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Eudaimonia in the Amazon: Relational Values as a Deep Leverage Point to Curb Tropical Deforestation

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Abstract: Tropical deforestation has been recognized as a major and multi-faceted sustainability issue, frequently analyzed in terms of its economic drivers, the effectiveness of protection policies, or broader political dynamics. Meanwhile, the role of values as underlying social factors affecting land-use choices remains underexplored. Recognizing that values can, however, be important "deep" leverage points for transformative change, we delve into that dimension using the Brazilian Amazon as a case study. Through a total of 72 key-informant interviews and field visits to 25 sustainable land-use initiatives in the states of Acre and Mato Grosso, we identify values that have motivated choices for conservation in deforestation frontiers and how stakeholders articulate them. Our results reveal that different land users make economic considerations, but these are interwoven with relational values—about connections to the landscape or social relations mediated by nature. Eudaimonic values, such as increased meaningfulness, personal growth through learning and knowledge sharing, as well as a sense of contributing to the world, are shown to be key in those initiatives. These findings challenge the commonplace distinction between 'traditional' and 'modern' people, showing that relational values are relevant across the board and may deserve much more attention as leverage points.

Keywords: Brazil; conservation drivers; environmental behavior; forest governance; local actors

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1. Introduction

The destruction of natural environments continues apace despite growing sustainability concerns. Perhaps no other case is as glaring as that of tropical deforestation. In just a few decades, rich ecosystems such as the Amazon, the Cerrado, and Southeast Asia's rainforests have lost millions of hectares chiefly due to the expansion of commercial agriculture, with substantive loss of biodiversity and livelihoods [1,2]. That has sparked major calls for transformative change towards sustainable land uses [3,4]. In the Amazon's case, such calls highlight an imminent tipping point beyond which a dieback process could turn the rainforest into a drier and poorer biome [5]. Yet, as in other conservation arenas [6], tropical deforestation has been ineffectually addressed mainly with end-of-pipe solutions, while transformative change towards different (and more sustainable) land-use regimes remains wanting [7,8].

One frequently overlooked dimension in the tropical deforestation debate is that of values, understood to be a "deep" leverage point [6]. Leverage points can be seen as the places where to intervene in a system; the deeper they are, the harder they are to operate, but the larger their potential effect is [9–11]. Deep leverage points include values, mindsets, attitudes, and feelings of connectedness toward nature that ultimately determine the (land-use) system's goals [6,10,12]. Indeed, an underlying cause of the Amazon's demise has been a sense of detachment in those causing deforestation locally or fueling it from afar [13] (see also [14]). Understanding—to eventually know how to operationalize—such deeper levers to change unsustainable systems remains a key research frontier.

There is a growing literature on relational values, which emanate from relations with nature or with other people [15,16]. Many authors detail the role such values can play in enabling environmental stewardship and transformations toward sustainability [6,10,17]. Still, that literature has mostly analyzed Global North contexts [6] or alternative Indigenous value systems [6,18]. It is important to explore the role of values also in the broader Global South settings where tropical deforestation takes place, where the debate has typically focused on macro-level dynamics about frontiers [19,20], command-and-control policies [21,22], or market-based mechanisms [23,24]. There is growing research on the cultural drivers of deforestation [25,26]. Still, more attention is needed on why people would choose to conserve those regions or how relational values can become a lever for sustainability transformations.

This article draws on empirical cases in two different contexts of the Brazilian Amazon to help fill that gap and explores a gamut of reasons why people opt for conserving the tropical forest. Critically, we move beyond simplistic understandings of human agency or stereotyped dichotomies between "traditional communities" supposedly prone to conserve and others often assumed to act based on economic motivations alone. The article reviews the literature on relational values applied to environmental conservation and then presents a diverse set of local actors and landscapes in the Amazon, a region so often treated as homogeneous territory (e.g., referred to in English as a *rainforest*, the Amazon's native vegetation also includes other types of phytophysiognomies such as savannas, woodlands, and transitional forests) [27–31]. Finally, we assess what roles relational values have played and can still play as a leverage point to counter deforestation trends.

2. Tropical Deforestation, Relational Values, and Nature-Inclusive Eudaimonia

Understanding what drives or curbs tropical forest loss has been a major debate in recent decades. Extensive literature exists on the roles of agricultural expansion [32], infrastructure [33], government-induced migration [34,35], international trade [36,37], and land-grabbing processes [38] as deforestation drivers. Conversely, there are assessments on successful action against deforestation, usually focused on environmental legislation [39,40], public policies for forest conservation [21,41], and particularly command-and-control mechanisms [42–44]. As opposed to such "sticks" of the state, other studies emphasize the role of the market and its "carrots" in the form of profit opportunities from sustainable land use [23,45] or financial incentives for conservation [46–48]. Lastly, there is a large body of literature on the role of Indigenous peoples and traditional communities in promoting forest conservation through sustainable livelihoods [49–51].

Most of such analyses generally oversimplify human agency, however. They rely on an artificial dichotomy between those assumed to be modern, rational individuals ("us") and traditional forest peoples ("them"). The former is usually likened to a Homo economicus who chiefly relates to nature in an instrumental way. It supposedly acts based only on legal prescriptions, economic incentives, and sanctions [52]. "Traditional" people, in turn, are considered inherently non-modern, alternative societies. They are regarded as legacies of the past not yet changed by contemporary rational thinking, people who see intrinsic value in nature and, thus, lead inherently preservationist lifestyles [53,54].

