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**Determinants of incentive-based forest governance in
the Amazon**

Evidence from Ecuador, Peru, and Brazil

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Abstract

Command-and-control policies are often criticized as insufficient to tackle tropical deforestation. Over the past two decades, both academics and policy-makers have promoted incentive-based policies, such as payments for environmental services, as attractive alternatives to curb forest loss, while also potentially contributing to poverty reduction of forest-dwelling populations. Many science-based recommendations on how to design effective incentive-based policies have, however, not found much resonance within policy circles. To understand the gap between recommendations and practice, it is important to understand why political decision-makers adopt incentive-based forest conservation schemes and what determines how these schemes are designed towards achieving environmental and non-environmental outcomes. To this end, we analyzed the governance dynamics of three government-led incentive schemes in the Amazon regions of Brazil, Ecuador, and Peru. We adopt a theoretical framework based on public policy theories, specifically on agenda-setting and policy instruments design. We find that environmental concerns are not always the prime motives for PES programs, as political and institutional contexts limit environmental policy-makers' actions. Yet, policy choice processes become less constrained when environmental issues are closer to a government's priorities. Electoral interests and bureaucratic politics exert pressure on policy design teams, who then trade off long-term societal efficiency concerns against short-term administrative goals. Lessons from other jurisdictions will often be drawn, as they may help in reaching acceptable policy proposals in a shorter time-frame. Priority is sometimes given to non-environmental concerns due to perceptions of political feasibility, to the influence of non-environmental agencies within governments, to beliefs in what role governments should take and how populations respond to proposed policies. These findings are especially relevant for scholars studying the processes and impacts of incentive-based conservation policies and for practitioners aiming to enhance policy efficiency.

Zusammenfassung

Politische Instrumente zur Überwachung und Bestrafung von illegaler Entwaldung (Command-and Control Policies) werden häufig als unzureichend kritisiert, um tropische Regenwälder effektiv und nachhaltig zu schützen. In diesem Kontext wurden in den letzten zwei Jahrzehnten sowohl von Wissenschaftlern als auch von politischen Entscheidungsträgern anreizorientierte Politikinstrumente beworben, um den Verlust der Regenwälder einzudämmen. Solche Instrumente umfassen beispielsweise Zahlungen für Umweltdienstleistungen, die zusätzlich die Armut der Bevölkerung in den Waldregionen mindern können. Dennoch fanden viele wissenschaftliche Empfehlungen für die Entwicklung effektiver, anreizorientierter Methoden wenig Resonanz in den politischen Kreisen. Um die Diskrepanz zwischen wissenschaftlichen Empfehlungen und der praktischen Umsetzung nachvollziehen zu können, ist es zunächst wichtig zu verstehen, warum anreizorientierte Instrumente überhaupt von den Politikern implementiert werden. Ferner ist es wichtig zu verstehen, welche Faktoren Einfluss auf das Politikdesign haben, dass die umweltspezifischen und umweltunspezifischen Ziele der Programme vorgibt. Zu diesem Zweck haben wir drei staatlich getragene Governance-Prozesse in Brasilien, Peru und Ecuador analysiert. Für unsere Studie benutzen wir ein theoretisches Gerüst, welches auf Theorien zur Staatstätigkeit (Public Policy) basiert, im Besonderen in den Bereichen des Agenda-Settings und der Entwicklung politischer Maßnahmen. Unsere Ergebnisse zeigen, dass umweltspezifische Ziele nicht immer der Hauptbeweggrund für die Entwicklung von Politiken zur Förderung von Umweltdienstleistung sind, da der politische und institutionelle Kontext häufig den Handlungsspielraum der verantwortlichen Politiker einschränkt. In diesem Kontext kann jedoch festgehalten werden, dass politische Entscheidungen immer dann ein geringeres Maß an Restriktionen erfahren, wenn der Umweltschutz allgemein einen hohen Stellenwert bei der verantwortlichen Regierung genießt. Wahltaktische und bürokratische Rahmenbedingungen beeinflussen zudem die politischen Gestalter, die langfristige gesellschaftliche Interessen und kurzfristige Regierungsziele gegeneinander ausbalancieren müssen. Dabei spielen auch immer die bisherigen Erfahrungen mit anderen Gesetzvorhaben eine große Rolle, da sie eine zeitnahe Ausarbeitung geeigneter politischer Konzepte ermöglichen. Desweiteren können umweltunspezifische Ziele denn Vorrang erhalten, wenn deren politische Durchsetzbarkeit einfacher erscheint. Ebenso kann die Priorisierung umweltunspezifischer Ziele auch durch den politischen Einfluss von Nichtregierungsorganisationen bestärkt werden, sowie durch politische Überzeugungen der gesetzgebenden Akteure, zur Rolle des Staates allgemein und

zu möglichen Reaktionen der Bevölkerung auf die Gesetzesvorhaben. Unsere Ergebnisse sind vor allem für Wissenschaftler relevant, die anreizorientierte Umweltschutzpolitiken erforschen und für Fachleute, die die Effektivität der Umweltpolitik verbessern möchten.

Achievements

The initial plan of the dissertation has been presented at the *14th Global Conference of the International Association for the Study of the Commons (IASC)*, in Kitafuji, Japan, on July 4th, 2013. Research that yielded Chapter VI of the dissertation was presented at the *International Conference on Policy Mixes*, in Leipzig, Germany, on February 25th, 2014. An initial version of the paper “Why were upscaled incentive programs for forest conservation adopted? Comparing policy choices in Brazil, Ecuador, and Peru” was presented, with a different title, at the international workshop *Governance of Ecosystem Services: Challenges for Sustainable Development*, in Frankfurt am Main, Germany, on March 10th, 2014. Research that yielded Chapter VII was presented at the *Workshop on Institutions for Ecosystem Services*, at the International Food Policy Research Institute in Washington, D.C., United States, on October 28th, 2014.

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List of Acronyms

ACF	Advocacy Coalition Framework
AIDSESP	Inter-ethnic Association for the Development of the Peruvian Forest
CCBA	Climate, Community and Biodiversity Alliance
CCT	Conditional Cash Transfer
CDSA	Acre's Company for the Development of Environmental Services
CEVA	Acre's Commission for Validation and Accompaniment
CI	Conservation International
CNS	Brazil's National Confederation of Rubber-Tappers
CONAM	Peru's National Environmental Council
EMBRAPA	Brazilian Agricultural Research Company
ES	Environmental Service
FTA	Free Trade Agreement
GHG	Greenhouse Gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
ICDP	Integrated Conservation and Development Project
IDB	Inter-American Development Bank
IMC	Acre's Institute for Climate Change and Regulation of Environmental Services
INPE	National Institute of Space Research
IPAM	Amazon Environmental Research Institute
JICA	Japan International Cooperation Agency
KfW	German International Development Bank
MAE	Ecuador's Ministry of the Environment
MEF	Peru's Ministry of Finance
MINAG	Peru's Ministry of Agriculture
MINAM	Peru's Ministry of the Environment
MSF	Multiple Streams Framework
PES	Payments for Environmental Services
PGE	Acre's State Attorney General's Office
PNBV	National Plan for Good Living
PPCD	Pilot Plan for Deforestation Control

PT	Process Tracing
REDD	Reduced Emissions from Deforestation and forest Degradation
SERNANP	Peru's National Service of State-Protected Natural Areas
SISA	System of Incentive to Environmental Services
UCEGEO	Acre's Central Geoprocessing and Remote Sensing Unit
UNDP	United Nations Development Program
USAID	United States Agency for International Development
VCS	Verified Carbon Standards
VRAE	Valley of the <i>Apurímac</i> and <i>Ene</i> Rivers
WWF	World Wildlife Fund
ZEE	Ecological-Economic Zoning

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I. Introduction

1. More than wood and trees: the Amazon

The Amazon is the largest tropical forest in the world, occupying an area of approximately 5.5 million km². As such, it is widely recognized as one of the main repositories of biodiversity worldwide and also as one of the largest carbon sinks in the planet, accounting for around 10% of Earth's terrestrial carbon (Boucher et al., 2011). In addition to the environmental wealth, over 30 million people live in the Amazon region, in a wide variety of settlements, from over one million people cities, such as Belém and Manaus in Brazil, to uncontacted indigenous groups. The region also presents a unique ethnolinguistic diversity, harboring hundreds of indigenous ethnic groups and languages, many of them bordering disappearance due to death and migration of speakers. Amazonian territories are far away from major political, economic and demographic centers, and its populations tend to be among the poorest in their countries. Public services, such as education, health, sanitation and law enforcement are generally poorly delivered and traditional economic activities (i.e. industry) are often scarce (Santos et al., 2014)

The Amazon forest is shared by nine countries and several provincial/state governments including local governments and indigenous communities with varying degrees of autonomy, in a complicated governance context. Central government agencies involved in sectors such as environment, agriculture, land tenure, mining, indigenous affairs, along with their state/provincial and municipal equivalents have a say in the governance of Amazonian lands. Individual land owners, colonists, companies, indigenous communities and other non-government agents are also stakeholders in the region.

The natural and human diversities present in the Amazon are severely threatened by the pervasive deforestation occurring in the region. The following section summarizes the main direct and indirect drivers of deforestation in the Amazon, as well as the main actors and institutions involved.

2. Deforestation in the Amazon: main drivers

Deforestation is a very complex phenomenon and tracing its drivers has been the focus of work of many scholars and institutions. The ecological, socio-economic and institutional diversity

of the region means that deforestation has several different direct and indirect causes depending on geographical location. In this section, we will provide an overview of the most relevant causes of deforestation in the Amazon, focusing on the ones that are more pervasive in distinct regions of the forest.

Direct Causes

Pasture expansion is arguably the main cause of deforestation in the Amazon, being especially relevant in Brazil, the world's biggest beef exporter, where it occupies three-quarters of the deforested area (Boucher et al., 2011). The low land prices, opportunities for land-grabbing and governmental incentives have historically motivated the expansion of the activity in the region (Margulis, 2003). Cattle-raising in the Amazon region is extensive and shows a very low productivity. It is carried out by both large landowners and smallholders. The latter raise cattle not only for direct economic profits, but also as a means for savings and insurance (Salisbury and Schmink, 2007), as a product with stable and secure returns and high liquidity in cases of economic distress (Margulis, 2003; Piketty et al., 2005), as a cheap way of securing land claims (Nepstad et al., 2006) and even for political and cultural status (Bommel et al., 2010; Margulis, 2003).

Small-scale agriculture: the expansion of small-scale agriculture has been an important cause of deforestation in Peru (Sy et al., 2015) and Ecuador (Holland et al., 2014) and has in recent years increased its share in Brazilian deforestation¹ as well (Godar et al., 2014). Population growth and internal migration are common triggers for increases in deforestation from small-scale agriculture (Robiglio et al., 2014). In some cases, internal migration to forest areas is an autonomous phenomenon, such as in Peru, where poverty, land scarcity, unfavorable market access and high unemployment drive migration from Andean regions into the Amazon (Zelli et al., 2014). In other cases, it is driven by governmental policies, which provide incentives to settlement programs to areas with undesignated land status, as it has been the case in much of the Brazilian Amazon in past decades (Margulis, 2003). Small scale deforestation is concentrated along roads, and smallholders who predominantly carry out cattle-raising tend to have greater implications for land conversion than those who produce crops (Pacheco, 2009).

¹ Also because of the reduction in large-scale deforestation in Brazil.

Large-scale agriculture, especially of soybeans, has been long identified as another driver of deforestation in the Amazon, mostly in Brazil (Fearnside, 2001), but increasingly in other countries like Peru (Gutiérrez-Vélez et al., 2011). Increased international demand for the grain and agronomic developments that allowed soybeans to be produced in the normally poor Amazonian soils drove an exponential push in production within previously forested areas (Boucher et al., 2011). Soybean plantations not only expanded directly into the forest (Gibbs et al., 2015; Morton et al., 2006), but the expansion in production areas has helped to push pastures further north into the forest (Arima et al., 2011; Barona et al., 2010).

Although logging does not convert large continuous swathes of forest into other uses, it is considered a driver of forest degradation and may severely damage forests (Nepstad et al., 1999). They are also often the first step to complete deforestation, as it establishes minimal infrastructure, such as roads to follow up settlers, and may help to finance subsequent conversion into pasture or agricultural land (Boucher et al., 2011; Chomitz, 2007). Especially in some Peruvian regions, mining has also been a growing deforestation driver (Asner et al., 2013)

Indirect Causes²

The expansion of road networks is among the most relevant indirect drivers of deforestation in the Amazon (Barber et al., 2014). Even a quick look at satellite images of deforestation in the Amazon shows that areas along roads are major focal points of deforestation in the region. Road construction and improvement tend³ to increase deforestation as they generate increases in farm gate prices of outputs, lower prices of inputs and make in-migration more attractive (Chomitz, 2007).

² Some indirect causes are relevant but are outside of the scope of policy action from Amazonian governments (i.e. the alleged influence of increased soybean demand from China (Fearnside et al., 2012)). For that reason, they are not discussed in this section. Some other indirect causes, such as purposive, large scale government settlement programs in the Brazilian Amazon, have been important in previous decades but are not as common today (Rudel, 2007).

³ There are also exceptions to the effect of roads as drivers of deforestation. Margulis (2003, p. 27) points out that road construction will only be a driver of deforestation under certain conditions, as “increased productivity can lead to more or less deforestation depending on the price elasticity of demand”. Chomitz (2007, p. 68-69) argues that “In rural areas where tenure is strong and immigration is limited, better road access might allow residents to work in towns, or shift them from extensive production of subsistence crops to more intensive production of commercial crops. Deforestation might then fall as long as residents can and will exclude in-migrants”.

The provision of fiscal incentives, such credits from state funds and banks, has been a mechanism for encouraging the expansion of pastures in the region. The Brazilian government, for example, provides credits which are used for agricultural expansion at much lower rates than a producer would get at commercial banks (Arima et al., 2005; Pacheco, 2009), with one governmental fund, for example, providing R\$ 1,89 billion to cattle raising activities between 2003 and 2007 (Barreto et al., 2008). The land tenure structure in the Amazon is another indirect driver of deforestation in the region. Insecure and contested tenure is widespread in the region and “Deforestation is often a way to establish rights to land, a strategy that has been accepted and even promoted historically by governments throughout Latin America” (Duchelle et al., 2014a, p. 55).

3. Policy responses to deforestation

Deforestation, as shown above, has multiple drivers, and policy responses produce trade-offs, not only in the environmental sector but also with other policy objectives, increasing the complexity of the decision-making process even further. Therefore, it is important to present what the most commonly discussed options available to policy-makers are.

Policy options to combat deforestation can be divided into three broad categories: disincentives, enabling measures and incentives (Börner and Vosti, 2013). Disincentives, also known as command-and-control policies, are the most commonly applied policies, historically (Serroa da Motta et al., 1996) as well as recently (Assunção et al., 2015). They target changes in behavior through regulations, bans, taxes, and restrictions, usually accompanied by fines and other legal action, including sometimes imprisonment, for enforcement (Börner and Vosti, 2013).

Enabling measures are those that contribute to establishing conditions that improve environmental management, without changing the underlying incentives to resource users (Börner and Vosti, 2013). Examples of enabling measures are land tenure reforms, the introduction of environmentally friendly technologies, environmental education and credit provisions for sustainable activities. Well-implemented enabling measures help to remove constraints that may preclude environmentally desirable behavior and increases options available to resource users (Börner and Vosti, 2013).

Disincentive policies and enabling measures have, however, been perceived as insufficient to halt deforestation pressures in the Amazon. Reasons for that perception are, among others, the possible lack of will and resources from governments to protect the environment, the existence of ‘hard-to-detect’ issues (Dietz et al., 2003) and costly and ultimately ineffective enforcement, with low levels of sanctioning applied (Brito and Barreto, 2006). That perception, however, has recently been questioned by studies in Brazil that show the enforcement of command-and-control policies as driving part of the deforestation reductions experienced in Brazil in the last years (Assunção et al., 2015; Börner et al., 2015). The creation and implementation of enabling measures have also faced serious challenges, i.e. because they are often the responsibility of non-environmental governmental sectors, or because powerful economic actors may benefit from enabling structures that are not conducive to sustainable behavior.

4. When sticks do not work: incentive-based policies

Due to the perceived shortcomings of disincentives, the difficulties in implementing enabling measures and to “a growing receptivity among policy makers globally to use private incentives to achieve social-policy objectives” (Ferraro, 2011, p. 1134) in other sectors, both scholars and practitioners have increasingly looked into forest conservation incentives to achieve conservation goals. Incentive-based policies aim to encourage conservation through changing the behavior in ways that contribute to forest conservation. Examples of incentives are subsidies, tax exemptions, certification and direct payments (Börner and Vosti, 2013).

The most common incentive-based conservation option since the 1990s was to provide inputs intended to promote alternative land-uses that generate income for forest-dwellers, who would then refrain from profiting from environmentally destructive activities (Ferraro and Simpson, 2002). Generally named integrated conservation and development programs (ICDPs), this indirect approach to conservation was widely adopted but had its effectiveness in conserving forests soon questioned both on theoretical and empirical grounds⁴.

In opposition to command-and-control and to indirect incentives, scholars (e.g. Ferraro, 2001; Ferraro and Simpson, 2002; Simpson and Sedjo, 1996) have increasingly advocated for the

⁴ More on the criticism to ICDPs in chapter II, section 2.5.

introduction or expansion of direct measures for conservation, such as “land purchases, leases, and easements, as well as financial incentives such as performance payments and tax relief” (Ferraro and Kiss, 2002, p. 1718). The early literature highlighted theoretical advantages of direct payments over command-and-control and indirect incentive options, seeing them as “likely to be (a) institutionally simpler; (b) more cost-effective in delivering benefits to buyers; (c) more effective in generating economic growth among suppliers by improving cash flow, diversifying income sources, and reducing income variance” (Pattanayak et al., 2010, p. 256).

Direct financial incentives linked to the performance-based provision and conservation of environmental services, commonly called payments for environmental services (PES) have dominated the scholarly and policy debate on direct incentives for forest conservation in the past decade. Due to the preponderant position of PES in the debate on incentive-based policies, the next chapter will be fully dedicated to providing a deeper discussion on its rationale, definition, the main policy recommendations to arise from the PES literature, and some of the criticism it has received.

The next section will present what the dissertation is looking at, what it aims to achieve and why it is relevant to the debate on incentive-based forest conservation in the Amazon.

5. Study objects, objectives, and justification

This dissertation will analyze the political processes that led to the adoption and design of three government-led, incentive-based forest conservation programs in Latin America, namely the *Programa Nacional de Conservación de Bosques para la Mitigación del Cambio Climático* (National Program of Forest Conservation for the Mitigation of Climate Change – Programa Bosques) in Peru, the *Socio Bosque* program, in Ecuador, and the *Sistema de Incentivo a Serviços Ambientais* (System of Incentive to Environmental Services – SISA), in the state of Acre, Brazil. It is relevant to explain the choice of this research object, and, especially the terms ‘*political processes*’, ‘*adoption and design*’, ‘*government-led*’, and why we chose those three specific programs.

Political processes: As we will describe in detail in the next chapter, much of the research done on PES has focused on the technical aspects of designing payments, focusing on providing recommendations on how to make them cost-efficient in conservation terms. Those

recommendations, however, often downplay the fact that policy-making is rarely a purely technocratic process, in which policies would originate outside of the politico-institutional system. PES programs, especially large-scale, government-led ones are, however, the result of interactions that involve a larger spectrum of concerns, rather than simply technically correct guidelines. Studies on these political processes that shape how PES programs are ultimately adopted and designed are rare in the research landscape, as we will show in the following chapter.

There is, however, an increased recognition that political processes matter. As a report by the Inter-American Development Bank (IDB) put it, “whatever the policy area, there is no single formula applicable to all circumstances; policies’ effectiveness depends on the manner in which they are discussed, approved, and implemented. [...] the processes of discussing, negotiating, approving, and implementing policies may be at least as important as the specific content of the policies themselves” (IDB, 2006, p. 3). Understanding the processes of policy-making helps to capture how they generate different provisions, and ultimately outcomes.

Adoption and design: Policies have been traditionally seen as a cycle comprised of separable stages or phases (Jann and Wegrich, 2007). Two of the initial parts of that cycle, agenda-setting and policy design (or policy formulation), are commonly assumed by the PES literature as being largely based on technical assessments. These stages, however, tend to be more complex, encompassing a wide spectrum of forces leading to policy definition. Taking into consideration the importance of understanding policy-making processes, the objective of this dissertation is to analyze *how those policies were introduced into selected governments’ agendas and why specific design features were chosen*. Insights from governmental agenda-setting theories and from policy instrument design theories will serve as the bases for the analytical framework to be used in the analysis.

Government-led: PES programs can be theoretically carried out by a wide range of actors, from individuals, through NGOs and private companies, to governments. To date, governments have been the driving force behind the largest PES programs, both geographically and financially, despite not leading the numerical amount of schemes. Arguably, due to the scale of governmental programs and to the possibilities for integration with other sectoral policies, governments are at the forefront in tapping into PES’ potential as a tool for deforestation

reduction. Part of the PES literature, however, states that government PES are less likely to be efficient than private schemes (Wunder et al., 2008).

One of the reasons singled out for that inefficiency is the existence of “major political-economy obstacles” (Wunder, 2005, p. 11), a “need to accommodate political pressures” (Pattanayak et al., 2010, p. 260), and “a variety of political pressures” (Engel et al., 2008, p. 666). No study, however, has systematically analyzed what those obstacles and pressures are why they occur. Very few examples are found in the literature of research on the political process of PES schemes from a policy theory perspective (Hrabanski et al., 2013; Le Coq et al., 2015)

Case studies: After recognizing the importance of researching the political processes of PES programs, it was important to define which cases would be the focus of the dissertation. Many such initiatives are currently being developed in the Amazon region, but not all of them have, at the same time, the consolidated organizational structure, the geographic and demographic scale, the degree of government involvement, and the high profile with scholars and policy makers as the selected projects. Analyzing three cases allows for the detailed examination of diverse contexts, providing a denser understanding of different decision making processes on similar policies. We chose the Amazon region because of its relevance for biodiversity, carbon storage, and regional climate regulation, because of the increased relevance of incentive-based policies for the region’s governments, and because of the researcher’s own experience with work and research on the region. Some other cases that also present those characteristics (e.g. the Bolsa Floresta program in the Brazilian state of Amazonas) have already been the focus of other studies, and the ones here presented remain largely under-researched. Based on those factors, the dissertation will focus on Programa Bosques in Peru, the Socio Bosque program, in Ecuador, and SISA, in the state of Acre, Brazil. We provide a thorough description of the programs in Chapter V.

6. Structure of the Dissertation

The remainder of this dissertation is organized as follows. Chapter II provides a literature review on PES, focusing on its rationale and definition and, especially, on the recommendations for cost-efficient schemes provided by the ecological economics literature. It also discusses some of the alternative views of PES arising from other intellectual approaches and some of the criticism faced by PES.

Chapter III presents the theoretical framework used in the analysis. The chapter initially reviews the unique features of the environment as policy domain. Then, it proceeds to present the theoretical framework used for analyzing cases, based on a combination of theories and frameworks present in the public policy literature. The chapter also presents the guiding hypotheses and research questions that motivated the research. Chapter IV describes the methodology used for the analysis, explaining how we collected and analyzed the data.

Chapter V thoroughly describes the programs' characteristics, institutional structures, and dynamics, as understanding how the programs are structured and how they operate is vital for the analysis here intended. Chapter VI describes and analyses the processes which lead to the adoption of the programs. It traces back the motivations, interests, and relations of the actors and institutions involved in the decisions that lead the governments to engage in incentive-based conservation programs. Chapter VII describes and analyses the design process of the programs. It deals with the specific decisions related to the programs' main design features, focused on the ones that have featured more prominently in the PES literature, as reviewed in Chapter II, as well as some features that are relevant for the specific programs. We concentrate our attention on how the programs' provisions diverge or not from the policy recommendations present in the literature.

Chapter VIII concludes the dissertation, drawing from the analyses performed in the previous chapters, generating insights on the political processes of PES programs and providing policy-relevant conclusions aimed at increasing the visibility of political aspects in PES research and practice.

II. Overview of the science-based policy recommendations for cost-efficient PES

This chapter will focus on payments for environmental services, explaining its main rationale, its most commonly cited definition and, centrally, discussing the main policy recommendations that arose from the literature. We do not aim to provide a full literature review on PES but to explain the main components of a cost-efficient PES scheme in accordance with the environmental economics view of PES. Another large branch of the literature on PES draws on other social sciences, such as anthropology, sociology, psychology and political science (Wunder, 2007) and focuses on issues other than the cost-efficiency of schemes. We provide a brief description of the main themes dealt with by this branch of the literature at the end of the chapter.

It is relevant to justify the selection of the environmental economics literature as the school of thought on which we base most of the chapter's discussion. The first reason is chronological. The political processes discussed in this dissertation have all occurred between 2007 and 2010 (see the timeline in chapter VII, section 3). At the time, most of the literature on PES focused on the environmental economics conceptualization, and the critiques were not yet widely published. Since the core objective of the dissertation is to understand how academic recommendations for PES have or have not been adopted by the programs, it is logical that the focus should be on the rationale that was more widely publicized at the time of the projects' adoption and design. The second reason is that much of the economics-based literature provides specific design recommendations for PES, while the other branch builds around, complements, and criticizes the economics-based literature, meaning that the earlier works remain the core to the understanding of PES. In the words of a PES critic, "the 'pure' market mechanism remains the ideal type amongst the primary promoters and funders of PES in the global south: multilateral lending institutions and multinational environmental organizations." (Shapiro-Garza, 2013, p. 6), which exemplifies the fact that the economics-based PES rationale remains the most policy relevant.

It is also worth noting that, due to the topic of this dissertation and because "payments for the conservation of standing forests are the most frequent of such programs in developing countries" (Alix-Garcia et al., 2008), this chapter refers mostly to forest conservation PES, although some of the works cited deal with PES in general or with other sectors, such as watersheds and biodiversity.

1. Payments for Environmental Services: rationale and definition

The current concept of environmental⁵ services (ES) originated in the 1970s and was slowly but steadily adopted as a tool for several authors to stress societal dependence on natural ecosystems and biodiversity. It found its way into the policy arena at the end of the 1990s and beginning of the 2000s, gaining a major push with the publication of the influential Millennium Ecosystem Assessment (Gómez-Baggethun et al., 2010). Concomitantly, a multitude of initiatives to put the concept of ES into policy practice, also through direct economic incentives for their provision and conservation, were being attempted. In a 2002 publication, Landell-Mills and Porras (2002) had already identified and analyzed “287 cases of emerging markets for four forest environmental services, including carbon sequestration, biodiversity conservation, watershed protection and landscape beauty” (p. 2).

Those many initiatives shared the idea of providing direct incentives to ensure the provision or conservation of ES but were variedly defined as “payments”, “markets”, “rewards”, “compensations” for “environmental” or “ecosystem” services. Despite the different implications of each wording (see Wunder (2005, p. 5) for a discussion), the one that with time became the most widely used and debated is payments for environmental services, which will also be the one used throughout this dissertation.

Building upon the accumulating experience of early PES programs and the growing interest of practitioners on the potential of PES, scholars have systematized their understanding of what a PES scheme is and how it should work. The most influential conceptual works on PES stemmed from the field of environmental economics and concentrated on the cost-efficiency of PES schemes.

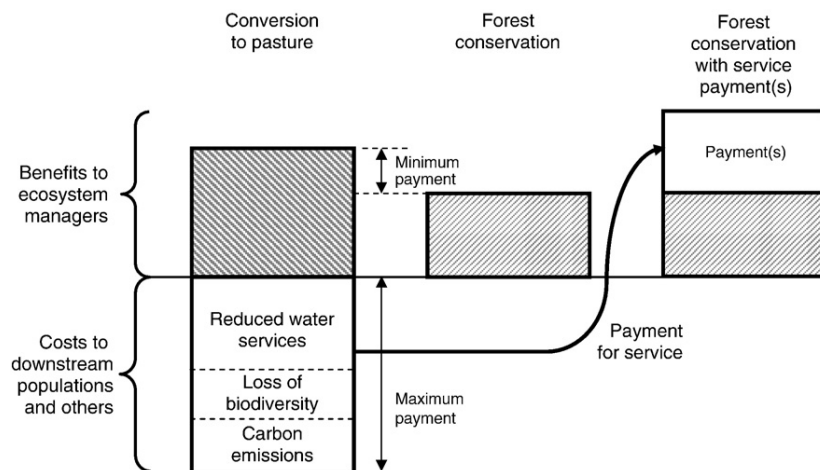
1.1 - Rationale

Engel et al. (2008) provide a succinct explanation of the basic rationale behind PES schemes aimed at maximizing conservation cost efficiency, illustrated in Figure 1 below. Any ecosystem manager or land user receives an amount of benefits from the ecosystem services provided by forests. Those benefits, however, tend to be smaller than the ones they could

⁵ Also sometimes named ecological, ecosystem, or nature's services.

receive from alternative land uses, commonly agriculture and cattle raising. Managers would, therefore, be better off by converting those forest lands into croplands or pastures. Deforestation, however, produces negative externalities to other users, both at local and global levels. Paying ecosystem managers to conserve their forests would thus make conservation more attractive, as the forgone benefits of conservation would be covered by the payments. To be efficient, those payments should, at least, amount to the difference between the potential benefits of land-use changes and the benefits already accrued by conservation and, at most, the costs of the externalities faced by the other actors.

Figure 1 - The basic rationale of PES



Source: Engel et al. (2008, p.665)

The key, overarching aim of a cost-efficient PES program is to make sure that the scheme produces what the literature refers to as *additionality*. Additionality in PES means, in sum, “the difference in service provision between the with-PES scenario and the without-PES baseline” (Wunder, 2007b, p. 51). In other words, an efficient PES scheme is one that generates environmental benefits that would not occur if the scheme was not in place. As a clear example, a scheme that occurs in an area with zero deforestation risk would generate no additionality, as deforestation will not occur anyway, with or without the program. All the design recommendations discussed in the following section, thus, converge towards the need for a PES scheme to be additional.

1.2 - Definition

The systematization effort to understand what constitutes efficient PES has also generated a widely⁶ adopted definition of PES. Wunder (2005) defined PES as “a voluntary transaction where a well-defined ES (or a land-use likely to secure that service) is being ‘bought’ by a (minimum one) ES buyer from a (minimum one) ES provider if and only if the ES provider secures ES provision (conditionality)” (p. 3). Wunder’s definition, despite being admittedly narrow, in the sense that most initiatives implemented at the time the definition was devised did not (and still do not) comply with it, has set the tone for much of the debate on the cost-efficient design of PES (Goldman-Benner et al., 2012, p. 55) and served as the starting point of other attempts at re-conceptualizing PES, including Wunder’s own, which we will present at the end of this chapter.

2. Specific recommendations for cost-efficient PES

The efforts of those scholars did not stop at providing a general rationale for the advantages of PES or at a generally accepted definition of PES. They also produced a relevant body of work on how PES projects should be designed to be cost-effective in generating environmental additionality. Several issues related to the design of PES must be addressed to ensure that they reach their intended environmental objectives in a cost-effective manner. The following subsections describe those issues and review the main recommendations provided in the literature. We summarize the discussion in Table 1 below.

This review does not address all issues covered in the literature. Some of the subjects are not centrally relevant to the cases covered here and were left aside to maintain the review more closely connected to the objectives of the dissertation. Among the issues not covered is the discussion of who are the most efficient buyers of ES (see Engel et al., 2008), left out because in all our cases the buyers are governments. Auctions and reverse auctions were also recommended as a way to increase the efficiency of PES, as they help reducing information asymmetries by revealing private willingness-to-accept and opportunity costs (Ferraro, 2008). We do not discuss auctions because they have not been widely applied in Latin America and this research had the assumption that they were not discussed as a possible approach to the cases researched.

⁶ The CIFOR working paper that initially presented the definition (Wunder, 2005) , has been cited, as of February 2016, 1405 times, according to Google Scholar.

The last caveat is that the categorization of issues proposed is unavoidably somewhat artificial since many of the recommendations will clearly affect more than one of the PES issues cited. This is, however, not problematic for our purposes because most of the literature has also discussed design recommendations using the terminologies and categorizations used here, as they facilitate a clearer understanding of PES design elements.

