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The Future of Nature Conservation in Amazonia: Evidence From Transboundary Protected Areas

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Biological diversity has been recognized as a global asset that is key to the well-being and survival of present and future generations. In response to massive destruction of the world's ecosystems, the international community has agreed on several initiatives, most importantly, the Convention on Biological Diversity (CBD) in 1992, which is the basis of the Strategic Plan for Biodiversity 2011–2020, and the 20 Aichi Biodiversity Targets. A central instrument of these initiative are protected areas. The nine Amazonian countries alone, have designated 390 million hectares of protected forest areas, some of which are under very heavy pressure. As explicitly stated in Aichi Targets 11, 17, and 18, the effective governance and management of these protected areas requires the active participation of indigenous and other local resource user groups and respect for their traditional knowledge and customary practices. This manuscript analyzes to what extent and in which way these targets have been achieved by analyzing three transboundary protected areas in Brazil, Peru, and Bolivia constituted of five national parks. The analysis shows that important progress has been made in terms of the local participation and the generation and sharing of economic benefits, mostly due to the engagement of non-governmental organization (NGOs) funded from overseas development assistance (ODA) sources. However, many of the established mechanisms show major shortcomings, such as power imbalances, lack of legitimacy of decision-makers, unclear responsibilities, unresolved logistical challenges, and the lack of financial support. In addition, the functionality of local governance structures is severely threatened by the vagaries of national policies that often put biodiversity conservation and economic development at loggerheads. In order to ensure the functionality of protected areas in the Amazon region, binding and sufficient commitments by national governments are needed for genuine and effective local governance.

Keywords: biodiversity conservation, governance, protected areas, Aichi Targets, social participation

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INTRODUCTION

The Challenge of Biodiversity Loss

Biodiversity, understood as the life on earth and all the variability among living organisms within species, between species, and between ecosystems (Swingland, 2000; Secretariat of the Convention on Biological Diversity, 2005), is key to ecosystem health, which guarantees the provision of ecosystem services (Millennium Ecosystem Assessment [MEA], 2005;

Ranganathan et al., 2008; Faith et al., 2010; Secretariat of the Convention on Biological Diversity, 2010; Kasparinskis et al., 2018). Biodiversity ultimately guarantees the long-term survival of the human species (Gowdy, 1997). Biodiversity also has an intrinsic value in itself (Chan et al., 2007), and its consideration must project beyond the anthropocentric utilitarian perspective (Haines-Young and Potschin, 2010), and encompassing its transcendental role (Maestre et al., 2012; Midgley, 2012). Maestre et al. (2012) and Lohbeck et al. (2016) argue that high levels of biodiversity positively correlate with ecological multifunctionality (Isbell et al., 2011; Gamfeldt et al., 2013). Accordingly, levels of biodiversity and ecological multifunctionality are higher in complex ecosystems like the Amazon biome (Thompson et al., 2012; Brockerhoff et al., 2017; Mori et al., 2017).

Despite the advances in the understanding and recognition of biodiversity in the last 15 years (IPBES, 2019), it is still being lost continuously in tropical countries in general and in the Amazon biome in particular (Fearnside, 1993; Hecht, 1993; Foley et al., 2007; Vieira et al., 2008; Piotrowski and Ortiz, 2019). Deforestation in the Amazon region is the most important reason for biodiversity loss, causing a spiral of progressive degradation (Giam, 2017). Forty years ago, deforestation in the Amazon biome was attributed to population growth, which was linked to the expansion of the road network and other infrastructure increase, like dams, oil pipes, and ports (Gentry and Lopez-Parodi, 1980; Fearnside, 1993). Over the next decades, the topic of land use change and the actors and activities behind it gained attention (Lambin et al., 2003; Lambin and Geist, 2006). More recently, deforestation has been linked to the alteration of local climate due to the modification of surface-energy atmosphere exchange (Sagan et al., 1979), impact on biotic diversity (Sala et al., 2000), soil degradation (Trimble and Crosson, 2000), and the importance of terrestrial ecosystems as carbon sinks (Woodwell et al., 1983). Deforestation has been linked to accelerated and globalized economic growth and its influence on agriculture, cattle ranching, and logging in Amazonian countries, particularly in Brazil (Bowman et al., 2012; Atkins, 2016). Quite a few academics warn that the Amazon biome is nearing a degradation tipping point (Piotrowski and Ortiz, 2019).

