DECEMBER 2017

Financing Conservation and Sustainable Land Use in the Amazon

Althelia's Tambopata-Bahuaja REDD+ and Agroforestry Project

Luis Miguel Ormeño and Joshua Gregory

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About Forest Trends

Forest Trends works to conserve forests and other ecosystems through the creation and wide adoption of a broad range of environmental finance, markets and other payment and incentive mechanisms. Forest Trends does so by: 1) providing transparent information on ecosystem values, finance, and markets through knowledge acquisition, analysis, and dissemination; 2) convening diverse coalitions, partners, and communities of practice to promote environmental values and advance development of new markets and payment mechanisms; and 3) demonstrating successful tools, standards, and models of innovative finance for conservation.

About Forest Trends' Public-Private Finance Initiative

Conserving forest and ecosystems and transforming land use at scale to sustainable low-emissions production systems requires substantial investment. Our Public-Private Finance Initiative is strategically focused on creating architectures that increase the amount of capital flowing to land use practices which reduce emissions from deforestation and degradation, improve the productivity of agricultural and livestock systems, and enhance livelihoods of rural populations.

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Acronyms

ACA	Amazon Conservation Association
ACCA	Asociación para la Conservación de la Cuenca Amazónica
AFOLU	Agriculture, Forestry and Other Land Use
AIDER	Asociación para la Investigación y Desarrollo Integral
APPCACAO	Asociación Peruana de Productores de Cacao
CAF	Corporación Andina de Fomento
CCB Standards	Climate, Community and Biodiversity Standards
CI	Conservation International
CIMA	Centro de Conservación, Investigación y Manejo de Áreas Naturales
COOPASER	Cooperativa De Servicios Múltiples Tambopata Candamo
EDF	Environmental Defense Fund
GPS	Global Positioning System
HNWIs	High-net worth individuals
MAAP	Monitoring of the Amazon and Andes Project
MINAGRI	Ministerio de Agricultura y Riego del Perú
MINAM	Ministerio del Ambiente del Perú
MT	Metric tons
NGO	Non-governmental organization
PECSA	Pecuária Sustentável da Amazônia
PES	Payment for Ecosystem Services
REDD+	Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
SERNANP	Servicio Nacional de Áreas Naturales Protegidas por el Estado
SOF	Sustainable Oceans Fund
Tambopata REDD+ Project	Tambopata-Bahuaja REDD+ and Agroforestry Project
tCO_2e	Tonnes of carbon dioxide equivalent
USAID	United States Agency for International Development
USAID DCA	United States Agency for International Development's Development Credit Authority
VCS	Verified Carbon Standard

Foreword

Dear Reader,

Peru, as a megadiverse country and signatory to the Convention on Biological Diversity, the World Convention on Climate Change and the World Convention to Combat Desertification and Drought, has a great responsibility to protect the natural ecosystems in its territory. In this context, Natural Protected Areas (NPAs) play a key role to protect the world's biological diversity, stabilize land use in the NPAs areas of influence, combat desertification, and mitigate climate change, as well as in safeguarding the cultural, landscape and scientific values that contribute to the sustainable development of the nation. Peru's National Service of Natural Protected Areas (SERNANP), in co-management with the Asociación para la Investigación y Desarrollo Integral (AIDER) and with financial support from Althelia Ecosphere, is implementing the REDD+ Tambopata Bahuaja-Sonene Project as part of the Partial Administration Contract for the Tambopata National Reserve (RNTAMB) and the Bahuaja-Sonene National Park (PNBS), both NPAs located in the Madre de Dios region.

The partial administration contract granted to AIDER is a co-management model that allows the articulation of collaborative alliances between the private sector, civil society and the State for the conservation of internationally significant forest ecosystems. The implementation of the Tambopata Bahuaja-Sonene REDD+ Project, involves installing agroforestry systems and valuing the ecosystem services provided by these protected areas; it also helps finance biological monitoring, research, and control and surveillance processes that are crucial to meet the conservation objectives of these NPAs. At the same time, it seeks to stabilize the families living in the NPAs buffer zones by creating economic opportunities as viable alternatives to other illegal activities (coca growing, mining) or slash and burn agricultural practices (one of the main drivers of deforestation), thereby improving the livelihood of these families, promoting them to become conservation allies.

The present financial sustainability model aims to result in a 60% increase in the local people's income, once the project is fully implemented; it would also generate more jobs in the area. In addition, this is a scalable proposal that could be replicated in more than 17 million hectares of NPAs in Peru, and the world; it is also a Green Investment opportunity for those wishing to contribute to conservation and socioeconomic development projects. Let us keep in mind that the NPAs are spaces that generate contributions to science and improve the quality of life of the people living in the buffer zones and influence areas, provided everyone works honestly, transparently, sharing benefits, and in partnership.

We hope this publication contributes to emphasize the benefits of this financial model for the sustainability of socio-environmental activities in key global interest areas.

Juan Carlos Gonzalez Aybar
Althelia Ecosphere

Jaime Guillermo Nalvarte Armas
Director Ejecutivo AIDER

Nonally Pedro Gamboa Moquillaza
Jefe del SERNANP

1. Introduction and Project Summary

The lowland Amazon region of Peru is one of thirty-six internationally recognized 'biodiversity hotspots'.[1] However, rates of deforestation in the Peruvian Amazon have been rising over the past 15 years, in particular in the southern region of Madre de Dios.

In 2014, Althelia Ecosphere, an environmental asset manager, partnered with the Peruvian government and a Peruvian NGO to structure an innovative project in Madre de Dios, known as the Tambopata-Bahuaja REDD+ and Agroforestry Project (the 'Tambopata REDD+ Project').

The Tambopata REDD+ Project is a successful example of a public-private-people partnership. In particular, it aggregates funding from international public and private investors, a guarantee from a development institution and co-financing from the Peruvian government to address deforestation and social development in an at-risk area of the Peruvian Amazon.

The primary financing for the Tambopata REDD+ Project takes the form of a six-year EUR5.6 million loan from Althelia to Asociación para la Investigacion y Desarrollo Integral (AIDER).

With its investment, Althelia co-finances AIDER's management contract (including activities such as biological monitoring, research, control & surveillance, promoting sustainable livelihoods with local populations) with the Peruvian government to conserve 570,000 hectares of natural forest within the Madre de Dios portions of two protected areas: Tambopata National Reserve and Bahuaja-Sonene National Park. Over its first crediting period of ten years (2010-2020), this forest protection will result in the avoided emission of 4 million tonnes of carbon dioxide equivalent (tCO_2e).[2] The avoided emissions will be certified as REDD+[3] carbon credits with the target to be sold in pre-compliance/compliance markets.

The loan also finances the restoration of 1,250 hectares (phase-1) of degraded lands within buffer zone adjacent to the two protected areas, via the establishment of shade-grown fine and flavour cocoa[4] in agroforestry systems managed by smallholders. After five years of being established after plantation (full production), it is expected that cocoa plantations will annually produce around 1,100 metric tons (MT) of "deforestation-free," fine & flavour, organic, fair-trade-certified cocoa, with associated improvements in the livelihoods of 350 smallholder families.

This report describes the innovative financial and operational features of the Tambopata REDD+ Project, and identifies some factors for success that could be applied in similar projects.

Section 2 describes the partners in the Tambopata REDD+ Project and their functions. Section 3 sets out the structure of Althelia's investment. Section 4 highlights the elements of the Tambopata REDD+ Project which are most innovative. Section 5 identifies some current operational challenges based on experiences in Phase 1. Section 6 concludes the report and looks at how the Tambopata REDD+ Project could be scaled up and/or replicated in Peru and other geographies.

2. Project Partners

2.1 Althelia Ecosphere

Launched in 2011, Althelia Ecosphere[5] (known as 'Althelia') is an environmental asset manager based in London, United Kingdom.

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[1] A biodiversity hotspot is a threatened habitat containing an unusual number of endemic species. **http://www.cepf.net/resources/hotspots/South-America/Pages/Tropical-Andes.aspx**

[2] Projected over the a ten year crediting period (2010-2020) as per the Project Design Document (PDD). From 1st July 2014 to 30th June 2015, the Tambopata REDD+ Project avoided the emission of 469,771 tCO_2e.

[3] REDD+ is a climate change mitigation framework under the United Nations Framework Convention on Climate Change, that incentivises developing countries to reduce emissions from land-use changes via payments for verified decreases in deforestation.

[4] 'Fine' or 'flavour' cocoa beans are produced by Criollo and Trinitario cocoa tree varieties, and differ from 'ordinary' cocoa beans through their flavour attributes, such as fruit, floral, wood, caramel and nut notes. **https://www.icco.org/about-cocoa/fine-or-flavour-cocoa.html**

[5] **https://althelia.com**/

Althelia invests in commercial initiatives that generate tangible environmental, social and economic returns in the land-use and oceans space. More specifically, it invests in management of protected areas, sustainable agriculture and fisheries, and seeks to monetise associated environmental services such as carbon sequestration, water provisioning and biodiversity conservation.

Althelia invests in land-use projects via a closed-ended vehicle, Althelia Climate Fund, which is established in Luxembourg. The fund runs until 2021, and utilises mainly debt instruments (for example, senior debt and mezzanine) under a results-based approach.

