

# Integrated REDD+ markets:

a financial model to support forest protection,  
agricultural production and decarbonization efforts

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Brazilian REDD+ Alliance

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## About the Brazilian REDD+ Alliance (Aliança REDD+ Brasil)

Created by BVRio Environmental Exchange, Biofílica Investimentos Ambientais, Fundação Amazonas Sustentável (FAS), Instituto Centro de Vida (ICV), Instituto de Conservação e Desenvolvimento Sustentável da Amazônia (Idesam), Instituto de Pesquisas da Amazônia (IPAM), Environmental Defense Fund (EDF), and Instituto do Homem e Meio Ambiente da Amazônia (Imazon), the Brazilian REDD+ Alliance has the objective to promote the use of REDD+ as a tool to combat deforestation and generate financial resources to support the government, rural producers, traditional and indigenous communities. Brazil has the potential to generate over US\$ 70 billion to 2030 through REDD+ in the Amazon region, and the Alliance aims to ensure that the country is in a position to lead the growing markets for GHG emission reductions internationally.

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# Introduction

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Projeto REDD+ Florestal Santa Maria, Mato Grosso (Crédito – Florestal Santa Maria)

Increasing urgency required to prevent catastrophic climate change requires the integration of all greenhouse gas (GHG) mitigation options and sectors in parallel. The creation of a carbon price is essential for the decarbonization of energy generation, industrial processes, transportation modes, land use and agricultural production, and consumer patterns.

The process of price formation, however, breaks down if an oversupply of cheaper mitigation options is mixed with measures that require higher carbon prices to compete. This has been the dynamic between land use mitigation options (in particular REDD+, reducing emissions from deforestation and forest degradation<sup>1</sup>) in relation to industrial and energy based options. There is the concern that the inclusion of REDD+ in markets could result in an

oversupply of mitigation credits and reduce prices to an extent that there would be no financial incentive for promoting investment in industrial improvements, energy efficiency, or renewable energy.

The easy solution, adopted since the outset of the Kyoto Protocol in 1997, has been to exclude REDD+ from markets. Land use, however, is still responsible for ca. 24% of global GHG emissions<sup>2</sup> and plays a vital role in biodiversity conservation, water flows, and livelihoods. With no carbon pricing on its support, however, significant levels of deforestation and GHG emissions occurred from 1997 to date. The exclusion of forests, therefore, resulted in a missed opportunity to create financial incentives for promoting the reduction of deforestation.

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<sup>1</sup> <http://REDD+.unfccc.int>

<sup>2</sup> IPCC 2014: Climate Change 2014. Mitigation of climate change. <https://www.ipcc.ch/report/ar5/wg3/>

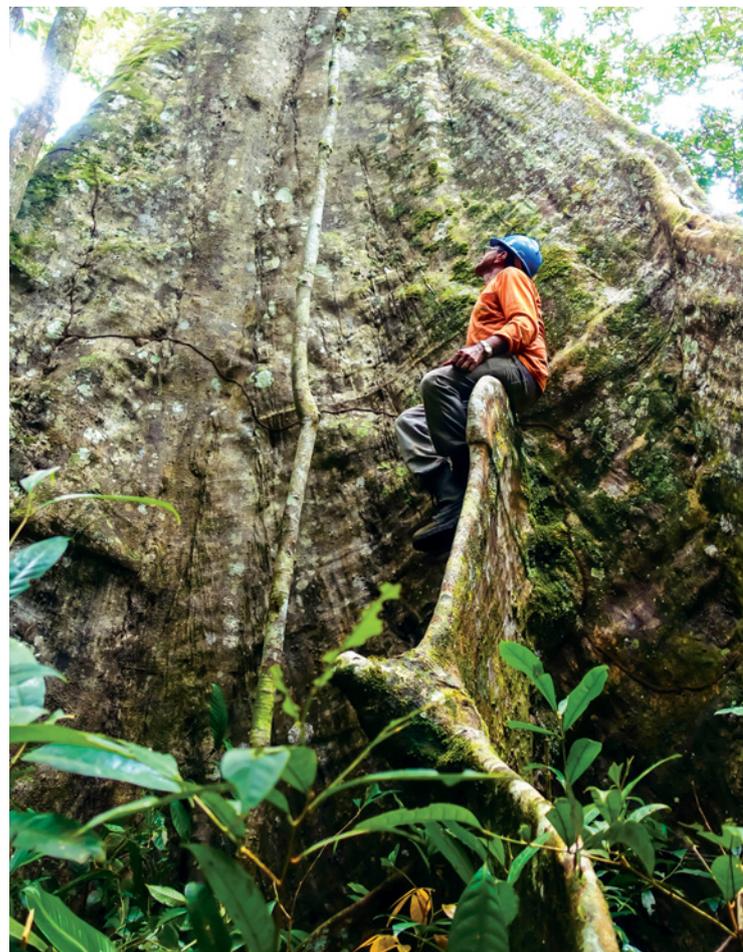
Looking forward, it is essential that developing countries secure financial resources in order to ensure forest protection in order to meet their GHG emission reduction targets under the Paris Agreement<sup>3</sup>. The NDCs<sup>4</sup> of many tropical forest countries are heavily reliant on the reduction of deforestation and ensuring land use sustainability.

