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How payments for ecosystem services can undermine Indigenous institutions: The case of Peru's Ampiyacu-Apayacu watershed

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ABSTRACT

Payments for ecosystem services have come to dominate international policies for addressing tropical deforestation. Political ecologists, degrowth scholars, and Indigenous activists have critiqued these approaches on the grounds that by centering economic growth, they can disrupt local conservation systems and compromise forest-dwelling communities' ability to protect forests and live well. Meanwhile, Indigenous groups have developed positive alternatives to 'green growth' strategies, including *buen vivir* (good living) in Latin America. In Peru, the National Forest Conservation Program (NFCP) serves as the state's flagship initiative to address tropical deforestation in Indigenous communities by paying communities for demonstrated reductions in deforestation, so long as they invest those funds according to an agreed up on management plan. We analyzed how the NFCP has interacted with quality-of-life plans, Indigenous planning tools rooted in *buen vivir*. Our findings suggest that the NFCP has eroded local systems for conservation, including the *minga,* an Amazonian tradition of mutual aid and shared labor for subsistence livelihoods, pushing communities to replace these systems with commodity production and employer-employee relationships. We argue that instead of imposing onerous conditions and steering communities towards evermore commodity production, conservation initiatives should support the implementation of quality-of-life plans. We suggest that climate justice organizers, political ecologists, and degrowth scholars explore and advocate for such initiatives.

1. Introduction

There is widespread agreement that protecting tropical forests is vital for stabilizing Earth's dangerously precarious climate system at a temperature that is safe for continued human habitation (IPCC 2021). Tropical forests provide a range of services. They help to mitigate climate change by continually sequestering carbon dioxide. Tropical forests also regulate the global water cycle, host unmatched terrestrial biodiversity, and provide natural resources that millions of people depend on worldwide. Disturbingly, however, the destruction of these ecosystems continues at a frightening pace. The Intergovernmental Panel on Climate Change reports that deforestation is directly responsible for 13% of total global greenhouse gas emissions annually (ibid). In the Amazon, the largest and most biodiverse tropical forest in the world, deforestation is increasing. From Bolsonaro's right-wing government in Brazil (Escobar, 2020) to nominally socialist Bolivia, policies promoting the production of commodities such as soybeans, palm oil, beef, and cacao have continued to drive deforestation (Hoffmann et al., 2018; Lapegna, 2016; Laso Bayas et al., 2022; Ravikumar et al., 2017).

Despite these large structural challenges, there is compelling evidence that policies that recognize the rights of Indigenous communities who have stewarded tropical forests for generations and provide them with resources to live well is effective at conserving forests (Nolte et al., 2013; Rights and Resources Initiative, 2019; Schleicher et al., 2017). Still, governments and international organizations have not provided enough support for Indigenous communities to thrive while protecting tropical forests (Sterling et al., 2017). Even as rights-based approaches to forest conservation have made inroads in international and national policy (Walters, 2019), international and national policy-makers have maintained a consensus that because economic growth must continue, it must be made 'green' (Kallis, 2021; Kothari et al., 2014; Perkins, 2019). In the context of tropical forest conservation policies targeting

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Indigenous communities, two major approaches have followed from the green growth consensus: (1) payments for ecosystem services (PES) to compensate communities for their conservation efforts, and (2) technical and technological support for communities to generate higher incomes, usually by producing or adding value to export commodities, while reducing their environmental impacts (Angelsen et al., 2018).

Despite this consensus among policy makers, Indigenous activists from the global South and North, climate justice organizers, degrowth scholars, and some mainstream environmental economists have strongly critiqued these neoliberal conservation approaches. They have argued that PES schemes have undermined Indigenous conservation strategies (Vatn, 2010), 'crowded out' people's intrinsic and cultural motivations to conserve forests with cash incentives (Agrawal et al., 2015), created conflicts, and failed to deliver results (Singh, 2015; Wunder and Ibarra, 2005). Ecofeminist scholars have emphasized that these schemes can contribute to privatizing commonly held resources, which has historically been the basis of capitalist economies (Federici, 2018; Hickel, 2020) in ways that specifically disempower and harm women (Hofmann and Duarte, 2021; Perkins, 2019).

In Peru, PES schemes targeting titled Indigenous communities have become a centerpiece of tropical forest conservation policy. Since 2010, the National Forest Conservation Program (NFCP) has signed deals with titled Indigenous communities to pay them 10 PEN (2.68 USD) per hectare that they conserve above an agreed upon historic baseline. The program requires communities to invest the funds they receive every year in activities set out in a project document, and includes extensive forest monitoring and reporting requirements. The NFCP explicitly aims to conserve 54 million hectares of Peru's forests while "promoting the development of sustainable production systems based on forests to generate income for the poorest local populations."

Going further than just poverty reduction, in 2016, the Ministry of Environment, which houses the NFCP, published its National Strategy for Forests and Climate Change which explicitly recognized the importance of aligning conservation with quality-of-life plans (commonly known as *planes de vida* in Spanish). Quality-of-life plans are organizing tools that Indigenous communities have developed based on the Indigenous Andean principle of *buen vivir* (good living). *Buen vivir* is a critique of neoliberal development that advances a broader notion of well-being than conventional conservation and development initiatives, which tend to focus narrowly on incomes and 'green growth' (Brandon, 2001; Singh, 2013; Sunderlin and Sills, 2012). Quality-of-life plans center communities' assets, rather than their deficits, and build priorities for action that leverage their cultural, social, economic, political and ecological strengths to improve their overall well-being - not just raise incomes through commodity production (Wali et al., 2017).

With a national PES scheme that nominally aims to advance Indigenous empowerment, the Peruvian Amazon presents a rich context for interrogating the prospects and limits of PES schemes in supporting Indigenous communities in advancing their priorities — including those that are not oriented towards economic growth. We begin this paper by reviewing critiques of PES schemes, focusing especially on those advanced by degrowth scholars. Next, we present literature on quality-of-life plans and *buen vivir,* arguing that these Indigenous approaches to political organizing can constitute a concrete tool in a larger policy program for degrowth. Finally, we present evidence from a case study in the Ampiyacu-Apayacu river basin in the Peruvian Amazon, where Indigenous Bora and Murui communities have worked to develop and implement quality-of-life plans since 2012, while more recently navigating fraught relationships with the NFCP. We explore the contradictions between PES and alternative conservation strategies rooted in broader Indigenous ideas.

We examine these tensions to provide more clarity into the limits of PES schemes in advancing Indigenous empowerment, contributing new evidence to political ecology literature suggesting PES schemes can undermine the very Indigenous institutions that have conserved forests historically. We argue that state conservation policy can and should instead direct conservation funding to support Indigenous communities without further entrenching the logic of perpetual growth and commodity production in ways that undermine conservation itself.

2. Critiques of PES

Payments for Ecosystem Services (PES) for tropical forest conservation aim to incentivize conservation by paying titled forest owners to conserve their forests rather than convert them to other uses or selling them to those who would (Wunder, 2005). So far, PES schemes have produced mixed results. While these schemes are informed by Coaseian environmental economic theory, environmental economists and ecologists have described how challenges related to measurement, reporting, and verification, high administrative costs, land tenure insecurity, and inadequate funding have compromised the effectiveness of these schemes (Blundo-Canto et al., 2018; Börner et al., 2017; Chervier et al., 2019).