Convention on Biological Diversity and the Protected Area Approach

There are at least 15 treaties signed by Amazon countries targeting biodiversity, biodiversity conservation, and forest conservation. The Convention on Biological Diversity (CBD) is undoubtedly the most important one. The CBD was the umbrella treaty that allowed the adoption of other agreements: The Cartagena Protocol on Biosafety, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, and the global Strategic Plan for Biodiversity 2011–2020. Accordingly, the CBD is the most comprehensive international legal instrument for the conservation of biodiversity. It promotes conservation but also sustainable use of biodiversity, as well as the fair and equitable sharing of the benefits derived from the utilization of genetic resources (United Nations, 1992). A total of 193 parties have ratified the CBD including all countries part of the Amazon biome. The CBD recognizes the irreplaceable role of forests to sustain biodiversity (Gibson et al., 2011; Lopoukhine et al., 2012) and represents a worldwide collective action to protect biodiversity through the establishment of a global PA (Protected Area) system. Beyond being recognized as the cornerstone of a global biodiversity conservation (Bruner et al., 2001; Secretariat of the Convention on Biological Diversity, 2008; Anthony and Szabo, 2011; Lopoukhine et al., 2012; Gizachew et al., 2020), the most cited perspectives on the positive effects of PA include: reducing deforestation (Andam et al., 2008; Gaveau et al., 2009), and the protection against forest fires (Adeney et al., 2009). Particularly in the last two decades, the importance of PA has been highlighted in discussions on climate change (Mansourian et al., 2009; Bebber and Butt, 2017), and as buffers of extreme climate events (Londono et al., 2016). Recently, PA have also been considered as important contributors to meet the Sustainable Development Goals (SDG) (Dudley et al., 2017), although the impacts of protected areas on development goals is a highly contested issue (Sims, 2010). Considering the fact, that, in the global south, protected areas are commonly located in regions of high biodiversity with people highly dependent on natural resources use and historical and cultural relationships with ecosystems (Woodhouse et al., 2018), PA might have positive as well as negative poverty effects while the use of natural resources in the PA may cause environmental degradation (Andam et al., 2010; Canavire-Bacarreza and Hanauer, 2012). This ambivalences indicate the importance of gaining the commitment of people dependent on the natural resource to the conservation of PA in which they reside (Brockington and Wilkie, 2015; Naidoo et al., 2019).

The CDB also establishes the general criteria for the governance of PAs. Graham et al. (2003) define governance as the interactions among structures, processes, and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say. The CDB stipulates that local actors are to be included in PA management, which signifies a substantial change to former enforced full protection approaches (Borrini-Feyerabend et al., 2013). A general classification recognizes PA governance by government, shared governance, governance by private actors, and governance by indigenous peoples and non-indigenous local communities. There is a consensual discursive trait that effectively managed PA will lead to improved biodiversity outcomes and that equity is a key aspect for effective PA management. In practice, however, there are a significant number of variations in PA governance models in different countries. Accordingly, the CBD's Program of Work on Protected Areas (PoWPA) has emphasized the promotion of PA good governance, including engagement of relevant stakeholders, indigenous and local communities, and equitable sharing of benefits (Secretariat of the Convention on Biological Diversity, 2004).

The Aichi Targets for Good Governance of Protected Areas

The Conference of Parties to the CBD adopted the Strategic Plan for Biodiversity 2011–2020, which includes a set of 20 global targets, the so called Aichi Targets, to achieve the plan's objectives (Marques et al., 2014). Aichi Targets 11, 17, and 18 establish the references for governance, social participation, benefit sharing and traditional knowledge, innovations, and practices of indigenous and local communities, which must be reflected in National Biodiversity Strategies and Action Plans (NBSAP), which each country signatory of the CBD is committed to design and implement.