Table 1 – Summary of the main recommendations for the design of cost-efficient PES

Issue	Main recommendations
Conditionality	Payments should only be made if the targeted ecosystem service (or related land use) is actually being provided.
Baselines	Constructing explicit baselines is required to understand pre-intervention conditions and behaviors and to evaluate how a PES scheme will or will not provide additional ES or desired land use, aiming to ensure that program resources will be additional.
Monitoring	Monitoring is required to understand if the PES scheme is actually providing additional ES and ensuring the desired land uses, and also to gauge impacts in all program aspects.
Sanctioning	Schemes should establish sanctioning mechanisms, such as payment suspensions or cancellations, to strengthen compliance by program participants.
Land tenure	Potential PES beneficiaries must have the, at least <i>de facto</i> , ‘right to exclude’, or the right to not allow external agents to occupy their lands.
Spatial targeting	Payments should be spatially differentiated. Schemes should target areas with high environmental service provision, high risks of ES loss, and low (opportunity, transaction, and protection) costs.
Recipients of payments	Recipients should be those who pose a high deforestation threat, considering they have positive but numerically small (relative to the financing available) opportunity costs.
Payment structure and amounts	Payments should, at a minimum, cover the opportunity costs of scheme participants, or provide the minimum amounts of participants’ are willing to accept.
ICDP-like components	Direct payments tend to be more cost-efficient than ICDPs because they are based on conditionalities, on less dubious assumptions, are less costly and administratively simpler. ICDP-like activities can be improved by adding conditionalities to its design.
Leakage and Permanence	Increase the scale of programs, track deforestation nationally or regionally instead of using a project based accounting system to mitigate leakage. Temporary crediting, favoring perpetual contracts over time-specific ones to foster permanence.
Poverty reduction	PES schemes should not be developed primarily as a tool for poverty reduction, which should only be a subsidiary objective. Poorer landowners are often not the most efficient providers of ES.

2.1 - Conditionalities, baselines, monitoring and sanctioning

Conditionality is arguably the most fundamental characteristic of a PES program, the one that distinguishes them from more traditional subsidy programs (Wunder et al., 2008). It means that a payment should only be made if the targeted ecosystem service (or related land use) is actually

being provided. Conditionality is “the most innovative feature of PES vis-à-vis traditional conservation tools” (Wunder, 2005, p. iv) because instruments like ICDPs consist of upfront payments or previously scheduled payments, not conditional on the actual achievement of environmental objectives.

For conditionality to be effective, it is necessary that PES initiatives dispose of effective monitoring systems (Pattanayak et al., 2010; Wunder, 2005). Working monitoring systems are required to understand if the PES scheme is actually providing additional ES and ensuring the desired land uses, and also to gauge impacts in all program aspects, including equity issues. Monitoring activities are necessary but not sufficient to ensure compliance. Schemes also require appropriate enforcement capacities (provided by the scheme itself or by broader governmental institutions) to ensure program efficiency (Honey-Rosés et al., 2009; Wunder, 2006; Wunder, 2007). Together with enforcement schemes, sanctioning mechanisms to ensure compliance with contracts by participants, such as the temporary or permanent suspension of payments, are also important.

One of the bases for the construction effective monitoring (and ultimately sanctioning) schemes is the estimation of what would happen without the existence of the program (Wunder, 2005) so that impacts on effectiveness and equity can be verified (Wunder, 2007). To achieve that, PES schemes must construct explicit baselines. Baselines “measure pre-intervention conditions and behaviors, and thus control for initial conditions that may affect measures of program effectiveness” (Ferraro and Pattanayak, 2006, p. 0484) and are required to understand and evaluate how a PES scheme will or will not provide additional ES or desired land use. They help to ensure that program resources will not be used for goals that would be achieved anyway without intervention (Wunder, 2005). Variations in the setting of the baselines have a big importance for the evaluation of the environmental impacts of PES (Wunder, 2007) and may also circumvent potential sources of inefficiency (e.g. the expansion of environmentally destructive activities prior to the program to obtain higher payments later on, avoidable by setting a baseline from a period prior to the design of the program (Engel et al., 2008)).

2.2 - Land Tenure

The existence of land- and resource-use decision rights has been identified as a core prerequisite for direct payments for forest conservation (Simpson and Sedjo, 1996; Wunder,

2005). Most importantly, potential PES beneficiaries must have the ‘right to exclude’, or the right to not allow external agents to occupy their lands (Wunder, 2005). Those rights do not necessarily have to be de jure, since sometimes informal land claims may also guarantee access control and tenure recognition (Wunder, 2007). In addition, sometimes legal issues hinder the implementation of PES programs in areas where inhabitants do not have secure land rights.

2.3 - Spatial targeting and recipients of payments

PES cannot be considered “as a silver bullet that can address any environmental problem” (Engel et al., 2008, p. 665) and its conservation-efficiency ranking at a specific context, as compared to other alternatives, may be highly variable (Wätzold and Dreschler, 2005; Wunder, 2005). Since funds for PES schemes are not unlimited, it is crucial to carefully determine where interventions will take place and which actors will participate in them.

Regarding the spatial selection, it would be intuitive to think that resources should be targeted to areas with high ES provision potential. Measuring or even estimating ES, however, can be an extremely complex task, marred with uncertainties (Costanza et al., 2014; Mitchell et al., 2013), and in some cases, as in watershed programs, it is “difficult to demonstrate service provision because the underlying biophysical linkages are complex and remain largely unexplored” (Pattanayak et al., 2010, p.260)⁷. Another recommendation present in the literature is that PES targeting should focus on deforestation risk. PES schemes should estimate the areas where future deforestation is a legitimate threat and use the scheme’s resources for the conservation of those areas, thus increasing additionality and financial efficiency (Wünscher et al., 2008). Areas with low deforestation risk may not be the most suitable for PES schemes since “it is a waste of money to pay for amenities that are not at risk of being lost” (Alix-Garcia et al., 2008, p.376), thus generating little or no additionality.

Geographical and ecological criteria are not the only ones relevant for targeting. Resources for the conservation programs are often scarce. Therefore, targeting crucially involves selecting which payment recipients will be the most cost-efficient providers of ES. The key concept recommended to guide the efficient targeting of participants in PES schemes is opportunity

⁷ In other cases, however, like in “carbon sequestration projects, the link between land use (growing trees) and services (sequestering carbon) is generally well established and easily monitored.” (Pattanayak et al., 2010, p. 260)

cost (Chen et al., 2010; Wünscher et al., 2008). Actors with high opportunity costs for conservation⁸ (i.e. highly capitalized farmers able to efficiently produce valuable crops) will require very high payments, which will probably exceed potential conservation funding and potentially the economic value of the ES provided (Alix-Garcia et al., 2008; Wunder, 2005; Wünscher et al., 2008). PES interventions should also, and crucially, avoid the enrolment of landowners who would have conserved forests in the absence of payments (Persson and Alpízar, 2013; Wunder, 2007). PES, therefore, “can really make a difference in the intermediate range of positive but numerically small opportunity costs (e.g., on degraded pastures, marginal croplands, hillside forests in slow-moving agricultural frontiers)” (Wunder, 2007, p. 56), and should be paid to “a critical mass of agents that both bear some current or projected conservation opportunity costs and have credible, site-specific claims” (Wunder, 2005).

For that reason, payments should, from a cost-efficiency perspective, be differentiated according to the criteria above, instead of fixed or area-based. Paying according to opportunity costs also recognizes differences in ES costs provision, making its use as an equitable way of distributing payments (Wunder, 2007). Part of the literature, however, recognizes the challenges involved in payment differentiation, including that “the administrative costs of such differentiation may be significant, and objections based on equity or legal concerns may cause political problems in implementing heterogeneous payments” (Wätzold and Dreschler, 2005, p.74). Indeed, spatial targeting is more common in private than in public PES schemes as governments are usually reluctant to differentiate participant access throughout space (Wunder, 2008b, p. 283).

2.4 - Payment amounts

Closely related to the discussion on targeting is the definition of how much participants should receive in a PES scheme. Here again, opportunity cost is the main concept guiding the discussion. Within the range of actors to whom the participation in PES schemes is cost-efficient, one may still find large variations in opportunity costs. Therefore, to be efficient, payments should be at least equal to the opportunity costs of activities that could be

⁸ Additionally, schemes should also take into consideration transaction and protection costs for the actors involved (Wünscher et al., 2008).

alternatively performed instead of forest conservation⁹, otherwise participants would not be willing to change their behavior (Engel et al., 2008). Calculating opportunity costs can be done, i.e., by estimating forgone profits from alternative activities, the amount of payment participants are willing to accept, and the amount participants expect to obtain if their land was rented out (Kosoy et al., 2007).

2.5 - Efficiency in comparison to ICDP-like programs

PES have been conceived as “alternatives to the more indirect pro-poor investments for transforming livelihoods such as ICDPs” (Lambin et al., 2014). ICDPs, and similar interventions such as ‘gestion de terroirs’ and ‘community-based natural resource management (Ferraro and Simpson, 2002), aim at promoting conservation by providing “alternative sources of products, income, or social benefits (schools, wells, clinics, etc.) as a means of encouraging communities to cooperate” (Ferraro and Kiss, 2002, p. 1718). Those initiatives have been significantly widespread since the 1990s, but have shown a mixed track record, at best, in terms of achieving their proposed conservation objectives (Ferraro and Kiss, 2002; Simpson and Sedjo, 1996; Wells et al., 1999). They are set from a questionable intention to link conservation and poverty reduction agenda (Wunder, 2005), tend to incur high costs (Weber et al., 2011), very high administrative intensity (Ferraro, 2001), “complex implementation needs, and [...] lack of conformity with the temporal and spatial dimensions of ecosystem conservation objectives” (Ferraro and Simpson, 2002, p. 340).

In face of those shortcomings, the provision of direct payments has been suggested as a more cost-efficient way to achieve conservation objectives. Direct payments are administratively simpler (as practitioners have fewer design tasks to perform), less costly (as they do not require, for example, paying a large staff to provide training and following up project activities), avoid ICDPs’ questionable ‘less poverty, therefore less deforestation’ assumptions and, crucially, compensate behavior conditionally to the objectives set (Engel et al., 2008; Ferraro, 2001; Ferraro and Kiss, 2002; Wunder, 2005). That is not to say that the ‘PES-positive’ literature sees no place for ICDP-like activities, only that they can be approached in more direct forms, especially adapting conditionalities to its design (Wunder, 2005).

⁹ In addition, the payment “must be less than the value of the benefit to ES users (or users would not be willing to pay for it)” (Engel et al., 2008, p. 668)

2.6 - Leakage and Permanence

The existence of a PES scheme might be highly effective in the intervention area, but relocate land uses that are detrimental to ES to a different area where no intervention is present, causing the so-called leakage (Engel et al., 2008; Wunder, 2007). The cessation of payments may cause detrimental land uses to resume, meaning that the ES provision lacks permanence¹⁰. Reducing leakage or its effects (e.g. increasing the scale of programs (Wunder, 2008a), tracking deforestation nationally or regionally instead of using a project based accounting system (Alix-Garcia et al., 2012)) and fostering permanence (e.g. by temporary crediting (Dutschke and Angelsen, 2008) and favoring perpetual contracts over time-specific renewable ones (Wunder and Albán, 2008)) are also relevant issues when considering the design of PES schemes.

2.7 - Equity (poverty reduction and welfare)

Likely due to reported correlations between forests and high poverty rates (Sunderlin et al., 2007), PES has been seen as a potential tool to both reduce deforestation and reduce poverty (Rodriguez et al., 2011). The literature on PES, however, has stressed that the rationale of PES was not (and PES schemes should not be) developed primarily as poverty reduction tools¹¹ (Engel et al., 2008; Pagiola et al., 2005; Wunder, 2008b). In other words, “poverty alleviation is an important side objective, which can be pursued through timely interventions (targeting, transaction-cost reduction, pro-poor premiums and subsidies), but it should never become the primary objective.” (Wunder, 2005, p. 22)¹².

¹⁰ In theory, a private scheme, voluntary for both buyers and providers, would incur in no permanence problems unless external conditions change, since the scheme’s conditions are renegotiable and would, thus, always remain satisfactory to both sides. If conditions are not satisfactory, it would mean that the scheme is no longer socially efficient, and it would be desirable that it stops (Engel et al., 2008). In the cases here presented, however, financing is based on budgetary decisions from governments, and impermanence becomes a real risk.

¹¹ Although they recognize that it can be a subsidiary objective, as long as poverty reduction provisions are well thought out, local conditions are favorable and efficiency concerns are primarily contemplated (Engel et al., 2008; Pagiola et al., 2005)

¹² Potential effects of PES on poverty may occur “among program participants and, indirectly, nonparticipants in areas where PES programs are implemented” (Pagiola et al., 2005, p. 239). In this dissertation, the focus is placed on program participants and on the direct effects of PES, thus excluding potential indirect effects on food, labor and other local markets.

From an efficiency perspective, those who should receive payments are the ones who pose a credible (or at least credibly projected) threat to the provision of ES (Wunder, 2005; Wunder, 2007). For that reason, several researchers note that poor land users, who usually have small plots and commonly have no means to seriously threaten their environment, will many times not be the most efficient providers of ES (Engel et al., 2008; Pagiola et al., 2005; Wunder, 2005). Additionally, the transaction costs of a program that enrolls a multitude of smallholders will likely be much higher than one enrolling (usually better off) large land owners (Grieg-Gran et al., 2005). Therefore, programs that provide payments for poorer populations risk having higher costs and negligible environmental additionality.

Some authors, however, observe the existence of interdependencies between effectiveness and equity concerns (Pascual et al., 2010; Pascual et al., 2014), and that poverty reduction may be a necessary condition for ES provision (Greiner and Stanley, 2013). Likewise, negative equity outcomes, such as disrupted social relations and elite capture of benefits, may negatively affect program effectiveness (Pascual et al., 2014). PES programs may also strengthen land tenure security by mapping and demarcating lands and by demonstrating income generating activities in the areas and may improve community organization through both learning or training (Wunder, 2005).

Poverty reduction is, however, only a part of a much a broader debate about equity within the PES literature. Pascual et al. (2010) and McDermott et al. (2013) identify two main dimensions of the term equity in the PES debate: procedural justice, which refers to the participation in decision making, and distributive justice, which refers to the distribution of benefits and costs in PES schemes¹³.

Procedural justice is related to the political processes for resource allocation. It involves issues such as recognition, inclusion, representation, and participation in decision-making and strategic management decisions (Corbera et al., 2007; McDermott et al., 2013). As it deals with mostly non-economic considerations, it has been less prominent in the efficiency-oriented PES literature. Procedural justice is seen as neither a necessary nor a sufficient condition for

¹³ McDermott et al. (2013) identify a third dimension, contextual equity “which incorporates the pre-existing conditions that limit or facilitate people’s access to decision-making procedures, resources and, thereby, benefits” (p. 416). We will not address this dimension in our discussion, as the elements of contextual dimension are fundamentally external to any PES scheme, and, in the vast majority of cases, cannot be influenced by the institutions and individuals directly responsible for the design of PES schemes.

program success (Bixler et al., 2015; Cooke and Khotari, 2001)¹⁴. Nonetheless, participatory decision-making processes in PES programs has been a concern of practitioners involved in PES, especially from the civil society and international organizations (Daviet et al., 2011; UNECE, 2007).

Distributive justice represents the economic dimension of equity. The literature on distributive justice is vast, present in debates in i.e. philosophy, economics, law, and politics. McDermott et al. (2013), writing in the context of PES, identify six principles of distributive justice, related to different theoretical traditions. Utilitarianist thinkers see equity as the greatest good for greatest number. Libertarianism understands equity as equal rights and opportunities, while egalitarianism understands it as “equality in the distribution of benefits from a productive activity without regard for any preexisting inequities”. Modern welfare economics sees it as the “the maximisation of individual utilities, aggregated according to a ‘social welfare function’” (p. 418). The merit-based understanding of equity, which together with the one in welfare economics, underpins much of what the mainstream literature on PES has to say about equity, holds “that rewards should be proportional to individual productive contributions or sacrifices made (i.e. opportunity costs)” (p. 418). Finally, the need-based understanding of equity, a perspective shared by philosophers such as Rawls and Marx, see equity should take account of “different needs arising from the inherent disadvantage suffered by some groups” (p. 418).

Poverty reduction and welfare improvement relates to that final conceptualization of equity and is, therefore, only one of the aspects of the debate on the distributive justice dimension of equity. It is, however, avowedly the most salient one in the programs we have picked as case studies. The first article of the legal decree that creates Socio Bosque states that one of the program’s three objectives is to “contribute to the improvement of living conditions of inhabitants of rural settlements” (MAE, 2008, p. 2) and its preamble affirms that “the high poverty rates in rural areas in Ecuador induce deforestation as a survival strategy, [...] it is necessary to adopt measures that contribute to the improvement of the living conditions of its inhabitants” (p. 1). Similarly, one of the three main stated objectives of the Bosques Program in Peru is to “promote the development of sustainable forest-based productive systems, for the

¹⁴ Although “stakeholder participation at an early stage may decrease monitoring and enforcement costs later” (McCann et al., 2005, p. 533).

generation of income in favor of the poorest rural populations” (MINAM, 2010, p. 2). Finally, Acre’s SISA program states “combating poverty and raising the population’s living standards” as one of its objectives¹⁵ (Acre, 2010a, p. 6). More information on the programs’ objectives is provided in Chapter V. Additionally, some of the early, seminal texts that laid the groundwork for the following debate on PES prominently addressed the relations between PES and poverty alleviation (Asquith et al., 2002; Grieg-Gran et al., 2005; Landell-Mills and Porras, 2002; Pagiola et al., 2005; Wunder, 2005; Wunder, 2008b). For that reason, our discussion in the remainder of the dissertation will focus on the relation between PES and poverty reduction¹⁶.

3. Beside efficiency: complements and criticism of the economics-based work

Another branch of the PES literature focuses less on encountering the most efficient design aspects of PES and recommending specific courses of action for policy-makers. Part of that literature takes the economics-oriented literature as a starting point for their arguments on why broader conceptualizations and definitions of PES are required (the most commonly referred to alternative definitions being Muradian et al., 2010; Sommerville et al., 2009; Tacconi, 2012). The definitions proposed frame participants as more than economic actors (e.g. “social actors”, “providers” instead of “buyers and sellers”), phrase the relations between those actors in non-economic terms (“transfer of resources”) and, in the case of Muradian et al. (2010) define the objective of schemes beyond pure environmental aims (e.g. “social interest” instead of “ES provision”).

Apart from definitions, this branch of the literature emphasizes aspects of PES that they deem as overlooked by the environmental economics literature. Corbera et al. (2009), Muradian et al. (2010), van Hecken and Bastiaensen (2010), Vatn (2010), van Noordwijk and Leimona (2010) among others, place emphasis on the institutional settings in which PES take place and

¹⁵ SISA is the only of the programs that also presents another dimension of equity among its objectives, stating “fair and equitable distribution of the economic and social benefits arising from the sustainable development public policies” (Acre, 2010a, p. 7).

¹⁶ Even with this restricted approach, our focus on poverty will also not address the multiple dimensions of poverty identified in the vast literature on the issue. Most of the discussion on PES focuses on the income and consumption dimensions of poverty, and we will follow suit in understanding poverty from that perspective. Angelsen and Wunder (2003) provide a summary of the evolution of the debate on poverty, from the traditional, narrower focus on income, to the addition of more complex dimensions such as food security, education, health, empowerment, freedom of choice and enhanced identity.

the social relations in which they are embedded, looking at them as more than market transactions, requiring broader collective approaches other than individual decision-making.

The mainstream PES concepts are also criticized by authors who question the superiority of the efficiency-oriented PES rationale. Corbera et al. (2007) and Pascual et al. (2010) highlight interdependencies between efficiency and equity in PES schemes. Other critics affirm that an excessive focus on PES may undermine ‘old-style’ conservation policies that are appropriate in some situations (Redford and Adams, 2009)¹⁷. Some authors point out the potential of PES schemes for “crowding-out” intrinsic motivations to conserve forests, meaning that financial incentives could become the single reason for conservation, replacing pre-existing, non-utilitarian values (Fisher and Brown, 2014; Muradian et al., 2013; Rode et al., 2015).

Another common critique of the efficiency-oriented PES rationale that is especially relevant for this dissertation relates to procedural justice. The efficiency-oriented literature largely discusses three dimensions of participation in PES programs, namely eligibility, desire and ability to participate (Kosoy et al., 2008). Other authors focus on the importance of a participatory decision-making process as crucial to PES, especially relating to equity in benefit distribution (McDermott et al., 2013), awareness of program features and requirements (Krause et al., 2013) and risks of increased non-cooperation (Pascual et al., 2014).

Authors such as Kosoy and Corbera (2010), Lohmann (2010) and Norgaard (2010), more fundamentally, see an oversimplification of social, political and environmental relations in the environmental economics approach, and relate that to what they see as the commodification of ES. Also criticizing PES at a more fundamental level, some critics frame PES as an extension of the ‘neoliberal’ approach to public policies into forest conservation (McAfee and Shapiro, 2010; Milne and Adams, 2012), questioning what they see as the oversimplification of communities as single, homogenous entities, of land-use practices as market transactions, and of the real voluntary nature of conservation contracts. In a stronger wording, more radical authors denounce incentive-based policies for what they see as a neo-colonial mechanism to enclose lands and undermine forest-dependent communities (Cabello and Gilbertson, 2012).

4 - Current state: Wunder’s new definition, PES, and public policy

¹⁷ Although this point is also made by mainstream authors like Engel et al. (2008) and Wunder (2007).

In face of the complements and criticisms, and especially of the increasingly mature experiences on the ground, the debate how PES should be implemented is today much more complex than at the time of its first consolidation in the mid-2000s. Recognizing these developments, Wunder (2015) proposes a revision of his definition of PES. The new definition is relevant for this work, as it carries elements which are important conceptual bases for the work here developed.

Wunder redefines PES as “voluntary transactions between service users and service providers that are conditional on agreed rules of natural resource management for generating offsite services” (Wunder, 2015, p. 241). The new definition excludes terms such as buyers and sellers, thus de-emphasizing the market-like character of PES. We interpret this change in the direction of a stronger recognition that PES have developed in the past decade not as strict market-like transactions, indirectly recognizing the increased centrality and scale of governments in PES schemes worldwide. We also understand the use of “agreed rules of natural resource management” as a move towards a view of PES that incorporates more complex institutional relations than those of market-like transactions.

The definition maintains the focus on environmental efficiency of the initial definition (‘generating offsite services’) and on the core characteristics of PES that differentiate them from other policies (‘voluntary transactions [...] conditional on’). This is, here, also interpreted as showing the relevance of looking at efficiency-oriented recommendations for PES design, since PES’s main aim should still be generating additional ES provision through payments made on a conditional basis.

The conceptualization that underlies this dissertation, that PES can be understood and researched as governmental public policies, is thus fostered by this revisited definition. As this chapter briefly showed, this is one of the several angles from which we can study PES. The increased, and increasingly recognized, role of governments in PES ensures it is an important one. For that reason, we will now turn to exposing the dissertation’s conceptual framework, which recurs to elements of public policy theories to explain the adoption and design processes of the three selected PES programs.

III. A conceptual framework for the analysis of environmental policy adoption and design

This chapter presents the conceptual framework used in the dissertation. The first section of the chapter singles out the environment as a differentiated public policy domain. This distinction is important as a starting rationale for the selection and development of the analytical approach adopted by the dissertation. The second section describes the Multiple Streams Framework (MSF), a widely applied framework for the analysis of agenda-setting processes, which was chosen to guide the analysis of the adoption of the programs in the cases studied. The third section develops and explains the conceptual framework used for the analysis of design decisions in the cases. We combine insights from selected theories and frameworks used in public policy analysis, designed to fit the context of our case studies. Finally, we present the guiding hypotheses and research questions of the dissertation.

1. Environment as a public policy domain

Several policy theorists agree that most policymaking occurs within specialized policy domains (Sabatier and Weible, 2007). Environmental public policy-making is no different from other sectors in that sense. Environmental problems and the policies that try to address them, also like in other sectors, have a unique¹⁸ set of characteristics, which may yield specific policy-making dynamics. Some of those characteristics are described in the paragraphs below.

Carter (2007) identifies several characteristics that distinguish the environment as a policy problem. Some of those characteristics relate to the natural aspects of the problems. Many environmental resources are public goods and significant collective action problems may arise from efforts to protect them. Environmental problems are frequently transboundary, requiring concerted action from the international community. The complex and uncertain interdependence of environmental problems may also affect policy-making, since it is many times difficult to address individual problems in isolation, as shown by the classical example of installing catalytic converters in cars to reduce nitrogen oxide emissions ending up increasing fuel consumption and, consequently, carbon dioxide emissions (Carter, 2007). Many environmental problems are irreversible, such as the exhaustion of resources or the extinction

¹⁸ Not individually unique, but unique when taken as a set of issues.

of species, putting pressure on policy-makers for early preemptive action, since delays and mistakes may be impossible to correct.

Other characteristics of environmental issues are more closely related to their political and administrative unfolding. Temporal and spatial issues affect the perception of environmental problems. They are often ‘non-sensorial’, meaning that they are not always as easily visible as, for example, a faltering hospital or a school lacking teachers. Environmental problems, thus, often require scientific knowledge to be realized. While some issues, such as urban air and water pollution, are easily noticeable, others, such as massive biodiversity losses, ozone depletion, and climate change, only came to public attention after careful scientific scrutiny. In developing countries, it is especially challenging to communicate the gravity of some environmental issues (Martinez, 1999). The impact of environmental problems is often long-term, while remedial actions have to be taken in the short term, before their effects are fully felt, as the case with climate change. This characteristic has major political implications, as the long-term effects may constrain politicians from taking appropriate action, as they “tend to have short-term concerns – tomorrow’s papers, forthcoming opinion polls or the next election – and they know how difficult it is to persuade people to accept self-sacrifice today in order to protect those who are not yet born” (Carter, 2007, p. 179). The location of environmental problems may also complicate political action on them. While the pollution of urban sections of rivers is felt by large numbers of cities’ inhabitants, other problems, like most deforestation in the Amazon, occur outside densely populated areas, hence perceived as detached from the lives of many voters. Those characteristics make environmental problems especially hard to ‘market’ politically.

Most policy-making is currently done by specialized ministries, secretariats and sectors within governments and international organizations. Environmental issues are especially, and often negatively, affected by decisions made by other ministries, such as finance, agriculture, and transport. Those decisions tend to follow narrow sectoral objectives, and their environmental consequences are often ignored. For that reason, environmental agencies must often attempt to coordinate action with other ministries, and in some cases engage in intra-governmental conflicts with other ministries.

Public policy solutions to environmental problems also have a unique set of specific characteristics. They are often perceived as highly technical, with high levels of scientific

involvement and usually expensive. It is technically more challenging, for example, to reduce the harmfulness of chemical residues of industrial processes than to construct a major housing project for homeless populations. This does not mean that their implementation will be overall more difficult than in other sectors, since political and administrative barriers may potentially hinder public policy in virtually all areas. But environmental policies are perceived as being difficult due to their often technically and scientifically complicated nature.

Solutions to environmental problems have often resorted to regulatory interventions. In other sectors, such as welfare and infrastructure, policy interventions take the form of positive measures, such as public spending in benefits and works. Regulatory measures, often in the shape of disincentives, “are likely to provoke howls of outrage from businesses and trade unions about the dangers of reduced competitiveness or jobs lost, or from consumers who have to pay higher prices for cleaner or safer goods” (Carter, 2007, p. 180). Indeed, environmental policies are seen by many as a hindrance to capital formation activities, potentially competing with other policy goals, which many times have stronger political support.

In parts of the developed world, environmental issues have acquired a much more prominent status in political and electoral debates in the last decades. In some countries, like Germany, green parties have been able to gather enough votes to take part in governing coalitions and even head the executive in some provinces and cities. Internationally, the ozone layer, biodiversity and especially climate negotiations are increasingly higher in the agenda of heads of state¹⁹. These positive developments, however, have yet to follow suit in the internal politics of developing countries, where grassroots ecological movements abound, but where green parties and environmental agendas still fail to succeed electorally. Being a lower priority for politicians, however, will not always necessarily be negative for environmental policymaking. As stated by Rhodes and Marsh (1992), an issue being peripheral to a government’s program and electoral results, especially when the range of interests affected is limited, allows for its stakeholders to have a greater capacity to run its own affairs.

The uniqueness of environment as a policy sector not only creates challenges for policymaking but also to policy analysis. The following sections will focus on presenting analytical options

¹⁹ The opening of the UNFCCC COP 21 in Paris, on November 30th, 2015, was attended by over 150 heads of state and government, “the largest group of leaders ever to attend a UN event in a single day” (UNFCCC, 2015).

based on the large literature on public policy theory to make sense of policymaking processes in the forest conservation sector in Latin America. With the backdrop of section 1 of this chapter, sections 2 and 3 will carry out two tasks: 1) present the Multiple Streams Framework as the analytical tool for the adoption of the programs, and 2) present an analytical framework for the analysis of the design decisions in the cases, using a combination of elements from policy theories, explaining why those elements are especially relevant. The separation may appear artificial, since the processes of policy adoption and design have several overlaps, especially when the analysis focuses on tracing their driving forces. However, as the still common use of the policy cycle (Jann and Wegrich, 2007) as a way to understand policy processes shows, it makes analytical sense to parcel out the process, in order to provide a more clearly understandable explanation of the forces at play.

2. Analytical framework for program adoption: the Multiple Streams Framework

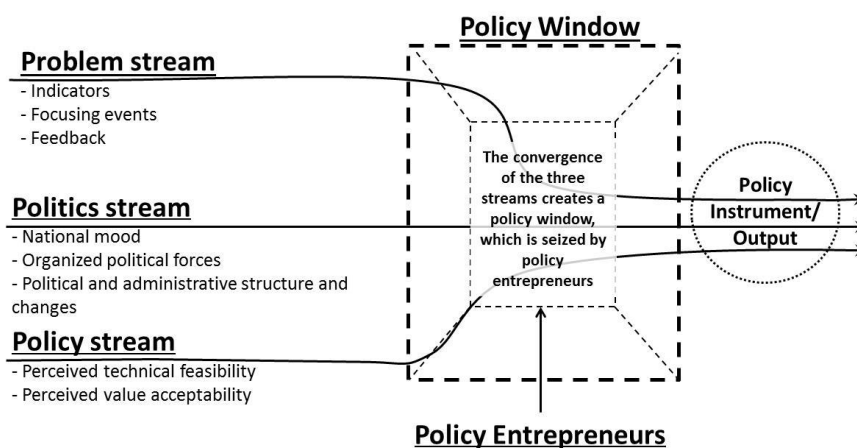
The Multiple Streams Framework (MSF) has been developed by Kingdon (1984) mainly as an analytical framework for understanding agenda setting, or why specific policies are adopted by governments instead of others, being commonly used to analyze the introduction of policies in governmental agendas (Brunner, 2008; Howlett, 1998; Le Coq et al., 2012). Essentially, the framework integrates “the interests, ideas, resources, and constraints of relevant actors” (Brunner, 2008, p. 501), and policy instruments are seen as an outcome of the interaction of three streams: problems, policy, and politics, which join from time to time, creating so-called policy windows, that can be seized by actors, or policy entrepreneurs, to push specific instruments towards the government’s agenda.

The *problem stream* “consists of various conditions that policy makers and citizens want addressed” (Zahariadis, 2007, p. 70). Problems are usually brought to the public attention through three main means: indicators and data; focusing events (such as disasters); and instances such as feedback from previous programs (Brunner, 2008; Zahariadis, 2007). The *politics stream* consists of three main elements: the national mood or public opinion, the actions of organized political forces (such as political parties and pressure groups) and changes of legislative representatives and executive personnel (Brunner, 2008; Zahariadis, 2007), including conflicting mandates and battles over turf between agencies (Kingdon, 1984). Finally, the *policy stream* is conceptualized as analogous to a “soup” of ideas floating around

that interact and combine receiving different amounts of attention due mainly to their value acceptability and technical feasibility (Zahariadis, 2007).

