

# REDD+ and forest protection on indigenous lands in the Amazon

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## Abstract

Reducing emissions from deforestation and forest degradation (REDD+) was introduced by the United Nations Framework Convention on Climate Change (UNFCCC) as a mechanism to reverse the loss of forests and carbon stocks in developing countries. REDD+ operates on the basis of performance-based payments. This article focuses on REDD+ as a market-based mechanism in the voluntary carbon market (VCM). It assesses the viability of using REDD+ on indigenous lands in the Brazilian Amazon by examining three key aspects of REDD+—the legal, technical and market requirements—in light of recent policy developments in Brazil and under the UNFCCC. REDD+ as a market-based mechanism in the VCM currently faces significant barriers as a useful tool for forest protection in the Amazon, due to the lack of an international carbon market under the UNFCCC, the highly complex technical requirements, and the low market demand for REDD+ credits in the VCM. Moreover, we suggest that, although legally possible under Brazilian law, REDD+ projects in the VCM may not be a suitable market-based option for indigenous communities in the Amazon due to the current national and international climate policy context.

## 1 | INTRODUCTION

Seeking to reverse the loss of forests and forest carbon stocks in developing countries, the United Nations Framework Convention on Climate Change (UNFCCC)<sup>1</sup> created the mechanism known as REDD+.<sup>2</sup> This was introduced in a simple format at the UNFCCC Conference of the Parties (COP) in 2005<sup>3</sup> and has since evolved into its current version: reducing emissions from deforestation and forest degradation, *plus* fostering conservation, sustainable management of forests and enhancement of forest carbon stocks.<sup>4</sup> REDD+

operates on the basis of performance-based payments—that is, payments are conditional on the outcome of a REDD+ action.<sup>5</sup>

Brazil can benefit from REDD+, given that it holds around 60% of the Amazon's 5.4 million km<sup>2</sup> of tropical forest and is under ongoing land-use pressure.<sup>6</sup> Amazonian indigenous territories store 27.1% of the region's aboveground carbon (28,247 MtC; i.e. 28.247 million tonnes of carbon<sup>7</sup>) on roughly 30% of the land area.<sup>8</sup> The indigenous

<sup>1</sup>United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107.

<sup>2</sup>A Angelsen et al (eds), *Realising REDD+: National Strategy and Policy Options* (Center for International Forestry Research (CIFOR) 2009).

<sup>3</sup>Papua New Guinea and Costa Rica, 'Reducing Emissions from Deforestation in Developing Countries: Approaches to Stimulate Action' UN Doc FCCC/CP/2005/MISC.1 (2005).

<sup>4</sup>UNFCCC, 'Warsaw Framework for REDD-Plus' (UNFCCC 2018) <<https://unfccc.int/topics/land-use/resources/warsaw-framework-for-redd-plus>>.

<sup>5</sup>Angelsen et al (n 2) 18.

<sup>6</sup>MCC Stabile et al, 'Solving Brazil's Land Use Puzzle: Increasing Production and Slowing Amazon Deforestation' (2020) 91 Land Use Policy 104362.

<sup>7</sup>W Walker et al, 'Forest Carbon in Amazonia: The Unrecognized Contribution of Indigenous Territories and Protected Natural Areas' (2014) 5 Carbon Management 479, 480.

<sup>8</sup>AC Crisostomo et al, 'Terras indígenas na Amazônia brasileira: reservas de carbono e barreiras ao desmatamento' (IPAM 2015).

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communities of the Brazilian Amazon<sup>9</sup> have legal title over around 1 million km<sup>2</sup> of these forests.<sup>10</sup> In practice, Brazil already benefits from REDD+ funding resulting from the Green Climate Fund and the Amazon Fund.<sup>11</sup> The crucial role of indigenous communities in ensuring forest conservation and the sustainable use of natural resources is well recognized in academic literature.<sup>12</sup> The potential benefits of REDD+ projects in promoting indigenous rights and improving livelihoods have been discussed,<sup>13</sup> as have the challenges in implementing REDD+<sup>14</sup>—including the importance of governance arrangements<sup>15</sup> and technical issues concerning measuring and monitoring forest carbon stocks.<sup>16</sup> It is recognized that developing countries—particularly Brazil—still face many hurdles in achieving a coherent REDD+ policy that addresses the needs of diverse local and indigenous communities.<sup>17</sup> As the rights of indigenous peoples are often challenged, the general view is that a robust legal framework that recognizes their rights, ensures community participation, and provides for good governance—including free prior and informed consent<sup>18</sup> and benefit-sharing—is a prerequisite for effective REDD+ projects.<sup>19</sup>

<sup>9</sup>Walker et al (n 7); EM Nogueira et al, 'Brazil's Amazonian Protected Areas as a Bulwark against Regional Climate Change' (2018) 18 *Regional Environmental Change* 573; G Piffer Salles, DT Paiva Salinas and SR Paulino, 'How Funding Source Influences the Form of REDD+ Initiatives: The Case of Market Versus Public Funds in Brazil' (2017) 139 *Ecological Economics* 91, 99.

<sup>10</sup>D Nepstad et al, 'Inhibition of Amazon Deforestation and Fire by Parks and Indigenous Lands' (2006) 20 *Conservation Biology* 65.

<sup>11</sup>See <<https://www.greenclimate.fund/countries/brazil>>.

<sup>12</sup>Nepstad et al (n 10); Walker et al (n 7); C Corrigan et al, 'Quantifying the Contribution to Biodiversity Conservation of Protected Areas Governed by Indigenous Peoples and Local Communities' (2018) 227 *Biological Conservation* 403.

<sup>13</sup>K Evans, L Murphy and W de Jong, 'Global versus Local Narratives of REDD: A Case Study from Peru's Amazon' (2014) 35 *Environmental Science and Policy* 98; T Loaiza, U Nehren and G Gerold, 'REDD+ Implementation in the Ecuadorian Amazon: Why Land Configuration and Common-Pool Resources Management Matter' (2016) 70 *Forest Policy and Economics* 67; M Aguilar-Støen, 'Better Safe than Sorry? Indigenous Peoples, Carbon Cowboys and the Governance of REDD in the Amazon' (2017) 44 *Forum for Development Studies* 44.

<sup>14</sup>CI Salimon et al, 'Estimating State-Wide Biomass Carbon Stocks for a REDD Plan in Acre, Brazil' (2011) 262 *Forest Ecology and Management* 555; CSMN Vitel et al, 'Land-Use Change Modeling in a Brazilian Indigenous Reserve: Construction of a Reference Scenario for the Suruí REDD Project' (2013) 41 *Human Ecology* 807; S Strey et al, 'Digging Deeper: The Value of Deep Soil Carbon for Potential REDD+ Projects in Tropical Forest Communities in Amazonia' (2017) 71 *Erdkunde* 231; Nogueira et al (n 9).

<sup>15</sup>TN Maraseni et al, 'An Assessment of the Impacts of the REDD+ Pilot Project on Community Forests User Groups (CFUGs) and Their Community Forests in Nepal' (2014) 136 *Journal of Environmental Management* 37.

<sup>16</sup>Salimon et al (n 14); Vitel et al (n 14); Strey et al (n 14); Nogueira et al (n 9).

<sup>17</sup>Piffer Salles et al (n 9) 99.

<sup>18</sup>United Nations Department of Economic and Social Affairs, 'Free Prior and Informed Consent – An Indigenous Peoples' Right and a Good Practice for Local Communities – FAO' (14 October 2016) <<https://www.un.org/development/desa/Indigenouspeoples/publications/2016/10/free-prior-and-informed-consent-an-Indigenous-peoples-right-and-a-good-practice-for-local-communities-fao/>>.

<sup>19</sup>Loaiza et al (n 13); G Vergara-Asenjo et al, 'A Participatory Approach to Elucidate the Consequences of Land Invasions on REDD+ Initiatives: A Case Study with Indigenous Communities in Panama' (2017) 12 *PLOS One*. See also P Moutinho et al, 'REDD no Brasil: um enfoque amazônico. Fundamentos, critérios e estruturas institucionais para um regime nacional de Redução de Emissões' (Centro de Gestão e Estudos Estratégicos, Instituto de Pesquisa Ambiental da Amazônia and Secretaria de Assuntos Estratégicos da Presidência da República 2012) 61; P Bottazzi et al, 'Carbon Sequestration in Community Forests: Trade-Offs, Multiple Outcomes and Institutional Diversity in the Bolivian Amazon' (2014) 45 *Development and Change* 105; A Blackman and P Veit, 'Titled Amazon Indigenous Communities Cut Forest Carbon Emissions' (2018) 153 *Ecological Economics* 56; TAP West, 'Indigenous Community Benefits from a De-Centralized Approach to REDD+ in Brazil' (2016) 16 *Climate Policy* 924.

