



DISCUSSION PAPER

The Economics of Climate Change Mitigation in Indigenous Territories

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The opinions expressed in this paper are those of the author and do not necessarily reflect those of Forest Trends. This paper was tabled at the COP-25 in Madrid under the title, "Exclusion of well-conserved indigenous territories from REDD+ mechanisms: free ride or 'head-in-the-sand' policy?"

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About Forest Trends' Communities and Territorial Governance Initiative

The Communities and Territorial Governance Initiative partners with indigenous and other forest communities on innovations to secure their rights, livelihoods, and cultures through a strategy built on advocacy, economic self-determination, and cultural integrity.

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Greta belonged to the tiny minority who could see our CO₂ emissions with her naked eye. Not literally of course, but still. She saw the invisible, colorless, scentless, soundless abyss that our generation has chosen to ignore; the greenhouse gases streaming out of our chimneys, hovering upwards with the winds and transforming the atmosphere into a gigantic, invisible garbage dump.

- *“Our house is on fire” (Winter, 2019)*

Introduction

The emergence of climate change as a global problem and the role played by forests (or deforestation) places indigenous peoples (IP) at the crossroads in a globalized world that hardly takes them into account. The fact that they occupy vast territories in the Amazon – in some cases as owners, in others as occupants – and that conserving their forests is in their DNA makes them indispensable allies in mitigating climate change.

Indigenous populations of the Amazon own 210 million hectares (ha), or some 519 million acres, of land and have proven to be highly skilled in the field of forest conservation: the deforestation rate is 0.8%, i.e., even less than that of protected areas (1.1%) and obviously significantly lower than that of the Amazon as a whole (RAISG, 2016). There is no doubt that indigenous communities prevent greenhouse gas emissions; some estimate a total of 42 gigatons of carbon dioxide equivalent (GT of CO₂) are kept within their forests,¹ which they achieve under particularly harsh conditions considering the continuous threats to their territories.

However, under the rules of the game as set forth by governments under the United Nations Framework Convention on Climate Change (UNFCCC), specifically when Reducing Emissions from Deforestation and Forest Degradation (REDD+) was being shaped, the governments of the Amazon region – fostered by both bilateral and multilateral agencies called “donors” – have limited their focus only to those players in a position to reduce deforestation and then mitigate emissions. They have not taken into account those who have historically protected and taken care of their forests. These territories have nothing to offer in terms of reduction or mitigation (Funk et al., 2019). Hence, many of these territories and communities have *de facto* been excluded.

This issue is at the center of the present paper, and aims to show how the REDD+ mechanism is inequitable (and to a certain extent even perverse, as it “punishes” those who did their homework well and rewards those who didn’t) and that in the long run will entail a high social, economic and cultural cost, while not achieving its central goal, which is to mitigate climate change.

The “head-in-the-sand” policy of both governments and climate funds is not fortuitous. There is a backdrop of strong economic reasons, a lack of acknowledgement of the environmental services provided by these almost pristine forests. Indeed, if properly valued and compensated, they would force industrialized countries and those with high greenhouse gases emission rates to transfer huge amounts of money to those responsible for such positive externalities.

The famous *free ride* expression properly renders the rationale behind such a lack of acknowledgement: why pay an indigenous community or authorities of a territory for a service that they

¹ The Yale School of Forestry and Environmental Studies estimates the Amazon basin stores up to 140 billion tons (127 billion metric tons) of carbon, with approximately one-third in titled or occupied (e.g., not yet titled) by Indigenous Territories or communities. The importance of those carbon sinks is huge; the same source estimates that if the entire Amazon forest was lost, and its carbon emitted into the atmosphere, it would be the equivalent of up to 140 years of all human-induced carbon emissions.

will continue providing anyway? Why pay for something they have been doing since ancient times and for free?

This *free ride* occurs both nationally and internationally, and this is made possible because, unlike other externalities which are nowadays being compensated (e.g., a catchment area where both parties – users downstream and communities upstream – are directly related), in the case of carbon emission/sequestration, there is no such direct and traceable link since the atmosphere is a common space in the sense given by Hardin in the “*Tragedy of the commons*.” (Hardin, 1968)

This paper thus contends that, once the environmental service provided by the Amazonian forests in mitigating climate change has been acknowledged (in terms of both stock and flow), the only problem that remains is that of financially quantifying and valuing it in terms of market prices. Once completed, one may argue *who* should compensate for it, *how* these benefits should be distributed among the indigenous territories (ITs) responsible for providing these services, and how this should be related to the territorial governance needs of these populations to guarantee territorial integrity to assist them in facing the threats and to secure proper forest conservation. And particularly how to relate them to their Life Plans, the tool *par excellence* for indigenous communities to guarantee their autonomy.

Recent studies reinforce the need to officially recognize and incorporate IP’s contributions to climate change mitigation. Amazonian primary forests capture huge amounts of carbon (Phillips and Brienen, 2017), and this effect is not being computed in country balances of emissions versus capture (Funk et al., 2019). This unaccounted-for carbon storage not only changes the core of Nationally Determined Contributions (NDCs) estimates, but also allows us to look in more detail at who emits and who mitigates in each country.

The analysis presented in this paper has obvious political dimensions and it is likely to be questioned and resisted by those presently enjoying such a *free ride* and who only contribute in dribs and drabs to climate funds, in amounts which bear no relationship whatsoever with the environmental services provided. And who also benefit from a certain degree of complicity from national governments inasmuch as climate funds have thus far been used to fund their own agencies and activities in the field of climate change (with the euphemism “enabling conditions”), with only small, conditional quantities percolating to those who really provide climate mitigation services: territories, communities, and their organizations.

The paper focuses on the so-called Territories with Minimal or No Deforestation² (TMND) which, as we will see, make up the majority of ITs or land in the Amazon Basin. But this is also true for most protected areas which also provide the same environmental services without being compensated for them and to a lesser extent for other social players who own forests in Amazonia, the largest forest reserve on the planet.

Some have questioned the need for a new concept which seems to be synonymous to “well-conserved territories.”³ Although they indeed seem to be synonymous, the expression “with minimal or zero deforestation” immediately points at the REDD+ mechanisms, the context in which these well-conserved territories are to be analyzed.

² The concept came up when in 2013 Forest Trends, at the request of the Coordinator of Indigenous Organizations of the Amazon Basin (COICA), decided to work with the nearly 2.5 million hectare Indigenous Reserve Cuenca Media y Alta del Río Inirida (CMARI) territory, as it had been chosen as a pilot RIA in Colombia. It very soon appeared that it was difficult to host an RIA Project in a territory with almost no deforestation. The first reaction was to conclude that CMARI had not been properly chosen by COICA, but very soon it appeared that the “minimal or zero deforestation” that is typical of CMARI was actually true for most of the territories larger than 100,000 ha in the Colombian Amazonia, which together account for 94% of the area owned by the indigenous populations in Colombian Amazonia. On average less than 2% of their surface had been deforested. The issue was debated in a number of workshops (Bogota 2015, Bogota 2016, Leticia 2017). Reports of each of these workshops have been prepared.

³ Funk et al. (2019) use the term “stable forests” to denote primary forests with minimal or zero deforestation. It encompasses all forests, not only those on indigenous territories. But in our view the term “stable” is misleading as it could also refer to forests having undergone anthropogenic disturbance in the past without a deforestation or degradation process underway.

The paper is based on an analysis of the situation in the five Amazonian countries having the largest indigenous territories in the Amazon Biome: Bolivia, Brazil, Colombia, Ecuador, and Peru.

Box A. Carbon Sequestration is Not the Only Environmental Service Provided by Amazon Forests

We will focus on carbon as it is of interest to the UNFCCC and climate funds. But we know that well-conserved forests and the IP who hold them provide many other environmental services that are neither valued nor compensated. In particular:

- Water regulation in large rivers, which ensures their navigability, a cross-border environmental service;
- Biodiversity, which has enabled the pharmaceutical industry and more recently the food industry to prosper with no compensation for those who conserve the forests, in spite of what is explicitly laid out in articles 8j and 10c of the Convention on Biological Diversity (CBD) (United Nations, 1992);
- Scenic beauty, which generates significant income for innumerable lodges and tourism agencies, without any profits transferred to those who conserve those forests and landscapes;
- Evapotranspiration, that allows Andean water basins to have abundant water (Bunyard and Herrera, 2012; Martins, 2017);
- Finally, “cultural services” involving the knowledge and know-how of the various IPs, which is still difficult to quantify.

Indigenous People and REDD+

With the creation of REDD+ at the 2007 Conference of the Parties (COP) in Bali, the role of native forests in carbon emissions and the need to bet on their conservation was made more visible. Indigenous peoples also began to become protagonists, especially in the Amazon, where demarcation and titling of their territories has been taking place for the last 30 years.

Indeed, if we look at the figures from 2009, 25.3% of the total area of the Amazon had been titled to IPs.⁴ And if we added the protected areas – many of which are also inhabited by IP – the figure rises to 41.2% of the Amazon. Table 1 breaks down the differences per country:

⁴ Currently protected areas represent 20.9% of the Amazon basin. But almost 24% of these areas overlap with indigenous territories (Benavides, 2009). The IUCN (Cisneros et al., 2010) made a survey and stated that out of the 801 national protected areas in South America, 214 have some degree of overlap with indigenous territories.

Table 1. Indigenous Populations in Amazonia as a Whole (2009)

Country	Percent of Amazonia titled as indigenous territory
Bolivia	25.7
Brazil	21.7
Colombia	56.0
Ecuador	64.8
French Guyana	7.3
Peru	16.7
Venezuela	67.4
Guyana and Suriname	N/A
Amazonia - Global	25.3

Source: Benavides, 2009.