When the three streams join at some point in time, a policy window is created. Policy windows are situations in which a “problem is recognized, a solution is developed and available in the policy community, a political change makes the right time for policy change, and potential constraints are not severe” (Kingdon, 1984, p. 174). These conditions must not, however, all be met at the same time for a policy window to open. As stated by Kingdon (1984, p. 176), “basically a window opens because of change in the political stream (e.g., a change of administration, a shift in the partisan or ideological distribution of seats... or a shift in national mood); or it opens because a new problem captures the attention of governmental officials”. In addition, windows may open due to institutionalized instances, such as elections or budgetary cycles, or abruptly, by events that cause political attention to focus on an issue, such as disasters or crises (Howlett, 1998). The advocates that work to seize policy windows are called “policy entrepreneurs”, who “must be able to attach problems to their solutions and find politicians receptive to their ideas” (Zahariadis, 2007, p. 74). The main elements of the MSF are illustrated in Figure 1 and described in Table 2 below.

Figure 2 – Structure of the Multiple Streams Framework



Source: Adapted from Le Coq et al. (2012)

Table 2 - Elements of the Multiple Streams Framework

Element	Description
Problem stream	
Indicators	Factual description of the state of affairs, and its changes.
Focusing events	Crises, disasters, symbols or personal experiences of policy makers that call the attention to a problem.
Feedback from previous policies	The operation of past programs can bring attention to policies that are or not working well, or new problems that may have arisen as a consequence of a policy.
Politics stream	
National mood or public opinion	‘Climate in the country’ or changes in public opinion, common lines along which many people in a given jurisdiction think.
Organized political forces	Interest groups pressure, NGOs, lobbies, parties, etc.
Legislative and administrative turnover and jurisdictions	“Events within government itself”: administration changes, seat changes in parliament, creating opportunities to push some proposals and bury others; bureaucratic and political battles for policy turf.
Policy stream	
Technical feasibility	The capacity of the government to actually implement a given policy.
Value acceptability	‘Value’ refers to the ideological positions of policy-makers in regards to policy themes, such their views on the role and size of government.

Source: Kingdon (1984)

We selected the MSF because it contains several elements that are conducive to a better understanding of why incentive-based policies were adopted. It includes analytical categories that guide research for policy drivers outside and, crucially, inside the government’s structure, accounting for the relevance of ambiguous and uncertain processes within institutions. It also confers relevance to concrete external elements of policy problems, such as indicators and events, while also taking into consideration more abstract factors, such as the national mood and value acceptability. Finally, the model is simple enough to allow for a clear presentation of the analysis, while still not missing the most relevant determinants of policy adoption²⁰.

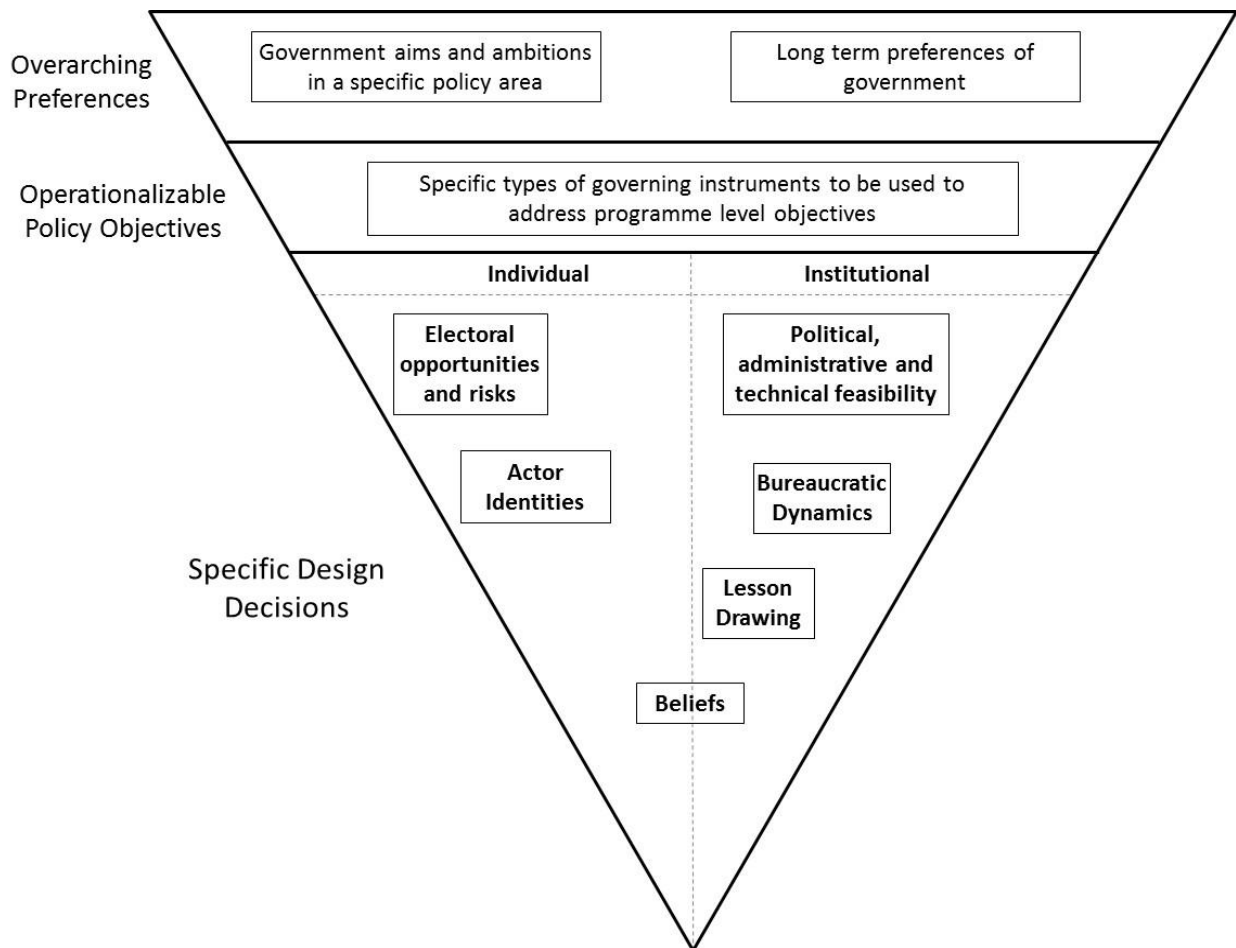
The MSF, however, aims at examining how problems are formed and how the attention of policy-makers is captured (Chow, 2014), and not for understanding the very specific details of policy design. It would be possible to analyze the design process using the MSF, but the understanding here is that the analysis could miss some relevant elements of the cases. For that reason, devising a synthetic framework, which combines elements of some of the different conceptual traditions, is the most appropriate way to move forward.

3. Conceptual framework for the analysis of program design

²⁰ An evaluation of the strengths and limitations of the MSF in relation to the specific analysis done in this dissertation will be provided in Chapter VIII, section 2.

Below, we develop a conceptual framework suitable for the analysis of the cases. The aim is not to create a synthetic theory, which tries to parsimoniously combine elements from multiple theories to “make general assumptions about the causal relationships between concepts” (Cairney, 2013, p. 2) of policy design. Our aim is, rather, to refer to different policy science theories to devise a *conceptual framework*, which will “identify relevant concepts and help organize analysis and theoretical comparison” (Cairney, 2013, p. 2) or, in Elinor Ostrom’s words on frameworks, “provide the most general list of variables that should be used to analyze [...] institutional arrangements.” (Ostrom, 2007, p. 26). Figure 3 provides a summary of the framework.

Figure 3 – Conceptual Framework



The framework aims at seeing policy design as more than a technical exercise of matching appropriate responses to given problems, but as a complex and sometimes ambiguous²¹ process. The theoretical literature on public policies is extremely vast and runs through a wide variety of ontological and epistemological approaches. An exhaustive review of that literature aimed at thoroughly and fully analyzing all the most useful theoretical approaches for this dissertation would yield an extensive work of its own. Merely rewriting descriptions of the theories, a task already, and more appropriately, performed in the several policy theory manuals available, would be of little use here. For that reason, we decided that it would be more fruitful to present the elements of the framework and synthetically explain their theoretical origins.

Its basic structure is adapted from Howlett (2009), who provides a framework to understand the design of policies in general, and applies it to environmental policies specifically. His framework sees public policy design as being the product of interactions and interdependencies in three levels of decision making. At an abstract level, we call ‘overarching preferences’ (top of the inverse pyramid, labelled ‘macro level’ by Howlett) the general statements of “government aims and ambitions in a specific policy area” and the “long term preferences of government in terms of organizational devices to be used in addressing policy aims” (p. 75). Howlett sees the existence of relatively long-term policy arrangements at the macro level, which he defines as governance modes. They are the general, relatively abstract aims and preferences that will reduce the number of specific choices to be made at the other levels. The author draws an analogy with the arts, comparing governance modes with artistic styles, such as classic or baroque. In more concrete, policy-related terms, the elements that will influence policies at this level are, for example, preferences for state-planned economic activities *vs.* free-market oriented economic policy, and for centralized control of major organized social actors *vs.* the promotion of autonomous networked collaborations.

At the ‘operationalizable policy objectives’ level (called by Howlett ‘meso level’), “the specific types of governing instruments to be used to address programme level objectives” (p. 75). Examples of the elements at this level are the choices of general policy instruments to address specific market or governance failures, such as mandatory participation laws to tackle

²¹ “Ambiguity is at the center of an alternative understanding of rationality and of institutional decision making. Ambiguity is a lack of clarity or consistency in interpretations of reality, causality, and intentionality. Ambiguous situations and purposes resist categorization and therefore systematic analysis. Ambiguous outcomes are fuzzy. In the ambiguous decision world, alternatives are hazy, objectives are contradictory” (Frederickson et al., 2012, p. 183).

freeriding, labeling for information asymmetries and personnel increases for ineffective law enforcement.

At the ‘specific design decisions’ level (called by Howlett ‘micro level’), the one that is of higher relevance for the analysis of design decisions performed in this dissertation, are the “specific, on-the-ground micro requirements to attain policy objectives [...] the settings of policy tools required to attain policy targets.” (p. 75). Choices at this level will define the specific details of how a policy instrument will be ultimately shaped, and for that reason, the design questions asked by this dissertation lay at this level. Examples of the criteria stated by Howlett as relevant at this level are political risks, constraints on state activity and degree of coerciveness.

A deeper discussion of changes at the overarching preferences level of the framework would shed light, for example, on long-term changes in governance trends. In this dissertation, however, we are analyzing policy processes that occurred in a relatively short time span. For that reason, the elements of the overarching preferences level (i. e. the increased emphasis on social policy in Ecuador), will be present in the analysis, but understood as a given policy context in which design decisions are made, not as an analytical object. Similarly, the operationalizable policy objectives level focuses on which policy instrument is adopted to tackle a specific problem, a task carried out in the adoption chapter (Chapter VI) of the dissertation. Elements of the operationalizable policy objectives level will be explained with the Multiple Streams Framework (see Chapter VI), but clearly will also be influential in specific design decisions. For that reason, the framework here exposed concentrates on further developing the specific design decisions level of Howlett’s framework, strengthening it with elements from other theories and frameworks. The analysis will, thus, not lose sight of elements at the other two levels and refer to them when required.

At the specific design decisions level, the framework departs from the elements of Howlett’s general framework for that level and presents analytical factors that we consider being the most relevant for the context of the cases in hand. It is important to point out that the factors presented below are by no means an exhaustive list of possible factors that influence policy making. Previous knowledge of the Latin American political and policy contexts, and of the three case studies, motivated the selection of these six factors as the ones which could more strongly and parsimoniously help informing the analysis.

The first factor taken into consideration are electoral opportunities and risks. This factor aggregates the idea that, in democratic systems, politicians will try to maximize power, ensuring that policies will be designed in ways to ensure the most votes possible in following elections. This element is one of the most important explanatory factors in the school of *public choice* theory. Public choice theory, also sometimes called rational policy analysis²² (Arts, 2012), applies assumptions and methods developed in economics to the study of politics, “viewing the actions of citizens, politicians, and public servants as analogous to the actions of self-interested producers and consumers” (Frederickson et al., 2012, p. 193), aiming to perform a type of "economic analysis of noneconomic social situations" (Emerson, 1976, p. 336, in Zafirovski, 2003, p. 42).

As in neoclassical economics, the basic unit of analysis is the individual, meaning that explanations of phenomena in terms of the actions of individuals are preferred to explanations based on social structures (Zafirovski, 2003). Those individuals are self-interested utility maximizers, who know their preferences and goals, can rank-order them and will perform choices that maximize their benefits and minimize their costs²³ (Frederickson et al., 2012). While in economics actors seek to maximize profits and rents, politicians will want to maximize power, by ensuring votes in the following elections²⁴, leading them to more favorably rank short-term interests rather than long-term consequences (Hindmoor, 2006). Bureaucrats, for their turn, will want to maximize their agencies' budgets, ensure career advancement or stability, or even actually pursue favored policies (Frederickson et al., 2012). As clearly stated in the words of an adherent to the approach, “as stressed by the traditional public-choice approach to economics, economic policy, including environmental policy, is determined by political and economic self-interest” (Aidt, 1998, p. 1)²⁵.

²² Here, the term public choice is used for economics-oriented approaches because, as stated by Frederickson et al. (2012, p. 193), “they are best known and most widely applied as rational or public choice.”

²³ Proponents of rational choice based approaches, however, understand that the utility-maximization assumption is not a description of human behavior, but rather “that it provides the assumption of purposeful behavior with greater precision, explanatory power, and simplicity” and defend it as a “deliberately simplifying assumption with an epistemological function to derive models of human behavior from a minimal set of axioms, laws or ideal typical concepts” (Zafirovski, 2003, p. 43).

²⁴ Public Choice theory deals mainly with liberal Western democracy, with periodic, democratic elections (Hindmoor, 2006).

²⁵ As stated by (Griggs, 2007, p. 173), however there are “divisions within rational choice theory itself over the boundaries to rationality and definitions of self-interest and its applicability to all areas of social inquiry”

Due to the shared assumptions with macroeconomics, research based on public choice theory benefits from the research methods developed in that discipline²⁶. It focuses the attention of research on the actors' immediate interests, which will many times be their primary motivation for action. Although not the single motivating factor, it will often be the single individual variable with the higher capacity to explain choices. Public choice (or rather, rational choice based approaches generally) has been the most commonly used approach to policy research, including on forest policies (Arts, 2012) and probably for that reason, it has been widely criticized (Hindmoor, 2006).

Criticism focuses on the narrow nature of its assumptions, especially regarding its conception of human nature. The self-interest assumption is seen as ignoring the complex motivations of individuals involved in policy making (Griggs, 2007; Hindmoor, 2006), like other “variables relating to participation in organizational decision-making, the amount and quality of employee feedback, and the degree to which the job is challenging all affect public-sector employee motivations” (Frederickson et al., 2012, p. 201). It has also been criticized for overlooking ambiguities and uncertainties of the policy process (Griggs, 2007), ignoring that political actors also pursue public and group interests, that collective identities and group solidarity are important to politics, and for overestimating market-like exchange relations in detriment to relations of authority (Udehn, 1996).

Agreeing with the criticism that self-interest is just part of what constitutes the complex individual characteristics of actors active in a policy process, who make decisions based on more than just electoral interests, the framework also takes into consideration what here is called actor identities. It refers to idiosyncratic characteristics of the actors involved in project design, like their educational backgrounds²⁷, the degree of commitment to service (Lipsky,

²⁶ Public choice theories have been widely applied for the study of environmental policies and several very often cited works are in line with the perspective, such as Baumol and Oates (1988), Hahn (1990), Keohane et al. (1998), Aidt (1998), Segerson and Miceli (1998) and Revesz (2001). Other policy models and analytical approaches, such as the instrument choice theory (Acemoglu and Robinson, 2001), cost-benefit analysis (Cole and Grossman, 2002) and smart regulation (Gunningham and Grabosky, 1998) are also based on rational choice approaches.

²⁷ “Perhaps more important than age or general socialization is the professional socialization received by members of an organization. Everything else being equal, we would expect individuals trained as lawyers, for example, to first think of using legal instruments (administered contracts, procedural guidelines, etc.) with which they are most familiar rather than other types of instruments [...]. Likewise, economists tend to think first of tax and expenditure instruments, or other incentive-dependent instruments such as franchises.” (Linder and Peters, 1989, p. 53).

2010) or personal relations. Those identities are both carried by the individuals from their lives outside of the organizations for which they work, but also shaped by the organizational identity into which they are socialized (Frederickson et al., 2012). This aspect is especially relevant in the Latin American context, where institutions are relatively weak in comparison to their counterparts in most developed nations (IDB, 2006; Levitsky and Murillo, 2009), conferring central importance to the individuality of actors. This factor also relates to the understanding that actors' behaviors are more than just rational and goal oriented, but also "associated with assumptions of rules, identities, situations and actions" (Frederickson et al., 2012, p. 181).

Shifting the focus from individual actors, the third factor, political, administrative, and technical feasibility, relates to the institutional context in which decisions are made. As stated by Webber (1986, p. 550), "[an] unfeasible policy proposal, no matter how technically sound, will seldom achieve that ['improvement of policy performance'] goal". Policy-makers are aware of the importance of a policy's political feasibility and will factor it in their design decisions as a guide to action, or at least as an excuse or an explanation for previous behavior (Galston, 2006). Policies also vary in terms of their administrative costs and the simplicity or difficulty of operational tasks that will have to be performed by bureaucrats, leading administrations to prefer policies that are less costly to design and run (Linder and Peters, 1989). In addition, most agencies, especially in low-priority sectors such as environment, have to carry out their tasks with limited resources and personnel and will tend to favor operationally simpler policies. This category is also linked to the relation between the technical requirements of a policy (e.g. costs, technology availability, and qualification of personnel) and the perceived ability of the government to be able to carry out that policy. In the words of MacRae and Wilde (1979, p. 219, in Webber, 1986, p. 548), technical feasibility "involves our capacity to design and produce devices that will perform the given tasks", differing from political feasibility, "which depends on the actions and interactions of human beings".

This factor relates to institutional constraints to the actions of policy actors, deriving, thus, from the concerns espoused by the *institutionalist* tradition of policy analysis. Institutional policy analysis places its focus on rules and norms. Political action would not be performed solely aiming at attaining the highest expected utility, but according to what is appropriated in a certain institutional setting (Arts, 2012). Emphasis is placed on the "institutional context in which political events occur and [...] the outcomes and effects they generate" (Schmidt, 2006, p. 98). Institutions serve as mediators of social behavior and, as put by North (1990, p. 3) in

the most commonly used definition of institutions “are the humanly devised constraints that shape human interaction”.

More specifically, institutional approaches²⁸ understand that actors are not decision-makers in a vacuum and that their behavior is mediated, constrained or stimulated by ‘rules of the game’. Interests, strategies, and motivations of actors occur within an institutional setting, which is embedded in historical developments. It understands that actions also follow an institutionally-bound ‘logic of appropriateness’²⁹, instead of only a more rationalist ‘logic of consequentiality’, which affect individuals, but is not a basic defining characteristic³⁰.

The fourth factor of the framework refers to the relations between the formal organizations that design and carry out policies, called here bureaucratic dynamics. Institutional interplay, broadly defined as “how a set of institutions affect one another” (Corbera et al., 2009, p. 746) is an important analytical domain for the understanding of policy processes. Such interplay can take several forms, but considering the specifics of the cases discussed in this dissertation, namely the intra-executive nature of the design process, the analysis will concentrate on bureaucratic dynamics, or the relations between governmental agencies involved in a given policy area. Especially in the Latin American context, coordination capacity, internal turf battles and jockeying for influence among agencies will often be very influential in policy design processes (IDB, 2006). Cox and McCubbins (2001, p. 36) call the lack of coordination between governmental agencies a process of ‘balkanization’, meaning the “pursuit of inconsistent policies by different sub-governments”. Divergences and convergences between agencies may have ideological sources, as well as be based on sectoral, regional or party differences, and coordination tends to be enhanced with political stability and the appointment of nonpolitical civil servants to senior positions (IDB, 2006).

²⁸ Institutionalism is a large label to describe a wide range of intellectual approaches to policy analysis, with varied objects, goals, and standards of explanation. The understanding of institutionalism here espoused takes elements from the whole spectrum of that range.

²⁹ Actors seek not to exclusively follow an individually defined self-interest but “to fulfill the obligations encapsulated in a role, an identity, a membership in a political community or group, and the ethos, practices, and expectations of its institutions. Embedded in a social collectivity, they do what they see as appropriate for themselves in a specific type of situation” (March and Olsen, 2006)

³⁰ Self-interest itself is “socially constructed and culturally and historically contingent. It is defined by cultural institutions which set the limits of the imagination, establishing basic preferences and identity” (Schmidt, 2006, p. 107)

Policy design is also influenced by similar experiences in different periods of time or jurisdictions. Lesson-drawing is also an influential process by which policy decisions are made. Rather than abstract relations between design and objectives, policymakers will often look at other jurisdictions that have designed similar policies or to previously implemented policies to draw ‘tried and tested’ policy options. Terms such as policy convergence, policy diffusion, and policy transfer³¹ are also used to describe similar processes “in which knowledge about policies, administrative arrangements, institutions and ideas in one political setting (past or present) is used in the development of policies, administrative arrangements, institutions and ideas in another political setting” (Dolowitz and Marsh, 2000, p.5). Lesson-drawing occurs in different degrees from a more or less intact adoption of a program already in effect in another jurisdiction, through the combination of several policies from other places, to simple inspiration, with programs from elsewhere used as intellectual stimulus for developing a novel program (Dolowitz and Marsh, 2000; Rose, 1991). Dolowitz and Marsh (2000) point out that more intact adoptions of policies tend to occur when governments are pressured to provide ‘quick-fix’ solutions for urgent problems since the adaptation of policies might take some time to be completed.

The sixth category is beliefs, which relates to the ideological and ideational principles that might limit or spur government activity, interfering with other considerations such as quality and cost (Linder and Peters, 1989). They are more easily identifiable at the overarching level of policy-making through the discourses of parties and political leaders, but are also key for the definition of specific policy design features, as project designers may also be biased to choose different courses of action based on their beliefs. Design-level beliefs are “related to specific instruments or proposals dealing with only a territorial or substantive subcomponent of a policy subsystem” (Sabatier and Weible, 2007, p. 195) and are, i.e., “detailed rules and budgetary applications within a specific program, the seriousness and causes of problems in a specific locale, public participation guidelines within a specific statute” (Sabatier and Weible, 2007, p. 195).

The importance of beliefs is recognized in its centrality at the Advocacy Coalition Framework (ACF). The ACF is a network-based approach to policy analysis that “has probably been as

³¹ Lesson-drawing is used here as it better conveys the idea that the ‘recipient’ of the policy actively adopted a policy previously existing somewhere, instead of a coincidental rapprochement of policies (convergence) or a process initiated by the ‘originator’ of the policy (transfer).

influential in the policy sciences as the entire family of policy network theories” (Arts, 2012, p. 4). It sees policy occurring within subsystems, which are affected by the broader political and socioeconomic system. Actors are driven by belief systems, which are the bases for the formation of advocacy coalitions, which in turn compete with each other in pluralist political systems. The competition between coalitions, as well as external and internal³² events, would then generate policy outcomes (Arts, 2012; Sabatier and Weible, 2007).

After describing the elements of our framework, it is important to explain why some potential explanatory factors of policy design are not present in it. Some concepts that commonly feature in policy analyses are embedded in the analytical factors described above. Public opinion, for example, has not been singled out as a separate policy determinant. The perceptions of politicians and policy makers of what the public opinion is are part of their perceptions of political feasibility and will be more relevant than what the actual public opinion is, for the definition of policy prescriptions. Power relations, in turn, are not present as an analytical factor, except within the dynamics of intra-bureaucracy power relations. That has been decided due to our initial knowledge of the policy making process. That process has explicitly excluded several non-governmental stakeholders, concretely showing an imposition of the government’s power and interests over those of the other stakeholders (Peru and Ecuador), or at best creating a government-sanctioned arena for stakeholder consultations (Acre).

Discourses are another underlying force influential in policy decisions (Böcher, 2012). Discourse analyses, however, depart from the positivist ontology of most PES literature. While it is undeniable that such departures provide enriching research perspectives, they also require a thorough questioning of the very object under study, which would open new research channels that could potentially convolute the analytical results of the dissertation. The very policy recommendations provided by PES scholars, which are the basis of the arguments in the following chapters, could be framed as a “specialist scientific discourse” (Böcher, 2012), instead of concrete, technical guidelines, as they are framed here, and that would bring a whole new set of questions to the dissertation. For that reason, after balancing the potential knowledge generation of analyzing the discursive elements of policies and the differentiated methodological challenges required by discourse analyses, we decided that they would remain outside the scope of the dissertation.

³² External and internal to a given policy subsystem.

We understand that leaving discourses (and other factors) outside of the analytical framework means missing out on some answers that could be valuable for the broader debate on incentive-based conservation policies. The analysis here performed, therefore, is not exhaustive, but, perhaps inescapably, a perspective. And, as pointed out by Udehn (1996, p. 11) “Every perspective involves a choice, and every choice is a loss of something”.

4. Research questions and research approach

To guide the analysis of the political processes that lead to the adoption and design of those programs, several research questions were devised, alongside guiding hypotheses that served as the bases for the interviews and documental research that unveiled the information used for the analysis. It is important to highlight that the hypotheses below are not strict, i.e., they will not be formally tested. They serve as the guiding ideas for the research.

Q1. - What aspects of the public opinion and characteristics of political organizations inside and outside the government led to the adoption of incentive-based conservation policies?

H1 – International funding opportunities (e.g. REDD+) combined with domestic pressure for social assistance programs created a favorable policy window for the introduction of incentive-based conservation policy instruments in the governments’ agendas.

H2 – The historical/ideological connection of leaderships with forest-dwelling groups led to a stronger political clout for environmental issues within the government’s agendas.

H3 – Organized domestic interest groups outside the government tend to be too politically weak to influence policy choice in the present political setting in South America.

Q2. - How did existing policies influence the programs' introduction in the governments' agendas?

H4 – The previous success of Conditional Cash Transfer programs both domestically and internationally has helped to raise the profile of policy instruments with a direct cash transfer component.

H5 – Existing policies, including small-scale PES schemes (up-scaling), influence both agenda-setting processes and instrument design. PES programs are also part of broader strategies for the construction of jurisdiction-wide environmental policy systems.

Q3 - How important are individual "policy entrepreneurs" in agenda-setting processes and what strategies do they pursue?

H6 – Successful entrepreneurs in incentive-based policy instruments tend to be part of high-level decision making groups inside the government, sharing priorities, political affiliations, and ideologies.

H7 – Policy entrepreneurs use the “win-win” discourse of incentive-based policy as a leverage to ensure support from opposing political groups.

Q4 - Why are design recommendations / good practices highlighted in the PES literature so rarely considered in government-led incentive-based conservation schemes?

Additionality by targeting high-pressure areas and assuring conditionality

H8 – Policymakers are aware that conservation tradeoffs (including political repercussions) tend to be harder in high-pressure areas and thus prefer to initially target low-pressure areas, where relatively low payments are sufficient to cover low conservation opportunity costs.

H9 – Conservation effectiveness is of lower priority to domestic policymakers in comparison to social benefits that are eventually linked to voter behavior. As a result, government-led schemes tend to be less monitoring-intensive and characterized by weak sanctioning mechanisms.

H10 - Policy designers perceive that ensuring that the programs provide additionality demands high administrative costs, larger and highly qualified staffs, and more complex rules, and at the same time they also perceive that it can jeopardize the willingness of participants to enroll in the programs, as they would not be able to choose areas under conservation.

Targeting according to opportunity costs to increase efficiency

H11 - Perceived political risks of adopting efficiency over fairness concerns are common reasons for the non-adoption of opportunity costs as a criterion for payment modalities. This is of particular importance in contexts where deforestation has been largely illegal but tolerated historically.

H12 - The continuous expansion of geographical areas eligible for project implementation, mostly going beyond previously defined “priority” areas, was motivated by welfare and equity, over concerns for a more environmentally efficient use of program’s resources.

Q5 – Does participation in the design of incentive-based schemes help policy makers in achieving their policy goals?

H13 - Politically stable governing groups tend to rely more heavily on participatory instrument design processes, which can help them to create more sustainable institutional mechanisms for the implementation of incentive-based policy instruments in the long run.

H14 – Participation makes policy processes more complex and time-consuming and less well established governing groups, thus, shy away from it, to guarantee action within shorter policy windows.

IV. Methodology

This chapter will present the methodology used in the dissertation. The first section deals with data collection, describing both how it was planned and how it was implemented in the field. The second section discusses the process of data analysis, also first explaining the methods planned for the analysis and how it was carried out after the collection of the data.

1. Data collection: interviews and document research methods

1.1 – Interview planning

The main method for data collection have been interviews with people in current or past decision-making or leadership roles in the programs themselves and other institutions involved in them, as well as representatives of the programs' staff, who all “have special insight into the causal processes of politics” (Beamer, 2002, p. 87). In the political science literature, the method is known as *elite*³³ *interviewing*. Elite interviewing has some distinguishing characteristics as compared to interviewing the general population and other stakeholders who are not in a decision-making or institutional leadership position. In elite interviewing, the researcher is more often interested in letting the respondent frame the problems, questions and situations at hand in their own terms (Leech, 2002), as elite respondents are usually hostile to structured formats and closed-ended questions, requiring a degree of trust that goes beyond simply ensuring anonymity and data protection, but involving even behavioral appropriateness and displays of knowledge on the research subject (Harvey, 2011).

Defining data needs and constructing the questions: Elite interviewing, thus, relies more often on open-ended questions. Aberbach and Rockman (2002), provide three arguments favoring open-ended questions in elite interviews. First, they argue that when there is a not a very high degree of prior research on a topic, it is hard to define questions and response options with clarity, both required for closed-ended questions. Second, open-ended questions can maximize response validity, as they provide “a greater opportunity for respondents to organize their answers within their own frameworks” (Aberbach and Rockman, 2002, p. 674), and they work best for the kind of exploratory, in-depth research as the one aimed for here. Finally, open-

³³ The term “elite” is not used in the socioeconomic connotation, but rather meaning persons in high-level political positions, with high visibility or expert knowledge (Leech, 2002).

ended questions increase the receptivity of elite respondents, who are more at ease with providing explanations in their own terms than being restricted by structured questionnaires (Aberbach and Rockman, 2002; Harvey, 2011).

Open-ended questions do not mean, however, that planning prior to the interviewing process is not necessary. On the contrary, in addition to the obvious point that only well-prepared researchers can pose relevant questions, better understand responses and guide the interview to obtain desired answers, poorly prepared open-ended questions will yield poor information and are likely to stray the inquiry away from the focus of the researcher and into the stream-of-consciousness and biases of the respondent (Beamer, 2002). In addition, well-prepared interviewers tend to be more trustworthy to respondents and more swiftly recommended to further respondents (Berry, 2002; Harvey, 2011). Therefore, a previous definition of the information needs and of the expectations for each interview was necessary, which are described in table 3 below.

Therefore, instead of a closed questionnaire, a series of guiding questions was prepared for each interview. Since the type of information intended to be acquired in each interview varied depending to the respondent, the guiding questions also varied. Respondents involved in the initial stages of the programs were asked to recollect the processes of design and adoption, as well as to provide their takes on the political questions surrounding the project. Generally, high-level project and implementing agency staff members were asked about the current state of the program, both on implementation and on its space within environmental and other policies in their jurisdictions. Technical staff members were asked to describe their functions, especially in comparison to the provisions of the program manuals.

Sampling respondents: The sampling of respondents was based on the previous knowledge by the researcher of key decision makers in the programs (reputational criteria) and on the selection of institutional positions (e.g. Program Director) whose occupiers play key roles in the programs (positional criteria), to be complemented with further names to be suggested in the interviews (snowball/chain referral approach). Such strategy is in line with the sampling methodology suggested by Tansey (2007) for interviewing elites. It has several advantages over other strategies, such as random probability or stratified sampling, because the set of actors involved in the decision-making process is relatively limited, because the aim is to obtain accounts and information from the individuals more closely involved in highly specific events

and processes, and because it is less likely to by-pass crucial respondents (Beamer, 2002; Tansey, 2007).