Indigenous peoples' rights are in the spotlight given the current political context in Brazil. The federal government, in power since January 2019, is notable for its discourse against environmental protection and indigenous peoples' rights.<sup>20</sup> After backtracking on a proposed merger of the agriculture and environment ministries, the government introduced significant budget cuts to key environmental agencies such as FUNAI (National Indigenous Peoples Foundation), which is responsible for safeguarding indigenous peoples' rights; the law-enforcement agency IBAMA (Brazilian Institute of the Environment and Renewable Natural Resources) and ICMBio (Chico Mendes Institute for Biodiversity Conservation). The Secretariat of Climate Change and Forests was extinguished and approximately 95% of the funding for climate action was cut,<sup>21</sup> as was the federal budget for forest management and conservation, fire control and forest monitoring. There have also been changes in the leadership and personnel of such agencies.<sup>22</sup> Furthermore, the federal government proposed a series of bills and amendments, most not yet approved by the Parliament, to open indigenous lands to mining and other economic activities,<sup>23</sup> as well as measures that allegedly favour agribusinesses and land grabbing.<sup>24</sup> Against this background, the 2019 fires and record high rates of deforestation announced by INPE (National Institute for Space Research) have heightened attention on the Amazon.<sup>25</sup> In light of these developments—and 15 years after its inception—it is timely to consider whether REDD+ still has a role in reversing the loss of tropical forests, as well as the prospects for benefits to be derived from future REDD+ activity.

This article aims to discuss whether REDD+ in the voluntary carbon market (VCM) is currently an adequate tool for forest protection in the Brazilian Amazon and specifically on indigenous lands, considering national law and the international climate change regime. To answer this question, we consider three key elements of REDD+: the legal, technical and market requirements involved in implementing REDD+ projects. Basically, there are two distinct approaches to REDD+ as it can take the form of (i) a market-based mechanism, either within or outside the UNFCCC, which involves the trading of carbon offsets or (ii) a fund-based mechanism, whereby developing countries can request financial compensation, known as 'results-based payments',<sup>26</sup> for reducing emissions from deforestation and

<sup>20</sup>D Abessa et al, 'The Systematic Dismantling of Brazilian Environmental Laws Risks Losses on All Fronts' (2019) 3 *Nature Ecology & Evolution* 510.

<sup>21</sup>ibid 2; R Mariz, 'Ministério do Meio Ambiente bloqueia 95% da verba para o clima' (O Globo, 8 May 2019) <<https://oglobo.globo.com/sociedade/ministerio-do-meio-ambiente-bloqueia-95-da-verba-para-clima-23646502>>.

<sup>22</sup>Established by Decree 10.234 of 11 February 2020.

<sup>23</sup>Bill 191 of 2020. See also E Johnson Pereira et al, 'Policy in Brazil (2016–2019) Threaten Conservation of the Amazon Rainforest' (2019) 100 *Environmental Science and Policy* 8.

<sup>24</sup>Provisional Measure 910 of December 2019 and subsequent Bill 2622 of 2020. The bill also proposes changes in the Indigenous Peoples' Statute, Law 6.001 of 19 December 1973.

<sup>25</sup>In 2019, deforestation in the Legal Amazon was 10,129 km<sup>2</sup>. See <[http://www.inpe.br/noticias/noticia.php?Cod\\_Noticia=5465](http://www.inpe.br/noticias/noticia.php?Cod_Noticia=5465)>.

<sup>26</sup>L Wallbott and E Recio, 'Practicing Human Rights across Scale: Indigenous Peoples' Affectedness and Recognition in REDD+ Governance' (2018) 3 *Third World Thematics* 785.

forest degradation. There is not yet an international carbon market established under the UNFCCC and the 2015 Paris Agreement. Currently, REDD+ is used as a carbon market mechanism only in the voluntary carbon market, where REDD+ carbon credits have been commercialized. The focus of this article is on this market modality of REDD+. We analyse all existing REDD+ projects in the Brazilian Amazon under Verra (formerly the Verified Carbon Standard (VCS)),<sup>27</sup> which is the only international carbon standard that has generated carbon credits in Brazil. Following a discussion of the different modalities of REDD+ (Section 2), we provide an overview of Brazil's emissions reduction target under the 2015 Paris Agreement (Section 3) and the existing REDD+ projects in the Brazilian Amazon (Sections 4 and 5). We then examine the key aspects of REDD+, which include legal (Section 6), technical (Section 7) and market (section 8) requirements. We conclude with an assessment of the current feasibility of REDD+ projects in the voluntary carbon market for forest protection in the Brazilian Amazon and future prospects given possible changes in market demand, including sectoral offset schemes (Section 9).

## 2 | CLARIFYING REDD+

Globally, market-based mechanisms have been used as a climate mitigation tool since the 1997 Kyoto Protocol,<sup>28</sup> which formed the basis for the first international carbon market.<sup>29</sup> A 'carbon market' refers to the buying and selling of carbon credits that have been either distributed by a regulatory body or generated by carbon offset projects.<sup>30</sup> The international carbon market can be separated into two submarkets: the *compliance* (or regulatory) market and the *voluntary* market.<sup>31</sup> In the compliance market, carbon credits are traded to meet regulated emission reduction targets. Carbon markets are voluntary where emission reduction targets are not imposed by law.<sup>32</sup> This market does not rely on legally mandated emission reductions to generate demand,<sup>33</sup> and buyers voluntarily seek to offset emissions by purchasing carbon credits.<sup>34</sup> In comparison, the Kyoto

Protocol created a compulsory carbon market by which emission reduction units were traded to allow industrialized countries to meet their assigned emission reduction targets.<sup>35</sup> In the voluntary market, there are no such legal obligations.

Currently, REDD+ takes the form of a market mechanism only in the VCM. Following the Kyoto Protocol, no other compulsory carbon market has been created under the UNFCCC. Verra is now the international carbon standard most used in the VCM.<sup>36</sup> The Paris Agreement urges parties to conserve and enhance carbon sinks and use voluntary cooperation between countries to transfer mitigation outcomes.<sup>37</sup> This may set the basis for a future global market mechanism, but it remains a matter of speculation. Recent UNFCCC negotiations did not agree on modalities and procedures for market-based mechanisms under Article 6 of the Paris Agreement.<sup>38</sup>

As noted earlier, REDD+ can also take the form of a fund-based mechanism. This modality of REDD+ has raised essential resources for developing countries, notably in Latin America.<sup>39</sup> There are various initiatives that channelled unprecedented amounts of funding for the implementation of fund-based REDD+ in developing countries, such as the Forest Carbon Partnership Facility (FCPF) hosted by the World Bank, the UN-REDD Programme, and official development aid.<sup>40</sup> Such initiatives are likely to continue, both within and beyond the UNFCCC.<sup>41</sup>

## 3 | BRAZIL'S EMISSIONS TARGET UNDER THE PARIS AGREEMENT

Brazil's greenhouse gas emissions target under the Paris Agreement is a reduction in annual emissions of 37% by 2025 (using a baseline of 2005).<sup>42</sup> The country also proposed an intended reduction of 43% of baseline emissions by 2030.<sup>43</sup>

<sup>27</sup>Verra was founded in 2005 by environmental and business leaders who saw the need for greater quality assurance in voluntary carbon markets. See <<https://verra.org/about-verra/who-we-are/>>.

<sup>28</sup>Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, entered into force 16 February 2005) 2303 UNTS 148 arts 6, 12, 17. See also B Garcia, 'Carbon Trading as a Climate Change Mitigation Tool' in S Alam, JH Bhuiyan and J Razzaque (eds), *International Natural Resources Law, Investment and Sustainability* (Routledge 2018); R Bayon, A Hawn and K Hamilton, *Voluntary Carbon Markets: An International Business Guide to What They Are and How They Work* (Routledge 2012) 5.

<sup>29</sup>Bayon et al (n 28) 5.

<sup>30</sup>ibid.

<sup>31</sup>ibid.

<sup>32</sup>Garcia (n 28).

<sup>33</sup>Bayon, Hawn and Hamilton (n 28) 5; on carbon markets, see A Goldstein and F Ruef, 'View from the Understory, State of Forest Carbon Finance 2016' (Ecosystem Marketplace 2016); K Hamrick and M Gallant, 'Unlocking Potential: State of the Voluntary Carbon Markets 2017' (Ecosystem Marketplace 2017).

<sup>34</sup>Angelsen et al (n 2) 319.

<sup>35</sup>In particular, Article 17 of the Kyoto Protocol refers to emissions trading as a mechanism that could be used by Annex B countries to fulfil their commitments under Article 3.

<sup>36</sup>K Hamrick and M Gallant, 'Voluntary Carbon Market Insights: 2018 Outlook and First-Quarter Trends' (Ecosystem Marketplace 2018) 7.

<sup>37</sup>Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) 55 ILM 740 arts 5(2), 6.

<sup>38</sup>World Bank Group, 'State and Trends of Carbon Pricing' (World Bank 2019); S Lang, M Blum and S Leipold, 'What Future for the Voluntary Carbon Offset Market after Paris? An Exploratory Study Based on the Discourse Agency Approach' (2019) 19 Climate Policy 414; T Cadman et al, 'From Paris to Poland: A Postmortem of the Climate Change Negotiations' (2018) International Journal of Social Quality 8; Evans et al (n 13).

<sup>39</sup>ME Recio, 'Transnational REDD+ Rule Making: The Regulatory Landscape for REDD+ Implementation in Latin America' (2018) 7 Transnational Environmental Law 277, 279.

<sup>40</sup>ibid 278.

<sup>41</sup>Wallbott and Recio (n 26).

<sup>42</sup>Brazil's Intended Nationally Determined Contribution towards Achieving the Objective of the United Nations Framework Convention on Climate Change' <<https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Brazil%20First/BRAZIL%20iNDC%20english%20FINAL.pdf>>.

<sup>43</sup>ibid.