Aichi Target 11 stipulates that participation of indigenous and other non-indigenous communities in PA management is required and that the benefits and cost of PA management must be shared fairly. Aichi Target 17 establishes that the NBSAP should be designed and implemented in a participatory manner, involving all relevant stakeholders. Finally, Aichi Target 18 establishes that traditional knowledge, innovations, and practices are recognized and respected, and are fully integrated and reflected in the implementation of the convention with the full and effective participation of indigenous and non-indigenous communities.

A widely shared understanding is that the well-being of residents of PA is of key importance to achieve effective PA governance. A more political framing of the issue is that, failing to assure well-being in a PA arrangement violates the human rights of indigenous or non-indigenous resident communities (Matsuura, 2017). This adds a moral and social justice challenge to the PA governance discussion. The participation of local communities requires that arrangements are needed to assure that costs and benefits of the conservation aimed for in PA are equitably shared among all stakeholders (Schreckenberg et al., 2016). This implies a recognition that a designation of a PA diminishes the net present value of income generation assets, which implies a conservation costs which primarily is carried by those who depend on those assets (de Lange et al., 2016).

In sum, these Aichi Targets require that PA governance facilitates the participation equitable share of benefits among the local resource users in and around PA directly faced by the consequences of restrictions resulting from eventual conservation objectives while minimizing their costs resulting from PA designation and management. In practice the Aichi Targets require the pursuit of the following objectives pertinent to local communities (Borrini-Feyerabend et al., 2013): (1) securing livelihoods, (2) the recognition of and support for local conservation achievements, (3) resolve conflicts among local actors, and (4) respect and enforce local rights, values, and identity.

Implementation of the Aichi Targets

National commitments under the PoWPA are specified in the National Programs of Work (NPW), which includes clauses on governance, participation, and equitable sharing of benefits, including to indigenous and non-indigenous communities (Secretariat of the Convention on Biological Diversity, 2004). The NPW specifies that a management committee is the main instrument to assure participation and dialog among public and local actors. It also constitutes the legal basis to not only legitimize, but also demand participation in PA governance (Arguedas et al., 2018a). This is a general condition that applies to all the PA of countries that signed the CBD. While this is the case, there are no public policies specifically focusing on PA governance. In most of the cases analyzed here, governance is considered to be part of general PA management, without clearly recognizing the differences between decision-making (policy) and implementation and enforcement (practice) (Borrini-Feyerabend and Hill, 2015).

A wide variety of non-state actors are involved in PA governance including PA-dependent actors (indigenous and non-indigenous communities), cooperation actors (NGO, donors, non-profits institutions, professional, religious, and education organizations), and private entrepreneurs (natural resources use-based companies, middlemen, and private landowners) (Borrini-Feyerabend et al., 2013). Commitments of each non-state actor to PA governance may vary according to interests. However, all non-state actors if they expect their interest to be met, have to comply with PA regulations. Based on the above, the common commitment of non-state actors is to contribute to the PA management objectives from their corresponding roles, which does not mean necessarily active involvement in PA governance. Non-state actors' commitments are conditioned by the restrictions established by the PA regulations, which is a direct function of each PA conservation category. This defines how non-state actors get involved in PA governance (Borrini-Feyerabend et al., 2013).

State of Local Participation and Benefit Sharing

There is no clear evidence of how governments operationalize their commitments regarding local participation in PA governance and management included in the National Strategies of PA Management and Biodiversity Conservation. It appears that the complexity of PA governance has so far limited the success of PA management (Borrini-Feyerabend et al., 2013), and that initiatives to address this problem rely on NGOs and non-profits institutions' proposals rather than the governments of the countries that signed international treaties. Some of the constraints that affect progress in the compliance of the Aichi Targets are deficiencies in the reporting and assessment at the appropriate scales (UNEP-WCMC et al., 2018). Nevertheless, worldwide there have been advances to monitor governance elements of Aichi Target 11 (Secretariat of the Convention on Biological Diversity, 2014; Timpte et al., 2018). For example, the results of a PA Management Effectiveness evaluation (PAME) by World Wildlife Fund (WWF) in over 200 PA shows that PA governance and the participation of local actors therein are critical elements not appropriately addressed (World Wildlife Fund [WWF], 2004), which remains true until today (Secretariat of the Convention on Biological Diversity, 2020). The CBD/SBSTTA/22/INF/30 report asserts that eighty parties of the CDB prioritized actions related to equity and governance