1.2 – Interview implementation

In the three research areas, initial contacts have been established with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) offices involved with the programs. Due to GIZ's involvement in the implementation of the programs, the pre-identified roles and actors to be interviewed have been presented and discussed with the GIZ staff, after which an initial list of respondents have been prepared. As the interviews progressed, new names and functions have been added. Table 3 summarizes the information needs and possible functions of the respondents.

In all three cases, many of the requests for suggestions of additional respondents tended to point to the direction of the same individuals, especially relating to the political aspects of adoption and to key design decisions. That indicates that the assumption of a limited number of actors being relevant for the decision-making process was correct.

In Peru and Acre, it was possible to reach respondents at the highest level of sectoral politics (Minister/Secretary) at the time of design. In the Ecuadorian case, the former minister was at the moment of the field visit still working at a high level in the government's cabinet, deeming an interview not possible. Regarding current and former program directors, it was possible to interview most of them, with two short-term directors of Programa Bosques not contacted and a second (recorded) interview with the Socio Bosque director not possible due to a lack of schedule availability during the period of the field visit, including two cancellations. At the technical staff level, all planned interviews were achieved.

Most of the changes in the interview plans occurred regarding respondents outside of the programs' staffs. Some of the changes were done due to suggestions to add categories of respondents not in the initial list and others due to the lack of response from potential respondents to the contacts made. Table 3 also indicates the changes that occurred to the initial list of planned responses.

Table 3: Planned information needs, requirements developed/dropped during data collection phase, contacts reached or not³⁴

Information needed	Institution/Position	Socio Bosque	Programa Bosques	SISA
Current policy priorities of the program	Program Director			
	High-level political representative			
	Opposition group political representative ³⁵			
Policy objectives and priorities of the government at the time of project design, role of policy entrepreneurs	High-level political representative at the time of design			
	Non-government institutions that assisted the design process			
	Relevant technical staff at the time of project design			
	Opposition group political representative at the time of project design ³⁶			
Political history of ruling political group ³⁷	High-level political representative			
	Academia			
Place of the programs in the context of national/state forest protection strategies	Environment Ministry/Secretariat			
	Academia/Civil Society ³⁸			
Role of rural production institutions in the project	Agriculture-related institutions			
Role of economic governmental agencies in the project ³⁹	Finance Ministry			
Government-led poverty-reduction policies in program areas (policies not led by environmental institutions)	Social Policy Ministry/Secretariat			
International funding objectives and strategies	International Donors/ Technical Assistance			
	International NGOs			
In-depth description of program design features (incentive levels, costs, targeting, additionality, monitoring, etc.)	Program Director			

³⁴ Interviews done in white, contacts not reached in shade.

³⁵ Category dropped because no party-level discussion on the programs was carried out.

³⁶ Idem

³⁷ Interviews not done because of lack of suggested contacts or contacts not reached

³⁸ Category added because of opportunities in the field

³⁹ Idem

Information needed	Institution/Position	Socio Bosque	Programa Bosques	SISA
	Relevant Technical Staff			
Participation issues in environmental policy	Civil Society representatives			
	Academia ⁴⁰			
	Program Director			
	High-level political representative			
Links between design features and policy objectives	Program Director			
	Relevant Technical Staff			
	Relevant technical staff at the time of project design			
	Non-government institutions that assisted the design process			

In addition to the interviews with individuals involved in the policy process, we performed a field visit to one of the indigenous communities participating in Programa Bosques in Peru. The visit was not aimed at providing information directly useful for the analysis, as program beneficiaries did not take part in the adoption and design processes. It was moved by an interest to witness the type of actions implemented by the program and to have a short interaction with the beneficiaries.

At the end of the field visit, 41 interviews, mostly lasting about over one hour, have been performed. One of them has not been recorded and two recorded interviews have been lost due to the theft of the cell phone used to record them. One of the lost interviews, however, was a repeat interview with a respondent. The interviews have not been transcribed, as an analysis of textual subtleties (e.g. specific wording, tone) was not aimed. Detailed summaries of the interviews, highlighting the contents of the responses were prepared instead. List 1 below provides a breakdown of the respondents by their position, currently or at the time of program adoption and design. Finally, to ensure trust from the interviewees, since it was possible that some politically sensitive information would be provided, the sources were all informed that

⁴⁰ Interviews not done because of lack of suggested contacts or contacts not reached

they would be kept anonymous and that only their institutional positions would be disclosed in all products to come out of the research, including this dissertation.

List 1 – Who was interviewed?

Ecuador

1. Foreign technical cooperation staff
2. Socio Bosque staff
3. Socio Bosque staff
4. Socio Bosque staff
5. Former high-level environmental ministry decision maker
6. Former high-level environmental ministry decision maker
7. NGO staff
8. NGO technical cooperation staff
9. NGO technical cooperation staff
10. NGO staff
11. Local NGO Staff
12. Environmental Policy specialist
13. Former high-level environmental ministry decision maker, twice
14. Environmental Policy specialist

Peru

15. Foreign technical cooperation staff
16. Foreign technical cooperation staff
17. Bosques program staff
18. Bosques program staff
19. Bosques program staff
20. Bosques program staff
21. Bosques program staff
22. Former Bosques program director
23. Former Bosques program staff
24. Former high-level environmental ministry decision maker

25. Former Bosques program staff
26. Finance ministry staff
27. Social Development ministry staff
28. High-level environmental ministry decision maker

Acre

29. High-level decision maker
30. High-level decision maker
31. SISA staff
32. SISA staff
33. SISA staff
34. Foreign technical cooperation staff
35. NGO staff
36. SISA staff
37. Environment secretariat staff
38. SISA staff
39. Family production secretariat staff
40. Family production secretariat staff
41. Local NGO Staff

1.3 - Documental Analysis

In addition to the interviews, we performed extensive research in the program-related documentation. The documents initially searched for were the formalization of programs' decisions, earlier versions of project documents when available, the interventions of project design participants in decision-making meetings, as well as other types of concrete information. They allowed for a better understanding not only of the programs' design but also on how they are inserted in broader government strategies. Table 4 below displays what types of information were found, what types were not, and what types of documents provided help in inferring information. Most of the documents were available online, on-site or at request to government staff.

The majority of the obtained documentation consists of descriptions of program rules and procedures. They were, therefore, used as the main basis for the chapter on the description of the programs. There was limited access to previous versions of documents and drafts of final texts prepared by the design teams, as there was no systematic file keeping of those versions, and only a few, unorganized files have been provided by one of the respondents (Interview 22), who coincidentally had them on his computer. Therefore, the documental analysis as a basis for reconstructing the negotiation process had a more limited impact than initially planned.

Table 4 – Types of documents found and analyzed

Type of Document	Socio Bosque	Programa Bosques	SISA
Initial legal document			
Operational manuals			Detailed description
Progress report (last covered year)	2013		2014
List of enrolled/sanctioned beneficiaries	Only total enrollment numbers		
Budgets			
Templates of beneficiary agreements			
Financial sustainability strategy			
Baseline methodology			
Monitoring methodology manual			
Monitoring report			
Labor performance evaluation directive			
Agreements with regional Governments			
Oversight commission regulations			
Stakeholder engagement process report			Self-reporting
Safeguard criteria and indicators			
Safeguard monitoring manual			
Safeguard monitoring report			Self-reporting
Non-permanence risk report			Self-reporting

2. Data analysis

2.1 – Method for the analysis: Process tracing

Process tracing (PT), as defined by (Collier, 2011, p. 824), “is an analytic tool for drawing descriptive and causal inferences from diagnostic pieces of evidence – often understood as part of a temporal sequence of events or phenomena”. Such definition is, however appropriate, too

broad. Beach and Pedersen (2011) define PT more narrowly in their separation of the method in three variants: theory-testing, theory-building and explaining outcomes. This definition of the variants will be used here to more clearly explain how data was analyzed.

Theory-testing PT “deduces a theory from the existing literature and tests whether there is evidence that a hypothesized causal mechanism is actually present in a given case” (p. 6). It is more often used when previous research has found a strong correlation between an independent variable and an outcome, but there is uncertainty on how that correlation works and if there is a causal mechanism between them, or in situations where theoretical conjectures are well developed, but empirical support is missing. The focus of theory-testing PT is to conceptualize a theory-based causal mechanism⁴¹ and test if it is they can be “treated as middle-range theories, [...] expected to be present in a population of cases”⁴² (p. 7).

Theory-building PT, on the other hand, builds up from the empirical evidence to infer a conceptual framework, instead of only deducing it from previous theoretical knowledge. Theory-building PT can be, like theory-testing PT, commonly used when there is a reliable correlation between independent variables and outcomes and uncertainty on the mechanisms linking the two, but also when the outcome is known, but not its causes. Theory-building PT is a more iterative process, as “hunches of what to look for that are inspired by existing theoretical and empirical work are investigated systematically, with the results of this search then forming the background for further searches” (p. 19), allowing the researcher to continuously refine the causal mechanisms as the research advances.

Explaining outcome PT is likely the most common variant, aiming at explaining case-specific outcomes of a historical or political process. It focuses not on theory, but rather on the case at hand, with theory (or theories) being useful as guides for crafting a *sufficient explanation* for a particular outcome. An important aspect of explaining outcome PT is that it does not aim, principally, at finding generalizable (systematic) causal mechanisms, but rather at finding detailed, complex causal mechanisms that are suited to the case in hand (non-systematic). This does not mean that explaining outcome PT has no value outside of the specific case study.

⁴¹ The authors conceptualize causal mechanisms as “a system that transmits causal forces from X to produce Y” (p. 8).

⁴² A more detailed explanation of how the three variants of PT are operationalized is present in the sub-section “Operationalization”, below.

While generalization is not the main focus, the authors point out that “a good explaining outcome PT study will point to potential systematic factors that can be investigated further by future studies, or that can act as building blocks for future attempts to build generalizable causal mechanisms that can explain outcomes across the population of relevant cases” (p. 28). As it will be explained in more detail in section 2.3 below, explaining outcome PT is operationalized as a mix between deductive and inductive reasoning, according to what is deemed more suitable for providing a sufficient explanation for the case in hands.

2.2 - Advantages of the method

PT is especially useful in small n research designs, where a historically specific explanation for an outcome produced by a chain of causal factors is sought (Hall, 2006). It is also a systematic way of explaining qualitative arguments. Summarizing the usefulness of process tracing, Collier (2011) points out that it “can make decisive contributions to diverse research objectives, including: (a) identifying novel political and social phenomena and systematically describing them; (b) evaluating prior explanatory hypotheses, discovering new hypotheses, and assessing these new causal claims; (c) gaining insight into causal mechanisms; and (d) providing an alternative means – compared with conventional regression analysis and inference based on statistical models – of addressing challenging problems such as reciprocal causation, spuriousness, and selection bias” (p. 824).

Other methods that could be used were excluded for not fitting the objectives as well as process tracing. Grounded theory, for example, is in a way similar to theory-building PT, as it seeks to induce theoretical arguments from empirical observations. However, it is not its purpose to provide descriptions or apply existing theories (Silverman, 2011), which may limit the explanatory possibilities of the research. In addition, grounded theory is focused on concepts, coding and categorizations (Corbin and Strauss, 1990), and it puts less emphasis on descriptions and processes, which, are more relevant in inducing explanations of causal mechanisms, like the ones searched for in this dissertation. Discourse analysis, as stated in the theory chapter, could shed an interesting light on some aspects of the research, especially on the role of ideational factors and informal power relations in politics. However, discourse analysis draws from a constructivist epistemology, while PT leans towards the positivist approach. To use the insights of discourse analysis properly, it would be necessary to introduce

a whole new group of concepts, which would make research conceptually crowded, without bringing absolutely vital contributions to an analysis based on a PT methodology.

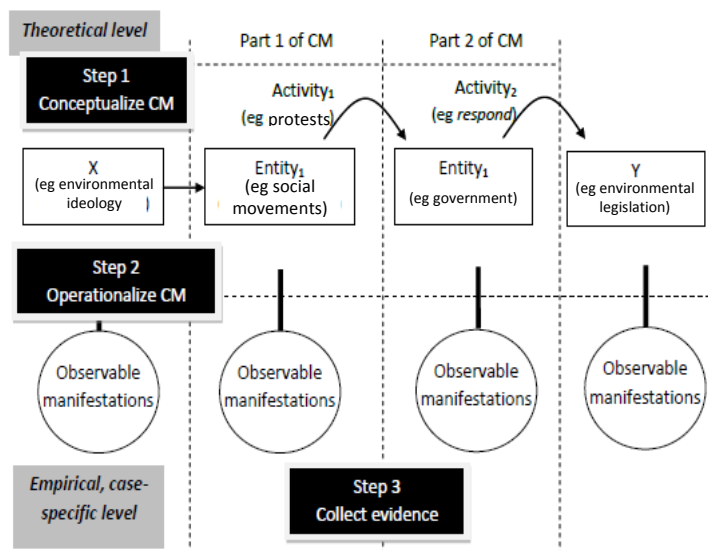
2.3 – Operationalization of process tracing

Beach and Pedersen (2011) also explain how one engages in process tracing in practice. The operationalization of the three variants is also different, and the three ways will be described. In the following section, we explain the choice of the explaining outcome variant as the one more suitable for the dissertation.

In theory-testing PT, illustrated in figure 4 below, the first step is to conceptualize a causal mechanism linking an independent variable (e.g. environmental ideology) and an outcome (e.g. environmental legislation)⁴³, based on existing theorization. A causal mechanism is composed of several parts, each one containing entities (e.g. social movements) who engage in activities (e.g. protests). The second step is to make case-specific predictions of what observable manifestations should occur in case the conceptual mechanism is to be present in the case. The step three is, finally, to collect evidence to increase our confidence if the causal mechanism was present in the case and if all parts functioned as expected in the conceptual mechanism (Beach and Pedersen, 2011, p. 10)

Figure 4 – Theory-testing PT

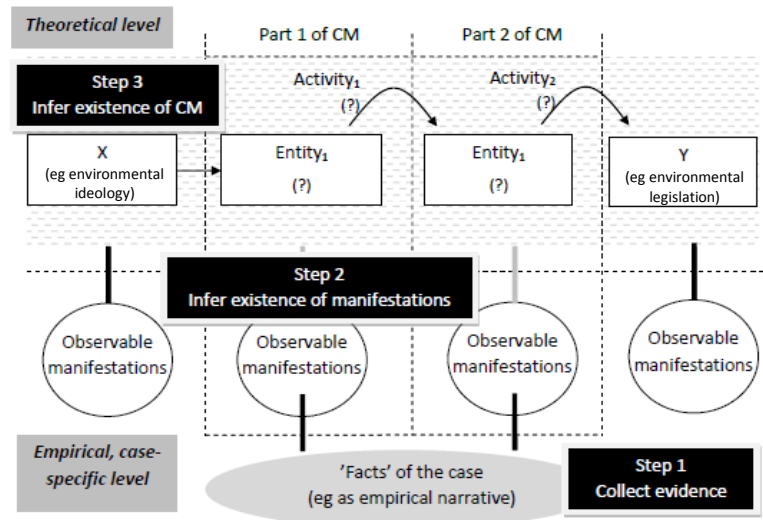
⁴³ Beach and Pedersen (2011) note that, in the case of theory-testing PT, the correlation between the independent variable and the outcome should have been already shown in the literature, so that theory-testing PT is to have explanatory power. If the correlation is not reliable, it would be difficult to tell if the conceptual mechanism is not appropriate or if the correlation is simply not there.



Adapted from Beach and Pedersen (2011)

In theory-building PT, illustrated in figure 5 below, the process of inference goes in the opposite direction. First, the independent variable and outcome have to be conceptualized. Then, the researcher should proceed to collect empirical evidence for the specific case. Step two is to infer, based on the evidence collected, observable manifestations of a plausible underlying causal mechanism. It should be noted that this step will also count with previous theoretical knowledge to help the researcher make inferences. As noted by Beach and Pedersen (2011) “here existing theory can be thought of as a form of ‘grid’ to detect systematic patterns in empirical material, enabling inferences about observable manifestations to be made” (p. 18). Step three is, finally, inferring from data, observable manifestations and existing theory, a plausible underlying causal mechanism linking independent variable and outcome, which could plausibly be generalizable to other contexts (systematic causal mechanisms). It is also relevant to cite the authors’ point on how theory-building should proceed: “In reality, theory-building PT is usually an iterative and creative process. Hunches of what to look for that are inspired by existing theoretical and empirical work are investigated systematically, with the results of this search then forming the background for further searches. This means that steps 1 and 2 are often repeated before step 3 is reached” (p. 19).

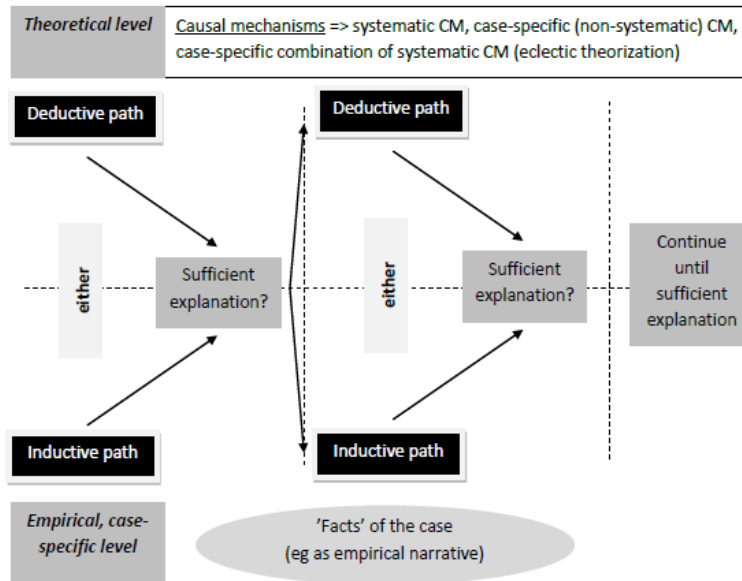
Figure 5 – Theory-building PT



Adapted from Beach and Pedersen (2011)

In explaining outcome PT, explained in figure 6 below, the focus is less on the theory and more on coming up with a minimally sufficient explanation of a specific outcome. For that reason, the method is useful when there is little theorization in the literature on if or how an independent variable is linked and on possible causal mechanisms. In explaining an outcome, the researcher will use some kind of mix between deductive and inductive explanatory facts, paying close attention to causal mechanisms that could work specifically for the case in hand, with less concern for its generalizability for other contexts (non-systematic causal mechanisms). The deductive path is similar to the steps described for theory-testing PT, and the inductive path similar to theory-building PT. The tendency is that an initial explanation will not be sufficient, so the researcher, informed by the results of the initial explanation, will choose an appropriate path to look for more evidence and conceptualizations until a sufficient explanation is reached (see Figure 6).

Figure 6 – Explaining outcome PT



Beach and Pedersen (2011)

The burning question of how to know if such sufficient explanation was reached is answered by Beach and Pedersen in a very pragmatic way: “There is no foolproof answer to this question; instead the decision that we have a minimally sufficient explanation is based upon a subjective assessment of whether all of the relevant facets of the outcome have been accounted for adequately, while at the same time ensuring that the evidence is best explained by the developed explanation instead of plausible alternative explanations. We can never confirm a theory with 100% certainty; instead, we stop when we are satisfied that the found explanation is able to account for the outcome beyond any reasonable doubt” (p. 26).

3 – Implementation of the analysis

Considering the objective of explaining the policymaking processes of the cases, and in light of the characteristics of the process tracing variants described above, the analysis pursued to carry out an explaining outcome PT. Initially, the policy recommendations categories to be analyzed have been defined, and guiding hypotheses have been conceived (see Chapter III for research questions and their related guiding hypotheses). Those guiding hypotheses have also been the basis for the preparation of the interviews’ guiding questions.

After gathering interview and documental data, an initial timeline for the policy-making process and a list of possible explanatory factors for decisions on each of the policy

recommendations have been prepared. After reviewing the interviews and documents, an explanation for the selection of the specific policy characteristics of each case has been constructed, based on the theoretical frameworks presented. We present results of this analysis in chapters VI, VII and VIII.

A secondary objective has been to identify potential mechanisms that could yield research paths for further studies in the area (e.g. generating hypotheses). It is not the main objective of the dissertation to look for generalizable findings, which could be claimed to apply to other incentive-based programs, but the findings of this dissertation can certainly be taken into consideration as possible issues occurring in other contexts, as it will be further explained in the conclusions at Chapter VIII.

One challenge of the interview process was the difficulty in cross-checking the reliability of the information provided due to the small amount of actors involved in the processes researched. Although expected to some extent, in the course of the interviews we realized that in many instances, only one or two actors were deemed sufficiently qualified to provide reasons for some decisions. We took that challenge into consideration. Interviews, especially elite interviews, cannot be understood as a complete representation of the facts, but as the attempt of actors who participated in the process to provide their recollections. That means that interviews regarding past events might be subject to questioning regarding their overall reliability. Respondents may post-rationalize their actions and present them as more consistent than they were when the processes actually happened. Details may be under- or overstressed, and some relevant factors may be under- or overstated. That is a common occurrence for processes that rely on elite interviewing and we have attempted to question the reliability of the information provided, while still considering it as the main source of data for the construction of the explanations.

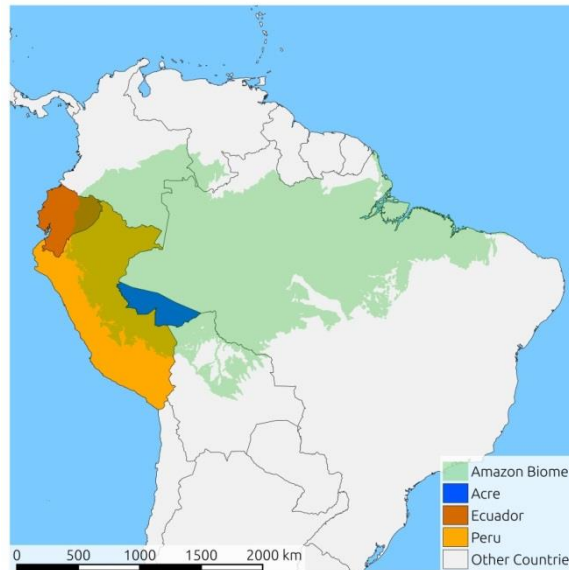
There is no fail-proof way to solve the reliability issues inherent to small sample elite interviewing. We have relied on previous knowledge, and on knowledge acquired during the interviewing and on documental research to critically assess the answers provided by the respondents. In analytical chapters of the dissertation, the aspects in which the information from the interviews is insufficient, or seem to contradict evidence from other sources, are explicitly mentioned. That assessment, however, will have an inescapable subjective

component, and the attempt was to ground the conclusions made in the most solid amount of evidence possible.

V. Case studies: describing the programs

This chapter will describe the features, institutional arrangements, and dynamics of the programs. Its objective is to lay the bases for understanding the analysis of the policy adoption and design processes in the two following chapters.

Map 1 – Where the regions studies are located



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*⁴⁴, and other types of native vegetation⁴⁵ all around continental Ecuador, b) to reduce the emission of greenhouse gasses caused by deforestation and c) improve life 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.

⁴⁴ *Páramos* are high altitude grasslands typical of Andean regions of South America.

⁴⁵ For simplicity, this dissertation will use forests when referring to all those types of vegetation, making differentiations when necessary.

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, 2015b). 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, 2015b)⁴⁶.

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 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 for the program, literally called geographical prioritization (*priorización geográfica*). The targeting mechanism is organized according to the criteria explained in Table 5 below.

Table 5 – Targeting criteria of the Socio Bosque program⁴⁷

Main variables	Sub-variables	Observations	Points
Level of threat	Closeness to access alternatives	Considers the closeness 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 punctuation

⁴⁶ This information was acquired from a financial strategy document prepared by the program’s staff, not from official financial reporting, which was not available.

⁴⁷ 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.

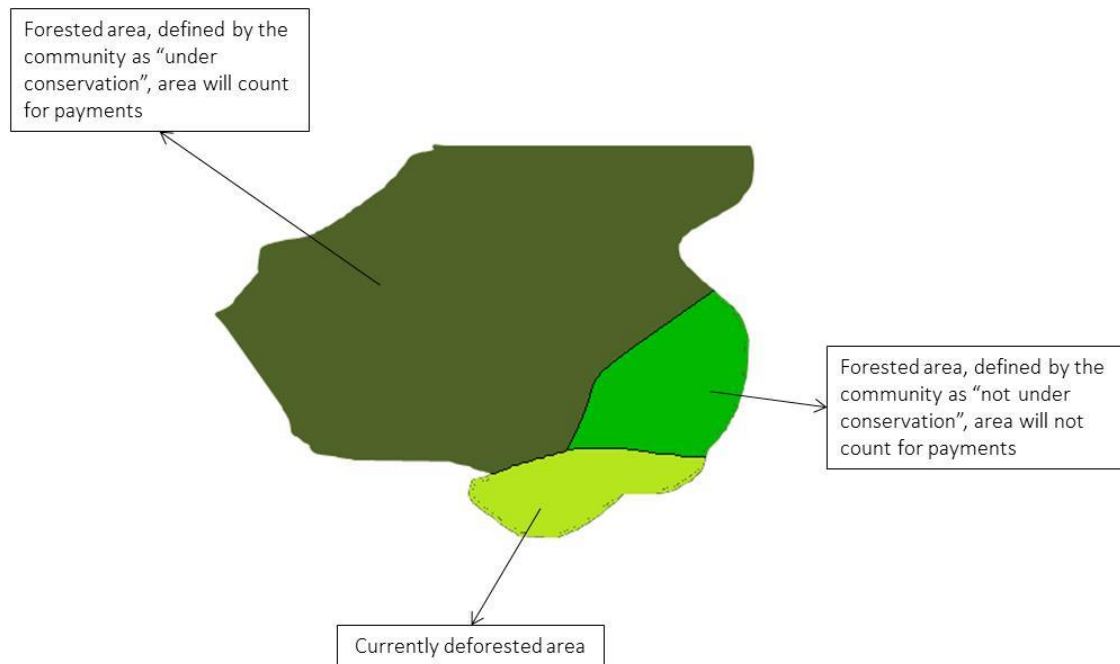
Main variables	Sub-variables	Observations	Points
	Hydrological Regulation	Importance for hydrological regulation	High Importance = 3 points Medium Importance = 2 points Low Importance = 1 points
	Carbon Storage	Defined in function of the biomass	High Storage = 3 points Medium Storage = 2 points Low Storage = 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, 2012c)

The formula for the targeting index of the program 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. It is worth noticing that the targeting process was not thought out to be applied from the beginning of the program, but to “determine the order of enrollment of landowners in situations where demand outpaces the supply of available funds for incentives, a situation Ecuador experienced for the first time in 2012” (Holland et al., 2014, p. 31).

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

Figure 7 – Hypothetical illustration of conservation area self-selection by communities



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 payments⁴⁸. 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, 2012c).

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

⁴⁸ 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 (2012c).

been successfully used at the *Gran Reserva Chachi*⁴⁹ project, and Socio Bosque's experience was later also replicated at the Programa Bosques in Peru, as we will see below. Agreements 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 money of 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, 2016c). 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 conditions⁵⁰ that have to be accomplished. If they are not fulfilled, the sanctions may vary from a temporary suspension of payments to the termination of the conservation agreements (MAE, 2012c).

After being accepted, individual properties and communities will receive payments if conditions are fulfilled. Socio Bosque's operational manual (MAE, 2012c) defines a differentiated payment system based on the size of the area defined by communities and

⁴⁹ 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)

⁵⁰ The full list of conditionalities can be found at MAE (2012c).

individuals as under conservation. It consists of six incentive level categories as illustrated in table 6 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 6, the initial rules of the project differentiated payments by property size only. The current payment structure, established in 2011 (MAE, 2011b), 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; MAE, 2011b)

Table 6 – 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: $(50 \times 30) + (50 \times 20) + (350 \times 10) = \text{US\$ } 6,000$ 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: $(50 \times 35) + (50 \times 23) + (350 \times 13) = \text{US\$ } 7,450$ 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: $(50 \times 30) + (50 \times 20) + (350 \times 10) = \text{US\$ } 6,000$ 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 páramos (current structure)			
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; MAE, 2012c)

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, 2011). 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, 2011). In the latest monitoring report available (MAE, 2015c), field verifications were done in 729 enrolled areas (out of a total of over 2500 agreements), of which 70.5% were approved, 22.9% approved with observations and 6.6% not approved. The non-compliance cases were, at the time of the report, being analyzed for the application of the appropriate sanctioning mechanism.

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, 2011). 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, 2011). Both aims were reached; in 2012 and 2015, respectively (MAE, 2012b; MAE, 2014d; MAE, 2015a). 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, 2012c).

The perceived success of Socio Bosque (see Chapter VIII) 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 in this dissertation, 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, 2016b). 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 in communities and disbursed a total of US\$ 12,468,713.43 in 2015, 84.8% of which 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). The budget for the program in 2016 is of close to US\$ 6.975 million, i.e. 33.8% for the payment of incentives, 10.6% for conservation monitoring, and 25.2% for program administration (PNCB, 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 the Amazon forests and tropical dry forests of Peru (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).

It is also worth noticing that the enrollment of communities is subject to the signing of cooperation agreements with regional governments, achieved alongside the implementation of the program (Interview 16). Communities located in regions without a cooperation agreement could initially not be enrolled, thus reducing the possible application of the targeting strategy.

Also following the lines established in Socio Bosque, the communities enrolled in Programa Bosques also define 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 participation⁵¹ (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

⁵¹ The complete list of documents can be found at MINAM (2011).

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 (Interview 15). 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 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 2016) per hectare of enrolled area per year, irrespective of the total size of land enrolled. As stated above, the payments must be used for the implementation of sustainable productive activities (called by the program Public Investment Projects), 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)⁵². To assist communities in ensuring the conservation

⁵² The full list of conditionalities can be found at MINAM (2011).

of their forests, the program includes a component of capacity development for forest conservation (MINAM, 2013).

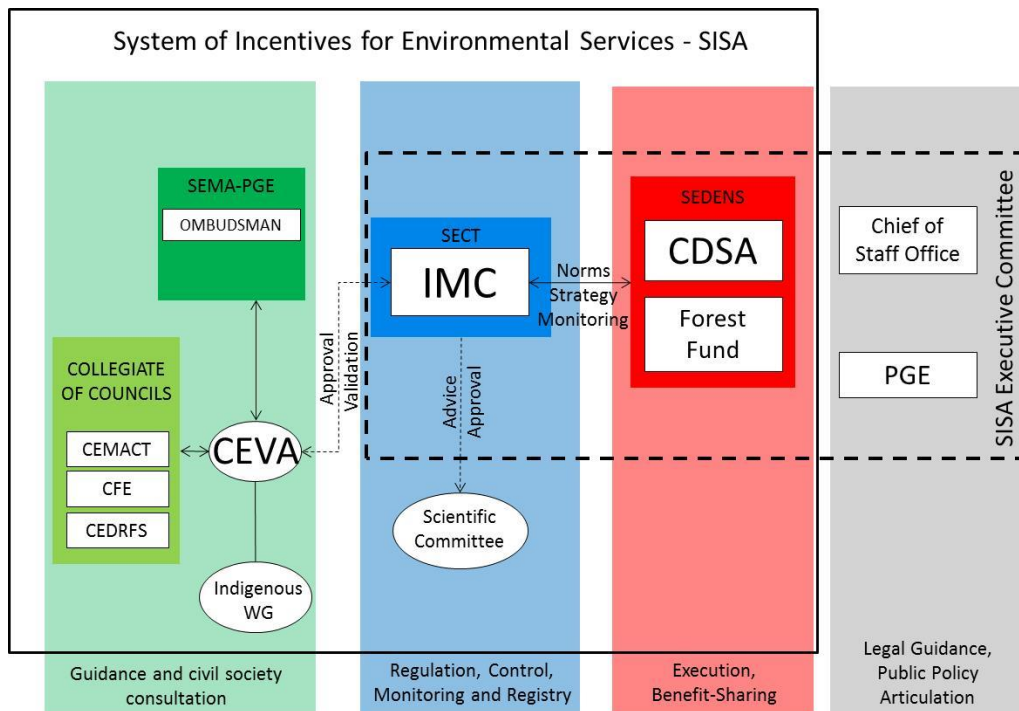
Peru did not have, at the start of the program, a complete and updated baseline of the state of the country's forests. For that reason, Programa Bosques had to identify the physical and biological state of participating areas during implementation. The program aims at providing a diagnosis of the state 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 (Interview 17). 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 an implementation horizon of 10 years, after which a general evaluation of the program will be performed. Currently, the management of the program is attempting to ensure an extension of the implementation horizon of the program (Interview 20). As of December 2015, 75 communities had participated in the program, with 5,941 families receiving benefits and 723,475 hectares enrolled (MINAM, 2015).