Political ecologists have identified deeper issues with PES schemes. Norgaard (2010) argued that PES schemes serve as "complexity blinders," flattening the territories that communities use and manage for diverse ecological and sociocultural purposes into "stocks and flows." This is not merely a conceptual mismatch: Vatn (2010) points out that the high transaction costs of determining the 'value' of ecosystem services, such as forest carbon, distort the price that communities receive through these schemes. In this way, PES schemes not only 'crowd out' people's traditional reasons to conserve and manage forests (Ezzine-de-Blas et al., 2019), but end up undermining environmental justice as communities end up with far less than even the assessed value of the ecosystem services they guarantee while consultants and non-profits eat up considerable ancillary costs (McAfee, 2012). Other researchers have pointed out issues with local elite capture, cautioning that PES schemes can exacerbate inequality at multiple scales (Pascual et al., 2014).

Singh (2015) summarizes deeper issues with PES schemes from a degrowth perspective, drawing from ethnographic work in Odisha, India. She shows that tribal communities in India have long protected forests for cultural reasons, finding great joy in the act of protecting their lands. State conservation intervention had served to disrupt these Indigenous approaches to conservation, and communities were well aware of this. One of her local interlocutors commented, "If you have money to spare in Sweden, please throw it in the ocean or simply give it to the money-eating Forest Department. Do not destroy our tradition of forest conservation with your money," a comment that finds resonance with the case study that we will describe from the Peruvian Amazon in short order. Singh describes the work of caring for forests as *affective labor,* contrasted with alienated labor - in other words, people enjoy the full fruits of this work in the form of social relationships, cultural co-production, and also ecological outcomes (see also Singh, 2013).

3. Degrowth and indigenous alternatives to 'green growth'

In identifying these local critiques of PES, Singh began to point to Indigenous value systems and organizing principles that can engender conservation and present an alternative to 'green growth.' Indigenous people have articulated and named a range of alternative visions for how society can be organized in harmony with nature, including *ubuntu* in East Africa, *swaraj* in South Asia, and *sumak kawsay* in the Andean region, *ametsa asaiki* in parts of the Western Amazon, and *buen vivir* more generally in Latin America (Kothari et al., 2014).

Kothari et al. (2014) explicitly argue that these ideas are aligned with the global degrowth movement. Degrowth scholars and activists call for rapidly reducing luxury consumption in the global North, investing heavily in public housing and transit to reduce reliance on fos-

sil fuels, and deeply transforming the global economy to reduce overall material throughput (Demaria et al., 2013). While critics often contend that degrowth would harm vulnerable people who must in fact consume more food, fuel, and consumer goods to live well, degrowth advocates maintain that while overall consumption and commodity throughput must decline, their movement foregrounds environmental justice by calling calling for massive redistributions of wealth within and between countries (Hickel, 2020; Singh, 2015).

Buen vivir is a Spanish language translation of the Quechua term *sumak kawsay*. Both concepts are invoked in documents describing quality-of-life plans in Peru. Building a wide and interconnected community network, establishing kinship, and living in deep ecological harmony are all central to *buen vivir* (Jimenez and Roberts, 2019; Villalba, 2013; Whitten Jr and Whitten, 2015). In Ecuador and Bolivia, these concepts have legal standing, and were enshrined into Ecuador's 2008 Constitution (Williford, 2018). In practice, though, the application of *buen vivir* has not consistently served the interests of Indigenous and working-class people. In Ecuador, where *buen vivir* is recognized in the constitution, the principle has been used to justify oil extraction on Indigenous lands (Riofrancos, 2020; Sawyer, 2004) and to displace urban communities (Ordóñez et al., 2022), ostensibly to serve the greater national interest.

While there are tensions between extractivist and anti-extractivist politics among real-world applications of *buen vivir,* its proponents share many commitments with degrowth activists. Both articulate priorities that improve human well-being in harmony with the natural world while rejecting the idea that economic growth can be maintained forever so long as it is made 'green' (Thomson, 2011; Ziai, 2015). Scholars have identified these Indigenous movements as potentially aligned with the global degrowth movement (Hickel, 2020), but there has been little research on how these ideas can be translated into policy demands, political power, and economic resources for communities. In particular, research examining how market-based conservation strategies *interact* with these alternative Indigenous political frameworks is scarce.

In the Peruvian Amazon, where this paper is grounded, *buen vivir* has become particularly important as an organizing principle for Indigenous communities. Indigenous Amazonians in Peru have invoked *buen vivir* to advocate for more land rights (Merino, 2020). More recently, Achuar, Awajun, and Wampis communities have appealed to the principles of *buen vivir* to declare Autonomous Integral Territories, which have still not been recognized by the state (ibid). An important question that comes from these developments is, to what degree have the politics of *buen vivir* empowered Indigenous people to pursue their priorities and build alternatives to extractivist development?

Perhaps the most important tool in Peru for turning the principles of *buen vivir* into political action is the "quality-of-life plan," known most commonly in Peru as *planes de vida*. The Peruvian Ministry of Culture and the national Indigenous organization, the Interethnic Association for Development in the Peruvian Amazon (AIDESEP) have both recognized, defined, and advocated for quality-of-life plans on these terms (Henao Muñoz, 2019; Velásquez Landmann and Macedo, 2016). These organizations and other non-profits have described quality-of-life plans as tools to align international and national environmental conservation initiatives with Indigenous interests (Wali et al., 2017). Quality-of-life plans aim to give power back to Indigenous groups to determine how conservation and other funds are used in their communities, aiming to break with the often-paternalistic restrictions of older PES schemes including REDD + projects. Case-based evidence from Peru and Colombia shows that quality-of-life plans often do prioritize raising incomes through commodity production, while also emphasizing bilingual education, multicultural healthcare systems, maintaining traditional plant medicines, and improving food sovereignty by building on traditional agricultural and horticultural practices (Merino, 2021; Monje Carvajal, 2015; Wali et al., 2017). Importantly, quality-of-life plans aim to surface communal forms of labor, often known as the *minga* in the Peruvian Amazon, wherein community members help each other with agricultural, construction, and community maintenance projects according to a logic of mutual aid (Garcés Montoya et al., 2021; Panduro-Meléndez, 2020; Wali et al., 2017).

But there is little follow-up research on how these plans have translated into action, especially when communities with quality-of-life plans also enroll in PES schemes such as the NFCP. This paper asks, to what extent have quality-of-life plans empowered communities to implement priorities that matter to them? What barriers do communities face in translating these quality-of-life plans into action? And given that the Ministry of Environment explicitly recognizes in its conservation strategy the importance of these plans, is Peru's NFCP working to improve community well-being in the ways that communities themselves have identified in their quality-of-life plans?

4. Background study context

This research was carried out in the Ampiyacu-Apayacu watershed of the Loreto region of Peru. The Ampiyacu-Apayacu Regional Conservation Area was established in 2010, and forms part of a larger system of protected areas in the Ampiyacu, Apayacu, Yaguas, and Putumayo watersheds (Fig. 1).

