Policy Paper

The Amazon and Agenda 2030

Empowered lives.
Resilient nations.

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POLICY PAPER

Empowered lives.
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ACRONYMS

AIDS	Acquired immune deficiency syndrome
ARPA	Amazon Region Protected Areas
BNDES	Banco Nacional do Desenvolvimento
CO2	Carbon dioxide
COICA	Coordinator of Indigenous Organizations of the Amazon River Basin
CSO	Civil Society Organization
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária
FAS	Fundação Amazonas Sustentável
GDP	Gross domestic product
GEF	Global Environment Facility
GSF	Guiana Shield Facility
GTZ	Gesellschaft Technische Zusammenarbeit
HIV	Human immunodeficiency virus
ICMS	Imposto Sobre Operações Relativas à Circulação de Mercadorias
ICT	Information and communications technology
IDB	Inter-American Development Bank
MDGs	Millennium Development Goals
NGO	Non-governmental organization
OTCA	Organización del Tratado de Cooperación Amazónica
PES	Payment for ecosystem services
R&D	Research and Development
REDD	Reduced emissions from deforestation and forest degradation
REDD+	Countries' efforts to reduce emissions from deforestation and forest degradation, and foster conservation, sustainable management of forests, and enhancement of forest carbon stocks
RSIP	Redes Socialistas de Innovación Productiva
SDGs	Sustainable Development Goals
SDSN	Sustainable Development Solutions Network
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
WWF	World Wildlife Fund

1 Introduction

1.1 Agenda 2030 and the Amazon

During the period 2000-2015, countries made great progress towards achieving the Millennium Development Goals (MDGs), described by the UN as "the most successful anti-poverty movement in history". Global poverty declined; more children than ever before are enrolled in primary education; infant mortality has fallen dramatically; access to drinking water has increased significantly; and millions of lives have been saved thanks to targeted investments in the fight against malaria, HIV/AIDS, and tuberculosis.

However, global development challenges are still daunting. The fight against poverty has made important progress, but more than 1 billion people continue to live in extreme poverty. Inequality and social exclusion are widening within many countries, and human impacts on the environment are already exceeding certain planetary boundaries (Steffen et al., 2015). The world urgently needs to address the challenges of ending poverty, increasing social inclusion, and sustaining the planet (SDSN, 2015).

At the Rio+20 United Nations Conference on Sustainable Development, governments approved the outcome document titled "The Future We Want", which defines pathways to a safer, more equitable, cleaner, greener and more prosperous world for all. Representatives from 191 UN member states and observers addressed the general debate on sustainable development and agreed that a new set of goals would be drawn up, based on widespread stakeholder engagement. This decision was followed by substantive intergovernmental negotiations and a global participatory process without precedents, to define the post-2015 development agenda.

At the United Nations Sustainable Development Summit on the 25 September 2015, world leaders adopted the 2030 Agenda for Sustainable Development, which includes 17 Sustainable Development Goals (SDGs) and 169 targets. The 2030 Agenda brings together the two previous development agendas into a comprehensive, integrated agenda, emerging from the Rio Summit in 1992, which emphasized environmental aspects, and the Millennium Summit in 2000, which focused on the social dimensions. The principles of this agenda are: a) universality, as it deals with global challenges and should be implemented by all countries, b) integration, bringing together the three strands of sustainable development: social, economic and environmental; and c) "leaving no one behind", as it should reach those groups that are most disadvantaged.

1.2 SDSN Amazonia and the origin and objectives of this report

Preceding the approval of Agenda 2030, in 2012, UN Secretary-General Ban Ki-moon commissioned the Sustainable Development Solutions Network (SDSN) to mobilize academia, research institutes, civil society, and the private sector in pursuit of practical solutions for sustainable development. The SDSN has four objectives:

I. To organize thematic groups mobilizing global expertise to identify critical pathways to sustainable development.
II. To promote Solutions Initiatives that can drastically accelerate progress towards sustainable development, such as early stage demonstration and testing of innovative policies, new technologies, business models or combinations thereof.
III. To build national and regional SDSN's that mobilize universities, research centers, civil society organizations, and businesses to accelerate sustainable development.
IV. To develop and disseminate online education materials for sustainable development.

In line with Objective III, the Sustainable Development Solutions Network for the Amazon (SDSN Amazonia) was launched on March 18, 2014 at the Fundação Amazonas Sustentável (FAS), in partnership with the Organización del Tratado de Cooperación Amazónica (OTCA), Brazil's Ministry of Environment, and a broad set of key institutions from the Amazon region, including the United Nations Development Programme (UNDP), the United Nations Environmental Programme (UNEP), and the Inter-American Development Bank (IDB). SDSN-Amazonia articulates a regional knowledge network and aspires to accelerate design and implementation of sustainable solutions specifically for the Amazon (SDSN-Amazonia, 2014).

In this context, and responding to the limited regional level information on the Amazon, in 2015, UNDP, supported by its country offices, and in

consultation with national authorities, conducted country-level studies on the situation of the Amazon region in eight of the respective countries: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela, which resulted in eight country reports. This policy paper condenses those reports with the aim to be a reference and support document for policy makers, practitioners, and researchers aiming to build solutions to the sustainable development challenges in the Amazon. Due to the abovementioned lack of information of on the Amazon region as a whole, for most of the paper the area of study is the Amazon as defined by the administrative borders of each countries' Amazonian States, and not necessarily the Amazon biome. In other cases, country-level information[1] is included.

This paper provides an overview of the development context in the Amazon, followed by a description of the special features of the Amazonian region regarding the SDGs, and an identification of the main challenges and opportunities for future development. The report then showcases successful transformative models of development and concludes with a final summary of best practices and lessons learned with the potential to transform at scale.

Photo: Tiago Zenero/UNDP Brazil. The Amazon is a rich and complex region, home to several peoples, cultures, landscapes, fauna, and flora. Picture from the I World Indigenous Games, in October 2015.

1. French Guyana is not included in the scope of analysis of this paper.

2 The Amazon development context

The Amazon basin is an area of immense socio-environmental diversity of global importance, in a process of rapid change. It covers an area of 7.8 million km^{2,} consists of 12 macro-basins and 158 sub-basins shared by 1,497 municipalities, 68 departments/states/provinces, and eight countries[2] : Bolivia (6.2%), Brazil (64.3%), Colombia (6.2%), Ecuador (1.5%), Guyana (2.8%), Peru (10.1%), Suriname (2.1%) and Venezuela (5.8%) (RAISG, 2012). The region has a population of about 33 million people, including 385 indigenous peoples, and several groups in a position of voluntary isolation. The Amazon is home to around half of the planet's biodiversity and a major provider of ecosystem goods and services, making it critical for climate and ecosystem functioning at the local, regional and global levels. The Amazon River alone provides about 15% of all freshwater worldwide (SDSN-Amazonia, 2014).

At present, climate change and increasing human intervention are driving the Amazon to a tipping point, with high rates of deforestation, migration and pollution in the region, threatening its life supporting ecosystem services and putting pressure on local cultures. An influential study released in 2008 by a team of international scientists from Oxford University, the Potsdam Institute, the Tyndall Centre for Climate Change Research, and others concluded that the Amazon rainforest was the second most vulnerable area in the world after the Arctic (Kriegler, Hall, Held, Dawson, & Schellnhuber, 2009).

The Amazon basin development context is one that is characterized by rapid change: increased infrastructure development, facilitated by road expansion, the opening up of vast areas of forest to agriculture and timber extraction, mining and petroleum activities, migration, and socio-cultural change.

The Amazon is in the midst of a development boom, but current development practices are largely not sustainable, based on extensive low-yield agriculture and resource extraction. Sustainable development in the Amazon needs to consider national, transborder, regional, and global drivers and pressures, while providing human development for local populations. This will require a massive transformation from business as usual: identifying and implementing context appropriate development alternatives that are the result of significant and strategic investment, experimentation, and best practices to achieve sustainable development.

2.1 Country-level dynamics in the Amazon

Each of the eight countries analyzed in this paper display specific development characteristics, some of which will be highlighted in this section.

Since the approval of the new constitution in 2009, Bolivia has been seeking to establish a new definition of development that is defined locally, but integrated into a national vision, that is consistent with the "Law of Mother Earth". In this context, development in the Bolivian Amazon is to be defined by its people so that it responds firstly to local development needs. This is still an ongoing process and it is understood that there is still a way to go before consolidating an "Amazonian Development Vision". However, certain patterns are emerging: from small-scale agriculture and cattle, to mining and timber extraction, and an extensive road network, the Bolivian Amazon is starting to develop economically, and accompanying deforestation is a growing challenge. Important social trends are increased land settlement and migration.

The Brazilian Amazon region makes up over 60% of the Amazon biome, with significant logistical and geo-physical challenges in governing such a massive area. A specific challenge is limiting large-scale deforestation from the expansion of the agricultural and extractive frontiers. Brazil has made significant progress by reducing deforestation rates 79% during the period 2004-2015 (INPE, 2016), and dramatically increasing protected areas. But recent increases in deforestation rather suggest that there are still challenges ahead, especially in the "Arc of Deforestation" where most of the planet's tropical phenomenon takes place (The Nature Conservancy, 2010).

2. The Amazon biome includes also French Guyana, with 1.1% of its total area (RAISG, 2012).

Development processes in much of the Colombian Amazon have been set against the decades-long conflict and drug trade, and more recently against peace-building efforts. This presents unique institutional and regulatory challenges for the Colombian Amazon region, but also suggests that new opportunities may present themselves over the coming years. Against this backdrop, Colombia has still made significant pledges to address deforestation with its "Amazon Vision", aiming for zero net deforestation by 2020 (MINAMBIENTE, 2016). Main challenges in this area come from cattle, road expansion, and large-scale industry, including oil and mining.

