



Comparative Analysis of Conservation Agreement Programs in the Amazon

DISCUSSION PAPER



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EXECUTIVE SUMMARY

The Amazon Sustainable Landscapes (ASL) Program was approved by the Global Environment Facility (GEF) Council in October 2015. Its objective is to protect globally significant biodiversity and implement policies to foster sustainable land use and restoration of native vegetation cover. The ASL Program is implemented via national projects in Brazil, Colombia and Peru, and a regional coordination project, with support from the World Bank Group as the ASL lead agency, the World Wildlife Fund (WWF) and the United Nations Development Programme (UNDP).

The three countries where ASL operates have launched a range of initiatives to promote conservation, sustainable development, and reduction in greenhouse gas emissions. Among these are Conservation Agreement (CA) and Payment for Ecosystem Services (PES) programs.¹ These programs are based on voluntary agreements that provide legal and de facto landowners with a range of benefits conditional on specified conservation actions or outcomes. The logic underlying these approaches is that for rural property-owners, conservation often means incurring both direct costs and sacrificing future income. By directly linking sustainable practices with an externally provided stream of benefits, conservation can be converted into an economically attractive choice.

Development of CA and PES programs has grown rapidly around the world. However, evidence on performance is mixed. Of particular concern is the finding that in many programs, the majority of land enrolled would not have been cleared or degraded, regardless of CA-provided benefits. CA programs that aim to reduce deforestation or otherwise change behavior with respect to the environment should therefore consider effectiveness not in terms of area enrolled, but in terms of *additionality* – how much more conservation will happen as a result of the CA program than would have happened without it. Effectiveness also depends on the environmental importance of land enrolled, and contribution to social and related goals. Finally, within the constraints of CA program designs that address these issues, participation must be attractive to property owners, both in terms of enrolling land in the first place, and then meeting agreed-upon commitments.

In this context, the objectives of this analysis are to a) identify CA program characteristics that deliver effectiveness as described above, b) assess how these characteristics are taken into account by CA programs in the Amazon regions of Brazil, Colombia and Peru, and c) provide recommendations regarding opportunities for ASL to support the effective use of CAs in the region. The study methodology includes four steps:

- 1) Identification and description of a set of focal CA programs in the region, based on meeting the specified criteria, literature, and consultation with national and international experts.
- 2) Identification of CA program characteristics that contribute to effectiveness globally, based on a thorough literature review of a) synthesis studies, b) impact evaluations of CA programs in the region, and c) notable other studies of CA and PES, as well as d) expert consultation.
- 3) Evaluation of the focal in-region CA programs against the identified characteristics, considering both how each characteristic is currently included in design and implementation, and which characteristics represent the greatest opportunities to improve performance.²

¹ This study focuses on conservation agreements, but given major overlaps in practice, draws on PES programs as well.

² Potential to improve performance by changing the way a particular characteristic is considered is both a technical and political issue. For instance, CAs that provide benefits to people in protected areas for meeting legal obligations may be useful in terms of outcome, but objectionable (or not) depending on policy and other concerns.

- 4) Recommendations based on the findings of the study and aimed at being used by ASL implementers as well as other project managers in the Amazon region and beyond.

In total, nine CA programs that met the study criteria are identified:

- 1) Brazil: [Bolsa Floresta](#), [Bolsa Verde](#)³
- 2) Colombia: [BanCO2](#), Conservation and Non-Deforestation Agreements within the [Corazón de la Amazonia project](#) (one of the ASL national projects in Colombia), [REDD Early Movers project of Visión Amazonía](#), CAs within the [Conservación y Gobernanza en el Piedemonte Amazónico project](#), and the [Programa Desarrollo Local Sostenible en Parques Nacionales](#)
- 3) Peru: [Programa Nacional de Conservación de Bosques](#) and [CAs in the Alto Mayo Protection Forest](#)

Based on literature review and expert consultation, the study identifies 30 characteristics that potentially contribute to CA program effectiveness globally. Each characteristic is described in the body of the study, along with an explanation of its importance and regional examples of good practice. The identified characteristics are divided into two types: 1) those for which the body of evidence is solid and relatively consistent, such that they can be understood to be broadly applicable to most CA programs, and 2) those for which data is indicative but still scarce, or whose relevance depends on the CA program and its context.

Results from benchmarking the selected focal CA programs against the identified characteristics are synthesized in the following tables. Characteristics are sorted according to the general issue they seek to address.

Where to operate?

Characteristic	Included *	Opportunity **
Operate in areas with <u>high risk of degradation</u>	Often	Highest
Operate in areas which provide <u>high environmental value</u>	Often	
Prioritize regions with <u>higher incidence of poverty</u>	Almost never	
Prioritize regions with <u>low opportunity cost</u>	Almost never	
Ensure <u>transparent criteria</u> regarding where the program operates	Almost always	

* Captures the average degree to which each characteristic is included in design and implementation amongst the nine programs assessed. Levels are “Almost always,” “Often,” “Rarely,” and “Almost never.”

** Captures the opportunity to increase effectiveness by incorporating the characteristic into design, or by improving the way it is considered. Opportunities were identified based on CA program experts’ perceptions of which characteristics combined technical, practical and political feasibility. Levels are indicated as: “Highest” (identified by more than ¾ of programs), and “Good” (identified by more than ½ but less than ¾ of programs).

Who to work with and how?

Characteristic	Included	Opportunity
Enroll participants who have <u>necessary rights, functioning social institutions, and capacity</u> to deliver conservation goals.	Often	Good
Ensure participation is <u>voluntary</u>	Almost always	
Subsidize <u>enrollment costs</u> for desirable participants	Almost always	
Foment <u>trustful negotiation</u> climate, incl. <u>implementer legitimacy</u>	Almost always	Good
Facilitate <u>informed deliberation</u> within legitimate institutions	Almost always	
Consider the use of <u>auctions</u>	Almost never	Good

To capture this reality, opportunities for change were derived directly from discussion with experts on each CA program.

³ This Program is currently suspended

What should the agreement look like?

Characteristic	Included	Opportunity
Benefits should be <u>conditional</u> on meeting contractual obligations	Almost always	Good
Contractual obligations and other elements <u>reflect local reality</u>	Almost always	
Make <u>contracts with long duration periods</u>	Almost never	
Choose <u>targets and commitments that are easily measurable</u>	Often	Highest
Address potential for <u>non-additionality and displacement</u> of land degrading activities	Almost never	
Communal contracts consider <u>social motivations and free riding</u>	Almost never	

How much to pay and how?

Characteristic	Included	Opportunity
Use <u>differentiated payments</u> but <u>avoiding complexity</u>	Often	
Calibrate <u>benefits to exceed opportunity + transaction costs</u>	Almost never	Highest
Communal contracts make use of <u>deliberated process</u>	Often	
Communal contracts consider <u>in-kind, communal benefits</u>	Rarely	

How to deliver during operations?

Characteristic	Included	Opportunity
<u>Consistently monitor compliance and apply contract conditionality</u>	Almost always	Highest
<u>Ensure quality implementation</u>	Often	Good
<u>Consider operational efficiency</u>	Rarely	
<u>Communicate with participants</u>	Often	
<u>Establish a learning culture within the implementing institution</u>	Often	Good

How to increase program continuity?

Characteristic	Included	Opportunity
Incentivize <u>economic transition towards sustainable alternatives</u>	Rarely	Highest
<u>Build relationships</u> with Finance Ministry (or equivalent)	Almost never	Good
Establish the CA program as a vehicle for delivering on <u>corporate social responsibility, offsets, and tax write-offs</u>	Rarely	Good
Establish the CA program as a vehicle for <u>providing ecosystem services</u> for local, national, or global markets	Rarely	

Based on these findings, the study suggests six opportunities for the ASL coordination project and/or ASL national projects to increase the use of best practices in key issues for CA effectiveness, which are strategic for the fulfillment of ASL national and regional program objectives. These are:

- 1) Continue to fund and support ASL CA programs, as a source of measurable impact, practical learning, and launch of scalable initiatives.
- 2) Facilitate engagement between ASL CA programs and corporate actors and government agencies who can provide new and long-term flows of finance, including related to:
 - a. Corporate compliance with legal requirements to offset environmental impacts
 - b. Corporate CSR goals related to carbon, conservation, and corporate image
 - c. Corporate or private tax write-offs, for instance related to offsetting carbon footprints
 - d. Public utility investments, for instance water utilities paying to protect water sources

- 3) Promote exchanges among CA programs assessed and relevant ASL national projects to share, discuss, and build on effective approaches to including relevant characteristics in program design and implementation. Specific themes found to combine high opportunity for improvement to increase effectiveness, and where there are also good examples of effective approaches in the region include:
 - a. Spatial targeting to areas at high risk of degradation
 - b. Participatory engagement and embedding agreements in the local context
 - c. Setting measurable metrics of contract compliance
 - d. Means to manage operational and transaction costs
 - e. Approaches to financial sustainability and continuity of impacts
- 4) Engage outside experts to build capacity in ASL national project-implemented CAs as well as relevant CA programs more broadly, in themes identified as priorities for improvement but where additional technical input may be valuable. Specific themes include:
 - a. Use of auctions and related mechanisms to increase efficiency and participant benefits
 - b. Well-crafted communications to promote enrollment and compliance with agreed commitments.
- 5) Support participatory research on CA design characteristics identified as important, but where regional experience and existing technical studies do not provide decisive answers. Specific themes could include:
 - a. Setting benefit levels and optimal contract design in key regional contexts with respect to: i) the relationship between opportunity costs and the decision to enroll in CA programs; ii) the economic value of non-monetary characteristics of contract design; iii) the value of in-kind vs cash benefits; and iv) differentiated payments
 - b. Design options to best balance environmental and poverty alleviation goals
 - c. Understanding the tradeoff in terms of effectiveness between controlling program costs and including all design characteristics perfectly
 - d. The best opportunities for using short term CA benefits to generate lasting transition to more sustainable economic activities
- 6) Use the CA design characteristics identified in this study as a basic checklist of issues to be considered across ASL work with CA programs and related interventions in and around protected areas and other institutions in the landscape.