The vast size of the forest belonging to the indigenous populations can clearly be seen in countries like Colombia, where the government has titled 36,336,807 ha (32.2% of the national territory) (INCODER, 2006), concentrated in Amazonia. Or in Ecuador, where 14 indigenous nationalities own 6.3 million ha, or in Bolivia where over 12.6 million ha of indigenous territories have been titled, with an average of 201,416 ha per territory having been granted (Van Dam, 2011). In Peru more than 1,500 native Amazon communities own 13.6 million ha (Portal Territorio Indígena y Gobernanza, 2019). Demarcation and titling have also benefited, though to a lesser extent, afro-descendant, extractive reserves and peasant communities.

Thus, REDD+ has the virtue of providing a new visibility to indigenous populations, especially those living in the tropical rainforests. This has enabled their organizations, in particular the Coordinator of Indigenous Organizations of the Amazon Basin (COICA), to emphasize the general problem of exclusion: powerlessness, territorial vulnerability, material poverty conditions and abandonment by the State. After initial resistance to REDD+ by many indigenous organizations, they later realized that REDD+ could become an opportunity to bring their problem to light and started to include the climate change issue in their agendas, actively participating in the COPs and coining the term Amazonian Indigenous REDD+ (RIA by its acronym in Spanish). RIA attempts to guide international discussions on this topic and represents a synergy between IP historical claims and the new REDD+ mechanism.

REDD+ also has the virtue of resolving – at least in theory – the tension between IP needs to one the one hand strengthen their culture and traditional way of life and to conserve their forests, while on the other hand securing substantial income that will allow them to finance their Life Plans (Van Dam, 2011).

However, over time, and with the arrival of the first climate funds, the initial enthusiasm started to dwindle:

- Only a few territories and communities managed to validate their REDD+ projects, for various reasons. Amongst these were the excessive technical requirements entailed and the high cost of complying with such requirements.

- Donor interests (both multilateral and bilateral) were focused on deforestation fronts, not on the areas of well-conserved forests.⁵ In other words, they focused on areas occupied to a large extent by settlers and small-scale farmers.
- Despite repeated promises made by donor countries at the various COPs, the funds received by the governments of Amazon countries have been curtailed and come from a reduced number of wealthy nations (Norway, Germany, the UK) and two main organizations: the Green Climate Fund (GCF) and the World Bank, through the Forest Carbon Partnership Facility (FCPF) and the Forest Investment Program (FIP).⁶
- The climate funds that have IP as their potential beneficiaries have had great difficulties in channeling the funds to their recipients.⁷

The creation of a new concept called Jurisdictional REDD+, based on the experience of Brazil's Environmental Services Incentive System of the State of Acre (SISA) program, aimed at solving this problem to a certain extent: the understanding was that the donors would provide funds ("payment for performance") to the extent the jurisdiction (sub-national, state, provincial or county government, according to the name given in each country) would yield results in reducing deforestation. These funds would then be distributed inside each jurisdiction among the various players, both those having contributed to curb deforestation and those who had conserved their forests, i.e., indigenous territories or protected areas.

This Jurisdictional REDD+ proposal, attractive at least on paper, and which led to the creation of the GCF, has not yet, however, yielded the results its promoters expected:

- Despite the growing number of sub-national governments taking part in the GCF, very few have set up a program similar to SISA; hence Acre has proven to be a unique case.
- This may be explained by the fact that jurisdictions have understood that taking part in the GCF allows them to "green" their public image while still expanding the agricultural frontier or foster other investments in infrastructure, agribusiness, etc., inevitably leading to greater deforestation. Such is the case of most Brazilian states, especially Para, Mato Grosso and Amazonas, all members of the GCF.⁸
- The funds allocated to the SISA program have been diminishing over time and generally come from external sources, not the State of Acre.
- In the case of SISA, the funds that have been distributed to the indigenous territories have been limited and conditional: the funds are channeled to the indigenous territories through a network of agroforestry agents (two or three per territory on average), who become civil servants of the State, by means of a competitive fund (calls for tender) for small community projects and activities, agroforestry nurseries, environmental education, etc.. These activities necessarily have a low impact as they are limited by available funding.

REDD+ has been questioned by some organizations concerned it could end up as a policy violating the rights of indigenous populations over their territories, imposing restrictions to the use of the land, or even expelling them from their forests. This, however, has not happened. One reason for this might be the scarce impact of REDD+, in both real and financial terms, and the echo it has generated among the indigenous organizations themselves, which have seen it as an opportunity to demand that their rights be respected.

⁵ With the exception of Brazil: the Fondo Amazonía [Amazon fund], managed by the [BNDES](#), in the case of indigenous peoples provides funds both to the deforested territories and those with minimal or no deforestation.

⁶ There are other multilateral bodies, such as UN-REDD and the [GEF](#) that promote REDD+ projects, but their funds have been more restricted and very seldom do they directly benefit the territories or communities

⁷ Roberto Espinoza, AIDSESP, personal communication, 2015.

⁸ Curiously, the Governors' Climate and Forests Task Force does not restrict membership to sub-national jurisdictions unable to show that they are actually reducing their deforestation rates.

Indigenous Territories and Forest Conservation

Despite the growing and alarming deforestation figures of the Amazon biome, the deforestation index is still very low in most of the territories occupied by IPs, as shown by the tables in this section.

There may be various explanations behind this fact, such as the low population density,⁹ and the fact that they are more isolated or removed from transportation routes and the settlement fronts. But it can undoubtedly be explained by the special bond between IP and nature, a reciprocal relationship based on the conviction that nature is life and that mankind is part of nature. The wisdom, practices, and knowledge that are part of their worldview are fundamental to the conservation of their forests. This knowledge translates to territorial or communal governance systems that have made it possible, so far, for many of these forests to remain virtually intact.

Unfortunately, the carbon stock baseline and deforestation rates reported by the Amazon countries to the UNFCCC take the Amazon biome as a whole without discerning between social players. As we know, the Amazon is not monolithic; there are different problems in different regions and sub-regions and various dynamics pertaining to each of the social and economic stakeholders. Thus, a generalized view regarding the Amazon that barely distinguishes between deforestation fronts and well-conserved areas and subsequently focuses on the former has been a hurdle to identify specific strategies for each of the various well-conserved areas and territories (Funk et al., 2019). Also, this perspective assumes that these well-preserved areas will continue to be so *ad eternum*, which has led governments and donors to assume they do not deserve special attention, as conservation is not an additionality.

In the case of Ecuador, according to RAISG data¹⁰ on deforestation between 2001 and 2015, in none of the indigenous territories does the deforestation rate exceed 1% during that period.

⁹ One of the hallmarks of indigenous territories in the Amazon Basin is their low population density. In Colombia, only 70,000 of the almost 1.4 million IP live in Amazon territories; in Ecuador, if we exclude the two largest ethnic groups (Kichwas and Shuar), the eight smaller Amazon nationalities have less than 15,000 people and they own 2.3 million ha. In Bolivia the 27 smallest indigenous groups (all of them in lowlands) barely add up to 35,300 people (an average of 1,300 per group). These vast territories, combined with the low population density, show how difficult governance is – a fact that should be taken into account by governments. Potential migration of these populations to the cities, or rural depopulation, would leave territories much more vulnerable to the various threats, with huge consequences in terms of deforestation.

¹⁰ Information regarding deforestation in indigenous territories and communities of the Amazon countries was provided by Carmen Josse, Director of the RAISG-NORAD Project in 2017.

Table 2. Deforestation Rates in Indigenous Territories of the Ecuadorian Amazon Region, 2001-2015

Nationality	Territory Area (km ²)	Total Area Deforested (km ²)	Deforested Area (%)
Achuar	20,765	63	0.30%
Andoa	1,328	3	0.22%
Cofán	27,421	37	0.13%
Kichwa	1,044,299	573	0.05%
Sapara	1,1117	10	0.09%
Secoya	2,558	9	0.36%
Shiwar	4,625	9	0.21%
Shuar	381,728	494	0.13%
Siona	9,692	30	0.31%
Waurani	54,453	33	0.06%
Cuyabeno - Imuya	38,857	23	0.06%
Tagaeri - Taromenane and Yasuní Park	15,227	0,00	0%
Total	1,612,0691	1,284	0.079%

In the case of Colombia,¹¹ out of the 178 territories located in the Amazon biome (with a total area of 26.4 million ha), only two of the 12 largest ones (over 500,000 ha) had a deforestation rate greater than 3%.

¹¹ In *Resguardos de la Amazonía Colombiana con mínima o nula deforestación [Territories of the Colombian Amazonia with minimal or zero deforestation]*. María Teresa Becerra tabled a PowerPoint presentation at the Workshop “Contribution to climate change mitigation of the indigenous territories of the Colombian Amazonia with minimal or zero deforestation, (The CMARI model),” Bogotá, 13 and 14 September 2016.

Table 3. Colombia: Areas Inhabited by Amazonian Indigenous Territories with over 500,000 Hectares of Forest

Territory	Area (ha)	Percent forest cover
Putumayo Territory	5,756,832	98%
Vaupés	3,810,961	97%
Cuenca Media y Alta del Río Inirida	2,178,688	96%
Mirití-Paraná	1,556,351	98%
Selva de Matavén	1,537,969	82%
Yaigoje-Río Apaporis	1,027,142	98%
Nukak-Maku	932,625	97%
Tonina, Sejal, San José and other	920,725	99%
Cuiarie Isana Rivers	907,381	98%
Bajo Río Guainiy Rio Negro	758,839	99%
Morichal Viejo, Santa Rosa, Cerro Cucuy, Santa Cruz, Cañodanta-Other	652,187	97%
Alto Unuma	511,915	76%

Source: Becerra et al., 2016.

An analysis by districts clearly shows that of the six Amazonian departments of Colombia regions, those with the most land titled as indigenous reservations are those with the lowest deforestation rates. In other words, the larger the area occupied by IP, the lower the deforestation rates.