In Ecuador, up until recently there were large parts of the Amazon that remained unregulated and with little public intervention. This lack of public intervention resulted in the development of petrol and mining activities in some areas, while in others it resulted in logging and wildlife trade (Leguia & Moscoso, 2015). Impacts from these activities are deforestation and land degradation, which can still be observed today (Sierra & Silva, 2015). The total deforestation in Sucumbíos, Orellana, Morona Santiago, and Zamora Chinchipe provinces for the period 2008 to 2014 amounts for more than 17,000 hectares (MAE, 2015). This situation has been changing over the last ten years due to a growing government interest in incorporating the Amazon region into the national economy and addressing social inequalities. This has led to decentralization, the channeling of public resources, and an increase in investment in the region. As a result, significant progress in several social indicators, such as income, has been made. However, these improvements come with the need balance social improvements and environmental and cultural pressures, such as increased internal migration and unregulated trade.

In Guyana, migration is a major issue: net migration for 2015 was estimated at -8.06 migrants/1000, the highest amongst the Amazon countries, and one of the highest in the world (CIA, 2016). In the rural Amazon region there are also health concerns: the country is currently ranked among the top five countries within Latin America and the Caribbean in maternal mortality rates. Deforestation has historically been low, but there have been recent increases, attributed mainly to the rapidly expanding mining sector, especially in the case of gold mining, which results in the contamination of freshwater systems (Rocha et al., 2012). Some of that contamination comes from informal mining activities (Veening, Bulthuis, Burbidge, & Strupat, 2015). The planned construction of the Georgetown-Lethem road route presents opportunities in terms of poverty alleviation and national development through the Integration of Regional Infrastructure in South America road network, but it will also increase deforestation pressures. Guyana is aiming to balance development with environmental sustainability with a Low Carbon Development Strategy, in close partnership with Norway (Norges regjering, 2014).

Peru is in a process of economic expansion and diversification, and for the Amazon it implies non-renewable resource extraction. Oil, mining, and gas play a significant role in the region's economy, alongside agriculture. However, poverty and extreme poverty still prevail in the region, mostly in the rural Amazon areas, where 54% of the total population live under these conditions (INEI, 2014b). The Peruvian Amazon makes up 60.6% of the country's territory, although it is the least populated, with only 9.41% of the total Peruvian population (UNICEF, 2014a). This is an ethnically and linguistically diverse territory, home to 60 out of the 76 ethnic groups found in the country (INDEPA, 2010). Access to this area is difficult, and in this case the provision of basic health services, education, water, and sanitation remain a major challenge.

While natural protected areas in Peru account for 22 million hectares, 38% of them in the Amazon (SERNANP & INEI, 2016), only one quarter has full protection, and in the rest of the protected areas deforestation for agriculture, timber, and for hydrocarbons is allowed. According to MINAM (2014), during the period 2000-2013, the Peruvian Amazon lost 8.95 million hectares of forest cover. The number of social and environmental conflicts has increased in the region, and informal economies such as logging, mining and oil extraction are major threats in certain areas. The country is aiming to respond to these challenges with active decentralization processes, including the implementation of industrial parks, as part of the strategies for diversification of production.

Suriname is heavily forested, with rainforest making up more than 90% of the land area. Tropical forest cover is still relatively high. Nevertheless, in some

areas deforestation has increased. Suriname's economy is highly concentrated in the extractive industries (gold, oil, and bauxite), which are the main drivers exerting pressure on deforestation, and also generate other social pressures. Large-scale mining operations use cyanide, posing a threat to local populations. Artisan gold mining, with mercury-based production has adverse economic, social, and environmental effects for forest communities (Hacon et al., 2008). It is estimated that between 20 to 40 tons of gold are being produced annually, and at least 20,000 gold mining-related workers are operating in the forest. Similar figures can be obtained in Guyana, with over 12 tons of annual production, and around 35,000 people employed (Legg, Ouboter, & Wright, 2015).

The Venezuelan Amazon is largely made up of the states of Amazonas and Bolivar, and there is a strong contrast between these two regions: the Amazonas State is to be dedicated mainly to environmental and hydrological conservation, while the state of Delta Amacuro and the northern part of Bolivar have been identified for industrial development, although it holds the main water reservoir of the country (Guri Reservoir). Therefore, the concentration of large industries has been focused on Bolivar, and mining makes the achievement of environmental sustainability especially challenging.

2.2 Common development dynamics across the Amazon

Although each of the eight countries displays its own features in terms of building sustainable development, there are several elements that are common to most of, if not all the countries, which are very briefly summarized below:

- Channeling of public resources to the Amazon region has been an important driver of improved performance with regards to the Millennium Development Goal (MDG) indicators over the last 10-15 years. However, human development indicators from the Amazonian still lag behind national averages.
- Although progress has been made in most cases, all eight countries are still battling deforestation, and the loss of biodiversity and ecosystem services. Many of the most common drivers of deforestation are derived from economic growth, facilitated by road expansion, migration and resulting in land use change, often from livestock and agriculture production, and the extraction of natural resources such as mining, oil, and logging. Persistently high levels of poverty exert continuous pressure on the region's natural resources.
- The Amazon's economic and social "opening up" is accompanied by public efforts to incorporate Amazonian regions into national planning systems and facilitate it through decentralization. Decentralization processes still face difficulties in building sustainable development in multi-ethnic and multi-cultural social contexts, competing interests, and challenging geo-physical conditions.
- Alongside decentralization, there have been important advances in establishing new protected areas, and the reinstatement of property rights to indigenous peoples, who traditionally have had low impact and have carried out the role of land stewards. However, as these groups establish contact with processes of economic development, threats are identified in terms of social cohesion and continuity.
- All countries are facing data collection challenges in key areas relevant for the monitoring progress towards Agenda 2030 and SDG targets and indicators, especially related to the living conditions of traditional communities, such as indigenous peoples.

The features identified above highlight the fact that improvements have been made, but the remaining challenges are daunting. There are national level particularities, but these are in essence regional issues, with many countries facing similar challenges. As such, countries will benefit from jointly envisioning a direction for sustainable development and fostering partnerships to create and seize opportunities. This will require massive strategic investment in key but often neglected areas, such as research and development (R&D) and education and skills development, and will benefit from a structured debate about the change that is desired. Sound policies and investment can lead to innovation and sustainable and inclusive development under unique Amazonian conditions. A coordinated multi-national effort is required. The adoption by the United Nations of the Agenda 2030 and the Sustainable Development Goals (SDGs) provides an enabling environment conducive for such undertaking.

3 The SDGs and the Amazon: Progress and Challenges

This section aims to provide an overview of the situation of the Amazon basin regarding the SDGs and its targets and indicators, highlighting improvements against the remaining challenges yet to be faced.

In order to provide an integrated, multi-goal perspective, the SDG progress in the Amazon will be analyzed following the SDGs "5 Ps Framework", which groups the 17 SDGs in 5 different clusters, attending to 5 different dimensions:

- The People dimension includes SDG 1 (End poverty in all its forms everywhere), SDG 2 (End Hunger, achieve food security and improved nutrition and promote sustainable agriculture), SDG 3 (Ensure healthy lives and promote well-being for all at all ages), SDG 4 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all), and SDG 5 (Achieve gender equality and empower all women and girls).
- The Prosperity dimension includes SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all), SDG 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all), SDG 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation), SDG 10 (Reduce inequality within and among countries), and SDG 11 (Make cities and human settlements inclusive, safe, resilient and sustainable).
- The Planet dimension includes SDG 6 (Ensure availability and sustainable management of water and sanitation for all), SDG 12 (Ensure sustainable consumption and production patterns), SDG 13 (Take urgent action to combat climate change and its impacts), SDG 14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development), and SDG 15 (Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss).
- The Peace dimension is comprised in SDG 16 (Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels).
- The Partnership dimension is comprised in SDG 17 (Revitalize the global partnership for sustainable development).

The analysis will cover the People, Prosperity, Planet, Peace, and Partnerships dimensions, including

crosscutting challenges to meet the SDGs in the Amazon region. It is important to note that there is still limited access to some data related to the SDGs at the national level. This limitation is even bigger at the subnational level, and especially in rural, remote, and isolated areas, as is often the case in the Amazon region. The information presented in this chapter can serve as an approximate overview, acknowledging the barriers and limitations to obtain complete, detailed, and homogeneous data.

3.1 People

Measuring poverty: diminishing but still above national averages

Poverty and extreme poverty have fallen (mainly in the cities), but the Amazon region overall still has levels above national averages. In fact, Amazonian populations have some of the lowest development indicators overall. The poverty rate in the Amazon region varies among the different countries: from 45% in the Brazilian Amazon (Azevedo-Ramos, 2008) to almost 80% in some areas of Guyana (UNDP, 2010), and the differences in poverty rate between rural and urban Amazon areas needs to be considered. For instance, in Peru, in 2014, 42% of the total population in the rural Amazon areas were living in poverty, and 12% in extreme poverty conditions (INEI, 2014b).

In addition, the definition of poverty needs to be adjusted to Amazonian local realities. Traditional monetary conceptualizations and development indicators do not always provide an accurate depiction of reality as perceived by local communities. The diversity of perception of wellbeing that indigenous cultures have is evident. For example, indigenous communities, who often have a reduced monetary income, often meet their basic needs through the use of forest and river resources, social cohesion, and a rich cultural heritage. These elements must be taken into consideration together with access to basic services, education, or clean water.

There have been important improvements in nutrition and food security

Vulnerability to food security in the Amazon is lower where there is access to and availability of local nutritional resources. Malnutrition rates have fallen at the national and regional levels, but rates in the Amazon are still higher than national levels. Chronic malnutrition rate of children under 5 years has decreased overall in the Amazon but is still high, especially in rural areas, and almost six times higher for some indigenous populations in Brazil (UNICEF, 2014b). In Peru, the chronic malnutrition rate for children under 5 years old has decreased, yet in 2014, 24% of children under 5 years old living in the Amazon region still suffer from chronic malnutrition (INEI, 2014b).