Althelia Climate Fund is funded by institutional public and private investors such as Credit Suisse, the European Investment Bank, the Netherlands Development Finance Company (FMO), Finland's Fund for Industrial Development (FinnFund), the Church of Sweden Pension Fund and AXA Investment Managers, amongst others. Conservation International (CI) sits on Althelia's Expert Board as a sustainability expert. In addition to financial and conservation expertise, Althelia have internalized and operationalized in its investment decisions and investment management an Environmental, Social and Governance Standard (Althelia ESG Standards) which are in full compliance with IFC Performance Standards.

Althelia has received attention for the issuance of Nature Conservation Notes, an innovative financial mechanism to attract private investors into the conservation sector. The Nature Conservation Notes, issued by Credit Suisse[6] in partnership with Althelia, provide high-net-worth individuals (HNWIs) with access to the climate finance space via the Althelia Climate Fund project portfolio.

By the end of Q2 2017, Althelia have committed the entire capital raised of the Althelia Climate Fund, i.e., EUR101 million.

Box 1 contains further information on Althelia's portfolio of land-use investments.[7]

BOX 1

Althelia's Land-Use Investment Portfolio

Althelia is financing a similar land-use project in the Cordillera Azul National Park, a protected area that straddles the San Martin, Huanuco, Ucayali and Loreto Amazon regions of Peru.

This investment, in partnership with SERNANP and Centro de Conservación, Investigación y Manejo de Areas Naturales (CIMA), has a similar structure to the Tambopata REDD+ project, and also funds a mixture of conservation and productive activities in the buffer zone.

Over the course of ten years, the Cordillera Azul project aims to protect 1.35 million hectares of forest, support the livelihoods of 180,000 people and 230 communities in a buffer zone of 2 million hectares, and avoid 15 million tCO2e via reduced deforestation and forest degradation.

Other investments in Althelia's land-use portfolio include:

- the Novo Campo Program for Sustainable Cattle Ranching in Alta Floresta, Mato Grosso, Brazil (in partnership with Pecuária Sustentável da Amazônia [PECSA S.A]);
- the Caribbean Conservation Corridor Project in the Izabal region of Guatemala (in partnership with Fundaeco NGO); and
- the Inyenyeri Cookstoves Program, in Rwanda (in partnership with Inyenyeri, a Social Benefit Company).

[6] **https://www.credit-suisse.com/global/en.html**

[7] In addition to land-use investments, Althelia has recently branched out into coastal and marine conservation finance via its Sustainable Oceans Fund (SOF), with support from CI and the Environmental Defense Fund (EDF). The SOF will invest in marine and coastal enterprises that deliver marine conservation, improve livelihood conditions and provide attractive economic returns to investors looking for impact. The SOF builds on recent research by EDF showing that profits in the global fishing sector could be grown by an additional US$51 billion a year if fisheries were managed sustainably. See **http://www.worldfishing.net/news101/industry-news/ocean-prosperity-roadmap-released**.

2.2 Asociación para la Investigacion y Desarrollo Integral

Asociación para la Investigacion y Desarrollo Integral (AIDER)[8] is a Peruvian non-profit with 30 years' experience working in community-based conservation and sustainable development initiatives in the Peruvian Amazon and the dry coastal forest region in the north of Peru.

AIDER is Althelia's investee, and the implementation partner in the Tambopata REDD+ Project, having two main functions.

The first is associated with a partial administration contract[9] that AIDER signed in 2008 with Peru's National Service of Natural Protected Areas (Servicio Nacional de Áreas Naturales Protegidas por el Estado - SERNANP).[10] Under this contract, AIDER is responsible for conducting biological monitoring and research in Tambopata National Reserve and Bahuaja-Sonene National Park[11] in Madre de Dios. AIDER has the mandate to work with farmers and native communities in order to improve their quality of life and stabilize land use, building a symbiotic relationship between the people and the protected areas. For example, AIDER works with two indigenous communities[12] as well as farmers families living in the buffer zone.

AIDER also oversees provision of technical assistance to smallholder farmers to establish 1,250 hectares (phase-1) of fine & flavour cocoa under agroforestry systems using degraded lands and pastures in the buffer zone of the protected areas. Agroforestry is a sustainable alternative to other local activities, such as illegal gold mining, extensive cattle ranching and papaya production,[13] which have the potential to cause severe environmental degradation and social problems. About 30 villages are comprised within the buffer zone, totalling nearly 8,000 people (1,600 families). AIDER currently works with 350 families, representing about 20% of the total population of the area.

Figure 1 shows the two protected areas that AIDER co-manages with SERNANP[14] as well as the buffer zone in which agroforestry cocoa systems are being established.

During Phase 1 of the Tambopata REDD+ Project, AIDER has been working with farmers located along the highway that connects Puerto Maldonado (the capital of Madre de Dios) and the city of Mazuko, between kilometers 1 and 85 on the road to Cuzco.

This stretch of road is part of the Interoceanic highway, and due to its proximity to the largest city in the department, it has historically been the area with the highest level of cattle ranching and, recently, illegal gold mining. It has also recently been degraded by agricultural activities, such as slash-and-burn papaya, corn and rice production, and is therefore suitable for regeneration and reforestation via agroforestry.

A second phase (phase-2) is expected to scale-up the agroforestry systems to 4,000 hectares. During Phase 2 of the Tambopata REDD+ Project, AIDER will seek to engage more farmers in these areas while also expanding its operations along the road that connects Puerto Maldonado to the city of Iñapari on the Brazilian border. The areas along this road are also under heavy pressure from cattle ranching, gold mining, rice, corn and papaya production.

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[8] **http://www.aider.com.pe**/

[9] SERNANP signs partial and full administration contracts with external managers in order to: a) access highly qualified professionals; and b) ensure the financial sustainability of protected areas. As of 2017 SERNANP had signed six administration contracts. Three of them seek to make protected areas financially sustainable through generation of REDD+ credits: (a) the Tambopata REDD+ Project; (b) a REDD+ project in the Alto Mayo region in San Martin (managed by CI), and (c) a REDD+ project in the Cordillera Azul National Park (managed by CIMA, see Box 1 above).

[10] **http://www.sernanp.gob.pe/home**

[11] See Figure 1.

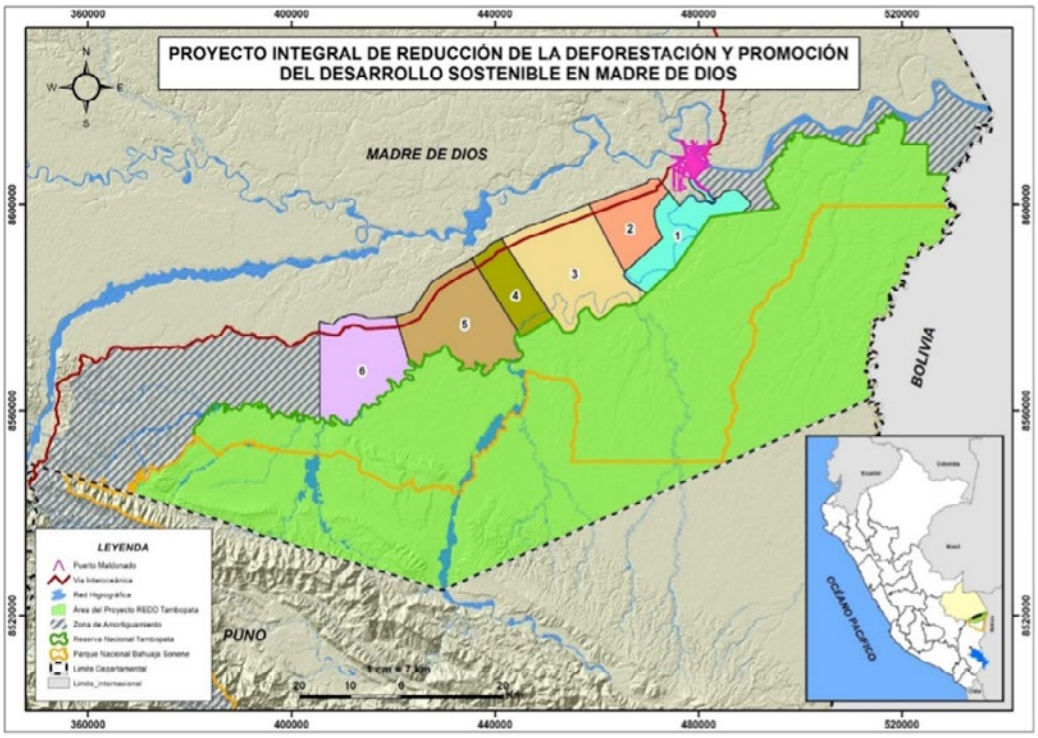
[12] The native communities also benefit from the productive initiatives promoted by AIDER under the Tambopata REDD+ Project. The Infierno community participates in cocoa agroforestry, and the Palma Real community is implementing a sustainable tourism initiative financed through the purchase of carbon credits by Condor Travel, a Peruvian tourism company. Condor Travel is also working towards including Palma Real's tourism services as part of its regular offering.

[13] Forests are often cleared to create papaya plantations, which require a large amount of agricultural chemicals and result in degraded land that is unsuitable for further use after three years.

[14] AIDER's contract is limited to the portions of the protected areas located in Madre de Dios.