Table 4. Colombian Amazon: Indigenous Territories and Deforestation Rates by Department, 2010-2012

	Amazonas	Caquetá	Guainía	Guaviare	Putumayo	Vaupés
Area (ha) of indigenous territories	8,667,225	624,163	6,465,357	2,031,428	472,140	4,275,313
Percent area of department titled as indigenous territory	79%	7%	91%	37%	18%	80%
Total area of department	10,917,092	9,009,275	7,134,201	5,546,151	2,590,078	5,348,530
Number of indigenous territories	24	40	30	28	59	5
Indigenous population	19,813	3,640	9,836	4,471	11,923	12,935
People per km ²	0.23	0.58	0.15	0.22	2.53	0,3
Deforestation area (2010-2012)	1,295	28,761	602	16,159	8,678	1,106
Deforestation rate	0.012%	0.32%	0.008%	0.29%	0.33%	0.21%

Source: Becerra et al., 2016.

Francisco Hildebrandt of the Colombian NGO GAIA Amazonas points out that if the macro ITs and the protected national areas were added up – as they are also inhabited by IP – the total would be 50% of the Colombian Amazonian biome, which makes IP the most important conservation stakeholders. And if we realize that within this 50%, only 4.4% of overall deforestation takes place, it means that 95.6% of deforestation takes place outside the indigenous territories.

In the case of Bolivia, according to the data compiled by RAISG on deforestation rates between 2000 and 2015, with the exception of two territories (Yaminahua Machineri and Mosenen) none of them had a deforestation rate greater than 1% over that period. Of the remaining 31 territories located in the lowlands, the majority had a deforestation rate of less than 0.2% over the same 15-year period.

Quintanilla and Zolezzi (2017) point out that in the lowlands and Yungas the total deforestation by 2010 was 5 million ha, of which only 2.2% (108,539 ha) were located in indigenous territories. And if all 59 territories located in the lowlands are considered (Amazonia, Chiquitanía, Chaco), out of 12,098,211 ha, the historic deforestation rate in 2010 was only 0.98% (118,620 ha).

Table 5. Deforestation Rates in the Indigenous Territories of the Bolivian Amazon, 2001-2015

Name	Area (ha)	Percent of deforestation of total territory	Total deforested area (ha), 2001-2015
Yaminahua Machineri	828	1.58%	13.05
Mosetén	3,692	1.53%	56.58
Mojeño Ignaciano	4,354	0.61%	26.72
Multiétnico II	20,117	0.59%	119.48
Guarayo	148,781	0.58%	867.71
Yuqui	2,462	0.52%	12.86
Leco de Larecaja	6,363	0.42%	26.61
Cavineño	22,789	0.27%	60.99
Bajo Paragua	11,281	0.25%	27.85
Multiétnico (TIM)	23,538	0.22%	52.41
Takana I	63,856	0.22%	137.57
Movima	964	0.20%	1.95
Baure	13,482	0.19%	26.18
Sirionó	1,849	0.18%	3.38
Consejo Tsiname	86,375	0.18%	156.11
Yuracare (Coniyura)	4,911	0.18%	8.83
Moré	1,819	0.16%	2.92
Takana - Cavineño	22,003	0.14%	31.61
Araona	955	0.12%	1.17
Movima II	15,045	0.12%	18.42
Chácobo - Pacahuara	15,580	0.11%	16.39
Canichana	614	0.10%	0.64
Leco de Apolo	27,991	0.10%	27.85
Pilon Lajas	31,998	0.08%	25.64
Takana II	10,508	0.08%	8.33
Joaquiniano	20,348	0.08%	16.09
Yuracare y Trinitaria El Pallar	2,776	0.06%	1.80
San Jose De Uchupiamonas	13,124	0.06%	8.43

Cayubaba	30,079	0.06%	19.14
Itonama	98,851	0.05%	50.41
Isiboro Secure (TIPNIS)	171,276	0.02%	32.52
Monte Verde	9,562	0.02%	1.50
Takana III	15,408	0.01%	1.59

Source: RAISG, 2016.

In the case of Peru, according to the same RAISG study of deforestation between 2000 and 2015, out of the 1,379¹² indigenous communities living in the Peruvian Amazonia, 545 had a deforestation rate of over 2% in that period, 247 had a deforestation rate between 1% and 2%, and 587 communities had a deforestation rate of less than 1%, with an average of .485% for the whole 15-year period.

In the case of Brazil, of the 309 ITs covered by RAISG in their 2000-2015 survey on deforestation, more than half (169) had a deforestation rate below 1% over that period and less than a third (92) had a deforestation rate above 2%.

Box B. Typology of Indigenous Territories in the Amazon by Degree of Market Integration

Benavides (2009) classifies communities in the Peruvian Amazon into three types based on level of integration to the global economy and market. This classification may also be applicable for the rest of the Amazon:

- a. Intensely integrated areas: These are the most colonized, with an economy geared to the production of fruit, coffee, cocoa, cattle breeding and other marketable products. These areas have a certain degree of migration; livelihood styles have already changed although they uphold their indigenous identity.
- b. Moderately integrated areas: IP maintain an important part of their territory and have access to the forest and its resources (hunting, fishing, harvesting, small-scale agriculture). They sell surpluses produced by traditional subsistence activities and they have temporary employment outside the community.
- c. Non-integrated areas: IP live in more isolation, continue subsistence activities, and pass on their traditional ways of life and economy through kinship relations. However, the external world is always present in some way, especially through the invasion of external actors.

Box C. Schizophrenia as a State Policy Where Forests are Concerned

While the Ministries of Environment in Latin America generate policies to curb deforestation in compliance with international obligations and the framework of the Paris Agreement, other ministries and sectors of the State (Energy, Mining, Agriculture) continue to create and fund programs that work in the opposite direction, such as large hydroelectric power plants, access roads that facilitate the arrival of settlers, mining, oil and gas extraction concessions, agricultural projects, etc., hence fostering an extractive economy that destroys the ecosystem.

¹² In the case of Peru and Brazil we do not provide information for each community, as it would take up too many pages of the present paper.

It is important to note their budgets are much larger than those of the climate funds.

These contradictory policies coexist without anyone budging.

At an international level, the picture is similar: while the governments of rich countries mutually encourage each other to make additional resources available to tropical countries to avoid the dreaded global increase of 2°Celsius, they do very little to reduce their domestic emissions, and continue to encourage investments in their transnational companies performing extractive or agricultural activities in those same tropical forests.

In Ecuador, for example, a specialist points out that the Amazon Comprehensive Forest Conservation Program & Sustainable Production (known as ProAmazonía), a joint project of the GCF and the Global Environment Facility (GEF) in Ecuador with the Ministries of Environment and Agriculture, has a budget of 60 million United States dollars (USD) for five years. On the other hand, BanEcuador, the development bank of the Ecuadorian State, has a budget of USD1 billion for the annual promotion of agriculture and livestock. At the same time, oil and mining are central policies of the Ecuadorian Government, and the main vectors of deforestation in the Amazon.

The Economic Concept of Externality as a Basis for Understanding Compensation Policies for Environmental Services

The economic concept of externality is the cost or benefit that affects a third party who did not choose to incur that cost or benefit. These negative or positive effects are not reflected in the cost of production nor in the market price of the final goods or services. The concept of externality is the rationale behind the environmental policies regarding climate change both nationally and internationally, and in particular the REDD+ mechanism. Indeed, in the case of carbon, the damage to the atmosphere by the emitters, with undeniable consequences for climate change, entails a cost for humankind as a whole and not for the emitters only (negative externality) who do not include them in their production cost matrix. Vice versa, those sequestering that carbon are providing an environmental service to humankind (positive externality) for which they receive no compensation whatsoever.

This concept can easily be seen in the case of water funds, a mechanism by which the water users downstream of a water basin know that thanks to the conservation measures taken by the upstream populations, water will continue to flow in terms of both quantity and good quality, and they are willing to acknowledge such a service by paying fees or royalties to the people upstream.

In the case of carbon, there is no similar geographic correlation between those who pollute and those who capture. If we add to this the difficulties encountered so far when trying to provide an economic value to both positive and negative externalities – which would probably result in extraordinary costs to be paid by the polluters – we can understand the huge political reluctance to put a figure to such externalities. This also explains why until recently the actual carbon markets were “voluntary.” As the name suggests it is the result of a particular sensitivity or the need to uphold a market image by companies and countries alike. Within the Paris Agreement and the NDCs whereby the regulated markets gradually absorb the voluntary markets, there should be a greater balance between those who pollute and those who sequester carbon.

More than 20 years ago, Monteiro da Costa (1996) explained the apparent paradox in the land policies of the World Bank that on the one hand forced countries to forsake their agrarian reforms and activate their real land markets (both for agricultural and livestock purposes), and on the other hand, forced countries to title vast areas of forests as ITs and protected areas. Monteiro da Costa pointed out that this was due to the interest of the industrialized countries to “immobilize” land use change in the

world's native forests as much as possible, as it was “cheaper to prevent deforestation in the tropics than to control CO₂ emissions in the developed world.”

An additional factor in this complex web of externalities and rights is the fact that land tenure does not necessarily imply ownership of the forest itself and even less so its free use. In some cases, whether the forest belongs or not to the landowner, environmental services are considered a public good whereby potential compensation for such services is only distributed as benefits to the community as a function of the policies introduced by the state. But the literature has shown that if there is no tangible economic advantage for the owners of the forest or those living in them, their conservation, in the short or long run, is jeopardized (in a context where underground resources also belong to the State).