Health expenditures and effective health policies for the Amazon Region have increased significantly

Health coverage and investment in public health has increased in countries like Bolivia, where health coverage has increased to almost 90% and health budget corresponded to 6.2% of GDP in 2014, or in Colombia, where around 95% of the population have some form of health coverage, and an expenditure of 8.8% of GDP in 2015. Outstanding improvements have been made regarding malaria, and some countries like Bolivia and Suriname have achieved their MDG goal.

However, the main challenge remains to establish a system that provides access to effective health services in remote areas. The quality of healthcare services does not meet the needs of the population. Infant death rate is one of the most critical indicators among Amazonian populations, particularly among indigenous people. Although it has steadily

decreased, it can be up to four times higher for indigenous populations than the national average (Egeland & Harrison, 2013). Health infrastructures are deficient and inadequate, with poor access to emergency care facilities, poor functionality of national referral systems for high-risk and emergency cases, a lack of necessary equipment/supplies, and a shortage of skilled professionals.

Maternal mortality rates have slightly decreased since 2000 in Brazil (WHO, UNICEF, UNFPA, & World Bank, 2015). Although the results show that rates are higher than the target rate of the MDG 5, they indicated a significant decrease in maternal mortality rates during the period 1990 to 2011(IPEA, 2014). Guyana was ranked among the top five countries within Latin America and Caribbean in terms of maternal death rates in 2015. With regards to sexual and reproductive health, the percentage of women of childbearing age that received treatment was gradually reduced during the past few years in some countries. The pregnancy rate among adolescents is still high in the Amazon region, where rates are estimated to double the national average. The Amazonian regions in Bolivia, 24% (2012), and Peru, 25.6% (INEI, 2014a), present similar values for adolescent pregnancy rate. In Suriname teenage pregnancies represent 17% of all live births.

The number of HIV/AIDS cases is increasing, and new viruses such as chikungunya or zika are spreading throughout Amazonian countries. Special attention will need to be given to the measurement of indicators that can provide this information. Similarly, the increase in alcohol and drug abuse, especially among young populations, deserves special consideration.

The region has experienced a sharp improvement in education indicators during the last 20 years

Social spending on education has risen steadily between 2001 and 2015, between 4% and 7% of the national GDP in Amazon countries, and reaching higher levels in the Amazon region than at the national level in Peru (INEI, 2015). During the last 20 years, the Amazon region has experienced a remarkable increase in primary school enrolment and a significant decrease of illiteracy rate, as well as a reduction of the gender gap in terms of access to education.

Nevertheless, there is a reduced participation of indigenous children and youth in local cultural practices and erosion of traditional knowledge, for example in the day-to-day use of biodiversity. The undervaluation of traditional knowledge and its lack of recognition through certification is often a crucial factor that results in the exclusion of indigenous peoples from the labor market. There is also a lack of differentiation between multicultural or bilingual education, which opens the debate around the intercultural and bilingual education curriculum.

There is a considerable gender gap in terms of political participation, combined with structural violence against women

Government-led initiatives and legislation have been undertaken in all Amazonian countries strengthening the rights of women to participate, to promote awareness, and to fight against gender violence, enhancing women's education and increasing professional opportunities. Giving women access to the political sphere does not necessarily mean that women have an active role. The quality of political participation of women still needs to be evaluated. In general, it is still a challenge to effectively incorporate women in the decision-making processes, and some indigenous people's organizations are still struggling to incorporate gender issues within their own internal processes.

In this sense, it is crucial to promote and display explicit efforts to ensure appropriate participation and representation of women, and strengthen their capacities to leverage decision making power and interests with other stakeholders. The role of women to manage private and public finances must be pushed forward as a key counterpart to protect the populations' interests. There is also the need to raise awareness about potential corrupt practices. There is a tension between Western gender discourse and its impact on traditional indigenous gender dynamics. In some cases, it is difficult to maintain a balance between valuing indigenous culture and traditions while actively suggesting changes in gender dynamics (e.g. in political participation).

Female population in the Amazon is overall still among the most vulnerable. Among them, the most discriminated and excluded are rural women, and amongst those, indigenous women. Violence rates

appear to have increased or stay stable, but this may be due to more women tending to report violence than before. Reported gender-based violence is high: in Colombia, 39% of Amazonian women have indicated been victims of physical violence (same as national average), but the region has the highest percentage of female rape in the country, with 7 women per 100.

3.2 Prosperity

Growth and natural resource-dependent economy

Countries sharing the Amazon basin have an average economic growth situated between 4.4% (Suriname, between 2000 and 2013) and 5.4% (Brazil, between 2000 and 2012). Although many Amazonian region's contributions to the national GDPs are small (e.g. in Colombia only 1.8% in 2013), their economic growth rates are high, sometimes surpassing 7%.

With regards to economic diversification, there is an increasing number of large-scale extractive projects for oil, gas, mining and hydroelectric energy in the Amazon region. These projects are often critical to national economies. Many local economies are heavily dependent on lower value land extensive agriculture, cattle and illegal resource extraction activities -like mining, timber, and bush-meat- that generate significant negative externalities on the environment, but also social.

There are significant gender and inter-cultural inequalities

Although the reduction in income inequality over the last decade has been a remarkable and a well-recognized feature, Amazonian regions still present high levels of inequality. For example, the Gini coefficient in the Bolivian Amazon changed from 0.64 in 2000 to 0.49 in 2013, and in the Brazilian Amazon it decreased from 0.57 in 2005 to 0.52 in 2013. Indigenous peoples, especially indigenous women and groups in voluntary isolation are among the most vulnerable: they face higher illiteracy rates, higher infant mortality, the highest rates of maternal fertility, lower education rates, and the highest poverty levels.

Measuring employment rates needs to consider gender, age, and the difference between the formal and informal economy. Amazon communities depend to a large extent on agriculture and resource extraction activities that are often not registered in official statistics. Employment opportunities and income revenues are unequal. Labor force participation is often double for men than it is for women, and the main source of work for women and men in the Amazon is the informal sector, which is not visible in the official data. This results in a lack of specific information for the region, without a solid baseline from which measuring progress. Despite the limited information, the available data indicates that unemployment rates for the Amazon tend to be higher than the national average.

There are about 33 million inhabitants in the Amazon, including 385 indigenous groups, and others in voluntary isolation. For example, in Ecuador 64.8% of the Amazon is considered ancestral lands occupied by indigenous peoples and nationalities. The population that lives in the Amazon represents no more than 10% in each of the Amazonian countries: 3.4% Bolivia, 2.8% in Colombia, and 9.4% in Peru (INEI, 2015), but has increased significantly, and faster than national averages (three times higher in Bolivia). This is a direct cause of the increasing immigration rates that closely follow the construction of new roads and the development of new economic opportunities, including illicit activities such as illegal mining. Such mobility is not necessarily regulated or accompanied by settlements plans, causing land and other social conflicts.

The breach between urban and rural areas has grown

Social and economic improvements in the Amazon have been partial, favoring cities and increasing the gap between urban and rural areas. Development indicators are higher for urban areas in comparison to rural areas. In the case of Brazil, all capital cities of the Amazonian States have a high Human Development Index (HDI)[3], while the municipalities lowest HDI in those States correspond to rural areas (UNDP, IPEA, & Pinheiro, 2011). Similar patterns can

3. The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living (UNDP, 2015). The HDI ranges from 0 to 1.000, and stratified as very high (0.800-1.000), high (0.700-0.799), medium (0.600-0.699), low (0.500-0.599), and very low (0.000-0.499) (UNDP et al., 2011).

be observed in Peru's Amazonian Departments, where the largest urban centers have the highest HDI, while small rural municipalities present the lowest HDI (UNDP, 2013).

The majority of indigenous communities live in remote areas with limited or no government or civil society social services. Political life, educational opportunities, and decision-making are mainly concentrated in cities. In rural areas, more than half of the population does not have access to any source of electricity, while access to electricity is high in urban areas.

There is limited accessibility to electricity in rural areas due to biophysical and geographical conditions, which leads to rural villages often relying off-grid generators, increasing their dependence on fossil fuels. Despite the developments in research and innovation in sustainable energy, practical application remains difficult and costly. Similarly, although there are important initiatives underway aiming to increase access to information and communications technology (ICT) for rural communities, ICT coverage rates are still relatively low and service quality is still very poor.

There is lack of data on waste management both in urban and rural areas. The vast majority of homes burn or dump their waste, especially in rural areas, and existing systems have difficulties coping with waste. For example, in Bolivia, the population that has access to these services is 54%. Up to 36% of the population burns or dumps their waste into rivers, figures that are even higher in rural areas (INE, 2012).

Regarding road infrastructure and institutional presence, access to public services in the Amazon region, especially in rural areas, is lower than national averages. In general, there is a marked difference

Photo: UNDP-GEF Small Grants Programme, Peru. Women-led seed management and organic production contribute to gender equality and food security while generating revenue for small-scale family farming. Picture from a Small Grants Programme organic farming promotion project in San Martin Region, Peru.

between the Amazon region and the national level and even bigger gaps between urban and rural areas. Access to adequate public services such as reliable energy, clean water, sanitation, housing, education, health, and media remains a problem for rural populations, especially for women. In addition to having inadequate service coverage, the Amazon region still faces low quality of service delivery and poor maintenance of existing systems.

3.3 Planet

Water ecosystems are at risk

The Amazon River basin covers about 6.4 million km^2 with over 1,100 tributaries, making it the largest river basin in the world (Commission on Development and Environment for Amazonia, 2001). However, there is limited knowledge of the Amazon biodiversity, an area that needs special attention and improved information.

National water access rates are higher than the Amazonian urban rates. Gaps in water coverage and access to basic sanitation services mainly affect rural areas and dispersed populations. In rural regions, rivers are the most common source of water, due to the limited availability of other alternatives. The reduction of water quantity and quality is a growing problem, and this resource is also contaminated due to illegal mining, waste disposal, or other economic activities. In countries such as Suriname, Guyana, Bolivia, Peru, and Ecuador there are problems of river contamination with heavy metals (Veening et al., 2015), such as mercury, due to gold mining. This has direct impact on drinking water quality, which leads to negative health effects (Hacon et al., 2008; Rocha et al., 2012).