In the case of Brazil, for instance, 89% of its NDC emission reductions are expected to derive from reduced deforestation<sup>5</sup>. However, while government budgets to environmental protection have been severely cut<sup>6</sup>, to date the only source of external funding available to support this effort in Brazil (and other tropical countries) has been international development (ODA) transfers, predominantly from Norway and Germany. These transfers are unlikely to grow to meet the level of finance required to reduce deforestation at scale. New funding mechanisms are, thus, essential.

At the same time, if REDD+ were linked to international markets, the large volumes of emission reductions with potentially lower unit cost would reduce the average costs of abatement and provide an incentive for countries to adopt more ambitious reduction targets.

There is an urgent need to conciliate the tensions and requirements of creating a carbon price for both REDD+ and other sectors of the economy, and secure

long-term financial support for the protection of forests on a large scale. This integration of forest protection, production and wider economic objectives would make it more cost effective and feasible to promote large scale GHG mitigation and global decarbonisation with the participation of all sectors of the economy.



Projeto REDD+ CIKEL, Pará (Crédito – CIKEL)

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<sup>3</sup> [http://unfccc.int/paris\\_agreement/items/9485.php](http://unfccc.int/paris_agreement/items/9485.php)

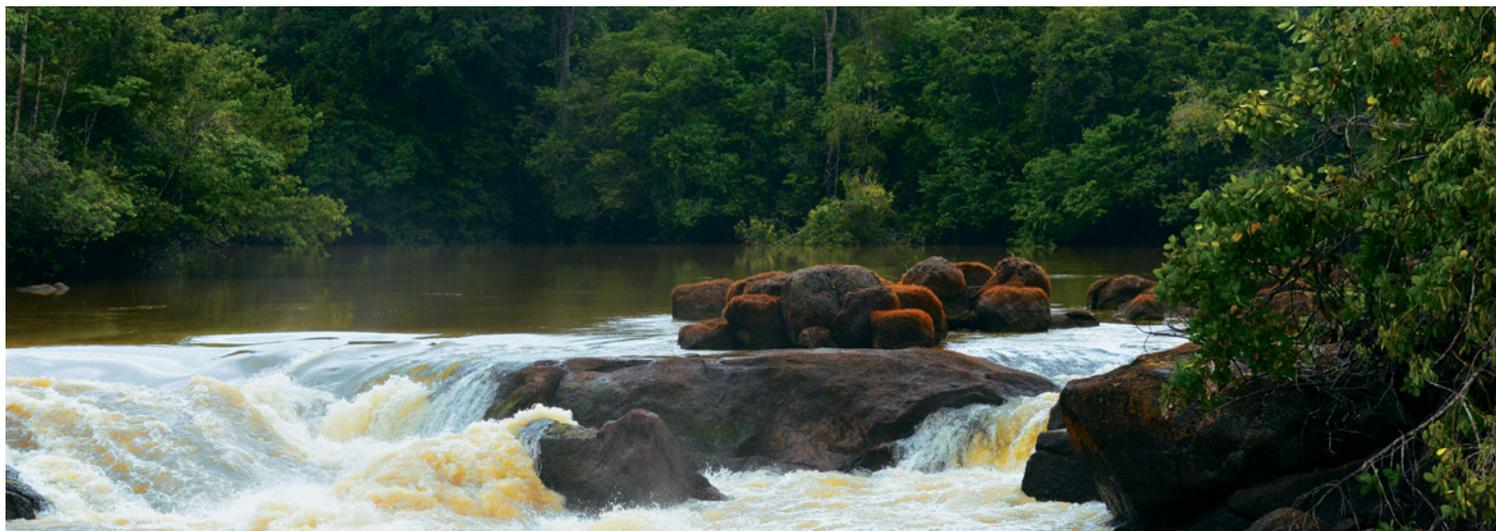
<sup>4</sup> NDCs (Nationally Determined Contributions) are the GHG emission reduction targets assumed under the Paris Agreement.

