

Describing the programs

1. Socio Bosque–Ecuador

The Socio Bosque program was created in November 2008, through the Ministerial Agreement 169 of the Ministry of the Environment of Ecuador (MAE). The main objectives of the program are a) to conserve forests, *páramos*¹, and other types of native vegetation² all around continental Ecuador, b) to reduce the emission of greenhouse gasses caused by deforestation and c) improve living conditions of the populations living in those areas (MAE 2008). The overall aim stated in the project's operational manual (MAE 2009) is to conserve more than 3.6 million hectares of forests, with the participation of between 500,000 and 1.5 million beneficiaries.

Socio Bosque is implemented by the MAE. Implementation is centralized within the ministry, which has established a project implementation unit for the program, with no direct participation of provincial or local governments. Financing for the program comes mostly from the federal government's budget, with the main additional financing from the German International Development Bank (KfW) (MAE 2015a). Additional technical cooperation resources come from the GIZ, Conservation International (CI) and the Inter-American Development Bank (IDB). As of 2015, the yearly budget of the program was at around US\$ 12.5 million, 84.8% of which dedicated to the payment of incentives, 12.9% for program administration and 2.2% for capacity building activities (MAE 2015a)³.

Individual landowners and communities whose lands are located in forests and other native vegetation areas in Ecuador are eligible to participate in the program. Enrollment in the program, as stated in the article two of the program's creation agreement, is voluntary. The

¹ *Páramos* are high altitude grasslands typical of Andean regions of South America.

² For simplicity, we will use forests when referring to all those types of vegetation, making differentiations when necessary.

³ This information was acquired from a financial strategy document prepared by the program's staff, not from official financial reporting, which was not available.

mechanism foreseen by the program to achieve those objectives is the provision of incentive payments to participants, conditional to the compliance of environmental and administrative conditions (more on the payments system and conditionalities below).

The program foresees a targeting mechanism, literally called geographical prioritization (*priorización geográfica*). The targeting mechanism is organized according to the criteria explained in Table S1 below. The formula for the targeting index is a simple sum of the points of each area in each category, the higher the final number, the higher the priority of the area.

Table S1–Targeting criteria of the Socio Bosque program⁴.

Main variables	Sub-variables	Observations	Points
Level of threat	Closeness to access alternatives	Considers the proximity of the area to access alternatives and their inclination	High Threat = 9 points Medium Threat = 6 points Low Threat = 3 points
	Historical Deforestation Patterns	Only applied in case of available information	
Environmental Services	Biodiversity Refuge	Native vegetation formations already protected in the National System of Protected Areas (SNAP) have lower priority	Points range from 1 to 4. The lower the presence of the vegetation in SNAP, the higher the score
	Hydrological Regulation	Importance for hydrological regulation	High Importance = 3 points Medium Importance = 2 points Low Importance = 1 points
	Carbon Storage	Defined in function of the biomass	High Storage = 3 points Medium Storage = 2 points Low Storage = 1 points
Poverty Levels	---	Defined according to the Unsatisfied Basic Needs index of the Ecuadorian government	> 65% of average NBI = 3 points < 65% of average NBI = 0 points

Source: (MAE 2012b)

Another relevant aspect related to the spatial distribution of project activities is the selection of areas to be conserved within the enrolled properties. The communities and individual owners decide, autonomously, how much and where are located the areas within their properties which will be eligible for the benefits of the project, as illustrated in figure 1 below. Areas defined as “under conservation” cannot be deforested, or payments may be suspended. Areas defined as “not under conservation” may be deforested with no consequence for payments. The selection

⁴ The table represents the index for forest areas and other vegetation types except *páramos*. For *páramos*, higher weight is given to hydrological services variables and demographic pressures are considered as threat levels.

of the area “under conservation” will determine the total amount of direct cash transfers received by the community or individual, as will be further detailed below.

Individual landowners and communities that wish to participate in the program must present a series of documents for the enrollment process. The most relevant are official land titles, to prove formal ownership or tenure rights over the areas, and sketches (*croquis*) showing exactly which areas of the property or community will be accounted for the payments⁵. Communities also have to show minutes of the approval of the application by the collective representation body of the community. If all the documents are approved, the areas are considered as pre-selected. Afterward, MAE’s staff performs a field verification process, to confirm vegetation cover and the geographical limits of the areas for final selection (MAE 2012b).