Different approaches to the conservation of the Amazon rainforest

The Amazon region ecosystems are mostly affected by rapid land use change and deforestation, which causes in turn the loss of ecosystems services and impacts on a wider regional hydrological system. In the last 30 years, about 60 million hectares of the Brazilian Amazon rainforest have been cleared, which accounts for 17% of the Amazon (Azevedo-Ramos, 2008). Key drivers for this rapid change are increased infrastructure development, mining and petroleum-related activities, migration, and socio-cultural change. Restoration becomes a key priority for the region.

Most countries have already integrated measures into their national policy framework to combat climate change using the United Nations Framework Convention on Climate Change (UNFCCC) and their commitments put forward under the Paris Agreement as a reference. Most are undertaking awareness-raising campaigns on climate change mitigation, adaptation and impact. As these initiatives are still relatively new, their impacts still need to evaluated.

All Amazonian countries recognize it is key to address mitigation by reducing deforestation and understanding the impact of climate change on the Amazon basin. The debate and understanding on climate change does not lead to unanimous solutions among governments. Several Amazon countries are at the forefront in the implementation of results based payments for the sustainable management of forests, which presents opportunities in terms of financing and linkages to local community development (e.g. Ecuador, Brazil). Other countries make room for private institutions (e.g. Peru, Colombia), while Bolivia proposes the use of mechanisms that are not market-based.

3.4 Peace

Challenges related to institutional presence and quality

Although there is a need for increased monitoring and analysis of institutional aspects in the Amazon, the information available suggests that there is poor institutional presence and poor institutional quality, and challenges of accountability in the region. Enhancing and strengthening state institutions is an important challenge. Often times, national policies do not take into account the socioeconomic and environmental realities of the region. In some cases, there is a clash between traditional and modern judiciary systems: the Ecuadorian and Bolivian constitutions recognize indigenous rights to exercise traditional judicial functions, always within their territory and within certain limits that in some cases are not clear (e.g. Taromenane in Ecuador).

3.5 Partnerships

Multi-stakeholder engagement is of utmost importance

In the Amazon, a growing number of North-South and South-South partnerships are aiming to tackle key sustainable development challenges. Indigenous and forest communities and the private

sector are also promoting sustainable development. These are discussed in more detail in the following chapters. Alongside national governments, multilateral institutions such as the World Bank, Inter-American Development Bank (IDB), United Nations Development Programme (UNDP), or the Global Environment Facility (GEF) are involved in the promotion of sustainability initiatives in the Amazon.

4 Main challenges and opportunities for the Amazon region

Based on the country stocktaking reports and national consultations, this section offers a general perspective of the most important challenges and opportunities the Amazon region faces. These challenges and their respective opportunities have been classified under economic activities, property rights, multi-level governance and intersectoral coordination, indigenous communities, human settlements and infrastructure, and environment and natural resources management. These categories are not exclusive, and in fact they are interrelated, as well as their challenges and opportunities. This interrelation reinforces the need for integrative measures in line with the SDGs.

SOCIETY AND HUMAN SETTLEMENTS	
Challenges	**Opportunities**
• Progress has mainly favored urban areas • Rural populations are the most vulnerable • Significant gender and inter-cultural inequalities • Limited access to health services, education, and other social services • Political life and decision making takes place in urban centers • Emigration and immigration generally higher than national averages • Limited accessibility to reliable and clean energy due to biophysical and geographical conditions • Gaps in water coverage and access to basic sanitation services in rural areas • Limited state funding to invest in less populated communities • In rural regions, water intakes from rivers continue to be the most common source of water • Weak systems of solid waste management • Large areas in the Amazon without road access and limited fluvial and air transport and limited local capacity for the proper maintenance • Urban development with limited attention to disaster risk • Limited access to information and low cellphone coverage in some rural areas • Deprivation of children from e-learning centers in the districts and in the interior	• Reconsidering diversity of the development definition • Incorporate differential development vision for the region taking into consideration the diversity of perception of wellbeing, respecting diverse customs and ways of life • Space for innovation • Development of cities that take into account unique ecosystem characteristics including how to provide services to smaller, remote populations • Renewable energies: solar, wind, biomass, and innovative small-scale hydro power generation methods • Appropriate distance communication and learning technologies • Innovative use of multimodal fluvial transport • Innovative access options: creative use of alternative transport options • Regional cooperation around mobility and connectivity: most isolated regions are at the borders between countries • Local knowledge, local conditions: prioritize technology transfer and capacity building in local communities • Prioritize information generation and knowledge management • Academia accompanies and promotes development processes through research applied to specific development problems • Ensure the effective distribution amongst relevant stakeholders, and incorporating local inputs

INDIGENOUS COMMUNITIES	
Challenges	**Opportunities**
• Limited progress in legal recognition of indigenous peoples' traditional lands • Loss of traditional livelihoods and knowledge, social infrastructure, and disruption of traditional cultural and social structures • Reduction or loss of healthy food sources due to habitat loss and contamination, forcing locals to seek other non-traditional sources • Weakening of traditional governance structures • Increase of criminal activities and substance abuse • Knowledge of indigenous peoples in voluntary isolation comes mostly from infrequent and sometimes violent encounters with neighboring peoples, and from aerial footage • Conflicting interests in indigenous geographic areas • Isolated populations may lack immunity from outside diseases (relevant for territories where extractive activities occur) • Risk of cultural extermination • Lack of valuation and understanding of traditional knowledge, lack of written or systematized sources of knowledge • Impact of new technologies on traditional cultures • Decreasing sustainability of age old traditional ways of life due to inherently changing ecosystem conditions related to human activity	• "Free, Prior and Informed Consent" • Designated areas that respect the rights of uncontacted groups to remain in isolation in order to protect the uncontacted indigenous peoples who inhabit the region • Reformed indicators in line with rural and traditional Amazonian reality • Establish the diversity of indigenous groups as a major cultural asset of the Amazon region • Increasing recognition of role of indigenous peoples in forest conservation and climate change mitigation • Increasing support in some countries to indigenous peoples' land titling and registration • Valuation of traditional knowledge in cooperation with academia/private sector and use of new technologies open possibilities for breakthrough science in medical fields, genetic research • Alternative economic opportunities for sustainable forest management • Support indigenous peoples in addressing threats and increase their capacities for territorial management • Incorporate Inter-American Commission on Human Rights' recommendations for uncontacted indigenous communities' decision not to remain in isolation

ECONOMIC ACTIVITIES	
Challenges	**Opportunities**
• Local economy based almost exclusively on primary activities • Local economies dependent on lower value, land extensive agricultural activities and both legal and illegal resource extraction activities • Expansion of the agricultural frontier: biodiversity loss, negative environmental and social externalities • Increase in illegal activities like timber, and bush-meat • Increase in unregulated mining • Development of mining activities in new areas • Loss of diversity in agriculture due to substitution of native crops with introduced species	• Improved agricultural technologies • Improving competitive positioning of producers in the Amazon • Targeted subsidies and incentives • Local value adding • Economic diversification through sustainable use of biodiversity and incorporation of indigenous peoples and their traditional knowledge in value-added chain • Diversification and specialization • Producer organization and collective bargaining with external support • Tax exemptions for artisanal products • Strengthen local cooperatives, associations, and community enterprises linked to the value chains of cocoa, coffee, livestock, forestry, and others • International markets increasingly aware of and require deforestation-free commodity production (soy, coffee, palm oil, etc.) • Close involvement of the governments in promoting a legal, planned and coherent sustainable mining development as part of their economical values • Promotion of innovative production systems/new markets for Amazon products, recognition of amazon products conserving biodiversity in the international markets

PROPERTY RIGHTS	
Challenges	**Opportunities**
• Political, economic and cultural power comes from control of the land, indigenous rights over control of the land might clash with macro-economic priorities • Undefined property rights are a driver of deforestation and violence at the frontier regions. Several regions still lack a formal territorial category • Fragmentation of communal indigenous lands • "Mixed" set of rights that different stakeholders claim over the same land • Inadequate conversion of forest land to agricultural land without mechanisms for transparency • Undefined and weak national regulations on access to and benefit sharing of the local biodiversity and its traditional knowledge	• Formalizing property rights where none exist • Strengthened tenure • Institutional incentive for local landowners to manage natural resources sustainably • Continue territorial recognition of indigenous land and consolidation of protected areas • Valuing traditional knowledge of indigenous peoples on the resources of local biodiversity

ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT	
Challenges	**Opportunities**
• Accelerated deforestation and expansion of agricultural frontiers changing the patterns of territorial occupation • National planning objectives with local land use realities • Lack of systematic land use planning • Direct relationship between paved roads and deforested areas • Large-scale cattle ranching • Large scale extraction projects • Mining and illegal economic activities • Timber extraction • Biodiversity and other ecosystem service loss: increase in the number of threatened and endangered species, and spread of vector-borne and other communicable diseases • Reduction of water quantity and quality, changes in precipitation cycle • Climate change impacts on ecosystems • Socio-environmental conflicts: competing interests between social stakeholders and the use of natural resources • Land conflicts between indigenous peoples and agribusiness, industrial and infrastructure sectors • Increasing number of large-scale extractive projects for hydrocarbons (oil and gas), mining, hydropower, roads, waterways the expansion of extensive agriculture for biofuel production, and the infrastructure necessary for its use	• Expanding and diversifying protected areas • Sustainable use of biodiversity • Valuing ecosystem services for livelihoods, economic development, culture and science, and well-being • Improved agricultural technologies and access to high value markets • Strengthened governance • Harmonize national planning, provincial and municipal land management plans, and indigenous "Life Plans" • Supporting national enabling policy environment • Multi-level land use planning and implementation • Land use planning and zoning • Prioritize investment in research, technology development, and innovation for sustainable use of biodiversity resources • Variety of alternative income generating opportunities based on the sustainable use of biodiversity and ecosystems, especially for the providers of traditional knowledge linked to the use of biodiversity resources • Promote bio-knowledge on the potential for access to genetic resources and their possible commercial applications, respecting associated traditional knowledge of indigenous peoples • Standards and improved technology for larger industry • Limit the negative social and environmental externalities through best practices and stricter regulation • Innovative environmental finance mechanisms