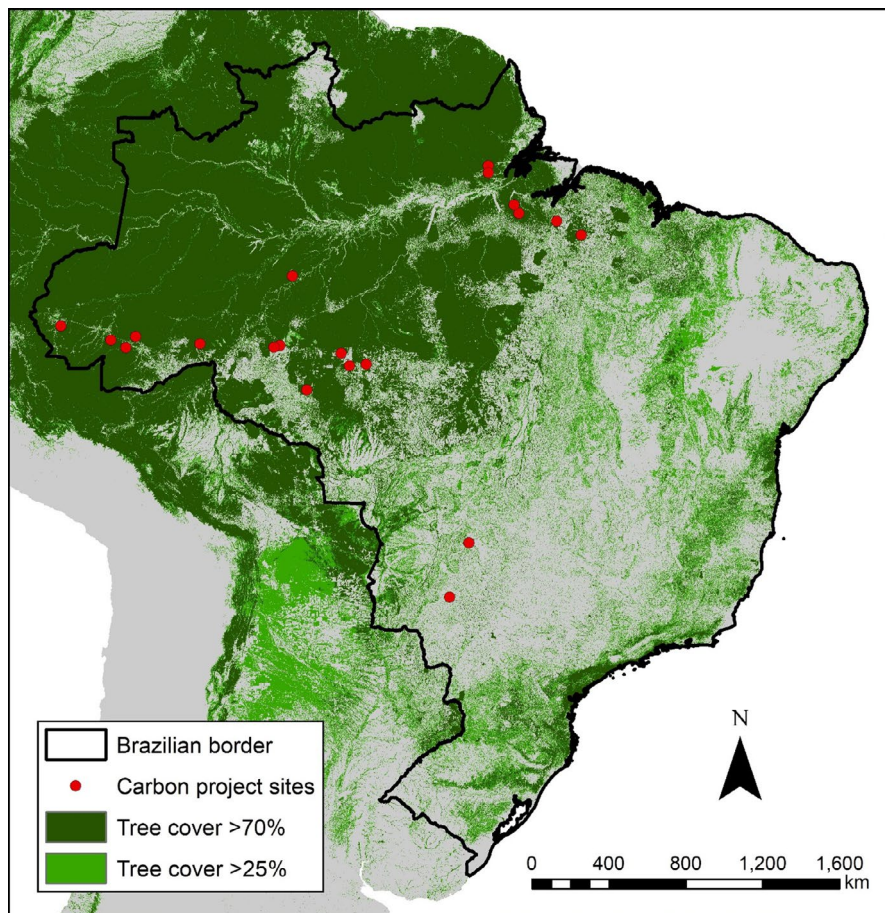


FIGURE 1 The locations of existing REDD+ projects in the Brazilian Amazon.<sup>48</sup> [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

The UNFCCC emissions summary states that Brazil's 2005 annual net greenhouse gas emissions (including land use, land-use change and forestry [LULUCF]) were 2.19 gigatonnes (i.e. billion tonnes) of carbon dioxide equivalent (Gt CO<sub>2</sub>e).<sup>44</sup> The Second Biennial Update Report of Brazil states that greenhouse gas emissions in 2012 totalled 1.27 Gt CO<sub>2</sub>e.<sup>45</sup> This is a reduction of 42% from the 2005 baseline emissions and surpasses the target of 37% for 2025. Under scrutiny, Brazil's target reveals itself less ambitious than it seems. The current target allows Brazil some flexibility to grow its energy sector (resulting in an increase in emissions) and still meet its 2025 target. Therefore, there is no compelling evidence at this time to suggest that Brazil's nationally determined contribution (NDC) could be a driver to increase opportunities for REDD+ projects in the Amazon. A more ambitious emissions target under Brazil's NDC could lead the government to use carbon credits from existing REDD+ projects in the Amazon to offset emissions from other growing sectors (transport and energy, among others). This would likely increase the domestic demand for REDD+ offsets.

<sup>44</sup>United Nations Climate Change Secretariat, 'Emissions Summary for Brazil' <[https://unfccc.int/files/ghg\\_data/ghg\\_data\\_unfccc/ghg\\_profiles/application/pdf/bra\\_ghg\\_profile.pdf](https://unfccc.int/files/ghg_data/ghg_data_unfccc/ghg_profiles/application/pdf/bra_ghg_profile.pdf)>.

<sup>45</sup>United Nations Climate Change Secretariat, 'Second Biennial Update Report of Brazil' <[https://unfccc.int/files/national\\_reports/non-annex\\_i\\_parties/biennial\\_update\\_reports/application/pdf/bur2-ing-02032017\\_final.pdf](https://unfccc.int/files/national_reports/non-annex_i_parties/biennial_update_reports/application/pdf/bur2-ing-02032017_final.pdf)>.

#### 4 | REDD+ PROJECTS IN THE BRAZILIAN AMAZON

There are currently 19 active REDD+ projects in the Brazilian Amazon registered under Verra (see Appendix 1).<sup>46</sup> Only one of these—the Suruí Forest Carbon Project (SFCP), which is discussed below—is on indigenous lands. Typically, these projects involve public and private sector partnerships, including national and international organizations.<sup>47</sup> The geographic locations of the existing REDD+ projects in the Brazilian Amazon are indicated in Figure 1.

#### 5 | INDIGENOUS REDD+ PROJECTS IN THE BRAZILIAN AMAZON

The Suruí Forest Carbon Project is the first and only REDD+ project in the VCM involving indigenous peoples in the Brazilian

<sup>46</sup>VCS database; two registered forest carbon projects are on Afforestation, Reforestation and Revegetation.

<sup>47</sup>See Brazilian projects in the VCS-Verra registry: <<https://registry.verra.org/app/search/VCS>>.

<sup>48</sup>VCS-Verra database <<https://registry.verra.org/app/search/VCS>>; MC Hansen et al 'High-Resolution Global Maps of 21st-Century Forest Cover Change' (2013) 342 Science 850.



Amazon.<sup>49</sup> It started as a spontaneous demand from the community,<sup>50</sup> led by the Suruí association Metareilá, and was developed by the Institute for Conservation and Sustainable Development of Amazonas (IDESAM).<sup>51</sup> The aim was to protect 13,575.3 hectares from deforestation.<sup>52</sup>

The carbon credits resulting from the SFCP were recognized as being wholly owned by the Suruí through Metareilá.<sup>53</sup> The project created the Suruí Fund, managed by the Brazilian Biodiversity Fund (FUNBIO), as the recipient of the project's credit sales and other donations. A community consultation process, elaborated by the Amazon Conservation Team (ACT–Brazil) and Metareilá, was carried out prior to the establishment of the SFCP, involving several meetings with the Suruí communities<sup>54</sup> and consultations with governmental agencies (FUNAI, the Ministry of Environment, the Attorney General's Office and local governments).<sup>55</sup> Consequently, a Memorandum of Understanding was signed between the communities and project participants by which the Suruí people expressed their consent to develop the project.<sup>56</sup>

The Project Design Document submitted to Verra attested compliance with Brazilian national law. The right of the Suruí people to develop REDD+ projects derived from the Brazilian Constitution, which grants indigenous peoples the sole right of use of their lands.<sup>57</sup> Moreover, it was claimed that the aims of the SFCP—to reduce greenhouse gas emissions and avoid deforestation—were in line with the 2009 National Policy on Climate Change and the 2004 Plan of Action for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAM).<sup>58</sup>

The SFCP was registered under Verra in 2009 and received its first and only issuance of carbon credits in 2013.<sup>59</sup> The credits were sold to Natura, a large Brazilian cosmetics company, and to the FIFA World Cup 2014.<sup>60</sup> Since then, the SFCP has seen no verifications or new issuances of carbon credits.<sup>61</sup>

The Suruí project involved 24 communities with a total population of approximately 1,231 people.<sup>62</sup> Despite their initial support, the communities became divided, with some arguing that the REDD+ project damaged their way of life.<sup>63</sup> The negative media coverage appeared in 2014, when Suruí members supported by the Catholic Indigenous Missionary Council criticized the use of the revenues from credit sales and demanded the end of the project.<sup>64</sup> In 2016, diamonds were discovered in Suruí territory, leading to an increase in illegal logging and mining.<sup>65</sup> The rates of deforestation were consequently higher than projected, leading to a decrease in the claimable emission reductions and a subsequent decrease in revenue from credit sales.<sup>66</sup>

Although there are significant differences among indigenous communities in the Amazon, the Suruí project revealed some of the challenges associated with REDD+ projects on indigenous lands. One is to generate enough revenue to support the wants and needs of the proponent communities and confront external threats encroaching into the project area and compromising the project outcomes. Despite the interest in the REDD+ concept since its inception, the practical implementation of REDD+ has proven more challenging than anticipated.<sup>67</sup> The Suruí project illustrates how difficult it is to maintain social cohesion when the use of REDD+ revenues is perceived as inadequate by members of the community. Historical conflicts between different Suruí clans increased with the creation of the SFCP because some community members believed that project revenues were distributed unequally.<sup>68</sup> The SFCP also raised concerns that the introduction of neoliberal practices among indigenous communities adversely affected their traditional forms of social organization.<sup>69</sup> More recently, some indigenous peoples in the Amazon basin have criticized the use of REDD+ as a market-based mechanism<sup>70</sup> for allowing developed countries to continue polluting while

<sup>49</sup>West (n 19); G Alvarez, M Elfving and JCS Andrade, 'REDD+ Governance and Indigenous Peoples in Latin America: The Case of Suruí Carbon Project in the Brazilian Amazon Forest' (2016) 3 Latin American Journal of Management for Sustainable Development 133.