FIGURE 1

Tambopata REDD+ Project Area (Phase 1)



Source: AIDER

FIGURE 2

Example of Deforestation Associated with Papaya Production (2013-2016)

Source: Asociación para la Conservación de la Cuenca Amazónica (ACCA)

FIGURE 3

Land Degradation Associated with Papaya Production

Source: Ministerio del Ambiente del Perú (MINAM)

By the end of Q2 2017, AIDER had helped smallholders establish 1,250 hectares of fine cocoa (for further details on plantation targets see Annex 1). The first cocoa harvest is expected to take place during May to August 2017 (high season), and is projected to be around 12 to 20 Metric Tons (MT). Cocoa volumes will increase significantly over time as the trees mature and the total area under cultivation increases.

AIDER has helped to establish a small producer cooperative, Cooperativa De Servicios Multiples Tambopata Candamo (COOPASER),[15] to help meet production targets, aggregate production, and operationalize the route to market of the agroforestry products. AIDER aims to recruit approximately 500 cocoa farmers to the cooperative. As of Q1 2017, the cooperative had 350 members.

With the financing of Althelia, AIDER is investing in COOPASER in a US$200,000 facility to centralise production and improve post-harvesting handling and fermentation. This processing facility will enable cocoa to meet high quality standards and improve traceability, thereby ensuring that it can be sold in national and international specialty markets.

The processing facility is currently under construction and is expected to be completed and inaugurated by Q3 2017. Importantly, the facility uses a modular design, and a second industrial unit could be built to allow for increased supply of cocoa from plantations during the second phase of the project.

BOX 2

Deforestation in Peru

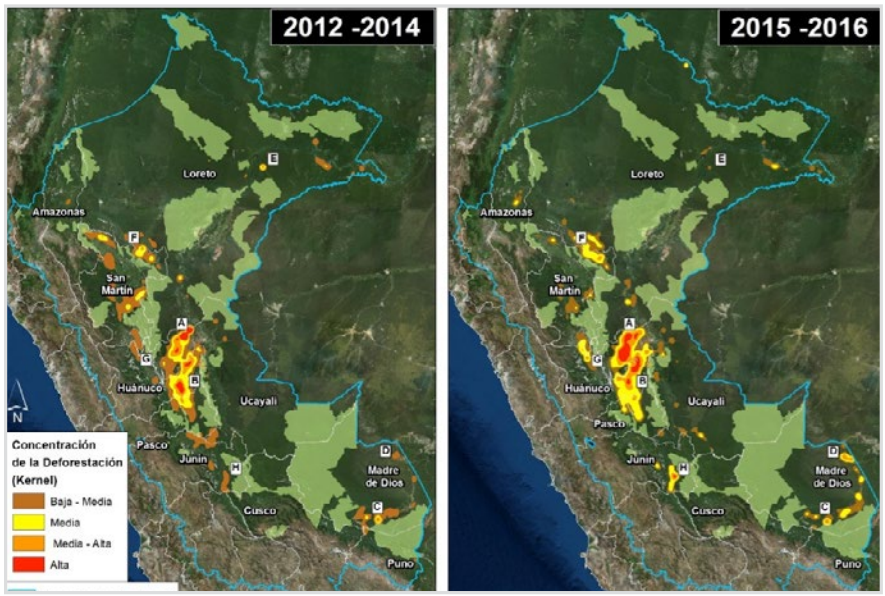
The Monitoring of the Andean Amazon Project (MAAP) (**http://maaproject.org/en**/), a joint project of ACA and ACCA, has analyzed deforestation patterns and drivers in the Peruvian Amazon using historic information from 2001 to 2015.

During this period there was a loss of 1,800,000 hectares of forest (around 2.1% of overall forest cover). Overall, deforestation has been increasing, with 2014 having the highest forest loss on record. Small-scale agriculture and expansion of cattle pastures are the most important drivers of deforestation.

MAAP has identified eight deforestation 'hotspots' in the Peruvian Amazon. The most serious hotspots are in the central regions of Huánuco and Ucayali. In the southern regions, there are two major hotspots along the interoceanic highway: beside the Tambopata National Reserve and around the town of Iberia, near the Brazilian border. Deforestation in these areas is mainly driven by illegal gold mining (see Box 3) and expansion of small-scale agriculture, such as papaya farms, along road infrastructure.

[15] **https://www.cooptambopata.com**/

FIGURE 4
Deforestation Hotspots in the Peruvian Amazon (2012–2016)



Source: ACA and ACCA

2.3 Ecotierra

Ecotierra,[16] a Peruvian-Canadian social business, was hired by AIDER to develop community-based organizational and managerial training programs, as well as to create market linkages with national and international specialty cocoa buyers.

Specifically, Ecotierra has hired an external manager and a commercialisation expert to run COOPASER's various operations, including the processing facility. These two professionals provide direct support to the cooperative in all aspects related to business management, operations permits, certifications (organic & fairtrade), cocoa quality control, marketing, product branding and commercialisation.

In particular, the commercialisation expert supports COOPASER's efforts to develop a branding strategy for their bean-to-bar chocolate line, to enable it to fetch a higher price. The branding strategy will highlight the quality of fine & flavour cocoa as well as the different social and environmental attributes of the production process, resulting in its certification as organic, fair trade and deforestation-free.[17]

2.4 Servicio Nacional de Áreas Naturales Protegidas por el Estado

The Tambopata REDD+ Project works in partnership with Peru's National Service for Natural Protected Areas (Servicio Nacional de Áreas Naturales Protegidas por el Estado - SERNANP), a governmental entity which supervises and manages Peru's National Protected Areas System (SINANPE), under the responsibility of the Vice-Ministry for Strategic Development of Natural Resources.

As detailed in Section 2.2, AIDER has a partial administration contract with SERNANP.

[16] **http://www.ecotierra.co**/

[17] Currently, the cooperative sells around 100 kg of chocolate per year.

BOX 3

Deforestation in Madre de Dios

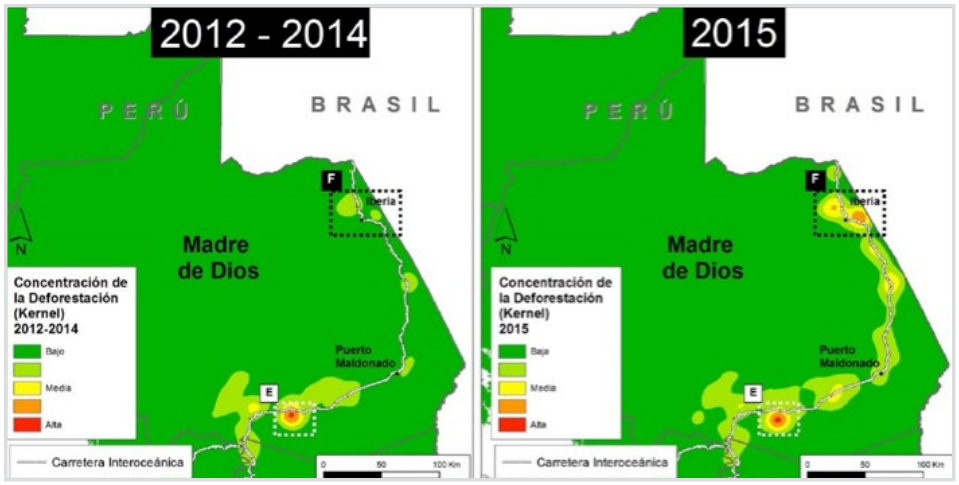
Gold mining is a major driver of deforestation in Madre de Dios. According to MAAP (**http://maaproject.org/en**/), between 2001 and 2016 gold mining was responsible for 62,500 hectares of forest loss in southern Peru, with 12,500 hectares deforested between 2013 and 2016 alone.

Much of the gold mining is illegal, taking place in protected areas and their buffer zones. (**http://maaproject.org/2017/maap**-synthesis2/) For example, gold miners invaded Tambopata National Reserve in 2015, altering the course of a major river and causing 450 hectares of forest loss. (**http://maaproject.org/2015/tambopata**/) Illegal mining is spreading upriver into the buffer zones of Bahuaja Sonene National Park and Tambopata National Reserve, particularly in an area known as La Pampa, south of the Interoceanic Highway. (**http://maaproject.org/2015/image12**-lapampa/)

The other major driver of deforestation in Madre de Dios is small scale agriculture, in particular forest clearance near the Interoceanic Highway to establish papaya plantations. According to MAAP, 204 hectares were cleared in 2015, a major increase over the 55 hectares reported in 2014. (**http://maaproject.org/2016/papaya**-peru/)