MULTI-LEVEL GOVERNANCE AND INTERSECTORAL COORDINATION	
Challenges	**Opportunities**
• Differing cultural backgrounds and interests • Policy overlap: horizontally (economic, agricultural and environmental policies) and vertically (the municipal, state and federal government levels, as well as at the project and landscape levels) • Lack of capacity to deal with complex socio-economic dilemmas • Collaboration challenges; implementation challenges; policy design that does not incorporate the needed ecosystemic and multi-actor approach • Managing cultural and socio-economic interfaces a persistent challenge to communities and their allies • Partnerships often arise because of conditions set by external donors • Projects incompatible with local impacted groups • Lack of local ownership and institutional spaces for local impacted communities to have their voices heard • National policies not accommodating the social, economic and environmental realities of the region • Local social fragmentation, reduced cohesion • Management of trans-frontier watersheds and other ecological systems • River basin facing cross-frontier contamination threats • Low local Amazonian participation in national and regional political fora	• Continue to prioritize decentralization • Improved participation: build public policies and solutions of scale from within the Amazon territory better aligned with local reality • Build local implementation capacity • Improved knowledge management: Build understanding of challenges, needs and interests of local actors, range of mechanisms and incentives and policy instruments available in complex competing interest contexts • Strengthening trans-national and regional treaties that articulate member country priorities with local needs • Existing International treaties: incorporated into operating principles, procedures, to ensure internationally recognized standards • Establish mechanisms to strengthen connections between communities, academia, and public policy • Multi-actor partnership best practices (e.g., for public-private partnership, non-timber forest products) • Implementation of certification systems like Fair Trade or organic • Increased local consultation and participation in the design of development priorities for the Amazon region, and in project execution is an opportunity to strengthen sustainable development • Existing international agreements to promote the conservation of biodiversity and the utilization of natural resources • Collaboration among governments to reduce illegal trafficking of fauna and flora, illegal mining and other related crimes

5 Transformative sustainable development models in the Amazon

5.1 The need for integration and an ecosystemic approach: a move away from "business as usual"

Faced with widespread development processes that continue to drive deforestation and degradation, policy-makers and practitioners need to develop policy and models that can foster human development while limiting deforestation and maintaining ecosystem services. This highlights the need for innovation, large-scale investment, experimentation, and scaling impact from successful examples that move beyond "business as usual".

This section presents a selection of innovative examples that are underway and are responding to this challenge to transform at scale. It is not an exhaustive list of projects aiming for sustainable development in the Amazon. Rather, they are examples that have moved past "proof of concept", have shown concrete results in the field, have assured longer-term financial sustainability, and have achieved the broad buy-in and ownership from involved stakeholders. These examples are already, or show real potential to, scaling up their positive impacts in diverse settings. Common to all these successful cases is the ability to integrate actors, interests, and ecological systems, be it at the local, national or regional (or all) levels. These examples incorporate an ecosystemic approach, based on the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way (CBD, 2016).

There is a summary table containing the best practices and lessons learnt, their specific relevance for the Amazon, and the identification of concrete cases at the end of the chapter (see 5.9 Summary table of best practices & lessons learned).

5.2 Positive incentives for sustainable development

Green Municipalities – Reducing deforestation through local pacts and partnerships

The Green Municipalities Program (Programa Municípios Verdes) in Brazil is a local governance initiative originating from the local Paragominas government, in the state of Pará, with support from The Nature Conservancy and Imazon that has generated impressive results in deforestation reduction through local partnerships. This section synthesizes analysis of the project from Programa Municipios Verdes (2013) and Zwick & Calderon (2016).

In 2008, Paragominas was on "black list" of municipalities with the worst deforestation records, immediately losing access to credit and facing an embargo on new land permits. However, by 2010 the Green Municipalities project turned the situation around and Paragominas became a role model across Brazil, reducing its deforestation rate from 8,000 km^2 in 2004 to less than 2,000 in 2015. Getting off the black list earned the municipality access to loans and markets for soy and beef production, and the opening of a timber furniture factory. The basic tenet behind the Paragominas project was setting a clear goal to move away from deforestation, ensuring the buy-in of all impacted stakeholders, including the wood-intensive charcoal industry, providing real support to ensuring compliance with Brazil's Forest Code to maintain 80% of forest intact, and register forest owners with the Rural Environmental Registry. Producers who comply can gain access to incentives such as credit, consumer markets and the removing of their properties from embargoes.

The program's success in Paragominas led to the Green Municipalities Program expansion by the in 2011. From this scaling process, currently covering 107 municipalities, important lessons have been identified: a successful model can only be transferred if it is sufficiently adaptable to new contexts; good governance comes in part from a solid local tax base; one cannot transform a society with determination that comes from the outside; and a mix of "carrots" and "sticks" may be useful in changing entrenched deforestation trends. Overall, in Pará, the tide is turning in favor of the "Green Municipalities". Major retail chains such as Wal-Mart, Carrefour, and Pão-de-Açúcar no longer buy products obtained through illegal deforestation or slave labor. Unilever and Marks & Spencer recently vowed to source raw materials from jurisdictions that "pursue comprehensive forest climate programs" like Pará. Additionally, the state is planning to reduce taxes for producers that are environmentally compliant and who prioritize land title regularization. In 2015 the government

of Pará transferred R $70 million (US $18 million) to municipalities based on environmental criteria.

Partnerships for forest stewardship in Peru

There are several initiatives in Peru that achieve forest conservation through strategic partnerships among NGOs and companies. One example is Alto Mayo Protection Forest Preservation Initiative, a coordination program oriented to mitigate deforestation in a 340,000-hectare territory in the Alto Mayo zone, in San Martin Region. The initiative articulates the efforts of several NGOs supported by Conservation International, and involves action lines oriented to foster democracy, civil society organizations and local administration around key environmental issues such as public water supply or sanitation services. The carbon credits from this initiative have been verified by Verified Carbon Standard and Climate, Community and Biodiversity Alliance's standards (Conservation International, 2013). Another example is the Conservation Initiative in the Martín Sagrado Bio-corridor, whose main goal is to preserve high value forested areas, through the implementation of three conservation concessions co-managed by dealers and the Pur Project, a platform of companies working within an integral concept of social, environmental and economic sustainability (Fundacion Amazonia Viva, 2010).

Socio Bosque and the Incentive Forest Conservation – National payments for conservation

Socio Bosque is an emblematic program in the Amazon region, part of Ecuador's National Incentive Program to conserve Natural Heritage, and managed by the Ecuadorian Ministry of Environment. The Socio Bosque program has been successfully established over the past eight years and has gained international recognition as a mechanism for forest and native vegetation conservation through governmental financial incentives. Between 2008 and 2014, over 2,700 agreements had been signed, under which more than 1.4 million hectares have been placed under conservation, with an accumulated investment of around US $26 million, benefiting more than 173,000 people. Most of the preserved land and beneficiary populations are indigenous communities in the Amazon. Based on Socio Bosque's success, the State has expanded the portfolio of financial incentives for the sustainable management of the country's natural heritage. These new incentives include, Socio Paramo, Socio Manglar, sustainable use of biodiversity, and sustainable forest management.

Similar to Socio Bosque, Peru's Incentive for Forest Conservation involves the direct delivery of a US $3.3 incentive per hectare of forest conserved per year to partner communities. These funds are delivered to rural and indigenous communities and invested in the implementation of an approved investment plan, which comprises an economic component (sustainable use of forests), a social component (education, health, local infrastructure), an environmental component (forest surveillance), and a management component. These financial incentives will be provided through Peru's National Forest Conservation Program for Climate Change Mitigation, using funds from the Peruvian Public Treasury (MINAM, 2015).

ICMS – "Protector-receiver" ecological tax redistribution

In Brazil, the ICMS (Imposto Sobre Operações Relativas à Circulação de Mercadorias) is a tax charged on the commercialization of goods and services. The "Ecological / Green ICMS" is a system of ecological criteria for redistributing the tax collected by the States to certain municipalities, rewarding those who help preserve the biomes or produce environmental services. Thus, it is "protector-receiver" tax scheme. Some key criteria include the existence of protected areas, waste disposal and sanitation conditions. Currently, 16 out of the 27 states have a law on the subject, including the Amazonian States of Acre, Amapá, Rondônia, Tocantins, and the west-central State of Mato Grosso. The funds are transferred to the municipalities, which have full autonomy investing them. Currently, the total amount transferred to municipalities by way of the ICMS has surpassed R $500 million / year. The scheme shows promise in scaling its impact. The Ecological / Green ICMS has inspired similar legislation at the local level and at the federal level.

Bolsa Floresta and Bolsa Verde – Financial support for community conservation

In Brazil, the Bolsa Floresta Program (Programa Bolsa Floresta) established in 2007, provides financial and technical support for local communities, residing in State Conservation Units (protected areas), to support economic activities based on sustainable use of forest products and services (Börner et al., 2013).

The program was originally created by the State Government of Amazonas, but since March 2008 it has been managed by the Sustainable Amazonas Foundation (FAS). The FAS currently benefits 9,400 families (40,000 people) in 574 Communities within 16 State Conservation Units, in a coverage area of 10.8 million hectares through 2,424 projects to generate income (FAS, 2016). It is made up of four components: 1) Family component, the money each family receives if engaged with the program and follows their sustainability commitments; 2) Community Association component, to enhance local community action; 3) Income component, an incentive for each family participating in the Bolsa Floresta Program, destined to the community in order to promote sustainable economic activities; and 4) Social component, an incentive for each participating family, destined to projects aimed to improve of wellbeing in the community (Bakkegaard & Wunder, 2014).