<sup>50</sup>Alvarez et al (n 49).

<sup>51</sup>Other project partners included the Kanindé Association, Forest Trends, the Amazon Conservation Team (ACT–Brazil), and the Brazilian Biodiversity Fund; Suruí Forest Carbon Project, 'Project Description Document' 8 <<https://registry.verra.org/app/projectDetail/VCS/1118>>.

<sup>52</sup>ibid 6.

<sup>53</sup>ibid 12, 29.

<sup>54</sup>ibid 49. The Suruí did not have an agreed protocol establishing how the community should be contacted and consulted.

<sup>55</sup>ibid 27.

<sup>56</sup>ibid.

<sup>57</sup>ibid 28.

<sup>58</sup>For relevant national legislation, see ibid 25.

<sup>59</sup>See project information <[https://www.vcsprojectdatabase.org/#/project\\_details/1118](https://www.vcsprojectdatabase.org/#/project_details/1118)>.

<sup>60</sup>S Zwick, 'The Suruí Forest Carbon Project: A Case Study' (USAID 2019).

<sup>61</sup>See project information (n 59).

<sup>62</sup>Project Description Document (n 51) 20.

<sup>63</sup>C Lang, 'The Suruí Forest Carbon Project Faces Illegal Logging, Gold and Diamond Mining. Almir Suruí Is Looking for Alternatives to Carbon' (Redd-Monitor, 3 October 2017) <<https://redd-monitor.org/2017/10/03/the-suru-i-forest-carbon-project-faces-illegal-logging-gold-and-diamond-mining-almir-suru-i-is-looking-for-alternatives-to-carbon/>>.

<sup>64</sup>J Luna Freire, 'Epistemological Spaces, Carbon Credits, and Environmental Modernity: The Suruí Forest Carbon Project' (2017) 7 Transmodernity: Journal of Peripheral Cultural Production of the Luso-Hispanic World 225.

<sup>65</sup>Zwick (n 60) 9; Lang (n 63).

<sup>66</sup>Lang (n 63)

<sup>67</sup>R van der Hoff et al, 'The Parallel Materialization of REDD+ Implementation Discourses in Brazil' (2015) 55 Forest Policy and Economics 37; Forest Trends et al, 'Investing in Forest Carbon: Lessons from the First 20 Years' (2011); Bottazzi et al (n 19); World Bank Institute, 'Estimating the Opportunity Costs of REDD+: A Training Manual' (2011); Loaiza et al (n 13).

<sup>68</sup>LMB de Barcellos and MF Gebara, 'Climate Mitigation or Knowledge Deprivation? Learning from Indigenous Socio-Environmental Funds' (2020) 6 Revista Produção e Desenvolvimento 6.

<sup>69</sup>ibid.

<sup>70</sup>Iquitos Declaration by the Coordinating Body for the Indigenous Peoples' Organizations of the Amazon Basin (COICA)' (29 April 2011) <<http://www.redd-monitor.org/wp-content/uploads/2011/05/1371.pdf>>.

offsetting the damage they cause through payments to indigenous communities based on their forest conservation efforts.<sup>71</sup>

Nonetheless, there are also positive aspects of the Suruí project.<sup>72</sup> The project indicated that public–private partnerships can be established towards common climate mitigation goals.<sup>73</sup> While not all credits have been sold, private companies have purchased carbon offsets from the SFCP in support of the project.<sup>74</sup> Various REDD+ projects have been registered in Brazil under Verra. Together, they have the potential to avoid millions of tonnes of CO<sub>2</sub> and to be commercialized in the VCM. REDD+ projects in Brazil have also contributed to building technical capacity of local project developers and other stakeholders.

More than 10 years after the SFCP was created, and in light of recent developments under the UNFCCC and some new legislation introduced in Brazil, the following sections enquire into whether REDD+ projects in the VCM are currently a viable option for indigenous communities in the Amazon. In particular, we look at the legal, technical and market requirements involved in implementing REDD+ projects in the VCM.

## 6 | LEGAL REQUIREMENTS FOR REDD+ PROJECTS

The discussion concerning the legal requirements for REDD+ projects proposed in this section begins with an analysis of whether Brazil's national law currently allows REDD+ projects to be developed in the VCM. We conclude that there are no legal impediments for implementing REDD+ projects in the voluntary market. We then discuss the specific legal requirements for REDD+ under Brazilian legislation if new projects are established under the VCM involving indigenous communities in the Amazon.

### 6.1 | REDD+ under national law

There is currently no specific law or policy in Brazil regulating REDD+ projects in the VCM. In the absence of specific legislation regulating REDD+ as a market-based mechanism, this section examines national laws and policies that are relevant to such REDD+ activities—for example, regarding climate change, fund-based REDD+, forests and indigenous peoples' rights.

The 1988, Brazilian Constitution defines the Amazon forest as part of the national heritage.<sup>75</sup> All levels of government (Union,

states, municipalities and Federal District) have shared responsibility to protect the environment.<sup>76</sup> The Constitution makes no references to market mechanisms as a tool for forest protection. Likewise, the 2012 Forest Code makes no specific mention of REDD+,<sup>77</sup> but it does envisage the development of markets for ecosystem services to drive conservation and reforestation.<sup>78</sup>

Brazil's 2009 National Climate Change Policy sets the guidelines for tackling climate mitigation and adaptation.<sup>79</sup> Several national agencies are responsible for its implementation,<sup>80</sup> including a National Climate Change Fund established in 2009. The Amazon Fund, created in 2008 through initial donations from Norway and Germany and managed by the Brazilian National Development Bank, has also been a key source of REDD+ funding in Brazil.<sup>81</sup> The goals established by the National Climate Change Policy of relevance to REDD+ include enhancing anthropogenic removals by sinks, preserving natural resources and promoting the reforestation and restoration of degraded areas.<sup>82</sup> The policy also refers to a Brazilian Emission Reduction Market<sup>83</sup> for the trading of certified avoided emissions, but this market has not yet been created. Traditionally, Brazil has advocated for REDD+ as a 'centralized' mechanism, whereby REDD+ projects receive direct financing under the UNFCCC from international donors and are managed by the federal government,<sup>84</sup> rather than being funded through an international carbon market mechanism and individual REDD+ projects in the VCM.

In 2016, Brazil launched its National REDD+ Strategy (ENREDD+),<sup>85</sup> which aims to eliminate deforestation, promote the conservation and restoration of forests, and enable a sustainable forestry economy. Specific objectives include monitoring and evaluating the impact of REDD+ policies, ensuring consistency between (federal, state and municipal) policies, and mobilizing capacity and resources for forest conservation and sustainable use. There is no explicit reference to REDD+ as a market-based mechanism in the VCM and REDD+ is defined under ENREDD+ as a funded-based mechanism.<sup>86</sup> Prior to ENREDD+, the 2004 Plan of Action for the Prevention and Control of Deforestation in the Legal Amazon was also an important instrument to prevent deforestation in the

<sup>71</sup>Wallbott and Recio (n 26) 795.

<sup>72</sup>As suggested, carbon markets and the commodification discourse in forest conservation cannot be regarded as a failure just yet; see van der Hoff et al (n 67). See also Loaiza et al (n 13).

<sup>73</sup>Alvarez et al (n 49); F Toni, IAR Ferreira and INR Ferreira, 'Adapting to Emerging Institutions: REDD+ Projects in the Territories of the Suruí and Cinta-Larga Indigenous Peoples' (ICARUS II Conference – Climate Vulnerability and Adaptation: Marginal Peoples and Environments, Ann Arbor, Michigan, May 2011).

<sup>74</sup>van der Hoff et al (n 67).

<sup>75</sup>Brazilian Federal Constitution 1988 (Brazilian Constitution) art 225(4).

<sup>76</sup>ibid art 23(6); J Costenbader (ed), *Legal Frameworks for REDD: Design and Implementation at the National Level* (IUCN 2009) 200.

<sup>77</sup>Brazilian Forest Code, Law 12.651 of 25 May 2012.

<sup>78</sup>ibid art 41(I).

<sup>79</sup>National Climate Change Policy, Law 12.187 of 29 December 2009 regulated by Decree 7.390 of 9 December 2010.

<sup>80</sup>ibid art 6(I).

<sup>81</sup>Established by Decree 6.527 of 1 August 2008; see AE Duchelle et al, 'Linking Forest Tenure Reform, Environmental Compliance, and Incentives: Lessons from REDD+ Initiatives in the Brazilian Amazon' (2014) 55 *World Development* 53, 56.

<sup>82</sup>Law 12.187 of 29 December 2009 art 4.

<sup>83</sup>ibid art 9.

<sup>84</sup>van der Hoff et al (n 67) 41; Piffer Salles et al (n 9) 99.

<sup>85</sup>Brasília, 'ENREDD+: Estratégia Nacional para REDD+' (2016) <[http://redd.mma.gov.br/images/publicacoes/enredd\\_documento\\_web.pdf](http://redd.mma.gov.br/images/publicacoes/enredd_documento_web.pdf)>.

<sup>86</sup>ibid 9.