Such is the case of Ecuador,¹³ where any potential compensation for environmental services provided by forests would enter the State's coffers. In the case of Colombia, according to Art. 63 of the Constitution the owner of the land also owns the ancillary goods, in this case the trees and therefore the carbon they sequester.¹⁴ In the case of Bolivia, carbon belongs to the Bolivian people as covered by articles 346 and 348 of the Bolivian Constitution. Thus, it would be considered as a natural heritage of public interest and of strategic nature for sustainable development (Rocha, 2015). In the case of Brazil, Article XII of Presidential Decree No. 7747 (Presidência da República, 2012) acknowledges the rights of IP to environmental services as a function of protection, conservation, recovery, and sustainable use of the forests as fostered in their territories by the existing legislation.

Box D. Multiple Advantages and Co-benefits of REDD+

The reluctance to financially compensate IP for their contribution to mitigating climate change in significant volumes and according to the environmental services provided has led to the coining of the expression “multiple benefits of REDD+” (or “co-benefits” of REDD+).

This is the term used for all the advantages potentially provided by REDD+ or the conservation of forests, which are not precisely set in financial terms, and could translate to environmental and social benefits. These environmental and social benefits would be those produced by REDD+ locally or regionally, such as biological corridors – that are essential for the connectivity between protected areas – lower water or wind erosion, which translates into enhanced navigability of rivers and reduced sedimentation of hydroelectric power plants, etc. (PNC-UN-REDD, SEAM/INFONA/FAPI. 2016. Mapping multiple benefits of REDD+ in Paraguay: using spatial information to support land-use planning surrounding REDD+ policies and measures in Asunción, Paraguay: FAO/UNDP/UNEP).

The RIA strategy could also be seen to take the same perspective, although the “multiple benefits” are different: linked to the opportunity provided by REDD+ to guarantee territorial rights and place the indigenous agenda in the political discussion.

The Perverse Dimension of REDD+

For all practical purposes, IP are excluded from the international and national REDD+ programs that establish compensation mechanisms for the environmental services they provide. Although the Cancun Agreements (UNFCCC, 2011) specifically point out that these programs should take into account all territories conserving their forest reserves for carbon and performing a sustainable management of their

¹³ In Ecuador, ecological systems cannot be negotiated by individuals. The State is the owner of the carbon, all the carbon, both in the soil and the biomass. Apparently, the rationale behind this decision was to prevent the *carbon cowboys* from becoming the owners of the communities' carbon. (Carmen Josse, Ecociencia/RAISG, personal communication, 2018).

¹⁴ Mateo Estrada, Organization of the Indigenous Peoples of the Colombian Amazon (OPIAC), personal communication, 2018.

forests¹⁵ (Paragraph 70, subparagraphs c and d), the national REDD+ strategies and the Climate Funds still focus primarily on those territories and communities which, because of their high deforestation rate, are in a position to reduce emissions (Funk et al., 2019)

This phenomenon, called “the perverse effect of REDD+” by some scholars (IWGIA et al., 2010, Forest Trends, 2012) stems from the assumption that in these territories with minimal or no deforestation, forests conserve themselves and do not require any financial support. This ignores the changing economic and social dynamics and the need to guarantee that the people living in those territories have the tools, living conditions, and means to guarantee their territorial governance and their permanence in those forests.

The underlying message sent to those who have conserved their forests is clearly, “We will be interested in your territories and communities as soon as you have significant deforestation rates and hence the possibility of reducing emissions.”

Only recently, and in a lukewarm fashion, when stock and flow considerations started to crop up, introduced by some Climate Funds (e.g., REDD Early Movers) and funded by the German Development Bank with the support of Norway and the UK, a small portion of the funds is allocated to IP or territories with minimal or zero deforestation, using various formats: grants, direct transfers, and incentives for conservation. However, the strategy stems more from Climate Funds’ needs to maintain a good relationship with the indigenous movements of each country rather than an actual acknowledgement and valorization of environmental services provided by those who have historically conserved these forests.

Francisco Hildebrandt of GAIA Amazonas points out that if one considers that each conservation strategy in Amazonia should have three main sub-programs (governance of indigenous territories; management of protected areas; and stabilization of deforestation fronts) then there is a clear imbalance between the investment in deforestation fronts, where cooperation policies and resources go, versus what is done in the macro territories or the rest of Amazonia, where investments are virtually nonexistent.¹⁶ In the case of Colombia, he adds, this policy results in facilitating migration of economies of war and illegal activities (coca, mining, etc.) from the foothills of the Andes to the territories that are better conserved. Thus, while purporting on the one hand to close a deforestation belt, on the other new fronts are opened in ITs. This process has been substantially accelerating after the peace agreements were signed, leading to the Revolutionary Armed Forces of Colombia (FARC) militias leaving these territories and new actors coming in.

Such imbalance between resources allocated to deforestation fronts and those going to well-conserved areas also turns out not to be very rational in terms of resource allocation of always-scarce funds. For example, in the case of ProAmazonia funds transferred through SocioBosque¹⁷ to well-

¹⁵ Paragraph 70 of these agreements states:

“Encourages developing country Parties to contribute to mitigation actions in the forest sector by undertaking the following activities, as deemed appropriate by each Party and in accordance with their respective capabilities and national circumstances:

- (a) Reducing emissions from deforestation;*
- (b) Reducing emissions from forest degradation;*
- (c) Conservation of forest carbon stocks;*
- (d) Sustainable management of forests;*
- (e) Enhancement of forest carbon stocks;*

¹⁶ Francisco Hildebrandt, GAIA Amazonas, personal communication, April 2018.

¹⁷ SocioBosque is the Forest Protection Program of the Ministry of Environment of Ecuador.

conserved areas amount to USD6/ha, whereas the same program pays USD270/ha for restoration costs.¹⁸

Just like in the case of public health, there is a certain refusal to understand that prevention is much more effective than the cure.

Box E. The Specific Dedicated Mechanism (MDE in Spanish) in Peru: A Different Kind of Climate Fund

Peru is probably the country that has the most diverse set of climate funds in the Amazon basin, and also has carried out the greatest efforts to adapt these funds to meet IP's demands.

There are five climate funds in Peru: FIP, FCPF, UN-REDD, Joint Declaration of Intent (JDI), MDE, all of them coordinated by the Ministry of the Environment of Peru (MINAM), as well as the National Forest Conservation Program (PNCB), an initiative by the national government. These funds all have an indigenous component, possibly thanks to the capacity of the Interethnic Association for the Development of the Peruvian Rainforest (AIDSESEP) to influence, lobby, and negotiate. They have left their mark in the region.

Peru also has a National Forest and Climate Change Strategy, and although it is more a diagnosis of the problem and a declarative document, it does acknowledge the contribution of IP to mitigating climate change. The strategy states that well-conserved areas and those with deforestation (in this case because of the possibility of reducing emissions) play an important role in mitigating climate change.

In fact, the PNCB, which is financed with public funds, includes among other activities a funding program for 130 indigenous communities (about 10% of the total communities in the Peruvian Amazon). Communities receive ten soles (USD3) per ha per year, for three to five years, just to conserve their forests. In 2018, there were about 1.8 million ha of forest under this program, i.e., 12.5% of the total 14 million ha titled to Peruvian Amazon communities. Both communities with deforestation and those with well-conserved forests are eligible, but one of the criteria is to strengthen the buffer zone of a protected area, as a way to lower the pressure on the natural protected areas.

Perhaps what distinguishes Peru from the other countries is the participation of the indigenous organizations (AIDSESEP, but also the Confederation of Peruvian Amazonian Nationalities CONAP, and in some cases regional organizations of each of these) in the decision making process. The outcome is that a good portion of climate funds are channeled directly to IPs.

The MDE-Saweto for indigenous people is probably the best example. An initiative of the FIP funded by the World Bank, it is aimed at resolving basic problems highlighted in the Amazon indigenous agenda, such as physical and legal remediation to grant legal security to the territories, community management of the forests by means of economic ventures, and indigenous governance through community Life Plans.

MDE-Peru, unlike the other seven countries where the FIP has established an MDE, is the only one where the indigenous organizations (AIDSESEP and CONAP) hold a seat on the steering committee and where they have managed to include as part of the enabling conditions the need to title those communities that still do not have tenure.

To their credit, the MDE has been able to bring funds to its, and they have developed a successful governance mechanism where those in charge of managing the funds are the nine regional offices of both IP organizations. An external agency, the World Wide Fund for Nature (WWF), aids in managing and auditing those funds but the beneficiaries are the indigenous

¹⁸ Actually, the cost of restoration per ha is much higher, USD800, of which ProAmazonia contributes USD270. The balance is paid by the Ministries of the Environment and Agriculture and the local governments.

communities themselves. Besides land titling, the funds foster economic and food security initiatives.

By the end of 2018, 210 out of the 300 communities had been recognized (a 2020 target), 88 communities had received their land titles (the 2020 target is 130) and there were close to 80 economic ventures underway.¹⁹

Another important achievement of the MDE-Saweto was the change in regulations in order to simplify the land titling process for IP.

It is, in a nutshell, a proven and successful mechanism that could very well become a source of inspiration for other climate funds.

The Invaluable Contribution of Territories with Minimal or No Deforestation to Climate Change Mitigation

TMND contribute very different values to the conservation of forests and the mitigation of climate change. These different values (positive externalities) need to be made visible in order to be acknowledged by governments and the international community in the framework of the REDD+ strategies.

EXISTENCE VALUE

This is a concept that comes from environmental economics and is used to refer to the intrinsic value of some asset, normally natural/environmental. It is the value of the benefits derived from the asset's existence alone. For example, a tree can be valued in a number of ways, including its use value (as lumber), an existence value (simply being there), and an [option value](#) (value of things that it could be used for). Existence value is separate from the value accruing from any use or potential use of the asset (Wikipedia).”

Precisely in our case, the sheer fact that these forests *exist*, over and beyond their use or utilization (or their biological diversity) has proven that they have an enormous value as generators of environmental services. The fact that problems may be encountered when trying to quantify such services both physically and financially (these are problems that remain to be solved) does not diminish their existence value.