The Green Grants Program (Bolsa Verde) started in 2011 and its main goal is to foster ecosystem conservation, promote active citizenship, improve the living conditions of families living under extreme poverty, and encourage their participation in activities oriented to environmental, social, educational, technical, and professional development (MCTI, 2016). The target population are families living under extreme poverty in priority conservation areas. To take part in the program, families have to be registered in the Ministry of Development's Social Program Registry as a low-income family, and the conservation area must comply with environmental laws and have a management plan. Bolsa Verde is part of the Brazil Without Misery Program, and it grants around R $300 per family quarterly over two years, with possibility of extension. By 2014, the project has benefited more than 70,000 families living in protected areas (Governo do Brasil, 2014).

5.3 Regional partnerships

Organización del Tratado de Cooperación Amazónica - OTCA

For issues of governance that go beyond national borders, opportunities exist in the form of strengthening trans-national and regional treaties that articulate member country's development priorities with local needs. One of the strongest achievements of national and international politics and diplomacy in the South American context is the Organización del Tratado de Cooperación Amazónica (OTCA). First signed in July 1978, by the eight Amazonian countries: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela, OTCA was re-launched in 2009. OTCA promotes harmonious development of the Amazon, and the inclusion of these isolated territories into their respective national economies, a goal that is seen as essential to maintaining the balance between economic growth and environmental preservation. In December 2010, members approved the Strategic Agenda Treaty for Amazonian Cooperation, which prioritizes the conservation, protection and sustainable use of renewable natural resources, incorporating the sustainable use of biodiversity; promotion of bioresearch, technology, and innovation in Amazonian biodiversity; conservation of protected areas; and management, monitoring and control of trade in species of wild fauna and flora. All this is done paying special attention to indigenous communities, as well as regional issues such as health, infrastructure and transport, tourism, and energy.

South-South partnerships

Considering the natural and cultural wealth of the trans-frontier region, the governments of Colombia, Peru and Ecuador have established a framework for the joint management of: Cuyabeno Wildlife Reserve (Ecuador, 603,380 hectares); Güeppí-Sekime National Park (242,000 hectares); indigenous reserves Airo Pai and Huimeki (Peru, 592,750 hectares) and La Paya National Park (Colombia, 422,000 hectares) – called the Cuyabeno-Güeppí Tri-La Paya Program. Between 2009 and 2013 two projects were implemented in coordination within the plan to support the Tri-National Program, which received funding from several international organizations. It is noteworthy that this initiative overcame challenges of international level, including the severance of diplomatic relations between Ecuador and Colombia. This was achieved, among other things, by strong commitment and willingness to link environmental authorities with the common interest to work in coordination for the conservation of this border region.

Photo: Sandra Aristizabal. Local communities from the Guiana Shield eco-region preserve their traditional livelihoods while perceiving Payments for Ecosystem Services. Picture taken in Inirida, Colombia.

The Guiana Shield Facility (GSF) is a multi-donor funding facility for the long-term financing of national and regional activities to conserve ecosystems, protect biodiversity, and to sustain human livelihoods within the Guiana Shield eco-region, which includes parts of Brazil, Colombia, French Guyana, Guyana, Suriname, and Venezuela (Guiana Shield, 2013). The Guiana Shield is an eco-region of regional and global significance. It covers an area of 270 million hectares, hosting several different ecosystems and key species, storing significant amounts of carbon and water, and providing livelihoods for many human cultures. The GSF delivery mechanism became operational through the issue of grants to project beneficiaries. To date, US $1.4 million have been disbursed to beneficiary organizations, with the aim to protect biodiversity through the implementation of valuation methodologies, payment for ecosystem services (PES), and the adoption of new technologies. The GSF project aims to set up and operate a long-term funding facility for the conservation and sustainable development of the Guiana Shield eco-region (UNDP, 2016). The GSF focuses on national and regional scale activities, emphasizing national ownership and priorities as well as regional collaboration. In the long-run, by preserving nature and therefore natural livelihood resources, a significant contribution will be made towards poverty alleviation and resource management by the local/indigenous inhabitants.

In another example, the Integrated and Sustainable Trans boundary Water Resources of the Amazon River Basin Program involves a set of measures to address the effects of climate variability and change on the entire basin region. Its overall objective is to formulate a Strategic Action Program for the Amazon basin and to create the necessary environment for future implementation among all eight countries making up the region. The agency responsible for implementation is the UNEP and the executive agency is OTCA. The project started in August 2010, with a significant budget of US $51.8 million, US $7 million from the GEF, and member country contributions and other donors adding up to US $44.8 million.

North-South partnerships

Guyana and Norway have solidified a partnership linking the Guyana Low Carbon Development Strategy with Norway's aim to mitigate climate change, establishing one of the first bilateral REDD+ projects in the Amazon. Norway is financing the Guyana REDD+ program that aims to reduce deforestation and forest degradation. Guyana was to receive US $250 million over a five-year period (2010-2015) for maintaining annual deforestation below 0.056%. Revenues from this partnership are managed under the Guyana REDD+ Investment Fund, to promote and invest in low carbon growth. After the final year of the agreement, it is an important case study to assess the potential of bi-lateral cooperation to mitigate climate change. The project faced important challenges: at the end of the fourth year Guyana had received a reduced amount of US $113 million due to penalties for excessive deforestation during 2012-2013 (FPDMC Guyana, 2014), together with expanding mining, agriculture, infrastructure, forestry activities, along with the construction of the Georgetown-Lethem road highway, which connects Guyana to Brazil.

Colombia, Ecuador, and Peru offer another example of North-South partnerships, through their bilateral agreements with Norway, Germany, and The United Kingdom. These agreements are shaped under the REDD Early Movers Program under Joint Declarations of Intent. The main aim of these agreements consist on offering financial support in exchange for reducing carbon emissions from deforestation and forest degradation – mostly in the Amazon. The scale of such financial support could go up to US $272 million in Colombia (JDI Colombia, 2015), US $74 million in Ecuador - together with actions in Colombia and Brazil (BMZ, 2015), and US $300 million in Peru (JDI Peru, 2014). The agreements also seek at promoting sustainable development and include a phase for the development of policy milestones, conducive to reduce deforestation and sustainable development. Peru has already started the implementation of such phase with support from UNDP.

Similarly, the Global Environment Facility (GEF) approved in 2015 the Amazon Sustainable Landscapes Program to protect over 80 percent of the Amazon and fight climate change. The GEF will commit US $113 million for a regional program involving Brazil, Colombia and Peru, and it is expected to leverage over US $682 million in additional financing. The program, which builds on several decades of work in the Amazon by governments, bilateral and multilateral agencies, NGOs, CSOs, and private donors, aims to maintain more than 70 million hectares of rainforest, promote sustainable land management in over 50 hectares, and support actions to avoid the emission of around 300 million tons of CO2 by 2030 (GEF, 2015). The program takes an integrated approach to protecting the Amazon ecosystem by implementing policies that foster sustainable land use, protected areas management and increasing vegetation cover, which contributes to biodiversity conservation and climate change mitigation.

5.4 Public-private collaborations for sustainable economic development

Manaus - Free Trade Industrialization in the Amazon

The Manaus Free Economic Zone, created by the Brazilian Federal government in 1967, was set up as a free trade area with the objective of creating an industrial center in the Amazon (Portugal, Harper, & Shaikley, 2011). More than 600 industrial companies generating around half a million direct and indirect jobs, with a focus on electronics. The project has driven economic development in the Amazonas State without significantly increasing levels of mineral extraction and agriculture. Public support is critical as the Free Economic Zone is dependent on subsidies. As other countries consider the options to move economic activity away from low yield and value agricultural activities, the lessons from the Manaus project provide insights: although many of these projects may require government subsidies, this has positive impacts when considering the avoided negative externalities. An ecosystemic public policy approach that values economic, social, and environmental impacts may help policy makers better evaluate the overall impact of industrial investments in the Amazon.

The Sustainable Connections Initiative[4]

The Sustainable Connections initiative mobilizes the livestock, wood and soy value chains in partnership with the city of Sao Paolo through sectorial agreements for the preservation of the Amazon rainforest. The project came about through active discussion of a landmark study carried out by the NGO

4. This section draws from information and analysis sourced from Rasche & Kell (2010) and Instituto Ethos (2016).

"Reportér Brazil" and by "Papel Social Comunicação". It became clear that Sao Paolo, the richest and most populous Brazilian State, was critical for both the degradation and preservation of the Amazon region, since it is the largest consumer of Amazon products, many of these sourced through illegal activities. This led to the signing of three business pacts and one governmental agreement. Signatories were broadly obliged to commit to finance, the distribution and marketing of only origin-certified Amazonian products, and ensure that suppliers that are not part of the "red list" of slave labor or from areas embargoed by Ibama. The Pacts Monitoring Committee, including members like Friends of the Earth, Imazon, Carrefour and Walmart, monitors compliance with the terms of commitment in each sector, and the Ethos Institute exercises the executive secretariat of the project, which is an initiative of the "Movimento Nossa São Paulo" and the "Fórum Amazônia Sustentável".

The timber industry has presented the least challenges of the three sectors, due to a high level of organization and certification. Around 80 percent of the large beef cold storage plants have also signed on. However, some producers remain resistant, skeptical of any sort of traceability, as it may have tax obligations. There has been more resistance from the soy industry, with 17 revisions of the soy pact, and by 2008, it had not been signed. However, through the supermarkets, which have signed on in large numbers, consumers are able to join the effort by making purchasing decisions at the counter.