On the ground, reality generally offers a much more nuanced picture. A study shows, for example, how for many US American farmers, the primary motivations behind their land-use choices are non-economic benefits such as aesthetic purposes, wildlife protection, or the enjoyment of their properties [55]. Other authors arrive at similar conclusions in the Australian context. They describe how "farmers are indeed motivated by actively pursuing personal and family well-being and make decisions within a care-based ethic rather than simply reacting to financial opportunities, imperatives and constraints" [56] (p. 264). Conversely, a lack of concern for conservation and an instrumental view of nature has favored a choice for native vegetation clearing in agricultural frontier regions of Brazil [14]. In sum, there is a tendency to focus exclusively on the market values of land or nature and neglect how other ones affect conservation [57]. To borrow Elliott's [58]

expression, it is evident there is a tapestry of values guiding land-use decisions, yet these values remain understudied as a leverage point to address deforestation [26,59].

In this context, the concept of relational values has emerged as a powerful lens to analyze place-based human-environment interactions in a more nuanced way [4,60,61]. It builds on a growing literature on how to foster conservation behavior and an ethic of care [62–65]. Its proponents noted that people do not only ascribe intrinsic or instrumental value to nature; they also value nature because of relations they develop and cherish [6,15,61]. Relational values are therefore those where the relationship itself matters, either with landscapes and nature itself or with other people (often mediated by nature, such as in certain activity spaces or territories that support social identities) [15]. Such values form principles, preferences and attachments that can go a long way in explaining people's behavior in contexts such as farming [66,67], coastal and marine ecosystems [68], or forest settings [69,70]. Human–nature connectedness [6,71] has been increasingly used as a lens, and some researchers have explored the role of exposure to or experiences in nature for personal fulfillment [72,73]. Some authors speak of "mental health ecosystem services" [74,75], and the latest framework of the Intergovernmental Science-Policy Panel on Biodiversity and Ecosystem Services (IPBES) on Nature's Contributions to People (NCPs) recognizes "psychological experiences" (NCP 15) as well as nature's contributions to "learning and inspiration" (NCP 14) and to the formation of social identities (NCP 16) [4,76].

One particular kind of relational values that has gained increasing attention are eudaimonic values. Eudaimonia refers to the notion of a well-lived, meaningful life where one's potentials can flourish [73,74]. The concept has Ancient Greek roots in the works of Aristotle and is usually translated as "happiness". Yet, philosophers are quick to point out that this is not a superficial, hedonic form of happiness but rather a feeling of self-fulfillment and realization [77,78]. Eudaimonic values thus refer to those that underscore a meaningful life. Some particularly speak of "nature-inclusive eudaimonia", stressing the role of nature in fostering such a sense of meaningfulness [72].

Research has started to show how eudaimonic and other relational values can be key to promoting conservation behavior [79]. They become a leverage point to the extent that they not only underscore individual agency but are also political in nature [80]. Individual action can present alternative framings and possibilities of socially relating to a place, which may foster further mobilization and agency—as people tend to support causes whose values are co-related to one's own [13]. Espousing and acting on certain values can thus be a form of contesting dominant agendas and paving the way for sustainability transformations [80]. As such, human–nature connectedness and a new paradigm of environmental stewardship could conceivably replace the current pattern of human–nature relationships based on detachment or domination, which arguably underscores much tropical deforestation [13,14,81]. Such is the challenge of addressing values as a deep leverage point for sustainable landscape transformations [6].

3. Empirical Cases and Research Methods

3.1. Case Study Sites

This article investigates local forest-based initiatives in two contrasting states of the Brazilian Amazon: Acre and Mato Grosso. Both are in the so-called "deforestation arc", a frontier region with high ecosystem conversion rates due to export-oriented agricultural commodity expansion and related infrastructure [82,83]. Yet, these two states have very different histories of territorial occupation, political structures, institutional settings, social movement mobilization, and land-use change trajectories (see Figure 1; see [84] for an account on Mato Grosso, and [85] on Acre).