in PA that range from recognizing diverse types of governance to promote equity mechanisms (Secretariat of the Convention on Biological Diversity, 2018a,b), and, based on this, elaborated globally applicable tools to assess equitable governance and management. However, as noted by the Protected Planet Report (2018), the recognition of PA governance diversity and the driver actors involved does not provide information on PA good governance and representation therein. Thus, in spite of the commitment of CDB Parties to adopt the PoWPA principles, progress in PA governance remains a major challenge, a reality reported since 2004 (UNEP/CBD/COP/DEC/VII/28).

It has been concluded that efforts to strengthen the governance and management rights of the relevant communities should avoid undermining the diversity of governance mechanisms in place. Additional criteria have been adopted to tailor governance arrangements to the specificities of their context and to enhance the diversity, quality, effectiveness, and equity as a means to improve PA governance. It was also suggested that an effective and equitable governance in PA requires the application of good governance principles proposed by the International Union for Conservation of Nature (IUCN) (legitimacy and voice, direction, performance, accountability, and fairness and rights). Finally, the assessment of equity in benefit distribution derived from PA requires a deep analyses of social and governance aspects in which the good governance principles are assessed through the quality of the governance arrangements and the social aspects focusing on the impacts on human well-being as a measure of equity (Secretariat of the Convention on Biological Diversity, 2018a). However, important questions remain how the above recommendations are streamlined into national strategies of PA management and PA governance.

Objectives

Now that the time horizon of the Aichi Targets and the Strategic Plan for Biodiversity 2011–2020 has passed, it is time to assess to what extent they indeed have contributed to the overarching goal, i.e., that "biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet, and delivering benefits essential for all people (Secretariat of the Convention on Biological Diversity, 2011)."

In this context, the specific aim of this manuscript is to explore progress of PA governance with regard to the Aichi Target 11, 17, and 18. This will done by analyzing the participation, performance, and contributions of the actor groups linked directly or indirectly to three transboundary protected areas located in Bolivia, Brazil, and Peru.

More specifically, the manuscript aims to answer the following questions: (1) What are the social and institutional conditions that impact PA governance? (2) What are the impacts of actors-based interventions on PA governance? (3) How do actors agree on the definition of responsibilities related to the PA management and what means or support do they have to meet them? (4) What are the contributions of each actor to PA management? and (5) How do these contributions help to achieve the Aichi Targets and the compliance of other international agreements that the actors' host countries have signed up for? From this analysis we hope to learn what are minimum conditions needed to make PA work in the Amazon region?