<sup>5</sup> EDF, 2016: Cost-Effective Emissions Reductions beyond Brazil's International Target: Estimation and Valuation of Brazil's Potential Climate Asset.

Pedro Piris-Cabezas, Ruben Lubowski, Steve Schwartzman, Alexander Golub and Nathaniel Keohane of the Environmental Defense Fund (EDF). [www.edf.org/sites/default/files/cost-effective-emissions-reductions-brazil.pdf](http://www.edf.org/sites/default/files/cost-effective-emissions-reductions-brazil.pdf).

<sup>6</sup> See, for instance, the recent reduction of 51% of the budget of the Brazilian Ministry of Environment - [www.observatoriodoclima.eco.br/ministerio-do-meio-ambiente-perde-51-da-verba-apos-corte/](http://www.observatoriodoclima.eco.br/ministerio-do-meio-ambiente-perde-51-da-verba-apos-corte/)

## Issues raised about REDD+ markets



Biodiversidade e rios na área do Projeto REDD+ Manoa, Rondônia (Crédito – Biofílica)

Over the years, different questions were raised about the effectiveness of GHG mitigation through land use activities. The difficulty in establishing baselines, detecting leakage, and the mensuration of carbon sequestration or release from biomass, all have been quoted as creating uncertainties about the climatic impacts of REDD+. Scientific evidence has been produced to overcome these concerns<sup>7</sup> and, with the improvement of remote sensing, forest inventories and other monitoring technologies, these technical impediments have been mostly overcome.

In parallel, the evolution of guidelines and standards such as the Verified Carbon Standard (VCS)<sup>8</sup>, the Cli-

mate, Communities and Biodiversity (CCB)<sup>9</sup>, and the Warsaw Framework for REDD<sup>10</sup> aim at ensuring that REDD+ projects generate comparable climatic benefits while at the same time creating other social and environmental co-benefits. Provided that GHG emission reductions generated by REDD+ initiatives are accounted for in a consistent way, between countries and within projects, programs and national initiatives within countries, REDD+ could become a robust GHG mitigation option.

Market concerns, on the other hand, remain valid, because of supply and demand unbalances. Land use practices have the potential to generate >

<sup>7</sup> See, for instance, IPCC Special Report on Land Use, Land Use Change and Forestry - [www.ipcc.ch/pdf/special-reports/spm/srl-en.pdf](http://www.ipcc.ch/pdf/special-reports/spm/srl-en.pdf)

<sup>8</sup> [www.v-c-s.org/project/vcs-program/](http://www.v-c-s.org/project/vcs-program/)

<sup>9</sup> [www.climate-standards.org/ccb-standards/governance-of-the-standards/](http://www.climate-standards.org/ccb-standards/governance-of-the-standards/)

<sup>10</sup> Warsaw Framework for REDD+, [http://unfccc.int/land\\_use\\_and\\_climate\\_change/REDD+/items/8180.php](http://unfccc.int/land_use_and_climate_change/REDD+/items/8180.php)

large volumes of GHG mitigation at relatively low prices<sup>11,12</sup>. For example, implementation of the new Brazilian Forest Code has the potential to conserve over 250 million ha of native vegetation in Brazil, storing ca. 100 GtCO<sub>2</sub>e<sup>13</sup> – the equivalent of 45 years of the European Union's industrial complex operating without caps<sup>14</sup>. Tropical peatland, in turn, currently store carbon equivalent to 5-9 years of global GHG emissions<sup>15</sup> while their degradation is responsible for ca. 10% of global emissions. While the numbers in these examples do not equate the volumes of offsets that can be derived from these activities<sup>16</sup>, they give an indication of the levels of magnitude of the potential mitigation impact of land use options.