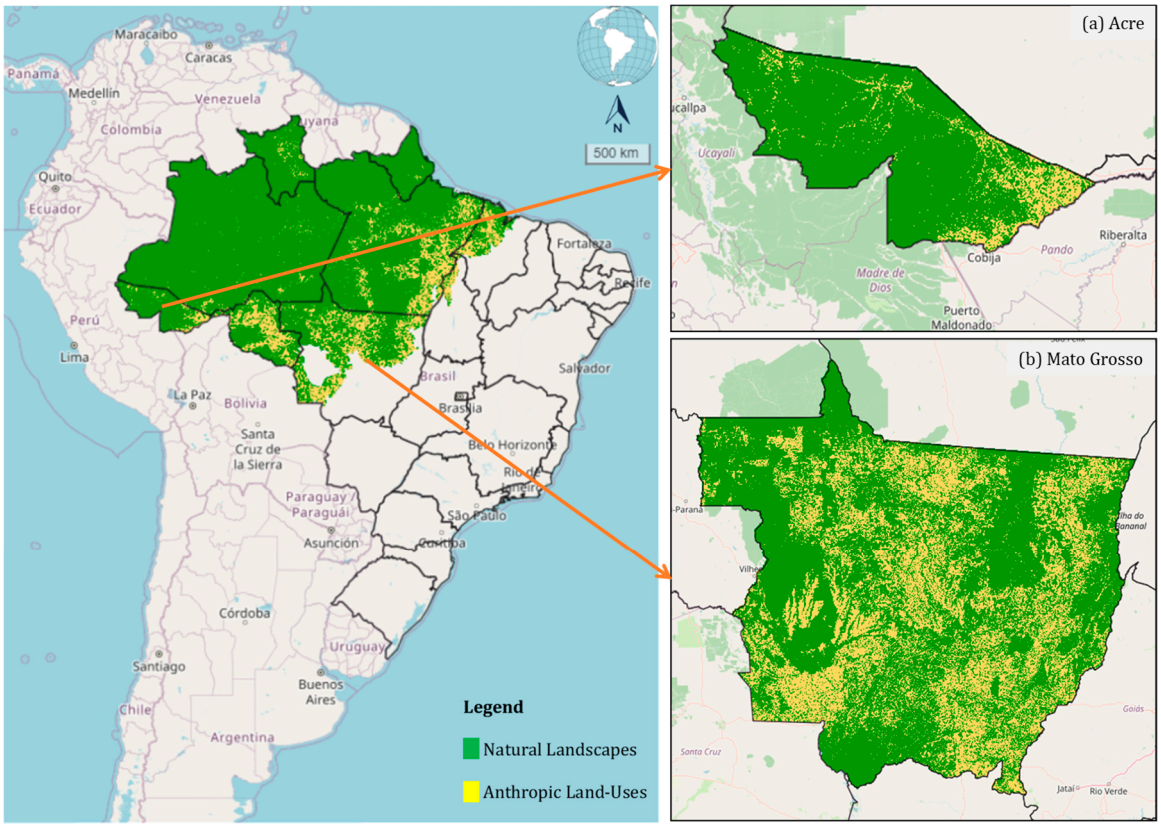

Figure 1. Land uses in Brazil's Amazonian states and highlights to Acre and Mato Grosso in 2021 Souce: Mapbiomas [27].

Acre is a relatively small state of 164 thousand Km^2 in the westernmost part of the Brazilian Amazon [86]. Almost 88% of its forest cover was preserved as of 2021 [27], including 48% in protected areas such as conservation units or indigenous territories [87,88]. Historically, Acre's approach to forest conservation has been grounded in the notion of "forest citizenship" (*florestania*), valuing small-scale agroforestry farming and traditional livelihoods [89]. Acre was the home state of environmental activist and rubber-tapper Chico Mendes, murdered in 1988; at least since then, it has enjoyed substantive international recognition for its successful conservation strategies and support towards traditional rural communities [90–93]. Nevertheless, the year 2019 saw Acre take a politically conservative turn and start having governments increasingly aligned with a mainstream development narrative based on large-scale agriculture and cattle ranching, akin to some of its neighboring states. In relative terms, it is a recent deforestation frontier driven mostly by cattle-ranching expansion [94,95], where, however, a network of grassroots movements with a strong social inclusion and conservation culture remains in place [85].

Mato Grosso, in turn, is over five times larger than Acre (ca. 903 thousand km^2) and Brazil's most pronounced agribusiness state [86]. It lies at the core of the Amazon's deforestation arc and has much land converted to large-scale agriculture, with considerable infrastructure for commodity exports [94–96]. In contrast to Acre, Mato Grosso's landscape is dominated by soy fields and characterized by concentrated land tenure [84,96,97]. Its territory sits in the transition between three important biomes: the Amazon (53%), the Cerrado (40%), and the Pantanal wetlands (7%) [86]. As of 2021, about 66% of Mato Grosso's Amazon areas were still preserved [27], though only 20% were under some form of protection [86,87]. Most of its agricultural expansion has occurred over the Cerrado's native vegetation [98]. Still, Amazon deforestation is advancing, and Mato Grosso's cumulative rate is already the second largest in the country (after Pará State) [94]. Recently, the state government has embraced the sustainability agenda with a market orientation, exploring

options to develop financial incentives, such as carbon offset mechanisms and payments for ecosystem services [99–101].

Therefore, their contrasting settings motivated the selection of Acre and Mato Grosso as study cases. They have epitomized two very different approaches to land use in the Brazilian Amazon, with Acre having a history of strong grassroots organization and Mato Grosso being more orientated towards mainstream agribusiness. As we shall see, there are also some differences in how people relate to nature.

3.2. Data Collection Methods

This article adopts a mixed-methods approach (with an emphasis on qualitative methods) to produce a contextualized interpretation of land-use practices [102]. Through a combination of three data-collection methods (key-informant interviews, fieldwork observations, and an online survey), we have sought to uncover actor perceptions that may otherwise go unnoticed in geospatial analyses. The goal was not to quantify how many were involved in conservation in Mato Grosso and Acre but to understand why those engaged with conservation were doing so.

Interviews and fieldwork observations took place on three occasions: (1) A first round of fieldwork visits and interviews in 2019, followed by (2) a second round of in-depth interviews via phone in 2021, and finally (3) a third round of in-person interviews during a final visit in 2022. The first round took place between June and September 2019 to identify key local initiatives aimed at some form of conservation-based land use. On that initial occasion, the first author conducted 72 semi-structured interviews (36 in Acre and 36 in Mato Grosso). The fieldwork started in the two state capitals, Rio Branco (Acre) and Cuiabá (Mato Grosso), before engaging further with local actors through snowball sampling. The interviews ranged from 40 to 150 min and were conducted in Portuguese. At the interviewees' request and due to the political sensitivity of land use issues in the Brazilian Amazon, the interviews were not recorded, and all answers were anonymized. The quotes used in this article are, therefore, from on-site notetaking and directly translated by the authors. The sampling sought, as much as possible, to ensure a gender balance between male and female respondents as well as a generational balance between younger and older stakeholders.