Socio Bosque relates to their beneficiaries and organizes their participation in the program through two main documents: conservation agreements and investment plans. Conservation agreements are “a transparent, voluntary, and participatory alliance, in which the owners or administrators of a resource agree to protect the natural value of an area in exchange for direct, ongoing, and structured economic incentives” (de Koning et al. 2011). The conservation agreements specify provisions such as the area under conservation in a community or property, the obligations of the government, the conditions to be complied by the beneficiaries, the duration of the agreement, the financial amount the beneficiaries will receive and the conditions for suspension and termination of the agreement. In Ecuador, conservation agreements had been successfully used at the *Gran Reserva Chachi*⁶ project, and Socio Bosque’s experience was later also replicated at the Programa Bosques in Peru, as we will see below. Agreements

⁵ For official enrolment after the application’s approval, a georeferenced map must be presented. The full list of required documents can be found at MAE 2012b.

⁶ The *Gran Reserva Chachi* project, initiated in 2005, was an agreement between three community centers of the *Chachi* people and Conservation International to promote the conservation of 7200 ha of tropical humid forest, based on the payments for each conserved hectare, conditional to compliance de Koning et al. 2011. For more information on the *Gran Reserva Chachi* project, see GTZ 2010.

are signed for a 20 year period and can be renewed for another 20 years, without limit for renewals (MAE 2009).

Investment plans detail how beneficiaries are planning to use the money transferred from the program to carry out productive projects that can bring welfare improvements for their populations. Individual owners have more leeway to define how the income from the incentives is used, with participants having to fill a simple form how they plan to use the resources (MAE 2013b), usually referring to the acquisition of assets to the households, payment of debts, investments or savings, family consumption or conservation activities (MAE 2016). Communities, on the other hand, must prepare their plans through a participatory process within the community and approve them in an assembly (MAE 2013b). Communities have chosen to use the incentive money mostly to foster economic development, infrastructure and conservation and territorial consolidation activities (MAE, 2016a). The stated rationale behind requesting investment plans is that they allow for more transparent decision-making procedures and increase the sharing of information within the communities (de Koning et al. 2011), reducing the possibility of misuse of the incentives by the community leaderships, as they have to be approved by community assemblies and strictly followed during implementation.

The project's operational manual lists 15 conditions that have to be fulfilled by the beneficiaries of the program. They refer to conservation (avoid deforestation and fires, and refrain from unsustainable economic activities and land use change) and administrative conditions⁷ that have to be accomplished. If these conditions are not fulfilled, sanctions may vary from a temporary suspension of payments to the termination of the conservation agreements (MAE 2012b).

After being accepted, individual properties and communities will receive payments if conditions are fulfilled. Socio Bosque's operational manual (MAE 2012b) defines a

⁷ The full list of conditionalities can be found at MAE 2012b.

differentiated payment system based on the size of the area defined by communities and individuals as under conservation. It consists of six incentive level categories as illustrated in Table S2 below.

The initial idea was to provide fixed payments of US\$ 20 per hectare per year, but the team soon realized that fixed payments would provide too little money for many individual participants and too much for some communities. For that reason, the area-based payment differentiation was devised (Interview 5). As it can be seen in the first quarter of Table S2, the initial rules of the project differentiated payments by property size only. The current payment structure, established in 2011 (MAE 2011a), adds a differentiation between individual and collective lands, and between *páramos* and other vegetation types, as well as adding a special category for properties under 20ha, who receive US\$ 60 per hectare. The new structure increased per hectare payments for communities and kept original values for individual landowners, except in the under 20ha new category (MAE 2009, 2011a).

Table S2–Payment calculation examples for Socio Bosque, under the previous and current payment structure

All properties in all land types (pre-2011 structure)			For 450 ha under conservation: (50x30) + (50x20) + (350x10) = US\$ 6,000 per year
Category	Area under conservation (ha)	Payment value (US\$/ha/year)	
1	1 – 50	\$ 30	
2	51 – 100	\$ 20	
3	101 – 500	\$ 10	
4	501 – 5,000	\$ 5	
5	5,001 – 10,000	\$ 2	
6	10,001 or larger	\$ 0.5	
Community properties in forest lands (current structure)			For 450 ha under conservation: (50x35) + (50x23) + (350x13) = US\$ 7,450 per year
Category	Area under conservation (ha)	Payment value (US\$/ha/year)	
1	1 – 50	\$ 35	
2	51 – 100	\$ 22	
3	101 – 500	\$ 13	
4	501 – 5,000	\$ 6	
5	5,001 – 10,000	\$ 3	
6	10,001 or larger	\$ 0.7	
Individual properties in forest lands (current structure)			For 450 ha under conservation:

Category	Area under conservation (ha)	Payment value (US\$/ha/year)	$(50 \times 30) + (50 \times 20) + (350 \times 10) = \text{US\$ } 6,000$ per year
1	1 – 50	\$ 30	
2	51 – 100	\$ 20	
3	101 – 500	\$ 10	
4	501 – 5,000	\$ 5	
5	5,001 – 10,000	\$ 2	
6	10,001 or larger	\$ 0.5	
Community properties in páramos (current structure)			For 450 ha under conservation: $(50 \times 60) + (50 \times 40) + (350 \times 20) = \text{US\$ } 12,000$ per year
Category	Area under conservation (ha)	Payment value (US\$/ha/year)	
1	1 – 50	\$ 60	
2	51 – 100	\$ 40	
3	101 – 900	\$ 20	
4	901 – 3,000	\$ 10	
5	3,001 – 10,000	\$ 4	
6	10,001 or larger	\$ 1	

Sources: (MAE 2009, 2012b)

There was no established forest monitoring strategy for Socio Bosque at the beginning of the program, and its system has been developed concomitantly with the start of project activities, with its implementation starting in 2010 and the preparation of a monitoring methodology manual in 2011 (MAE 2011b). The main objective of the system is to verify forest cover, and therefore environmental conditionality compliance, in the enrolled areas. The program uses an area-specific baseline, prepared before the signing of the Conservation Agreement, and evaluates the current state of the forest cover through the analysis of satellite and photographic images, in situ verification of the areas, and other methods according to appropriateness and availability. The frequency of monitoring is determined by the estimates of deforestation pressures in the specific areas (MAE 2011b).

The system also aims at identifying threats to the areas as a basis for preventive action. Additionally, the program intends to build capacities for participatory control and vigilance in the areas (MAE 2011b). The methodology manual also foresees the possibility of adaptations as further technological, administrative and financial resources become available. Finally, related to the monitoring activities in the context of Socio Bosque, MAE also aimed to prepare a historical deforestation map of Ecuador and the national forests evaluation, with the objective

of obtaining historical data on the dynamics of the deforestation processes in Ecuador, and provide updated information on the state of the country's forests, respectively (MAE 2011b). Both aims were reached; in 2012 and 2015, respectively (MAE 2012a, 2015b). Administrative conditionalities are verified by the evaluation of compliance reports prepared by the participants. Participants must report the implementation of the investment plans twice a year, in templates provided by the program. The program's team may check the veracity of the information in field visits (MAE 2011a).

The perceived success of Socio Bosque has triggered the expansion of the program beyond its original scope. In 2013, MAE published an agreement that framed Socio Bosque as a national program of incentives for conservation and sustainable use of the natural heritage (MAE 2013a). The program has, in 2014, added mangroves to its conservation component (MAE 2014c) and introduced components (*capítulos*) for the implementation of biocommerce (*biocomercio*), forest restoration (MAE 2014a) and forest management (MAE 2014b) activities. Those components, however, will not be covered here, as their introduction happened after the field visit and the interviews did not cover aspects related to their adoption and design.

As of November 2015, Socio Bosque had enrolled 2,775 areas, with a total of 1,489,542 hectares (MAE 2016). Out of that total, 190 agreements were done with communities and the remainder with individual owners. The enrolled area of enrolled communities, however, corresponds to 88% of the total. The program reaches 187,634 beneficiaries, 86% of which are in communities and disbursed a total of US\$ 12,468,713.43 in 2015, 84.8% of which was directly used for the payment of incentives (MAE 2015b).

2. Programa Bosques – Peru

Officially established in July 2010, Programa Bosques has as its overarching aim to contribute to the conservation of tropical forests and to generate income for vulnerable and poor populations in Peru. The program's general objective is to conserve 54 million hectares of

tropical forests, as a contribution to climate change mitigation and sustainable development. Its specific objectives are to develop sustainable, forest-based production systems to generate additional income for poor populations; to identify and map areas for forest conservation; and to strengthen the capacities of regional and local governments, as well as communities, for forest conservation activities (MINAM 2013).

The core of the program's implementation is performed by a program management unit within Peru's Ministry of the Environment (MINAM). In addition, the program also established agreements with regional governments, the Interior and Public Ministries as well as with the country's Protected Areas Service (SERNANP) to strengthen the program's capacity to combat environmental illegalities. Finally, the program also has partnerships with a series of international organizations, including the GIZ, the United States Agency for International Development (USAID), the United Nations Development Program (UNDP), the Japan International Cooperation Agency (JICA), and the World Wildlife Fund (WWF) (MINAM 2016).

Similar to Socio Bosque, Programa Bosques provides payments conditional to environmental and administrative conditions (more on the Programa Bosques' payments system and conditionalities below). Participation is also voluntary and participants also must sign conservation agreements and prepare investment plans as prerequisites for enrollment. Unlike Socio Bosque, however, the scope of Programa Bosques is limited to communities, with individual landowners not eligible to participate. While Socio Bosque focuses on a variety of ecosystems, Programa Bosques is solely focused on forests (MINAM 2013).