Global demand for GHG reductions, however, remains restricted due to lack of binding commitments of international agreements. While the Paris Accord points in the right direction, it does not create binding commitments. The only indications of demand

come from subnational or sector initiatives: California's market has the potential to absorb 225 MtCO<sub>2</sub>e of international offsets, and CORSIA's targets could create a demand of 3 ca. Gt to 2035.

Any market with an unbalance of over supply and restricted demand reacts by reducing prices. Even REDD+ units could be priced so low as to invalidate the financial incentive to create them<sup>17</sup>. And, at the same time, this could derail international efforts of putting a price on carbon, required to decarbonize the industrial, energy, agricultural and transportation sectors.

There is a need to manage the supply of different mitigation options in markets, so that it does not affect market prices for REDD+ and other mitigation options. If managed properly, the relatively lower cost of REDD+ could enable the adoption of more ambitious targets and involve all sectors of the economy.

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**11** See, for instance: Seymour F. E. Busch, J., 2017: *Why Forests? Why Now?* The Science, economics and politics of tropical forests and climate change. Center for Global Development.

**12** This discussion becomes further confused by the variability of definitions of what and how should be credited for a land use project. Baseline and credit schemes have proven riddled with uncertainties related to baseline definition and leakage. Remuneration for stocks alone (i.e., remuneration for any standing biomass), on the other extreme, would create an oversupply that could not be priced. Stock and flow methods, such as the system adopted by the Acre state government's programme, could provide a balanced approach (Moutinho, P.; Guerra, R. et al., 2017: Programa REDD paraearly-movers – REM. Ipam, Brasilia.)

**13** Britaldo et al., 2014.

**14** The volume of EU ETS quotas allocated to industry during 2008-2012 were ca. 2 GtCO<sub>2</sub>e per year, and it is estimated that it created a reduction of ca. 0.2 GtCO<sub>2</sub>e per year.

**15** Estimated storage of ca. 160-300 Gt CO<sub>2</sub>, according to Kurniati et al, 2014: Carbon accumulation of tropical peatlands over millennia: a modelling approach. *Global Change Biology*. <http://onlinelibrary.wiley.com/doi/10.1111/gcb.12672/abstract>.

**16** In order to qualify as valid mitigation options, activities must meet a series of requirements. In particular, that they are additional to current practices. In the case of land use projects, there must be a case that the forests in question are protected from expected land use change.

**17** The average price of tonne of CO<sub>2</sub> stored in forest for sale for Forest Reserve Credits (CRAs) in the Amazon is US\$0.12/tCO<sub>2</sub>e, based on the prices landowners asked to forego the right to legally deforest their legal reserves (see [www.bvrio.com](http://www.bvrio.com)). Indeed, the use of CRAs as a vehicle to compensate farmers for avoided deforestation was proposed by BVRio Institute ([www.bvrio.org/2016/06/28/climate-value-for-money-2-gtco2-storage-for-u-250-million-forest-legal-reserve-credits-in-brazil-2/](http://www.bvrio.org/2016/06/28/climate-value-for-money-2-gtco2-storage-for-u-250-million-forest-legal-reserve-credits-in-brazil-2/)) and Forest Trends (Edwards, R., 2016: Linking REDD+ to support Brazil's climate goals and implementation of the Forest Code. [www.forest-trends.org](http://www.forest-trends.org)).

# Creating a separate but complementary market for REDD+



Projeto REDD+ Florestal Santa Maria, Mato Grosso (Crédito – Florestal Santa Maria)

Given that the inclusion of emission reductions from REDD+ in the same market as other mitigation options could result in undesirable impacts, a possible solution would be to create two distinct but complementary markets. REDD+ units should be negotiated in a pool of other REDD+ units, so not to affect the pricing of other mitigation options. At the same time, nations or entities should not be allowed to

meet their targets solely through the use of a single mechanism, but by adopting a combined approach.

For instance, a minimum tranche of a country's target should be met by adopting internal decarbonization measures<sup>18</sup> and/or non-REDD+ offsets. Provided that this 'quota' is met, this same country could complement its targets using REDD+ offsets<sup>19</sup> (see Figure 1).