In other words, there is no doubt that these forests have value granted by their sheer existence. The problem is that given the present configuration of international negotiations in the framework of the COPs, nobody is interested in acknowledging such value and paying for it.

If we consider that carbon stocks (both in the soil and the biomass) constitute “avoided deforestation” or “contained emissions,” there is a REDD+ effect in these territories. This is actually the rationale for why “the maintenance of forest carbon stocks” was included in the Cancun Agreements as an option to REDD+.

And the maintenance of such a stock does undoubtedly have a cost, though not visible.

THE VALUE OF A CULTURE OF RECIPROCITY WITH NATURE

It is not accidental that deforestation rates are much lower in indigenous territories than in the rest of Amazonia, but rather the result of a bond established between these peoples and their environment. A

¹⁹ Cynthia Mongilardi, WWF, personal communication, October 2018

worldview with complex ancestral knowledge (that we are just starting to discover and understand) has conserved this biome.

This relationship with nature has led to a system of community rules that restrict the undue usage of biodiversity, especially the commercialization of it. In the Amazon worldview only non-intensive use of the forest resources is allowed.

In the same way that the CBD recognizes the value of indigenous knowledge regarding the properties of certain species, which, for example, is applied in the pharmaceutical or food industry (Articles 8j and 10c), we should also recognize the value of traditional knowledge that allows for the conservation of forests. The western world only recently discovered this knowledge and describes it with expressions such as “low-intensity forest management” or “low-carbon and climate resilient development strategies,” or even “climate-smart agriculture.”

THE VALUE OF TERRITORIAL GOVERNANCE THAT SECURES TERRITORIAL INTEGRITY

The governance carried out by the Amazon peoples over their territories and communities also explains the Amazonian forest territorial integrity and persistence over time. Indigenous people have faced numerous threats by organizing control and surveillance systems in order to stop the entrance of loggers, settlers, illegal miners, etc. Many leaders are murdered when trying to protect their land and forest.

Such territorial governance, which guarantees minimal or zero deforestation, and that bears a very high cost for the indigenous organizations (time, transportation over rivers and rainforests, communication between them) receives however no acknowledgement or support from the State. The State has the necessary resources for protected areas, or municipalities, and although these carry out the same function as indigenous territorial governance, sometimes it is with less effective results.²⁰

Even along the border areas (e.g., the Colombian territories bordering with Brazil and Venezuela) the indigenous peoples play a very important geopolitical role by protecting national sovereignty although here again they are not actually acknowledged by their national governments.

CARBON CAPTURE BY PRIMARY FORESTS

Recent surveys show that primary, mature, or pristine forests are not neutral in terms of carbon sequestration or emission. On the contrary there is a clear gain of sequestered carbon of such a magnitude that if it were to be included in the national carbon balance, it would by far exceed the carbon emission generated by the transportation systems and the industrial sector. Phillips and Brienen (2017) point out that such is the case of eight out of the nine Amazon countries.

As this topic is so important, this paper will deal with it later on. But it is important to point it out when drawing the list of TMND values contributing to mitigating climate change.

THE HISTORICAL VALUE OF INDIGENOUS PEOPLES' CONSERVATION EFFORTS (ECOLOGICAL DEBT)

Finally, another value deserves to be outlined: the historical factor. Although the UNFCCC does not consider retroactivity, the fact is, that because IP managed to conserve their forests for many centuries, the climate crisis today is not more serious.

Had the Amazon peoples adopted the development models fostered by our societies since the times of the rubber plantations, proceeding with models based on livestock, grain production etc., and had they not resisted forest conversion, the planet's situation today would be totally different.

²⁰ For example, in the case of Puinawai, a National Park with more than 1 million ha, distributed over 3 Guania territories, the State does not have any park rangers on site and leaves the protection chores in the hands of the territory authorities. Zero cost. <http://www.parquesnacionales.gov.co/porta/es/parques-nacionales/reserva-nacional-natural-puinawai/>

Therefore the actual environmental service provided by IP did not start today. Instead, there have been centuries of efforts to conserve forests and mitigate climate change. Consequently, an environmental service has been provided for centuries that has not been acknowledged.

Mankind has an ecological debt that may be difficult to measure but cannot be ignored.

Contribution of Primary Forests to Mitigating Climate Change

In a recent paper, two scholars of the University of Leeds, in England, Phillips and Brienen (2017) point out that “the Amazonian forests have provided a significant carbon absorption service,” which has been underestimated to such an extent that, between 1980 and 2010, the carbon sequestered by the forests has been greater than the carbon emissions of all national economies with the exception of Venezuela. For most nations (Bolivia, Colombia, Ecuador, French Guyana, Guyana, Peru and Suriname) the sink has probably mitigated, additionally, all the anthropogenic carbon emissions linked to deforestation in Amazonia and to other changes in the usage of the soil.”

Phillips and Brienen’s survey is based on records obtained from 309 permanent plots in 71 different locations located in mature Amazon forests, and is the result the efforts of over 100 Amazon Forest Inventory Network associates.

This sequestration effect of mature or primary forests “varies substantially from one year to the next mainly because of the temperature and moisture variations of the tropics.” And although in years of drought (such as 2005 and 2010) such sequestration may have been lower, the balance is still very positive and “represents hundreds of millions of tons in the years without a drought.”

And, they add, “Although in areas of the same size, net flows in mature forests are expected to be significantly lower than in the deforested, degraded or reforested plots, these small variations in the mature forests may become high values when calculated at a regional level.”

Phillips and Brienen suggest a number of conclusions stemming from this finding:

- a. “First, historically, if Amazonia has provided a large environmental service to the global climate, then the net carbon emissions of the Amazon nations – Brazil, Bolivia, Colombia, Ecuador, French Guyana, Guyana, Peru, Suriname, Venezuela – may be greatly over-estimated.” Typically, national and international assessments simply omit the behavior of intact forest ecosystems. “For example while Brazil’s reporting to the UNFCCC includes gross deforestation for all types of soil, carbon removal from the atmosphere is only estimated for managed lands.”
- b. “Second, the renewed emphasis on national reporting of all carbon fluxes following the Paris 2015 climate agreement means that it may well be advantageous for tropical forest nations to examine the behavior of their old-growth forests extremely carefully.”
- c. “And third, while world leaders have set an ambition of limiting global temperature rise to 1.5°C above pre-industrial levels, in practice this may only be accomplished if the biosphere cooperates and provides large net sinks into natural and managed ecosystems worldwide.” In other words, if the territories with minimal or zero deforestation and the protected areas also receive the attention they deserve.

Phillips and Brienen also suggest that:

- The absorption or sequestration rate dropped by one-third in the decade of the year 2000 when compared to the two previous decades. This was “mainly as a result of a weakening of the sink when taken at a unit scale (hectare by hectare) and not measured by the reduction of the total area of Amazon forests.”
- In spite of that drop, and of the emission increase caused by the burning of fossil fuels in most of those nine countries, it is likely that the sink effect will still exceed emissions.
- For eight out of these nine countries, the sink has surpassed the net emissions generated by the burning of fossil fuels and by deforestation, degradation and fragmentation of the Amazon forests.

To sum up, the carbon sinks of Amazonia are huge (above 100 Tg in underground and superficial biomass). The net carbon emissions of the Amazon nations (Bolivia, Brazil, Colombia, Ecuador, French Guyana, Guyana, Peru, Suriname and Venezuela) have been significantly overestimated in all assessments as they disregard the carbon balance of the mature forest ecosystems. And although emphasis has been placed on managing secondary forests by virtue of their potential as carbon sinks, for various reasons the volume of carbon sequestration by the mature forests has been much larger than the net sequestration of secondary systems. For example, since 2000 pristine forests of the Amazon have contributed 306 teragrams (Tg) carbon each year while the secondary forests only contributed 60 megagrams (Mg) carbon.²¹

Phillips and Brienen's survey clearly show that if the effect of carbon sequestration of the primary and mature forests were added to the national carbon flow accounts in the NDCs, the picture would be totally different. At some point in time they even wonder "if various northern countries include the carbon balance of their pristine forests (which usually are also net sinks) in the reports they send to the UNFCCC, why have Amazon countries excluded the carbon balance from their own mature forests in their reports?" The answer can only be analyzed in the light of the *free ride* policy guiding public policies, in particular those in the international climate scene.²²

Box F. Valuation of the TMND Contribution to Mitigating Climate Change

The field of "ecological economics," unlike environmental economics, considers that if something has a value, although it may be impossible to assign it a monetary value (a price) it cannot be disregarded from the analysis. Some of the most precious things in life, and of our life on this planet, have a value, albeit without a price.

It is likely that some of the "values" of the well-conserved forests with minimal or zero deforestation are difficult to establish in monetary terms. But some others can indeed be appraised. Such is the case of carbon stored in the soil or biomass, or that captured by mature forests. The other values may be estimated, as ecological economics does have tools do to so.

Another task, rather more legal or political in nature, will be to guarantee that indigenous peoples become the owners of the carbon they capture in their forests: following the same arguments with which States ended up acknowledging that communities owned their forests over the past 30 years – as the only way of ensuring they would conserve them and benefit from them – they must also be the owners of the environmental services they generate.

By way of example, if we estimate the carbon captured by the Indigenous Reserve Cuenca Media y Alta del Río Inirida (CMARI) territory to be around 1 ton per year/ha (i.e., not encompassing the other values) and at a price of USD2/ton on the voluntary market, we would be speaking of close to USD4.4 million per year generated by CMARI as it has a total extent of 2.2 million ha. If we push these calculations to include the 26 million ha of forests owned by the Colombian Ips, this figure would add up to USD52 million. Every year.

And we haven't included in this calculation the value of stored, not released, carbon.

If we compare that figure to the USD20 million contributed by the Indigenous Pillar of the

²¹ One teragram equals 1 million metric tons. One megagram equals one metric ton.