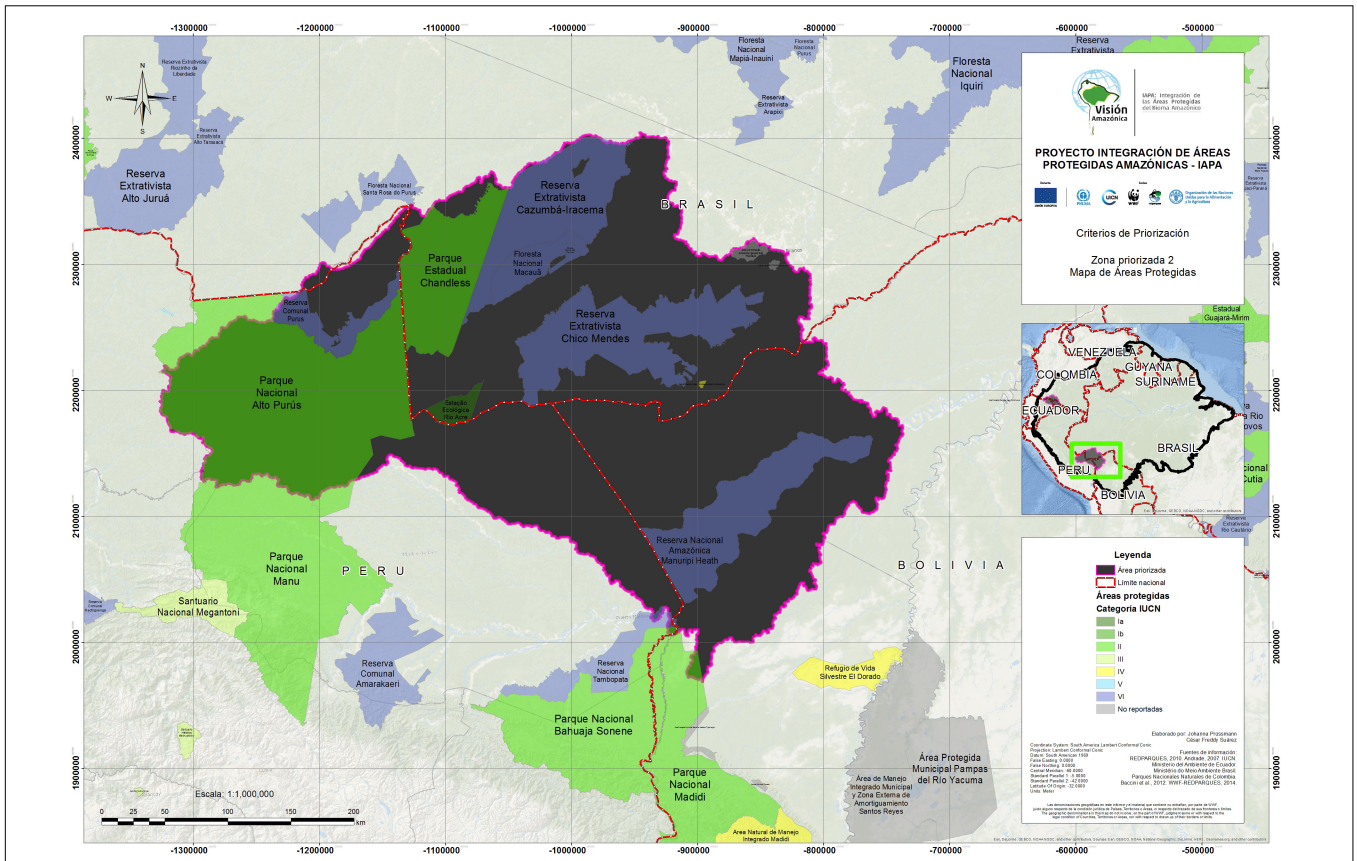
MATERIALS AND METHODS

This research relies on information generated in the context of the EU-funded project Integration of Protected Areas of the Amazon Biome (IAPA) for the creation of a network of protected forest areas in the Amazon region. The project was devised to support the regional initiative "Vision for the conservation of the diversity of the Amazon biome based on ecosystems," proposed in 2008 by the Latin American Network for technical cooperation in national parks, other protected areas, wild fauna, and flora (REDPARQUES). IAPA's objective is to increase the resilience of the Amazon ecosystem to the effects of climate change by maintaining the provision of goods and services that benefit biodiversity, communities, and local economies. The project was developed in eight of the countries that are part of the Amazon territory: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Surinam, and Venezuela (REDPARQUES, 2017).