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ACRONYMS

ASL: Amazon Sustainable Landscapes
BF: Bolsa Floresta (Forest Allowance)
BPAM: Bosque de Protección Alto Mayo (Alto Mayo Protection Forest)
BV: Bolsa Verde (Green Allowance)
CA: Conservation Agreement
CdA: Corazón de la Amazonia (Heart of the Amazon)
CGPA: Conservación y Gobernanza en el Piedemonte Amazónico (Conservation and Governance in the Amazon Foothills)
CSR: Corporate Social Responsibility
ES: Ecosystem Services
FAS: Fundação Amazonas Sustentável (Sustainable Amazonas Foundation)
GEF: Global Environment Facility
Ha: Hectare
NGO: Non-Governmental Organization
PA: Protected Area
PDLS: Programa Desarrollo Local Sostenible en Parques Nacionales (Sustainable Local Development in National Parks Program)
PES: Payment for Ecosystem Services
PNCB: Programa Nacional de Conservación de Bosques (National Forest Conservation Program)
PNN: Parques Nacionales Naturales (National Natural Parks (Colombia))
REDD+: Reduced Emissions from Deforestation and Degradation
REM: REDD+ Early Movers
ToR: Terms of Reference
UNDP: United Nations Development Programme
VA: Visión Amazonía (Amazon Vision)
WWF: World Wildlife Fund

GLOSSARY OF TERMS

All terms in this glossary are italicized in the text the first time they appear. Except where noted, the definition is that of the authors, based on accepted common understanding of the terms.

Additionality: Conservation outcome caused by conservation agreement-provided benefits, i.e., beyond what would have happened in the absence of the program.

Conservation Agreement: A voluntary, conditional agreement that provides benefits to resource owners or users in exchange for delivery of conservation actions or results.

De facto: practices that exist in reality, whether or not they are legally recognized.

Payment for Ecosystem Services: Direct, conditional contracts in which payment is provided to at least one provider by at least one beneficiary of ecosystem services.

REDD+: Programs that seek to Reduce Emissions from Deforestation and forest Degradation, as well as enhance forest carbon stocks through conservation and sustainable management (UN-REDD, no date).

1. INTRODUCTION

The Amazon Sustainable Landscapes (ASL) Program was approved by the Global Environment Facility (GEF) Council in October 2015. With a commitment of US\$113 million of GEF resources and an expected US\$682 million leveraged in additional financing, the ASL Program aims to protect globally significant biodiversity and implement policies to foster sustainable land use and restoration of native vegetation cover. Specifically, the Program aims to strengthen management effectiveness of almost 67 million hectares of protected areas, facilitate the creation of 4.3 million hectares of new protected areas, promote sustainable practices in 11 million hectares of productive landscapes, restore 35,000 hectares of forests, and support actions that help mitigate emissions by 166 million metric tons of carbon dioxide equivalent.

The Program comprises national projects executed by Brazil, Colombia, and Peru, and a regional coordination project. The national projects are led by GEF implementation agencies as follows: World Bank Group as the ASL lead agency and implementing agency for Brazil and Colombia, World Wildlife Fund (WWF) as implementing agency for a project in Peru, and United Nations Development Programme (UNDP) as implementing agency for Colombia and Peru. Program implementation is done in close coordination with national Ministries, research institutes, regional environmental authorities, agencies and national Non-Governmental Organizations (NGOs).

The three countries where ASL operates have launched a range of initiatives to promote conservation, sustainable development, and reduction of greenhouse gas emissions (González et al., 2019). Among these are *Conservation Agreement* (CA) and *Payment for Ecosystem Services* (PES) programs. These programs are based on voluntary agreements that provide legal and *de facto* landowners with a range of benefits conditional on specified conservation actions or outcomes. Typical benefits provided by CA and PES programs include investments in social services like health and education, physical inputs like tools and seeds as well as technical support for livelihoods often in the agricultural or fisheries sectors, and cash payments. The logic underlying these approaches is that for rural property owners, conservation often means incurring both direct costs and sacrificing future income. By directly linking sustainable practices with an externally provided stream of benefits, conservation can be converted into an economically attractive choice (Ferraro and Kiss, 2002; Milne and Niessen, 2008; Wunder, 2015).

The distinction between CA and PES is blurry in practice, at least in part because choice of terms is self-defined (either by programs themselves or researchers studying them) rather than categorized according to a consistent global set of technical criteria. Both CA and PES programs make use of the fundamental principles of an external benefit, provided conditional on meeting conservation commitments. However, it is possible that programs defined as PES may place greater emphasis on the issue of gathering payments from beneficiaries (e.g., Salzman et al., 2018) or creating markets for ecosystem services (ES) (Wunder et al., 2018). This study uses information from programs and studies defined as both CA and PES, as relevant to study goals (described further in Section 2: Methodology, below), but focuses on recommendations for CAs as being of particular interest to the ASL Program.

Globally, use of CA and PES approaches has grown rapidly, in particular over the past 20 years (Ezzine-de-Blas et al., 2016). However, evidence on performance is mixed (Ezzine-de-Blas et al., 2016; Wunder et al., 2018). Of particular concern is the finding that in many programs, the majority of land enrolled would not have been cleared or degraded regardless of payment (e.g., Robalino and Pfaff, 2013).

In broad terms, this is due to CA program designs that permit anyone with a given resource in a broadly defined area to enroll whatever portion of their property they like. Larger net benefits from participation (simplistically, program benefit minus opportunity cost) come from enrolling areas that are least likely to be cleared (i.e., with zero or low opportunity cost). Conversely, the more likely a landowner is to clear a particular area, and therefore the higher the opportunity cost, the less likely it is that CA benefits will be sufficient to make enrolling that area financially attractive. As a result, under open program designs, there is a strong incentive for landowners to enroll areas they do not plan to use during the contract period (Wünscher, 2008; Börner et al. 2016; Bruner et al., 2018).

Programs that aim to reduce deforestation or deliver on related conservation goals should therefore consider effectiveness not in terms of area enrolled, but in terms of *additionality* – how much more conservation will happen as a result of the incentive program than would have happened without it. Effectiveness also depends on the environmental importance of land enrolled, and contribution to social and related goals that vary significantly by CA program. Finally, within the constraints of CA program designs that address these issues, participation must be attractive to landowners, both in terms of enrolling land in the first place, and then meeting agreed-upon commitments. These issues are increasingly well understood in the literature and by practitioners, although they are implemented inconsistently in CA and PES programs around the world (Ezzine-de-Blas et al., 2016; Börner et al., 2017; Wunder et al., 2018).

In this context, the objectives of this study are to a) identify CA program characteristics that deliver effectiveness as described above, b) assess how these characteristics are taken into account by CA programs in the Amazon regions of Brazil, Colombia and Peru, and c) provide recommendations regarding opportunities for ASL to support the effective use of CAs in the region.

The study is structured as follows. Section 2 presents the methodological approach. Section 3 presents the criteria used to select the focal CA programs in the ASL region for inclusion in the assessment and provides basic information about each selected program. Section 4 presents a set of CA program characteristics that contribute to effectiveness globally, and shares examples of good practices from within the region. Section 5 compares the selected CA programs against the identified characteristics, and highlights trends and opportunities. Section 6 provides recommendations for the ASL program and project implementers to increase the contribution of CAs towards fulfillment of ASL national and regional program objectives.

2. METHODOLOGY

The methodology comprises four steps. The overall approach builds on that used by Wunder et al. (2018), who evaluated a set of 70 PES programs against three fundamental best practices.

2.1 Identification and description of relevant conservation agreement programs

The criteria used to select the focal CA programs for inclusion in this study were initially defined by the Task Terms of Reference (ToR). These were then refined and substantiated by consideration of relevant literature, and consultation with national and thematic experts. Experts consulted (Annex 2a) are recognized as global and in-country leaders in CA and PES themes.

The study identified all active CA programs, i.e., interventions which provide benefits conditional on compliance with terms of an explicit agreement, a) in the Amazon regions of Brazil, Colombia and Peru, b) run directly by or in partnership with the government (i.e., not strictly NGO or private transactions), and c) meant to incentivize conservation by communities or individuals (i.e., not companies or local levels of government). Initially, the study planned to consider only programs at the state level or broader, but following consultation, several important site-level programs were also included, as well as one important CA program that is currently suspended. Additionally, the study did not include programs that have implemented only the demand side of PES (i.e., gathered payments from beneficiaries) but which do not or have not yet disbursed funds via a CA. The emphasis is thus on what makes a CA work as a means to deliver on conservation and other objectives, including lessons related to financial sustainability and continuity of program impacts. The criteria used are summarized in Table 1.

Table 1: Criteria used to select conservation agreement programs for this assessment

Criteria	Subset reviewed here
Location	Brazilian, Colombian or Peruvian Amazon
Scale	National, State, Site
Mechanism	Voluntary contracts and conditional payments
Who runs the program	Government or partnership between Government/NGO/private sector
Type of incentive provided	Broadly defined - cash, livelihood support, infrastructure
Who conserves	Communities, individuals
What behavior is incentivized	Broadly defined - standing forest, sustainable management, sustainable agricultural practices

In total, nine CA programs meeting these criteria were identified, including one initiative supported by an ASL national project, and eight other CA programs run by national or state governments, or by NGOs in partnership with those actors. Basic information about each program was derived from a review of published literature, program websites, program documents, and interviews with experts.

2.2 Identification of program characteristics that contribute to effectiveness

The study focuses on effectiveness, as described above, comprising characteristics that deliver additionality and greater environmental value, support program social and related goals, and make participation and compliance attractive.

The study uses four sources of information to identify relevant characteristics:

- 1) Major reviews of multiple studies and experience to date, in particular Ezzine de Blas et al. (2016), Börner et al. (2017), Grima et al., (2016), Engel (2016), Salzman et al. (2018), and Wunder et al. (2018).
- 2) Existing impact evaluations of the specific CA programs considered in this study, specifically Wong et al. (2018) and Giudice et al. (2019).
- 3) Notable other studies of CA and PES, including high-quality single-program impact evaluations outside the region (e.g., Arriagada et al., 2012, Jayachandran et al., 2017, Alix-Garcia et al., 2019) and solid theoretical or field exploration of key issues including: incentivizing more profitable sustainable uses that allow CA benefit provision to phase out over time (Pagiola et al., 2016, Veléz et al., 2017); use of principles from behavioral economics (Ezzine de Blas et al., 2019; Alpizar et al., 2015), and the role of opportunity costs (Wünscher et al., 2008, Börner et al., 2017; Bruner et al., 2018). Studies were identified through relevant online literature searches, and work recommended by the various experts consulted as part of this research.

4) Expert consultation (see list in Annex 2b).

The study divides the design characteristics identified by these sources into two types: 1) those for which the body of evidence is solid and relatively consistent, such that they can be understood to be broadly applicable to most CA programs, and 2) those for which data is indicative but still scarce, or whose relevance depends on the CA program and its context. The methodology for this division is as follows: due to the complexity of knowing what would have occurred in the absence of a CA or PES program, and therefore how much additionality a given program has delivered, high-quality impact evaluations (i.e., those that carefully derive a valid counterfactual using experimental or quasi-experimental design) are particularly valid for drawing conclusions. Those program characteristics which multiple impact evaluations consistently identify as relevant to effectiveness form the basis of the “broadly applicable” group. Additional characteristics assigned to this group are those identified by multiple other high-quality sources (study or expert), or which are simply uncontroversial. The second “potentially applicable” group of characteristics is broader, and includes those identified only in a single place, theoretically solid but not demonstrated in the field, or where relevance depends on context.