²² It is interesting to see how some scholars contribute to such distortion. A case in point is that of the Woods Hole Research Centre (WHRC). In a paper published in *Science* (Baccini *et al.*, 2017) they state that "*the tropics are a net carbon source, with losses owing to deforestation and reductions in carbon density within standing forests being double that of gains resulting from forest growth.*" (<http://science.sciencemag.org/content/358/6360/230>)

The RAISG consortium scientists, partners with Woods Hole, surprised by this assertion, and knowing that it contradicted their own data, requested WHRC to review the claim. Hansen *et al.* (2019), also in *Science* magazine, strongly question the WHRC data.

Amazon Vision Program (PIVA) over a five-year program (i.e., USD4 million per year and conditionally thereafter because these are competitive funds) the imbalance is clearly huge.

The Concept of “Stock and Flow” as an Attempt to Tackle the Problem

A few years ago the concept of “*stock and flow*” was created as a shy attempt to solve REDD+’s perverse effect and to ensure that a portion of climate finance also goes towards the TMND or well-conserved territories. In a stock and flow scenario, the funds received by a State (national or sub-national) are to be distributed both to those “reducing the emission *flow*” and those “conserving the carbon *stock*”. The former recipient is on the deforestation frontier (and is really targeted by donors) and the latter is the TMND and protected areas.

However, this allocation between stock and flow brings about a number of challenges:

- First, allocation of funds to one or the other is arbitrary. It follows political criteria; it is not based on the actual contributions of each of them to mitigating climate change.
- Then, the money that the TMND and the protected areas may potentially receive (the “stock”) depends on a certified deforestation decrease. In other words, such dependence means that if there is no emission reduction in that jurisdiction not only is the flow being sanctioned but also the stock, in spite of their guaranteed contribution. This will soon be the case for Colombia, now that deforestation has been rising again as a result of the peace agreements. Or Brazil, as a result of the new policies introduced by the Bolsonaro administration.

The situation in Ecuador is interesting: there stock and flow are not linked to a single result. Rather, the government has two mechanisms or programs to work with: one for upholding the stock, one for lowering the emission flow. The first one is SocioBosque, considered by some as a conservation incentive rather than a climate fund. It targets those indigenous communities and organizations whose forests are well-conserved and who pledge to keep them that way for 20 years. SocioBosque recently received funds from two climate funds, ProAmazonia (a smaller sum) and REM Ecuador (signed in June 2018). The only expected “result” to which communities have committed is that the forest continue to be conserved and that the funds be used in accordance with an investment plan. The second, ProAmazonia, a more conventional climate fund, is mostly invested on the deforestation frontiers or in areas risking deforestation, and disbursements are linked to a “result,” i.e., a reduction in the deforestation rate.

Box G. Consolidating Carbon Emitted and Captured into a Single Figure at the Amazon Level Does Not Contribute to Equity

Calculating how much carbon is emitted or captured in each Amazon country is carried out at the national level. However, this method conceals the efforts and contributions of the various players in the macro territory. For example, if following the Colombian Peace Agreements the deforestation rate increases, and this were to impact the funding flow received by Colombia from Norway and Germany, this would also affect the PIVA funds. That would be the case even if there were no increase in deforestation in its. Such financial sanction to the whole area can only be avoided with a more regional approach, which is possible with satellite monitoring.

The Free Ride of the Emitters

The Merriam-Webster dictionary defines the expression *free ride* as “a benefit obtained at another’s expense or without the usual cost or effort.”

That is exactly what is happening in the world with carbon: those who emit without any cost and are responsible for the climate change take advantage of those who sequester this carbon (and have been doing so for centuries until it became clear that the emission rate was higher than the capture rate and climate changes started). This could be rewritten as, “Why pay those who are conserving their forests if they are doing it for free and have been doing so for centuries? Why should we contribute towards territorial governance, a mechanism guaranteeing a minimal deforestation rate, if these peoples and communities will continue to do so anyway?”

That is why the UNFCCC has coined the concept of additionality, in order to acknowledge only those “additional” activities carried out to reduce emissions and not those that have been or would be performed anyway. In other words, if the initial status is that of conservation, then no mitigation measure is required and the message is “carry on, thank you for your services, but as there is no additionality you will receive nothing.” Free ride. Which means that both notions, i.e., free ride and additionality, refer reciprocally to the other.

As pointed out by a senior official of the Colombian Ministry of the Environment and Sustainable Development, “We are doing two things, conserving the forests and reducing deforestation, but we are only being paid for one.”²³

In the case of the indigenous peoples from the TMND, who are not in a position to reduce emissions, the idea is for them, thanks to their own effort and budget, to uphold conservation of their forests (good governance, control and surveillance, keep on living in their communities, etc.).

One of the arguments of those supporting this free ride concept, and contending that only additionality should be paid for, is that conservation is not the result of an action carried out by IP living there but the absence of pressures or threats. Thus, although there is an environmental service, it is not due to the effort of indigenous communities and therefore they should not be compensated for the services rendered.

There are figures that contradict this. As mentioned before, only 4.4% of deforestation in Colombia takes place in the indigenous reservations that make up 50% of the Colombian Amazon, whereas 95.4% of deforestation takes place in the remaining 50%.

Such *free ride* situation occurs both at a national and international level:

- At the international level, since industrialized nations do not acknowledge the TMND as eligible for compensation for the environmental services they provide, and in such a magnitude, they focus only on the deforestation frontiers and on those projects that can show additionality. They also exclude carbon captured by mature forests from national emissions accounting and the NDCs of countries with TMND (which is something industrialized countries report for their own forests) (Phillips and Brienen, 2017; Funk et al., 2019).
- At a national level, because they do not disaggregate the emission and capture data per region or stakeholder, which would clearly identify those who emit versus those who contribute to mitigating climate change. The concept of NDCs, as one figure per country, actually conceals the responsibility of the various players and regions, be it when computing either the emission or the sequestration rates.

This *free ride*, as mentioned before, is made possible because, unlike what is happening in the case of water funds, where both parties are directly connected, in the case of carbon the geographical relationship between emission and sequestration does not exist. If in the case of the watershed mechanism the downstream users did not create a fund to make sure there is a proper management upstream, they would soon feel the damage inflicted. Conversely, in the case of climate change, we end up with Hardin’s tragedy of the commons because, as it is a common, unregulated space, the

²³ Ruben Dario Guerrero, Senior Official of the Colombian Ministry of the Environment and Sustainable Development, personal communication, 2018.

cost of continuing to pollute becomes a damage to all, not only to the polluter. Such a selfish attitude, which is putting the planet on the brink of disaster, is that of the main historical polluters of our planet.

The free ride is also present in the concept “payment for performance” adopted by the main climate change funds to carry out their yearly payments: the “performance” they refer to is not the balance between emissions and sequestration but only the emissions reduction. Sequestration is taken for granted.

Box H. Costs of Territorial Governance and Forest Conservation

One of the main challenges of the indigenous territorial process that took place in the Amazon over the past 30 years has been managing or governing these vast territories. Indigenous peoples were not necessarily prepared for it, and they have received no support or assistance from their respective governments. In Colombia alone, 24 territories are larger than 100,000 ha and some are over 1 million ha. These are territories with communication, transportation and basic utility problems where the State is virtually absent, and where the only way to fend off problems such as potential invasions, illegal activities, and the arrival of outsiders is through continuous surveillance and control.

As we all know, it is good territorial governance that will ultimately secure pristine forests.

The governance of these territories requires that indigenous authorities devote a good part of their time to working with governmental entities in the city, which also means abandoning their traditional activities and incurring high travel expenses.

We could keep listing the costs of governance: there are communication costs (mobile phones), costs related to gathering an Assembly, preparing Life Plans and updating them periodically, managing the scarce resources received, hiring professional services such as lawyers, accountants, and so forth.

Governance is therefore expensive, and out of proportion with the material and financial resources an indigenous organization has. These are costs which, unlike those of a municipality or local government, are not recognized by the State. Here again there is a *free ride*.

There are donors who are surprised when they see small misappropriation of funds or corruption in territories where the leaders must leave their productive activities to play their leadership roles. But they must make a living somehow; they need money to go to town, and so on. It is all too I to assume that they should pay out of their own pockets whereas meanwhile it is seen as logical that national, provincial, or municipal authorities have people on their payroll and that their travel expenses are covered by the public treasury.

In the long run such a situation is untenable and nobody should be surprised in such a context that the “carbon cowboys” negotiate contracts that are detrimental for the communities and territories: even though they are highly inequitable it gives IP an income that neither the State, NGOs nor their second-tier organizations acknowledges.

It is high time for governments and the international community to understand that the conservation of these forests, which are seemingly intangible, depends on good governance and that governance – political, economic, and environmental – has costs involved. Free ridership as a policy is not only unfair, it is also short-sighted.

The Need to Revisit the Concepts of “Cooperation” and “Voluntary” Agreements

It is time to revisit the term technical or financial “cooperation” for multilateral or bilateral programs that support climate change mitigation. Calling it “cooperation” falsely implies that “donors” contribute as a result of their environmental or social sensitivity to the Amazon and its inhabitants, or as an act of generosity. In reality, their actions stem from the urgency to prevent climate change from reaching certain thresholds. Failing to recognize the environmental service provided by countries, Amazonian forests, and people that can preserve them, will generate irreparable economic damage. And of course, it is less expensive than reducing emissions at home.

If we then consider this “cooperation” as a payment for services rendered, we should refrain from seeing it as philanthropy. Moreover, if we see it as a payment and not as a “donation,” then such payment must indeed reflect the value of the service actually rendered. In the case of the Amazon we should assign a market value for the carbon stock stored in hundreds of millions of hectares of forest and the carbon captured every year, only considering two of the services which are the easiest to assess.