The IAPA project focused on developing theoretical and practical knowledge capabilities on PA governance, based on the IUCN principles of good governance (Arguedas et al., 2018b) described as: "The process through which authority is developed and exercised with pertinence and equity over time in order to guarantee that PA are better integrated into society to face the challenges of global change" (Borrini-Feyerabend et al., 2014 cited in Arguedas et al., 2018b). To that end, IAPA supported local communities in efforts to design and implement a fishing management project and provided training in the promotion of PA tourism. During the project implementation especial attention was given to the role of local people and their traditions in PA conservation, to community-based arrangements of natural resources management and their impacts on conservation, and to local people's livelihoods. This was complemented by efforts to involve local actors in the planning and decision-making of PA management. Part of the latter efforts included capacity-building of PA staff on the management effectiveness, financial sustainability, and PA governance (REDPARQUES, 2019a,b). The governance training was directed at community leaders, local government representatives, and staff of national PA systems. During these trainings, the strengths and weaknesses of current PA governance became evident (Arguedas et al., 2018a,b). In these meetings, we recorded the statements of the participants to reveal their arguments and discourses (Hardy, 2001). In addition, we used direct observations during 2 years of field work, and publications of the IAPA project (REDPARQUES, 2017), and relevant secondary sources available.

The here presented insights essentially relate to three transboundary protected areas constituted of five national PA (see **Map 1**).

The *Manuripi Amazon National Wildlife Reserve* (*MANWR*) has an extension of 7,470 km^2. The reserve was created on December 20, 1973. It covers a large part of the Manuripi province and involves within its area two large municipalities Puerto Rico and Filadelfia. The entire reserve area is classified as



MAP 1 | Locations of the protected areas.

humid tropical forest with 760 species of plants, 112 species of fish, 70 species of amphibians, 72 species of reptiles, 489 species of birds, and 150 species of mammals identified. The population within the reserve is organized in barracas (productive facilities for the use of natural resources, particularly Brazil nut, privately owned) or in communities (306 families of permanent residence). The main economic activity in the reserve is seasonal Brazil nut collection and swidden agriculture.

Cazumbá-Iracema is an Extractive Reserve (RESEX) that in Brazil is a protected area category created by demand of communities. RESEX communities are recognized for their historic conservation endeavors and for their interest in maintaining or regaining control of their customary territory (Instituto Chico Mendes de Conservação da Biodiversidade [ICMBio], 2007). It was founded in 2002 in the Rio Purus basin, in the Brazilian state of Acre and in the Sena Madureira and Manoel Urbano municipalities. Its population are traditional communities of Brazil nut and rubber collectors (350 families of permanent residence). The occupation of the territory is based on "ocupações," which are units for residence and production with an average of 300–500 ha. The *Chandless Stadual Park* on the Brazil-Peru border is a Brazilian conservation unit created in 2004 and administrated by the regional government. With 600 species of birds, the park has the highest reported concentration of birds in the Amazon region. The 11 families that currently live in the park migrated from the northeast region of Brazil and mixed with indigenous people. In the park and its buffer zones, subsistence agriculture and extractivism are the main productive activities (Secretaria de Estado do Meio Ambiente [SEMA], 2010).

The *Alto Purus National Park and Purus Communal Reserve* in the departments of Ucayali and Madre de Dios, is the largest natural protected area in Peru and covers the origin of large Amazonian rivers such as the Purús, Curanja, Chandles, Yaco, Acre, Tahuamanu, Las Piedras, and Envira. The park is important for its biological wealth, its role as a carbon sink and for local indigenous population to meet their subsistence needs (Servicio Nacional de Áreas Protegidas por el Estado [SERNANP], 2012a). In this area there are indigenous groups in voluntary isolation and others never contacted, from Arawak and Pano linguistic families. They mostly reside in the park's buffer zone, including in the Purús Communal Reserve located in the department of Ucayali and is part of the buffer zone of the Alto Purús National Park. Puerto Esperanza, the capital of Purús province has a population of approximately 1,200 and a rural population distributed in 44 settlements of which 41 are indigenous located along the Curanja and Purús rivers and three non-indigenous rural settlements. People rely on hunting, fishing, gathering of forest fruits, and the collection of chelonian eggs for consumption and for sale. The Purús Communal Reserve is an example of

humans living in harmony with nature (Servicio Nacional de Áreas Protegidas por el Estado [SERNANP], 2012b).