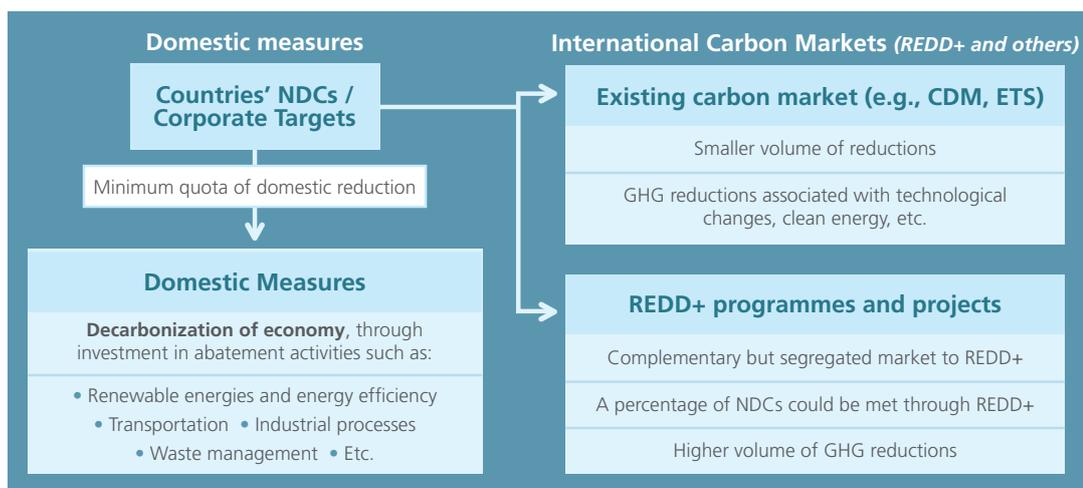


Figure 1: Integrated REDD+ concept: separate but complementary carbon markets, so that REDD+ units do not affect the price levels of other mitigation mechanisms. Supplimentarity requirements are adopted both in terms of domestic abatement measures and external offsets, but also between REDD+ and other types of mitigation mechanisms.

<sup>18</sup> E.g., public policies and incentives for energy efficiency, renewable energy, improvements in industry and transportation, etc.

<sup>19</sup> A similar, conditional, approach to the conditional use of offsets was adopted by the Kyoto Protocol, where the "supplementary" concept required countries to meet a significant proportion of their targets before using offsets.

**A series of positive impacts could be expected by adopting this approach:**

- the separation of markets would not affect the price of other mitigation options;
- by ensuring that non-REDD+ options receive the necessary financial resources to direct investment in R&D and investment in low-carbon infrastructure, the process of innovation and decarbonisation of industrial, transportation and energy complexes would continue;
- including REDD+ units as a complement to these measures, though, would reduce the average cost of GHG abatement and enable countries / entities / sectors to adopt more ambitious targets;
- the inclusion of REDD+ in markets, at the same time, would ensure access to financial incentives to tackle this important source of emissions;
- given that the abatement profile of reducing deforestation is frontloaded (as opposed to tree planting or the replacement of energy infrastructure, for instance), it would accelerate the climate benefits associated of mitigation, 'buying time' for other measures to enter into force.

Therefore, it is proposed here that the design of a future global carbon market regime includes REDD+ in its mix, by adopting separate but complementary markets to ensure that forest protection, land use production, and decarbonisation of other economic sectors occur in parallel – an integrated protection, production and decarbonization market – “Integrated REDD+”.

Domestic or regional markets could also adopt a similar approach and could serve as building blocks for a global market. In Brazil for example, high emission sectors such as cement and transport could have emission reduction targets combined with a quota for REDD+ offsets. This would also work in tune with other sustainable development goals: reduction of poverty and inequality.

## Integrating Forest Protection, Production and Decarbonization objectives within land use strategies: Integrated REDD+



Artesanato na RDS Rio Negro (Créditos, Bruno Kelly; Fundação Amazônia Sustentável)

At the local scale, implementation of REDD+ can create tensions with other land use activities. Tree planting schemes envisage carbon revenues to finance their plantings. Agriculture, a major deforestation driver, requires finance to intensify and reduce its impacts. Sustainable land use, however, requires a combination and integration of these different measures, which in turn have different carbon benefits, timeframes and costs<sup>20</sup>.