3. SISA – Acre

The *Sistema de Incentivos a Serviços Ambientais* (System of Incentives for Environmental Services – SISA) differs sharply from the other two programs in its format. It was created in 2010 by the state of Acre in Brazil. Instead of being a payments-providing program with specific activities, similar to Socio Bosque and Programa Bosques, SISA organizes the financing and implementation of ecosystem service-related programs and projects in the state of Acre (see Figure 8). As it will be explained in further detail in the next chapter, SISA built upon the experience with previous policies within the state, such as the Ecological–Economic Zoning (ZEE) and the Valuation of Forest and Environmental Assets Policy (Duchelle et al., 2014b). The program's overarching objective is the conservation and enhancement of environmental services in the state (Acre, 2010a).

Figure 8 – Institutional Arrangements of SISA



Source: IMC (2015), translated by the author

The core institution of SISA is the Institute for Climate Change and Regulation of Environmental Services (IMC). The Institute is responsible for the overall coordination of the program, refining norms, defining strategies, overseeing monitoring, evaluation activities, and the accomplishment of policy objectives. It is also responsible for approving methodologies and registering projects and other activities to be implemented within the SISA framework. With the support of SISA’s Scientific Committee, it is also responsible for carrying out inventories and estimates of environmental services provision and conservation. The institute is an autarchy within the state’s organizational structure but it is connected to the Science and Technology secretariat.

Another core institution established by SISA is the Commission for Validation and Accompaniment (CEVA). CEVA is SISA’s main link to the civil society, aiming to ensure transparency and social control of projects and activities carried out within the SISA framework, by analyzing and approving norms and other documents presented by the IMC. CEVA is composed of 8 members, 4 stemming from the civil society and 4 from the government. CEVA receives input from a “Collegiate of Councils”, which brings together representatives from three thematic councils (environment, science and technology; forests;

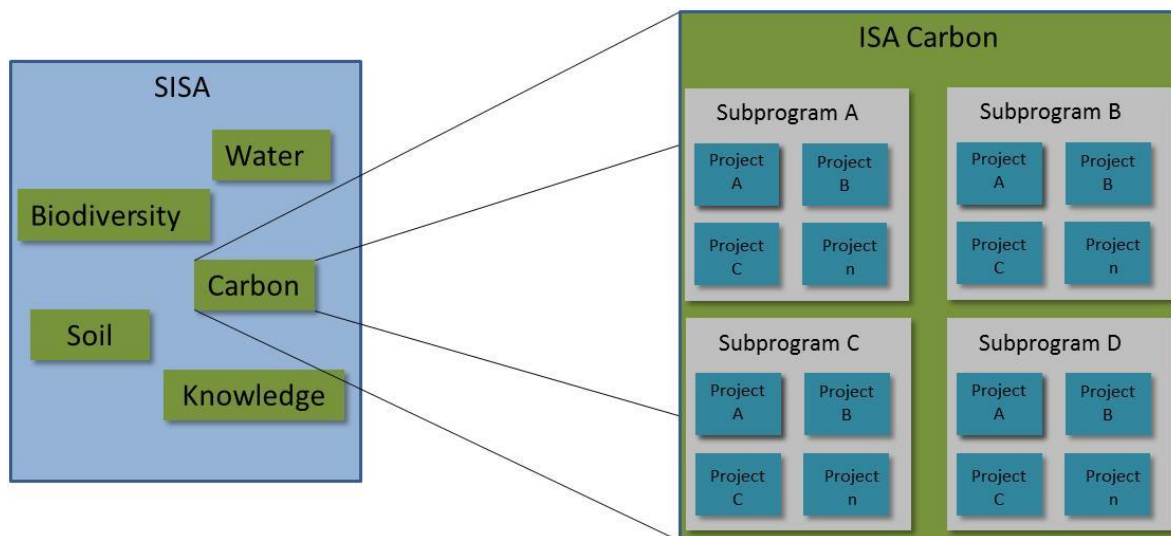
rural and forest sustainable development); from the Indigenous Working Group, responsible for representing Acre's indigenous populations in the SISA structure; and from Acre's government's Ombudsman, who is responsible for receiving complaints from citizens and institutions regarding the implementation of SISA (Acre, 2013).

The third core institution of Acre, and arguably the most innovative in SISA's structure, is the Company for the Development of Environmental Services (CDSA). CDSA's main functions are to raise funds for activities within the SISA and head the interaction with potential private project implementers (Interview 35). Such function entails more than going after potential donors, but also being the executive agency of projects and placing SISA's activities within potential markets for environmental services, managing and marketing potential credits generated by SISA's initiatives. CDSA is also responsible for managing Acre's Forest Fund, which aims at concentrating financial resources for forest-related policies in the state (Acre, 2013). CDSA is defined as a public company (*empresa pública*), regulated by private law, having more legal flexibility to do business than public agencies.

Legal advice on the SISA is provided by the State Attorney General's Office (PGE), which also participates in CEVA and hosts SISA's ombudsman. In addition to the structure described above, SISA entered a multitude of agreements with partners ranging from local NGOs, to federal government agencies to international organizations to support SISA's activities.

As stated above, SISA is a general institutional framework for the support and execution of activities on the conservation and generation of environmental services. Since its enactment, it has supported already existing activities carried out by the government, such as the aforementioned ZEE and Valuation policies (Duchelle et al., 2014b). It will also provide support for activities implemented by non-governmental and private institutions in the state. SISA will be ultimately composed of a series of thematic programs, focused on priority areas, namely water resources conservation, sociobiodiversity conservation, carbon and climate regulation, the valorization of traditional knowledge, and soil conservation and improvement. Each of those areas will be covered by a program, composed of subprograms and projects, to be detailed in accordance with future developments in the state's policies (see Figure 9).

Figure 9 – SISA Implementation Structure



The program related to reducing greenhouse gasses (GHG) emissions from deforestation and degradation within the planned SISA structure, named *ISA-Carbono*, was the first to be created and is currently the one undergoing the initial stages of implementation.

SISA intends to generate tradable carbon credits as one of the means to finance its execution. IMC and the Markit Environmental Registry will be responsible for a system that will register emissions reductions resulting from both individual projects and state policies implemented within the context of SISA. Acre intends to validate their emission reductions through the application of independent auditors such as the Voluntary Carbon Standard (VCS) and the Climate, Community and Biodiversity Alliance (CCBA) (WWF, 2013).

Monitoring activities within the SISA framework will be carried out by the Central Geoprocessing and Remote Sensing Unit (UCEGEO), which, with the support of SISA, intends to “monitor deforestation occurring at a smaller scale than the Brazilian national monitoring institution, the National Institute for Space Research (INPE), can detect [...] particularly important in Acre, where most deforestation occurs at a small scale.” (Duchelle et al., 2014b, p. 36).

Acre is among the smallest and poorest states in Brazil, so raising funds for conservation activities in the state has been one of the motivations and is one of the main concerns of SISA. The first funding source achieved within the context of SISA came from the KfW, within the

context of their REDD+ supporting funds⁵³. As an example of how the funds raised by the program will be used, SISA has agreed with KfW that 70% of the resources must be directly provided to beneficiaries and that the remaining 30% may be used for project's structuring activities (Duchelle et al., 2014b). The program has decided to use the beneficiary-related resources to further finance the rubber-tapper subsidy program (for more on this program see Sills and Saha (2010)) and to the productive restructuring of properties activities. The remaining resources will be applied to human resources, structuring the registry system, auditing requirements and beneficiary capacity-building (CEVA, 2013).

⁵³ More on SISA's integration with the REDD+ debate in chapter VII.

VI. Why were upscaled incentive programs for forest conservation adopted?

Comparing policy choices in Brazil, Ecuador, and Peru

This chapter aims at analyzing the determinants of the adoption of the three incentive-based forest conservation policies studied by this dissertation. The analysis is based on the Multiple Streams Framework outlined in Chapter II. A summary of the findings can be found in Table 7 at the end of this chapter. Further aspects of the analysis of the policy adoption process will be espoused in Chapter VIII.

This chapter is the main analytical part of a paper published by the author in 2015 at the *Ecosystem Services* journal, as Rosa da Conceição et al. (2015).

1. Socio Bosque – Ecuador

1.1 - Problem Stream

By the time of Socio Bosque's design, there was no countrywide assessment of the country's deforestation rates. Estimates were based on FAO data and punctual studies, many of which revealed alarming deforestation hotspots (Interview 12). That, however, was enough to convince president Correa of the importance of combating deforestation (Interview 12). More recent estimates from the Ecuadorian government place deforestation at around 77.000 hectares per year (MAE, 2012a), driven mostly by commercial agriculture and cattle ranching. The current national development strategy (*Plan Nacional de Buen Vivir - PNBV*) targets a 30% reduction in deforestation. Poverty rates are high in rural areas of the country (around 52%) especially in the Amazon region where indigenous populations are the poorest ethnic group (Mideros, 2012). The government perceived poverty as an indirect driver of deforestation in Ecuador.

The respondents did not identify specific events which were directly influential in the creation of Socio Bosque, but a new force for environmental action in the country can be traced back to the new constitution adopted in 2008, which legally acknowledges 'nature's rights' and incorporates the concept of 'good living' (*Buen Vivir*), which can be broadly understood as a harmonious living with other people and nature. The government promoted policies that could accomplish the aim set in the PNBV. Command-and-control policies, especially their

monitoring, were perceived as ineffective and hard to implement in the country, mainly because government institutions were weak (Interview 12). Concomitantly, several small scale incentive-based initiatives were being implemented in Ecuador. Notably relevant for Socio Bosque was the *Gran Reserva Chachi* program, carried out by Conservation International and the German Society for Technical Cooperation (GTZ). The Chachi program and was built around PES-type conservation agreements (GTZ, 2010), which also became one of the pillars of Socio Bosque (Interviews 5, 8, 12).

1.2 - Politics Stream

The perception among respondents in Ecuador was that environmental issues were not of high priority for voters and that social welfare policies for sparsely populated areas were, albeit higher in the agenda, still a diffuse interest. There was, therefore, no substantial perception of pressure from the general public opinion to create Socio Bosque. The decision-making and design processes were, like in Peru as it will be seen in section 2.2, made within the executive, with no debates in Congress. The program's legal basis is a ministerial agreement, which does not require congressional approval, nor public debate involving political parties. The respondents also did not identify pressure from local NGOs for the creation of the program but they were, from the outset, very critical of the non-participatory character of the program's design. Conservation International has, however, lobbied within the government for the creation of the program (Interview 13).

Under Correa, it has become more common that new policy proposals come directly from the president's office. That was the case with Socio Bosque, which was motivated by a direct demand from the president, who wanted an incentive-based response to deforestation (Interviews 5, 6, 12). The current Ecuadorian government has promoted the use of incentive-based policies, not only for environmental themes but in all areas of government policy making (Interviews 5, 12). The strong role of the executive also helps explain the quickness in program design. The request from the president was made in March 2008, and the project agreement was signed in November 2008. There was no formal deadline for the design to be completed, but respondents mentioned a general understanding that direct requests from the president should be completed as soon as possible, due to Correa's philosophy of quick changes⁵⁴

⁵⁴ The government's motto is *Revolución Ciudadana*, the Citizen's Revolution.

(Interviews 5, 8, 12). Thus, relatively little new research was conducted to base the design process, which used the scarce, already available information on the state of the Ecuadorian forests and design aspects of the Chachi program. Participation was also limited, as it could greatly enlarge the time span of the design process⁵⁵.

1.3 - Policy Stream, Policy Window, and Entrepreneur

As stated above, Ecuador lacked technical means and institutional structures to effectively implement command-and-control policies in its forests. The president and Socio Bosque's design team believed that incentive-based policies had a higher chance of presenting fewer technical hindrances to successful implementation, due to the perceived success of small-scale schemes in the country, such as the Chachi program and to the exchange of experiences with other countries (Mexico and Costa Rica). Value acceptability within the government was not an issue in the Ecuadorian case, as the program's creation was a direct demand of the president. The creation of Socio Bosque was congruent with the sustainability discourse that permeated the new administration and was also present in other major government initiatives, such as the new constitution, which was approved concomitantly with Socio Bosque's proposal. The influence of conditional cash transfer (CCT) programs has not been often mentioned, but a key respondent hinted at some possible relation, stating that the initial idea was to have a "type of forest *Bono*", in reference to the country's *Bono de Desarrollo Humano* CCT program (Interview 5). Interview partners generally agreed that President Correa was the key policy actor in this process.

The adoption of a nationwide conservation program in Ecuador was, thus, driven by a direct request from the presidency, due to a perceived need to reduce deforestation rates in the country, seen as alarming according to the scarce data then available. The specific choice of an incentive-based program was motivated by the interest of the government in extending its social policy network to forested areas through a direct cash transfer program, by the executive's preference for incentive-based public policies and the existence of previous experiences with incentive-based conservation programs in the country, such as the Chachi project. The decision process was entirely done within the executive, without formal discussions in the congress or with the civil society.

⁵⁵ A detailed analysis of the design process will be provided in the next chapter.

2. Programa Bosques – Peru

2.1 - Problem Stream

The main direct drivers of deforestation in Peru are agricultural expansion and cattle ranching (Zelli et al., 2014). The main indirect drivers are the population growth in forested regions, an increase in the demand for products that can be cultivated in forest areas, government support for business sectors that push the agricultural frontier, and institutional and legal weaknesses. Poverty rates are high in forest areas (37% in 2010), albeit lower than in the mountain regions (Che Piu and Menton, 2013).

Peru has only created an environment ministry in 2008. Previous forest conservation policies, carried out by the National Environmental Council (CONAM) and the National Institute of Natural Resources, were mostly command-and-control measures aimed at protecting wildlife and containing illegal deforestation. Policies were perceived as having limited effectiveness since both institutions lacked ministerial powers and political clout.

The movement towards strengthening the environment sector in Peru was boosted with the creation of MINAM in 2008. Before the creation of the ministry, general environmental responsibilities in the country were held by CONAM, while the mandate on forests and water was held by the Agriculture Ministry (MINAG). The process of negotiation for the creation of the ministry and the definition of mandates on forest areas was complex and, in the end, it was decided that the MINAM would have a mandate on protected areas, but that the national forest authority would remain at MINAG. Recollecting on this process, one key respondent stated that this development showed the low priority given by the government to environment issues and exemplified the challenges faced by the newly created MINAM (Interview 23)

The Free Trade Agreement (FTA) signed between Peru and the United States in 2007 was cited (Interviews 21, 23, 24) as one of the triggers for forest sector reforms, e.g. vis-à-vis timber trade and command-and-control policies (Oustr, 2006). The government promulgated a series of decrees that regulated the agreement. Indigenous leaders perceived those as opening up the Amazon region to the exploration of natural resources by foreign interests (Melendez and Leon, 2010) and opposed the decrees, by roadblocks and occupations around the Amazon

in 2008. On July 5th, 2009, protestors and police forces clashed near the city of Bagua, leaving 33 people dead and 200 wounded (Melendez and Leon, 2010). The violent conflict, known in Peru as *Baguazo*, caused changes in the cabinet and, especially relevant to the adoption of *Programa Bosques* a necessity to appease the relations with indigenous groups (Interviews 21, 23).

The strengthened Peruvian participation in international climate negotiations, with the aim of attracting attention and potential financial sources for environmental policies, was also a noteworthy factor for the creation of *Programa Bosques*. The MINAM team concluded that forest conservation had the largest potential, and offered during the UNFCCC's 14th COP in December 2008 to commit to conserving 54 million hectares of forests, as a Peruvian contribution to the international climate change mitigation efforts. Peru's COP 14 commitment triggered the beginning of the design process of *Programa Bosques* (Interview 23).

2.2 - Politics Stream

In Peru, like in most of Latin America, the environment is perceived as a low-priority issue by voters. In the case of *Programa Bosques*, it was not different; none of our respondents identified public environmental concerns as a central factor in its creation. Social welfare programs, on the other hand, are perceived as very relevant to public opinion and to the political acceptance of governments by benefited populations (Layton and Smith, 2015). The strain in government's relations with indigenous people favored the idea of fostering a program that could provide direct cash transfers to indigenous communities. This was a major driver for the approval of the *Bosques* program, especially by the Ministry of Finance (Interviews 23, 24).

Peruvian environmental policy-making, including *Programa Bosques*, is largely concentrated within the executive. The program's legal basis was, like in Ecuador, built through presidential and ministerial decrees, which are not subject to legislative processes. The program was thus not discussed in Congress, and party politics played no direct role, nor did local and provincial governments. There was also no pressure for the creation of an incentive-based program emanating from local NGOs (Interviews 23, 24). NGOs called for stronger policies towards forest conservation and welfare of forest populations and were highly involved in the indigenous protest movement, but not in the creation of *Bosques* itself. Hence, they were highly critical of the executive-dominated, non-participatory fashion of the program's design.

The structure of Peruvian policy making and the negotiation processes between ministries had a major influence in the Bosques Program, especially the influence of MEF and, to a smaller extent, MINAG. The discussion on the program within the Council of Ministers lasted throughout most of 2009. MEF, which ultimately decides on the allocation of budgets in Peru⁵⁶, was not convinced of the importance of a ‘pure’ conservation program and pleaded for some type of direct economic returns arising from it. MINAG initially contested the idea of the program, saying that it could represent a barrier to the expansion of the country’s agricultural frontier (Interview 23). There was also a conceptual conflict since the MINAG had an approach that favored forest management aimed at economic gains from timber products (Interviews 20, 23). However, after the *Baguazo*, both MEF and MINAG recognized the importance of improving the relations with the Amazon indigenous groups. The idea of providing conditional, direct cash transfers to indigenous communities became attractive to both ministries, which agreed to the creation of a conservation-aimed program, if it was designed with a poverty reduction component and, at least initially, a strong focus on legally recognized indigenous territories (Interview 23).

2.3 - Policy Stream

Despite the recent existence of the ministry and the perceived low of capacity of the government institutions to generate reliable indicators, enforce current policies, and provide reliable monitoring, the exchange of experiences between the MINAM-based program design team and other Latin American countries where national incentive based schemes were being implemented, such as Costa Rica, Mexico and Ecuador, led the Peruvian government to believe that a similar scheme could also be technically feasible in the country (Interview 23). The Ecuadorian experience was especially relevant, influencing *Programa Bosques* to adopt conservation agreements, investment plans, and other similar features. As stated previously, key respondents mentioned that the MEF and the MINAG staff involved in the negotiations for the creation of the Bosques program did not have forest conservation as a core value, so the introduction of a cash transfer component made the program more acceptable to their agencies.

⁵⁶ Indeed, it is common in Latin America that the Finance Ministry has a disproportional influence on policy decisions. As stated by the IDB (2006, p. 64), “An important feature of Latin American cabinets has been the central role of the finance ministry [...] The finance ministry has dominated the budget process and been able to prioritize its goals on the presidential agenda. Thus it has been in a privileged position in respect to other ministries”

Another governmental policy that relates to the creation of *Programa Bosques* was the existence, since 2005, of the *Programa Juntos* CCT program. *Juntos* pays 100 Soles per month to families for the compliance with health and education-related conditionalities. The program was perceived as successful in poverty reduction efforts in the Andes region, and ‘inspired’ the idea of conditional transfers for indigenous peoples, with conservation as the condition. In the initial drafts, the *Programa Bosques* was even called *Conservando Juntos* (Interview 15)⁵⁷.

2.4 - Policy Window and Entrepreneur

Respondents (Interviews 20, 22, 23) identified that the policy window for the creation of *Programa Bosques* was opened after the signing of the forests annex of the FTA, which played an important role in focusing government’s attention towards the forest sector, which was strengthened by the creation of the environment ministry. The policy entrepreneur for the Bosques program was the environment minister Antonio Brack. He was already a famous environmentalist, who ran a TV show about the environment, and was a respected biologist. Before being invited to become the minister, he had no relations with the president or presence in the country’s political arena. Brack led the formation of the team that designed the program and the negotiations within the Council of Ministers that ultimately led to the program’s approval (Interview 24).

Therefore, the adoption of Programa Bosques was rooted in the increase in deforestation in the country, in the high poverty rates in the country’s forest areas and by the recent creation of the Environment Ministry. The approval of the program by non-environmental agencies in the Council of Ministers was motivated by the interest in improving the relations between the government and indigenous peoples of Peruvian Amazon following the *Baguazo*. Bosques was also perceived as a way to extend the country’s direct monetary transfers policies to indigenous communities, as part of the effort to mend relations with them, while concomitantly introducing a large-scale conservation program. Additionally, the newly created Ministry of the Environment wished to strengthen Peru’s role in international climate negotiations and understood that the country’s main contribution would come from forest conservation activities, and pledged an increase in conserved areas in the country. Like in Ecuador, the

⁵⁷ Further discussion on the role of CCTs can be found in chapter VII, section 4.1 and chapter VIII, section 1.

decision-making process occurred exclusively within the executive, with no legislative debate and negligible participation from the civil society.

3. SISA – Acre

3.1 - Problem Stream

Most of the deforestation in the state occurs in small-scale settlement areas along roads in the southern, more populated part of the state (Acre, 2010b). Currently, around 12% of the state's original full forest cover has been lost to deforestation (Acre, 2011), and around 80% of the deforested area is currently occupied by cattle ranching (Acre, 2010b). Despite recent improvements, Acre is still one of the poorest states in Brazil, with 20.8% of its population living in extreme poverty in 2008 (IPEA, 2010).

No specific event was identified as especially relevant for the creation of SISA. As opposed to the Peruvian and Ecuadorian cases, where incentive-based conservation was a novelty in the government's public policy toolbox, the government of Acre has been an early adopter of integrated environmental and development policies. Starting with the creation of multiple-use reserves in the state by the federal government, the state's government has implemented activities that attempt to foster environmentally sustainable activities by actors involved with forest areas, such as a minimum price for native rubber, the Valorization of the Environmental Assets and the Certification of the Family Rural Property for smallholders. SISA was created to financially and technically consolidate these initiatives, which were perceived by many respondents as being effective and in need for further strengthening and expansion (Interviews 28, 29, 34, 35, 37).

3.2 - Politics Stream

There was no perception of pressure from the public opinion for the creation of the SISA. There is, however, a perception that environmental policies tend to be historically well-received by the electorate (Interview 28). Repeated re-elections of the ruling party show longstanding support from the population, despite a few tight races such as in the 2010 elections.

SISA was approved as a state law in October 2010. The proposal originated at the executive and, like previous environmental laws, passed without much opposition (17 votes in favor and 2 against (Acre, 2012)). NGOs had a strong participation in the design process of SISA. The consultation process started in August 2009 and received 357 recommendations from civil society organizations. It sharply reshaped the initial idea of the program, from a project-based approach to a structural program, organizing an institutional structure for regulating new activities from the government, private sector, and civil society (Acre, 2012)⁵⁸.

The design process of SISA was different from the ones of Ecuador and Peru, due in part to specific characteristics of the administrative structure of Acre. First, as previously mentioned, environmental issues in the state are unusually high in the executive's priorities, greatly facilitating the percolation of environment-related proposals within the government (Interviews 28, 37). Second, respondents identified cooperation between government agencies of different sectors on environmental themes and attributed this (i) to the high importance of those themes for the cabinet, and (ii), to the relatively small and stable pool of high-level civil servants in the government, making up a decision-making staff comprised of trusted participants of the governing team for years, which respondents considered conducive to a higher cohesion between them (Interviews 28, 32, 33, 35). Finally, unlike in Peru and Ecuador, there was no perceived threat of a closing window of opportunity for SISA, leaving ample scope for its proponents to carry on with the design process for how long they deemed necessary. The main coordinators of the policy process were long-term allies of the governor and occupied high-level political positions (*secretários*, the state equivalent of a minister).

3.3 - Policy Stream

Acre has been benefiting from deforestation data provided by the national government and building upon the existing systems to tailor them to the state's specific needs. There is also a perception from actors inside and outside of the state that Acre has a small, but highly effective administration with qualified and committed technical and administrative staff (Interview 33). Moreover, the state has accumulated experience in implementing policies that reach out to the state's smallholders and traditional populations. For that reason, there was a widespread perception that SISA would be technically feasible and that it can help the state to further

⁵⁸ More details on the participation process in chapter VII, section 3.

strengthen its capacities for environmental research, monitoring and public policy outreach (Interviews 28, 35, 40). Finally, as stated above, environmental policies have high value acceptability within the government, as they are at the core of the governmental discourse. Despite this discourse, deforestation in Acre has remained relatively high also after 1998, both in relative and absolute terms.

3.4 - Policy Window and Entrepreneur

It is difficult to identify the opening a specific policy window for the SISA program, as forest policies have been continuously implemented in the state for over a decade. Respondents identified the increased profile of PES and REDD discussions in the international arena, and the ensuing potential for increased financial flows for forest protection policies, as a possible new factor for the introduction of the PES project proposal that would later develop in the SISA (Interview 28). As for entrepreneurs, there is no clear individual force behind the creation of the program, as it has been sponsored by the governor's cabinet, his main aides and the *secretários* of environment-related agencies.

SISA's adoption, therefore, built upon the experiences accumulated by Acre in the forest conservation sector. Initially thought out to be the state-wide PES program, it morphed into an institutional structure created to accommodate all incentive-based forest conservation activities in the state, including REDD+. SISA benefited from a more stable and favorable political context, in which environmental issues were perceived as high on the government's agenda, and was approved as a state law in the legislative assembly. Crucially, the major changes undergone by the program from its inception to the final version were the result of a relatively long consultation process, which was open for the state's civil society, some external institutions, and environmental specialists.

4. Summary

All governments perceived deforestation pressures as a concern in their jurisdiction, both with consistent data, as in Acre, or with more scattered but convincing evidence, such as in Ecuador. All regions also shared high poverty rates in their forested regions and successes in recently created or expanded CCT programs. In all three cases, there was also the perception that command-and-control policies to reduce deforestation were ineffective. Finally, while in Acre

no specific events or major political changes were linked to the introduction of the programs, Peru and Ecuador experienced focusing events that influenced the creation of the programs. In Peru, disagreement with free-trade agreements with the USA led to protest by indigenous peoples, which culminated in violent clashes with government forces, known as the *Baguazo*. The *Baguazo* worsened relations between indigenous peoples and the government, which ultimately approved a proposed incentive-based forest conservation program as a way to improve those relations. In Ecuador, the then recently elected Rafael Correa was proposing a new constitution, which increased the powers of the executive to promote social policies and increased, at least discursively, the importance of environmental issues in the country's basic legislation. Additionally, incentive-based public policies were being promoted in other sectors as well.

On the political situation of the countries, respondents in Ecuador and Peru did not consider environmental issues a priority among voters and did not see the existence of any pressures from the civil society for the specific creation of incentive-based forest conservation programs. In Acre, there was wide agreement among respondents that forest conservation was high on the agenda of the government, at least in comparison to other jurisdictions, and an understanding that the population received environmentally minded policies well. Organized political forces, such as political parties or NGOs were absent from the discussion in Peru and Ecuador, as the decision-making process happened within the executive. In Acre, the decision to adopt the program was voted in the state's legislative assembly and passed with ease. Civil society was consulted during the design process, which will be described in detail in the following chapter. In Peru, debates on the program within the Council of Ministers were crucial to shaping Programa Bosque's concept. MEF, who ultimately decides on budget allocations, was not strongly convinced of a 'pure' conservation program and took a positive stance on Programa Bosques only after it introduced the cash transfer and productive activities component. In Ecuador, there was not so much discussion on the political feasibility of the program, as the request for it came directly from the president's office. In Acre, the general opinion among respondents was that the administrative environment in the state was conducive to the mainstreaming of environmental policies in the state.

Consultations with other Latin American countries with active large-scale incentive-based policies, as well as smaller-scale initiatives already happening in Ecuador, showed Ecuadorian and Peruvian teams that the programs would be technically feasible. In Acre, previous

experience with state-wide conservation programs, as well as a wealth of data originated from the federal government, confirmed the perception that SISA would be technically feasible. Finally, the introduction of environmental provisions in the proposed new constitution, and the drive of the new administration for strengthening social policies in general and of incentive-based policies specifically were the main reason given by respondents for the opening of a policy window in Ecuador, where president Correa was identified as the policy entrepreneur. Developments after the *Baguazo* were identified as the main determinant of the policy window opening in Peru, and the then environment minister Brack was seen as the policy entrepreneur. In Acre, no specific policy window opening was recognized, as environmental policies have been steadily implemented in the state for over a decade, and respondents did not identify an individual policy entrepreneur.

Table 7 below summarizes these findings in accordance with the elements of the MSF.

Table 7 – Summary of findings

	Programa Bosques - Peru	Socio Bosque - Ecuador	SISA - Acre
Problem stream			
Indicators	Deforestation pressures from small-scale actors, high percentage of carbon emissions from LULUCF, high poverty rates in forest areas	Deforestation pressures from agriculture and cattle ranching, high poverty rates in forest areas	Deforestation in small-scale agricultural settlements, high poverty rates
Focusing events	Trade agreement with the USA, creation of Environment Ministry, indigenous conflicts	No specific events, but innovative environmental clauses in the new constitution	None identified
Feedback from previous policies	Ineffective command-and-control policies	Ineffective command-and-control policies, small-scale PES projects in implementation	Array of integrated environmental and development policies in place for several years and perceived as effective
Politics stream			
National mood	Perception of low electoral priority for environmental issues, no direct pressure for the creation of an incentive-based program	Perception of low electoral priority for environmental issues, no direct pressure for the creation of an incentive-based program	Perception that environmentally friendly policies are well received by the population, continuous re-elections of the ruling group
Organized political forces	Environmental policy-making concentrated in the executive, no legislative debate for Programa Bosques creation, limited influence of NGOs in program creation	Environmental policy-making concentrated in the executive, no legislative debate for Socio Bosque program creation, limited influence of local NGOs in program creation	Swift approval of SISA law in the state assembly, NGOs had a relevant role in SISA's design process
Political and administrative structure and changes	Need to gain MEF's approval influenced the addition of direct transfer component	Policy proposal came directly from the president's office, need for a quick design, wide use of incentive policies by the government	Environment comparatively high in the government's agenda, cooperation between government agencies and its members facilitates mainstreaming of environmental policies
Policy stream			

	Programa Bosques - Peru	Socio Bosque - Ecuador	SISA - Acre
Perceived technical feasibility	Similar experiences in other Latin-American countries influenced the perception that the program could be technically feasible. Perceived success of <i>Juntos</i> .	Similar experiences in other Latin-American countries and in smaller scales within Ecuador influenced the perception that the program could be technically feasible	Federal and state level monitoring systems in place and being improved, experienced and qualified high-level staff
Perceived value acceptability	The introduction of a cash transfer component made the program more acceptable to non-environmental government agencies	Direct request from the president downplays the importance of value acceptability as a variable within the administration	Environmental issues are at the core of government's discourse
Policy Window	Window opened with the signing of the FTA	Environmental discourse introduced with the new constitution	Forest policies have been continuously implemented in the state for over a decade
Policy Entrepreneur	Antonio Brack	Rafael Correa	None identified

VII. Better bend than break? Designing policies

This chapter explains the factors that played the most relevant roles in defining the specific policy design decisions taken in each of the cases. The chapter is organized along the lines of the main recommendations for incentive-based policies identified in Chapter II and summarized in Table 1. After describing the decisions on each type of recommendation, in accordance with the literature review performed in Chapter II, an analysis of the processes based on the theoretical framework developed in Chapter III will be provided. The final section will discuss the findings of the chapter.