Amazon. It has been implemented in four phases (the fourth one up to 2020). The PPCDAM encourages sustainable productive activities and the use of ecosystem services.<sup>87</sup>

The above overview indicates that there is currently no specific legislation in Brazil incentivizing REDD+ projects in the VCM. Nor is there any explicit prohibition of such projects. Hence, we argue that there are no legal impediments for REDD+ projects in the VCM for two main reasons. First, the current legislation does not explicitly prohibit the implementation of REDD+ projects in the VCM. Second, such REDD+ projects are in line with the goals of the relevant Brazilian laws and policies discussed above, notably those of reducing deforestation, enhancing carbon sinks and restoring degraded areas.<sup>88</sup> In view of this, the following sections examine the specific legal requirements for developing REDD+ projects in the VCM, particularly on indigenous lands, if new projects are established in the Brazilian Amazon under Verra or other international carbon standards.

## 6.2 | REDD+ projects on indigenous lands

Indigenous lands in Brazil are not categorized as protected areas under the National System of Protected Areas.<sup>89</sup> However, indigenous territories have the highest level of protection by law because they are regulated by the Constitution.<sup>90</sup> The federal government owns the lands 'traditionally occupied' by indigenous peoples. These lands are defined as follows:

those on which they live on a permanent basis, those used for their productive activities, those indispensable to the preservation of the environmental resources necessary for their well-being and for their physical and cultural expression, according to their uses, customs and traditions.<sup>91</sup>

The 2007 National Policy on the Sustainable Development of Traditional Peoples and Communities<sup>92</sup> defines 'traditional peoples and communities' as culturally differentiated groups that recognize themselves as such, with their own forms of social organization and cultural, social, religious and economic needs, using practices transmitted by tradition.<sup>93</sup> The policy also recognizes indigenous peoples' right to territorial integrity and over natural resources.<sup>94</sup>

<sup>87</sup>Plan of Action for the Prevention and Control of Deforestation in the Legal Amazon, Operational Plan 2016–2020 <<http://redd.mma.gov.br/en/legal-and-public-policy-frame-work/ppcdam>>.

<sup>88</sup>These projects include the Jari Pará REDD+ Project <[https://www.vcsprojectdatabase.org/#/project\\_details/1811](https://www.vcsprojectdatabase.org/#/project_details/1811)>, the Fazenda Sao Paulo Agroforestry Project <[https://www.vcsprojectdatabase.org/#/project\\_details/1663](https://www.vcsprojectdatabase.org/#/project_details/1663)> and the Manoa REDD+ Project <[https://www.vcsprojectdatabase.org/#/project\\_details/1571](https://www.vcsprojectdatabase.org/#/project_details/1571)>.

<sup>89</sup>Law 9.985 of 18 July 2000.

<sup>90</sup>Brazilian Constitution (n 75) Chapter 8.

<sup>91</sup>ibid art 231(1).

<sup>92</sup>Brazilian Constitution (n 75) Chapter 8.

<sup>93</sup>Decree 6.040 of 7 February 2007.

<sup>94</sup>ibid art 3.

<sup>95</sup>ibid art 2.

Indigenous peoples do not own their lands, but they exercise permanent tenure over the lands that they traditionally occupy.<sup>95</sup> Their right to permanent tenure involves the effective occupation of the land, according to their uses, customs and traditions.<sup>96</sup> Indigenous lands cannot be leased and no acts that restrict the full exercise of indigenous peoples' permanent tenure should be permitted.<sup>97</sup> This right is also recognized under the 1973 Indigenous Peoples' Statute.<sup>98</sup>

Indigenous communities have 'original rights' to their traditional lands<sup>99</sup> and no other rights can prevail over such rights. For example, establishing protected areas in indigenous territories would be unconstitutional, as it would restrict indigenous peoples' original land rights.<sup>100</sup> In Brazil, the Armed Forces and the Federal Police ensure the protection of indigenous lands.<sup>101</sup> FUNAI represents indigenous communities and assists them in judicial (and extrajudicial) disputes.<sup>102</sup> The 2012 National Policy of Territorial and Environmental Management of Indigenous Lands provides further guidelines regarding the management of Indigenous territories and the role of FUNAI.<sup>103</sup>

REDD+ projects developed on indigenous lands that violate the rights discussed above—notably, the rights to territorial integrity, permanent land tenure and original rights—would be illegal and/or unconstitutional. For example, REDD+ activities that limit access of indigenous communities to their territory violate Article 18 of the Indigenous Peoples' Statute, which asserts that no acts restricting the full exercise of indigenous peoples' permanent tenure over the land should be permitted.<sup>104</sup> Moreover, according to the Constitution, 'acts with a view to occupation, domain and possession of indigenous lands are null and void, producing no legal effects'.<sup>105</sup>

### 6.2.1 | Legal requirements for REDD+ on indigenous lands

Indigenous lands are 'inalienable and indispensable, and the rights thereto are not subject to limitation'.<sup>106</sup> The Constitution allows productive activities in indigenous territories, in so far as they are necessary for the wellbeing and the physical and cultural expression of indigenous communities.<sup>107</sup> Therefore, indigenous peoples are enti-

<sup>95</sup>Brazilian Constitution (n 75) art 231(2).

<sup>96</sup>Law 6.001 of 19 December 1973 art 23.

<sup>97</sup>ibid art 18.

<sup>98</sup>ibid art 22.

<sup>99</sup>Brazilian Constitution (n 75) art 231(1).

<sup>100</sup>ibid art 231.

<sup>101</sup>Law 6.001 of 19 December 1973 art 34.

<sup>102</sup>ibid art 35.

<sup>103</sup>Decree 7.747 of 5 June 2012.

<sup>104</sup>Law 6.001 of 19 December 1973 art 18.

<sup>105</sup>Brazilian Constitution (n 75) art 231(6).

<sup>106</sup>ibid art 231(4).

<sup>107</sup>ibid art 231(1).

tled to develop productive activities, because their land rights are not subject to limitation, if such activities are according to their uses, customs and traditions.<sup>108</sup> There are examples of indigenous communities in the Amazon carrying out economic activities, such as ecotourism, sports fishing and commercializing native products.<sup>109</sup>

Indigenous peoples have exclusive use rights to the riches of the soil, rivers and lakes within their lands.<sup>110</sup> Even though indigenous lands are owned by the State, indigenous peoples have the right to explore the utilities, uses and fruits of natural resources or property, as well as the legal right to use and derive profit from those natural resources.<sup>111</sup> This right applies exclusively to indigenous communities, as anyone else is prohibited from hunting, fishing, gathering fruits, and undertaking agricultural, cattle ranching or extractive activities.<sup>112</sup> Two exceptions to the exclusive use right concern minerals and hydric resources.<sup>113</sup> According to the Brazilian Constitution, the Parliament can authorize the use of hydric resources and mining on indigenous lands but only after hearing the communities involved, which must also participate in the results of such activities.<sup>114</sup> With regard to mining, their participation shall be ensured 'as set forth by law'.<sup>115</sup> Any such law, however, has never been adopted. Therefore, mining in indigenous territories is still considered illegal. The 1989 Indigenous and Tribal Peoples Convention under the International Labour Organization (ILO Convention No. 169) recognizes that, where the State retains ownership of mineral and other subsurface resources, governments must ensure consultation procedures, benefit-sharing and compensation for indigenous communities.<sup>116</sup> Likewise, the 2007 United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)<sup>117</sup> requires States to obtain free, prior and informed consent (FPIC) for the approval of any projects affecting indigenous territories.<sup>118</sup> Brazil has ratified ILO Convention No. 169, which was incorporated under domestic law through Decree 10.088/2019, and endorsed UNDRIP.<sup>119</sup> Therefore, FPIC is a requirement under Brazilian law for projects involving indigenous peoples, as discussed below.<sup>120</sup> In this respect, the 2010 Declaration

from the Latin American Indigenous Forum on Climate Change states that REDD+ projects must ensure full compliance with UNDRIP and other legal instruments.<sup>121</sup>

As noted, the Brazilian Constitution allows productive activities in indigenous territories compatible with traditional values and customs. Therefore, as a form of economic activity, REDD+ projects in the VCM are in principle permitted as they involve forest protection and/or ecological restoration.<sup>122</sup> However, REDD+ projects implemented on indigenous lands must observe additional legal requirements under Brazilian law. Notably, REDD+ projects involving indigenous peoples require a written authorization from FUNAI<sup>123</sup> to contact indigenous peoples and access their land. FUNAI's authorization, albeit necessary, is not sufficient to implement REDD+ projects in indigenous territories.

REDD+ projects also require the FPIC of indigenous peoples—a well-established principle in international law, as noted above.<sup>124</sup> Under Brazilian law, this requirement is foreseen by Law 13.123/2015 on Genetic Heritage, Protection and Access to Traditional Knowledge. FPIC is defined as 'formal consent, previously granted by indigenous peoples or traditional communities according to their uses, customs and traditions or community protocols'.<sup>125</sup> It is required for economic activities involving genetic resources and indigenous peoples' traditional knowledge.<sup>126</sup> This can be achieved through the signing of a written agreement, an audio-visual record, the opinion of an official body or community protocols.<sup>127</sup> The Brazilian legislation does not devise specific procedures that communities should follow to make use of such protocols. Some indigenous peoples in Brazil have adopted their own community protocols to define how they should be contacted and consulted.<sup>128</sup> These protocols are monitored and implemented with the support of FUNAI and the Attorney General's Office.<sup>129</sup> Other national laws and policies, such as the 2012 National Policy on Environmental and Territorial Management of Indigenous Lands, also recognize the right of indigenous peoples to FPIC.<sup>130</sup>

Moreover, REDD+ projects must ensure equitable benefit-sharing, both financial (payments for carbon credits) and non-financial (such as recreational and educational activities). Law 13.123/2015 establishes how this is to be attained in economic

<sup>108</sup>ibid.