5.5 Public policy for change at scale

Colombia's Amazon Vision to mitigate Climate Change

All of the Amazonian countries have in place or are establishing some type of public policy and incentives framework that respond to climate change, many of them with forests and reducing deforestation at their center. We highlight Colombia's Amazon Vision as an emblematic case that links global climate change accords with national development. At the 2009 Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC), Colombia announced an ambitious goal of reaching zero net deforestation in the Colombian Amazon by 2020. To reach this goal, the national government developed a comprehensive program called Amazon Vision, which is part of the National REDD+ strategy currently under preparation, including both adaptation and mitigation. Amazon Vision seeks to promote a new model of development in the region that improves the living conditions of local populations while conserving the environment. Colombia is active in the UNFCCC REDD+ negotiations where it supports market-based mechanisms and has been a vocal proponent of the idea that REDD+ should accommodate a stepped sub-national approach, with approximately 50 early-stage REDD+ initiatives in Colombia (MADS, 2013). Up until 2013, one REDD+ project, the Chocó-Darien Conservation Corridor, was producing credits in the voluntary market and seven additional projects are in an advanced stage of implementation. Unique to Colombia, this action is being aligned with the government acts in accordance with the new commitments arising out of a final Peace Agreement (MINAMBIENTE, 2016).

Bolivia's National Forest Plan – Decentralized Forest Management

Bolivia aims to build integrated systems so Amazonian forests provide not only wood but also become the basis for maintaining biodiversity, with local communities as central actors. Bolivian forest legislation has a form of small-scale forest use as an alternative solution to the disadvantages that the large-scale model poses for small forest users. In legislative terms, the Forestry Act enables local empowerment over the responsibilities and the accompanying benefits from sustainable community forest management. This measure has increased the potential for peasant and indigenous communities to gain access to timber resources, and has also increased their participation over the granting of permits and monitoring, improving transparency and equity in the distribution of timber benefits. The direct consequence of these measures has been a dramatic decline in illegal logging, the incorporation of peasants and indigenous peoples into the domestic and export markets, and a flow of benefits and better opportunities for direct negotiation between community actors and forestry companies. Taking advantage of these rights, communities in the departments of La Paz and Beni are beginning to see results in terms of sustainable economic development, not only from timber, but also through non-timber products such as cocoa, as well as through community tourism projects. New protected areas – Madidi and Pilon Lajas – have been registered as communal land by the Tacanaindigenous peoples, contributing to the vision of forests as systems of production, conservation and management.

Productive Innovation Networks - Redes Socialistas de Innovación Productiva (RSIP)

In Venezuela, the Ministry of "Poder Popular para Ciencia y Tecnología" promotes the formation of social productive innovation networks. This creates opportunities for organized communities, public and private companies, knowledge centers and other institutions to join forces to promote community development by taking advantage of local potential. The RSIP has achieved significant results with cacao – increasing production in Manapiare from 12 tons of dry fermented cacao in 2004 to more than 120 tons currently, and expanding production from two to more than 22 communities in Manapiare. The RSIP supports local communities with basic technological infrastructure as a fundamental need to add value to cocoa. This results in higher quality and yield attracting domestic and foreign investment.

Interactive Educational Television in the Amazon

Amazonas is the largest State in Brazil (about 4.5 times bigger than Germany), and is characterized by huge isolated areas. There are 6,100 rural communities across Amazonas, and transport is mainly by air or river. The State's education system is characterized by low completion rates (50% at age 16, compared with Brazilian average of 69%), and high numbers of overage students in a total student population of 864,000. Through the Centro de Mídias do Amazonas, education officials in the State are promoting the widespread use of interactive educational television to address these challenges. As described by the World Bank (2014), classes are taught remotely by teachers in Manaus and broadcasted to students in rural communities who view the classes on television and are then supported by a professional face-to-face tutor in their classrooms. The goal is to replicate the traditional classroom experience, and not to provide poor, rural communities with a lower-quality form of education represented. The project was initially funded by a US $150 million Inter-American Development Bank project, as part of the Program to Accelerate Educational Progress in Amazonas State. Under the IDB project, there are plans to expand coverage to 1,500 additional communities and 560 more schools, eventually reaching 15,000 more students. As a testament to the positive results in Amazonas, the infrastructure may once again be used to support distance teacher-training activities as well.

5.6 Creative leveraging of financial mechanisms

The Amazon Fund and the Public Investment Guidelines for Biodiversity and Ecosystem Services

In 2008, Brazil set up the Amazon Fund aimed primarily at the reduction of greenhouse gases generated from deforestation and forest degradation, but also for biodiversity conservation and social improvement. Although the Amazon Fund was created by the government and is managed by a public bank, it is a private fund. The Brazilian National Economic and Social Development Bank (BNDES) manages the Amazon Fund, raising funds, selecting and supporting appropriate projects. Initiatives eligible to receive support from the Amazon Fund must be in accordance with the Sustainable Amazon Plan, the Plan for Prevention and Control of Deforestation in the Legal Amazon, State Plans to Prevent and Combat Deforestation, and the Amazon Fund Guidance Committee guidelines and criteria, as well as the BNDES operational policies. Up to the end of 2014, approximately R $2 billion (around US $900 million) had been deposited in the fund's account, with the Norwegian government, the German Development Bank and Petrobras being the greatest contributors. Activities supported include management of public forests and protected areas, environmental control, monitoring and inspection, sustainable forest management, or economic activities which use forests sustainably, amongst others. The greatest beneficiary of the fund so far has been the Green Municipalities Program (BNDES, 2013).

In 2015, the Peruvian Ministry of Economy and Finances approved the Public Investment Guidelines on Biodiversity and Ecosystem Services, whose goal is to protect natural capital to ensure the provision of goods and services needed for development. These guidelines promote investment in biodiversity and ecosystem services, considering them as assets for the pursuit of economic activities in Peru, and they are recognized as infrastructure and public services that contribute to Peru's overall economic progress (DGIP-MEF, 2015).

The Amazon Region Protected Areas (ARPA) program

Through its geographic scope and financial objectives, the Amazon Region Protected Areas (ARPA) program redefines large-scale conservation. As described by

WWF (2016) and the World Bank (2012), ARPA is a unique conservation partnership that comprises key groups ranging from government agencies to NGOs, to major donors and focuses on the Brazilian segment of the Amazon biome. The partnership grew out of a pledge made by the Brazilian Government in 1998 to triple the area of the Amazon under legal protection. Since 2003, the program has set new standards for innovation and cooperation and has produced extraordinary conservation results. By investing in the sound management of biologically important state and federal lands, ARPA is playing a key role in ensuring that future development in the Amazon region can take place on a solid environmental platform. Financial oversight for the project rests with the World Bank while the Brazilian Biodiversity Fund acts as ARPA's financial manager. This arrangement combines the elements of public and private sector know-how, increasing project efficiency and transparency.

Once registered, protected areas under ARPA must demonstrate compliance in meeting management standards to be eligible to draw on the program's Trust Fund. ARPA started its second phase (2012-2015, US $85.8 million budget) as the World Bank, the Brazilian Ministry of the Environment, WWF and the German Development Bank publicly announced the Protected Areas Fund. Initially US $56.5 million were invested, and the current phase of the program aims at further capitalizing the fund with a 150% increase. By July 2006, a total of 21 million hectares of new protected areas had been created with ARPA support in the Amazon, more than doubling the area under protection. Upon completion in 2018, ARPA will cover nearly 70 million hectares of rainforest. Listening to and involving local communities has been key to the program's success. This is facilitated by conservation units, each one with an executive council comprised of representatives from the Brazilian government, civil society associations and local administration.

ARPA's replicability will soon be tested, as the program has also spurred the development of a new World Bank project with a similar structure focusing on expanding and better managing protected areas along Brazil's coastline and marine habitats.

5.7 Local and indigenous-led initiatives

The Caimaninae and Arapaima conservation programs: community-based conservation and management

Since 2008, Bolivia has been establishing a more flexible approach to local resource management, identifying new forms of management for integrated resource use, driven by community resource management. A concrete example is the cayman alligator (caimaninae) conservation program that incentivizes sustainable management of the species by providing an economic benefit to the indigenous communities for the sustainable harvesting of surplus populations in lowland rivers. Local communities also participated in drafting the "Strategy for the Renewal of the National Program of Conservation and Management of the Cayman Alligator". The program has been implemented in nine communities between 2010-2014, with the goal to establish fair and equitable distribution of economic benefits from cayman management. This is a concrete example of community-based natural resource management, empowering local communities with resource management rights, creating incentives to market natural resources to the highest value, ensuring economic benefits are captured locally, and in turn incentivizing sustainable harvesting and management. The success of the program can be seen in its expansion to other species in Bolivia, including, the "Tatú", the "Peni" (tupinambis teguixin) and the "Capihuara" (hydrochaeris hydrochaeris).

Brazil has established a community fishing initiative in the Mamirauá Sustainable Development Reserve – located at the confluence of the Solimões and Japurá Rivers in the Amazonas State. The Varzea flooded forest has very high biodiversity value, and the local community depends on fishing, agriculture and timber extraction. In the 1980s the area was classified as a protected conservation unit, creating conflicts because of the prohibition of new settlements and extraction of natural resources. However, in 1990 a Sustainable Development Reserve was created: a newly created conservation category that allows local populations to manage and benefit from natural resources sustainably. Sustainable management techniques were introduced for the overfished arapaima, including harvesting quotas and other limits against overfishing, and the prevention of fishermen from other areas gaining access to the resource. These coordinated changes contributed to the recovery

and regrowth of the species, and between 1999 and 2006 fish volumes increased eight-fold. A decade after, the sustainable management system was introduced and the average income of local households improved 110%. Similar to the Bolivian case, local communities took advantage of a new policy and legal framework that gave them incentives to sustainably manage local resources.

COICA – Indigenous "Life Plans"

The Coordinating Body for Indigenous Peoples' Organizations of the Amazon Basin (COICA) has played an important role in allowing indigenous peoples to be educated in their native language in Suriname, as well as the foundation of an Amazon Indigenous University. The COICA "Plan of life" project is an interregional pilot project implemented by five countries, including Suriname, with funding from UNDP and the World Bank. Indigenous peoples are supported to develop their "plan for life": essentially, their own vision for sustainable development, based on traditional knowledge. This project originates from the need from indigenous peoples to restore and maintain traditional values, solidarity and sense of belonging in their communities. Efforts such as these have encouraged the revitalization of traditional Amazonian cultures.