FIGURE 5

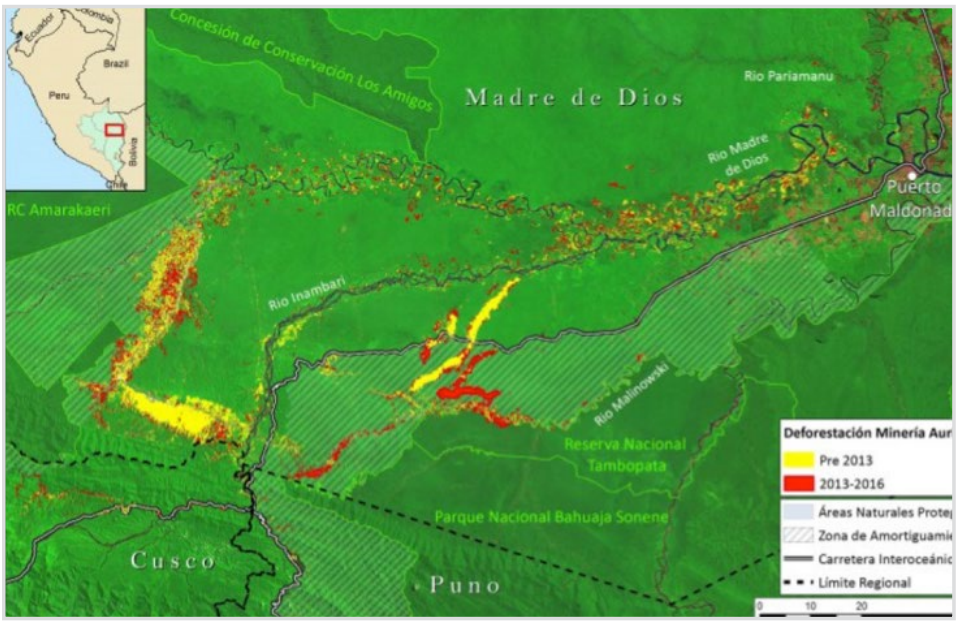
Deforestation Hotspots in Madre de Dios (2012–2015)



Source: ACA and ACCA

FIGURE 6

Deforestation in Madre de Dios Caused by Illegal Gold Mining (2001–2016)



Source: ACA and ACCA

FIGURE 7

Deforestation in La Pampa (Buffer Zone of Tambopata National Reserve) (2013–2016)

Source: ACA and ACCA

FIGURE 8

Deforestation on Border of Tambopata National Reserve (2016)

Source: ACA and ACCA

3. Investment Structure

The loan from Althelia to AIDER is denominated in Euros, and has a six-year term (2014-2020). AIDER benefits from a low interest rate, and has a three-year grace period in respect of capital and interest repayments. These repayments are earmarked from diversified revenue sources including the commercialisation of environmentally certified agroforestry products and certified environmental services such as carbon credits (see further in Section 4.1 below).

The Tambopata REDD+ Project investment is divided in two major legs:

a) The Production Leg, with the garget to reach 1,250 hectares of agroforestry systems and launch of a cocoa producers social business (Cooperativa Tambopata - COOPASER), runs from Q2 2014 to Q4 2017;

b) The Protection Leg, in order to secure operational expenses of the administration contract, including control & surveillance activities of Tambopata National Reserve and Bahuaja-Sonene National Park, that runs from Q2 2014 to Q2 2020.

The overall investment of Althelia through AIDER is EUR5.6 million, consisting of:

- EUR3.6 million for the Productive Leg
- EUR2.0 million for the Protection Leg

An additional grant US$60,000 from Peru's Ministry of Environment (MINAM) has been given to COOPASER to establish a cocoa quality control lab within the cocoa fermentation and drying facilities financed by Althelia.

The expansion phase of the Project (Phase-2) will require a further investment of EUR6.0 million in order to reach the 4,000 target. This investment may come from Althelia further commitments, but it is contingent on achievement of performance indicators (see further in Annex 1) of phase-1.

SERNANP also co-finances protection activities within the protected areas as part of its overall budget.

4. Innovative Design Elements

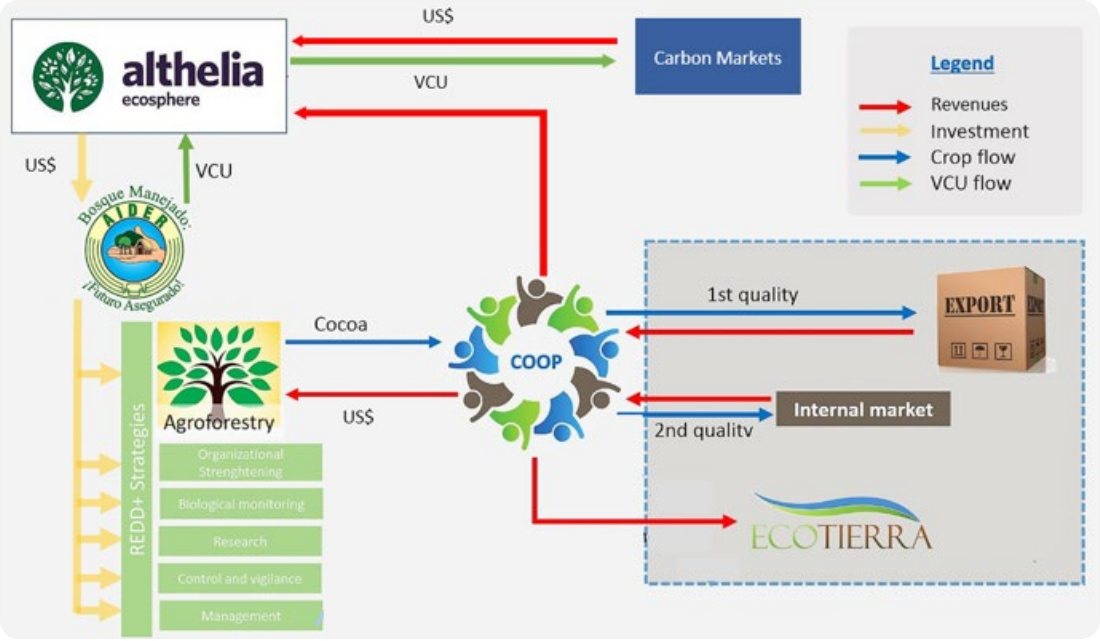
4.1 Financial Risk Management

As mentioned, the loan from Althelia to AIDER has a term of six years and a low interest rate, and AIDER benefits from a 3-year grace period over both principal and interest payments.

These concessional terms give AIDER operational and financial flexibility, as it does not need to prioritise early generation of cash flows to meet principal and interest payments, and furthermore the interest rate on the loan is significantly lower than the average market rate from commercial banks.[18]

Althelia has included a number of financial mechanisms to reduce the credit risk of lending to AIDER[19] and safeguard interest and capital payments.

FIGURE 9
Production-and-Protection Component



Source: AIDER

4.1.1 Fund-Level Guarantee

In May 2014, Althelia and the United States Agency for International Development (USAID)[20] entered into a partnership whereby the USAID Development Credit Authority (USAID DCA) would guarantee private investors in Althelia Climate Fund up to 50% of the fund's performance on a portfolio basis.

The USAID DCA guarantee, for an amount of US$133 million/EUR100m, is intended to support Althelia's global strategy to attract more private investors and has proven successful as Althelia was able to attract private investors into the Fund. See further information in Box 4.

[18] For example, Agrobanco, Peru's agricultural development bank, lends to small and medium-sized producers at an average annual interest rate of 18%. **http://www.agrobanco.com.pe/data/uploads/2017/pdf/015_42ReglamentoTarifarioGeneral_042017PUblico.pdf**

[19] Main credit risks include lack of farmer's experience working with cocoa, increasing migration, usage of agrochemicals and contamination of member farms, market price volatility, competing economic activities with illegal options like mining, climate, social and political risks, among others.

[20] **https://www.usaid.gov**/

BOX 4

USAID DCA and the Impact of Loan Guarantees

USAID DCA makes partial loan guarantees available to financial institutions in partner countries to reduce the risk of private sector lending. The guarantee allows financial institutions to create new loan products, offer improved lending terms such as grace periods or reduced interest rates, and lend to higher risk sectors such as entrepreneurs and smallholder farmers. (**https://www.usaid.gov/sites/default/files/documents/1870/1210-usaid-onepager-v5-4_2.pdf**)

Between 1999 and 2015, USAID DCA unlocked around US$4.2 billion of capital across 74 countries. The cumulative default rate is 2.36% (**https://www.oecd.org/dac/peer-reviews/Development-Credit-Authority.pdf**)

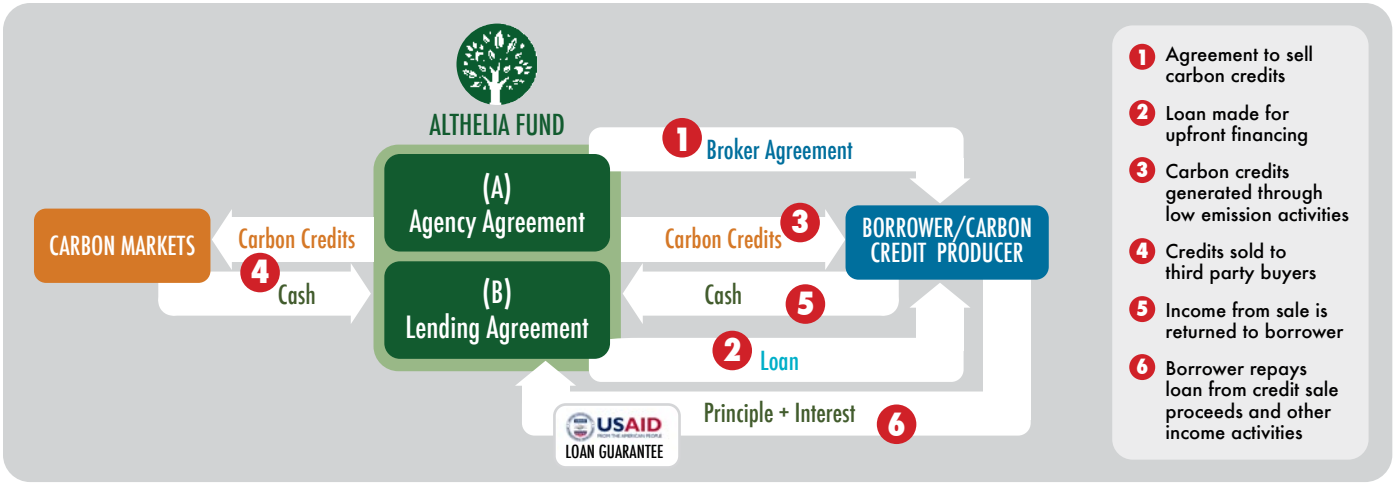
"Crowding-in" of private capital through partial loan guarantees is accomplished at a fraction of the cost of conventional donor support, and aims to permanently replace short-term donor funding with long-term and sustainable, locally-generated, economic growth.