The study organizes the identified design characteristics around six issues where CA programs can make choices with respect to their approach. These issues are given in rough chronological order, starting with those that would tend to appear in initial design and going through operations, as follows:

- 1) Where to operate?
- 2) Who to work with and how?
- 3) What should the agreement look like?
- 4) How much to pay and how?
- 5) How to deliver during operations?
- 6) How to increase program continuity?

For each issue, the study first presents a table with the identified characteristics. The broadly applicable characteristics are given first and are highlighted. Following each table, the study provides examples of good practices from the region, as gathered from discussion with experts and the literature review.

2.3 Evaluation of the relevant CA programs against identified characteristics

In practice, each CA program is unique in its design and has specific goals, such that strengths and opportunities are a function of those goals as well as technical opportunities and political reality. To address this, this study carried out structured conversations with experts on each program as a means to benchmark performance against the effectiveness characteristics, identify those which are not relevant to the particular CA program, as well as to identify the best opportunities to incorporate new characteristics or improve their design. Experts consulted are recognized for their knowledge of each CA program and their expertise more broadly and are frequently among the people in charge of the particular CA program.

The study assesses each CA program as follows:

- 1) Current status for each characteristic, scoring on a 4 point scale as follows: 4: rigorously incorporated into design and implementation; 3: considered and implemented at a reasonable level; 2: in design but not implemented, or implicitly implemented at a basic level; 1: not considered; NA: not applicable.

- 2) Potential for improvement in each characteristic, scoring as follows: Yes, if change is seen as attractive to the program and technically feasible within the specific program design, No otherwise.⁴

Results are presented for the set of nine CA programs, according to each of the six issues described above, as follows:

- 1) Average degree to which each characteristic is included in design and implementation in the nine programs assessed. Levels are: “Almost always,” “Often,” “Rarely,” and “Almost never”
- 2) Opportunity for improving use of the characteristic, based on the number of CA programs that stated that it was a practical and political opportunity. Levels are “Highest” (identified by more than ¾ of programs), and “Good” (identified by more than ½ but less than ¾ of programs)

We note that while much of the information and knowledge used to assess each program was provided by experts, final interpretation is done by the authors. Scoring is unavoidably subjective, and opinions are the full responsibility of the authors only.

2.4 Recommendations

Recommendations are made based on consideration of findings from the three steps described above, as well as review of publicly available ASL Project documents describing the coordination project and national projects (Annex 1), and consultation with ASL Program team members, including at the 2nd ASL Annual Meeting in Leticia, Colombia.

3. INCENTIVE PROGRAMS ASSESSED

This section describes the CA programs identified as meeting the criteria for inclusion in the analysis. Programs and sources of information are summarized in Table 2, with a brief description following.

⁴ In initial interviews, scoring from 1-4 was used. This level of precision was later dropped because for multiple CA programs, experts felt that a simple “yes” or “no” answer best captured the degree of accuracy with which they could evaluate each characteristic.

Table 2: Conservation agreement programs assessed in this review

Country	Scale	Program	Age (yrs.)	Run by ¹	Beneficiaries (families)	Coverage (ha) ²	Program goals	Payment type	Funding	References
Bra	Nat'l	Bolsa Verde (BV)	8 ³	Nat	50,000	28.7 million ²	Conservation, Poverty	Cash, Livelihoods	In country (public)	Wong et al., 2018 WWP, 2017
	State	Bolsa Floresta (BF)	11	NGO / State	9,610	11 million ²	Conservation, Poverty	Cash, Livelihoods	In country (private) Int'l (public and private)	Bakkegaard and Wunder, 2014 FAS, 2017
Col	Nat'l	BanCO2	6	NGO / State	6,800	85,000	Carbon, water, biodiversity, Poverty	Cash, Livelihoods	In country (public and private)	BanCO2, 2019 Henao, 2017
	Multi-State	Conservation Agreements within the REM program of Visión Amazonía (REM)	6	NGO / State	NA	NA	Deforestation, Carbon	Cash, Livelihoods	International (public)	V. Salazar, PC visionamazonia. minambiente.gov.co
	Multi-State	Conservation and non-Deforestation Agreements within Corazón de la Amazonia (CdA)	4	Nat/ State / NGO	358	11,257	Conservation, Sust. use, Governance	Livelihoods	International (public)	PNN, no date Ochoa, 2017 MinAmbiente et al González et al., 2019
	Multi-site	Conservation Incentives within the Conservación y Gobernanza en el Piedemonte Amazónico (CGPA) program	7	NGO / State	226 ⁴	NA	Water, Governance	Livelihoods	International (public)	Pat. Nat., 2017a Pat. Nat., 2017b Vélez et al., 2017 F. Velandia, PC
	Multi-site	Programa Desarrollo Local Sostenible en Parques Nacionales (PDLS)	NA	Nat.	46	65+	Water, Poverty	Livelihoods	International (public)	PNN, 2018 PNN, 2017
Per	Nat'l	Programa Nacional de Conservación de Bosques (PNCB)	9	Nat.	10,000	2 million	Conservation, Poverty	Cash, Livelihood, In kind	International (public) In country (public)	Giudice et al., 2019 MINAM, no date (a) FNPS, no date MINAM, 2014
	Site	Conservation Agreements in the Alto Mayo Protection Forest (BPAM)	9	NGO / State	960+	182,000 ²	Deforestation, Conservation	Livelihood, restoration	International (private)	CI Perú, 2016 CI Perú 2017 SERNANP, no date

¹ Categories are: National government (Nat); State government (State); Non-governmental organization (NGO)

² For agreements inside protected areas, the entire area of the protected area is listed

³ Currently suspended; ⁴ Estimated for consistency, assuming mean family size of 5.

3.1 Brazil

Brazil has multiple conservation agreement and incentive programs. However, most are either outside the Amazon region (for a country-wide review, see Forest Trends, 2015; Pagiola et al., 2013), provide incentives to actors other than private or community landowners (e.g., ICMS Ecológico, through which the Federal Government incentivizes States to conserve, or zero-deforestation cattle agreements through which States incentivize meatpacking companies to source beef only from ranches that do not deforest), or do not make use of explicit contracts and links to conservation performance (e.g., PGPMBio, which provides price support for harvest of forest products; and SACarbono, which combines multiple initiatives to reduce deforestation). Two incentive programs meet the criteria for the assessment conducted.

Bolsa Verde (BV) was created in 2011 but has been suspended since 2018 due to budget constraints. This study considers BV nonetheless because of its scope and importance. Bolsa Verde was a national program, funded by the Federal Government, which aimed to improve the living conditions of families below the poverty line who are engaged in conservation activities (WWP, 2017). Eligible locations were subgroups of Sustainable Use Conservation Units and Environmentally Distinctive Agrarian Reform Settlements.⁵ The program provided a household-level payment, conditioned on community-level compliance with a) Forest Code-stipulated maintenance of at least 80% coverage of native vegetation,⁶ and b) sustainable use of natural resources (Wong et al., 2018).

Bolsa Floresta (BF) is a state-scale program in Amazonas State, which has environmental and social objectives. The program is operated by Fundação Amazonas Sustentável (FAS), created by the Brazilian Bank Bradesco and the Amazonas State Government. Funding is currently provided from corporate sources (Coca Cola and Samsung), and Fundoamazonia, which includes international cooperation funding from Norway and Germany, as well as corporate funding from Petrobras. Bolsa Floresta operates in 16 protected areas (PAs), offering four complementary subprograms, one of which (Bolsa Floresta Familiar) provides a household-level cash payment equivalent to US\$ 150/year if children regularly attend school (the only exception is if there is no school nearby) and if the family follows the rules of the PA management plan. The other three programs are implemented at the level of communal associations and local institutions, and support income generation projects, infrastructure, and empowerment (Bakkegaard and Wunder, 2014; FAS, 2017).

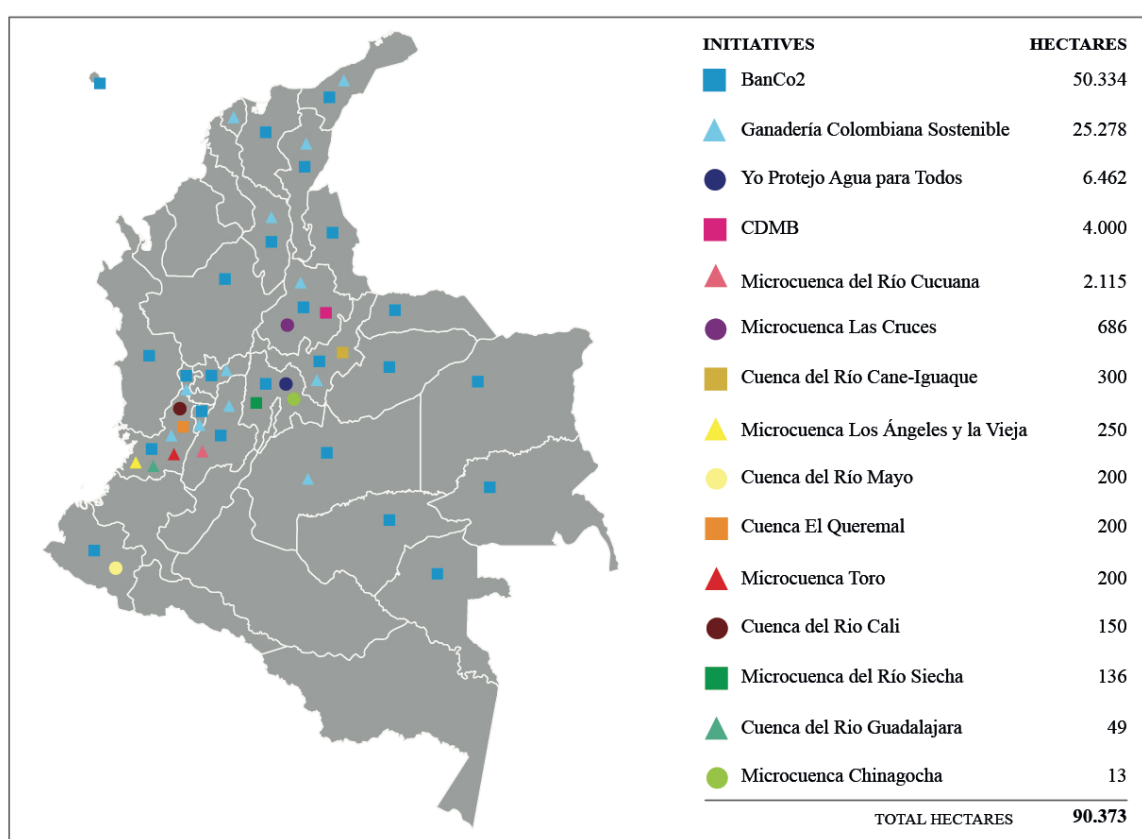
3.2 Colombia

In Colombia, there has been more than a decade of dispersed experimentation with and implementation of CAs and PES programs. However, most is outside of the scope of this review due to location (Figure 1). This study assesses five CA programs in Colombia, one of which (CdA) is supported by an ASL Project. Also of note, although outside the direct scope of this study, for the past two years Colombia has been developing a legal framework to support effective implementation of PES by institutions using public funding through Decree 870 (2017), and more recent Regulations. A portion of Colombia's national carbon tax goes to the Ministry of Environment to support PES implementation.