The Field Museum of Natural History carried out a biological and social inventory of this region in coordination with the environmental non-profit, the Instituto del Bien Común, and several indigenous federations in 2003. The Ampiyacu-Apayacu basin, along with the neighboring Yaguas and Medio Putumayo-Algodón watersheds are characterized by forests situated in low hills alongside swamp forests and alluvial plains (Pitman, 2004).

The communities of the Ampiyacu-Apayacu watershed are largely ethnically Bora and Huitoto Murui, and both the Bora and Murui languages are commonly spoken alongside Spanish. Members of other groups have also intermarried into these villages. Like elsewhere in the Peruvian Amazon, this region has seen multiple waves of migration and resettlement caused by abusive colonial and neocolonial regimes. During the late 19th century rubber boom in Peru and Colombia, rubber barons forced indigenous peoples, including the Bora and Huitoto Murui, into debt-peonage, coercing them to extract rubber. Between 1899 and 1914, indigenous populations were decimated by this brutal regime as rubber barons commonly murdered and mutilated them as punishment for "inadequate" rubber harvests, while they were also subjected to deadly diseases like smallpox to which they had no resistance (Alvira Reyes et al., 2016; Chirif, 2017). The epicenter of the rubber boom in this part of the Amazon was the Caquetá and Putumayo watersheds, primarily in what is today Colombia.

When Amazonian rubber was replaced by cheaper rubber from British plantations in southeast Asia in the 1910s, rubber barons like Carlos and Miguel Loayza forcibly relocated indigenous peoples to the Ampiyacu and Apayacu river basins to grow crops, raise cattle, and harvest newly valuable forest products including timber and tree resins (Chirif, 2011). In 1933, a border conflict broke out between Peru and Colombia, and the former rubber barons forcibly moved an additional 6719 people, primarily Huitoto Murui, to the Ampiyacu river basin. Many died of disease during this time (ibid). The settlements that are today known as Huitotos de Pucaurquillo and Boras de Pucaurquillo, two of our study sites, were informally established at this time.

In the 1950s and 1960s, the region experienced another economic boom as European demand for wild cat, peccary, and caiman pelts drove hunting and trapping in the region (Alvira Reyes et al., 2016). During this time, religious missionaries arrived in the region, converting many local people to Christianity and enrolling children in Spanish-language schools. In the subsequent decades, demand grew for Amazonian timber, and local people were drafted into timber crews. Severe violence struck the region in the 1990s as armed groups from Peru and

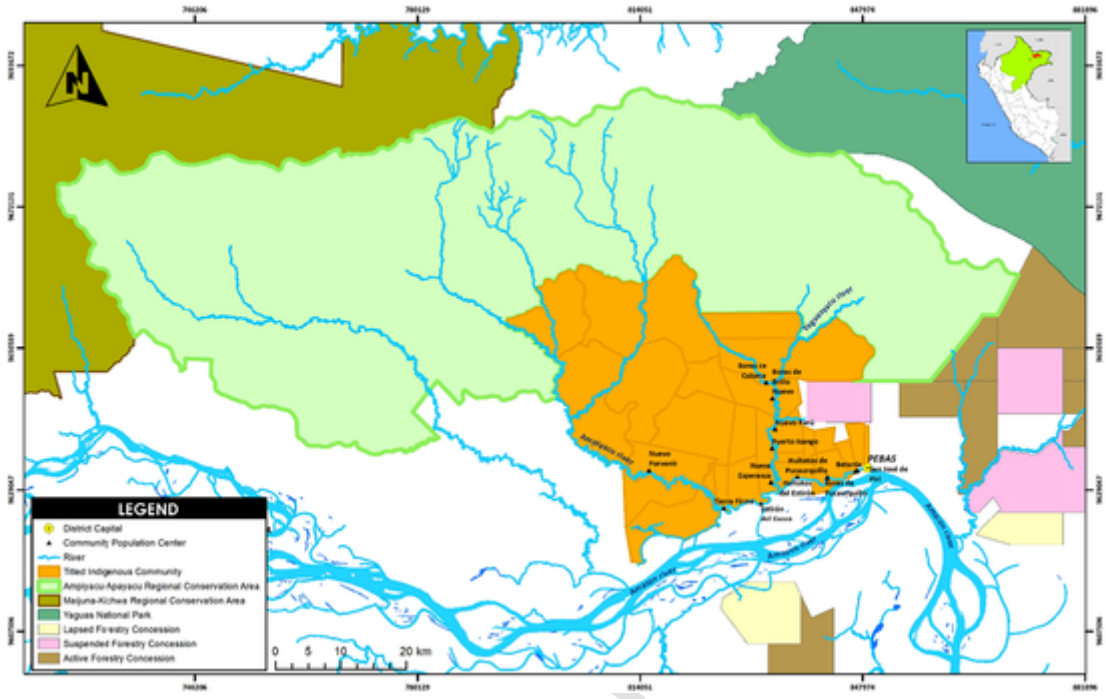

Fig. 1. Map of Ampiyacu-Apayacu Regional Protected Area and surrounding Indigenous communities. Map by Jose Luis Jibaja, Instituto del Bien Común).

Colombia fought the state and paramilitary groups (ibid). Prior to The Field Museum's inventory of this landscape in 2003, the community had been facing ecological threats from outside logging, along with fishing and hunting. In the Field Museum's 2003 inventory, indigenous participants in focus groups and interviews explained that these ecological threats were exacerbated by limited government services and sustained out-migration into cities.

Despite these traumatic historic upheavals and more recent challenges, local people have retained and re-established sophisticated agricultural and agroforestry systems, hold highly sophisticated knowledge of the local flora and fauna and their uses, and have used these assets to conserve their forests and ecosystem services. The Field Museum's rapid inventory was used by the local indigenous organization, FECONA (Federation of Native Communities of the Ampiyacu-Apayacu Basin) and their allies to lobby for a conservation area that would empower communities. In 2010, this coalition secured a major victory when the Peruvian government approved a Regional Conservation Area. In 2012, the Field Museum and the Instituto del Bien Común began working with local communities to develop quality-of-life plans that they could use to implement local priorities that improve their well-being and secure resources from government and non-governmental agencies to support them. These quality-of-life plans were completed and were considered active until 2015, when another round of plans were created to be active for the next five years.

In 2017, the National Forest Conservation Program (NFCP), a conditional cash transfer program administered by the Peruvian Ministry of Environment that aims to provide economic rewards to indigenous communities for conserving forests, made an agreement to work with communities in the watershed. In this context, we began this research to see whether quality-of-life plans had empowered communities to implement their priorities and to direct conservation funding to activities that made sense to them.