In addition, the USAID DCA guarantee allows Althelia to take more risks at a project level. For example, Althelia is able to invest in projects such as the Tambopata REDD+ Project, where repayments are directly and indirectly dependent on smallholder farmers activities (reduction of deforestation and agroforestry), a category of borrower that is seen as risky by the traditional financial sector. In what it regards to buyers of environmental assets such as carbon credits, the USAID DCA guarantee enables them to have access to environmental assets that without such de-risking wouldn't exist. The USAID guarantee also ensures to buyers of carbon credits that the project due diligence process and the environmental, social and governance standards are best-in-class.

Figure 10 shows how Althelia has articulated its investment using the USAID DCA guarantee as a risk mitigation tool to attract private investors and reduce its credit risk profile.

FIGURE 10

Althelia's Investment Structure and USAID DCA Loan Guarantee



Source: AIDER

4.1.2 Acceptance of REDD+ Credits as Loan Collateral and Source of Loan Repayments

During the six-year term of the loan, around 4 million tons of verified carbon dioxide equivalent emissions reductions (tCO_2e) will be generated from 12,000 hectares of avoided deforestation in the two protected areas under

co-management by AIDER.[21] The Carbon Credits are validated and verified annually under the Verified Carbon Standard (VCS),[22] the world's most widely used voluntary carbon standard, and the Climate, Community and Biodiversity Standards (CCB Standards)[23] Gold Level, and will be sold in the international carbon markets.[24] In addition to the Project activities, Althelia also finances the cost of generating carbon credits such as deforestation monitoring, reporting and verification, third party certification bodies, among other costs that are incorporated in the project investment.

Althelia is currently marketing the carbon credits of the Tambopata REDD+ Project through its affiliate Ecosphere+ (E+),[25] a specialized company in marketing and sales of environmental assets. E+ targets pre-compliance buyers, i.e., corporates that may be required to offset their greenhouse gas emissions in future compliance markets, and therefore wish to purchase de-risked REDD+ credits from Althelia's projects today as an insurance against future increases in carbon prices.

A ground breaking feature of this investment structure is that AIDER uses the credits generated by the Tambopata REDD+ Project as mean of repayment and collateral for the loan from Althelia, using the carbon credits sales proceeds to repay that loan and the total carbon asset value to collateralized the loan in case of default. This innovative mechanism is a first of its kind at the world scale.

Assuming a price of US$5 per tCO_2e, the carbon credits' value would be equal to US$20 million, which would be enough to repay the entire loan without considering other sources of revenue. Althelia's institutional investors are sending a strong message of support to Peruvian national REDD+ System, as well to other regional REDD+ frameworks (Colombia, Brazil) and to international carbon markets (California, EU-ETS, Aviation) to open to official de-risked/ESG compliant REDD+ credits.

It is also a highly innovative approach, as even the most progressive loans and loan guarantees in the agricultural, fisheries and forestry sectors are based on the valuation of future crop harvests, fishing permit quotas or forest inventories, and not on the future value of environmental assets.

4.1.3 Provision of In-Kind Packages to Producers Rather than Credit

As part of the joint venture agreement between AIDER and COOPASER, all members of COOPASER receive an in-kind package of farming inputs valued at US$2,000/hectare, which is distributed over the course of three years.

The package is comprised of 1,111 fine cocoa seedlings, high quality grafting materials, 1,111 banana suckers,[26] 70 timber species,[27] fertiliser and farm tools. In addition, AIDER provides technical assistance and a variety of post-harvest services such as processing infrastructure and routes for export.

By providing farmers with an in-kind package rather than a loan, COOPASER eliminates the risk of farmers using loan capital for different purposes than purchasing inputs. It also allows COOPASER to access economies of scale through bulk purchases, and to ensure the quality of inputs.

As mentioned, AIDER also provides a complete package of technical assistance to farmers. This helps to ensure that farmers follow the recommended agricultural production cycle, which should lead to higher yields of higher quality cocoa, manage farmers' risks, and speed their development into specialised cocoa producers.

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[21] This is due to the ongoing threat of deforestation in the two protected areas. At present, AIDER is not considering commercialising carbon credits from the agroforestry systems established in former degraded lands, but it retains the option of doing so in future.

[22] **http://www.v-c-s.org/project/vcs-program/**

[23] **http://www.climate-standards.org/ccb-standards/**

[24] The Tambopata REDD+ Project was validated in June 2012 under the CCB Standards second edition and under the Gold Level for Climate Adaptation and Biodiversity exceptional benefits. The first implementation report was approved in May 2015 and the second in November 2015. Annex 1 contains CCB Standards evaluation results for 2014-2015.

[25] **https://www.ecosphere.plus**/

[26] Bananas provide shade for cocoa seedlings and serve as a short-term cash crop and food. Banana plants are removed from the field as cocoa trees grow, to open further space and promote growth and reduce nutrient competition.

[27] Timber trees are a long-term crop within the agroforestry system.

Provision of in-kind packages rather than credit to farmers speeds up their inclusion within the supply chain, should lead to higher quality cocoa, and restricts AIDER's exposure to the credit risk of lending to smallholders. However, this strategy requires a large amount of upfront investment capital, and means that returns only start to flow once there are sales of cocoa (i.e., from the third year after plantation onwards).

4.1.4 Primary Management of Revenue and Use of Revenue-Sharing Agreement

Althelia's business practices require strict control over the Cooperative revenue stream to maintain good governance over the cash management of the cocoa business.[28] Once cocoa production reaches the required levels and the cocoa beans exports commence, COOPASER will assign to ACF the export sales invoices and the final client will pay directly to an escrow account. After subtracting capital amortization and accrued interest for the working capital provided, Althelia will transfer the balance to COOPASER.

Under a revenue sharing agreement between COOPASER and AIDER, AIDER will receive from COOPASER, annually, the equivalent to 1.5% of sale proceeds to support conservation in the two protected areas, thus contributing to the financial sustainability of the Tambopata National Reserve and the Bahuaja-Sonene National Park.

The revenue sharing agreement also covers commercialisation of bean-to-bar chocolates (see Section 4.3 below).

It is expected that certified fair-trade & organic cocoa will provide price premiums that will support the operation and create the margins required to make the business sustainable for all the parties.[29]

FIGURE 11
Regeneration of Degraded Land

Source: Luis Miguel Ormeño

4.2 Operational Risk Management

4.2.1 Establishment of Cooperative

A key element of the project design was the establishment of a new cooperative to aggregate cocoa farmers. Although incurring short term costs, these should be offset in the longer term by lower overall transaction costs and a reduction in the operational, social and financial risks associated with dealing with individual farmers.

To manage environmental risk and ensure compliance with Althelia's Environmental, Social and Governance Standards, prospective cooperative members need to present the following documentation: formal land title or proof of possession of farm, GPS farm location, personal ID, validation that there has been no deforestation on the farm since 2012,[30] and a signed zero-deforestation commitment form.

COOPASER also performs background checks on prospective candidates to ensure that they comply with

[28] To avoid producers 'side-selling' their cocoa to other buyers, COOPASER will pay producers against delivery of cocoa. Another economic incentive for producers is that they receive additional price premiums for fair-trade certification and deforestation-free attributes of their cocoa, that will be shared with them at the end of the year via their membership in COOPASER.

[29] Certification is registered under COOPASER's name and the costs of certification are covered by COOPASER. During 2016 costs equalled $5,500/year for organic certification and US$3,600/year for fair trade certification.

[30] Deforestation definition is taken from FAO. Through satelite validation, AIDER team verifies that the land over which the agroforestry syste will be installed have not been cleared in the last five years in order to avoid persverse incentives.

Peruvian laws and regulations, and credit assessments to ensure that they do not have delinquent debts with private or public financial institutions.

Each new member must also commit to establish at least three hectares of cocoa. This is the minimum area that will allow a farm to be self-sustaining, and ensure that the processing facility operates at an optimal capacity.

4.2.2 Use of Mixed-Crop Systems

Farmers are encouraged to grow timber trees and bananas on their plots to create shade for their cocoa plants. Mixed cropping also provides alternative sources of income to meet short-term cash needs at differing harvest cycles, and can address smallholder food security.

Shade trees also act as long-term forestry investments. The timber harvesting cycle matches the productive life of a cocoa plantation – about 25 years – which means that a harvest is possible before renovating the field. Also, tree branches can be pruned on a continuous basis to provide firewood.

Alternative crops are also important if cocoa trees fail to produce sufficient returns for reasons that are beyond farmers' control (such as reduced international cocoa prices, pests and/or climatic events).

Agroforestry systems are proving to be excellent ecosystem connectors as well. In the project area, sloths are appearing again and use the new trees to move from place to place.