The fact that we do not have all the tools to estimate or quantify the value of the service cannot constitute an excuse for non-payment or for a symbolic payment (which at any rate should be a down payment). One could set parameters using the various assessment methods while agreements on more accurate methods of measurement are in the making at the COPs.

Likewise, the “voluntary” nature of the payments should be revisited. Once the existence of negative externalities (emissions) and positive externalities (sequestration) have been asserted, the “voluntary agreements” should be replaced by contracted obligations. This seems to be the path chosen since the Paris Agreements and the NDC mechanism. Just like in the case of the water funds, where irrigation and drinking water users are obliged to pay a fee for the water they use, those who pollute by emitting carbon should embed in their price structure an amount equivalent to the price of the carbon emitted.

Box I. Where Should Climate Funds Go?

As is the case with the water funds, in the case of the climate funds those who are compensated cannot freely dispose of these conditional funds. In the case of climate funds, payment is not universal (i.e., it is not received by all those who provide the service) but it comes in the form of competitive funds. Their approval or assignment criteria are defined by officials of the fund in question and not by those who have legitimately earned the money.

The payment (or compensation) for the service is conditional in two ways: the continuity of the provision of the environmental service (which stands to reason) but also the use of the funds. Ultimately, it is not a payment but a pseudo-payment where the payer states what the recipient can or must do with the money.

The question then is: should climate funds be spent exclusively on conservation activities (because that is what is of interest to the carbon emitter) or do these resources belong to the community with free disposal (e.g., to fund the implementation of a Life Plan) while the community guarantees that the forest will be properly conserved?

The question becomes even more relevant in the context of an absent or weak State, with virtually no policies and programs and, above all, no financial resources for territorial governance. It is in this case, where the State is absent or has forsaken its population, that climate funds become particularly relevant for IPs.

Who Should Pay?

This whole debate has been partly concealed for economic and political reasons, because it inevitably leads to the question of who should pay for these environmental services. Even among those who agree that TMND deserve to be compensated because of the externalities they produce, a first estimate shows that the calculations per hectare would entail such a huge figure for the State²⁴ that there would be no way of guaranteeing such a payment, much less so on a regular basis.²⁵

However, for each of the ecosystem services, an analysis should be performed to find out whether externalities are local, regional, or global in nature. And in the case of carbon there is no doubt they are global.

The problem with carbon, unlike that of a water basin, is that there is no environmental traceability: for example it is impossible to assert whether the greenhouse gases (GHGs) stored or captured by the CMARI forests or even by the whole Colombian Amazonia are those emitted by the Colombian urban transportation system or by steel factories located in the Ruhr area in Germany. The forests that capture carbon are scattered throughout Amazonia (and other tropical forests) while the emitting sources are scattered throughout the world. However, the emissions baseline and NDCs may provide us with the necessary information in order to build a sort of *clearinghouse* model with a balance sheet between emissions, stocks and sequestration, where the various stakeholders are represented: countries, regions, and areas. In the meantime, the lack of traceability should not prevent us from acknowledging the existence of the service or the need to pay for it, especially when concrete data regarding per country emissions is available.

The delay in resolving the issue is a way to defer payment. Because the more we wait, the less these countries will feel compelled to pay, the more so when there seems to be no intention whatsoever of considering retroactive payments (Angelsen, 2017, quoting Lund). Why should I pay if I am not forced to do so?

If the governments of the Amazonian countries understood that the balance between emissions and sequestration is positive for them (as stated by Phillips and Brienen, 2017) and that it is up to the high-emissions countries to pay, States would stand to benefit much more, especially if we think that protected areas, owned by the State, play the same role and provide the same services as the TMND.

These systems create distrust or resistance among the indigenous organizations. They mistrust (rightly so) the State. As these issues are resolved in the framework of the UNFCCC and COPs, where the parties are the States and the IP are simple guests or observers, IP prefer to be cautious for the time being. Likewise, they realize that the funds coming from the so-called “donors” are too few and far between as the States are a sort of black hole where these funds are retained. Therefore, if the rationale for cooperation is not to give the funds directly to the IP but to funnel them through the States (as agreements are between States) there is no guarantee that these communities will ever see these funds. However, over the past years, stemming from the indigenous organizations’ advocacy work and from pressures from the donors themselves, national governments have had to yield to a certain degree. Such is the case of Colombia where PIVA jumped from 4% to 22% of the total of Visión Amazonía, and especially Peru, where AIDSESEP managed to put on the table a number of topics from the indigenous agenda.

²⁴ For example, in the case of Colombia, a high official of the environment sector points out that “that’s never going to happen nobody in this country will be given that, and even less so will it be given to them (the territories) because that is not sustainable. If I set a precedent by paying per hectare, I have to make sure it is sustainable, and will continue to be. It will not. There are no tax revenues to cover that...”

²⁵ Actually the SocioBosque program, born in Ecuador with funds from the Government itself, shows that it is feasible even at a national level and that it would be feasible for the other Amazon basin countries as well.

This analysis also reframes the fact that climate funds are limited, both geographically and in duration: conversely, they should be universal in the sense that they should benefit all those who provide the service, and they should be permanent, inasmuch as the service provided is also permanent.

Transaction Costs or “Enabling Conditions”

There is a general perception that climate resources are delivered to ITs and communities late, or never, even when the programs clearly specify that IP are privileged beneficiaries.

The first reason for the lack of finance to IP has to do with the so called “enabling conditions.” States keep portions of climate funds to finance their own bureaucracy and programs associated with climate change: National REDD+ Readiness Strategy, Measurement, Report, and Verification (MRV) systems, and payment to technicians and officials in new climate-related agencies (Fletcher et al., 2016). This is so because, although “donor” disbursements are linked to performance, allegedly such performance is also due to the intervention of the State, and that has a cost. Also because in order to revert the existing deforestation, the country must be prepared, and the cost of such preparation should be on the shoulders of the climate funds or the technical cooperation projects.

It is interesting to note that in the case of Peru, AIDSESEP managed to include, under the notion of “enabling conditions,” the titling of many communities whose land had not been demarcated. That is how this issue became part of the agendas of a number of climate funds (Espinoza and Feather, 2018).

The second reason is because of the high transaction costs beyond what the national governments keep. These include: NGOs in both the northern and southern hemisphere managing the processes; carbon studies carried out by a small number of specialists, which are expensive; fees and travel expenses of multilateral bodies’ officials, events, congresses and workshops, etc. These are all costs that take part of the pie that was assigned for the territories and communities.

A final reason is that climate funds have had huge challenges in order to come up with simple and effective mechanisms to make sure funds actually reach the territories and communities.

We may wonder whether it is ultimately the State who should be managing climate funds. Over and beyond the fact that the “Parties” identified in the Framework Convention are the States, one might think that, in the case of the funds earmarked for IP by virtue of the environmental externalities or services they provide, they should be responsible for deciding how such funds should be managed.

For TMND, Revisiting the Term “Pay for Performance”

As mentioned before, disbursements made by donors to Amazon countries within climate funds depend on the results they achieve every year in their goal to reduce deforestation. This is called “payment for performance” and theoretically disbursements should stop if at some point the deforestation rate has dropped.

There are a number of reasons why this mechanism has its limitations:

- As it is based on an aggregate figure at a national level, it doesn’t distinguish between the efforts of each stakeholder. In the end the righteous may pay for the sinners;
- It proves the capacity of governments, or lack thereof, to reduce deforestation. In fact, it acts as an assessment of their policies, some of which foster deforestation;
- It only focuses on one of the “results,” e.g., the reduction in emissions due to deforestation and forest degradation, whereas there are other “results” just as important for mitigating climate

change, including conservation of carbon stocks²⁶ and the sequestration effect of mature or primary forests.

That is the reason why a distinction must be made between what happens in the ITs and what happens in the rest of Amazonia: if deforestation has not increased in the ITs it means there is a “performance” there and investments should continue, especially in supporting self-governance.

In the case of the TMND, for obvious reasons “performance” cannot be linked to a reduction in deforestation but rather the provision of an environmental service, in terms of both quality and quantity, i.e., the conservation of the forest. Or, even better, the territorial governance that guarantees a proper conservation of their forests.

The Need for a Differentiated Strategy that Covers the Various Scenarios of Indigenous Territories

It stands to reason that the number of hectares of forest or the quantity of carbon captured (which in turn may vary according to the composition of the forest) cannot constitute the sole criterion for the payment of environmental services. Amongst other reasons, this is because it would be unfair for smaller territories or for those with greater threats which therefore must carry out more stringent control and surveillance work.

Box J. Creation of a Climate Fund for the Indigenous Peoples of Colombia

Out of the 183 indigenous territories located in the Colombian Amazon, 20 are larger than 100,000 ha and contain 94% of the forests of the country. On average their deforestation rate is less than 2%. They account for the bulk of the TMND.

If the environmental services they provide were to be valued, in theory a climate fund could be created for the indigenous Amazonian peoples of Colombia within the Organization of the Indigenous Peoples of the Colombian Amazon (OPIAC) framework with the following steps:

1. Calculating or estimating the contribution of each territory in terms of avoided deforestation, and carbon stocked and captured, translated into tons of carbon and then measured in USD according to market prices;²⁷
2. OPIAC presenting estimates of territories’ contributions to the international community to determine funding;
3. OPIAC creating a mechanism (e.g., a fund) where the funds thus calculated are deposited, waiting to be managed. They may do so according to the following rules:
 - a. A distribution of this sum, that takes into consideration the administrative costs of OPIAC, and the assistance and technical cooperation with the territories; the balance would be distributed according to the parameters mentioned before: surface, population, threats, material poverty situation, isolation, etc.;
 - b. Every territory receives an indicative amount, to be used to implement their Life Plans, which constitute the basis for yearly plans to be submitted by the

²⁶ The payment is actually made as a function of the variation in carbon stock. The benchmark comes from the tons of carbon stored. Hence, if deforestation increases, the stock diminishes. [María Teresa Becerra, Institute of Hydrology, Meteorology and Environmental Studies of Colombia (IDEAM), personal communication, 2018.]