⁵ Sustainable Use Conservation Units include seven categories of protected area within the national system designed to balance conservation and sustainable use of natural resources; of these, three were eligible for BV. Settlements were created with state assistance by the Agrarian Reform for the purposes of addressing tenure issues; of these, four subcategories of environmentally distinctive agrarian settlements were eligible for BV (Wong et al., 2018).

⁶ This requirement has been in place for the Amazon biome as of the Forest Code of 1965 (Lei no. 4.771, September 15, 1965: Código Florestal)

Figure 1: PES projects in the Colombian Amazon



Source: Moros et al., *Working Paper*

BanCO2 operates nationwide. The Program is run by the civil society organization Masboques and implemented through agreements with relevant Departmental government agencies. BanCO2 aims to support both environmental conservation and positive social change, including addressing issues related to equity and armed conflict. There are three program areas: BanCO2 Plus, oriented towards offsetting carbon emissions; BanCO2 Bio, focused on conservation of flora and fauna, and BanCO2 Agua, which protects water sources. The program uses an online platform to link companies and individuals with legal and *de facto* forest landowners. The program has expanded rapidly, including more than doubling its size in the Amazon in the past year (2018). It covers a larger area and includes more people than any other program in the country. In the Amazon, the significant majority of BanCO2 agreements are with Indigenous communities. Incentive payments in these contexts are communal and made in accordance with a communal investment plan that in turn builds on community *Planes de Vida* (Life Plans) (BanCO2, 2019; Henao, 2017; C. Borda, PC, 2019).

The REDD+ Early Movers (REM) program is financed by international cooperation from Norway, Germany and the UK. Payments are made to Colombia conditional on meeting national deforestation reduction targets. The REM program is implemented directly by the Ministry of Environment, which establishes agreements with smallholders. In areas of high deforestation risk, the program provides direct support for transition to sustainable agriculture, while in areas of lower risk, it provides incentives as a conditional cash payment (V. Salazar, PC, 2019). REM is part of the broader Visión Amazonía (VA) strategy that was launched in 2013 by the Colombian government as part of its Integral Strategy for Control of Deforestation and Forest Management, which promotes low-carbon development including a goal of net-zero deforestation by the year 2020 (<http://visionamazonia.minambiente.gov.co>). Vision Amazonia has become the umbrella program

under which various cooperation efforts (including Corazón de la Amazonia, reviewed below) are aligned.

The GEF-financed Corazón de la Amazonia (CdA) project is implemented by the World Bank as part of the ASL Program and within the VA government umbrella. During the 5th GEF replenishment period, CdA was a stand-alone project, but with additional financing from the GEF in the following period, it was structured as part of the ASL. The project is executed by the NGO Patrimonio Natural in agreement and collaboration with the Ministry of Environment, *Parques Nacionales Naturales* (PNN, the Colombian Government Agency in charge of protected areas), Instituto Amazónico de Investigaciones Científicas SINCHI, Instituto de Hidrología, Meteorología y Estudios Ambientales, Corporación para el Desarrollo Sostenible del Norte y el Oriente Amazónico (CDA), and Corporación para el Desarrollo Sostenible del Sur de la Amazonia (Corpoamazonia) (Ochoa, 2017). Corazon de la Amazonia's objective is to improve governance and promote sustainable land-use activities in order to reduce deforestation and conserve biodiversity in the Project area.

One element of CdA is the establishment of *Acuerdos de Conservación y no Deforestación* (Conservation and non-Deforestation Agreements) supported by the project and implemented directly by Instituto SINCHI in areas of medium and low deforestation pressure in the Departments of Caquetá and Guaviare. These agreements combine interventions in three areas (J. Barrera, PC, 2019):

- 1) Production: Improved production by means of knowledge transfer regarding sustainable approaches, and the recovery of three hectares per landowner for forestry activities.
- 2) Social: Knowledge transfer and training aimed at changing the way in which rural producers view the forest and their lands.
- 3) Planning: Participatory land use planning, designed to shift cleared areas towards sustainable production, following existing environmental regulations.

The agreements are at the individual/property owner level, with complementary program engagement to ensure coordination with local and communal organizations (González et al., 2019; Minambiente et al., no date). The area that each producer dedicates to conservation comes from remaining natural forest on their farm, as opposed to areas currently under production (J. Barrera, PC, 2019). Within the current ASL national project, SINCHI is transferring its knowledge and methodologies to the regional environmental authorities CDA and Corpoamazonia, so they can establish new agreements with the farmers in their areas of intervention.

The USAID-funded Conservación y Gobernanza en el Piedemonte Amazónico (CGPA) program is led by the Departmental Government of Caquetá and operated by Patrimonio Natural. Again, Cas are one element of a broader program. Specifically, the CA component of CGPA aims to protect important water sources for major cities via agreements that provide in-kind benefits to upstream landowners in exchange for maintaining existing natural vegetation cover, recovery of degraded areas, and more sustainable management in key landscape areas (e.g., along rivers) (Patrimonio Natural, 2017a, Patrimonio Natural, 2017b, Vélez et al., 2017)

The Programa Desarrollo Local Sostenible en Parques Nacionales (PDLS), has been in pilot implementation since 2017 by PNN. The PDLS program aims to align the activities of communities living inside of protected areas with relevant conservation and sustainable use objectives. As of early 2019, four pilot projects were in the design stage. All aim to use Cas to improve water quality and quantity and are located in areas that are both important for water services and under significant threat of land clearing or degradation. One of the four pilots, in Alto Fragua Indi Wasi National Park, is in the Amazon region. Going forward, PNN aims to include incentives for other ecosystem services as well, with targets and approaches to be defined (PNN, 2017; PNN, 2018).

3.3 Peru

As in Brazil and Colombia, there are a significant number of CA and PES-related initiatives in Peru. For the purpose of the study, two specific programs were considered. In 2014, Peru passed Law 30215: Payment Mechanisms for Ecosystem Services, to promote, regulate and supervise PES in the country. The law provides a general description of issues and enabling environment but does not go into specific details to organize PES in the country.

At the national scale, the Programa Nacional de Conservación de Bosques (PNCB), run by the Ministry of Environment, provides indigenous communities in the Amazon with a direct conditional cash transfer accompanied by technical assistance to implement sustainable activities. Funding is provided by the institutional budget allocated to the Ministry of Environment (MINAM, 2014), and various sources of international cooperation related to climate change, including Japan International Cooperation Agency (JICA) and the Hatoyama Initiative (Fast Start Finance) of the Government of Japan (The REDD Desk, no date (a)), KfW, the Forest Carbon Partnership Facility, and others (The REDD Desk, no date (b)). The program and its funding sources are envisioned to mature and expand over time (Giudice et al., 2019). As of early 2019, PNCB was contracting an evaluation aimed to identify accomplishments and impacts, as well as opportunities to improve design going forward.

At the site scale, the National Park Service (SERNANP) and a consortium of NGOs including Conservation International have collaborated to implement a REDD+ project in the Alto Mayo Protection Forest (BPAM). Carbon payments made by the Disney Company in the voluntary carbon market are used to finance Cas in which people living in the protected area agree to no new deforestation and to contribute to PA management, in exchange for technical support to improve production, add new crops, and access higher value markets (CI-Peru, 2016; CI-Peru, 2017).

4. CA CHARACTERISTICS THAT CONTRIBUTE TO EFFECTIVENESS

This section presents findings related to characteristics identified in the study for the design and implementation of CA programs that contribute to their effectiveness, i.e.:

- 1) Deliver additionality;
- 2) Protect areas of higher environmental value;
- 3) Support the programs' social and other development related goals; and
- 4) Make participation and compliance attractive

Findings are presented in separate tables for each of the six issues described earlier, with broadly applicable characteristics given first and highlighted, followed by potentially applicable characteristics. After each table, this report provides examples of good practices from the region. The section concludes with a brief presentation of important characteristics for which greater clarity is required before clear conclusions can be made (Section 4.2, and a summary table (Section 4.3). The expert-guided evaluation of opportunities to better incorporate both types of characteristics in the nine CA programs assessed here is presented in Section 5.

4.1. Characteristics

4.1.1. Where to operate?

What's effective	Justification	References
Use spatial information to identify and operate in areas with <u>high risk of degradation</u>	Potential CA participants have a strong incentive to enroll land they do not plan to clear, such that untargeted programs tend to deliver small reductions	Wünscher et al., 2008 Ezzine de Blas, 2016 Börner et al., 2017 Salzman et al., 2016

	in deforestation and degradation relative to the total area enrolled.	Wunder et al., 2018
Use spatial information to identify and operate in areas which provide <u>high environmental value</u> *	Environmental values are not uniformly distributed, such that programs that actively target areas with high environmental value will increase the share of those areas enrolled, as compared to allowing open enrollment from broad regions.	Börner et al., 2017 Wunder et al., 2018 Alix-Garcia et al., 2019
Use spatial information to prioritize regions with <u>higher incidence of poverty</u>	Where a given CA benefit represents a larger percentage of participants' income, poverty alleviation impact may be larger, and CA benefits may inspire more conservation.	Uchida et al., 2007 Hedge and Bull, 2011 Wong et al., 2018
Use spatial data on common crops or agricultural suitability to prioritize regions with <u>low opportunity cost</u>	Participation in a CA will be more attractive where foregone income is lower.	Jack and Santos, 2017 Bruner et al. 2018
Ensure <u>transparent criteria</u> for where the program operates, and exercise <u>caution in changing these criteria</u>	Designs can be seen as unfair if it is not clear why particular locations are included or excluded. Where this is the case, ineligible groups may increase environmentally degrading activities.	Alpizar et al., 2015 Bruner and Reid, 2015

* Can be defined as relevant to a range of objectives including ecosystem service value, species richness, and ecological connectivity.