5. Methods and site selection

We carried out semi-structured interviews, focus group sessions, and participant observation in four communities in the Ampiyacu-Apayacu watershed between June and July of 2018. In June and July of 2019, we returned to the research villages to return our preliminary results, make modifications based on community feedback, and carry out follow-up interviews in collaboration with the local Indigenous organization, the Federation of Native Communities of Ampiyacu. The communities that we visited were Boras de Pucaurquillo, Huitotos de Pucaruquillo, Boras de Brillo Nuevo, and Tierra Firme. We selected these communities because they had active quality-of-life plans, were enrolled in the government's National Forest Conservation Program (NFCP), and reflected the diversity of the watershed in terms of population size, ethnicity, and proximity to markets (see Table 1).

Table 1
Community priorities in quality-of-life plans from 2012 to 2015.

Community priorities 2012–2015	Priority 1	Priority 2	Priority 3	Priority 4
Huitotos de Pucaurquillo	Increase women's artisanal crafts using chambira fiber	Improve vigilance & control of protected area	Raise incomes through sustainable fish management	
Boras de Pucaurquillo	Increase women's artisanal crafts using chambira fiber	Raise incomes through sustainable fish management	Revitalize bilingual education and indigenous culture including dance	Secure rights to expanded territory
Boras de Brillo Nuevo	Improve vigilance & control of protected area	Increase women's artisanal crafts using chambira fiber	Revitalize bilingual education and indigenous culture including dance	Raise incomes by connecting agricultural products to markets
Tierra Firme	Increase women's artisanal crafts using chambira fiber	Manage yarina palm fiber for craftwork	Revitalize bilingual education and indigenous culture including dance	Raise incomes by connecting agricultural products to markets

Community	Number of families	Hours in boat to town of Pebas
Boras de Pucaurquillo	20	0.5
Huitotos de Pucaurquillo	49	0.5
Boras de Brillo Nuevo	61	7
Tierra Firme	18	5

The first author of this paper had previously worked with The Field Museum and had collaborated with members of the local Indigenous Federation on projects, and had existing relationships with community leadership. We arranged with the community leaders to convene an assembly to explain the nature of the project. Community members shared their perceptions of quality-of-life plans and the National Forest Conservation Program in these assemblies. In the assembly itself, we carried out several group activities.

1. We constructed a participatory timeline of events related to the creation and management of the Ampiyacu-Apayacu Regional Conservation Area, the elaboration and implementation of quality-of-life-plans, and the NFCP.
2. The community leader helped us to identify community members who had participated in quality-of-life planning processes and had received benefits from the NFCP. We worked with women, men, and youth in separate groups of 5–7 people to map natural resource use and hear perspectives on how their environment had changed over time.
3. We used a visual actor-mapping tool to describe the main state and non-state organizations that the communities had relationships with, and heard perspectives on the nature of these relationships (whether they were positive, mixed, or negative, and why)

After these group activities, we asked the community leaders to help us identify willing community members to sign up for specialized focus groups to ask about specific activities that were in their quality-of-life plans, including women's artisanal crafts, reforestation, and improved cacao cultivation. We also asked people to sign up for convenient times when we could visit them at home and carry out semi-structured interviews. The community chiefs told us that these respondents were broadly representative of others who participated in similar activities, but it is possible that there were some differences that we could not observe.

During these interviews, we asked people about their experiences with quality-of-life plans, the specific benefits they had derived from the NFCP, and to report on concerns they had with the program. We also asked people to report on how the NFCP had supported or not supported priorities laid out in quality-of-life plans. Finally, we asked people to report on their level of engagement with the processes of both creating quality-of-life plans and entering the NFCP. We interviewed community members who did not directly receive benefits from the NFCP, but who had received wages for working on NFCP-funded projects that other community members had received. In addition, we spent extended periods of time with volunteers who invited us to visit their farms, accompany them on fishing trips, or view reforestation areas. In total, 120 community members participated in assemblies and focus groups, and we interviewed 40 individuals in 2018 and another 20 in 2019.

We supplemented community-level work with semi-structured interviews with government functionaries and environmental non-profit staff. At the national level, we interviewed two staff from the National Protected Area Service, two from the NFCP, two from the Ministry of Culture, and two from the Ministry of Development and Social Inclusion. We also interviewed two staff from the Loreto regional government's Regional Environmental Authority, an Indigenous municipal councilor and the Mayor of the Pebas municipality (where the communities are located), and four staff from regional environmental non-profits. We used QSR Nvivo software to code and analyze data from both focus groups and interviews. We coded the interviews to highlight positive and negative perceptions of the NFCP, consonance or dissonance between the NFCP and quality-of-life plans. We also added codes for specific issues a number of specific issues that came up during interviews, including experiences with specific NFCP-funded projects, discussions about access to basic services such as healthcare and education, people's assessment of how these processes had or had not empowered them to advocate for their needs, and how traditional institutions had been impacted by the NFCP.

6. Case study: How quality-of-life plans interact with PES in four Amazonian communities in Peru

6.1. Had quality-of-life plans empowered communities?

All four quality-of-life plans identified key assets that informed the communities' priorities:

1. Rich subsistence-based shifting cultivation practices for growing cassava and plantains and managing fiber and fruit producing crops in fallows and secondary forests
2. Social systems for mutual aid based on kinship networks, including community support for clearing fields, planting, harvesting, maintaining communal areas, and sharing bushmeat and fish. The ethic of shared work and mutual aid is known locally as the *minga,* and it is a core element of traditional livelihoods
3. Strong formal organizations that worked to obtain land titles and secure management rights in the co-managed protected area, along with deep strategic knowledge about state and non-state organizations who can serve as allies
4. Deep knowledge of medicinal plants and artisanal craft traditions using local materials among women

In this context, communities worked to identify key priorities in their quality-of-life plan in 2012, described in Table 1 below. Benavides and Montes (2021) documented the methods used to generate these plans. In principle, the priorities listed in quality-of-life plans emerge from the rigorous "asset mapping" process that takes stock of social, economic, ecological, cultural, and political knowledge and resources. The priorities are generally similar across communities because the communities shared many of these assets.

There had been substantial progress in all the common priorities areas according to community members who we spoke with in focus groups, although they voiced concerns about implementation for some of them. In all of the communities we visited, women had worked with partner organizations to develop their skills in making handbags and crafts to sell to local markets using the fiber of the *chambira* palm, which grows in secondary forests managed by communities. At the same time, eight women who participated in a joint focus group discussion about artisanry between Huitotos and Boras de Pucaurquillo reported that profit margins were thin and income was unreliable at best. All communities had bilingual education in place, which was not as well-supported before. Communities were also uniformly participating in the management of the protected area, primarily by organizing patrols and by monitoring biodiversity in collaboration with the regional government. Overall, many of the priorities identified by communities in 2012 had been implemented in some measure by 2018.

During the same period, the four communities had also accepted other development projects that were not in the quality-of-life plans. The regional agricultural extension agency PEDICP (Special Project for Integrated Development in the Putumayo Watershed) had enrolled some community members in the production of cacao. According to five cacao producers we spoke with, they had accepted these initiatives on an individual basis, shifting from mixed agricultural systems to ca-

cao despite not having expertise or experience. We did not systematically collect figures on the costs and revenues of these projects, but of the five cacao growers we spoke with within Boras de Pucaurquillo and Huitotos de Pucaurquillo, four reported that they were unsatisfied with the revenues that they had realized. There was also a state initiative to develop ecotourism infrastructure, supported by the Peruvian Forest Service. This initiative is still being developed, but its benefits have primarily accrued to community members in the form of wages for building infrastructure such as bridges and signage. One worker we spoke with said that he was happy for the wage, but was not sure how the project would impact the community in general, nor did he believe that it had been adequately discussed.