<sup>109</sup>A Villas-Bôas, 'Diagnóstico da qualidade de vida e da integridade dos territórios do povo Kayapó' (Instituto Socio Ambiental 2014); Associação Floresta Protegida, 'Plano de Gestão Territorial e Ambiental da Terra Indígena Las Casas' (2017).

<sup>110</sup>Brazilian Constitution (n 75) art 231(2); Law 6.001 of 19 December 1973 art 24.

<sup>111</sup>Piffer Salles et al (n 9) 99.

<sup>112</sup>Law 6.001 of 19 December 1973 art 17(1).

<sup>113</sup>Brazilian Federal Constitution of 1988 art 231(3).

<sup>114</sup>ibid.

<sup>115</sup>ibid.

<sup>116</sup>Indigenous and Tribal Peoples Convention, 1989 (No. 169) (adopted 27 June 1989, entered into force 5 September 1991) 28 ILM 1382 (ILO Convention No. 169) art 15; Convention on Biological Diversity (adopted 5 June 1992, entered into force 29 December 1993) 1760 UNTS 79 (CBD).

<sup>117</sup>UNGA 'Declaration on the Rights of Indigenous Peoples' UN Doc A/RES/61/295 (2 October 2007) (UNDRIP) art 32(2). See also UNGA 'Programme of Action for the Second International Decade of the World's Indigenous People' UN Doc A/60/270 (18 August 2005) para 58.

<sup>118</sup>UNDRIP (n 117) art 32(2).

<sup>119</sup>Decree 10.088 of 5 November 2019.

<sup>120</sup>Law 13.123 of 20 May 2015 art 9.

<sup>121</sup>Wallbott and Recio (n 26) 795.

<sup>122</sup>Brazilian Constitution (n 75) art 231(1).

<sup>123</sup>See on access to indigenous lands <<http://www.funai.gov.br/index.php/servicos/ingresso-em-terra-indigena>> and the requirements for scientific research in particular under Normative Instruction 01/PRESI of 29 November 1995.

<sup>124</sup>See, for example, ILO Convention No. 169 (n 116) art 6; UNDRIP (n 117) art 19.

<sup>125</sup>Law 13.123 of 20 May 2015 art 2(6).

<sup>126</sup>ibid art 11.

<sup>127</sup>ibid art 9.

<sup>128</sup>Brazilian Attorney General's Office, 'Protocolo de consulta prévia dos povos indígenas' <<http://www.mpf.mp.br/atualizacao-tematica/ccr6/documentos-e-publicacoes/protocolos-de-consulta-dos-povos-indigenas>>.

<sup>129</sup>Law 13.123 of 20 May 2015 art 6.

<sup>130</sup>This policy was established under Decree 7.747 of 5 July 2012. Reference to free, prior and informed consent (FPIC) and the ILO Convention No. 169 is made in art 3(11).



activities involving the use of genetic heritage and access to traditional knowledge.<sup>131</sup> This law is relevant to REDD+ projects based on an expansive approach to benefit-sharing, which encompasses not only the use of genetic resources but also the conservation and sustainable use of biodiversity more broadly.<sup>132</sup> Law 13.123/2015 requires benefit-sharing agreements, including a description of the products subject to economic exploitation, duration of the activity, methods of benefit-sharing, rights and responsibilities, intellectual property rights, termination, penalties and dispute settlement methods.<sup>133</sup> The right to benefit-sharing is also recognized in various international treaties to which Brazil is a party.<sup>134</sup>

REDD+ projects in the VCM involve the signing of contracts or other arrangements among local communities and project partners. If REDD+ projects limit indigenous peoples' rights, such as land rights, or fail to meet the legal requirements discussed above (such as FPIC and benefit-sharing), such contracts or arrangements can be considered illegal and/or unconstitutional. These requirements under national and international law offer an important safeguard to indigenous peoples, making their consent a prerequisite for the establishment of REDD+ projects and recognizing their rights as the main beneficiaries of REDD+ revenues.

## 6.2.2 | Ownership of REDD+ carbon credits

The ownership of carbon credits resulting from REDD+ projects developed in the VCM can be difficult to establish as they often involve several stakeholders, including communities, local governments, nongovernmental organizations and private actors. As noted above, indigenous peoples have the exclusive use right to the riches of the soil, rivers and lakes within their lands.<sup>135</sup> The Indigenous Peoples' Statute recognizes that this right includes the right to the possession and use of natural resources and all utilities on indigenous lands.<sup>136</sup> The Brazilian Civil Code also recognizes that 'the fruits and other products of a thing, even when separated, belong to its owner'.<sup>137</sup> REDD+ projects generate tradable carbon credits, which logically are the 'fruits' accrued from the forest through REDD+ activities. Arguably, carbon credits deriving from REDD+ projects in the VCM are owned by indigenous peoples, who have exclusive use rights to

the riches of the soil, including forests, and own the 'fruits' of a thing—which, for REDD+ projects, are carbon credits. Consequently, indigenous communities are entitled to decide how carbon revenues are to be shared among project partners. As noted above, carbon credits from the SFCP were recognized as being wholly owned by the Suruí people through Metareilá.<sup>138</sup> It is suggested that, even if carbon ownership is not nationally regulated, there is a legal assumption that emission reductions would be treated like any other economic benefit of a particular activity.<sup>139</sup> The entity that has a right to the forest land is usually recognized as the owner of carbon rights.<sup>140</sup>

Having discussed the main legal requirements for developing REDD+ projects in the Brazilian Amazon, we next examine whether such projects are currently a viable option for indigenous communities by considering two other key aspects of REDD+ projects in the VCM: the technical and market requirements.

## 7 | TECHNICAL REQUIREMENTS FOR REDD+ IN THE VOLUNTARY MARKET

The first step in any forest carbon project is to identify a suitable standard and methodology.<sup>141</sup> Currently, the most used and comprehensive carbon standard is Verra.<sup>142</sup> Other standards with REDD+ methodologies include, for example, Plan Vivo, the Gold Standard and the American Carbon Registry. Carbon market standards publish methodologies and guidelines for project proponents to follow in order to deliver REDD+ projects and earn carbon credits. Verra has several methodologies that address different baseline scenarios in various sectors (such as energy, transport, waste, agriculture and forestry), including REDD+ methodologies.<sup>143</sup> Despite the diversity of methodologies, forest carbon projects, such as REDD+, involve five basic steps from the initial project design to completion: (i) feasibility study for estimating the carbon stocks and potential carbon credits; (ii) field survey to confirm the projected carbon stocks; (iii) preparation and submission of project documents to the selected standard (such as the project design document and monitoring plan); (iv) verification and validation<sup>144</sup> of the project by independent auditors and (v) monitoring report and risk assessment submitted throughout the project life cycle.<sup>145</sup> Each of those steps involves significant technical capacity and resources.<sup>146</sup>

<sup>131</sup>Law 13.123 of 20 May 2015 art 25.

<sup>132</sup>See E Morgera and E Tsioumani, 'The Evolution of Benefit Sharing: Linking Biodiversity and Community Livelihoods' (2010) 19 *Review of European Community and International Environmental Law* 150.

<sup>133</sup>Law 13.123 of 20 May 2015 art 26.

<sup>134</sup>Including the CBD (n 116) and its Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (adopted 29 October 2010, entered into force 12 October 2014) <<https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>>. See also Forest Carbon Partnership Facility and UN-REDD Programme, 'Guidelines on Stakeholder Engagement' (2012); UNGA 'Programme of Action for the Second International Decade of the World's Indigenous People' UN Doc A/RES/60/142 (7 February 2006).

<sup>135</sup>Brazilian Federal Constitution 1988 art 231; Law 6.001 of 19 December 1973 art 24.

<sup>136</sup>Law 6.001 of 19 December 1973 art 24.

<sup>137</sup>Brazilian Civil Code, Law 10.406 of 10 January 2002 art 1,232; Piffer Salles et al (n 9) 99.

<sup>138</sup>Project Description Document (n 51) 12, 29.

<sup>139</sup>C Streck, 'Rights and REDD+ Legal and Regulatory Considerations' in Angelsen et al (n 2).

<sup>140</sup>ibid.

<sup>141</sup>Garcia (n 28).

<sup>142</sup>L Brotto and D Pettenella (eds), *Forest Management Auditing: Certification of Forest Products and Services* (Routledge 2018).

<sup>143</sup>Angelsen et al (n 2); Verra, 'Methodologies' <<https://verra.org/methodologies/>>.

<sup>144</sup>See J Olander and J Ebeling, 'Building Forest Carbon Projects: Step-by-Step Overview and Guide' (Forest Trends 2011).

<sup>145</sup>Forest Trends et al (n 67).

<sup>146</sup>Garcia (n 28).