Examples of good practices in region regarding where to operate:

Target high risk of degradation: Multiple programs use spatial information to identify regions of higher deforestation, including around protected areas, which are either targeted directly (e.g., PNCB), combined with other criteria (see below), or used to inform strategy. For instance, the REM program uses different approaches in higher and lower pressure areas.

Target high environmental value: Multiple programs (e.g., BF, PDLS, and BPAM) operate in and around existing protected areas. This approach allows CAs to make use of prior efforts to focus on areas of environmental importance. Conservation Agreements in these contexts help PAs deliver results by strengthening collaboration with residents. Other CA programs target a particular ecosystem service identified based on their own analysis. For instance, CGPA prioritizes water provision, CdA prioritizes connectivity, and REM prioritizes high carbon content. These approaches allow a focus on priority issues particular to the program. Issues identified by experts as important for improving program design regarding these characteristics include more directly assessing ecosystem services, targeting multiple environmental values, and translating technical information into program design.

Poverty targeting: None of the studied programs uses a poverty criteria to select regions of operation. However, multiple programs have objectives related to poverty reduction and rely on the general correlation between poverty and areas prioritized based on risk of degradation and environmental importance. Bolsa Verde had an explicit poverty threshold for eligibility *within* the regions selected for operation, which Wong et al. (2018) suggest may have contributed to conservation effectiveness by ensuring that payments represented a comparatively larger fraction of the beneficiary family income. On the other hand, observers (Anon., PC, 2019) also suggest that the poverty threshold created social conflicts by excluding a group of still-poor families using a criterion that seemed arbitrary at the local scale. To some degree, conflicts may be hard to avoid when applying poverty (or any other eligibility) criteria, such that programs may need to decide if the tradeoff in using an explicit poverty cutoff is better than making all people in a target (relatively lower income) region eligible. Another challenge noted by multiple programs, also commonly noted in PES more broadly, is that the poorest people are

less likely to own land and therefore less likely to be able to participate. Uniform family level payments to everyone in a region (e.g., BF) avoid this problem, but may be inefficient with regard to conservation results, in that incentives do not increase in line with area conserved or other criteria.

4.1.2. Who to work with and how?

What's effective	Justification	References
Enroll participants who have (or support them to obtain) legal or <i>de facto</i> rights, functioning social institutions, and capacity to deliver conservation goals.	Conservation often requires ensuring that third parties do not cause degradation. Rights to the relevant resources and either direct capacity or a functioning legal system to ensure management are therefore necessary. In many cases, there is a communal element to making and keeping commitments, such that functioning social institutions are also important.	Börner et al., 2017 Engel and Palmer, 2008 Wunder et al., 2018
Participation is <u>voluntary</u>	A core element of the CA approach is to drive conservation by making it attractive. Voluntary choice ensures that those who enroll are better-off as a result of choosing to conserve.	Wunder et al., 2018
Subsidize <u>enrollment costs</u> for target participants	Direct costs and complexity can inhibit participation, especially for marginalized groups. Targeted training, support in completing enrollment forms, financial support for logistics, etc. can overcome this barrier.	Jack and Jayachandran, 2019
Foment a <u>trustful negotiation climate</u> , including steps to establish <u>implementer as legitimate</u>	Trust in the implementer, contract legitimacy, and clarity that participation in a CA does not threaten land rights can be central to willingness to participate in both individual and communal contract contexts. Transparent and open process led by a trusted implementer can help meet these needs.	Wunder, 2013 Sattler et al. 2013
Facilitate <u>informed deliberation</u>	Real commitments based on clear understanding are fundamental to CAs' ability to change behavior away from degradation rather than just enroll people to receive a few years of payments prior to continuing business as usual.	Milne and Niesten, 2009
Engage <u>legitimate institutions</u>	Working within institutions, especially where CAs are communal, can embed them in legitimate and established process.	Milne and Niesten, 2009
Make use of a <u>broad set of legal frameworks</u>	CAs can be effective using a range of national and state policies, as well as contracts, although state involvement can facilitate enforcement of contract terms (reviewed in section 4.5, below)	Interviews conducted as part of this study
Consider the use of <u>auctions</u> to allow participants to determine eligibility and benefit levels	Potential participants have a range of opportunity costs and motivations that are hard for CA programs to know. Auctions, through which a CA program allocates contracts to those land owners who indicate willingness to accept the lowest payments for a given outcome, represent a means for programs to learn about participants, and set benefits, eligibility, and other program characteristics efficiently, thereby increasing impact. ⁷ Participation in auctions as a	Kaczan et al., 2017 Jack and Jayachandran, 2019 Jindal et al., 2013 Ajayi et al., 2012 Rolfe et al., 2017 Lundberg et al., 2018

⁷ Use of auctions and related mechanisms to set prices and determine other program parameters remains limited, but has been successfully trailed in multiple countries, including in Australia (Rolfe et al., 2017), Malawi (Jack and Jayachandran, 2019), and Indonesia (Ajayi et al., 2012). Variants on using auctions to set prices include allowing potential participants to "bid" the set of conservation deliverables they offer (as in the US Conservation Reserve Program), with the program paying a previously fixed price to the best contracts, up to a budget cap or land protection target (Hellerstein, 2017). Lundberg et al. (2018) provide a review.

	process may also increase transparency and motivation to comply with commitments.	
Actively involve women in design, commitment and implementation *	Processes that ensure women's participation, including in understanding CA terms, defining them, and making commitments is both a goal on its own and may result in greater sustainability and societal benefits.	Cook et al., 2019 Schwartz, 2017 Benjamin, 2018

* This characteristic was identified too late in the study process to include in focal CA program surveys but is substantiated by the literature.

Examples of good practices in region regarding who to work with and how:

Property rights: Weak governance with respect to land tenure is an important challenge in the ASL areas of intervention. It is caused by several factors, including lack of control over public lands, incipient and unreliable private land property registries with incomplete and/or outdated coverage and without spatial information, and non-integrated registries of public and private lands. In this context, a way must be found to ensure that programs enroll people with at least *de facto* rights to their land. A common approach (e.g., by BF, PDLS) is to require proof of residency for two to five years rather than formal title. In terms of enforcement rights, some CA programs operating in PAs make use of PA governance to prevent outside actors from interfering with agreements and conservation results. For instance, participants in BF can report infractions to the PA manager, who has state authority to address problems.

Local institutions: All CA programs analyzed work with local institutions at some level. However, some make the inclusion of institutions an explicit element of design, e.g., CGPA formally includes local social and political institutions in the process of negotiation, design, and communication of CAs. These institutions are also be part of the agreement in many cases. CdA requires that local institutions participate, and works to strengthen that participation, including embedding incentives in the local institutional context by supporting municipal planning, which then provides the basis for benefits provided within CAs.

Implementer: CA programs assessed are implemented by diverse actors, including the national government (e.g., BV, PNCB), regional government (e.g., BF), environmental authority at different scales (e.g., REM, PDLS), and NGOs in partnership with the government at some level (e.g., CdA, CGPA, BPAM, BanCO2). Government-led implementation, or partnership with governmental authorities was reported as one means to establish legitimacy (e.g., in the cases of REM, PNCB, BF and BV), although some experts noted that government motives are not universally trusted by potential participants, with concern over losing property rights being a main concern (e.g., González et al., 2019). Another approach (e.g., in the cases of CdA, PDLS, and BPAM) is for implementation to be led by an NGO with credibility built through prior engagement and demonstrated delivery in previous work with target participants.

Support for participation/trustful negotiation: Multiple programs invested in upfront communication and workshops to ensure informed participation. Bolsa Floresta carried out a series of three meetings prior to signing agreements, and provided fuel, food and accommodation to support participation. PNCB has a formal process involving field visits, workshops, engagement with local government, and then support for enrollment. Instituto SINCHI carried out an extensive engagement process for the CAs within CdA, including emphasizing the completely voluntary nature of the agreements, and working directly with municipal development planning. Broadly, an intercultural dialogue is often valuable, considering that participants' land use decisions and relationship with the land often go far beyond basic economic considerations (F. Berrocal, PC, 2019). Common challenges in carrying out such participative processes include the cost of reaching large numbers of people in remote locations and

ensuring consistent implementation of a quality engagement process. In this regard, Anon. (PC, 2019) highlighted that a specific commitment must be made to ensure that CA program staff have sufficient expertise, time, and budget to properly carry out work with potential program participants.

Legal framework: Programs assessed varied in their supportive legal framework, including being part of a national government policy (BV, REM, PNCB), state government policy (BF), embedded within protected area legislation (BPAM, BF, PDLS), or using contract mechanisms (BanC02, CdA, CGPA). Implementation at scale and to some degree enforcement of contract terms is facilitated by being part of state or national policy, but this does not appear strictly necessary, as evidenced, for instance, by the rapid growth of BanC02. Further discussion on this point is given in section 4.5, regarding consistent application of conditionality.

4.1.3. What should the agreement look like?

What's effective	Justification	References
<u>Benefits should be conditional</u> on meeting contractual obligations *	This is a core element of the CA approach. Without conditionality, land degradation <i>and also</i> receiving CA benefits tends to be the most attractive choice, leading to little impact.	Ezzine de Blas et al., 2016 Wunder et al., 2016 Yang et al., 2018
Contractual obligations and other elements <u>reflect local reality</u> . Participatory development can be useful	Obligations and contract terms that reflect local social and economic reality, for instance related to development aspirations and economic alternatives to land clearing, will be more attractive and easier to comply with.	Moreno Sánchez et al., 2015 Costedoat et al., 2016 Kaczan et al., 2017
Make <u>contracts as long as practical</u> **	Other than for initial test periods, shorter contracts make it easier to enroll land while there is no intention to clear it, and then deforest as planned once contracts have expired, leading to reduced CA program impact.	Grima et al., 2016 Engel, 2016
Choose <u>targets and commitments that are easily measurable</u>	The harder targets and commitments are to measure, the harder it is to apply program conditionality. Commitments measurable by satellite imagery may be most straight forward.	Wunder et al. 2018 Ezzine de Blas et al., 2016
Address potential for <u>non-additionality and leakage of resource degradation</u> e.g., by contracts on entire properties or by excluding soil/slope types less likely to be cleared	Without explicit consideration in contracts, participants have a greater incentive to enroll land that they are least likely to clear, or to shift activities to areas not under contract. Reduction in impact caused by such "leakage" can be addressed at least in part by appropriate contractual requirements.	Jayachandran et al., 2017 Bruner et al., 2018 Engel, 2016
Communal contracts consider <u>social motivations and free riding</u> , including through reliance on legitimate communal institutions and targets	Where community institutions are strong and legitimate, relying on them can increase buy-in to agreement and internal enforcement. Among the problems potentially addressed is the incentive for individuals to "free ride," assuming that their individual infractions will not jeopardize communal CA benefits.	Sommerville et al., 2010 Wong et al., 2018

* Can be defined in terms of actions or outcomes. Universal best practice in this regard is not clearly established.