These interviews aimed to identify what elements local actors point out as drivers of forest conservation in their regions. We have categorized the interviewees into two main groups: a contextualization group, comprised of representatives of academia, the private sector, public agencies, and non-governmental organizations (NGOs) who helped understand the region; and a land-user group, encompassing local actors that directly use the land, such as Indigenous peoples, rubber-tappers (*seringueiros*), members of afro-descendant traditional communities (*quilombolas*), family farmers, as well as middle-to-large landowners, plus rural extension workers on the ground (see Table 1). This second group is the main source of information for the results presented in this article.

The semi-structured interviews were steered around a set of guiding questions designed to explore local perceptions of forest conservation, restoration, and deforestation in each place. The interviews consisted of open-ended questions about the interviewees' involvement in land-use practices, initiatives they considered promising, which aspects were regarded as transformative, the reasons why people conserve or restore forests, and the main barriers to forest-based practices in each of their regions. The data collection and storage were conducted according to the ethics regulation and guidelines from the Faculty of Humanities of the University of Amsterdam, with the approval number 2019-FGW_OTHR-10187 granted to the activities of the AGENTS Project.

All responses were coded, categorized, and analyzed through inductive coding. They were divided into four clusters of reasons for conserving: (a) legal considerations, with code labels such as *the legislation requires*, *fear of embargo or fine*, *to comply with the law*; (b) economic considerations (*economic profits*, *cost-benefit* or *income stability)*; (c) technical considerations (*prevent ecological imbalances*, *reduce environmental impacts* or *access to sustainable land-use*

techniques); and answers that deviated from those other inductive frames, then coded as (d) other considerations. These were the ones hinting at relational values, with code labels such as *individual motivations*, *personal beliefs*, *changes of mindset*, *intrinsic passion*, *cultural identities*, or the *spiritual value of forests*.

Table 1. Stakeholders interviewed during fieldwork.

Sector	Description	Interviews in Acre	Interviews in Mato Grosso
	Contextualization Group		
Academia	Scholars and researchers	3	3
Private Sector	Companies and privately owned businesses	3	3
Public Sector	Policymakers and public servants at the municipal or state level	7	3
Civil Society	Socioenvironmental NGOs at local, regional, or national level	7	14
	Land-Users Group		
Local Actors	Family farmers and traditional communities such as Indigenous peoples, rubber-tappers, and others	15	10
	Middle-to-large landowners	1	3
Total		36	36

The interviewees identified several local conservation-based initiatives as "successful", "promising" or "transformative". Informants in the contextualization group referred to initiatives they recognized as positive examples in their region, while informants in the land-users group were actively part of those initiatives. Following these accounts, the first author visited 25 initiatives (12 in Acre and 13 in Mato Grosso). They were categorized into five main land-use categories: ecotourism, agroforestry, reforestation, carbon offsetting, and sustainable value chains (see Table 2).

Additional in-depth interviews then took place via phone in December 2021 with additional participants in those initiatives. This method was chosen due to COVID-19 restrictions on mobility and face-to-face contact that year. We interviewed a total of eight members of key initiatives. They were asked about how the initiative emerged and how their members were able to maintain their forest-based activities over time (including through the COVID-19 crisis). Finally, a third round of interviews was conducted in August 2022 during a return fieldwork visit. Its main purpose was to co-validate our preliminary results and analysis—also an important step to advance scientific co-production.

The online survey, too, was an adjustment to COVID-19 restrictions. It was carried out in July 2021 using the Qualtrics software to pose three multiple-choice and two open questions to local respondents. The multiple-choice questions inquired how place-based initiatives in Acre and Mato Grosso (a) came into existence, (b) consolidated over time, and (c) navigated through crises. The open questions sought to capture local perceptions of the positive and negative landscape transformations during the COVID-19 pandemic. This survey was sent to the same group of actors from the first round of interviews, who forwarded it to other stakeholders they considered relevant. The survey produced 80 (anonymous) responses from academia, the private sector, public agencies, civil society organizations, and local actors.

We acknowledge the risk of biases in these methods. In-person interviews can lead to a social desirability bias, depending on the subjectivities of the researcher, while snowball sampling might result in excessive focus on a specific network, and surveys are often unrepresentative of broader realities beyond the chosen sample [103]. Our decision to combine such different data-collection methods was precisely to mitigate such risks and reduce the bias that the use of a single method could create—while benefiting from the rich qualitative material collected through multiple rounds of interviews.

Table 2. Visited initiatives in the Brazilian states of Acre and Mato Grosso during fieldwork.