By allowing all these activities to compete for financial resources in the same market, it is unlikely that costlier alternatives would succeed. It is the combination of approaches, however, that ensures a sustainable

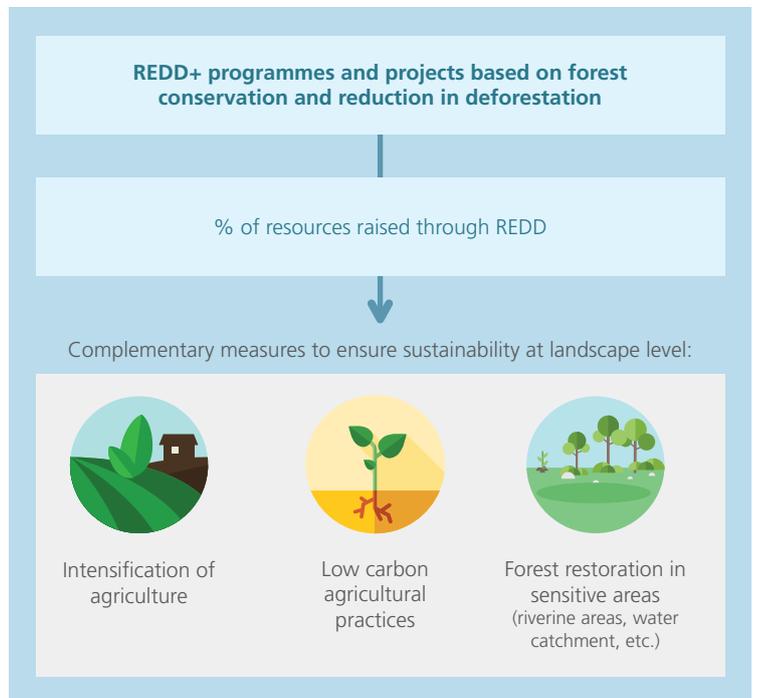
landscape integrated with a productive rural economy.

In the same way as proposed for the design of international carbon markets, REDD+ finance flows at the domestic or jurisdictional level could be conditioned to parallel investments in complementary activities, adopting a “stocks and drivers” approach. I.e., for each investment into forest protection, there should be a complementary investment into tackling the drivers of deforestation (predominantly intensification of agriculture to reduce pressure on land) and/or reforestation of riparian reserves or water catchments (see Figure 2).

<sup>20</sup> The cost of carbon sequestration and storage by reforestation in Brazil, for instance, is ca. US\$ 12.00 / tCO<sub>2</sub>, while cost of avoiding deforestation by acquiring and retiring a Forest Reserve Credit is below US\$ 0.12 / tCO<sub>2</sub> (see Voluntary Contributions for the Climate in [www.bvrio.com](http://www.bvrio.com)).



Investment in REDD+ for the purpose of meeting of NDCs and other compliance targets.



*Figure 2: Integrated REDD+ concept: complementarity of REDD+ with other activities within developing countries, to ensure integration of forest protection, sustainable agricultural production, and decarbonization of the economy as a whole.*

## Conclusion

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Produção de castanha de projeto de REDD+ (Crédito – IDESAM)

Urgency in halting GHG mitigation emissions and avoiding climate change requires a concerted and integrated effort that involves all sectors of the economy. Given its importance in terms of contribution to GHG emissions, the land use sector must be able to secure financial resources on a large scale to ensure its sustainability and transition to a low carbon dynamics. The inclusion of REDD+ into markets is an opportunity to secure such financial resources to the land use sector.

The creation of a separate REDD+ market has the potential to catalyse the transfer of financial resources to the land use sector, while ensuring that non-REDD+ options continue to receive financial resources for the process of innovation and decarbonisation of industrial, transportation and energy complexes. Given the lower unit cost of REDD+ units, its inclusion in markets would reduce the average cost of GHG abatement and enable countries/entities to adopt more ambitious targets.

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**21** See, for instance: Moutinho, P.; Guerra, R. et al., 2017: Programa REDD para earlymovers – REM. Ipam, Brasília.

The logo for the Brazilian REDD+ Alliance, featuring the text "Brazilian REDD+ Alliance" centered between two horizontal white lines.

Brazilian REDD+ Alliance

[www.bvrio.org](http://www.bvrio.org)