** During interviews, most experts suggested that assigning a specific duration for this criterion was not appropriate. Most CAs in the region are short (1-5 years), based both on participants' willingness to make commitments and CA programs' ability to commit future financial resources.

Examples of good practices in region regarding what the agreement should look like:

Clear Conditionality: Most programs have clearly defined conditionality, ranging from simple (e.g., in PNCB, participants commit to not clearing enrolled areas and to spending CA-provided benefits as agreed, with infractions addressed by removal from the program), to more involved (e.g., in BPAM, there is a sequential series of repercussions, although again ultimately resulting in removal from the CA program). Regardless of complexity, multiple programs report room for improvement in communicating with participants about both the specifics of the conservation commitment, as well as about procedures in the event of infractions.

Participatory/locally appropriate design: The programs assessed make use of multiple designs to accommodate context. REM divides its intervention into areas with high and low deforestation pressure; in the former it provides benefits in the form of support for sustainable production (in particular related to agroforestry systems producing rubber, cacao, and/or including livestock), while it makes conditional direct payments in the latter. CdA explicitly embeds its interventions in local planning processes. Bolsa Floresta combines incentives with other interventions aimed at livelihoods and local institutional strengthening more broadly.

Target is easily measurable: CA programs assessed have conservation commitments that vary widely in terms of how complex they are to measure. The simplest commitments to measure relate to forest cover change, either as a specific target (e.g., BV), or as a proxy for provision of ES such as water provision (e.g., CGPA, PDLs) or carbon emissions avoidance (e.g., REM). Some programs combine easy to measure forest cover change targets with others that are harder to measure. For instance, PNCB also includes a commitment related to how CA benefits are used. Targets such as compliance with PA management plans (e.g., BF) are also harder to measure outside of specific indicators related to non-deforestation. Comprehensive commitments, such as those under CdA, may be particularly challenging to monitor: CAs under CdA including commitments related to production of charcoal, use of certain pesticides, forest clearing, road construction, and use of endangered plant or animal species, as well as commitments related to participation in training, enrollment in the relevant community association, and contributing to planning.

Leakage and spillovers: BanCO2 addresses the potential for within-property leakage of deforestation by requiring participants to commit not to clear any of their forest area, even though paid enrollment is limited to three hectares. CAs in BPAM require no further clearing on any property within the PA, making it impossible to simply shift degrading activities to other locations (at least within the PA). At the scale of a communal commitment, BV made all households' payments conditional on the entire qualifying area complying with the Forest Code requirement that 80% of native vegetation remain intact. Even though this kind of arrangement makes people who do not all know each other responsible for each other's behavior, as well as jointly responsible to address illegal activities by outsiders, Wong et al. (2018) show a significant impact on reducing deforestation.

4.1.4. How much to pay and how?

What's effective	Justification	References
Use <u>differentiated payments</u> where appropriate <i>but avoid complexity</i> or criteria that can seem unfair	Providing greater benefits where there are differences in environmental value, probability of degradation, or other legitimate criteria can increase the incentive to protect important places, and/or recognize areas of higher cost for participants. On the other hand, perceived unfairness can provoke negative response from those who receive smaller benefits.	Ezzine de Blas et al., 2016 Alix-Garcia et al., 2019 Wunder et al, 2018 Engel, 2016 Alpizar et al., 2015
Calibrate <u>benefits to exceed participants' opportunity and</u>	Participants must receive a benefit large enough to make behavior change attractive, i.e., CA benefit + existing cultural or known monetary	Gneezy and Rustichini, 2000

<u>transaction costs</u> , accounting for existing preferences for conservation and how the CA impacts them*.	ecosystem values must exceed foregone income, transaction costs, and direct costs. However, calculation is indicative rather than precise, as payments may displace some existing motivations for conservation, many existing values are unknown, and actual decision-making is complex.	Handberg and Angelsen, 2019 Salzman et al., 2018 Engel, 2016 Börner et al., 2017
Communal contracts make use of <u>deliberated process to define benefits</u>	Legitimate process can generate value by identifying communal priorities, and increasing buy-in.	Kaczan et al., 2017 Moros et al., 2019 Ezzine de Blas et al., 2019
Communal contracts consider provision of <u>in-kind, communal benefits</u>	Communal benefits can increase a sense of joint commitment to CAs.	Zabel et al., 2013 C Borda, PC, 2019 Kaczan et al., 2017

* Universal best practice is not established with regard to setting payment levels, or how long payment is needed. For a useful framework see Börner et al., (2017).

Examples of good practice in region regarding CA benefits:

Differentiated payments where appropriate, avoiding complexity: Some programs (e.g., PNCB, BF) provide a uniform benefit per ha or per family or community, favoring programmatic simplicity. BanC02 provides a uniform payment within a given objective in a given region, based on a broadly determined opportunity cost. Corazón de la Amazonia combines cash and in-kind benefits: participants in the department of Guaviare for instance receive training, inputs to sustainable management including tools and plant material, and direct payments to compensate for time spent on conservation activities instead of working in their farms. In general, experts confirmed a tradeoff between a) differentiating benefits to accurately address opportunity costs and reward enrollment of areas with higher environmental value, and b) simplicity in design, in turn making communication with program participants easier. Colombia's PES law explicitly recognizes this tradeoff, stipulating that Government funded PES projects must pay a standard amount per ecoregion based on a representative opportunity cost.

Communal deliberations on use of payments: PNCB requires community deliberation and then CA program approval for use of payments. Bolsa Floresta complements its household level payment with three other benefit types that are channeled through local community organizations, and as such require deliberation and communal decision-making. In a context of individual agreements, CdA supports communal planning through direct engagement and supporting official planning mechanisms.

4.1.5. How to deliver during operations?

What's effective	Justification	References
<u>Consistently monitor compliance and use information to apply contract conditionality</u>	Monitoring and verification of compliance is necessary to being able to apply contract conditionality. Consistency in this regard is identified by implementers and studies as central to an agreement that delivers results and is perceived as fair by participants.	Ezzine de Blas et al., 2016 Wunder et al., 2018 Börner et al., 2017
<u>Ensure quality implementation</u>	Even the best designs can be undermined by poor delivery, for instance related to how technical assistance is delivered, whether there is adequate funding for mandated consultative processes, and whether CA benefits are provided as agreed.	Anon, PC

Consider <u>operational efficiency</u> to maximize funding dedicated to CA benefits for participants	To the extent that operations costs can be controlled without sacrificing quality of delivery, a greater share of program budget can be dedicated to benefits provided to participants.	Börner et al., 2016 Salzman et al., 2016
Communicate with participants using messaging that draws on behavioral science, e.g., related to preferences for social norms or default values	Take the time to craft communications that account for best practices including from behavioral science and marketing. For instance, people tend to do what they perceive is “normal.” Messages establishing that most people comply with agreements may increase others’ likelihood of such behavior.	Ferraro, 2014 Ferraro et al., 2011 Wallander et al., 2019 Bruner and Reid, 2015
Establish a <u>learning culture</u> within the implementing institution, targeted at improving performance	Improvements can be readily identified and used if programs gather information and have internal procedures for putting learning into action. Impact evaluations can be particularly insightful. An institutional culture that rewards rather than punishes evidence of problems can also be important.	R Giudice, PC, 2019 C Borda, PC, 2019
Ensure <u>internal clarity on program objectives</u> , in particular as they drive design choices related to targeting, measuring compliance, and others *	Clarity about objectives supports consistent delivery. Conversely, lack of clarity between conservation vs poverty goals, biodiversity vs climate goals, or others, can drive ineffective practices or inconsistent program delivery.	Anonymous, PC, 2019

* This characteristic was identified too late in the study process to include in focal CA program surveys but is substantiated by comments from multiple experts.

Examples of good practices in region regarding delivery through good operations:

Monitoring: Multiple programs studied have strong satellite image-based monitoring systems of their own (e.g., CdA, PNCB). Several programs that target carbon emission reductions also quantify change against a baseline scenario (e.g., BPAM, REM, BanC02 Plus as of 2018). In addition, several programs (e.g., BF, CdA) rely on participatory monitoring with enrolled individuals and communities to address issues beyond forest cover, and as appropriate to bring problems to the attention of the authorities. Such participatory monitoring may also include other institutions already present and part of the social fabric in areas of CA program intervention (F. Berrocal, PC, 2019). Experts interviewed note that such participatory monitoring can bring out vital information and help increase participation in the agreement, but that challenges related to impartiality should be considered with regard to use of the data.

Consistent application of conditionality: Most programs include as a penalty that participants will be removed from the CA program when there is non-compliance. Experts from multiple programs reported that consistently implementing this penalty is a challenge, due to space for discretion and hence uneven and non-transparent conditionality. Another challenge relates to ensuring that monitoring and verification take place prior to payments. In the case of BanC02, payments are provided monthly, which is valuable to participants but makes it challenging to impose conditionality and sanctions in a consistent manner. A final challenge relates to NGO-led programs, which can terminate contract agreements but not legally enforce penalties like removing participants from a protected area. In part due to limitations regarding legitimacy around enforcement, Instituto SINCHI is currently its role within CdA to the relevant regional environmental authorities (Corporaciones).

Transaction costs: BanC02 keeps costs low through the use of an online platform for transactions. This has increased transparency and participation, in particular for potential funders, and allows the

program to rapidly begin operations where there is demand. On the other hand, experts have suggested that there may be a tradeoff in terms of capacity building and sustainability, and that rural landowners may not easily have access to information about the program, even though payments can be made directly to their bank accounts. Transaction costs in other programs (e.g., REM, CdA), are comparatively high, due to focus on process, transparency, capacity building, and engagement in remote contexts. Both approaches have pros and cons, such that the optimal balance must be determined by particular program needs.