One stated objective of quality-of-life plans is to allow communities to reject projects that do not align with their priorities or do not build on their existing social, ecological, and cultural assets. In community assemblies in Boras de Pucaurquillo and Huitotos de Pucaurquillo, participants explained during a participatory timeline activity that private loggers and miners used to work with the community, often framing their activities as "development projects." These agreements generally had unfavorable benefit sharing terms and caused damage to important ecosystems. One woman from Boras de Pucaurquillo told us that after developing quality-of-life plans and establishing the protected area, they no longer work with these groups and do not allow them access to their lands: "those loggers are not project-providers; they are scammers." This very same expression was repeated in three additional interviews, and the fact that outside extractivists were no longer welcome was confirmed without exception by community members we spoke with. More precisely, a respondent from Boras de Pucaurquillo told us that by going through the process of reflecting on community assets, articulating a vision for the future, and participating in the governance of the regional conservation area, the people in her community had changed their conception of these extractive industries, viewing them as no longer compatible with their goals.

While communities had begun to reject some private projects, state agencies had continued to bring in small "development projects" including chicken coops and fish farms. These projects have had mixed results, echoing similar patterns elsewhere in the Peruvian Amazon (Alvira Reyes et al., 2016). These projects do not correspond to the main challenges that community members identified in their quality-of-life plans, including limited access to health services, concerns about being able to fund their children's education, and having enough cash on hand to buy nutritious food when they are unable to produce it themselves. Thus, there is a disconnect between the programs that government agencies had offered and what community members said they needed.

After noticing these dynamics in early assemblies and discussions, we asked community members explicitly to explain this disconnect to us. According to the elected leader of Huitotos de Pucaurquillo, "if the state comes to us with a project, we feel like we have to say yes. If we say no, or try to tell them how to do it, we may end up with nothing. If we accept it, then at least we end up with something. So we do not use quality-of-life plans to reject projects. That said, if an outside organization offers us a deal that will harm our environment, including logging or mining, we will refuse that immediately." We now turn to assessing how the NFCP, a PES scheme and Peru's flagship policy instrument for conserving tropical forests on Indigenous lands, has interacted with quality-of-life plans and community priorities.

6.2. Payments for environmental services and the Erosion of the Minga

6.2.1. The NFCP did not recognize or seek to implement quality-of-life plans

In the Ampiyacu-Apayacu watershed, community respondents were unanimous about one point regarding the NFCP: no staff from the NFCP, during their initial discussions with the community, inquired about existing planning processes or community priorities. However, community members also did not bring quality-of-life plans to the attention of the NFCP. After a meeting in the municipal capital of Pebas with the NFCP director, the president of the Huitotos de Pucaurquillo community suggested that it was the government's responsibility to be proactively aware of existing initiatives such as quality-of-life plans, and to take steps to work in concert with them:

> The executive director of the NFCP said on Wednesday that quality-of-life plans are bigger and broader in scope than the NFCP is, and are more far-reaching than the investment plans that guide the NFCP. However, it seemed to us at first as if the national and regional governments were unaware of quality-of-life plans, and if they are not familiar with them, then we as a community cannot be responsible for educating them… they need to understand what a quality-of-life plan is, and when they offer us projects, they need to do so in accordance with quality-of-life plans!

Indeed, the investment plans that the NFCP helped communities create diverged wildly in their content from existing quality-of-life plans. According to a community member who participated in the process in Tierra Firme, a program staffer put up a large piece of paper in the community meeting center, and asked community members to name economically productive projects. Naming what was familiar, community members listed farming fish, rearing chickens, cultivating cacao in agroforestry systems, and reforestation (planting fruit trees in secondary forests that had been cleared after use for crop cultivation to restore tree cover and sell fruit) as potential options. These were not the priorities reflected in communities' quality-of-life plans, and this was the extent of the process. Moreover, the NFCP asked community members to select one of these options to participate in as a household unit. They were then given a budget to use to develop their project and paid wages to carry out labor, buy materials, and build physical structures such as chicken coops.

In many cases, community members reported selecting these projects without adequate information about their consequences, and without training or prior knowledge of how to manage them. One woman described her experience after selecting the chicken coop option in Boras de Brillo Nuevo:

> My family selected chicken raising, even though we didn't know how to manage it. We had never managed chickens before. I don't want to hear about chickens ever again; they gave me three months of feed, and a little bit of corn to plant to feed them. After 2.5 months, the corn was no longer productive enough, the chickens died, and I was left with nothing!

6.2.2. The NFCP imposed overly burdensome bureaucratic requirements

Communities were required to rigorously keep receipts documenting how they spent their funds to show that the funds were in fact deployed in a manner consistent with their investment plans. Communities are not permitted to save NFCP revenues from year to year; they must spend all of their income from the program in the calendar year that they receive it. Failure to comply with these requirements would cause communities to be removed from the NFCP. Our interviews with community members in 2018 and in 2019 revealed growing dissatisfaction and problems with the NFCP.

In all interviews and focus groups, community members agreed that the number of conditions placed upon them by the NFCP was inappropriate and inconsistent with their autonomy and sovereignty. According to a leader from Huitotos de Pucaurquillo, "receiving these payments with so many conditions does not work for us. The program says that it is our money, and yet we are required to show receipts for every single expenditure. If it is really our money, given that we have done the work of conserving the forest for everyone, we should be able to do what we please with it."

While we were carrying out field work in 2019, issues over communities' handling of receipts had come to a head. Many receipts had been

lost, and the NFCP accused community members of using the money for expenditures not aligned with the "investment plans" that NFCP required. Communities were on the verge of being kicked out of the program for these inconsistencies, and demanded an audience with the NFCP to address the issue. The director of the NFCP traveled from Lima to the municipal capital of Pebas to meet with community leaders and resolve the situation. We were present at this meeting on Wednesday, June 26th, where community leaders voiced their concerns. Some community leaders frankly expressed their dismay at the difficulty of complying with the NFCP's rigorous reporting requirements. Others pledged to do better in making sure that they spent money to the NFCP's satisfaction, apparently accepting the premise that the NFCP has legitimacy in dictating these terms. Eventually, the NFCP found a way to retroactively rectify the accounting problems. However, it was not clear that there was a strategy to ensure that these issues would not emerge again. In large measure, this has to do with the way that 'investment plans' were created, and how they related to other initiatives, including quality-of-life plans.

6.2.3. The NFCP eroded local systems of mutual aid and shared labor

The *minga* is an important institution in indigenous communities of the Peruvian Amazon. It refers to communal work projects, built on a logic of reciprocity and mutual aid. People commonly describe the ethic of the *minga* as "I help you, you help me." People in the Ampiyacu-Apayacu watershed work in *mingas* to clean shared spaces in the village, to clear a household's plot of trees and vegetation before they sow crops, to harvest, and to build dwellings. The *minga* is commonly associated with non-commodity crops. It is an important strategy for maintaining secondary forests and shifting cultivation, which supports biodiversity and long-term forest cover (Chibnik and de Jong, 1989; Coomes, 1996; Hiraoka, 1985; Van Vliet and Gomez, 2015).