4.2.3 Use of Experienced Implementation Partners

Ecotierra has hired an independent, external professional to manage COOPASER and the cocoa processing centre, with experience in running rural enterprises. Ecotierra has also hired a commercialisation expert to find niche markets for the cooperative's fine and flavour cocoa. Ecotierra and AIDER maintain oversight of the professionals to ensure good operational and financial management. The intention is to create an environment where the business flourishes, but also where managerial/financial experience can be transferred to members of the cooperative, so that they can gradually take on management responsibilities over time.

From a more strategic perspective, the fact that the Tambopata REDD+ Project is being run by an experienced partner such as AIDER, with 30 years of relevant experience in conservation and development projects, has been crucial to bring partners and investors on board.[31]

4.2.4 Diversified Sourcing of Cocoa Seedlings

To speed up the production of cocoa seedlings and shorten the time until cocoa can be harvested, AIDER is training local producers in the establishment of cocoa nurseries, seedling grafting techniques and use of high-quality cocoa genetic grafting materials.

AIDER has also been using a mixed cocoa seedling production strategy, working with cooperative members as well as external nurseries. During 2016 AIDER built a nursery with the capacity to provide seedlings to 312 families, who planted 313,000 cocoa seedlings between Q4 2016 and Q1 2017.[32] In addition, two local private nurseries provided 280,000 cocoa seedlings.

By diversifying its sourcing of cocoa seedlings, AIDER will have sufficient seedlings to meet its planting goal of 1,250 hectares by May 2017. More seedlings will be produced over 2017 and 2018, both by members of the cooperative as well as external providers, to achieve the goal of 4,000 hectares of planted cocoa trees by 2021 as part of the phase-2 of the Project.

[31] AIDER is under a 20-year partial administration contract with SERNANP to pursue biological monitoring and research in Bahuaja Sonene National Park and Tambopata Reserve, and it has a solid track record as a reliable NGO working directly with Amazonian communities in 'production and protection' initiatives in the field.

[32] Cocoa trees are planted at a density of 1,111 trees per hectare at 3x3 metre intervals.

In 28 February 2017, at the World Resources Institute (WRI) 20x20 Initiative Annual Meeting, AIDER has announced jointly with Althelia, the National Forestry Agency of Peru (SERFOR) and the Minister of Agriculture of Peru, the milestone of 1,000,000 cocoa trees planted by the Tambopata REDD+ Project.[33]

FIGURE 12
Preparation of Cocoa Seedlings

Source: Luis Miguel Ormeño

4.2.5 Location of Project

The farms participating in Phase 1 of the Tambopata REDD+ Project are located within the buffer zone of Tambopata National Reserve, between kilometres 1 and 85 on the road from Puerto Maldonado to Mazuko, with the processing facility located roughly at the centre of the project area, at km 39.

The strategic locations of the farms and processing facility — close to the regional capital and also along the Interoceanic Highway[34] — allows AIDER to minimise costs at the production, processing and export stages. It also allows AIDER greater oversight of operations, which is important to ensure compliance with certification standards as well minimise the risk that farmers side-sell their cocoa.[35]

From a geographic standpoint, the Tambopata REDD+ Project is set to benefit from a land titling programme promoted by MINAM and Corporacion Andina de Fomento (CAF) (see further in Section 5.1 below), as this programme will increase the number of farmers that can qualify to be members of COOPASER. A larger membership will support cocoa production and allow the fermentation and drying centre to run at full capacity, thereby covering operational costs and increasing revenue.[36]

[33] **http://www.aider.com.pe/prensa/El-proyecto-REDD+-Tambopata-Bahuaja-cumple-meta-de-plantar-un-millon-de-arboles.html**

[34] The Interoceanic Highway connects the Atlantic coast of Brazil to the Pacific coast of Peru, via Cuzco.

[35] Side-selling is not currently considered to be an issue, given AIDER's close oversight of the farmers, and given that Madre de Dios is not a major area of cocoa production (which means there are few competing purchasers).

[36] In this regard, AIDER is also considering whether the facility should process cocoa from other projects and farmers in the area.

4.3 Commercialization of Cocoa in Specialty Markets

International demand for fine & flavour cocoa has been steadily increasing over the last years,[37] supported by the development of an international specialty chocolate market, with chocolate manufacturers interested in discovering new flavours and cocoa profiles, as well as sourcing directly from producers and developing bean-to-bar relationships.

The concept of 'bean-to-bar' presents the attributes of the fine & flavour cocoa that makes up the chocolate, the story of the growers and the sustainability of the supply chain. Bean-to-bar helps connect consumer purchasing decisions to positive environmental and social impacts in the field. For example, consumers who buy COOPASER's chocolate will support the conservation of Bahuaja-Sonene National Park and Tambopata National Reserve, and the sustainable development of rural communities living within their buffer zones.

With support from Peruvian chocolatier manufacturer Bakau,[38] COOPASER has already developed a specialty chocolate bar, producing about 100 kg/year of chocolate. This chocolate allows potential cocoa purchasers to preview the flavour characteristics of the local fine & flavour cocoa in a manufactured end-product.

FIGURE 13
COOPASER's Specialty Bean-to-Bar Chocolate

Source: Sandro Aquino, Bakau

Looking forward, COOPASER is considering creating a strategic alliances with high-end chocolate manufacturers such as Loving Earth,[39] the Australian leader in vegan chocolate and cocoa-derivate products; ICAM,[40] a leading Italian specialty chocolate maker, among others. In the case of Loving Earth, the cocoa of Tambopata REDD+ Project will provide the principal raw material for the chocolates (cocoa) as well as carbon credits that will be used to fully compensate the life cycle of the chocolate, from production to consumption. In the case of ICAM, this Italian high-quality chocolate manufacturer has a premium chocolate brand, Vanini,[41] that promotes a single origin chocolate line from the Peruvian Amazon. ICAM has been a long-term partner and supporter of Peru's coca substitution and crop diversification strategy, importing 5,000 MT of cocoa per year from rural cooperatives in the Amazon, about 3,500 MT of which are organic and fair trade certified. ICAM is interested in expanding this offer to include attributes such as 'deforestation-free', making it an ideal purchaser for cocoa from the Tambopata REDD+ Project.[42]

COOPASER is seeking to target environmental and socially-responsible consumers by attaining fair trade and organic certifications. In addition COOPASER intends in the near future, with the technical support of AIDER, to register the agroforestry systems planted under the VCS AFOLU protocols in order to generate carbon credits from carbon capture of the

[37] **https://www.icco.org/component/content/article/69-cocoa-market-outlook-conference-september-2015/289-cocoa-market-outlook-conference-presentations.html**

[38] **https://www.facebook.com/bakauperu**/

[39] **https://lovingearth.co**/

[40] **http://www.icamcioccolato.com/en**

[41] **http://www.vaninicioccolato.com/en/peru-single-origin-cocoa**

[42] Interview with Cesar Gordon, ICAM's Legal Representative in Peru.

trees planted, as well as measure biodiversity and social impacts under the CCB Standards.[43] These will allow COOPASER to access further price premiums and market differentiation, as per the corporate positioning strategy of the Cooperative.

Ecotierra has developed a monitoring and traceability system (Minka)[44] to allow third parties to access basic information on COOPASER's members and the agroforestry systems, including production data, certifications, deforestation-monitoring images, to support management of information towards certification bodies and the market, being corporate buyers or consumer looking for transparency across the value chain.

5. Current Challenges

5.1 Lack of Land Title

Farmers must have formal land title or a certificate of possession to join COOPASER. This is important in order to promote land use stabilization, engagement of the farmers in the long term and avoid land trafficking. Despite the importance of land titling, the regional government has not issued any new land titles or certificates of possession since 2014, due to unfinished cadastral surveys[45] and overlapping land claims from farms, indigenous lands and tourism, timber, Amazon nut and mining concessions.

If the land titling was accelerated, the outreach of the Tambopata REDD+ Project will be bigger, integrating a larger number of smallholders and generating broader socioeconomic and environmental impacts.[46]

However a new land titling program, promoted by MINAM and CAF,[47] has the goal of formalising land tenure in 9,500 individual farms and 21 communities in the departments of Madre de Dios, Cuzco and Puno,[48] including within the project area.

The programme will be extremely important in addressing local deforestation, as 45% of total forest loss between 2001 and 2014 occurred in areas where there is no clear land tenure or recognition.[49] Farmers who have clear legal ownership of land in buffer zones are natural allies of protected areas, as they serve as gatekeepers and can counter land invasions, illegal activities and deforestation within their farms.[50]

The programme will also have a positive effect on the Tambopata REDD+ Project, as it will enhance AIDER's ability to find new potential cooperative members in a more concentrated area, thus reducing the cooperative's operational costs and maximizing its socioeconomic impact.

5.2 Working Capital Requirements

COOPASER requires working capital to buy cocoa from its members. It has enough financial resources to purchase cocoa during the 2017 harvest, which is expected to be relatively small as farms develop their plantations (e.g., 17 to 20 MT). Over the next few years COOPASER will need substantially more working capital, and so it will require a revolving line of credit of millions of dollars.

However, COOPASER has no credit history. Furthermore, it has not been able to pledge the processing facility as loan collateral while the facility has been under construction. This is why the continuous financial support of Althelia is required in

[43] **http://www.climate-standards.org**

[44] **http://www.ecotierra.co/minka-es**

[45] A cadastral survey is a comprehensive map of land ownership and title.