4.1.6. How to increase program continuity?

What's effective	Justification	References
<u>Incentivize economic transition</u> to alternatives that are simultaneously more sustainable and more profitable than current activities.	Sustainable alternatives to current economic activities may have large transition costs. Using CA benefits to cover these costs may expand adoption, with the new, greener activity being self-sustaining once established, in turn limiting the number of years during which CA benefits must be provided.	Pagiola et al., 2016 Veléz et al., 2017
<u>Build relationships</u> with Finance or equivalent Ministry	Relationships and ensuring that CA programs describe themselves in ways that meet Finance Ministry goals can make support more robust, perhaps especially during economic downturns.	L. Suarez and Z. Romo, PC, 2017.
Establish the CA program as a vehicle for delivering on voluntary or mandatory corporate interest in conservation, including related to <u>corporate social responsibility, offsets, and tax write-offs</u>	For programs interested in and legally able to obtain funds from private sources, transparent and efficient delivery of conservation can make investment in the CA program attractive to companies who care about their environmental impact, carbon footprint generally, or corporate image. Quantifying impact more formally (e.g., in terms of specific ecosystems protected, or carbon emissions avoided against a baseline) can make a CA program an eligible and attractive option for companies obligated or otherwise interested in quantitatively offsetting negative impacts through conservation elsewhere.	Henao, A.L., 2017 Salzman et al., 2018 Pagiola, 2008 C. Borda, PC, 2019
Establish the CA program as a vehicle for providing <u>ecosystem services</u> where local, national, or international actors can pay for their provision	For water and other ES where beneficiaries are concentrated, CA programs can become the conduit through which beneficiaries pay for ES provision (for instance water payments by hydroelectric power companies or water utilities). CA programs can also have a key role in delivering deforestation reductions as part of national REDD+ agreements.	Grima et al., 2016 A Henao, P.C., 2019 C Borda, P.C., 2019 González et al., 2019

Examples of good practices in region regarding program continuity:

Incentivizing economic transition to sustainable activities: REM and CdA invest in helping landowners shift to sustainable productive activities in high deforestation areas. Bolsa Floresta invests in sustainable production of forest products as a complement to the direct incentive component of the program. Conservation Agreements in BPAM include in-kind support for transitioning to shade coffee production. The GEF- WB implemented Integrated Silvopastoral Approaches to Ecosystem Management project, implemented in Quindío, Colombia (but not assessed here because it is not currently operating and is outside of the ASL intervention area), used intentionally short-term incentive payments to encourage transition from extensive, high impact livestock systems to a more

sustainable silvopastoral system. Pagiola et al. (2016), show that incentive payments generated significant uptake of the improved approach. Moreover, because the approach was also more profitable once fully adopted (i.e., after transition costs were overcome), improved practices largely remained in place once payments stopped. Veléz et al. (2017) have proposed a similar intervention in the coffee value chain for the Hacha River watershed in Caquetá, Colombia, as part of CGPA project.

Links to corporations via CSR, offsets, and tax write-offs: BanCO2 receives significant private sector finance by companies seeking to offset impacts, generate good corporate image, and receive tax write-offs. The program establishes legitimacy in this space by positioning itself as a transparent means to simultaneously contribute to conservation and social goals. Key elements of the approach are a highly transparent online transaction mechanism, and more recently certification which allows polluting firms to avoid paying a carbon tax if they offset emissions. BF and BPAM also receive major finance from private companies interested in voluntarily offsetting impact and contributing to conservation.

Develop markets for ES payments: REM and PNCB function explicitly as mean to deliver deforestation reductions as part of national REDD+ commitments, on which international payments depend. Outside of carbon emissions, BanCO2 has used its online transaction mechanism to become a vehicle for transactions with Municipal water companies willing to pay for protection of vegetation that contributes to water supply.

4.2. Important but unresolved issues

Despite growing clarity about the characteristics described above, many issues regarding CA design are still actively debated. Some may be resolved with data in the future, while others should be addressed depending on the specific context, such that a general recommendation will not be appropriate. The main issues relevant to programs in Amazonian Brazil, Colombia and Peru are presented below. We note a significant focus on issues regarding benefit provision itself (items 1-4):

- 1) Are in-kind benefits more effective than cash in terms of recipients' preferences, minimizing displacement of other motivations to conserve, and maximizing value of benefit as compared to the cost of providing it? Does this vary in a consistent way between contexts with communal tenure (including indigenous communities) and private ownership?
- 2) How large of a role can non-monetary characteristics of contract design (duration, communications, obligations, rights, and process) play in making CAs attractive, and what is the optimal design for these in the Amazon region?
- 3) Do benefits basically need to outcompete a financial calculation of the opportunity costs of foregone production? If so, how do landowners discount returns on places they plan to farm in the future and how do non-monetized or non-monetary ecosystem services inform landowners' calculations?
- 4) If differentiated payments are provided to beneficiaries, how many different payment levels is optimal?
- 5) How can conservation incentives best support poverty alleviation goals, and to what extent is there a tradeoff with conservation goals?
- 6) What is the right balance between keeping program operating costs low (for instance through choosing simple targets, basic monitoring, and uniform cash payments) and making sure that programs deliver well (for instance through outcome-level targets, consistent monitoring and enforcement of contracts, and excellence in delivery)?
- 7) Should incentives be offered to increase compliance with legal obligations, given that in practice, conservation laws are not fully respected, and that some laws may not fully account for previously existing practices? Or would CAs in these contexts be morally irresponsible or politically objectionable?

- 8) Should landowners unlikely to carry out destructive behavior (and hence less likely to deliver additionality by changing behavior) nonetheless be eligible for CA programs on ethical grounds, despite expected reductions in program efficiency?
- 9) How best to operate a CA program in places where actors engaged in illegal activities – from drug trafficking to mining to corruption – are present and tolerated? Potential challenges range from creation of a broadly distrustful climate to impact on property rights and ability of landowners to plan for sustainability.

4.3 Summary of design characteristics that contribute to effectiveness

Table 3 presents a summary of the characteristics described above, divided by issue and whether the characteristics is likely to be broadly applicable, or context dependent.

Table 3: Summary of design characteristics that contribute to effectiveness

	Location	Participants	Agreement	Benefits	Operations	Continuity
Broadly applicable	High risk of degradation High environmental value	Participants have rights, institutions, and capacity Voluntary	Clear conditionality	Differentiated payments but avoid complexity	Monitor Apply conditionality Quality implementation	
Context dependent or limited information	Poverty criteria Low opportunity costs Transparent criteria regarding where program operates	Enrollment by targeted people subsidized Trustful negotiation climate, incl. implementer legitimacy Informed deliberation Women involved Auctions	Reflect local reality Duration of Contracts Target easily measurable Leakage / spillovers considered Social motivations and free riding	Opportunity and transaction costs considered Deliberations on use (communal only) In kind benefits (communal in particular)	Operational efficiency Communications drawing on behavioral science Learning culture and procedures Internal clarity on program objectives	Incentivize economic transition Build relationships with Finance Ministries Links to CSR, offsets, taxes ES markets

5. ASSESSMENT

This section presents aggregated information regarding how the focal CA programs currently make use of or could improve the use of each identified characteristic associated with effectiveness. Results are presented in terms of:

- 1) Average degree to which each characteristic is currently included in design and implementation. Four ranked categories are reported: “almost always,” “often,” “rarely,” or “almost never.”
- 2) Opportunity for including new characteristics or adjusting their design, ranked based on the number of CA programs that identified each characteristic as a practical and political opportunity worth including to improve effectiveness. The study distinguishes the “highest” (identified by more than ¾ of programs), and “good” (identified by more than ½ but less than ¾ of programs) opportunities.

While much of the information and knowledge used was graciously provided by experts in each program, final interpretation is done by the authors. Ranking is unavoidably subjective. Opinions are therefore the full responsibility of the authors only.

Where to operate:

Characteristic	Included	Opportunity
Operate in areas with <u>high risk of degradation</u>	Often	Highest
Operate in areas which provide <u>high environmental value</u>	Often	
Prioritize regions with <u>higher incidence of poverty</u>	Almost never	
Prioritize regions with <u>low opportunity cost</u>	Almost never	
Ensure <u>transparent criteria</u> regarding where the program operates	Almost always	

Who to work with and how?

Characteristic	Included	Opportunity
Enroll participants who have <u>necessary rights, functioning social institutions, and capacity</u> to deliver conservation goals.	Often	Good
Ensure participation is <u>voluntary</u>	Almost always	
Subsidize <u>enrollment costs</u> for desirable participants	Almost always	
Foment <u>trustful negotiation</u> climate, incl. <u>implementer legitimacy</u>	Almost always	Good
Facilitate <u>informed deliberation</u> within legitimate institutions	Almost always	
Consider the use of <u>auctions</u>	Almost never	Good

What should the agreement look like?

Characteristic	Included	Opportunity
<u>Benefits should be conditional</u> on meeting contractual obligations.	Almost always	Good
Contractual obligations and other elements <u>reflect local reality</u>	Almost always	
Make <u>contracts long</u>	Almost never	
Choose <u>targets and commitments that are easily measurable</u>	Often	Highest
Address potential for <u>non-additionality</u> and <u>leakage</u>	Almost never	
Communal contracts consider <u>social motivations</u> and <u>free riding</u>	Almost never	

How much to pay and how?

Characteristic	Included	Opportunity
Use <u>differentiated payments</u> but <u>avoiding complexity</u>	Often	
Calibrate <u>benefits to exceed opportunity + transaction costs</u>	Almost never	Highest
Communal contracts make use of <u>deliberated process</u>	Often	
Communal contracts consider <u>in-kind, communal benefits</u>	Rarely	

How to deliver during operations?

Characteristic	Included	Opportunity
Consistently monitor compliance and apply contract conditionality	Almost always	Highest
Ensure quality implementation	Often	Good
Consider operational efficiency	Rarely	
Communicate with participants	Often	
Establish a learning culture within the implementing institution	Often	Good

How to increase program continuity?

Characteristic	Included	Opportunity
Incentivize economic transition	Rarely	Highest
Build relationships with Finance or equivalent Ministry	Almost never	Good
Establish the CA program as a vehicle for delivering on CSR, environmental offsets, carbon offsets, and tax write-offs	Rarely	Good
Establish the CA program as a vehicle for providing ecosystem services for local, national, or global markets	Rarely	

In summary, the study makes the following observations regarding the current use and opportunities to use the identified characteristics associated with CA program effectiveness:

- 1) Where to operate: inconsistent inclusion of identified characteristics among the focal CA programs. There is a particularly important opportunity for improvement regarding targeting areas under threat of degradation.
- 2) Who to work with and how: consistent inclusion of identified characteristics, suggesting mature program development in this area. Programs nonetheless identified an opportunity to further improve approaches to ensuring trustful negotiations and to strengthening participants' rights and institutions. There was also broad interest in exploring the use of auctions to allocate contracts and set payment levels.
- 3) What the agreement looks like: consistent inclusion of the basic element of contract conditionality, but inconsistent inclusion of other potentially important contract characteristics. There is a particularly important opportunity for improvement with regard to selecting measurable metrics for performance and moving towards even greater clarity with regard to conditionality.
- 4) How much to pay and how: inconsistent inclusion of identified characteristics, with a particularly important area of opportunity regarding the calculation of appropriate benefit levels. It is noteworthy that four of the nine themes prioritized for further research and consideration (i.e., the value of in-kind benefits, the role of non-monetary contract characteristics, the role of opportunity costs, and scope for differentiated payments) also relate to the theme of effective and efficient provision of benefits.
- 5) How to deliver during operations: consistent inclusion of relevant characteristics, but at the same time identification of opportunities to continue to improve in terms of institutional culture for learning and quality delivery. Mirroring findings regarding contract design, the issue of consistent monitoring as a key input to applying conditionality was identified as a priority opportunity during operations as well.
- 6) How to increase program continuity: Relatively little inclusion of the approaches identified, although there are notable exceptions of CA programs effectively using each identified approach. Almost all options are identified as priority opportunities, with the greatest interest in approaches to catalyzing economic transition such that CA benefit provision can phase out over time without losing conservation results.