1. Presidential influences, drawing lessons and learning during implementation: designing Socio Bosque in Ecuador

Socio Bosque's design process has been led by MAE's staff, with the support of specialists from Conservation International (Interview 5). Among the main influences in the design, was the experience with the *Gran Reserva Chachi* project, from which the idea of implementing direct payments based on conservation agreements was drawn (de Koning et al., 2011). The design team also held workshops with representatives from international organizations, such as the World Bank, and representatives from countries such as Mexico and Costa Rica, with experience in PES (Interview 8).

1.1 - Conditionality, monitoring, and baselines

As a reminder of the discussion of Chapter II, we will present the summary table of that chapter (Table 1), divided according to the sections concerned.

Issue	Main recommendations
Conditionality	Payments should only be made if the targeted ecosystem service (or related land use) is actually being provided.
Baselines	Constructing explicit baselines is required to understand pre-intervention conditions and behaviors and to evaluate how a PES scheme will or will not provide additional ES or desired land use, aiming to ensure that program resources will be additional.
Monitoring	Monitoring is required to understand if the PES scheme is actually providing additional ES and ensuring the desired land uses, and also to gauge impacts in all program aspects

It was clear from the beginning of the design process that the incentive should not be perceived as a gift, but an outcome-oriented investment; hence conditionalities and sanctions were considered necessary to make the program effective. Much of the program’s design team shared this motivation for the decision, and the definition of what conditionalities and sanctions were to be applied was swiftly agreed upon (Interview 5). It was also agreed that conditionalities should be as clearly understandable as possible, as they believed that most potential beneficiaries were not used to long administrative procedures (Interview 5, 12). In addition, it was not clear, by the time the program was being designed, to what extent the implementation team would have the administrative capacity to enforce conditionalities, further strengthening the case for an administratively simple program.

At the start of the program, no nation-wide forest monitoring system was available. Establishing such system before the beginning of Socio Bosque’s activities was deemed unfeasible, as there was pressure from the president’s office for timely implementation. The design team, therefore, decided to proceed, setting up an extensive monitoring system as one of the program’s core activities to be performed during implementation (Interview 5).

No country-wide emission or land cover change baseline existed at the time of Socio Bosque’s design phase⁵⁹ as well. Reliable information on past deforestation in Ecuador was scarce, with the design team relying on extrapolations from punctual studies (Interview 12). Therefore, the program had to develop property/community specific baselines as a requirement for enrollment, to allow for compliance monitoring. The baselines are constructed through field verification of the vegetation cover of the area, complemented by satellite imagery or aerial photography when available. The participants decide which parts of their territory they want to conserve (see sections 1.3 and 1.5 below) and the vegetation cover at the date of the field verification will be considered for conditionality compliance (MAE, 2011).

1.2 - Leakage and Permanence

Issue	Main recommendations
Leakage and Permanence	Increase the scale of programs, track deforestation nationally or regionally instead of using a project based accounting system to mitigate leakage. Temporary crediting, favoring perpetual contracts over time-specific renewable ones to foster permanence.

⁵⁹ The baseline has been later completed and published (MAE, 2012b).

Socio Bosque’s design has no explicit provisions to avoid leakage. The theme came up during the design process, but just as an argument in favor of a national program, in the case an eventual national accounting of carbon credits would happen in the future (Interview 5). The conservation agreements are set to last for 20 years, with the possibility of renewal. During the design phase, there was some discussion about the duration of the contracts. Suggestions varied between open-ended contracts to five-year contracts (Interview 5). The decision to set the contract for 20 years was made because it was perceived that a five-year contract would not generate a real commitment for people to conserve their forests and that a 20 year contract would give the program more political sustainability, as the 20 year contracts are longer than a government term, reducing the risk of program cancellation by a future administration (Interviews 5, 8).

1.3 – Poverty reduction and participation

Issue	Main recommendations
Recipients of payments	Recipients should be those who pose a high deforestation threat, considering they have positive but numerically small (relative to the financing available) opportunity costs.
Payment structure and amounts	Payments should, at a minimum, cover the opportunity costs of scheme participants, or provide the minimum amounts of participants’ are willing to accept.
Spatial targeting	Payments should be spatially differentiated. Schemes should target areas with high environmental service provision, high risks of ES loss, and low (opportunity, transaction, and protection) costs.
Poverty reduction	PES schemes should not be developed primarily as a tool for poverty reduction, which should only be a subsidiary objective. Poorer landowners are often not the most efficient providers of ES.
Land tenure	Potential PES beneficiaries must have the, at least <i>de facto</i> , ‘right to exclude’, or the right to not allow external agents to occupy their lands

Poverty reduction was a central concern in Socio Bosque’s design. The very existence of the program stems from a presidential request for a program that would tackle deforestation and poverty at the same time (Rosa da Conceição et al., 2015). For that reason, several of the design decisions taken were aimed to ensure benefits to poorer populations. The decision to include communities in the program was driven by the possibility to provide them with cash transfers (de Koning et al., 2011). Welfare concerns also guided the definition of a poverty parameter for targeting, and the interest in fostering potential income generating activities also motivated the inclusion of ICDP-like activities (Interview 8). The program, however, was not able to

reach many poor inhabitants of forests because, for legal reasons, it can only sign agreements with participants with formal land titles (Interview 5).

The concern with possible perceptions of interference with land use rights was, in turn, an important factor in deciding that enrollment in the program would be voluntary and that participants themselves would define which areas of the property/community count for payment purposes. The design team understood that a non-voluntary program, or one that externally defined which parts of the community or individual lands, would be under conservation could foster opposition of potential participants to the program, ultimately risking its viability (Interview 5).

The design process itself was done with limited formal participation of national actors outside of the government (Fehse, 2012; Krause et al., 2013), except for the close partnership with Conservation International (CI) throughout the design process and informal contacts with some potential beneficiaries to exchange ideas about the program, as well as local governments with previous PES experiences, such as the Pimampiro⁶⁰ project (Interview 5). Respondents justified the lack of participatory planning with the voluntary nature of the program, which allegedly caused the participation of civil society actors in the design to be unnecessary (Interview 5). That also had to do with the fact that the design had to be finished quickly, and the design team understood that a consultation process would hinder the program’s feasibility by extending the design process phase, as there were pressing requests from the president’s office to get the project started quickly (Fehse (2012), Interviews 5, 12).

1.4 - Payment levels and opportunity costs

Issue	Main recommendations
Recipients of payments	Recipients should be those who pose a high deforestation threat, considering they have positive but numerically small (relative to the financing available) opportunity costs.
Payment structure and amounts	Payments should, at a minimum, cover the opportunity costs of scheme participants, or provide the minimum amounts of participants’ are willing to accept.

⁶⁰ The Pimampiro PES project was established in 2000, for protecting native vegetation around the Palaurco River upper watershed, aiming at safeguarding water quality and dry-season water quantity. An analysis of the project can be found at (Wunder and Albán, 2008).

Opportunity costs were not calculated for the definition of payment levels. The project team considered that “different levels of incentives depending on the specific location of a landowner would be a cause of intense social debate and would not be politically viable” (de Koning et al., 2011). It was also affirmed by respondents that calculating opportunity costs would entail a long process, requiring the generation of new data, raising fears within the design team that the project design phase would be greatly extended, reducing the political momentum for program adoption (Fehse, 2012). Specialists invited to take part in a workshop with the design team tried to make a case for opportunity cost calculations, including the proposal of a road-based zoning system that would provide simple opportunity costs estimates. Their suggestions, however, were not taken into consideration (Interviews 2, 13). Additionally, the design team perceived that using opportunity costs as a basis to define payment levels would mean that poor populations, which tend to pose smaller deforestation threats, would be excluded from the program or receive very low payments (Interviews 5, 12, Fehse (2012)), showing again the influence of poverty reduction concerns in program design.

The area-based payment differentiation at Socio Bosque, however, was devised as a proxy for opportunity costs, with the “assumption that opportunity costs decrease when the area increases, since access becomes more difficult in larger areas”, but “was also a political decision to maximize the limited budget that was available”⁶¹ (Krause and Loft, 2013, pp. 1173-1174). As it can be seen in the first quarter of Table 6 (Chapter V, section 1), the initial rules of the project differentiated payments by property size only. The current payment structure, established in October 2011 (MAE, 2012c), 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, which receive US\$ 60 per hectare (see Table 6 in Chapter V, section 1). 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; MAE, 2012c). The change in the incentive structure was in part due to a decrease in the rhythm of new participants signing up, especially in *páramos* areas, which “have high opportunity costs, because these areas are fertile and easy to access and the original incentives were not sufficient” (Krause and Loft, 2013, p. 1174). With the new incentive structure, total payments experienced an average increase of 40.2%, with wide variations between regions and

⁶¹ Maximize here means not increasing the amount of money available, but reaching more beneficiaries with the same budget.

tenure types, from a 0.3% for individual contracts in the Amazon region, to a 116.9% increase for community areas in the Andes (mostly *páramos*) region (Krause and Loft, 2013). Concerning payments per beneficiary, there are also large variations in the amounts paid. Individual contracts received on average almost four times more per beneficiary per year than collective contracts, US\$ 458.32 *versus* US\$ 129.91 respectively (Krause and Loft, 2013)⁶².

The definition of the specific monetary amounts of the incentive was intended to be kept simple and straightforward, as it was believed that more complicated systems would be hard to implement and difficult for the communities to understand. The initial values were loosely based on the incentive values of the programs presented in the design workshop and on the budgetary possibilities of the program (Interview 5).

1.5 - Spatial Targeting

Issue	Main recommendations
Spatial targeting	Payments should be spatially differentiated. Schemes should target areas with high environmental service provision, high risks of ES loss, and low (opportunity, transaction, and protection) costs.

As stated in Chapter V, section 1, the targeting system was not planned to be applied from the beginning of the program, but only after there was more demand for participation than the supply of funds for new enrollments (Holland et al., 2014). Another relevant aspect related to the spatial distribution of project activities is the selection of areas to be conserved within the enrolled properties. Respondents closely involved in the design progress mentioned that the decision to allow communities and individuals to define those areas themselves was taken to maintain coherence with the voluntary nature of the program (Interview 5, 8).

In spite of the lack of targeting and the voluntary decisions on which areas should be conserved, a recent study (Jones et al., 2016) on conservation impacts of Socio Bosque found that the program “reduced average annual deforestation by 0.4–0.5% between 2011 and 2013 for those enrolled, representing as much as a 70% reduction in deforestation attributable to Socio Bosque” (p.1). The study, however, is restricted to “smallholders that live along “the western boundary of Cuyabeno Faunal Production Reserve, in Sucumbíos Province, northeastern

⁶² The difference is high, but the changes in the payment structure in 2011 reduced them. Before that, Socio Bosque paid on average US\$ 451.44 per beneficiary per year for individual contracts and US\$ 72.91 per beneficiary per year for community contracts (Krause and Loft, 2013).

Ecuador” (p. 2), in Amazon region of the country, encompassing only 63 program participants (all landowners) with an average enrollment of 49ha, or 77% of their parcels.

1.6 - ICDP-like components

Issue	Main recommendations
ICDP-like components	Direct payments tend to be more cost-efficient than ICDPs because they are based on conditionalities, on less dubious assumptions, are less costly and administratively simpler. ICDP-like activities can be improved by adding conditionalities to its design.
Poverty reduction	PES schemes should not be developed primarily as a tool for poverty reduction, which should only be a subsidiary objective. Poorer landowners are often not the most efficient providers of ES.

Socio Bosque requires communities (but not individual landowners) to develop ICDP-like (see Chapter II, Section 2.5) projects, with the stated aim of fostering income generating activities within the community. The motivation for that decision was, again, the intention from the design team that the incentive should not be perceived as a gift and to ensure that the whole community could benefit from the payments, avoiding, for example, capture by community leaders and consumption related uses (Interview 5). Research on program implementation, however, shows that investment plans have not always ensured transparent and informed decision making in communities (Krause et al., 2013), that “some communities are having difficulties distributing the costs and benefits of participation in Socio Bosque fairly” (Collen et al., 2016, p. 8), and reports evidence of “intracommunal power imbalances and elite capture” (Krause and Loft, 2013, p. 1180).

2. Addressing conflicts and adapting lessons: designing Programa Bosques in Peru

Programa Bosques’ design process was performed by a team from the MINAM and, as stated in Chapter VI, sections 2.2 and 2.4, influenced by discussions within Peru’s Council of Ministers. Like in Socio Bosque, the design team held meetings with representatives from countries with experience in PES, technical experts, and international researchers. Socio Bosque’s input was especially influential as it will be seen below.

2.1 - Conditionality, monitoring, and baselines

The general rationale for the definition of the conditionalities was also to ensure that communities would not perceive the incentive as a hand-out and that they should be transparent and easily understandable (Interview 23). Additionally, as stated in Chapter VI, section 2.3, the creation of Programa Bosques has been inspired by the *Juntos* CCT program, so the inclusion of conditionalities for payments was integral to the very existence of Programa Bosques (Interview 23). Respondents did not report a great deal of discussion during the design process on what conditionalities should be applied; with the avoidance of deforestation in the areas to be conserved, no illegal logging and illegal crops, financial accountability and community evaluation of activities being generally agreed upon from the start of the process (Interviews 21, 23).

The baselines and forest cover monitoring system were not in place at the beginning of the program, and are being implemented as one of the program's components (Interview 18). Peru did not have a ministry of environment before 2008 and no nation-wide conservation program⁶³ until the creation of Programa Bosques, which could have pushed for a forest cover monitoring system (Interview 23). While it cannot be said with certainty that Programa Bosques is the main driving force for the creation of such a system, it has become one of the drivers for the improvement of forest monitoring in the country.

2.2 - Leakage and Permanence

There are no specific provisions to avoid leakage or to promote permanence in Programa Bosques' documents. The program's total execution horizon is 10 years (MINAM, 2013), but conservation agreements have a duration of 5 years, with the possibility of renewal if conditionalities are met (PNCB, 2011). The duration of the agreements was not widely discussed during the program's design phase (Interview 21).

⁶³ At the time of Programa Bosques creation, Peru had the National Protected Areas Service (SERNANP), an agency rather than a program, established by the same decree that created MINAM.

2.3 – Poverty reduction and participation

Poverty reduction concerns were also central in the design of Programa Bosques. The introduction of a cash transfer mechanism during the program's design phase was a definite requirement for the acceptance of the program by the Ministry of Finance (MEF), which ultimately allocates the budget for government policies (Rosa da Conceição et al., 2015). Similar to Socio Bosque, poverty reduction concerns were among the factors taken into consideration in design decisions relating to targeting, payment system definition and the introduction of ICDP-like activities (Interview 21, 23). We could, however, not find evidence on the extent to which these design elements were thoroughly discussed by the design team, as opposed to a straightforward adoption of Socio Bosque's design model.

Programa Bosques also did not count with the wide participation of non-government stakeholders. A few meetings were held with the NGO Inter-ethnic Association for the Development of the Peruvian Forest (AIDSESEP) to discuss some of the initial drafts of the program, but the respondent did not inform how much of AIDSESEP's input has been adopted by the design team (Interview 22). The design team reasoned that, since participation in the program is voluntary, a thorough participatory process would make the design process unnecessarily time intensive (Interviews 21, 22, 23).

2.4 - Payment levels and opportunity costs

The interviews and program documentation did not yield solid evidence on more specific reasons why an undifferentiated payment structure was chosen, or why opportunity costs were not considered, despite the payments structure being one important feature that deviates from what is done in Socio Bosque. According to the respondents, the specific amount of the payment was defined largely for the sake of simplicity and expected budgetary constraints, with the value of 10 Soles being deemed as easy to understand and communicate, while keeping the total amount of expenditure for the program within a realistic budgetary range (Interviews 21, 23).

2.5 - Spatial Targeting

Programa Bosques aims to reach all communities with land titles in forested areas in the country. Therefore, the program's targeting (*focalización*) is more a prioritization of communities in which the program will intervene, rather than a selection of who participates or not (also called placement). The selection of the initial area of program implementation, at the Valley of the *Apurímac* and *Ene* Rivers (VRAE) region, however, did not follow the prioritization criteria, being motivated by the government's interest to benefit a region with a history of poverty and political conflict (Interview 21). In addition, the program's implementation requires agreements (*convenios*) between the central government and the departments⁶⁴. For that reason, communities in provinces without such agreement are not eligible, even if both the province and the community score highly in the targeting system (Interview 16).

Furthermore, according to information provided by the GIZ-Peru staff (personal communication with R. Giudice, in 10.03.2017), the criteria for prioritization of communities has not been homogenously followed by the program. In 2011, for example, the program prepared a ranking of 102 communities based on the prioritization criteria, with the first 50 being considered priority for enrollment. In that same year, 27 communities voluntarily applied for enrollment, of which 17 were enrolled by the end of that year. Only 10 of those 17 were among the list of 50, and five were not even ranked within the list of 102 communities.

The participation of the provinces was considered important as part of a general effort to deconcentrate and decentralize public policies in Peru (ProDescentralización, 2012), as well as due to implementation transaction cost concerns, given the size of the country and the remoteness of some of the potential intervention areas (Interview 16, 20). Participating communities are free to define which share of their territory is enrolled in the program. As described in the case of Socio Bosque, which seems to have played the role model here, this design choice leaves ample scope to the adverse selection of non-threatened forest areas into the program.

⁶⁴ Departments are the highest level of subnational government in Peru, the equivalent of states in Brazil and the United States and of Bundesländer in Germany.

2.6 - ICDP-like components

Again following the Socio Bosque model, the Peruvian program requires communities to use their payments for the implementation of ICDP-like productive activities. Considering the poverty reduction objectives of the program, the design team reckoned that cash disbursements to communities required procedures to ensure that expenditures were transparent and goal-oriented. Concerns about local capacities to manage investments in alternative income generating activities led to the definition of a financial reporting system, which is untypical in PES schemes. However, the ability to demonstrate the investment of transfers in productive activities came to be an important asset in negotiations with the MEF, which was much more willing to approve budgets to a program with a component that stimulated economic activity concomitantly with conservation (Interview 23).

3. Participation, innovation and late decisions: designing SISA in Acre

3.1 - Conditionality, monitoring, and baselines

Acre's decision to attract long-term financing for SISA through the generation of certified emissions reductions required stricter methodologies for forest conservation as compared to the Ecuadorian and Peruvian programs. Acre already had established a deforestation baseline during the elaboration of its state Pilot Plan for Deforestation Control (PPCD). It remains to be decided, though, whether specific local baselines have to be defined for individual projects. Conditionalities will also be defined later, at the projects' level (for the implementation structure of SISA, refer to Chapter V, section 3).

The same essentially applies to land cover monitoring systems. Acre's already existing monitoring activities, also described in Chapter V, section 3, form a solid base for deforestation monitoring of SISA's activities. Unlike the cases in Peru and Ecuador, most of the monitoring infrastructure in the state had been created by previous policy efforts.

The existence of baselines and a well-developed monitoring system in Acre helps explaining why the theme was the subject of so few recommendations in the consultation process (see section 3.3 below). Most of the comments related to the theme were concerned with control, inspection and sanctioning of illegal activities, rather than monitoring itself.

3.2 - Leakage and Permanence

The program has also no specific guidelines for leakage avoidance. The consultation process raised the question of leakage, as the initial project proposal intended to work on priority areas. The issue has been addressed, for the carbon component, with the broadening of the program's intended implementation in the whole state and with the statewide accounting of emissions reductions. That may avoid issues regarding within-state leakage of emissions, although not inter-state or international leakage.

The issue of permanence has been also questioned in the consultation process, as the participants were concerned with the initial duration of 15 years for the program. The response of the design team is that they understood the concern but that there was not a lot that could be done (Acre, 2012). Although the final version of SISA scrapped a time limit and was turned into a law, which is more politically stable than a one-off project, the government understood that it would be unwise to make strict long-term plans at the time of design “due to the unpredictability of what is going to happen after four governing terms. Similarly, the identification of financing sources for the next 50, 100 years does not seem feasible. It [not presenting specific long-term plans for ensuring permanence] is a risk the program will have to take” (Acre, 2012, p. 63, author's translation).

3.3 – Poverty reduction and participation

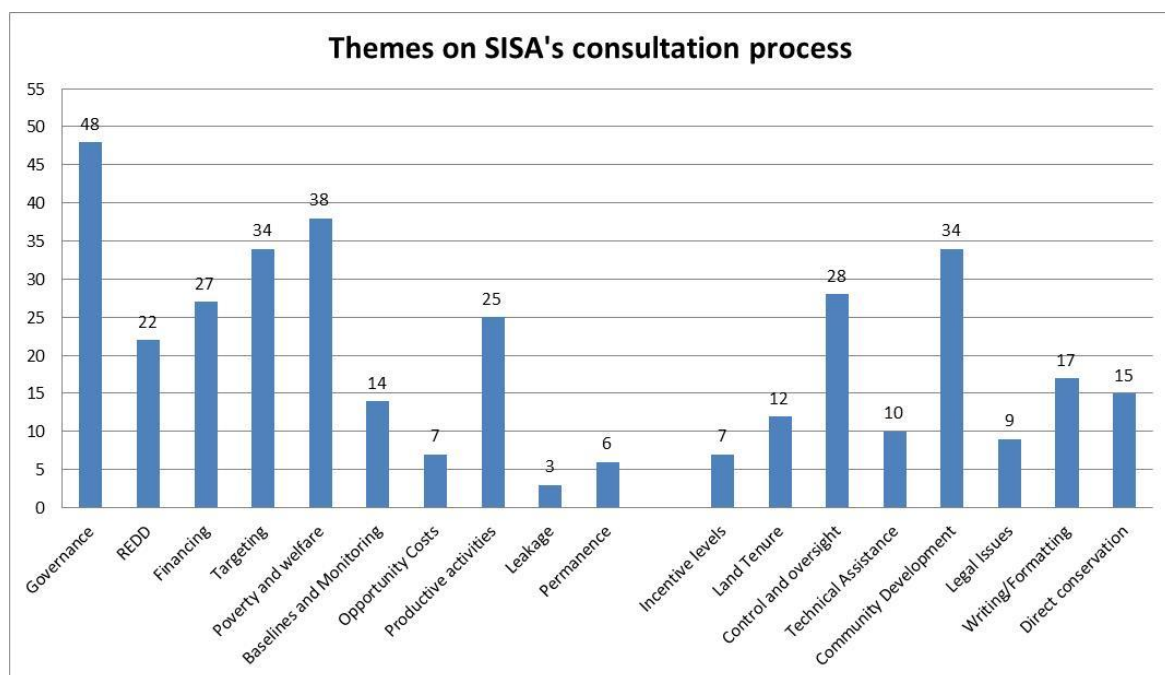
Poverty reduction and welfare improvement concerns permeate the whole design of SISA. In the text of the SISA law, benefit sharing is stated as one of the guiding principles of SISA and one of the objectives of ISA Carbono (Acre, 2010a). Figure 10 below also shows that poverty and welfare issues were the second most frequent concerns of the process' participants.

Various respondents emphasized that reconciling environmental conservation with welfare concerns is one of the core philosophies of state policies in Acre. A common view is that forest conservation and the well-being of forest inhabitants of Acre are inextricably linked. Hence, policies that seek to conserve forests are considered incomplete if they lack a component to ensure that their benefits also reach forest dependent people (Interviews 28, 29, 35).

Unlike in the Ecuadorian and Peruvian cases, SISA performed a long (see the timeline in Figure 11), participatory consultation process with the state’s stakeholders. An initial version of the project prepared by the government was made available to scientists, local, national and international NGOs, leaderships of potential beneficiary groups (rubber tappers, indigenous peoples, smallholders and farmers), fundraising and carbon market specialists, mayors, state and national assembly representatives, as well as other governmental agencies’ representatives (Acre, 2012). The initial consultation process occurred between August 2009 and April 2010. After two months spent in the analysis of the recommendations, reformulation of the program’s initial draft, and drafting of the law project, a second consultation process was performed, lasting from July to October 2010 (Acre, 2012).

As mentioned by respondents (Interviews 28, 32, 37), the best source for understanding the design process in Acre is the compilation of the recommendations made during SISA’s consultation process (see below), as published in Acre (2012). The contents of the suggestions provided by the consultation process’ participants and the responses provided by the government’s design team formed the bases of the descriptions and analyses regarding the Acre case, compounded with information acquired during the interviews. Figure 10 provides a breakdown of the issues addressed by the consultation process.

Figure 10 – Breakdown of themes addressed by SISA’s consultation process



Source: Prepared by the author based on Acre (2012)

Of the 72 invited institutions, only three produced formal, written reports commenting on the initial draft. Stakeholders were also involved through meetings, workshops, and a technical seminar, which were yielded the majority of the recommendations provided (Acre, 2012). The consultation process, which received altogether 357 recommendations from civil society organizations sharply reshaped the initial idea of the program from a project-based approach to a structural program, not solely aimed at creating a new activities, but at supporting existing ones and organizing an institutional structure for regulating new activities from the government, private sector and civil society (Acre, 2012).

One relevant remark on the participation process is that leaders of social movements in the state were given work positions within the government. That, according to a respondent (Interview 33) and one remark made during the consultation process (Acre, 2012), might have generated some questioning about the allegiances of members of social movements, as they end up being also part of the government. That situation led some to fear a weakening of the role of the civil society in the state, as leaders that before pushed the civil society's agenda ahead could now be discouraged to criticize the government in case of disagreement. That point was also raised by other organizations working in the state, which identified a "change in the nature of the relations of the social movements and the government", and a "strong cooptation of leaderships, injection of public money in the civil society through agreements and salaries, generating a political and partisan binding" (IUCN et al., 2008, p. 29, author's translation).

3.4 - Payment levels and opportunity costs

In the technical seminar, which was part of the consultation process, participants noted the absence of conservation opportunity costs as a criterion for incentive design in the original proposal and recommended complementary research activities (Acre, 2012). The project team, as intended in the consultation process, contacted the Amazon Environmental Research Institute (IPAM) to provide an estimate of opportunity costs in the state, which was published in 2012 (IPAM, 2012). At the time of the study, however, the official program documentation of SISA and ISA Carbono lacked any reference to opportunity costs program design criterion. In the consultations, the program's design team has acknowledged the importance of opportunity cost calculations but mentioned that they would not "commit with paying

opportunity costs in this moment of uncertainty about financing” (Acre, 2012, p. 60, author's translation). Therefore, details on the adoption of opportunity costs as a criterion for payment calculations will be another aspect to be defined alongside the design of specific projects (Interview 35).

3.5 - Spatial Targeting

The initial proposal for the program intended to be “implemented in 7–8 priority areas of high deforestation risk based on information in the state’s Ecological and Environmental Zoning” (Duchelle et al., 2014b). This aspect was one of the most frequently mentioned themes in the consultation process (see Figure 10), regarding the very applicability of the priority areas concept for SISA and, especially, how they would be defined and who would be excluded (Acre, 2012). The design team decided, then, not to use priority areas, and that the whole area of the state should be allowed to be eligible for activities within the SISA framework. A state-wide approach was considered more appropriate for the accounting of potential carbon credits generated by the program, for the diversity of potential beneficiaries, and for the heterogeneous local contexts in the state (Acre, 2012). The government considered the subprogram/project structure in SISA more appropriate to address local contexts, under a general program that holds rules and standards together (Interview 35). Therefore, the spatial distribution of SISA supported activities will only be known when full-fledged implementation is underway.

In addition to allowing for projects potentially being implemented in the whole area of the state, the program also intends to foster what it calls “thematic projects”. Such projects can focus on specific areas (e.g. Alto Juruá region in the north of the state, surroundings of the capital Rio Branco) or specific groups (e.g. vulnerable indigenous populations, well-off farmers with pasture expansion potential).

3.6 – ICDP-like components

ICDP-like components are very likely to be present within SISA-supported programs. As stated above, welfare improvement is at the core of the program’s objectives, and the design team was convinced that the pursuit of sustainable productive activities is central to the state’s

conservation strategy. During the consultation process, ICDP-like investments were broadly and uncritically seen as a key program component (Acre, 2012).

Recommendations from the Brazilian Agricultural Research Company (EMBRAPA), for example, state that conservation incentives may originate “from the adoption of sustainable practices” (Acre, 2012, p. 57, author's translation). The SISA team implicitly agreed by arguing that “the term ‘payments for environmental services’ does not reveal the innovative dimension of the program” (Acre, 2012, p. 57, author's translation) and that it was important to make it clear that the project supports the adoption of production techniques that seek to have a lower environmental impact than traditional forms of agricultural production, while not compromising the income-generation purpose of the rural properties (Acre, 2012, p. 58). Also, potential local beneficiaries favored ICDP-type interventions: the National Confederation of Rubber-Tappers (CNS) worried that “the problem with incentives, for example, the rubber subsidy, is that the rubber tappers get complacent and, when the incentive ends, they want to move to the city”. In addition, local population representatives claimed that “what the people want are incentives to generate income and not deforest, we do not want just payments for not deforesting” (Acre, 2012, p. 58, author's translation).

3.7 –REDD+ integration

In addition to the themes above, another issue in SISA’s design worth mentioning is the planned integration with the REDD+ regime. The international debate on the establishment of a global REDD+ regime gained prominence concomitantly with SISA’s design period. The design team and the stakeholders consulted in the participation process took notice of the emergence of REDD+ as a potential tool for financing conservation activities in the state. For that reason, the initial proposal of a government-led PES project in the state morphed into a program with a strong intention to relate to the REDD+ international debate. Unlike Socio Bosque and Programa Bosques, SISA was intentionally designed to insert itself in a future REDD+ regime, incorporating much of the terminology used in REDD+ (i.e. safeguards, register, carbon credits) and showing commitment to generate certifiable emissions.

It is likely that this possibility of drawing additional financial resources to the state is the most attractive aspect of integrating activities with a budding REDD+ regime for a relatively poor,

isolated jurisdiction like Acre. In addition, as stated in the consultation report, the design team understood that the term REDD+ “could bring communication benefits” (Acre, 2012, author's translation), furthering the state’s attractiveness for potential donors.

Table 8 below summarizes our findings and figure 11 provides a timeline of the processes analyzed.

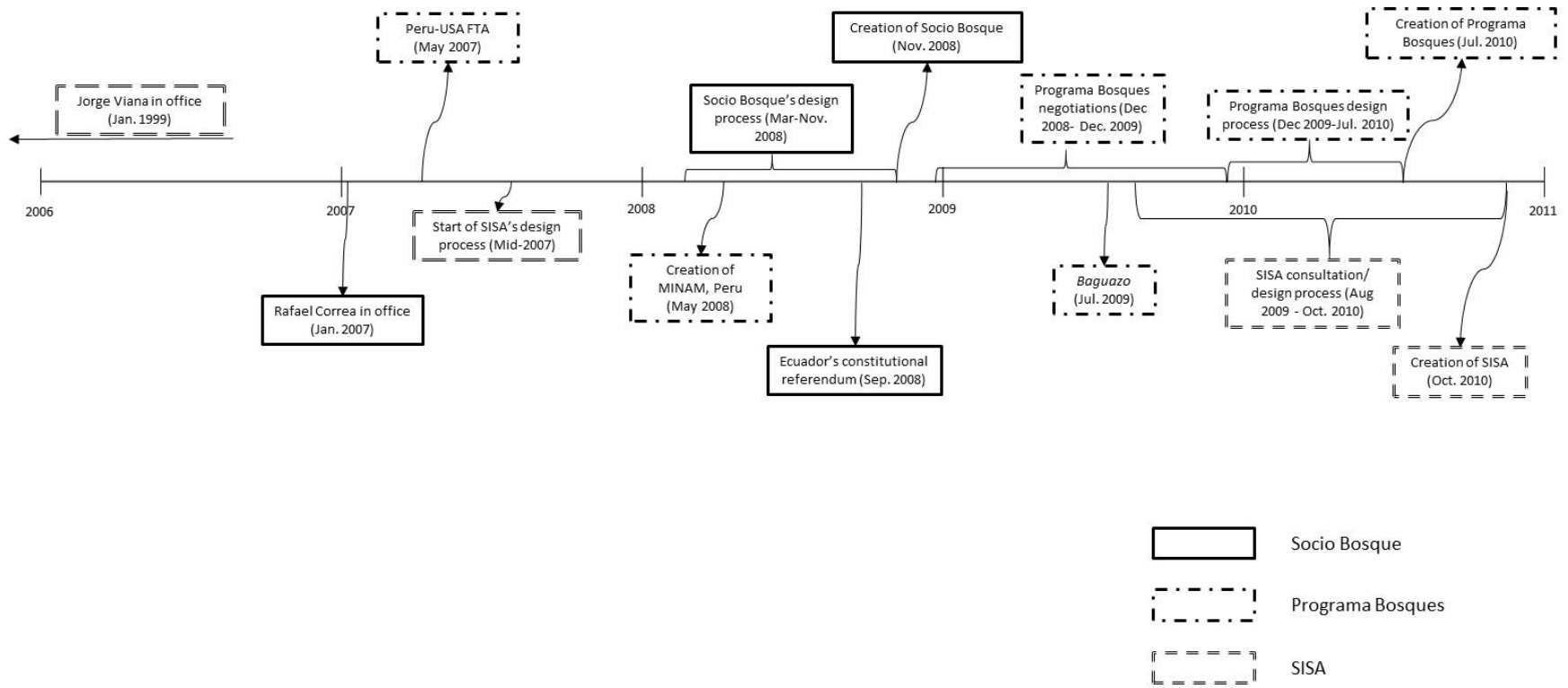
Table 8 – How were recommendations considered in the cases?