According to community members we interviewed, the projects that the NFCP promoted in Ampiyacu-Apayacu through its investment plans eroded the *minga* as an institution. According to three families in Boras de Pucaurquillo and Huitotos de Pucaruquillo who had chosen to build chicken coops, they hired their neighbors and relatives to help with this labor, creating employer-employee relationships where egalitarian kinship networks had previously prevailed. According to one resident of Huitotos de Pucaurquillo who selected cacao agroforestry, he now hires other community members to work on his plot. Another community member who selected reforestation also hires people to work on her plot growing fruit trees. The main goal of these NFCP-sponsored projects is to produce for sale on the market, rather than for subsistence. In focus groups in all communities, we were told that the NFCP projects were largely built to expand wage labor opportunities.

Our results broadly show that the benefits of the program are not accruing equally to all community members. Community members who worked as hired hands for other communities also reported their frustration with these dynamics. In Boras de Pucaurquillo, we interviewed three community members who did not directly receive any project at all from the NFCP. Two were not present during the meetings where projects were allotted to community members, and one was present but did not feel she understood the program well enough to sign up. They all expressed resentment at seeing their neighbors benefit from the project, while their only gain was several days of wages building chicken coops and working to manage a secondary forest plot for fruit trees.

There is one notable exception to this pattern in the community of Tierra Firme. Tierra Firme is the smallest of the communities that we studied. In Tierra Firme, they deliberately organized to insist that NFCP funds be allocated primarily towards collective projects, including a community health clinic and a school. In this small community, there are regular *mingas,* the Murui language is widely spoken, and commodity crop production is extremely limited. In other communities, it was not clear to residents that allocating NFCP funds primarily to collective infrastructure projects was even an option, and NFCP staff did not present it as an alternative in community meetings.

7. Discussion

The communities of the Ampiyacu-Apayacu basin have successfully protected tropical forests through traditional cultivation, hunting, and fishing strategies back-stopped by non-commodity oriented social systems of shared labor and mutual aid for generations. Our results reveal that they have continued to organize successfully to implement priorities that build on their strengths, knowledge, and values, including artisanry, shifting cultivation, and wild fish management. Meanwhile, the National Forest Conservation Program's funding has worked at cross-purposes to these community's goals while undermining the *minga*, a key Indigenous system for shared labor and mutual aid, that they have relied on historically to live well and conserve their environment.

The quality-of-life plans that these communities developed reflect the principles of *buen vivir* and called for maintaining the *minga* as an institution for mutual support. Rather than singularly emphasizing income-generating activities and economic growth, their plans highlighted a variety of activities that would improve people's lives on their own terms. Our results show that the NFCP did not support the implementation of these plans, raising an important question: is it even possible for a market-based PES instrument like the NFCP to empower Indigenous communities to carry out activities that improve life and support environmental stewardship, but are not oriented towards 'green' economic growth?

Fundamentally, the NFCP is built on the logic that communities should be given money *as a reward* for demonstrated environmental outcomes, and subject to strict conditions of how this money is spent. These ecological and financial monitoring requirements emerge logically from the principles of Coaseian environmental economics and 'green growth' respectively. Each of these principles, which have guided the NFCP and other PES schemes around the world, foreclose other possibilities and visions for deploying conservation funds. The NFCP's Coaseian environmental economics requires that funds only be delivered to communities in exchange for a verifiable ecosystem service: namely, forest conservation and carbon storage. But there are other principles that could instead be used to justify delivering funds to communities, for example repairing the historical harm that was done to communities during successive waves of colonization and commodity booms (Tuck and Wayne Yang, 2012) supporting Indigenous people's ability to thrive as part of a rights-based approach to conservation (Rights and Resources Initiative, 2019), or providing Indigenous people with the necessities of life due to all people (Hickel, 2020).

The NFCP appeals to the principles of 'green growth' to justify its onerous requirements around how communities spend program money. In 2019, the head of the program told us that they sought to "teach people to fish, rather than simply give them fish." This trite justification for the program supervising how communities use the funds they receive and punishing them when they deviate from the plan reflects a more explicit commitment from the NFCP to promote more sustainable value chains for commodity crops such as coffee and cocoa ("Estrategia Nacional sobre Bosques y Cambio Climático,", 2016). Valeria Biffi Isla (2021) carried out research on the NFCP with Indigenous Kichwa and Awajún people, and found a similar result - she argued that the Program was creating and expanding an "audit culture" among Indigenous communities that can cause either backlash or disrupt local institutions that favor conservation. The program's insistence that people treat conservation funds as 'investments' that generate cash incomes drives this audit culture as the program wants to ensure that its investments are being used to generate what amounts to economic growth.

Our case study revealed that the NFCP had worked to disrupt the *minga*, the characteristic Amazonian system of mutual aid and labor sharing, by funding "projects" for individual families, creating new em-

ployer-employee relationships. The *minga* does not aim to spur economic growth by increasing cash incomes or commodity yields. Instead, it serves to support community members in need, maintain common spaces that benefit everyone, and preserve traditional subsistence shifting agricultural systems (see also Wali et al., 2017). When a cocoa farmer in Boras de Pucaurquillo told us that "when people see that you are receiving money from the NFCP, if they aren't, they will likely end up just working for you…nowadays, we don't do *mingas* as much," he was succinctly describing how the NFCP scheme was disrupting local institutions that promote conservation. The *minga* can be thought of as a form of what Singh (2013) calls *affective labor,* in which people can enjoy the full social, cultural, and ecological fruits of their work, and our case study reveals how PES schemes are replacing *affective labor* with exploited or alienated labor. In this way, our case study contributes empirical evidence to a body of scholarship critical of PES schemes by showing *how* they can serve to replace subsistence production systems and kinship-based mutual aid with growth-oriented production systems built on employer-employee relationships.

Degrowth scholars and political ecologists have developed sophisticated critiques of PES schemes. This paper supports several of these critiques. Our results reinforce Norgaard's argument (2010) that market-based conservation policies flatten complex territorial management into systems that generate stocks and flows. Our results also show that this 'flattening' does not just occur with respect to carbon, the ecosystem service directly at issue for the NFCP; instead, the NFCP has applied its logic of stocks and flows more broadly, pushing communities to think about their entire territory as a source of income-generating commodities. Our findings also provide support for larger critiques of 'green growth' by revealing a contradiction between Indigenous priorities and visions for future and a growth-oriented conservation scheme on the other.

These patterns are not unique to PES schemes, but can also apply more generally to state conservation schemes in Indigenous territories. As an Indigenous community member from Odisha, India proclaimed in response to state Joint Forest Management schemes in Singh's, 2015 study, "do not destroy our tradition of forest conservation with your money." This fear of outside conservation schemes destroying traditions of conservation finds resonance with the decline of the *minga* that we observed. While the scheme at issue in Singh's study was not a PES scheme, it shared the NFCP's market-oriented logic as a conservation scheme that aimed to generate incomes through forestry activities. The implication is that PES schemes are not uniquely responsible for degrading local institutions, but may form part of a larger trend in conservation, including the long-standing mixed record of Integrated Conservation and Development schemes (Brandon, 2001).