Synthesizing opportunities, the study notes particular potential to improve in four general areas:



- 1) CA mechanism: making the basic CA conditionality work, including through picking good metrics for measuring contract compliance, ensuring consistent monitoring, and then consistently applying conditionality.

- 2) Institutional: continued improvement of the engagement processes, as well as operational efficiency and a learning culture.
- 3) Select technical themes: in particular a) using spatial data to identify areas of high pressure for degradation, b) calibration of benefit levels, including the role of non-financial elements, and c) use of auctions.
- 4) Program continuity: building into CA program design as appropriate approaches to increase funding stability, draw in new sources of finance, or reduce the requirement for long-term payments.

A synthesis of results is given in Table 4.

Table 4: Performance and opportunities against effectiveness characteristics

	Where to operate?	Participants Governance	/ Agreement	Payment	Operations	Sustainability
Broadly applicable	High risk of degradation High environmental value	Participants have rights, institutions, and capacity Voluntary	Clear conditionality	Differentiated payments but avoid complexity	Monitor Apply conditionality Quality implementation	
Context dependent or limited information	Poverty criteria Low opportunity costs Transparent criteria regarding where program operates	Enrollment by targeted people subsidized Trustful negotiation climate, incl. implementer legitimacy Informed deliberation Auctions	Reflect local reality Contracts long Target easily measurable Leakage / spillovers considered Social motivations and free riding	Opportunity and transaction costs considered Deliberations on use (communal only) In kind benefits (communal in particular)	Operational efficiency Communications drawing on behavioral science Learning culture and procedures	Incentivize economic transition Build relationships with Finance Ministries Links to CSR, offsets, taxes ES markets

 Almost always considered and implemented
 Often considered and implemented

 Expert-highlighted opportunities for improvement

6. RECOMMENDATIONS

The study highlights six opportunities for the ASL coordination project and/or ASL national projects to increase the use of best practices in key issues that are strategic for the fulfillment of ASL national and regional program objectives.

- 1) Continue to fund and support ASL CA programs, as a source of measurable impact, practical learning, and launch of scalable initiatives.
- 2) Facilitate engagement between ASL CA programs and corporate actors and government agencies who can provide new and long-term flows of finance, including related to:
 - a. Corporate compliance with legal requirements to offset environmental impacts
 - b. Corporate CSR goals related to carbon, conservation, and corporate image
 - c. Corporate or private tax write-offs, for instance related to offsetting carbon footprints
 - d. Public utility investments, for instance water utilities paying to protect water sources
- 3) Promote exchanges among CA programs assessed and any other ASL national projects implementing CAs to share, discuss, and build on effective approaches to including relevant characteristics in program design. Specific themes found to combine high CA program interest in improvement, and where there are also good examples of effective approaches in the region include:
 - e. Spatial targeting to areas of high risk of degradation
 - f. Participatory engagement and embedding agreements in the local context
 - g. Setting measurable metrics of contract compliance
 - h. Calculation of opportunity costs
 - i. Means to manage operational and transaction costs
 - j. Approaches to financial sustainability and continuity of impacts
- 4) In coordination with exchanges described in 1), engage outside experts to build capacity in ASL national project-implemented CAs, in themes identified as priorities for improvement, but where additional technical input may be valuable. Specific themes include:
 - k. Use of auctions and related mechanisms to increase efficiency and participant benefits
 - l. Well-crafted communications to promote enrollment and engage participants during operations
- 5) To address gaps not covered by 1) and 2) including the unresolved issues in section 4.2, support participatory research on CA design characteristics identified as important, but where regional experience and existing technical study do not provide decisive answers. It is noteworthy that most programs' implementers expressed significant interest in learning and improving design. This suggests an opportunity for answering questions about key design characteristics through experimentation within the CA programs assessed by this study, in partnership with internal or external research institutions as necessary. Specific themes for research could include:
 - m. Setting benefit levels and identifying optimal contract design in key regional contexts with respect to: i) the relationship between opportunity costs and the decision to enroll in CA programs; ii) the economic value of non-monetary characteristics of contract design; iii) the value of in-kind vs cash benefits; and iv) differentiated payments
 - n. Design options to best balance environmental and poverty alleviation goals

- o. Understanding the tradeoff in terms of effectiveness between controlling program costs and including all characteristics perfectly
 - p. The best opportunities for using short term CA benefits to generate lasting transition to more sustainable economic activities
- 6) Use the CA design characteristics identified in this study as a basic checklist of issues to be considered across ASL work with CA program performance, or related interventions in and around protected areas and other institutions in the landscape. To the best of our knowledge, this study provides the first compilation of characteristics that drive effectiveness in a format that can rapidly be used to identify both good practices and potential opportunities. The expert-driven assessment of status and specific opportunities should be directly relevant for ASL work with CdA and all the initiatives supported through its national projects. Outside of ASL national project areas of interventions, broader dissemination of all or part of this study may be useful to Ministry and other partners in the countries where ASL works, or to GEF Implementation Agency partners' work outside the ASL focus region.

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ANNEX 1: ASL PROJECT COMPONENTS RELATING TO CONSERVATION AGREEMENTS OR INCENTIVES

1. Brazil - Amazon Sustainable Landscapes Project:
 - a. Component 2: Fostering Sustainable Productive Landscapes. Part of this component includes government revision of affordable credits for qualified long-term investment activities for restoration of Areas of Permanent Preservation (APPs) and Legal Reserves (LRs). Mid-sized farmers are the most disadvantaged, and mid-sized areas are where much of the vegetation deficit is found. Therefore, the component aims to “increase the amount of ABC [Agricultura de Baixo Carbono] Program loans provided to mid-size farmers in the Amazon region by giving a financial incentive as a compensation for results reached by farmer's efforts in the recovery of degraded areas in APPs and LR.”
 - b. Component 4: Capacity Building and Cooperation. This component aims to improve Brazilian stakeholder capacity/collaboration across sectors, including the exchange of knowledge between the four national child projects. Initial areas of focus may include payment of environmental services.
2. Colombia - Forest Conservation and Sustainability in the Heart of the Colombian Amazon
 - a. Component 3: Sectoral Programs for Sustainability and Land Management (original 2013 Plan). This component includes conservation agreements within its goal to “benefit local population from sectoral programs by improvements in their livelihoods.” The 2017 update states the intention to “support the promotion of sustainable land-use and natural resource management practices that contribute to the restoration of vegetation...and advance the livelihoods of local communities in the Project Areas,” and presents a target of conservation agreements implemented with three indigenous authority associations (AATIs) as well as with 400 farmer households.
 - b. Component 4: Project coordination, management, monitoring, and evaluation. Additional financing will support eight work-study exchanges between the three countries “to build capacity and align regional Amazon conservation and sustainable use strategies” such as payments for environmental services and indigenous land management practices.
3. Colombia - Connectivity and Biodiversity Conservation in the Colombian Amazon
 - a. Baseline analysis shows that the Connected Landscapes program, which focuses on the strengthening of local governance and promoting sustainable livelihoods, includes payments for ecosystem services linked to forest conservation.
4. Peru - Securing the Future of Peru’s Natural Protected Areas
 - a. Baseline analysis shows that the Peruvian government is already engaging in conservation agreements in this space, including reducing management costs through participatory and collaborative mechanisms, such as conservation agreements. During consultation, local government stakeholders acknowledged the importance of having financial strategies to adequately maintain conservation areas, one potentially viable mechanism being payment for ecosystem and water services.
 - b. The Productive Sustainable Landscapes program has a target of conserving 4,000 ha of forest. As part of Component 2 (below), it has introduced Conservation Agreements at the producer and community level to increase this area, in addition to conservation delivered by Regional Conservation Areas inside the National System of Protected Natural Areas.
 - c. The SFM-2 program will engage in long-term financing that supports the application of community-based forest management through conservation agreements for natural resource management, as well as short term funding that allows for 2-3

Amazon NPAs to achieve structural level/natural resource management through conservation agreements with communities.

- d. Component 2 “will test and promote viable site-based revenue generating mechanisms some of which will also provide opportunities for enhanced sustainable livelihoods for communities and incentives for reducing pressures on forest ecosystems.”

ANNEX 2: EXPERT CONSULTATIONS

a. Consultations regarding the selection of programs to include

Country	Expert	Institution
Brazil	Warwik Manfrinato	ex-Forest Trends
	Luana Duarte	Ministério del Medio Ambiente
Colombia	Rocio Moreno Sanchez	University of the Andes
	Carlos Borda	Ministry of Environment
	Lina Moros	Universitat Autònoma de Barcelona
	Alejandro Rosselli	Conservation International
Peru	Renzo Giudice	University of Bonn
	Gabriel Quijandria	Ministry of Environment
	Javier Montoya Zumaeta	Australian National University

b. Consultations regarding specific programs

Country	Program	Expert	Institution
Brazil	Bolsa Verde	Anonymous	
	Bolsa Floresta	Valcléia Solidade	Fundação Amazônia Sustentável
Colombia	BanC02	Albeiro Lopera Henao	BanC02
		Carlos Borda	Ministry of Environment
	Vision Amazonia	Virginia Salazar Bermudez	Ministry of Environment
	Corazón de la Amazonia	Doris Ochoa Jaramillo	Patrimonio Natural
	Conservación y Gobernanza en el Piedemonte Amazónica	Francisco Velandia	Patrimonio Natural
	Para el Programa Desarrollo Local Sostenible en Parques Nacionales	Jorge Enrique Rojas	Parques Nacionales
Peru	Programa Nacional de Conservación de Bosques	Gabriel Quijandria	Ministry of Environment
		Rudy Valdivia	PNCB
		Renzo Giudice	University of Bonn
	Acuerdos de Incentivos, BP Alto Mayo	Luis Espinel	Conservation International

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