RESULTS

Level of Local Participation in the Governance and Management

The interviews with participants of the IAPA supported trainings demonstrate that the topic of PA governance is not well-understood theoretically and conceptually by the local stakeholders. This, in spite of stakeholders' ongoing participation in PA management and the definition of PA regulations that provide the legal context for PA governance (Arguedas et al., 2018a). Another insight from the interviews is that PA managers make insufficient and untargeted efforts to improve PA governance, especially with regard to the involvement of local resource users (Arguedas et al., 2018a).

One important governance instrument present in all studied PAs is the PA management committee (PAMC). PAMC is a formal mechanism for PA management and governance that aims at facilitating the participation of the various actor groups in the process of planning and decision-making (Arguedas et al., 2018a). In the case of the two Peruvian PAs, the law obliges the signing of contracts with community-based entities called 'executor of the administration contract'. These contracts aim to assure shared management and governance and to coordinate activities of the communities with interests in the PA. In Brazil, national legislation foresee the creation of management committees for PAs. In the case of Extractive Reserves, like the PE Chandless, deliberations of these committees are binding. Also in Bolivia, the General Regulations of PA establishes the formation of management committees with ample authority to define the regulations for decision-making planning, monitoring and auditing of the PA. Our analysis revealed, however, that in many cases the PAMC are operating deficiently. In Brazil, PA committees have not been active for two years (Arguedas et al., 2018a).

Level of Generation and Sharing of Economic Benefits for Protected Areas Residents

In all the studied PAs novel initiatives to improve the well-being of local residents was observed. In MANWR new modes of participatory governance included regulations of Brazil nut extraction. The measures assured equitable access to the resource and its benefits, but also assured sustainable extraction and reduced impacts on wildlife. It also assured that conservation efforts by local residents generated additional income. In the PE Chandless, regulations were designed with the local population on the use of the natural resources of the PA. They were devised through dialog and agreements that secured both livelihoods and conservation goals. In the RESEX Cazumbá Iracema, the population successfully achieved that their traditional land use practice of tapping rubber along rubber routes (*estradas gomeras*) was recognized as the main principle to organize PA management. In Peru, the Purús CR implemented two monitoring systems to assure sustainability of subsistence hunting. The monitoring also tracks climatic variables and water quality to support management plans for aquatic turtles and catfish. In the Purús CR, furthermore, a forest concession was established in the buffer zone managed with local participation (Coronel Cisneros, 2017; Solórzano Orellana, 2017).

The above initiatives were reinforced by another collaborative natural resources management innovation. In the Purús CR and the Purús NP a management plan was designed to assure environmental services and ecological functions of the watersheds, and to conserve a sustainable supply of fish. In MANWR, the PA direction and local communities set up a management plan for the control and comprehensive use of the *Arapaima gigas,* an invasive species threatening the native ichtyofauna (Van Damme, 2018; Van Damme et al., 2018).

DISCUSSION AND CONCLUSIONS

Our analysis of five Amazonian PAs shows that important progress has been made in terms of the local participation and the generation and sharing of economic benefits. However, many of the established mechanisms show major shortcomings, such as power imbalances, lack of legitimacy of decision-makers, unclear responsibilities, unresolved logistical challenges, and the lack of a continuous financial basis. Most importantly, the observed achievements relied on the engagement of NGOs funded from ODA sources, such as the IAPA project, but suffered from a lack of political commitment. Despite the fact that international agreements related to PAs, or to any other environmental issue, are signed by governments in the name of their nations, there is ample evidence that commitments such as the investments of public resources and the designation of the public apparatus to implement the international treaties domestically, is at the lower end of government's priorities in Latin American countries.

Insufficient Financial Support

Insufficient financial support and understaffing of PA systems in Latin America are the most important constraints for their effective management (Bovarnick et al., 2010; World Bank, 2013). In all countries of the region, it is the several international cooperation agencies such as IUCN, World Conservation Society (WCS), WWF, and Amazon Region Protected Areas program (ARPA), that essentially finance the management of PA while the national contribution is marginal, in Bolivia, for example, less than 1% (Bovarnick et al., 2010; World Bank, 2013). Parallel, there is an institutional weakness in enforcing regulations and to prevent encroachment.