[46] The Government of Peru is piloting efforts to include farmers without land title, such as usage-based contracts (cession de derechos de uso) within permanent production forested areas. However, the contracts are not currently in operation, and so the project is limited in its ability to include smallholders without land title.

[47]

[48] **http://www.minam.gob.pe/minamcaf/ambito-del-programa-minamcaf/**

[49] **http://www.bosques.gob.pe/archivo/ff3f54_ESTRATEGIACAMBIOCLIMATICO2016_ok.pdf**

[50] Interview with Pedro Gamboa, chief of SERNANP.

order to enable COOPASER to operate in the initial years while it constructs a credit track record and reaches its financial sustainability.

As of the date of publication, COOPASER is negotiating further commitments with Althelia for a long-term revolving line of credit having the value of export contracts as a repayment mechanism as explained above and buyers like ICAM and/or Loving Earth as a co-guarantor of repayment through the triangulation system.

5.3 Diversifying Smallholder Income

There is an important need for further income diversification beyond cocoa trees, especially short-term crops or economic activities to provide farmers with cash and food, such as bananas. Unfortunately, the variety of banana that farmers initially received in their package of inputs turned out to be unsuitable for commercialization. COOPASER is currently developing a business relationship with Inka Crops, a snack company based in Lima, to supply *bellaco* plantains, which have a larger market demand and fetch a higher price than the previous variety of banana.

In addition to *bellaco* plantains, other options include leguminous plants and small animal husbandry such as chickens, pigs, fresh-water fish and apiculture. These activities have symbiotic relations with agroforestry systems as they produce nitrogen, high quality manure or provide pollination services that increase crop productivity and reduce input costs.

Fresh-water fish farming is a promising activity as water reservoirs could also provide drip irrigation/fertilization, increasing profit margins for relatively minor additional investment costs. In departments like Madre de Dios that suffer from high water contamination due to the use of mercury and cyanide for gold mining operations, consuming fish directly extracted from rivers and ponds is no longer an option. This problem creates a great demand for fresh-water fish raised in aquaculture systems thus ensuring sales at the local level and allowing the development of a higher end aquaculture sector to cater to hotels and restaurants in the tourism sector.

Small animal husbandry is a good alternative to traditional cattle ranching, as small animals require substantially less land and also produce less methane and compacted soil.

5.4 Lack of Management and Business Skills

Ecotierra hired an external professional manager to train local leaders to develop their managerial and governance capacities, and allow broader participation in the cooperative's operations; however, this process is still ongoing.

More generally, it is important that producers develop their business skills i.e., to manage their farms in a profitable way, using the right combination of short-, mid- and long-term economic activities to optimise the economic returns on their farms and minimise environmental impacts. For example, they need to be able to calculate production costs, determine break-even points (both in value and volume), produce cash flow projections and build budgets.

Producers can use technology, including cellphones, tablets and GPS, to systematise this information, analyze it and take informed decisions. Although these types of technology currently have a relatively low penetration rate in the Madre de Dios region, the market is expected to grow and a range of applications related to more cost-effective agriculture (and eventually precision agriculture) will become more accessible.

5.5 Limited Supply of Fine & Flavour Cocoa Genetic Material

Since fine cocoa only represents 10% of the total area under cocoa production in Peru, sourcing enough fine & flavour cocoa genetic material, seedlings and grafting materials has proven to be a major challenge. Despite its potential, Madre de Dios is not a cocoa producer region, thus AIDER has had to purchase material from departments as far as Huánuco, San Martin and Ucayali, which has led to significantly increased project implementation costs. Nevertheless, thanks to the good progress on plantations of phase-1, the cocoa already planted will serve as genetic material for the expansion phase, thus diminishing the costs of plantation. The expansion phase will also include the installation of a clonal garden that will be under the property of COOPASER/AIDER in order to provide with high quality and fully traceable genetic material at scale for further consolidation and expansion of the agroforestry development, ensuring the sustainability of the project production capacity over time.

For phase-1, COOPASER has capitalized on farmers with established plantations already under production, offering them technical assistance and route-to-market while at the same time securing cocoa supply to feed the processing facility.

5.6 Illegal Gold Mining

As mentioned in Box 3, illegal gold mining continues to be the most important deforestation driver in Madre de Dios. The incremental nature of deforestation in the protected areas (due to illegal gold mining) threatens the ability of the Tambopata REDD+ Project to generate REDD+ credits.

Furthermore, gold mining and other related illegal activities (such as fuel-smuggling, prostitution and liquor distribution) create profitable and easy to earn economic alternatives that deter local farmers from engaging in legal activities such as cocoa production, which demand hard work, real skills and are prone to weather related risks such as droughts, flooding and pests.

Unfortunately, it is beyond the capacity (and scope) of the Tambopata REDD+ Project to address the problem of illegal gold mining, which requires the central and regional governments to address the root causes, as part of a comprehensive long-term strategy as well as through performing interdiction activities in illegal gold mining camps.

FIGURE 14
Environmental Degradation Associated with Gold Mining

Source: Andina

5.7 Demand and Adequate Price of Carbon Credits

Financing from Althelia Climate Fund has allowed the Tambopata REDD+ Project to be today a reality, nevertheless, the innovate financing model remains at risk if the market for emissions reductions generated by the national protected areas are not sold in the market.

Despite the fact that the Project is developed in a national protected area belonging to the Peruvian State, that has the official approval of the national protected areas agency (SERNANP), that complies with Peruvian legal framework as well as is included in the National REDD+ System of Peru and currently being in the process nesting,[51] the sales of carbon cred-

[51] See the Peruvian Environment Ministry REDD+ Registry here: **http://serviciosecosistemicos.minam.gob.pe/buscador**

its from the Tambopata REDD+ Project has been disappointing. The Project in order to be successful will need to monetise the emissions reductions created by the Project so it can provide risk-adjusted return promised to Althelia's investors, alongside of the substantial environmental social impacts the project is already generating.

The Tambopata REDD+ Project won't be able to be called a success if the repayment mechanism that combines cocoa and carbon sales fails. The cocoa sales seem to be in the good road, the emissions reductions generation (carbon assets) also seem to be met; nevertheless, its monetisation remains a promise yet to be accomplished.

6. Conclusion

The Tambopata REDD+ Project is a successful example of a partnership between international public/private investors (via Althelia Climate Fund SIF SICAV and managed by Althelia Climate Fund G.P), experienced NGOs (AIDER and Ecotierra), supply chain commercial partners (ICAM and Loving Earth), and government agencies (MINAM, SERNANP, USAID), to support improved livelihoods for smallholder farmers located in the buffer zone of protected areas, and a conservation co-management strategy that includes the generation of new revenue streams for the protected areas and the people living in/around them.

The most noteworthy and innovative aspects of the Tambopata REDD+ Project include:

- The use of carbon credits that are generated over the period of the project as a mean of repayment and collateral for long-term lending at fair rates.
- The use of a USAID DCA partial loan guarantee to reduce the risk of lending to the project implementation partner.
- The implementation of a revenue sharing agreement between the cooperative, project implementation partner, protected areas and investor to secure a shared-value creation.
- Provision of in-kind packages to producers rather than credit to secure funds are invested in the asset creation and avoid misspending.
- The use of differentiated market channels to commercialise cocoa, notably via organic and fair trade certification, with the associated implementation of a credible monitoring and evaluation system to create additional value such as deforestation-free cocoa (see award by United Nations Framework Convention on Climate Change award to the Project for deforestation-free cocoa: **http://unfccc.int/secretariat/momentum_for_change/items/9254.php**)

The key remaining question for project-based approaches to forest conservation supported by climate finance such as the Tambopata REDD+ Project is their real potential for them to scale up, and be replicable in other sectors and geographies, and thereby have a greater impact on avoided deforestation and overall ecosystem conservation and livelihoods. We believe that the Tambopata REDD+ Project in order to be scalable, repeatable and generate new investments will need to generate market-rate financial returns to the investors that have putted money into Althelia Climate Fund, and through the Fund, into the Project. Producing high-impact ecosystem conservation and social impact will not be enough in order to make of Tambopata a successful business story.

Following are some ways in which the Tambopata REDD+ Project could be scaled up and/or replicated within the Peruvian Amazon:

- Apply Results-Based Payments from the Green Climate Fund (GCF), World Bank FCPF or other donors' contribution to enhance and incentivize the international private sector to engage at scale in the purchase of emissions reductions of Peru REDD+ Projects in Protected Areas, such as the Tambopata REDD+ Project.
- By incentivising the demand for emissions reductions purchase from REDD+ Projects in the Peruvian Amazon in partnership with the Peruvian Government and within the framework for the National REDD+ Strategy, AIDER and Althelia could expand their existing partnership and their collaboration with Peru's Natural Protected Areas to identify other protected areas in the Peruvian Amazon where there is a potential to co-manage protected areas and reduce the drivers of deforestation by the implementing production-protection strategies such as the ones deployed in the Tambopata REDD+ Project, generating impact in terms of climate change mitigation and adaptation.