5.8 Private sector innovations at scale

Natura's Business Model

Natura, as described by Eccles, Serafeim, & Heffernan (2011) and WOBI (2013), is a world renown Brazilian producer of beauty and personal care products, much of whose primary material is sourced directly from the Amazon. Natura's focus on social and environmental responsibility is a primary source of innovation and growth. By 2009, Natura's direct sales generated income for over 1 million people in Latin America (Eccles et al., 2011). By the end of 2012, the company's goal was to generate turnover of US $65.8 million from the Amazonian region, and to distribute US $5.8 million among supplier communities (WOBI, 2013). In 2011, Natura made the biggest investment in its history—US $170 million—focusing on reducing the environmental impact of its products and on consumer education (WOBI,

Photo: UN Photo/Eskinder Debebe. Rubber tree sap is a valuable material for the industrial production of latex. Picture from Tapajos National Forest, in Para, Brazil.

2013). In 2011, Canada's Corporate Knights Research Institute ranked the Brazilian firm as the second most sustainable company on earth, and Forbes magazine ranked it the eighth most innovative company in the world. Today, Natura is one of the planet's most profitable cosmetics organizations and is growing at a rate of 20 percent a year.

The relationship between Natura and its suppliers is unique, and the company applied the principles of the Convention on Biological Diversity to its supply chains (WOBI, 2013). To bring its operations into line with this commitment, the firm has a team of anthropologists, social scientists, psychologists, economists, biologists and administrators responsible for nurturing and managing company relations with rural producer groups and indigenous communities (WOBI, 2013). Natura applies a triple bottom-line approach that measures financial, social and environmental performance: tracking net revenue, investments in R&D, dividend payouts, but also reductions in carbon emissions, wealth creation for supplier communities, and investments in educational projects. In Natura's Vice President Marcelo Cardoso's words: "(…) for Natura, in terms of its potential value and potential for innovation, the Amazonian region could end up becoming the Silicon Valley of South America" (WOBI, 2013).

Natex - Locally-sourced Rubber for Condom Manufacturing

The Brazilian State of Acre has been promoting sustainable industries through policies that have led to the creation of several enterprises that protect the environment while providing local population with a source of income (Furini da Ponte, 2014). In the municipality of Xapuri, the public-private-community partnership Natex produces rubber condoms from local plantations, supporting the livelihoods of more than 600 families (Schmink et al., 2014). This initiative aims at generating stable income to local populations from sustainable management of forests and increasing the economic value of rubber trees (Prado & Ribeiro, 2011). The particularity of the Natex Condom Factory is that it is the only male condom factory in the world that sources itself with native, non-plantation rubber (Schwartzman, 2015), which contributes to the preservation of the Amazonian rainforest and sets an example of economic development and innovation without deforestation.

5.9 Summary table of best practices & lessons learned

Best practice / lessons learned	Relevance for the Amazon	Case-study examples
Ecological and social dependencies and linkages need to be understood and models built to incorporate these: family -> community-> administrative unit-> national-> regional	• The Amazon rainforest is one enormous continuous ecological landscape • Administrative boundaries do not eradicate many social and ecological linkages and dependencies • Interdependencies need to be worked with across administrative boundaries with ecosystemic solutions	• Cuyabeno-Güeppí Tri-La Paya Program • Integrated and Sustainable Trans boundary Water Resources of the Amazon River Basin Program • OTCA
Integrated "multi-prong" solutions are required to respond to the Amazon's unique conditions	• Traditional solutions may not be appropriate for Amazon's multi-actor, intercultural context • Combining economic development with environmental sustainability requires significant changes in current behavior	• All the projects discussed in chapter 5
Complement "top-down" enabling policy with incentives for "bottom-up" action.	• Enabling policy environment can help to establish broad institutional base for sustainability in previously unregulated areas • On the ground implementation exceeds external authority reach • Long-term sustainability is in the hands of local actors	• Bolivia's National Forest Plan • Caimaninae and Aripaima community conservation programs • Green Municipalities • Manaus Free Economic Zone
Invest in strategic and focused research into sustainable development problems as a tool to propel solutions	• A first step requires understanding the complex challenges • Good information a support tool for securing investments and building confidence • Good information can build common understanding of problems and unity to implement solutions	• COICA "Plan of life" • Green Municipalities • Guyana Low Carbon Development Strategy • Sustainable Connections Initiative
An informed mix of policies and actions, including institutional, command and control, and economic can be effective in driving sustainable land use change	• Deeply entrenched activities that have negative environmental and social impacts may involve powerful players with big economic interests • Changing behavior may require the threat of legal consequences (command and control) • In combination with substantive gains from complying with less damaging activities (economic incentives) • Must engage and secure buy-in from impacted stakeholders	• Early Movers Program • Green municipalities • Guiana Shield Facility • ICMS economic incentive • Partnerships for forest stewardship in Peru • Socio Bosque and the Incentive Forest Conservation • Sustainable Connections Initiative
Expanding the reach of protected area systems can benefit from i) innovative funding mechanisms and financial incentives that can ensure sustainability, and ii) the diversification of protected area mechanisms	• Growing competing interests and competition in the Amazon means that establishing new strictly protected areas faces ever-increasing challenges • Stretched public budgets may not be sufficient to ensure sustainability • Innovative financial mechanisms can offer more secure alternatives • The support of local actors towards conservation goals can be key to sustainability	• ARPA • Bolivia's National Forest Plan • Bolsa Floresta and Bolsa Verde • Caimaninae and Aripaima community conservation programs • Socio Bosque and the Incentive Forest Conservation
Adaptability is key for successful pilots to grow to scale	• The Amazon's diversity means that there is no "silver bullet" solution for all cases • Each context has a unique mix of socio-political and geo-physical considerations to which successful models will need to adapt	• EMBRAPA • Green Municipalities • Manaus Free Economic Zone • Socio Bosque and the Incentive Forest Conservation
Create economic value from the biodiversity that standing forests have to offer	• Alongside environmental objectives, successful projects need to respond to local economic needs	• Bolivia's National Forest Plan • Caimaninae and Arapaima conservation programs • Green municipalities • Guyana Low Carbon Development Strategy • Natura and Natex • Socio Bosque and the Incentive Forest Conservation • Sustainable Connections Initiative
Transforming agricultural practices is key to reducing deforestation	• Traditional agricultural practices in the Amazon have been inefficient • Many opportunities to increase technical capacity, local organization, production yields and efficiency and add value locally	• Local indigenous initiatives • Redes Socialistas de Innovación Productiva (RSIP) • Natex • Natura
Significant mobilization of strategic investment key to scale impact	• The scale of the task of transforming current development trends onto s sustainable path is enormous and will require significant investment	• Most of the projects listed in chapter 5

6 Sharing Knowledge for Sustainable Development

There has been substantial progress throughout the Amazon basin in terms of sustainable development this century. Many of the indicators related to the MDGs have improved. Deforestation rates, when compared to rampant highs around ten years ago, are showing long-term tendencies for overall reduction.

However, as the Agenda 2030 era begins, there are several social and environmental indicators in the Amazon that score far below national averages. Deforestation is still not under control, resulting in the loss of ecosystem services, which is a cause for social concern, especially among indigenous and rural communities. Progress in human development has mainly favored the Amazonian cities, and despite recent improvements, poverty levels in rural Amazonia are still remarkably high. Overall, in many countries, Amazonian populations have some of the lowest human development indicators, thus posing a greater challenge to achieving the SDGs.

The main challenge in the Amazon for the coming years is finding development pathways that combine environmental protection and poverty reduction, leaving no one behind. The Amazon is a unique space of diverse but interlinked actors, cultures and landscapes, conflicting interests and layered rights, under rapid change, and with many entrenched incentives and conditions for unsustainable development. Therefore, the Amazon needs an inclusive and integrated approach to development that fights inequalities, promotes new production models, reduces deforestation, increases food sovereignty, and recognizes indigenous peoples' efforts to conserve biodiversity and cultures.

Fortunately, there are a growing number of valuable examples of success on the ground that light the way for what works, and how to overcome unique Amazonian development challenges. The most successful of these are identifying innovative ways to build effective collaboration between government agencies, at all levels, local populations, and the NGO and private sector. These highlighted cases show that current best practices prioritize an ecosystemic approach and a well-informed mix of public policy measures, combine top-down policy with bottom-up action, are adaptable, make use of innovative finance mechanisms for sustainability, and are creative in identifying economic value in standing forests and in connecting its inhabitants with markets.

There are plenty of ideas and projects on the ground that aim to tackle sustainable development challenges with new models. However, there is also an important gap in terms of generating and managing knowledge throughout the Amazon basin. This means it is difficult to evaluate results and impacts, and the real potential for replicating success. Moreover, there is no long-term platform for sharing successes and lessons learned. This situation limits the potential impact that successful projects might have, as well as the support network that struggling projects might benefit from to overcome their own challenges. Several working solutions have already been identified and understood in the Amazon, and their results have been disseminated to other regions for potential application. But these solutions alone are still not enough: achieving sustainable development in the Amazon requires integrated solutions, and scaling up of initiatives that acknowledge its environmental, social, and cultural diversity.

There is the need for establishing multidisciplinary knowledge management and innovation teams, who are responsible for responding to regional challenges by investigating and evaluating promising projects, identifying opportunities for scale, disseminating of best results at the regional level to leverage impact, and for providing a basis for conflict prevention in extractive sectors that can create a bridging space in the Amazon. In order to do so, international organizations or ad hoc platforms such as SDSN Amazonia can address the challenges the Amazon faces by "mobilizing scientific and technical expertise from academia, civil society, and the private sector in support of sustainable development problem solving at local, national, and global scales with integrated solutions" (SDSN, 2015). Establishing mechanisms to connect communities, academia, and public policy through action-orientated research can foster discussion and solution identification between stakeholders, resulting in significant positive impacts on the region.

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