Unclear Responsibilities

There is a lack of a clear definition of responsibilities for PA governance. A well-conserved PA depends on the collaboration between several key actors, including law enforcement departments, policymakers, local communities, and cooperation

agencies, among others. In the current shape of PA governance, the actors who are failing the most are law enforcement departments and policymakers. The authority of a PA has a key role in the facilitation, recognition, legitimation, and accomplishment of the conditions achieved for PA good governance. If not, efforts of non-state actors will have limited long lasting impact. Efforts to improve PA management and governance are likely to only have a short-term effect, because of failing governments' commitments and support, and incoherent policies. Aichi Target 11 will not be achieved if the weak commitments persist of governments making sure their national PA systems work and comply with international treaties that governments have signed on behalf of the country.

Conflicting Development Agenda

National development goals, framed as progress in economic growth, can be pointed out as the main component for the underperforming conservation commitments. For instance, 21 development projects in Bolivia, most of them related to promoting the oil and gas producing sector, are negatively affecting at least 20 PAs and indigenous territories (Página Siete, 2020). In Brazil, since 2008 a process of PA downgrading, downsizing, degazetting, and reclassification is in progress driven by the powerful agriculture and livestock sector, land conversion for rural settlements, tourism, the construction sector, and the electricity sector (Bernard et al., 2014). This process has been accelerated by the Bolsonaro administration that substantially curtailed the operational capacity of IBAMA, the countries lead environmental agency (Branford and Borges, 2019; De Area Leão Pereira et al., 2019). And, also in Peru, infrastructure projects (Actualidad Ambiental, 2017), illegal mining, and drug trafficking (Mongabay Latam, 2018) are among the most threatening activities affecting PA, especially in the Amazon region. Overall, there is evidence that 70% of PA in the entire Amazon region are at risk from infrastructure projects, energy projects, extractive industries, deforestation, and forest fires (El Universal, 2019). In fact, all Amazonian governments are constantly trying to adapt the national PA systems to the conflicting development interests of national economic elites rather than consolidating the conservation status and strengthening the rights and interest of local resource user groups representing societal and marginalized minorities.

Good governance of PA is indispensable for effective and equitable conservation (Borrini-Feyerabend et al., 2013). Accordingly, by emphasizing appropriateness and fairness of decision making processes as outlined by the Aichi Target 11, can ensure effectiveness and efficiency of PA management.

But, PA governance needs to comply with national regulations. The role of governments, therefore, is crucial to make PA governance work. Governments should take the responsibility to oblige all actors to contribute as demanded to PA good governance, rather than remain outside of the arena where negotiations and conflict resolution takes place, or worse, act in a counterproductive way and prioritize development goals over conservation goals. It can be expected that initiatives to improve PA governance through international cooperation assistance or wider participation of other actors will fail, if national governments are not willing or able to support these initiatives (FAO, 2020).

Nowadays, PA governance is still shaped by the vagaries of the national policies and politics that put at risk any conservation initiative and discourage actors' commitments to the PA underlying cause. There is a critical gap in meaning, when the foundation for decisions are not clearly agreed among actors involved in democratic decision making, and the process does not reflect the collective interests and preferences during its operationalization. There is a disparity of interests among actors involved in PA governance; communities are motivated by securing their livelihoods, the private sector is interested in the land and resources, governments may follow electoral interest, etc. As long as those interest are not openly negotiated, the effectiveness of PA governance is low, and fragile agreements will endure or function only with the massive intervention of a third party, in the present case, international cooperation agencies. Thus, the fate of nature conservation rests primarily on more active and committed actions of governments to make their national PA system successful.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

WC was the lead author of the manuscript and also obtained data and information resulting from fieldwork. WJ and BP discussed the initial idea for the manuscript. All authors developed its initial plan and outline and interactively contributed to writing the manuscript until its completion.

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