- The replication potential of the Tambopata REDD+ Project has been tested. Althelia has invested in a similar conservation and livelihoods project in the Cordillera Azul National Park, under the authority of SERNANP and administration contract of CIMA NGO. It has been demonstrated that techniques, structures and lessons-learned are transferable between projects. Althelia, having experienced implementation partners such as CIMA and AIDER, the scaling up and replication in terms of operational capabilities seems feasible.
- Beyond its current partners, Althelia could seek to work with other NGOs and/or farmer cooperatives and associations in the region, such as ACCA, Organization for Integrated Sustainable Development (ODEINS), Fundacion Huarayo and CARITAS, as part of a strategy for co-management of protected areas, or as part of a Peruvian regional or national REDD+ framework in the Peruvian Amazon, enabling the replication and scaling up.
- The Tambopata REDD+ Project could be folded into the Protection-Production Compact that the Government of Peru is currently designing with support from the governments of Norway and Germany.[52] This initiative is currently focused on the central region of the Peruvian Amazon, but there are plans to expand it to other departments. Donor support is structured as "payment for performance" based on measurable decreases in deforestation, and the primary focus of the initiative is the establishment of public-private partnerships to implement alternative agricultural practices for those commodities that are the primary drivers of deforestation, namely coffee, cocoa and oil palm.

As regards replication, the five key aspects of the project that are outlined at the beginning of this section could potentially be implemented in other conservation and land-use projects. For example, the partial loan guarantee provided by USAID DCA significantly mitigates the risks associated with lending (directly and indirectly) to smallholders by de-risking the investment vehicle that provides the financing. This financial product is highly replicable and could be applied by USAID DCA (or other international development finance institutions) to manage the risk of lending in other projects, under the investment management of Althelia or other financiers.

To facilitate replication, AIDER could set up study tours for representatives of other regional governments and potential private sector and NGO partner organizations to visit the Tambopata REDD+ Project. These initial interactions could be followed by exchange visits, in which key actors from Madre de Dios could help to inform the implementation of similar efforts in other regions.

Finally, the private equity fund model is an inherently scalable source of conservation finance, which could be limited by the capacity of the Project to produce the risk-adjusted returns Althelia requires to provide to its investors. As Credit Suisse CEO Tidjane Thiam affirms in the Conservation Finance Report, co-authored by Credit Suisse and the McKinsey Center for Business and Environment,[53] investors are "seeing conservation impact investing as a way to achieve substantial environmental and social impact alongside market-rate returns", which means that positive environmental and social impact need to be necessary coupled with financial return in order to attract capital at the required pace and scale. Today, Althelia Climate Fund portfolio, including the Tambopata REDD+ Project being highly dependent on present and forward emissions reductions prices, the replication and scale up of such initiatives can be seriously limited if expected returns are not met. This will be a case where Project impacts can be long lasting for farmers and protected areas, but not for the assets managers.

At the contrary, if Althelia is successful at monetizing the emissions reductions and overall impacts generated by the Tambopata REDD+ Project, the European asset manager could establish new funds of larger size, leveraging off its experience and track record of their land-use projects within its portfolio such as the Tambopata REDD+ Project, and these new funds could be invested in similar land-use projects in Peru, Latin America and replicated as well in other geographies of the world, such as Asia and Africa, places that are in much need of such innovative financing and impact in ecosystem conservation and livelihoods enhancement.

Climate change mitigation and adaptation remain the biggest challenge of our time. The Tambopata REDD+ Project provides interesting highlights of how to tackle climate change challenges while preserving our natural ecosystems and improving peoples' quality of life, with the contribution of the private sector to the financing of these solutions.

[52] **http://www.forest-trends.org/publication_details.php?publicationID=5517**

[53] See **https://www.credit-suisse.com/media/assets/corporate/docs/about-us/responsibility/banking/conservation-finance-en.pdf**

ANNEXES

Annex 1

Key Indicators of the Tambopata REDD+ Project[54]

a) Productivity of Cocoa Agroforestry Plantations

YEAR	PRODUCTIVITY	KILOGRAMS/HECTARE
1	0%	0
2	10%	90
3	40%	360
4	70%	630
5	100%	900

b) Increase in Area of Cocoa Agroforestry Plantations

YEAR	ANNUAL INCREASE IN HECTARES UNDER CULTIVATION
1 2014/2015	200
2 2015/2016	400
3 2016/2017	650
TOTAL	**1,250**

c) Recovery of Degraded Pasture Lands and Papaya/Banana Plantations

TYPE OF LAND RECOVERED	NUMBER OF HECTARES
Pasture lands	1,019
Papaya and banana plantations	231

d) Composition of Agroforestry Systems

PLANT	PLANTS PER HECTARE
Cocoa plants	1,111
Banana plants	1,111
Timber trees	69
TOTAL	**1,303 (including Inga Edulis)**

e) Membership of COOPASER: Gender (as of March 2017)

GENDER	NUMBER OF INDIVIDUALS
Male	249
Female	91
TOTAL	**340**

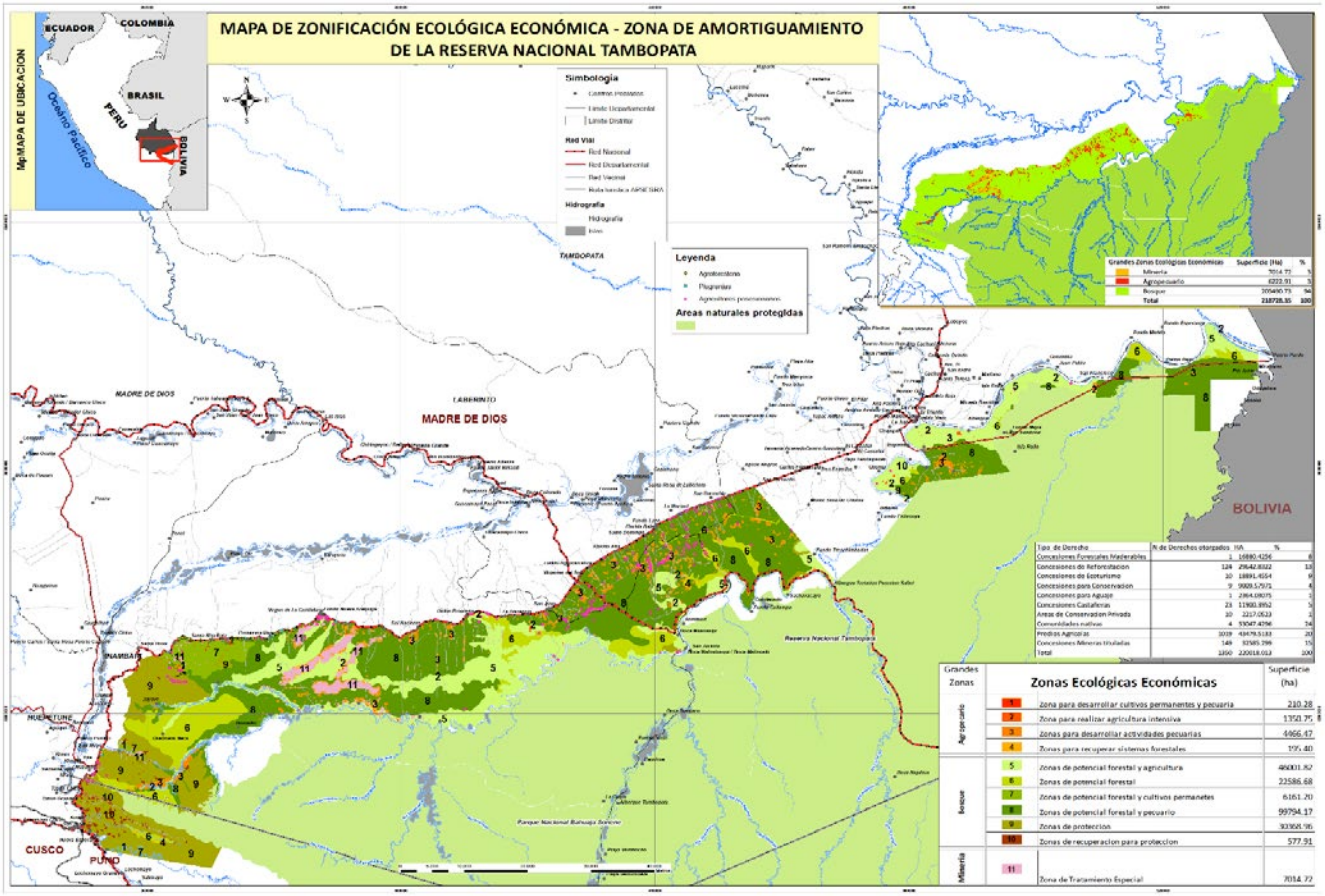
[54] Source: AIDER

f) Membership of COOPASER: Age (as of March 2017)

AGE GROUP	PERCENTAGE OF INDIVIDUALS
49 and under	10%
50 and above	90%

Annex 2

Ecologic/Economic Zones in the Buffer Zones of Tambopata National Reserve



Source: ACA and ACCA

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Biodiversity Initiative

Promoting development of sound, science-based, and economically sustainable mitigation and no net loss of biodiversity impacts

Coastal and Marine Initiative

Demonstrating the value of coastal and marine ecosystem services

Communities Initiative

Strengthening local communities' capacity to secure their rights, manage and conserve their forests, and improve their livelihoods

Ecosystem Marketplace

A global platform for transparent information on environmental finance and markets, and payments for ecosystem services

Forest Policy, Trade, and Finance Initiative

Supporting the transformation toward legal and sustainable markets for timber and agricultural commodities

Public-Private Finance Initiative

Creating mechanisms that increase the amount of public and private capital for practices that reduce emissions from forests, agriculture, and other land uses

Water Initiative

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