Quality-of-life plans in Indigenous Amazonian communities reflect the ideas of *buen vivir*, and tend to prioritize needs and activities that are consonant with existing values and practices like the *minga.* Degrowth scholars who have called for large public investments in meeting people's basic needs while transferring resources from the global North to the South would do well to engage with these tools as a pathway to operationalize global degrowth programs. The quality-of-life plans in the communities who participated in this study did not focus myopically on income-generating activities, although incomes were important to people, but rather emphasized maintaining customary agricultural practices and improving services such as healthcare and education. If conservation funds were used to help communities to implement these priorities, rather than push for more commodity production, Indigenous communities would be more effectively empowered to protect tropical forests in ways that make sense to them. In this way, our research shows that the NFCP in Peru, like many PES schemes and other conservation programs, has undermined instead of supported local institutions. Climate justice organizers, degrowth scholars and activists, and international donors should learn from these experiences and advocate that conservation resources provide for the needs of Indigenous forest stewards on their terms, pushing back against conventional schemes that so often fail because of the deep contradictions between Indigenous empowerment and 'green growth.'

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References

Agrawal, A., Chhatre, A., Gerber, E.R., 2015. Motivational crowding in sustainable development interventions. Am. Polit. Sci. Rev. 109, 470–487.
Allan, R.P., Hawkins, E., Bellouin, N., Collins, B., 2021. IPCC, 2021: Summary for Policymakers.
Alvira Reyes, D., Ordoñez, A.B., del Campo, Á., Chase, R., Claramunt, S., Heilpern, S., Pitman, N., Ravikumar, A., Grández, B.R., Rodríguez, A.R.S., et al., 2016. Perú. Medio Putumayo-Algodón, Field Museum of Natural History.
Angelsen, A., Martius, C., De Sy, V., Duchelle, A.E., Larson, A.M., Pham, T.T., 2018. Transforming REDD+: Lessons and New Directions. Center for International Forestry Research (CIFOR), Bogor, Indonesia.
Benavides, Margarita, Montes, María Rosa, Instituto del Bien Común, 2021. Guía metodológica para la elaboración de planes del buen vivir. https://ibcperu.org/wp-content/uploads/2021/09/BUEN-VIVIR-DESCARGABLE_PDF.pdf. (Accessed 10 May 2022).
Biffi Isla, V., 2021. Los efectos de estado de la política pública ambiental en territorios indígenas. Anthropologica 39, 11–35.
Blundo-Canto, G., Bax, V., Quintero, M., Cruz-Garcia, G.S., Groeneveld, R.A., Perez-Marulanda, L., 2018. The different dimensions of livelihood impacts of payments for environmental services (PES) schemes: a systematic review. Ecol. Econ. 149, 160–183.
Börner, J., Baylis, K., Corbera, E., Ezzine-de-Blas, D., Honey-Rosés, J., Persson, U.M., Wunder, S., 2017. The effectiveness of payments for environmental services. World Dev. 96, 359–374.
Brandon, K., 2001. Moving beyond integrated conservation and development projects (ICDPs) to achieve biodiversity conservation. Tradeoffs Synerg. 417–432.
Chervier, C., Le Velly, G., Ezzine-de-Blas, D., 2019. When the implementation of payments for biodiversity conservation leads to motivation crowding-out: a case study from the cardamoms forests, Cambodia. Ecol. Econ. 156, 499–510.
Chibnik, M., de Jong, W., 1989. Agricultural labor organization in ribereño communities of the peruvian amazon. Ethnology 28, 75–95.
Chirif, A., 2011. El auge del caucho o el juego de las apariencias. Libro Azul Británico Inf, Roger Casement Otras Cartas Sobre Las Atrocidades En El Putumayo Lima IWGIA-CAAAP.
Chirif, A., 2017. Después del Caucho. Mana, International Work Group on Indigenous Affairs (IWGIA), Lima, Peru.
Coomes, O.T., 1996. Income formation among Amazonian peasant households in northeastern Peru: empirical observations and implications for market-oriented conservation. Yearb. Conf. Lat. Am. Geogr. 22, 51–64.
Demaria, F., Schneider, F., Sekulova, F., Martinez-Alier, J., 2013. What is degrowth? From an activist slogan to a social movement. Environ. Values 22, 191–215.
Escobar, H., 2020. Deforestation in the Brazilian Amazon is still rising sharply. Science 369.
Estrategia Nacional sobre Bosques y Cambio Climático, 2016.
Ezzine-de-Blas, D., Corbera, E., Lapeyre, R., 2019. Payments for environmental services and motivation crowding: towards a conceptual framework. Ecol. Econ. 156, 434–443.
Federici, S., 2018. Re-Enchanting the World: Feminism and the Politics of the Commons. Pm Press.
Garcés Montoya, Á., Velásquez, A., Sanabria Bohada, D., Hurtado, F., Acosta, G.L., Jiménez García, L., Hernández, M.J., Ángel, S., Zapata Aguirre, S., Ospina Mesa, V., 2021. Minga de saberes metodológicos: Comunicación-Territorio-Buenos vivires. Red Diálogo de Saberes en Comunicación y Buen Vivir, Medellín, Colombia.
Henao Muñoz, M., 2019. Construcción del plan de vida comunitario en la vereda San Lorenzo-Alejandría. Universidad de Antioquia, Municipio de Alejandría-Antioquia.
Hickel, J., 2020. Less Is More: How Degrowth Will Save the World. William Heinemann.
Hiraoka, M., 1985. Floodplain farming in the Peruvian Amazon. Geogr. Rev. Jpn. Ser. B 58, 1–23.
Hoffmann, C., Márquez, J.R.G., Krueger, T., 2018. A local perspective on drivers and measures to slow deforestation in the Andean-Amazonian foothills of Colombia. Land Use Policy 77, 379–391.