Programs Main Recommendations	Socio Bosque	Programa Bosques	SISA Acre
<p>Strong degree of conditionality; monitoring system in place</p>	<ul style="list-style-type: none"> - Payments conditional on compliance with environmental and administrative conditions. - Field and image-based monitoring system to be fully developed during implementation. 	<ul style="list-style-type: none"> - Payments conditional on compliance with environmental and administrative conditions. - Field and image-based monitoring system to be fully developed during implementation. - Payment suspensions being carried out, mostly due to administrative non-compliance. 	<ul style="list-style-type: none"> - SISA has no specific provisions on conditionality, since it has not yet included direct financial transfers as its provisions.
<p>Take safeguards to contain leakage and boost permanence</p>	<ul style="list-style-type: none"> - No provisions to avoid leakage and increase permanence. 20-year contracts to ensure some political stability. 	<ul style="list-style-type: none"> - No provisions to avoid leakage and increase permanence. 5 year contracts due to legal limits. 	<ul style="list-style-type: none"> - SISA’s plans to generate tradable carbon credits, which will require safeguards for leakage. The program intends to provide a framework for the long-term implementation of conservation activities in the state, so permanence is core to its strategy.
<p>Poverty concerns should be secondary to environmental concerns</p>	<ul style="list-style-type: none"> - Core priority for the program. - Communities included in the program due to poverty reduction concerns. - Poverty as a parameter for targeting. - Use of ICDP like projects aimed at 	<ul style="list-style-type: none"> - Core priority for the program. - Poverty component required by MEF for program budget approval. - Poverty as a parameter for targeting. - Use of ICDP like projects aimed at generating income generation options. 	<ul style="list-style-type: none"> - The programs already supported by SISA are closely related to social and poverty reduction concerns. Associating conservation and social policy concerns has been at the core of Acre’s policies.

Main Recommendations	Socio Bosque	Programa Bosques	SISA Acre
	generating income generation options.		
Define baselines	<ul style="list-style-type: none"> - No countrywide baselines before the program. - Property/community specific baselines developed to monitor compliance during the enrollment process. Field visits aided by imagery when available - Participatory mapping of areas to be conserved, as defined by landowners/communities. 	<ul style="list-style-type: none"> - No countrywide baselines before the program. - Community specific baselines developed to monitor compliance during the enrollment process, based on satellite imagery and participatory field verification. - Participatory mapping of areas to be conserved, as defined by communities. 	<ul style="list-style-type: none"> - Acre prepared a historical baseline and has been using it as the basis for its environmental policies, including SISA.
Pay according to landowner's opportunity costs	<ul style="list-style-type: none"> - No previous calculation of opportunity costs. Area and vegetation type as proxies to opportunity costs. - Differentiated payments per enrolled area size, type of vegetation and ownership. Payment structure adjusted during implementation to better reflect opportunity costs. 	<ul style="list-style-type: none"> - No previous calculation or proxies of opportunity costs. - Undifferentiated payments. - No use of OCs as they were perceived to not benefit poorer populations enough. 	<ul style="list-style-type: none"> - The issue was raised during the consultation process, but no provisions for the consideration or not of opportunity costs are yet in place.
Employ spatial targeting	<ul style="list-style-type: none"> - Based on assumed levels of threat, environmental service, and level of poverty. - Applied only after there were more enrollment requests than resources (from 2012). 	<ul style="list-style-type: none"> - Region and community focalization. Based on primary forest area deforestation rate and poverty incidence rate or closeness to access paths. - Initial implementation at the VRAE region due to the region's poverty and past political turmoil. - Enrollment subject to regional government's agreements, irrespective of targeting scores. 	<ul style="list-style-type: none"> - No specific provisions for the consideration or not of spatial targeting is yet in place. But SISA's plans to generate tradable carbon credits will require some sort of targeting provisions.
Consider costs of ICDP-like components	<ul style="list-style-type: none"> - Payments attached to ICDP like activities are central to the program's strategy. Considered important to reduce poverty. 	<ul style="list-style-type: none"> - Payments attached to ICDP like activities are central to the program's strategy. Considered important to reduce poverty. 	<ul style="list-style-type: none"> - Activities already supported by SISA have ICDP-like components in its structure.

Programs Main Recommendations	Socio Bosque	Programa Bosques	SISA Acre
<p>Ensure wide participation in design process</p>	<ul style="list-style-type: none"> - Participatory process largely absent. - Voluntary enrollment. - Participants define which areas will be set aside for conservation. 	<ul style="list-style-type: none"> - Participatory process largely absent. Unclear results from AIDSESEP meetings. - Voluntary enrollment. - Participants define which areas will be set aside for conservation. 	<ul style="list-style-type: none"> - SISA was built through an extensive participatory process, which fundamentally changed the initial idea proposed by the government.

Figure 11 – Timeline of the design processes



4. Analysis of policy decisions

The final section of this chapter will analyze the design decisions of the programs in the light of the conceptual framework espoused in Chapter II, section 3. As a reminder for the discussion, we present, in Table 9 below, a summary of the main explanatory elements of our framework.

Table 9 – Reviewing elements of the conceptual framework

Explanatory Element	Summary description
Electoral opportunities and risks	In democratic systems, politicians will try to maximize power, ensuring that policies will be designed in ways to ensure the most possible votes in following elections.
Actor identities	Idiosyncratic characteristics of the actors involved in project design, like their degree of commitment to service or personal relations.
Political, administrative, and technical feasibility	The institutional context in which decisions are made; administrative costs and the simplicity or difficulty of operational tasks that will have to be performed by bureaucrats; the relation between the technical requirements of a policy and the perceived ability of the government to be able to carry out that policy.
Bureaucratic dynamics	The relations between governmental agencies involved in a given policy area.
Lesson-drawing	Policy makers will often look at other jurisdictions that have designed similar policies or to previously implemented policies to draw ‘tried and tested’ policy options.
Beliefs	Ideological and ideational principles that might limit or spur government activity.

4.1 – Poverty reduction and welfare

Perhaps unsurprisingly, the most outstanding deviation from the policy recommendations provided by PES scholars is the fact that all three programs place poverty reduction and other welfare concerns at the core of the programs’ objectives and design decisions. Reducing poverty and improving the living conditions of the poorer sectors of the population has been the main overarching declared objective of Latin American governments for long, and more markedly since the 2000s, with the emergence of leftist-populist governments all over South

America⁶⁵ (Remmer, 2012; Seligson, 2007), which pursued “statist, nationalist, and redistributive political projects” (Remmer, 2012, p. 947). Even before those developments, CCT programs started proliferating in Latin America. Present in Peru, Brazil, and Ecuador⁶⁶, these programs have all been expanded in the second half of the 2000s and perceived as more successful in alleviating poverty than previous policies (Fiszbein and Schady, 2009; Ordóñez et al., 2015). In addition, some studies found that voters tend to reward governments that implement targeted social assistance programs in the region (Hunter and Power, 2007; Layton and Smith, 2015; Sandberg and Tally, 2015; Sewall, 2008), at least in the short term (Zucco, 2013). On the other hand, respondents agreed that conservation is a low priority for voters, although there were no consistent studies or opinion polls found on voters preferences to back that perception. There is a documented increasing trend in environmental social movements’ activity and public environmental awareness in the region (Baud et al., 2011; CNI, 2012a, 2012b; IPSOS, 2014), and that may have influenced the adoption of the programs, despite it not being explicitly recognized by respondents. In any case, an increased environmental awareness for the general public and a stronger environmentally focused civil society do not necessarily mean that environment would overtake poverty and other welfare issues as a higher priority for voters. Therefore governments will have a high interest in associating environmental and welfare policies, as the later will normally have a much higher resonance with the electorate.

In Acre, the historical connection of environmental and social policies in the state adds to the explanation for the hybrid shape of the program. The decades-long social struggle of rubber tappers in Acre was initially related more to the Brazilian labor movement than to environmental concerns (Keck, 1995). Their struggle to ensure land-use rights and fight encroachment by farmers eventually led to the creation, in the beginning of the 1990s, of extractive reserves, protected areas where forest dwellers could still collect non-timber forest products and earn their livelihoods (Vadjunec et al., 2011). The strengthening of Acre’s grassroots social movements, “whose participants had a strong dependence on Acre’s abundant forest resources for their livelihoods, and a well-defined common identity as rubber tappers”

⁶⁵ Programa Bosques was created during the government of Alan García, a politician not associated with the left. His election in 2006, however, was a very close contest against the leftist Ollanta Humala, showing the appeal of left-populist politicians in the country close to the time of Programa Bosque’s creation. Humala would eventually win the presidency in the following election in 2011.

⁶⁶ The main CCT programs in those countries are, respectively, Programa Juntos (created in 2005), Bolsa Familia (2003) and Bono de Desarrollo Humano (2004).

(Kainer et al., 2003), both in local politics and in its international image, culminated with the election of Jorge Viana, a forester with strong ties to the rubber tappers, as the governor of the state in 1998. In such a political context of strong belief in the interconnectedness between social and environmental policies, it could hardly be expected that an incentive-based conservation program in the state would follow the recommendation to have welfare issues as a secondary priority.

For those reasons, it is fair to say that the three programs studied have been designed with the intention of being seen as hybrid, environmental *and* social policies.

4.2 - ICDP-like components

Closely related to the concerns with welfare issues analyzed above, is the central presence of ICDP-like components in the programs. One of the motivations for the emergence of direct payments in the forest conservation literature was the understanding that ICDPs were not delivering in their dual intention to promote conservation and development. In spite of that, all three programs place great emphasis on ICDP-like components, which they call productive projects or activities. As stated before, both Socio Bosque and Programa Bosques require communities to prepare investment plans. That means that the incentive provided will, unlike most CCTs, not be freely utilized by the communities, but must be invested in activities intended to generate income, making the programs ultimately a source to finance small-scale, community-led ICDPs. In Acre, although much of SISA's ground implementation is still undefined, the projects that are already receiving support from the initial SISA resources are all aimed at economic activities expected by Acre's government to have a low environmental impact.

The explanation for the lingering interest in ICDP-like activities is also manifold. On the ideological dimension, there was the belief that the payments should not appear to be handouts, but to be seed funds for the construction of long-term solutions for the communities' socioeconomic issues (Interviews 8, 23). From a technical standpoint, the fact that the money is given to a community, with a political/hierarchical structure of their own, tying payments to reportable productive activities was seen as the best way to ensure that the whole community would benefit from the program, reducing the risk of capture of the payments by the community leaders. An early analysis of Socio Bosque, however, "identified several potential concerns

with the current implementation at the community level. These concerns include low levels of participation in communal decision-making about the use of the incentives, a lack of information about the terms of the conservation agreement, and inequitable benefit sharing, including perceived limitations for families and a lack of direct benefits, especially for marginalized groups” (Krause et al., 2013, p. 12).

In Peru, bureaucratic dynamics and lesson drawing were additional influences in determining the existence of an ICDP-like component. During the discussion of Programa Bosques in the Council of Ministers, the Finance Ministry stressed that the program would only be approved if some sort of production-related provision was included (Interview 23) and, as stated in the previous chapter, the budgets for all government programs needed the acquiescence of the Finance Ministry to be approved. That led the design team, as with other aspects of Programa Bosques, to find a solution in absorbing the concept of investment plan present in Socio Bosque.

4.3 - Targeting

Targeting is, politically, one of the trickiest aspects of the design of a PES program, as it will ultimately define who participates - and eventually benefits - and who does not. As a consequence, none of the programs has adopted the technical recommendations for spatial targeting present in the literature. Ecuador and Peru have developed focusing schemes for selecting participants, but, by largely ignoring them, accepted participants from a wide range of spatial conditions. In Acre, the initial idea of having priority areas for implementation has given way to a state-wide approach, still allowing for future targeting, but refraining from specific targeting decisions at the start of the program.

The decisions regarding targeting were largely motivated by concerns about political feasibility and medium-term electoral strategies of the government. Targeting conservation incentives to maximize cost-effectiveness may generate a perception of unfairness if targeting criteria discriminate against poor landholders or good forest stewards. In the intervention contexts of the three programs, it is indeed likely that the lion’s share of avoided deforestation potential is concentrated among better off land users. A perception of unfairness, justified or not, may jeopardize program acceptance, undermine the government’s popularity in the intervention area and cause rifts among the population.

Electoral interests are also likely to have played a major role in the decision to have participants define what share of their land is enrolled in the programs. A top-down definition of eligible areas could have been erroneously perceived as a violation of land use rights, including because payments were not a priori designed to fully compensate for the foregone benefits of forest conversion. Both Socio Bosque and Programa Bosques, as discussed above, were created and designed as hybrid environmental and social programs, and had the political intention to allow for the inclusion of many participants.

The design teams reckoned that, even in a context of voluntary enrollment, a perceived interference in land use decisions would discourage participants from enrolling (Interview 5, 17). In Ecuador, the team was indeed aware of reports of previous activities in the country in which communities felt discouraged to participate when they perceived that their freedom to make land use decisions would be hindered by conservation incentive projects, one of which is described for Ecuador in PROFAFOR and GIZ (2013). Indeed, a study that analyzed the factors affecting desire to participate in Socio Bosque, focused on *páramos* areas (Bremer et al., 2014), found that “a fear of land expropriation” was one of the most important factors affecting a lack of desire to participate⁶⁷, together with “insufficient incentive payments to cover opportunity costs where there are not pre-existing constraints on land use” (p. 128). The same study identified the financial motivation provided by the incentive payments, but also “non-monetary motivations including improved land security and the desire to continue or enhance water supply or biodiversity [as] also key motivations for enrolling in the program” (p. 128). Similar notions were reported in a study on the Ecuadorian Amazon region, where “program participants mentioned three reasons for enrolling in FCIs⁶⁸: the financial incentives, environmental protection, and the paucity of alternative land uses. Most program participants indicated that the financial incentive was the primary reason for enrollment, with compensation providing an alternative source of income” (Jones et al., 2016, p. 6). Concerns with expropriation were also reported, with a “fear that at the end of the 20-year contracts the forested land would revert to the government. As stated by a male non-participant, ‘Some neighbours fear Socio Bosque is a trick, a way for government to take possession of your land’.

⁶⁷ Such “perceptual obstacle” was also found in a study focused on two other local initiatives in Ecuador (the previously cited Pimampiro project and the Fund for the Conservation of Water (FONAG), in Quito) and Mexico’s nationwide PES program (Southgate and Wunder, 2009)

⁶⁸ Forest Conservation Incentives

This fear of expropriation was tied to respondents' general mistrust of the national government" (p. 7). Additionally, the study found that "In many rural areas, poor farmers depend on trees and their land for emergency expenditures and our focus groups confirmed that loss of access to forest as an economic safety cushion was a main reason for not enrolling. The local scarcity of productive land and lack of access to off farm employment or credit leaves smallholders all the more reluctant to sign-off forest use for 20 years" (p. 8).

Respondents in Peru have also added technical reasons for the non-implementation at first of the targeting strategy. Due to the lack of some of the necessary data for the whole country required to implement the strategy, the start of program implementation would allegedly have had to be delayed for a few months. Yet, in both Peru and Ecuador, programs were urged to deliver payments as soon as possible, due to political and administrative constraints and pressures, which are described in further detail in section 4.4 below.

4.4 - Monitoring

Decisions regarding monitoring systems in Ecuador and Peru also interestingly illustrate the relevance of political and bureaucratic contexts in the design and initial implementation of the programs. Both countries lacked a well-developed monitoring system at the time of program design, but both recognized that the programs could only be meaningfully implemented if such systems were in place, as clearly stated in their institutional structures and operational manuals. Ideally, the programs should construct a monitoring system and have it functioning by the beginning of payment delivery, but in both Programa Bosques and Socio Bosque, that was not the case.

Several contextual factors explain the decision to begin delivering payments before the finalization of the monitoring systems in Socio Bosque and Programa Bosques. In Ecuador, the idiosyncratic characteristics of President Correa were relevant, as he pressured for quick action in various policy areas. From the beginning of his mandate, he was trying to implement fundamental changes in Ecuadorian institutions. One of the core changes observed in the country was the strengthening of the executive power's capacity to formulate public policies, in detriment of other institutions, such as the congress (Acosta et al., 2010; Andrade, 2013). At the base of his political changes, was a new constitution. The public debate on the new constitution started with the beginning of Correa's mandate in 2007 and culminated on a

referendum about its adoption, to be held on the 28th of September 2008 (see Timeline in Figure 11). The public debate on the constitution, therefore, overlapped with the design process of Socio Bosque. To ensure support, Correa intended to demonstrate a commitment not only to the country's population but also to a quick and bold action by the government, in line with his government's motto of a "citizen's revolution". While a key respondent affirmed that there was initially no formal instruction from the president's office to hurry the design process (Interview 5), the design team believed that it must be finished as quickly as possible. Hence, the design team set itself an admittedly overoptimistic deadline of 2 months to complete the design of Socio Bosque and get the project going on the ground (Interview 5). The set deadline was then formalized at a policy follow-up system monitored by the presidency⁶⁹, which aimed to ensure that Socio Bosque would be finalized within the deadline. Eventually, the design process was completed in 8 months (Interview 5).

In Peru, a similar need for a quick completion of the design program was necessary, but political feasibility and bureaucratic dynamics were more relevant. First, as stated in Chapter VI, the government aimed to mend its shaky relations with the indigenous populations as a consequence of *Baguazo*. A dragging design process would delay the beginning of payments, which was understood to be potentially counterproductive to that aim (Interview 21). In addition, the environment ministry was a new entity in the government and sought to demonstrate efficiency to a somewhat skeptical Council of Ministers (Interview 23). Both forces, therefore, pushed the ministry to start delivering the payments while leaving the monitoring system to be set up later with the program in full swing.

4.5 - Participation

The aforementioned urge to begin program implementation led both Socio Bosque and Programa Bosques to refrain from involving other stakeholders in the program's design processes. The perceived administrative complexity of a participatory design process is likely to have been factored into the decision of not carrying out such a process, as it would have delayed the start of payment delivery. Respondents in both Ecuador and Peru, however,

⁶⁹ The system is called Information System for the Democratic Governability (SIGOB) and aims to "support the programming and management of the tasks required for the execution of the objectives defined by the Presidency and to provide information about their accomplishment, together with the institution in charge of their execution and management" (SENPLADES, 2017).

justified this choice with the voluntary opt-in nature of the programs, which allegedly made such a process unnecessary (see sections 1.3 and 2.3 above).

In the Acre case, the administrative complexity associated with participatory and transparent processes did not seem to deter the SISA design team, and it is important to pursue an explanation of that difference in relation to the Ecuadorian and Peruvian cases. The whole design process of SISA took three and a half years, from mid-2007 to end 2010 (WWF, 2013) (see Timeline in Figure 11), and still left several aspects to be defined at the subprogram and projects levels. Acre's governmental group has a historical association with the state's social movements (Hochstetler and Keck, 2007), which have historically vied for being taken into account in the state's decision-making processes (Keck, 1995). The ruling party started gaining political ground during the 1990s, and in 1998 it won the state's gubernatorial race. In power, they proclaimed their belief in guiding ideological concepts such as "forest-based development" and "*florestania*"⁷⁰ and have been continuously reelected, with landslide victories up to the 2010 elections. The ruling party has, therefore, been in power for almost 20 years, providing a political continuity that is unusual for Amazonian states in Brazil. Such continuity and, perhaps even more importantly, the perception of electoral support by the population at the time of SISA design, is likely to have reduced the pressures for the quick delivery of benefits by the government, as it was the case in Ecuador and Peru, both experiencing more dynamic and unpredictable political contexts. Therefore, Acre's political history and the electoral context in the time of SISA design enabled a longer design period, including a participatory process.

4.6 - Payment levels and opportunity costs

Payment levels, and the related discussion about opportunity costs as a basis for their definition, illustrate the importance of lesson drawing in program design processes. Ecuador had no nationwide forest protection program at the time of the design, so program designers found it vital to consult with other countries where such policies were already in place. Consultations with Mexican and Costa Rican representatives⁷¹ were key in defining issues related to Socio

⁷⁰ Portmanteau formed by the words *Floresta* (forest) and *Cidadania* (Citizenship, which in Portuguese has a meaning also related to civic engagement),

⁷¹ It was not possible to obtain any registry or memory of those consultations to verify what were the themes discussed.

Bosque, especially regarding the issue of payment levels. It is hard to ascertain why exactly the program decided against differentiating payments by opportunity costs, but one respondent (Interview 2) hinted at lesson drawing as a possible explanation. Scholarly specialists suggested several alternative ways to use opportunity costs for payment differentiation, including a straightforward road zoning proxy system (Interview 13). And yet, representatives of the Costa Rican delegation allegedly argued that the explicit use of opportunity costs could be politically complicated and unnecessary. As a reason, they suggested that such differentiation is hard to communicate and could lead to complaints about undue favoritism. The Socio Bosque team thus decided not to follow the recommendations provided by the academic specialists (“*no le hicimos caso*”, Interview 2) on opportunity costs. There was also no thorough answer on the definition of the specific payment values used by Socio Bosque. Respondents stated that the design team took into consideration budgetary possibilities and tried to offer the higher possible value considering the ambitious expansion plans of the program and, later, its strategy of area-based differentiation (Interviews 2, 5).

Lesson drawing as a basis for policy decisions was even clearer in the Peruvian case. As seen in Chapter 6, section 2, several of Programa Bosques’ features have been directly taken up from the Ecuadorian program. The non-use of opportunity cost calculations as a basis for payments was not different. Peruvians went even further and did not even use a rough proxy for opportunity costs. On the procedures necessary for payments (Conservation Agreement signing and Investment Plan preparation and execution), Programa Bosques adapted with little change the Ecuadorian provisions. As stated before, there was no explanation by the respondents on why the area-based differentiation used in Socio Bosque was not replicated in Ecuador nor on why the specific value of 10 Soles was chosen, except that it was a random, round value based on budgetary expectations (Interview 23).

Table 10 below summarizes our analysis of the main design decisions of the programs, based on the elements of the conceptual framework.

Table 10 – Analysis of design decisions

Programs Themes	Socio Bosque	Programa Bosques	SISA Acre
Poverty Reduction and Welfare	The <u>belief</u> that welfare improvements should be the main task of governments. Welfare policies have been shown to reward <u>electoral interests</u> of incumbent politicians in Latin America. In Acre, a historical interconnectedness between social and environmental policies was also a factor in design decisions.		
ICDP-like components	The <u>belief</u> that program benefits should not be seen as handouts. From a <u>technical</u> standpoint, ICDP-like components were seen as the best way to ensure that the whole community accesses the benefits. In Peru, <u>bureaucratic dynamics</u> was also relevant, as the Finance Ministry required a production-related component for project approval. Peru also adapted the Investment Plan as a basis for productive activities, <u>drawing lessons</u> from the Ecuadorian case.		Decisions for this theme have not yet been reached in Acre.
Spatial Targeting	Fears of potential beneficiaries misunderstanding targeting as undue land-use interference rendered conservation efficiency-oriented targeting to be perceived as <u>politically unfeasible</u> and causing <u>electoral risks</u> .		Decisions for this theme have not yet been reached in Acre.
Monitoring	The monitoring system was not in place at the start of the program. Perception of a need for a quick payment delivery start due to shaky relations with indigenous peoples. Influence of <u>bureaucratic dynamics</u> too, as the Environment Ministry was a newly created agency that faced some skepticism from parts of the Council of Ministers.	Need for quick government action, mostly associated with <u>president Correa's individual drive</u> towards change, meant that the program should start even before a monitoring system was in place.	Federal level monitoring system was already in place, little discussion at the state level.
Participation	The <u>administrative complexity</u> of a participatory design process, compounded with pressures for a quick start in program implementation, compelled the teams not to carry out such processes.		The government perceived strong <u>electoral support</u> by the population. Institutional stability made a participatory design process <u>politically and administratively feasible</u> . <u>Belief</u> in the interconnectedness of development and conservation.
Payment levels and opportunity costs	<u>Lessons drawn</u> from Costa Rican and Mexican experiences led the program not to emphasize opportunity costs as the basis for defining payment levels. The payment structure has been later changed to implicitly take opportunity costs into consideration.	The lack of emphasis on opportunity costs was a <u>lesson drawn</u> from the Ecuadorian program, but no further changes were made to the undifferentiated payment structure.	Decisions for this theme have not yet been reached in Acre.

5. Discussion and conclusion

As we have seen, contextual elements of the design processes led, in the Ecuadorian and Peruvian cases, to largely inefficient program designs vis-à-vis the policy recommendations presented in Chapter II, and to the later definition of design elements in Acre. The centrality of welfare and poverty reduction considerations as determinants of policy design choices has produced a notable deviation from PES policy recommendations in all cases. Poverty reduction has been a core priority of Latin American governments for decades and the more recent introduction of successful CCT programs in the region has rewarded the incumbents who implemented them with electoral support. Particularly in the case of Acre, environmental and social policies have, moreover, co-evolved over the past two decades, fostering a political discourse that disapproves of government action that seemingly prioritizes environmental over social policies. The studied programs thus tend to be of a hybrid socio-environmental nature that allows administrations to find support in both domestic and international arenas.

Efficient spatial targeting criteria (high environmental service provision, high risks of ES loss, and optimal opportunity costs) were not strictly followed, meaning that several of the enrolled areas will generate sub-optimal conservation benefits in relation to the resources invested. Ecuador and Peru prepared schemes for prioritizing specific areas, which were not strictly followed, as we have seen in section 2.5. Even more problematic is the decision, in the Ecuadorian and Peruvian cases, to allow participants to freely define which parts of their lands will be eligible or not to receive payments (see Chapter 5, Figure 7). It is likely that the areas defined as not being under conservation are the ones participants are planning to deforest. That feature has clearly negative effects on additionality, as communities and individuals may decide not to enroll the parts of their lands that they already intended to deforest, which is exactly the opposite of the effect aimed for at a textbook PES program (to pay participants not to go ahead with their deforestation plans). The decision was taken, according to respondents, to be consistent with the voluntary nature of the program. It was also taken to ensure that participants would not have the perception that the program would affect their land use decision-making freedom. This backs the proposition that efficiency concerns were secondary if perceived as unfair. Similarly, as pointed out in Chapter 2, section 2.7, payments should be

directed to those who pose a credible threat to the provision of ES. The selection of beneficiaries in our cases did not fully consider the level of threat of participants, another decision that will likely lead to low conservation additionality in the programs.

The existence of ICDP-like components in the programs is also questionable in regard to its cost-efficiency. As argued in Chapter II, section 2.5, PES have been conceptualized as more efficient alternatives to indirect approaches such as ICDPs. The introduction of ICDP-like components is, therefore, contrary to the academic rationale behind PES. Decision-makers, however, believed that direct monetary transfers could be misinterpreted as unconditional handouts and that productive activities were needed as a long term solution for income generation and to reduce intracommunity elite capture of benefits. The ICDP-like components in Peru and Ecuador are financed by payments subject to conditionalities, unlike traditional ICDPs financed by upfront payments. Other than that, there is no indication that those components will not suffer the same shortcomings of traditional ICDPs and improve conservation effectiveness, as they also tend to incur high costs, have a very high administrative intensity and complex implementation needs. There are still no consistent studies on the impacts of productive activities on the welfare of the populations benefitted by the programs, but a study on the internal decision making in some communities in Ecuador show that their role in improving the involvement of community members in the Socio Bosque is questionable (Krause and Loft, 2013).

Another inefficient design characteristic of the Ecuadoran and Peruvian cases, and still undefined in Acre, is the lack of use of opportunity costs to calculate payment amounts. In Ecuador, the payment structure of the program (See Chapter V, table 6) moved towards an implicit recognition of opportunity costs as an element to improve the efficiency of the scheme. Increasing the payments for beneficiaries in *Páramo* areas is likely to have increased the attractiveness of participation for potential beneficiaries who would otherwise prefer to leave their lands uncommitted, available for potentially profitable uses in the future. The structure, however, is still a rough proxy for opportunity costs, which could be further improved to better reflect more a specific distribution of opportunity costs in the country. The continuous voluntary enrollment of participants despite the changes towards a more opportunity cost oriented payment structure shows that the perception that payment differentiation would be badly received by locals on equity grounds may have been overstated. In Peru, on the other

hand, the undifferentiated payment structure (see Chapter V, section 2) remains unchanged. A recent study that proposes alternative scenarios for Programa Bosques' payment scheme found that the current forest stock-based scheme "turns out to be the most cost-ineffective and second-most unequal PES design option. The chief reason is that communities with large forest reserves and low population densities will receive the largest transfers, whereas communities with less forest and higher population densities will receive smaller transfers" and "does not fit well with the spatial patterns of deforestation and opportunity cost" (Börner et al., 2016, p. 7).

While, as we have seen, political and administrative constraints make the design of a perfectly efficient PES program in the jurisdictions studied largely unattainable, some politically acceptable changes toward a more efficient design are also possible. The move towards the recognition of opportunity costs in Socio Bosque's payment structure is an example of those changes. With the experience collected by the programs and the small but growing body of academic work on their implementation, a gradual move towards a more cost efficient, and concomitantly politically and administratively feasible, program design is by no means impossible. Börner et al. (2016, p. 6), for example, show that a scenario in which "Fixed annual per-household payment of PEN⁷² 2000, adjusted for interprovincial differences on opportunity costs for each hectare of avoided deforestation" would yield roughly the same amount of conserved area as the current scheme, at a cost of 20 million Soles less, while still providing politically crucial net benefits to the participants, although some restructuring could possibly cause resistance, especially in large communities with low population densities, which currently receive the largest transfers.

Finally, it is important to consider what aspects of the experiences analyzed here could be extrapolated to other areas throughout and beyond the Amazon region. The basic policy context of the three jurisdictions studied, consisting of democratic systems with regular and largely fair elections, relatively weak environmental agencies within the government's bureaucracy, a majority city-dwelling voters and a sizable percentage of the forest-dwelling population being poor, is shared by several other developing countries in the region and around the world. We can thus expect that some of the design determinants we found in our cases will be present in the policy design contexts of other jurisdictions as well. Politicians will try to get reelected or make their successors, and for that reason will have to take into account the demands of their

⁷² Peruvian Soles

populations, so welfare considerations will tend to interfere with environmental policies aimed at areas that also experience widespread poverty. As we have seen, it is not realistic for governments to design and implement perfectly cost-effective policies if they clash with welfare concerns. Perhaps even more importantly, those welfare considerations will often arise from *perceptions* of fairness or unfairness. Programs with a benefit-sharing structure, for example, that perfectly reflects the opportunity costs of participants, might still be seen as unfair by many since they may not provide more money to the poorest. It seems, therefore, inescapable that compromises will have to be found in order to design conservation programs cost-effectively as possible while ensuring their political acceptance.