Category	Description	Activities	Leading Actors	Interviewees
Ecotourism	Tourism services based on forest conservation.	Birdwatching, observation of rare plants, experiences of forest livelihoods and contact with traditional communities. Range from community-managed projects to luxurious resorts.	Traditional peoples, family farmers, medium-to-large landholders	4 interviewees in Mato Grosso, 2 in Acre
Agroforestry	Production systems combining native forests and agricultural land uses.	Collection of non-timber forest products (e.g., latex, Brazil-nuts), fruit (e.g., açaí berry, palm heart), and vegetable oil (e.g., *copaíba*) production. Some include sustainable timber management and artisanal production of natural furniture and bio-jewelry.	Traditional peoples, family farmers, private companies	10 interviewees in Acre
Reforestation	Recovery of degraded or clear-cut forests by growing native and/or exotic plant species.	Growing forests through planting young individual trees (seedlings) or by dispersing seeds through direct sowing (*muvuca*).	Traditional peoples, family farmers, urban dwellers, NGOs, government agencies and private companies	4 in Mato Grosso
Carbon Offsetting	Financial return for carbon stocked by forests.	REDD+ projects of payment for ecosystem services, and carbon compensation schemes, and financial bonds to be traded in international carbon markets.	Traditional peoples, medium-to-large landholders, government agencies and private companies	1 in Mato Grosso, 3 in Acre
Sustainable Value Chains	Agricultural production based on socio-environmental criteria.	Deforestation-free commodities (i.e., cattle), and sociobiodiversity value chains (i.e., Brazilian nuts, latex, native fruits).	Traditional peoples, family farmers, medium-to-large landholders and private companies	4 in Mato Grosso, 1 in Acre

Our sample does not mean to be representative of Acre's or Mato Grosso's entire stakeholder universes (let alone of the whole Amazon), nor does it claim to uncover underlying (and sometimes unconscious) motivations. Yet, it does present the views and the voices of countercurrent stakeholders that have chosen to engage with conservation- and restoration-based activities—and perhaps sow the seeds of transformative change—in a major deforestation frontier. Our findings, therefore, bring important insights into how actors articulate and make sense of their agency and praxis of change.

4. Results: Relational Values in the Brazilian Amazon

4.1. A Tapestry of Values in Deforestation Frontiers

Relational values have stood out very prominently in our results. When asked "*why do people conserve the forest in your region?*" many interviewees, both in Acre and Mato Grosso, resorted to relational values to explain their conservation behavior and land-use practices. They often referred to proneness to conserve even when economic pressures influenced them to clear areas for agriculture.

Figure 2 summarizes the interviewees' responses to that question. The label *legal requirements* captures answers such as "because the law mandates" or "fear of embargoes and fines". The label *economic incentives* encompasses "market pressures", "diversify income sources", or "lack of financial means to deforest". The label *practical environmental considerations* comprises replies in the direction of "counter-balancing ecological disruption", "experienced a decrease in environmental services" (e.g., water, pollination), or "learned new sustainable techniques to reduce environmental impacts". The final label, *relational values*, in turn captures responses of the following kind: "changes in mindset", "individual

motivation", "personal learning", "intrinsic beliefs", "improvements to the general well-being", and "passion for conservation activities". Often, interviewees referred to multiple categories in their answers. (The percentages in Figure 2 refer to the total number of coded text segments in the interviews overall. That is, 43% not of the respondents but of the total of explanations given were about relational values.)

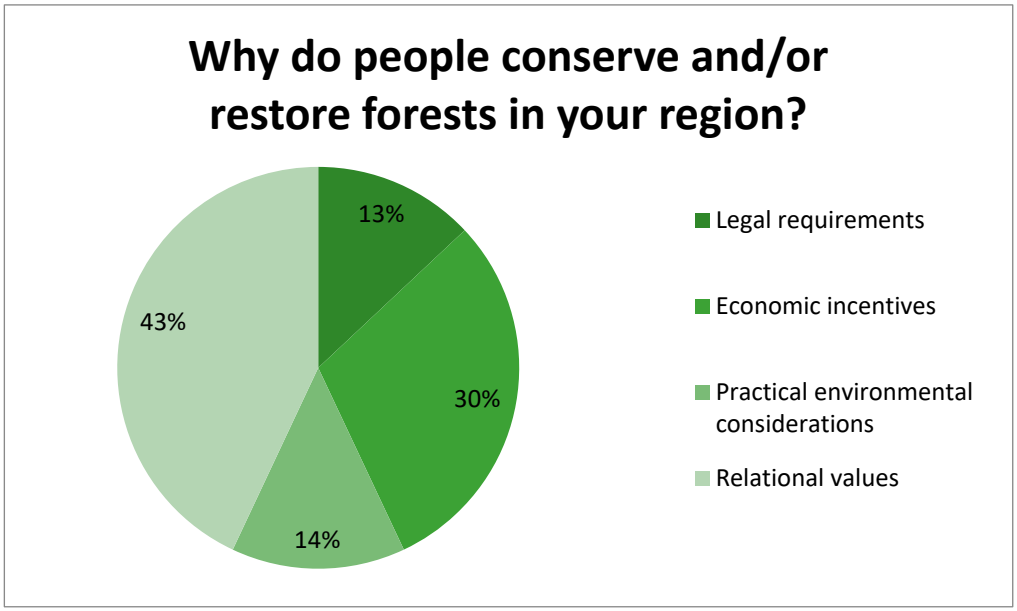

Figure 2. Elements influencing forest conservation and/or restoration in the Brazilian Amazon.

These numbers suggest that respondents acknowledge legal requirements, economic incentives, and practical environmental considerations as important factors influencing land-use choices—in line with much of the literature on deforestation [21,39,40,43,45]. However, the results also show that interviewees often point to relational values. The precise numbers are less important than the fact that those various considerations are woven together in what we have previously referred to as a tapestry of values, where multiple threads intersect [58] (p. xiv).