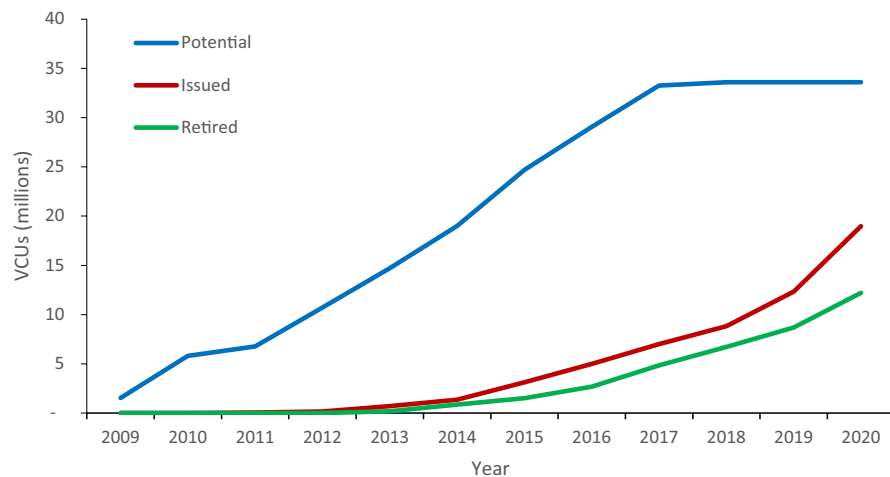


FIGURE 2 Brazil's total claimable emissions as of August 2020. [Colour figure can be viewed at wileyonlinelibrary.com]

REDD+ projects in the VCM can be proposed by an individual, organization and/or community (project proponent) and are implemented by project developers. To receive carbon credits, the project proponent must demonstrate that REDD+ activities achieved the expected results, such as carbon sequestration and/or avoided carbon emissions. When the outcomes of a REDD+ project are verified by third-party auditors, through a process known as verification, the carbon standard issues carbon credits, which are then commercialized.

Projects involving local or indigenous peoples also require proof of FPIC and community participation.<sup>147</sup> This usually involves extensive and costly consultation processes with local communities and governmental agencies. Other technical requirements of REDD+ projects relate to additionality and leakage. Additionality is the determination of whether the project will lead to the expected outcomes when compared to the baseline emissions.<sup>148</sup> Project proponents must demonstrate that the project outcomes would not have been achieved in the absence of the project.<sup>149</sup> Leakage in REDD+ describes the displacement of emissions from deforestation or forest degradation from one forest area to another as a result of the project.<sup>150</sup> Each of these technical requirements must be extensively demonstrated in project documents and are subject to verification from external auditors. The technical expertise and resources involved in implementing REDD+ projects are not available within local communities. In practice, REDD+ projects in the Amazon could only be developed with financial support from donors and private sector partners,<sup>151</sup>

particularly to meet the stringent technical requirements involved in implementing REDD+ projects.

## 8 | REDD+ MARKET REQUIREMENTS

Verra is currently the only standard to have REDD+ carbon projects generating carbon credits in Brazil, with 21 verified forest carbon projects in total.<sup>152</sup> The first Brazilian REDD credits (known as Verified Carbon Units, or VCUs) were issued in 2012 to a project avoiding planned deforestation in the Brazilian Amazon.<sup>153</sup> The carbon credit information for REDD+ projects globally is publicly available on Verra's database. We used this database to calculate the total number of credits generated by Brazilian projects between 2009 and 2020. Verra issued 18.98 million carbon credits to Brazilian forest projects in this period, 57% of the 33.6 million audited and claimable emission reductions generated by these projects (see Figure 2). As of August 2020, just 12.21 million credits had been 'retired', meaning sold. Once carbon credits are purchased, they are transferred to the buyer of the credits and then retired on behalf of the offset buyer. This means that the offset is removed from the market to ensure that it cannot be sold again.<sup>154</sup>

Figure 2 demonstrates the low credit sales of REDD+ projects in the Brazilian Amazon (green line). The claimable emission reductions (blue line) are those that can be verified by an independent auditor and—if emission reductions are verified—converted into carbon credits. In other words, 'claimable emission reductions' relate to the potential carbon credits that a project can generate. The potential carbon credits that could have been generated by REDD+ projects in the Brazilian Amazon (blue line) are much higher than those that were actually verified and issued (red line). The carbon credits that were finally sold are even lower (green line). The rates

<sup>147</sup>P Anderson, 'Free, Prior, and Informed Consent in REDD+: Principles and Approaches for Policy and Project Development' (Center for People and Forests 2011). See also VCS Standard 3.16.11–3.16.19 <[https://verra.org/wp-content/uploads/2020/03/VCS-Standard-v4.0\\_Updated.pdf](https://verra.org/wp-content/uploads/2020/03/VCS-Standard-v4.0_Updated.pdf)>.

<sup>148</sup>The Nature Conservancy, 'Reducing Emissions from Deforestation and Degradation (REDD): A Casebook of On-the Ground Experience' (2010).

<sup>149</sup>The VCS has a tool for assessing the additionality of a proposed project, which involves a four-step process.

<sup>150</sup>Olander and Ebeling (n 144).

<sup>151</sup>Examples of REDD+ projects funded by the private sector include the CIKEL Brazilian Amazon REDD APD project <[https://www.vcsprojectdatabase.org/#/project\\_details/832](https://www.vcsprojectdatabase.org/#/project_details/832)>, the Ecomapua Amazon REDD project <[https://www.vcsprojectdatabase.org/#/project\\_details/1094](https://www.vcsprojectdatabase.org/#/project_details/1094)> and the Envira Amazonia Project <[https://www.vcsprojectdatabase.org/#/project\\_details/1382](https://www.vcsprojectdatabase.org/#/project_details/1382)>.

<sup>152</sup>VCS Project Database <<https://www.vcsprojectdatabase.org/#/home>>.

<sup>153</sup>The CIKEL Brazilian Amazon REDD Project in the state of Para. See the VCS Project Database <[http://www.vcsprojectdatabase.org/#/project\\_details/832](http://www.vcsprojectdatabase.org/#/project_details/832)>.

<sup>154</sup>C Riedy and A Atherton, 'Carbon Offset Watch: 2008 Assessment Report' (Institute for Sustainable Futures, University of Technology Sydney 2008) 5, 25.

of credit issuances and sales have been increasing since 2016, but the total volume of credit issuances remains low compared to the total verified claimable emissions. Figure 2 shows that the supply of voluntary carbon credits vastly outweighs the demand.

Project proponents face large upfront costs to develop projects and issue carbon credits. One of these costs is a fee applied to each credit when issued. To minimize the costs, proponents can choose not to issue verified credits that they cannot sell. This avoids the issuance fee until a sale is guaranteed. This strategy has an impact on a project's verification process. Our analysis shows that 11 of the 21 projects still held unissued credits from a previous verification when the next verification was due. It is likely that proponents cannot justify the high auditing costs for projects due to the lack of sales and the low values they currently experience on the voluntary market.

Forest carbon projects traditionally had a small share in international carbon markets.<sup>155</sup> The reasons for this relate to their high market price and the uncertainties related to REDD+ projects.<sup>156</sup> The cheapest carbon credits often come from renewable energy projects.<sup>157</sup> There has been a recent increase in the volume of offsets from REDD+ projects in Latin America, with almost all projects located in Peru.<sup>158</sup> The high costs of implementing REDD+ projects in the VCM and the related higher market price compared to other offsets—for example, from energy projects—are well known.<sup>159</sup> Some of the costs to be factored into REDD+ projects include community engagement activities, technical services, consultancy fees, legal services, auditing, carbon registry and broker fees. There are also high risks associated with REDD+, which is a factor limiting private sector investment.<sup>160</sup> Common risks include illegal activities (such as logging, mining and agriculture) threatening forest project areas, leakage, permanence, and the impacts of natural events (such as forest fires and plagues).

Globally, the VCM has suffered from an oversupply of carbon credits<sup>161</sup> and forest carbon projects have met with relatively low demand.<sup>162</sup> Prices for REDD+ offsets fell 47 percent between 2016 and 2018 (from US\$ 4.40 to US\$ 2.35 per tonne).<sup>163</sup> In 2019, renewable energy projects dominated transactions in the VCM by volume, although REDD+ was the most popular project type across all categories.<sup>164</sup> The VCM is also driven by speculation about future com-

pliance carbon markets. As the future of a global carbon market remains uncertain, many investors have engaged in the VCM only at very small scales.<sup>165</sup> The longer the uncertainty remains, the more likely it becomes that most investors will wait to see how the market develops.<sup>166</sup>

There may be an increase in demand for offsets in the VCM driven by the operationalization of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) adopted in 2016 by the members of the International Civil Aviation Organization.<sup>167</sup> Airlines will be expected to purchase carbon offsets to compensate a percentage of the growth in CO<sub>2</sub> emissions above the 2020 level. With the proposed implementation of CORSIA, starting with a pilot phase (2021–2023),<sup>168</sup> the resultant increase in demand for offsets may address the current oversupply seen in the VCM. The timelines for the purchasing of offsets, and how this scheme will relate to Article 6 of the Paris Agreement, are currently unknown. It is also uncertain whether the Brazilian government will support REDD+ projects as a market mechanism and create a national carbon market in the future. The low demand and price for forest carbon credits in the VCM, which are associated with the stringent and costly technical requirements for implementing REDD+ under international standards such as Verra, indicate that REDD+ projects in the VCM may not currently be an attractive market option for protecting forests in the Brazilian Amazon.