Specific characteristics of the programs also carry valuable lessons for other countries. In many other forested areas, monitoring infrastructure is still not in the stage required to ensure the enforcement of conditionalities. The programs in Peru and Ecuador started with partial monitoring systems in place, and the consequences of that decision are still to be seen. Integration with already existing activities in forest areas where, i.e., baselines have already been developed, may increase the cost-efficiency of incentive-based conservation programs, without causing politically complicated delays in program implementation. Simple targeting criteria, as the ones present, but not fully implemented, in both Peru and Ecuador could also provide a boost in program efficiency, especially if they include some poverty-related criteria, to ease the acceptance of targeting both by the population involved and by non-environmental agencies within the government. Opportunity costs, while sometimes difficult to fully calculate and hard to communicate to non-specialist audiences, can be implicitly included in payment structures without causing the upheaval feared by some, as it has been shown by the changes in Socio Bosque's payment structure. ICDP-like productive programs feature in Ecuador and Peru and will very likely also be part of Acre's program, despite the slim academic evidence of their effectiveness. Our findings show that the decision to have those activities as part of the programs stems from a belief that government transfers may make people complacent or be used in futile expenditures, which is not backed by academic evidence, especially recently by evaluations of CCT programs. Other incentive-based policies could reduce their implementation costs and beneficiaries' transaction costs by being more flexible in regards to what expenditures are allowed, instead of creating onerous structures to supervise spending. Finally, SISA's structure could also be a promising innovation, as it theoretically allows for more specific targeting (i.e. by private actors aiming at areas that generate a large amount of

credits/ higher additionality), while the government may hold them accountable for welfare responsibilities in the areas where projects are being implemented.

VIII. Is “optimal” always good? Political limits for forest policy-making

This final chapter revisits the guiding hypotheses presented in the introduction, and discusses them based on the findings of chapters VI and VII. We follow up the work done on those chapters with a critical discussion of the advantages and shortcomings of the chosen qualitative research approach and the conceptual frameworks used in our analysis. The final section draws lessons for academic policy analysis and the practice of incentive-based conservation policies in the Amazon and beyond.

1. Revisiting the guiding hypotheses

H1 – International funding opportunities (e.g. REDD+) combined with domestic pressure for social assistance programs created a favorable policy window for the introduction of incentive-based conservation policy instruments in the governments’ agendas.

This hypothesis identified two potential driving forces for the appearance of policy windows for the introduction of the programs. Domestic pressure for social assistance was present in all cases, although it can be argued that it is a constant characteristic of the Latin American public policy context in all sectors - especially in poor regions like the Amazon. Therefore it was not a specific contextual factor to be faced by the programs’ policy-makers, but a factor that permeates policy-making in many sectors of government action. As it was observed, pressure for social assistance programs was likely the strongest influence on program design, guiding several decisions on the programs’ features.

The international context, on the other hand, has had different influences in the three presented cases. In Ecuador, no evidence was found of a direct influence of the international environmental regime in the creation of Socio Bosque. None of the Ecuadorian case’s respondents identified that influence as a key determinant of program creation. During Socio Bosque’s implementation, however, agreements were signed with bilateral cooperation agencies, and the program was awarded a grant from the KfW to support implementation. Additionally, REDD+ has not been present in the discussions on the creation and implementation of the program. In Peru, an early indicator of the motivation to create Programa Bosques was to signal willingness and strengthening of Peruvian political will to work with forest conservation and climate change issues to the international community through the

creation of the ministry of environment. Like in Ecuador, the REDD+ regime has been mostly outside of the discussion on the creation and implementation of the program.

In Acre, the situation was markedly different. SISA has the stated intention to generate quantifiable carbon emissions reductions (see Chapter V, section 3) that can later be negotiated in carbon markets or used as the basis for the receipt of grants by international organizations. Therefore, the REDD+ regime was a prominent influence in SISA's design. Not only REDD+, but the possibility to attract international funds in general, was very relevant for SISA. Unlike the cases in Peru and Ecuador, which are mostly financed by the standard governmental budget, Acre is a relatively poor state, with fewer resources to implement an ambitious and likely expensive large-scale conservation program. Therefore, the attraction of additional capital for the state is closer to the core of the government's priorities.

H2 – The historical/ideological connection of leaderships with forest-dwelling groups lead to a stronger political clout for environmental issues within the government's agendas.

This hypothesis was conceived considering the context in Acre, as it was known that the leadership in Ecuador and Peru did not have their local constituencies in forest areas. In Acre, the central political leaders constructed their political careers together with the emergence of the Acrean grassroots movement, of which they were part of, or at least closely linked to (see Chapter VII, section 4.1). Much of Acre's governing group's political discourse built upon their connections with forest peoples. Respondents exemplified the relevance of environmental issues in the state with the fact that SISA's legal basis is a state law instead of a weaker decree. However, the hybrid nature of SISA as an environmental and social policy may qualify that statement. This guiding hypothesis, therefore, tends to hold in the case of Acre, but the best way to properly evaluate it would be to conduct a comparative study with other Brazilian Amazon states, whose governments have had a lower degree of connection with their grassroots environmental movements.

H3 – Organized domestic interest groups outside the government tend to be too politically weak to influence policy choice in the present political setting in South America.

The hypothesis may not hold for every public policy sector, or even for some aspects of environmental policy, but the evidence showed that it holds for the cases studied. Interest

groups outside of the government concerned with forest conservation have mostly been excluded from the design of the programs. In Peru, civil society groups were central in denouncing and discussing the *Baguazo* and its aftermath, which were important for the introduction of Programa Bosques in the government's agenda. The program, however, was not specifically demanded by the civil society, but was a response originated from within the government to help to placate the *Baguazo* crisis. In the design phase, there was some contact with the main NGO collective in the Peruvian Amazon, AIDSESEP, but the outreach was sporadic at best (see Chapter VII, section 2.3). The voluntary nature of the enrollment in the program was seen by the design team as enough to ensure that eventual participants were in accordance with the program's provisions. In Ecuador, there were no contacts with organizations outside of the government, during neither the agenda-setting or design phases. In both cases, the programs have been created by executive decrees, which also do not require debates in the legislative bodies of the country, therefore, also excluding the discussion with opposition parties. In Acre, the design process involved the participation of the civil society. That, however, does not necessarily show political strength of groups outside the government, as the process was led by the government itself, in a political arena created and sanctioned by the government, in a context where part of the state's grassroots political groups have previously assumed roles within the government (see Chapter VII, section 3.3).

H4 – The previous success of Conditional Cash Transfer programs both domestically and internationally has helped to raise the profile of policy instruments with a direct cash transfer component.

The existence and success of CCT policies were relevant for the creation of direct monetary transfers for forest conservation both in Peru and Ecuador (see Chapter VI, sections 1.3 and 2.3). Respondents (also in Acre) however, downplayed the further importance of CCTs in the introduction and design of the programs, stating that no contacts have been made with the agencies implementing the CCTs. It seems clear, however, that the success of CCTs has been important to set the stage for policies with direct payment components. CCTs have not only been successful, but have also generated political gains for incumbent politicians in the region (see Chapter VII, section 4.1).

Additionally, environmental concerns were often encumbered by the necessity of programs to gain approval by non-environmental agencies – especially when environmental issues ranked

low in the respective cabinets' agenda. In these cases, environmental agencies were often dwarfed by more powerful government agencies or sectors (such as finance and agriculture).. Non-environmental agencies may also control budget assignments, such as the MEF in Peru, allowing them to impose certain policy priorities on environmental agencies (see Chapter VI, section 2.2).

H5 – Existing policies, including small-scale PES schemes (up-scaling), influence both agenda-setting processes and instrument design. PES programs are also part of broader strategies for the construction of jurisdiction-wide environmental policy systems.

Small-scale schemes have indeed been influential, especially in Ecuador. The *Chachi* project, through the technical assistance of Conservation International, has originated both of the most important instruments of Socio Bosque, the Conservation Agreement and Investment Plan - which were both later also adopted by Programa Bosques in Peru (see Chapter V, section 1 and Chapter VI, section 1.1). This success indicates the importance of lesson drawing as a determinant of policy design, and how experiences perceived as successful can be up-scaled within countries and horizontally spread among them (see Chapter VII, section 4.6). Both programs, despite being implemented across most or all of the countries' forested areas, were not initially considered as parts of broad strategies for the construction of jurisdiction-wide environmental-policy systems in their countries. However, the pioneering attributes of the respective programs have helped improve aspects of environmental policy making in their countries. In Peru, information on the environmental state of the country, as well as deforestation monitoring have been strengthened through the activities of Programa Bosques, in addition to the cooperation of MINAM with provincial governments on environmental themes. Socio Bosque has also helped to improve forest data in the country, and has since become a blueprint for policies in other environmental themes in the country (see Chapter V, section 1).

In Acre, on the other hand, SISA was integrally designed to be a jurisdiction-wide program, serving as an umbrella for forest conservation activities implemented in the state. Furthermore, the program built upon previous programs and was designed with the aim of providing support to pre-existing activities, not only of implementing new ones (see Chapter VI, section 3.1). Such a set up was seen by external actors as a positive innovation to come out of the state and has already been helping Acre attract external financing, even though many of the provisions

for the program's implementation still have to be defined at a subprogram- or project-specific level.

H6 – Successful entrepreneurs in incentive-based policy instruments tend to be part of the high-level decision making groups inside the government, sharing priorities, political affiliations, and ideologies.

This hypothesis is true for all three cases, as all of the actors involved were already part of government groups or, in the case of Peru, were integrated into them shortly before the conception of the program. The executive-concentrated nature of forest policy-making in the jurisdictions leaves little room for the influence of external actors (see Chapter VI, sections 1.2 and 2.2). It is also interesting to note that in Acre there was no individual figure, such as former minister Antonio Brack in the Peruvian case, who stood out as a clear driver or enabler of the policy. That can be attributed to the fact that the pool of policy-makers in Acre was smaller and more closely connected, being mostly part of the high-level bureaucracy of the state for years and sharing similar priorities and ideologies (Chapter VI, section 3.2).

H7 – Policy entrepreneurs use the “win-win” discourse of incentive-based policy as a leverage to ensure support from opposing political groups.

AND

H12 - The continuous expansion of geographical areas eligible for project implementation, mostly going beyond previously defined “priority” areas, was motivated by welfare and equity, over concerns for a more environmentally efficient use of program's resources.

Governments are aware of the need to control deforestation, but the notion that forested regions are home to poor rural populations in need of welfare improvements was influential in the adoption of incentive-based programs. In our case studies of conservation programs there was either a clear high-level demand for a program to tackle both deforestation and poverty (Ecuador), a political tradition of socio-environmental discourse (Acre), or the need to pursue secondary policy objectives as a precondition for approval by non-environmental government agencies (Peru) (see Chapter III). The influence of the success of CCTs and the persistence of ICDP-like components show that the idealized win-win solutions of incentive-based policies were strong determinants for both the creation and the design features of the programs. The joining of environmental with social motivations for policies was not necessarily used to ensure

the support of opposing political groups, as the creation and design of the programs did not involve a large amount of political debate, but was key to ensure support of non-environmental agencies in the jurisdictions. It was especially important in Peru, where the Finance Ministry was skeptical of a purely environmental program and had a key voice in approving the program in the country's Council of Ministers (see Chapter VI, section 2.2).

Additionally, the idea that the programs can tackle deforestation and poverty at the same time is very attractive to external actors, especially international donors, the general public opinion, and to potential beneficiaries of programs. In Peru and Ecuador, the amount of enrolled participants and the size of forest areas under the programs are regarded as arguably the most important early measure of program success, since measurements of actual deforestation reductions or improvements in incomes of enrolled beneficiaries are, at the time of writing, incipient at the very best. For that reason, attracting the largest number of participants within budgetary possibilities is a priority for the programs' teams. By this logic, the design teams feared that efficiency-oriented participant targeting could potentially reduce the beneficiary enrollment speed.

H8 – Policymakers are aware that conservation tradeoffs (including political repercussions) tend to be harder in high-pressure areas and thus prefer to initially target low-pressure areas, where relatively low payments are sufficient to cover low conservation opportunity costs.

Several enrolled areas in both Socio Bosque and Programa Bosques are not under considerable deforestation pressures. Targeting areas of low pressure was obviously not specifically mentioned as an objective by the respondents, and it is also not present in the programs' design documents. There was also not, however, a consistent effort to target the programs' activities towards areas with higher deforestation pressures and, therefore, higher potential for additionality (see Chapter VII, section 4.3). As stated above, attracting a large number of participants is a priority for the programs, and for that reason, the programs did not specifically target areas for any reason, preferring instead to enroll the largest possible amount of eligible participants. As an exception, in Peru, the very first areas to be enrolled were located in the VRAE region, which was targeted not for environmental characteristics, but for being one of the poorest areas in the country, with a history of social conflicts with indigenous peoples (see Chapter VII, section 2.5). Also, Programa Bosques subjected the enrolment of participants from regions to the signing of a cooperation agreement with provincial governments; no

communities from regions without an agreement could participate in the program, irrespective of any other characteristic of the community (see Chapter V, section 2). Therefore, there was no targeting of specific areas with low deforestation pressures; there was actually no targeting according to environmental criteria in the initial years of the programs' implementation.

H9 – Conservation effectiveness is of lower priority to domestic policymakers in comparison to social benefits that are eventually linked to voter behavior. As a result, government-led schemes tend to be less monitoring-intensive and characterized by weak sanctioning mechanisms.

AND

H10 - Policy designers perceive that ensuring that the programs provide additionality demands high administrative costs, larger and highly qualified staffs, and more complex rules, and at the same time they also perceive that it can jeopardize the willingness of participants to enroll in the programs, as they would not be able to choose areas under conservation.

AND

H11 - Perceived political risks of adopting efficiency over fairness concerns are common reasons for the non-adoption of opportunity costs as a criterion for payment modalities. This is of particular importance in contexts, where deforestation has been largely illegal but tolerated historically.

Forest conservation issues were not identified as a priority for voters according to our respondents. Instead, voters favored welfare policies as being of utmost priority in elections (see Chapter VII, section 4.1). Therefore, this set of hypotheses is consistent with the idea that several incentive-based conservation programs can be characterized as hybrid social and environmental policies. In these cases, some important environmental efficiency features tend to be overlooked, especially in terms of targeting and opportunity costs (see Chapter VII, section 4.3). However, monitoring and sanctioning provisions are generally addressed by the programs. In addition to the non-implementation of targeting in the programs, another feature related to the importance of ensuring participation in the programs is the ability of participants to define which parts of their property/community land will be counted for payment purposes in Ecuador and Peru, which has further negative effects on the additionality of the programs (see Chapter VII, section 5).

Opportunity costs, for their turn, have largely been ignored in both the definition of participants and payment amounts. Suggestions of even approximate opportunity cost calculations have been overlooked in favor of a less administrative intensive payment structure in Ecuador, although the changes in the payment structure showed at least an implicit recognition of efficiency gains stemming from taking opportunity costs into consideration (see Chapter VII, section 1.4). They were, however, not even part of the debate in the design process in Peru and at best postponed for the subprogram and project level in Acre.

H13 - Politically stable governing groups tend to rely more heavily on participatory instrument design processes, which can help them to create more sustainable institutional mechanisms for the implementation of incentive-based policy instruments in the long run.

AND

H14 – Participation makes policy processes more complex and time-consuming and less well established governing groups, thus, shy away from it, to guarantee action within shorter policy windows.

The stability and cohesion of Acre's governing and administrative group have been identified as important determinants of the participatory nature of SISA's design (see chapter VI, section 3.2). Additionally, when environmental issues are higher on the governments' agendas, environmental agencies tend to have more cooperative relations with the rest of the government, and their priorities will be more in line with the work of other sectors, as in the case of Acre (see chapter VI, section 3.2). Nevertheless, Acre presents a less diverse set of economic and political actors in comparison to Peru and Ecuador, and even to some other Amazonian states in Brazil. This relative uniformity of interests might lead to more restricted pressure on sectoral agencies and, therefore, may also be an explaining factor for the perception of high policy coordination levels in the state. As a consequence, SISA's implementation has a foundation based on the law, instead of a decree, making it more stable in principle. It is, however, unclear if Acre's participatory process will necessarily mean that the institutional mechanisms created will be more effective or stable in the long term than in the other programs.

In many countries with tropical forests, environmental policies are being designed in a data-scarce environment, where the collection of important information, for example on reference scenarios, requires additional political or budgetary support. In addition to that, Peruvian and Ecuadorian program designers were required to demonstrate quick results in order to secure

political support. This pressure diverted attention away from knowledge and information management and stifled participatory engagement (see Chapter VII, sections 4.4 and 4.5). In Acre, a longer and more flexible policy choice process was possible, allowing for more participation, integration of data generating systems, and the future specification of site-, ecosystem-, and beneficiary-specific subprograms, in addition to the fact that Acre already benefitted from a national monitoring system (see Chapter V, section III). The identification of those differences, however, does not imply that a more participatory and data intensive process will necessarily guarantee a more successful program.

2. Critical assessment of the dissertation

As mentioned in Chapter IV, the main methodological challenge of the dissertation was to figure out how to critically assess the information provided by the sources, since most of the processes did not yield documental evidence against which the claims made in the interviews could be consistently checked. This challenge contains several common issues faced by qualitative research.

The first challenge is the validity of the data collected or, in more blunt terms, its truthfulness. The information provided by respondents mainly consisted of recollections of activities in which they were involved a few years before the interviews were conducted. Thus, these interviews are subject to the natural waning of memories and to post-rationalizations of processes. These conditions can influence interviewees and present sometimes messy, non-linear processes in a more organized and meaningful way, can downplay misjudgments and highlight decisions that with hindsight proved to be more appropriate than others. Furthermore, questions can be answered in a way that the interviewee perceives as being the ones preferred by the researcher. These are inescapable realities of elite interview-based research, which always deals with highly politically conscious actors. They may admittedly generate an interpretation of the policy process that is more eloquent and tidy than the process being analyzed. This dissertation has tried to maintain a critical stance on the contents of the interviews, avoiding considering all answers to be a perfect history of the processes exactly as they happened, but seeing them as a recollection that ran through the many perceptual filters cited above. Still, the information provided composed the bulk of the data used to construct the dissertation's arguments and they were, despite the shortcomings, the best possible sources for research on the themes.

The second issue is the nature of the researcher as an interpreter. While quantitative research, generally speaking, has tools such as statistics and models, to achieve a more objective stance towards the research subject, “qualitative issues and practices arise within the context of the inescapable interpretive activity of all humans including researchers” (Bradley, 1993, p. 433). The meaning of the information is assigned by the researcher and that meaning is affected, if not constructed, by the previous experiences and ideas of the researcher. In spite of this, an effort was made to keep the subjectivity of the author as separated from the interpretation as possible. Being fully objective, however, is impossible and even harder in the type of qualitative research performed here.

The third challenge was the development of an analytical framework for the analysis. In the research planning stage, the researcher understood that, while the Multiple Streams Framework (MSF) had the potential to capture the decision-making processes that led to the adoption of the programs, none of the traditional policy analysis frameworks of public policy theory seemed to provide enough guidance to study the specific context of forest policy making in Latin America.

The MSF provides a generally well-constructed explanatory framework for analyzing the introduction of incentive-based policies in the countries researched and was able to accurately capture key processes that led to the adoption of the programs under study. Of special relevance to this dissertation was the framework's attention to intra-organizational dynamics, to the role of specific interactions between institutions, and to the actions of key individuals. By conceiving the policy process as a result of complex ambiguity-prone interactions involving imperfectly informed actors and non-linear decision-making processes, the framework proves itself especially relevant in Latin American policy-making contexts. We identify, however, a few shortcomings in the framework. Some of the framework categories, while suitable for processes involving broad societal debates, strong party politics mobilization, and deep ideological cleavages, may be out of place in cases of strongly top-down, executive-centered decision-making processes, in which divergences express themselves at more technical levels and are seldom expressed publicly. Categories such as value acceptability within the policy stream, the idea of a policy entrepreneur with an advocacy-like operation, and the strong emphasis on organized political forces make little analytical sense when the policy changes are designed either inside the administration (Peru) or directly in the presidential office (Ecuador).

Such categories may also have a weak explanatory relevance when environmental issues are part of the core priorities of long-standing, voting-dominant, and stable governing groups (Acre).

For the analysis of policy design, the complexity of the determinants meant that choices had to be made on which aspects of policy making were focused on. Choosing or developing an analytical framework will always mean focusing attention on some aspects and overlooking others. As stated by Bradley (1993, p. 434), research is done through “prespecified structures and strategies”, that “range from theory, constructs, and operational definitions guiding data collection to analytical methods driving data analysis”, and “in much qualitative research, these structures and strategies are viewed as suggestive and tentative rather than as directive and rigid”. In that sense, the same data used in this research could be analyzed through different theoretical lenses and yield some different insights from the ones reached here. The clearest example here is the non-use of discourse analysis within our framework, as discussed in Chapter III, section 3. However, the dissertation was developed with the aim of providing the most appropriate explanation possible of the cases analyzed, and the author is confident that this dissertation is, as of now, the most compelling explanation of the political processes of the three cases studied. But it is, by no means, the only one explanation possible.

Another challenge is the external validity, or generalizability, of the findings. Contextual, case-based research, such as the one performed here, does not aim primarily at providing explanations for political processes happening outside of the regions concerned. The objective of the research has, from the start, been to generate specific insights on the policy processes of the three regions studied, or at best for the whole Amazon region. That is not to say that some of the insights generated by the theoretical framework cannot reasonably work in other regions with similar political structures (i.e. priority to electorally important issues will be given in any jurisdiction with a democratic system; lessons from successful programs will likely be drawn by other programs in neighboring regions). That said, it is important to be aware that the findings reached here may not always hold in other geographical and political contexts. However, questions asked here and the policy theory-oriented outlook provided can generally help to understand the policy determinants of incentive-based conservation adoption and policy design, shedding light on what characteristics are context-specific and which are the to be expected in programs across the globe.

Other challenges are more concrete. For example, it was not possible to reach all of the best sources of information on the respective processes. In Ecuador, for example, the best respondent to understand the motivations for the creation of Socio Bosque would be President Rafael Correa. It was not possible to interview him, and some of the questions posed by the dissertation could not be responded with the same confidence an interview with him would have yielded. However, the majority of the respondents with the best knowledge in the process that could realistically be reached were interviewed. Finally, we have also tried to triangulate the information provided by the interviews with other sources of information, but often the memories of the respondents were the only sources available. Design meetings cited by the respondents have not, as it commonly happens in Latin America, been recorded or yielded minutes and aide-memoires, with the exception of a few meetings in Acre. That was another unfortunate hurdle to the research and another reason why the interviews ended up in many cases being the only source of information on the decision-making processes researched.

3. Perspectives for incentive-based forest conservation

To wrap up this chapter and the dissertation, it is relevant to reflect on what our findings might mean in the contexts of research and practice of incentive-based forest conservation policies in the Amazon and beyond.

At the time this dissertation started being prepared, scholarly works focused on the political context of incentive-based conservation programs were few and far between. Since then, the topic remains outside typical research topics in the area, although a few more studies have surfaced since (Hausknot et al., 2017; Le Coq et al., 2015; Le Coq et al., 2014). The most important aspect of this dissertation within its academic context remains, therefore, to show the importance of understanding the political context in which policy is made. A perfectly efficient design of a PES program, as it was shown, faces a plethora of contextual barriers that might lead it to be unworkable, or at least perceived to be unworkable by the individuals and institutions that will ultimately need to get them approved within skeptical cabinets and ensure the enrollment of often distrustful community members.

The usefulness of the dissertation's findings clearly refers to the debate on science policy interfaces. The debate is complex and long-standing, too much to be taken on at the closing stages of the dissertation. It is worth it to make a few points though. There is a widespread

perception of a disconnect between science advice and policy-making. While a direct adoption of scientific advice seldom happens, it is “often forgotten [...] that policy-making is messy. Although a tidy, analytically driven cycle of policy-making might seem logical to scientists trained in the tradition of hypothesis generation and testing, policy-making is instead a networked process in which scientific evidence is only one of many inputs” (Gluckman, 2016, p. 969). In that sense, while the governments studied have clearly not fully adopted the efficiency-oriented recommendations on PES, it is very likely that the inputs provided by the literature did, or will, at least indirectly make way into the considerations of policy-makers. It also seems clear that the interaction between academia and the governments implementing the programs should be a two-way street, with the governments also making it clear to researchers what their demands and limitations are. That way, research efforts might improve its usability by policy-makers and become more attuned to their real needs of information, both on science and governance.

For one group of practitioners, the findings of this dissertation may be of special interest. Donors often face trade-offs in deciding which projects should be supported. Such support comes in terms of financial resources, and also often through technical cooperation. A closer understanding of the political and administrative contexts in which policies are designed will often be key for maximizing the results achieved by the resources donated. This dissertation has tried to show that those contexts will more often than not be as important as the technical proficiency of program proposals, as a conservation program will often only take off if contextual conditions are appropriate, both within and outside the government. Additionally, the consideration given by the programs’ non-environmental objectives opens questions that donors have to address. When choosing which programs to finance, which are the criteria to take into consideration? The sheer environmental efficiency of the design? The broad social improvements generated by the program? Some sort of mixed criteria aimed at a general improvement of a series of social and environmental indicators? How to deal with conflicting provisions in policy designs? Should they be more proactive in assisting the design processes of programs and not only their implementation? The findings of this dissertation show that the objectives of a program and the provisions planned to achieve them will not always satisfactorily match, at least not in the cost-effective ways that financing institutions are mostly interested in. A closer involvement from donors in the design stages of policy making, or at least a thorough *ex-ante* evaluation of the opportunities and shortcomings of a proposed policy,

could be very useful in sorting out which programs would be more suitable for any given donor's strategic agendas.

In addition to the characteristics of the programs themselves, issues related to the general administrative structure of the countries will also be ultimately important. The identified lack of cooperation between government agencies in the policy design process is likely to harm the effectiveness of the programs, since "better policies are likely to emerge if [...] participants can cooperate with one another to uphold agreements and sustain them over time" (IDB, 2006, p. 8). Considering that non-environmental agencies tend to take precedence in intra-administration debates and to come on top if differences are irreconcilable, environmental agencies must learn to tread carefully within the bureaucratic maze and to concede or stand ground if policies are to work in the long term. Additionally, large-scale programs will often need to cooperate with sub-national administrative levels (municipalities, states, provinces) in order to be efficiently implemented. It is common, however, that local political and economic interests and a lack of qualified personnel, among other issues, are hindrances to decentralization efforts, especially in the Amazon regions of the countries researched.

Finally, in addition to the national-level context, the international debate on REDD+ and other performance-based development goals are likely to result in stricter evaluation standards for programs that receive international funding. Programa Bosques and Socio Bosque are clearly lagging behind such standards. SISA, for its turn, has considered a possible insertion in the REDD+ regime from the start, and for that reason has included additionality and safeguards among its concerns (although not yet thoroughly or concretely). Positive signs can be identified in the structure of SISA in the attempt to integrate inescapable welfare concerns in cost-efficient conservation programs. The embedded structure designed in Acre may, for example, mean that a subprogram or project will target high-additionality areas while respecting welfare-related safeguards established by the government. SISA, however, is facing an extremely slow starting phase, showing that a more thorough design may indeed hinder swifter implementation. It remains to be seen in the medium term how much Acre's design model will be able to fulfill its own requirements, and if they will generate the desired conservation gains.

As stated almost 30 years ago by Linder and Peters (1989, p. 45) "the choice of instrument, and more generally the design of policy, has substantial consequences for performance". The recognition of the importance of policy adoption and design is, therefore, nothing new.

However, it is clear from our findings that not enough emphasis is placed on adapting technical recommendations to the contexts in which they have to be turned into real policies. Indeed, better knowledge on what constitutes a favorable public policy environment for effective incentive-based conservation can help to avoid investments in doomed policy programs. Strategies to enhance program efficiency, therefore, should be based on a careful evaluation of context-specific political and institutional constraints if both environmental and social objectives are to be achieved.

Annex 1 – Comparative table of projects

Comparative table of incentive-based conservation programs in the Amazon region.

	Socio Bosque - Ecuador	Programa Bosques - Peru	SISA – Acre, Brazil
POLITICAL AND ECONOMIC CONTEXT			
Type of Jurisdiction	Unitary, Presidential Republic, direct election for President	Unitary, Presidential Republic, direct election for President	Federated Unit (state), direct election for governor and legislative assembly
Political subdivisions	24 Provinces	25 Regions and 1 Province	22 Municipalities
Latest basic law (Constitution)	September 2008	December 1993	October 1988 (Brazil's Federal Constitution)
Time since major change in the government's ruling group (by the time of program creation)	~2 years	~4years	~12 years
Ethnic make up	<i>Mestizos</i> 71.9%, <i>Montubios</i> 7.4%, Afro-Ecuadorian 7.2%, Amerindian 7.0%, Caucasian 6.1%, other 0.4%	Amerindian 45%, <i>Mestizo</i> (mixed Amerindian and white) 37%, white 15%, Afro-Peruvian, Japanese, Chinese, and other 3%	Multiracial (<i>Pardos</i>) 57,5%, Caucasian 33,0%, Afro-Brazilian 7,8%, Asian or indigenous 1,7%
Area (km²)	258,238	1,285,216	164,123
Population	16,144,000 (2015 est.)	31,151,643 (2015 est.)	816 687 (2016 est.)
Drivers of deforestation and forest degradation in project area	Mining, cattle ranching, agriculture	Small scale migratory agriculture, wood extraction, mining	Cattle ranching, agriculture, illegal logging,
PROGRAM CHARACTERISTICS			
Proponent(s)	Government	Government	State Government
Legal Basis	Ministerial Agreement	Ministerial Agreement	State Law 2.308/2010
Start date	September 2008	July 2010	October 2010
Implementing Agencies	Environment Ministry, Sub-secretariat of Natural Heritage	Environment Ministry	Climate Change Institute (IMC) and State Environment Secretariat (SEMA)
Main Partners	CI, GIZ, SENPLADES, Local NGOs	GIZ, JICA, USAID, WWF, UNDP	GIZ, Federal Government
Funding	Government, KfW, IDB	Government	State Government, KfW
Budget	US\$ 12.5 million (2015)	US\$ 6.97 million (2016)	n/a
Changes in project coordination leadership	1	6	1
Size of the team	Around 50	Around 50	Around 30 (IMC, CDSA, SEMA)
DESIGN CHARACTERISTICS			
Scale	Forest and <i>páramo</i> areas	Amazon regions of Peru	Entire state
ES aimed	Biodiversity protection, hydrological regulation, carbon storage (ES took as criteria for spatial prioritization)	Climate Change	Carbon storage and sequestration, socio-biodiversity, water resources, climate regulation, soils conservation and traditional knowledge

	Socio Bosque - Ecuador	Programa Bosques - Peru	SISA – Acre, Brazil
Duration	Conservation Agreements last 20 years, with possible renewal.	Conservation Agreements last 5 years, with possible renewal.	Not defined
Targeted beneficiaries	Rural communities and individual landowners.	Forest dwelling communities	Not defined
Deforestation threat in targeted areas (additionality potential)	20-25% of the project area in 2012 is estimated to be in threatened areas ⁷³	n/a	Not defined
Types of benefits	Conditional direct cash transfers, technical assistance	Conditional direct cash transfers, technical assistance	Conditional direct cash transfers, technical assistance, others to be defined
Amount direct cash transfer	Between US\$ 0.5 and US\$ 60 per hectare per year (see Table 6)	10 Soles per hectare per year	Not defined
Payment modalities	Differentiated by the size of property, enrolled area, type of owner and type of vegetation. Smaller properties, communities, and communities in Páramo lands receive a higher amount per hectare (see table 6)	Undifferentiated Payments	Not defined
Criteria for conserved area selection	Self-selection by the community/ individual owner	Self-selection by the community/ individual owner	Not defined
Enrolment requirements	Valid tenure, legal establishment and geographical information documents, investment plan.	Valid tenure, legal establishment and geographical information documents, investment plan.	Not defined
Conditions	Not to promote land-use changes in the areas under conservation, not to hunt in those areas and to provide information on conservation state, tenure changes and compliance with the investment plans.	Avoid deforestation in the areas to be conserved, no illegal logging or illegal crops, compliance with the investment plans.	Not defined
Enrolment procedures	For communities: Signature of a Conservation Agreement and presentation of community approval of an Investment Plan. For individuals: Signature of a Conservation Agreement.	Signature of a Conservation Agreement and presentation of community approval of an Investment Plan	Not defined
Number beneficiaries	187,687 (December 2015)	4,009 families (December 2015)	n/a

⁷³ Estimate from the program's staff

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