For instance, many local stakeholders highlight the instrumental value of forest protection. They often stress, for example, how much their conservation-based initiative rewards them economically, refuting mainstream notions that deforestation is justified in the name of "development" to address poverty. Brazilian public officials aligned with big agribusiness typically claim that smallholders in Amazon frontiers *depend* on land clearing for agriculture, as seen for instance at the 2020 meeting of the World Economic Forum, when Brazil's then Minister of Economy, Paulo Guedes, stated that "*the worst enemy of the environment is poverty*" and that "*people destroy the environment because they need to eat*" [104]. Likewise, it is common for large farmers involved in deforestation-driving activities or agribusiness to antagonize forest conservation and development [13,14]. Local actors engaged with sustainable land use, however, critique that narrative. During an interview, a rubber-tapper community leader responded unintendedly to the minister's reasoning: "*The government adopts this discourse that it will bring employment, income, and development . . . as if the forest didn't already bring these things! Our forest has immeasurable wealth!*". Myriad studies have detailed the economic role of local sustainability initiatives in the Amazon [31], which we show to be often infused with crucial relational values, too.

4.2. Human-Nature Connectedness, Mental Health, and Eudaimonic Values

Local actors in both Acre and Mato Grosso report that forest conservation initiatives have significantly improved psychological well-being standards for the ones who live there. They point out that such activities develop a sense of purpose in everyday life in

line with what they perceive as mental health benefits. They report on the value of human-nature connectedness and an enhanced sense of meaningfulness, as they feel their personal effort becomes directly related to the well-being of the entire household and community. Land users in both states argue that such improvements have driven and sustained their adoption—and expansion—of sustainable practices.

In Acre, many interviewed forest dwellers emphasized their satisfaction from living in the *seringais*—the rubber-tapping areas where each household has a pathway within the forest to collect natural rubber. That entails a close relationship with nature in those specific paths. Rubber-tappers highlighted the satisfaction in planning the management of their forests, growing medicinal plants that help them heal many illnesses locally, and even the pleasure of talking to their trees. They notice the subtle changes in the plants due to their actions and care—as in a kind of large-scale gardening, with people well-embedded in natural systems. Such interaction with their surrounding environment makes them feel part of the ecosystem and demonstrates how everyday actions affect the landscape and the other way around. In that sense, a local family farmer frames conservation as "*a strategy for maintaining mental health and improving the quality of life, the* viver bem *[good living]*".

In Mato Grosso, local actors stress that although their work in conservation initiatives is physically demanding, it is more rewarding in an immaterial sense than industrial farming. They say it is also safer and far less strenuous than the routine of heavy labor carried out in agricultural commodity plantations so widespread in that state, under intense sunlight, heat, and exposed to high levels of toxic agrochemicals [105]. As a rural extensionist interviewed in Mato Grosso puts it, "*People conserve the forest because of the well-being of having the forest nearby: happiness, for example, of collecting seeds, in comparison to being a* celetista *[unionized worker] on a farm*". Conservation initiatives thus show their potential to change the way people relate to nature and eventually to each other. In the words of a rubber-tapper, forest conservation "*transforms the minds of our people; and it raises awareness that what is being done* [large-scale deforestation] *is a crime against humanity*".

4.3. Cherishing Family Reunion and Social Relations Mediated by Nature

Relational values reported by the interviewees are not limited to individual relations with the landscape. They also include social relations mediated by nature—notably family reunion. In the examined cases, it has been common for conservation-based activities to help bring back relatives that had left their family plots. Usually, these relatives are part of younger generations that migrate either to other rural areas to become employees in large-scale plantations or to urban areas to work or study due to the lack of opportunities in their regions of origin. With the implementation of forest-based initiatives such as agroforestry systems, ecotourism, or seed collection networks, the youth has felt the incentive to return to the land their families still have and contribute to those activities. Such a return happens because forest-based activities require more work that is considered satisfying, besides the income and livelihood opportunities they create.

Conservation-based land uses thus attract—and keep—people in rural areas of the Amazon for myriad reasons. These reasons include economic ones, but relational values have also emerged, and where they do, they appear meaningful. For instance, rubber-tapper communities and family farmers involved in agroforestry or value-chain development on native products point out that these practices diversify their household income sources. As those systems have multiple agricultural outputs (e.g., nuts, fruits, oils), their harvests happen at different times of the year, and there is always some work to be carried out. Income, therefore, flows in at every season, and there is no dependence on a single product. Such sustainable land uses require more careful management and an attentive workforce, and by working on their own farms, people say they have strengthened their family connections. In the words of a family farmer in Acre state, "*Conservation makes people go back to their properties, be healthier, value the countryside*".

In Mato Grosso, too, smallholders and traditional peoples that lead reforestation activities, as well as larger landholders that engage in ecotourism, report that those initiatives

have enhanced their sense of community and brought back people that had left those regions. Those actors stress their new sense of purpose and connectedness. In an interview with a local family farmer, she said that "*People started to return to their own plots and left the neighboring farms where they used to work, and the family has reunited*".

4.4. Personal Flourishing: Building and Sharing Knowledge

A third value that local actors emphasize in both states is knowledge building and sharing. When experimenting with forest-based land use systems such as agroforestry, they start a learning process that generates a range of new information about their environment. That includes getting to know better various plant species, understanding the interactions between different types of trees, learning how to produce organic agricultural inputs, etc. This kind of place-based, situated experience becomes key to personal fulfillment as much as to the formation of social identities and local cultures in those communities [106].

In Acre, many interviewed smallholders stressed their learning through trial and error to mix fruit, nut, and various nutrient-rich trees in different arrangements when creating agroforestry systems. Such experimentation seeks to understand what works better in the specific social and ecological conditions in which they live. A local land rights activist stressed that "*urban knowledge is fragmented, but rural knowledge is holistic, comprehensive, transdisciplinary*". This knowledge-building process is therefore contextualized and adapted to the landscape, helping to ensure that their conservation activities will endure over time. As a larger landholder working with carbon offset projects mentioned in an interview, "*You can't just look at profit, you also need to look at continuity. In the same way you can use the land, you can recover the forest with the knowledge and the money earned from it*".