## 9 | CONCLUSION

REDD+ as a market mechanism in the voluntary market, although not prohibited under Brazilian law, currently faces significant barriers due to uncertainties in the international climate change regime regarding a future carbon market, and due to technical and market constraints associated with the implementation of REDD+ projects in the VCM.

To be an effective tool for forest protection, REDD+ projects in the VCM must provide an ongoing source of income for project proponents, who can be either private landowners or communities such as indigenous peoples. REDD+ VCM projects can effectively provide a reliable source of income if carbon credits are sold regularly and the revenues arising out of REDD+ credit sales are reverted back to project proponents who, based on such payments, have the capacity and the commitment to ensure that their forests are maintained. If REDD+ in the VCM ensures a regular source of income, it can become a driver for forest protection. When project

<sup>155</sup>W van der Gaast, R Sikkema and M Vohrer, 'The Contribution of Forest Carbon Credit Projects to Addressing the Climate Change Challenge' (2018) 18 *Climate Policy* 42.

<sup>156</sup>ibid.

<sup>157</sup>S Donofrio et al, 'Financing Emissions Reductions for the Future: State of the Voluntary Carbon Markets 2019' (*Ecosystem Marketplace 2019*) 6.

<sup>158</sup>Peru accounted for 86% of the overall 22.8 MtCO<sub>2</sub>e increase in volume from Latin America; ibid 5.

<sup>159</sup>Forest Trends et al (n 67); Olander and Ebeling (n 144); MC Cenamo et al, 'Guia sobre Projetos de REDD+ na América Latina' (2010).

<sup>160</sup>A Goldstein, 'Converging at the Crossroads: State of Forest Carbon Finance 2015' (*Ecosystem Marketplace 2015*).

<sup>161</sup>Donofrio et al (n 157).

<sup>162</sup>van der Gaast et al (n 155).

<sup>163</sup>Donofrio et al (n 157) 8.

<sup>164</sup>S Donofrio et al, 'Voluntary Carbon Market and the Post Pandemic Recovery' (*Ecosystem Marketplace 2020*) 6.

<sup>165</sup>Forest Trends et al (n 67).

<sup>166</sup>ibid.

<sup>167</sup>International Civil Aviation Organization (ICAO), 'Consolidated statement of continuing ICAO policies and practices related to environmental protection – Global Market-based Measure (MBM) scheme' (September 2016) <[https://www.icao.int/environmental-protection/documents/resolution\\_a39\\_3.pdf](https://www.icao.int/environmental-protection/documents/resolution_a39_3.pdf)>.

<sup>168</sup>ICAO Resolution A40-19: 'Consolidated statement of continuing ICAO policies and practices related to environmental protection – Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)' art 9(a).

proponents can rely on continuous REDD+ VCM credit sales, they are less likely to engage in or allow unsustainable activities, such as logging or forest conversion. REDD+ projects in the VCM then act as an incentive for forest conservation over destructive practices. However, if REDD+ VCM projects are unable to provide a sustainable source of income for project proponents, due to low or irregular credit sales, they are unlikely to prevent activities such as mining, commercial logging and industrial-scale cropping, whether legal or illegal. Our analysis of REDD+ VCM projects in the Brazilian Amazon revealed that there has been limited demand, resulting in low credit sales. Consequently, revenues have not provided an effective source of income for project proponents. The current market scenario for forest carbon credits in the Brazilian Amazon may, however, change driven, for example, by the introduction of future compliance markets, either in Brazil or internationally, or due to the uptake of sectoral offset schemes such as CORSIA. If this occurs, REDD+ projects in the VCM may become an attractive market-based option and tool for forest conservation.

Currently, there is no certainty as to whether the UNFCCC will endorse a market-based approach to REDD+ under the Paris Agreement and introduce a global carbon market. If clear rules for an international and compulsory carbon market are established under the UNFCCC, or if a Brazilian emission reduction market is created, as foreseen under the National Climate Change Policy, REDD+ projects as a market mechanism may become a viable and attractive option for protecting forests in the Amazon. Further developments with CORSIA may also have a positive impact on future carbon markets in terms of generating demand for carbon credits, including from REDD+ projects in the Brazilian Amazon. If new REDD+ projects are established on indigenous lands in the Brazilian Amazon, the main legal requirements under the national laws and policies discussed here must be observed.

REDD+ projects involve technical requirements, such as demonstrating compliance with FPIC, equitable benefit-sharing, additionality, permanence and avoidance of leakage. Each of the steps in REDD+ implementation imposed by international carbon standards such as Verra demand significant technical capacity and financial resources. The high costs and time involved in meeting such technical requirements are factored in by private investors and may be a deterrent to implementing new REDD+ projects in the VCM in the absence of market demand for carbon credits.

Forest carbon projects also rely on a dynamic carbon market to be successful. Ultimately, new REDD+ projects in the Amazon can only be justified if there is market demand for REDD+ credits in the VCM. Our analysis of the existing REDD+ projects in the Brazilian Amazon revealed that all credit issuances have been for verified emission reductions from 2018 or earlier. Globally, the voluntary market has suffered from an oversupply of carbon credits and low market prices. The data suggest that there is not enough demand for REDD+ credits in the VCM, and therefore little incentive to implement new REDD+ projects in the Amazon in the current market and international policy context. In parallel to the debate on carbon

markets, fund-based REDD+ activities will continue to exist and provide funding and support for local and indigenous communities.

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## APPENDIX 1

## Forest Carbon Projects in the Brazilian Amazon

VCS Project ID	Project Type	Forest Area (ha)	Location (State)	Length of crediting period (years)	Estimated claimable emissions over project lifetime (tCO <sub>2</sub> e)	Forest Legal Status	Total claimable emissions issued as carbon credits to date (% of claimable emissions)			Total carbon credits retired to date (% of total issued VCUs)
							Pr—Private Land	IT—Indigenous or Traditional Communities	Re—Reserve	
665	ARR	1,096	Mato Grosso	40	620,493	Pr	394,400	125,464 (32%)	118,397 (94%)	-
738	ARR	589	Mato Grosso, Mato Grosso do Sul, Goiás	30	206,115	Pr	-	-	-	-
832	REDD – APD	27,435	Pará	20	7,454,138	Pr	3,284,853	974,650 (30%)	493,524 (51%)	2,446,338 (95%)
875	REDD – AUD	70,000	Mato Grosso	30	29,923,331	Pr	2,572,689	2,564,096 (91%)	489,624 (93%)	3,225,833 (48%)
963	REDD – AUD	34,702	Acre	30	898,679	Pr	578,984	527,041 (91%)	384,647 (81%)	128,396 (33%)
977	REDD – AUD	177,900	Pará	40	19,194,532	Pr	7,087,378	6,787,396 (96%)	-	-
981	REDD – AUD	135,106	Pará	40	9,162,590	Pr	477,611	-	-	-
1027	REDD – APD	18,101	Pará	10	5,022,865	Pr	-	-	-	-
1094	REDD – AUD	86,270	Pará	30	2,170,138	Pr	1,293,369	757,775 (59%)	598,145 (79%)	174,688 (79%)
1112	REDD – AUD	41,976	Acre	10	1,201,474	Pr	656,488	220,742 (34%)	205,111 (93%)	487,166 (91%)
1113	REDD – AUD	28,096	Acre	10	1,538,533	Pr	858,372	221,634 (26%)	251,529 (100%)	39,000 (21%)
1115	REDD – AUD	65,980	Amapa	30	3,450,278	Pr	536,560	536,560 (100%)	182,347 (100%)	1,358 (100%)
1118	REDD – AUD	31,994	Mato Grosso	30	7,423,806	IT	251,529	251,529 (100%)	51,075 (98%)	1,737,832 (90%)
1147	REDD – APD IMF – Ltp	20,387	Amazonas	36	1,850,000	Re	182,347	182,347 (100%)	831,378 (69%)	482,341 (100%)
1317	ARR		Bahia	30	49,069	Pr	1,358	1,358 (100%)	37,073 (8%)	37,073 (8%)
1329	REDD – AUD	28,752	Para	30	2,023,744	Pr	52,108	52,108 (100%)	16,797 (10%)	20,074 (3%)
1382	REDD – APD	39,301	Acre	10	12,596,462	Pr	11,036,121	1,924,093 (17%)	1,737,832 (90%)	831,378 (69%)
1503	REDD – AUD	35,398	Rondônia	30	12,428,713	Pr	1,211,526	1,211,526 (100%)	482,341 (100%)	482,341 (100%)
1571	REDD – AUD	22,118	Rondônia	30	8,378,697	Pr	482,344	482,344 (100%)	37,073 (8%)	37,073 (8%)
1654	REDD – AUD	5,392	Amazonas	30	4,267,919	Pr	937,832	488,856 (52%)	16,797 (10%)	16,797 (10%)
1663	ARR	1,056	Mato Grosso Del Sul	25	1,484,968	Pr	167,292	167,292 (100%)	20,074 (3%)	20,074 (3%)
1686	REDD – AUD	190,210	Acre and Amazonas	30	14,507,808	Pr	617,953	617,953 (78%)	503,788 (56%)	372,453 (74%)
1811	REDD – AUD	50,480	Para	30	15,491,971	IT	900,752	503,788 (56%)	-	-

Source: VCS-Verra database <<https://registry.verra.org/app/search/VCs>>.