The targeting process at Programa Bosques, named focalization (*focalización*), is divided into two steps. The first is the selection of which provinces are the priorities for conservation (*focalización de provincias*). Three criteria are considered at this stage, a) the total area of primary forests, b) deforestation rates and c) poverty incidence rate. The second is the selection

of which communities should take priority in participating in the program (*focalización de comunidades nativas*). The indicators used in this phase are a) the total area of primary forests, b) percentage of conserved primary forests and c) closeness to access alternatives. In addition to those variables, the program also aims at involving indigenous organizations in the region with the aim of potentially including communities initially not contemplated in the targeting process (MINAM 2011).

Also following the lines established in Socio Bosque, the communities enrolled in Programa Bosques define for themselves which parts of their lands will be considered for conservation, and which areas will not, in a process named zoning (*zonificación*). The zoning process is performed after the completion of the enrollment process (see below). Initially, the Programa Bosques' team provides the communities with maps and satellite images of the community areas, and assists the community members in the identification and demarcation of the zones enrolled for conservation. The size of the selected area within the total area of the community will, thus, determine the total amount of direct cash transfers received by the community, like in Socio Bosque. The managing committee of the community then receives training to independently read and understand maps and basic satellite imagery and, finally, a conservation map with the area demarcated for conservation must be approved by the community assembly (MINAM 2011).

After the identification of a community, the enrollment process also involves two parts. The first is a series of workshops with local authorities and communities, to disseminate information on what participation in the program consists. A community assembly must, then, approve the participation of the community in the program. Concomitantly, the community must present the legal documents required for enrollment. Those documents include the land

tenure rights title and the minutes of the meeting of the community assembly that approved participation⁸ (MINAM 2011).

Programa Bosques also has Conservation Agreements and Investment Plans as the basic documents relating the program to its beneficiaries. After enrollment and zoning, the community proceeds to the elaboration of the Investment Plan. The plans are to be drafted based on decisions taken by the communities, with the support of project design specialists to work with the community in the plan's creation. The construction of the plan is done through workshops in which the communities' management committees and the specialists identify priority actions and potential project areas, in accordance with the communities' intentions (MINAM 2011). The specialists, in addition to helping with the technical specifications, also provide suggestions, i.e., for the community to match the intended productive activities with the potential for production and market access of products in the specific localities of the communities. After the draft of the plan is ready, it must be approved by the community assembly.

With the conservation maps, the investment plans and the minutes stating community assembly approval, the communities may then sign their Conservation Agreements. In Programa Bosques, Conservation Agreements are also the documents that establish the obligations of the government and the conditions to be fulfilled by the participants. The duration of the agreements is 5 years, with an annual ratification based on the fulfillment of conditionalities.

One important difference between the provisions of Programa Bosques and those of Socio Bosque is the payment structure. While the Ecuadorian program has an area- and beneficiary type-based payment differentiation, the Programa Bosques has an undifferentiated area-based method. The Peruvian program provides 10 Soles (approximately US\$ 3 in May 2018) per hectare of enrolled area per year, irrespective of the total size of land enrolled. As stated above,

⁸ The complete list of documents can be found at MINAM (2011).

the payments must be used for the implementation of sustainable productive activities, in accordance to the Investment Plans, with the aim of contributing to poverty reduction in the communities (MINAM 2013). One of the program's components has been established to assist with the preparation of the plans and the actual implementation of the foreseen activities, providing technical assistance during implementation and follow-up (MINAM 2011).

Conditionalities in Programa Bosques are also based on environmental and administrative requirements and are more loosely defined than in Socio Bosque. Environmental conditions are the avoidance of deforestation in the areas to be conserved and the absence of illegal logging and illegal crops in the whole community area. Investment plan-related conditions involve checking the implementation of planned activities, financial accountability and community evaluation of activities (MINAM 2011)⁹. To assist communities in ensuring the conservation of their forests, the program includes a component of capacity development for forest conservation (MINAM 2013).

Peru did not have, at the start of the program, a complete and updated baseline of the state of the country's forests. For that reason, Programa Bosques had to identify the physical and biological state of participating areas during implementation. It aims at providing a diagnosis of the state of the tropical forests of the country and the threats to them, as well as socioeconomic, demographic and cultural aspects of the populations that can be enrolled in the program. Georeferenced baselines for monitoring each enrolled community have been developed, based on satellite images and field verification. The program also aims at evaluating the program, understanding its management results and impacts at the national, regional and local levels. It intends to carry out periodic evaluations of the state of natural resources and evaluate socioeconomic impacts in intervention areas (MINAM 2013). Programa Bosques has

⁹ The full list of conditionalities can be found at MINAM (2011).

an implementation horizon of 10 years, after which a general evaluation of the program will be performed.

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