In Mato Grosso, too, Indigenous peoples, family farmers, and others recognize the role of learning and knowledge sharing as a critical element. As a family farmer and seed collector explained, "*We seek to understand the seeds, because every seed has something to teach us*". A local seed collector reported a similar disposition, "*Sometimes someone identifies a new species through a practical experience, then wants to know how to collect [the seed], what it is for. Sometimes they even go back to old knowledge and pass it on to each other. People started to study again*". Gradually, local actors thus build a body of contextualized knowledge. Interviewees reported that such a learning experience has in turn helped them realize the importance of forest conservation.

Knowledge sharing has also been key, and it goes beyond immediate surroundings. The interviewees reported that instant messaging applications such as WhatsApp have been important enablers of exchange as well as of the creation of far-reaching 'communities of practice' across the Amazon. Through such digital connectivity and instant communication, collective bonds have become continuous and easily cultivated even across distances. Moreover, local actors feel that knowledge building and sharing can inspire others inside and outside one's own community, potentially triggering similar initiatives elsewhere.

Learning and exchanging what they learn also positively affected local actors' self-perception and sense of personal worth through caring, interacting, and contributing to the surrounding landscape. Such improvements in self-perception may be particularly valuable to historically marginalized social groups in the Amazon [107]. They have begun to recognize their intellectual potential as the result of experimentation and learning by doing through individual effort. As such, sustainable land use has had a clear eudaimonic value in terms of personal flourishing in Amazonian landscapes.

4.5. Finding Meaning and Contributing to the Common Good

Local actors in both regions stressed contributing to the "common good" as a key driver of their forest conservation actions. That idea often surfaced when referring to individual contributions to society—their community, the country, or even the planet. The specifics of what they mean vary according to context and actor profile. For instance, a smallholder rubber-tapper in Acre highlighted their local actions as an important part of global dynamics, "*You have to contribute to the community, to the collective, and you have to*

think about the whole, about yourself and about the world". She further hinted at the benefits of their community conservation actions to planetary biophysical systems, such as curbing climate change or maintaining the global water cycle.

Other interviewees pointed to the importance of contributing to the common good in their immediate regions, communities, and surrounding environment. Another rubber-tapper in Acre emphasized the role of the forest to everyday livelihoods and the reproduction of their forest-based lifestyles: "*Conservation is an obligation and a duty, because the forest is an immeasurable asset; it is what guarantees the climate, the animals, the life of the waters*". A larger landholder in Mato Grosso, in turn, underlined the idea of common good grounded on intangible experiences of personal satisfaction and of making a difference. She stated that "*Conservation has to do with love, with pleasure, with valuing non-economic aspects; [it relates to] a desire to make a difference, to do it differently, to contribute to others*".

In all these cases, there is a clear perception of conservation as a source of meaning, their choices also being articulated by the eudaimonic value of living a meaningful life [73]. Thus, sustainable land use becomes attached to the idea of contributing to the common good and elevating individual actions as critical to the success of broader processes.

5. Discussion: Relational Values as a Deep Leverage Point

Our results reveal the key importance of relational values in making sense of and driving conservation in frontier regions of the Brazilian Amazon—even if they are enmeshed in a tapestry that also includes the instrumental values of nature. For one, these results overcome stereotypical distinctions between "modern" and "traditional" people to show that all those involved in sustainable land use activities highlight eudaimonic or other relational values (e.g., social relations mediated by nature) as key. They portray a much richer picture of human agency than what is found in the common notion of Homo economicus (chiefly motivated by a logic of gain and seeing exclusively instrumental value in nature). Meanwhile, they also refute any form of cultural essentialism when interpreting the behavior of local communities living in forest frontiers [54,108]. On the contrary, our findings support an understanding of social identities and human agency shaped by everyday practices and show how engagement in sustainable land use can have a beneficial impact on people themselves.

It is worth noting that, despite their contrasting settings, we have mostly encountered commonalities across Acre and Mato Grosso. Differences have related more to stakeholder type and their perspectives on sustainability. On the one hand, larger stakeholders generally take a more entrepreneurial approach, emphasizing their contribution to global sustainability (e.g., carbon stocks, biodiversity protection) or their personal connection to the forests to justify their choices. They also frequently highlight their struggle and endurance to overcome what they perceive as bureaucratic obstacles and institutional incentives for deforestation [9]. In Mato Grosso, a larger landowner declared that "*passion [is] the only thing that explains it [forest conservation]—passion for nature*".

Smaller stakeholders such as smallholders or rubber-tappers, on the other hand, also emphasize a connection to nature but do it through a more community-based lens. They emphasize how nature mediates their social relations or contributes to their collective action through forest-based initiatives. There may be less reference to "bureaucracy" in their language, yet there is a similar observation that conservation is pursued independently from (or even despite) public institutions. The testimonial of a rubber-tapper from Acre is illustrative: "*I have that personal passion; [I conserve] not because the government mandates or the legislation requires it, [but] because I think it's important*". Or in the words of a land rights activist: "*The law cannot stop deforestation. People only preserve if they understand the importance [of forests]. The law is necessary, but it is not what transforms [attitudes and behaviors]*".