²⁷ This estimate can be carried out yearly with the IDEAM data or with national projections obtained with data gathered by the specific territories.

authorities of the territory together with the communities;

- c. Thus the territories with the smallest size, or with the largest population, or those with greater threats located in deforestation frontiers, will receive more money than what they would be getting if only the contribution of their carbon stock and flow were considered.

Overall, there should be different strategies, at least in the following cases:

- The vast territories, which are contributing more to mitigating climate change but are usually less populated and possibly are less exposed to threats;
- The smaller territories, e.g., those contributing much less in terms of environmental services, but which are generally located in the forefront of deforestation, have greater threats, and to some extent play the role of buffers for the larger territories.

Stemming from these two ideal types it is possible that a typology may be introduced taking the following into account: surface, deforestation rate, population, exposure to threats, social organization, control and surveillance mechanisms, access to markets, material poverty, etc.

And from there onwards, an index may be built which could be utilized for distributing the funds to each IP accordingly.

Competitive Funds and the “Project Model” as Payment Mechanisms for Climate Services

In Latin America, the first programs envisaging conservation incentives were based on direct transfers: starting with a lump sum per hectare (that would vary as a function of the number of hectares per plot), the Costa Rican Forest Fund (FONAFIFO), SocioBosque in Ecuador, and the “Programa de Transferencias Directas Condicionadas” [“Direct fund transfer program”] in the Peruvian Amazon transfer a yearly sum to the community after its investment plan has been introduced and approved.

With the climate funds the method changes: by means of competitive funds (such as the call for tenders in the SISA program or those staged by PIVA²⁸), there is in fact, no acknowledgement of the community’s right to dispose of these funds to implement their Life Plan. Now they have to introduce a project which may be approved or rejected. This implicitly means disregarding the positive externality provided by each and every territory to mitigate climate change, and which grants them the right to receive a compensation for the environmental services rendered.

Moreover, competitive funds have the following limitations:

- They are based on the “project model,” a very Western fashion of intervention (see box K);
- It is not a universal right: only a few territories or communities can have access to funds, and they have to “win” the contest;
- The goals and activities of the projects are in accordance with the interests and criteria of those who manage the funds (“eligible activities”) and they are the ones who decide which projects are approved;
- Usually they are not related with the community’s Life Plan;
- The sums granted through these projects bear no relationship with the ecological services provided;

²⁸ In the case of PIVA, the reason why funding arrived through a competitive fund and not by direct transfers is unclear. Some point out that this modality was imposed by donors, others that it came from OPIAC as a result of the consultation workshops carried out in Amazonia with the support of the GIZ.

- Projects are limited both in duration and geography;
- Because these are competitive funds territories compete against each other to gain access to funding;
- And those territories or communities that have greater capacity or experience in preparing projects, i.e., those that have an NGO assisting them or hold social capital with those making the decisions to approve these projects, get a running start.

Box K. The “Project Model”

In the development assistance world, the approach to communities is based on the intervention of external players through a process called “project.” Such projects may take many shapes, but they all have one pattern in common, that we will call the *project model*, that includes design and planning procedures, operational deadlines, management modes, follow-up, monitoring and assessment standards, etc. Such a *project model* has become more standardized over time, but it is still a model that has been politically and culturally built, and does not reflect the world view of IPs. For example, projects are conceived according to the logic of scientific rationality, chopping up reality analytically in order to isolate the factor(s) that will be tackled by the model itself: far away from the holistic approach with which IP and small scale farmers perceive reality. Furthermore, the power dynamics of the project model establishes control within management, be it NGOs, companies, or governments.

What is interesting is that this very project model is the one that lays out the need for creating participatory spaces for these so-called target groups or “beneficiaries.” Such participatory spaces, depending on the project, may be somewhat larger or smaller but they are invariably limited. Participation, generally speaking, is seen as a process required for a project to succeed rather than as a political or civil right: it allows for the target groups to relate to the project, endorsing its goals. “Taking ownership” is the buzz word. Generally speaking, communities value these participatory spaces built by the projects just as they value any help they receive. It is often their history of isolation, marginalization, and poverty that has led them to await meekly for the projects to arrive or for the possibility to take part in a competitive fund. Over time, some of them have developed some kind of know-how vis-à-vis the projects and they know how to behave in a politically correct manner in order to have them approved.

Can Payments for Ecosystem Services have Adverse Effects on IP in the Amazon?

Some fear that if the TMND were to be acknowledged for the environmental services they provide this would be tantamount to pumping huge sums of money into these economies – for which they are not prepared – with irreparable damage as a result to their social organization, their relationship to nature, their consumption patterns, etc. The rationale is that because these are scarcely monetized economies, they have a limited experience with handling money (or large sums of money), which in turn would entail a very significant cultural change. This observation is largely based on the impact caused by illicit economies such as coca growing or illegal mining in communities that barely knew what cash was all about.

Others, however, contend that money is already part of the daily life of Amazon communities and that it will continue to spring up, and that the task is rather to focus on assisting them in this transition. Francisco Hildebrandt points out that “One cannot speak of conservation if economic alternatives are not examined. People in the communities need money to buy their machetes, their flashlights, and their boots, and economic alternatives are necessary to create that income, to satisfy those needs. And if

they fail to get the money they move towards growing coca or towards other illegal activities.”²⁹ And Santiago Kingman, the director of the SocioBosque program in 2018, points out in the case of Ecuadoran territories that “Only the uncontacted tribes do not value cash...The Waoranis are highly dependent on the oil industry from which they get money and jobs.” The problem, he adds, is not the money but how it is managed. “The issue is whether it becomes a cultural genocide or an assimilation process with a proper use of the tool (money)”.³⁰ As mentioned also by Roberto Espinoza of AIDSESEP, what counts is the existence of a Life Plan guiding the allocation of resources, in addition to building management and autonomy capacities looking towards a self-management perspective.³¹

But beyond the money needs of the families we find the needs of the organizations, territories, and communities. A survey carried out by CMARI (Luzardo, 2014), to examine how the organization would invest a potential sum coming from climate funds, identified four main fields:

1. Territorial governance,³² regarding which we already mentioned the costs involved;
2. The need to improve the economy and the living standards of the communities who have a very minimal income, in the case of CMARI on the basis of cassava and its by-products;
3. The need to improve the infrastructure to enhance their living conditions, especially regarding river transportation, communications, housing, healthcare, education, and energy;
4. And finally the need for control and surveillance mechanisms due to the growing threats faced by IPs.

Actually, in the case of the indigenous peoples of the Colombian Amazonia, there is a General Participation System whereby the territories manage large sums of money. And although in some cases conflicts have arisen because of the money, they are not more significant than those of our overarching society – or maybe they mirror our society.

Perhaps by way of conclusion we may state:

- That the impact of money in a community is at any rate a different issue, separate from the acknowledgement and compensation for the environmental services provided when preserving their forests;
- In the majority of cases, and especially in Colombia (also in Ecuador, in the case of the communities participating in SocioBosque) there are now some long experiences with handling large sums of money;
- At any rate, it should be seen as a transitional process, whereby territorial governments in charge of a jurisdiction must make investments, improve the infrastructure, etc. and to do so they will have to handle large sums of money sooner rather than later. The challenge is therefore is to build capacity so that indigenous governments may indeed accomplish such a mission, with all it entails: planning, management, accountability, etc;
- Climate funds, for lack of government funds, are the only possibility for indigenous communities to finance their Life Plans.

²⁹ Personal communication, 2018.

³⁰ Personal communication, 2018.

³¹ Personal communication, 2018.

³² Recall that CMARI is a territory of more than 2.2 million ha (almost the surface of Belgium), where the 17 communities are several days away from each other by boat, and from the nearest city and capital of the department, Puerto Inírida.

Acronyms

AIDSEP	Interethnic Association for the Development of the Peruvian Rainforest
CBD	Convention on Biological Diversity
CMARI	Indigenous Reserve Cuenca Media y Alta del Río Inirida
COICA	Coordinator of Indigenous Organizations of the Amazon Basin
COP	Conference of the Parties
FARC	Revolutionary Armed Forces of Colombia
FIP	Forest Investment Program
FCPF	Forest Carbon Partnership Facility
FONAFIFO	Forest Financing Fund of Costa Rica
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gases
IDEAM	Institute of Hydrology, Meteorology and Environmental Studies of Colombia
JDI	Joint Declaration of Intent between the Government of the Republic of Peru, the Government of Norway and the Government of the Federal Republic of Germany
INCODER	Colombian Institute of Rural Development (<i>ceased to exist in 2013</i>)
IP	Indigenous Peoples
IT	Indigenous Territory
MDE	Dedicated Mechanism Specific for Indigenous Peoples
Mg	Megagram
NDC	Nationally Determined Contributions
NORAD	Norwegian Agency for International Cooperation
OPIAC	Organization of the Indigenous Peoples of the Colombian Amazon
PIVA	Indigenous Pillar of the Amazon Vision Program (Colombia)
PNCB	National Forest Conservation Program of Peru
PROAmazonía	Amazon Comprehensive Forest Conservation Program & Sustainable Production
RAISG	Amazonian Network of Georeferenced Socio-Environmental Information
REDD+	Reducing Emissions from Deforestation and Forest Degradation in developing countries, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks
REM	REDD Program Early Movers

RIA	REDD Indigenous Amazon
SISA	Environmental Services Incentive System of the State of Acre (Brazil)
SocioBosque	Forest Protection Program of the Ministry of Environment of Ecuador
Tg	Teragram
TMND	Territories with Minimal or No Deforestation
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollars
WHRC	Woods Hole Research Center
WWF	World Wide Fund for nature

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