Hofmann, S., Duarte, M.C., 2021. Gender and natural resource extraction in Latin America. Eur. Rev. Lat. Am. Caribb. Stud. Eur. Estud. Latinoam. Caribe 39–63.
Jimenez, A., Roberts, T., 2019. Decolonising neo-liberal innovation: Using the Andean philosophy of 'buen vivir'to reimagine innovation hubs. In: 15th International Conference on Social Implications of Computers in Developing Countries (ICT4D), Dar es Salaam, Tanzania. pp. 180–191.
Kallis, G., 2021. Limits, ecomodernism and degrowth. Polit. Geogr. 87, 102367. https://doi.org/10.1016/j.polgeo.2021.102367.
Kothari, A., Demaria, F., Acosta, A., 2014. Buen Vivir, degrowth and ecological Swaraj: alternatives to sustainable development and the green economy. Development 57, 362–375.
Lapegna, P., 2016. Soybeans and Power: Genetically Modified Crops, Environmental Politics, and Social Movements in Argentina. Oxford University Press.
Laso Bayas, J.C., See, L., Georgieva, I., Schepaschenko, D., Danylo, O., Dürauer, M., Bartl, H., Hofhansl, F., Zadorozhniuk, R., Burianchuk, M., 2022. Drivers of tropical forest loss between 2008 and 2019. Sci. Data 9, 1–8.
McAfee, K., 2012. The contradictory logic of global ecosystem services markets. Dev. Chang. 43, 105–131. https://doi.org/10.1111/j.1467-7660.2011.01745.x.
Merino, R., 2020. Rethinking indigenous politics: the unnoticed struggle for self-determination in Peru. Bull. Lat. Am. Res. 39, 513–528.
Merino, R., 2021. Buen vivir and the making of indigenous territories in the Peruvian Amazon. Lat. Am. Perspect. 48, 136–151.
Monje Carvajal, J.J., 2015. El plan de vida de los pueblos indígenas de Colombia, una construcción de etnoecodesarrollo. Luna Azul 29–56.
Nolte, C., Agrawal, A., Silvius, K.M., Soares-Filho, B.S., 2013. Governance regime and location influence avoided deforestation success of protected areas in the Brazilian Amazon. Proc. Natl. Acad. Sci. 110, 4956–4961.
Ordóñez, M.F., Shannon, K., d'Auria, V., 2022. The materialization of the Buen Vivir and the rights of nature: rhetoric and realities of Guayaquil Ecológico urban regeneration project. City Territ. Archit. 9, 1–17.
Panduro-Meléndez, R., 2020. Género, biodiversidad y soberanía alimentaria en los ecosistemas del Alto Mayo, Pósic, Rioja, San Martín-el caso de la campesina Carolina Ocampo Soplac. Rev. Investig. Agrar. 2, 6–17.
Pascual, U., Phelps, J., Garmendia, E., Brown, K., Corbera, E., Martin, A., Gomez-Baggethun, E., Muradian, R., 2014. Social equity matters in payments for ecosystem services. Bioscience 64, 1027–1036.
Perkins, P.E. (Ellie), 2019. Climate justice, commons, and degrowth. Ecol. Econ. 160, 183–190. https://doi.org/10.1016/j.ecolecon.2019.02.005.
Pitman, Nigel, 2004. Perú : Ampiyacu, Apayacu, Yaguas, Medio Putumayo /. Field Museum, Environmental and Conservation Programs, Chicago, Ill. https://doi.org/10.5962/bhl.title.96683.
Ravikumar, A., Sears, R.R., Cronkleton, P., Menton, M., Pérez-Ojeda del Arco, M., 2017. Is small-scale agriculture really the main driver of deforestation in the Peruvian Amazon? Moving beyond the prevailing narrative. Conserv. Lett. 10.
Rights and Resources Initiative, 2019. Secure Indigenous Peoples and Community Land Rights as a Nature-Based Solution to Climate Change. UN Secr. Gen. Clim, Action Summit.
Riofrancos, T., 2020. Resource radicals. In: Resource Radicals. Duke University Press.
Sawyer, S., 2004. Crude chronicles. In: Crude Chronicles. Duke University Press.
Schleicher, J., Peres, C.A., Amano, T., Llactayo, W., Leader-Williams, N., 2017. Conservation performance of different conservation governance regimes in the Peruvian Amazon. Sci. Rep. 7, 11318.
Singh, N.M., 2013. The affective labor of growing forests and the becoming of environmental subjects: rethinking environmentality in Odisha, India. Geoforum 47, 189–198.
Singh, N.M., 2015. Payments for ecosystem services and the gift paradigm: sharing the burden and joy of environmental care. Ecol. Econ. 117, 53–61.
Sterling, E., Ticktin, T., Morgan, T.K.K., Cullman, G., Alvira, D., Andrade, P., Bergamini, N., Betley, E., Burrows, K., Caillon, S., Claudet, J., Dacks, R., Eyzaguirre, P., Filardi, C., Gazit, N., Giardina, C., Jupiter, S., Kinney, K., McCarter, J., Mejia, M., Morishige, K., Newell, J., Noori, L., Parks, J., Pascua, P., Ravikumar, A., Tanguay, J., Sigouin, A., Stege, T., Stege, M., Wali, A., 2017. Culturally grounded indicators of resilience in social-ecological systems. Environ. Soc. Adv. Res. 8.
Sunderlin, W.D., Sills, E.O., 2012. REDD + projects as a hybrid of old and new forest conservation approaches. Anal. REDD. p. 177.
Thomson, B., 2011. Pachakuti: indigenous perspectives, buen vivir, sumaq kawsay and degrowth. Development 54, 448–454. https://doi.org/10.1057/dev.2011.85.
Tuck, E., Wayne Yang, K., 2012. Decolonization Is Not a Metaphor. Decolonization Indig. Educ, Soc, p. 1.
Van Vliet, N., Gomez, J., 2015. Sustainable wildlife management and legal commercial use of bushmeat in Colombia: the resource remains at the cross-road. Int. For. Rev. 17, 438–447.
Vatn, A., 2010. An institutional analysis of payments for environmental services. In: Ecol. Econ., Special Section - Payments for Environmental Services: Reconciling Theory and Practice, 69, pp. 1245–1252. https://doi.org/10.1016/j.ecolecon.2009.11.018.
Velásquez Landmann, M.E., Macedo, M., 2016. Plan de Vida. Guía para la Planificación Colectiva, Ministerio de Cultura.
Villalba, U., 2013. Buen Vivir vs development: a paradigm shift in the Andes? Third World Q. 34, 1427–1442.
Wali, A., Alvira, D., Tallman, P.S., Ravikumar, A., Macedo, M.O., 2017. A new approach to conservation: using community empowerment for sustainable well-being. Ecol. Soc. 22.
Walters, G., 2019. A landscape for everyone: integrating rights-based and landscape governance approaches. In: IUCN, International Union for Conservation of Nature. https://doi.org/10.2305/IUCN.CH.2019.08.en.
Whitten, Jr, N.E., Whitten, D.S., 2015. Clashing concepts of the `good life': Beauty, knowledge and vision, versus National Wealth in Amazonian Ecuador. In: Santos-Granero, F. (Ed.), Images of Public Wealth in Tropical America. University of Arizona Press, pp. 191–216.
Williford, B., 2018. Buen Vivir as policy: challenging neoliberalism or consolidating state power in Ecuador. J. World-Syst. Res. 24, 96–122.
Wunder, S., 2005. Payments for environmental services: Some nuts and bolts. (No. 42). In: CIFOR Occasional Papers. Center for International Forestry Research (CIFOR), Bogor, Indonesia.
Wunder, S., Ibarra, E., 2005. Payment Is Good, Control Is Better. Why Payments for Forest Environmental Services in Vietnam Have So Far Remained Incipient. Center for International Forestry Research (CIFOR).
Ziai, A., 2015. Post-development concepts? Buen Vivir, Ubuntu and degrowth. In: De Sousa Santos, B., Cunha, T. (Eds.), Epistemologies of the South: South-South, South-North and North-South Global Learnings. Coimbra, CES.