Overall, many informants argue that relational values are what holds things together irrespective of barriers or material rewards. As the leader of a local seed collection initiative put it, "*The majority of members here are passionate about the forest. You have to like it. Of course some people come for the money, but those don't stay too long*". Could such relational values

become a lever to promote stewardship and stem deforestation in the tropics? Although the experiences analyzed here represent only a small portion of all that happens across the Amazon, they can be seen as niches of innovation that might spread and eventually become dominant [8]. Relational thinking has gained growing attention in landscape research [60,66], with a correlation between values and land-use patterns becoming increasingly clear [14,109]. Conversely, studies have posited that "landscape simplification" processes—as is the case with deforestation—can undermine human–nature connectedness and other relational values [110]. There is, therefore, a concurrent dispute in the realm of values about how to relate to nature linked to the more visible contestation about what land-use practices are to be dominant.

Our findings also support the view that relatedness, attachment, and stewardship grow hand in hand with embracing more sustainable land uses. They provide evidence that the promotion of such conservation-based activities as agroforestry, ecotourism, and sustainable value chains can help foster relational values in people, among themselves and with nature, and that this could be an avenue for countering deforestation-based activities and discourses in the tropics. Much environmental degradation in the Amazon has been explained not necessarily by profit-seeking but by value systems that foster disconnect, an instrumentalist view of nature, and attitudes of domination [8,25,81]. Therefore, the realm of values also becomes an important arena for intervention. As seen, they constitute a deep leverage point where the "intent" of land-use systems can be changed to curb—and possibly reverse—deforestation [10,80]. Researchers have devoted increasing attention to the role environmental education can have in fostering such human–nature connectedness through outdoor experiences, particularly among children [62,111]. Others have explored the potential of arts-based methods to sensitize individuals [112]. Here, we highlight the role of praxis in sustainable land use, experiences shown to be bound with eudaimonic and other relational values that infuse people with meaning and can deeply support conservation.

The specific policy implications of those findings are at least three. First, our findings challenge and problematize conventional 'development' agendas that antagonize economic improvements and conservation. We show that both can go hand in hand, enmeshed in relational values that go beyond a purely instrumental view of nature. Second, alternative land uses that foster human–nature connectedness and relational values represent surer options for stemming deforestation than trying to pursue incremental changes to activities based on a relationship of domination (e.g., "sustainable intensification"). Third, a finer understanding of how people relate to land use is fundamental for devising suitable policy instruments. An excessive focus on monetary incentives for conservation risks reinforcing instrumental views of nature and may be counterproductive—sometimes inducing deforestation through so-called "motivation crowding", as pecuniary interests can displace previously existing drives for conservation [112,113]. Instead, sustainable land-use policies would be more effective building on the power of eudaimonic and other relational values that have already shown to support conservation. Pro-environmental attitudes alone may not gain sufficient scale unless suitable institutions are in place—that is, a new system *intent* requires a matching system *design* in order to deliver its full potential [10].

To operationalize values as a leverage point, more research is needed on how relational values and institutional contexts interact for they are not isolated variables, but instead influence one another. In our cases, Acre's longstanding framework of forest protection that includes social and cultural valorization of native vegetation may have fostered local initiatives along these lines. Mato Grosso, in contrast, as the national symbol of agricultural commodity production and export, has approached sustainability through a "green economy" lens with little smallholder participation in policy design [93]. As such, its forest-based initiatives have generally focused on monetizing nature [100,101]. Relational values did emerge, as seen, but resisting a strong state-level policy orientation toward instrumental valuation and fitting in a framework of individual entrepreneurship. Different contexts, therefore, give rise to distinct relational values. Nature-inclusive eudaimonia may materialize in various forms to foster environmental stewardship and more sustainable

practices. Understanding in what ways human–nature connectedness is more likely to emerge under such different socio-cultural and institutional settings—and how—is, thus, a key research frontier. Conversely, it is critical to link these findings to research on strategic advocacy and policy change, to appraise how the operation of such "deep" levers could lead to changes also in the institutional sphere for a land-use transition [8,10,114].

6. Conclusions

Relational values between people and landscapes as well as social relations mediated by nature go a long way in explaining why some individuals or communities choose conservation—even in situations when they could profit from the alternatives. Our assessment of frontier regions in the Brazilian Amazon is among the first to assess tropical deforestation through this lens. Complementing the literature on why people sometimes persist in clearing, we now explain why others opt for sustainability instead. We demonstrate that eudaimonic values—linked to better physical and mental health, personal fulfillment through learning, or living a meaningful life contributing to sustainability as a greater good—are particularly key. They are how multiple actors make sense of and feel motivated in their choices for conservation-based practices. Likewise, many are driven by the enhanced social relations these practices offer them.

Human–nature connectedness is a deep leverage point for transformational change. As multiple studies had exposed disconnect from nature or relationships of domination underlying environmentally degrading behavior in the Amazon and elsewhere, we conversely show how relational values underscore choices for sustainable land use. Further research is needed on how different policy instruments could tap into their potential and help promote such values for leveraging change. More studies are necessary on the conditions, means, and contexts for fostering greater relatedness as a pathway for curbing forest clearing. Likewise, work on values can be more clearly linked to institutional change agendas. As is typical of deep leverage points, they are hard to operationalize but can achieve significant impacts. Working on such values may therefore be among the surest ways to secure a long-lasting transition away from tropical deforestation. This can happen in parallel with other policy efforts, in a bid to root them in society and guarantee they will not be easily reversed.

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