

A just transition for the Amazon: A mission-oriented framework

October 2024 — Working paper WP 2024/15

Mariana Mazzucato

Founding Director and Professor in the Economics of Innovation and Public Value UCL Institute for Innovation and Public Purpose

João Pedro Braga

PhD candidate at the UCL Institute for Innovation and Public Purpose. Member of the Youth Advisory Committee for the Science Panel for the Amazon (YAC-SPA)

About the Institute for Innovation and Public Purpose

<u>The Institute for Innovation and Public Purpose (IIPP) at University College London (UCL)</u> brings together cutting-edge academic theory with teaching and policy practice, to rethink the role of the state in tackling some of the biggest challenges facing society.

IIPP works with partners to develop a framework which challenges traditional economic thinking, with the goal of creating, nurturing and evaluating public value in order to achieve growth that is more innovation-led, inclusive and sustainable. This requires rethinking the underlying economics that have informed the education of global public servants and the design of government policies.

IIPP's work feeds into innovation and industrial policy, financial reform, institutional change and sustainable development. A key pillar of IIPP's research is its understanding of markets as outcomes of the interactions between different actors. In this context, public policy should not be seen as simply fixing market failures, but also as actively shaping and co-creating markets. Re-focusing and designing public organisations around mission-led, public purpose aims will help tackle the grand challenges facing the 21st century.

IIPP is uniquely structured to ensure that this groundbreaking academic research is harnessed to tackle real world policy challenges. IIPP does this through its high-quality teaching programme, along with its growing global network of partners, and the ambitious policy practice programme.

IIPP is a department within UCL – and part of The Bartlett, ranking number one in the world for architecture and the built environment in the world.

https://www.ucl.ac.uk/bartlett/public-purpose/

Contents

Executive summary		4
1.	Introduction: Socio-biodiversity in the Pan-Amazon	6
2.	Challenges and opportunities for a just transition in the Pan-Amazon	8
3.	Existing initiatives	13
4.	A just transition in the Amazon	15
	4.1 A mission-oriented framework	15
	4.2 A common good approach	19
5.	Mission-oriented tools, institutions, and partnerships with common good principles	21
	5.1 Tools and Institutions	21
	5.2 Public-private partnerships	22
	5.3 Co-creation and participation models	23
6.	Conclusion: A new social contract for the Pan-Amazon	26
References		28

Acknowledgements

We are grateful to our colleagues at IIPP-UCL for their fundamental research input and comments in earlier drafts. In alphabetical order: Ana Steiner, Anna Hope Emerson, Eduardo Spanó, Fernando Teixeira, Giovanni Tagliani, Giulia Lanzuolo, José Coronado, Leyner Mosquera, Myriam Nobre, Manuel Maldonado and Sarah Doyle.

Reference

This working paper can be referenced as follows: Mazzucato, M., and Braga, JP. (2024). A just transition for the Amazon: a mission-oriented framework. *UCL Institute for Innovation and Public Purpose*, Working Paper Series (IIPP WP 2024-15). ISSN 2635-0122

Available at: <u>https://www.ucl.ac.uk/bartlett/public-purpose/WP2024-15</u>

Executive Summary

The Amazon Rainforest is the world's largest tropical forest and it plays a crucial role in global sustainability due to its unparalleled socio-biodiversity and its function in climate regulation. However, the region faces significant challenges related to balancing economic, social and ecological sustainability. Issues such as deforestation, illegal mining, and unregulated agriculture threaten both ecosystems and the well-being of its peoples. Addressing these complex issues requires solutions that promote sustainable land-use practices while respecting local communities and preserving ecological integrity. Unfortunately, existing solutions have fallen short of turning these challenges into opportunities for innovation and investment. **This paper presents a new framework for addressing the Pan-Amazon's interconnected challenges.** Drawing on the missions (Mazzucato 2018; 2021) and the common good approaches (Mazzucato, 2023c), the paper explores what a just transition could look like in the Amazon region.

A transnational, cross-sectoral and whole-of-government approach is key to addressing the interconnected environmental, cultural, social, and economic challenges facing the Amazon. By positioning the Amazon as a hub of innovation for the common good, this paper focuses on realising its socio-bioeconomic potential based on green industrial transformation. To achieve this, we frame a Pan-Amazon mission as a series of ambitious, public purpose-driven projects that aim to transform the Amazon's socio-bioeconomy by integrating green industrial strategies with local knowledge systems. At the heart of this approach is a reimagining of value creation: rather than seeing the region solely as a natural resource to be exploited or simply to be 'saved' from the threat of deforestation, it must be understood as a dynamic hub for co-creation of value. This implies aligning innovation, industrial policies, and financial investments with social goals, enabling the Pan-Amazon to develop while preserving its biological and socio-cultural diversity.

The proposed just transition for the Amazon stresses that traditional top-down economic models are insufficient, particularly in a region as socially and biologically diverse as the Amazon. Instead, it is necessary to engage local communities, especially indigenous populations, as shapers of the region's future. Co-creation means not just consulting these groups but also embedding their traditions into the fabric of policy decisions. **The inclusion of traditional knowledge in shaping the region's development is key for justice.**

The paper also outlines why implementing this approach requires redesigning key tools, institutions, and partnerships so that they are outcome-oriented, and what it means to implement ambitious policies that engage and benefit local populations. Some of the paper's key recommendations are described below.

 Implement a mission-oriented approach to catalyse investment and innovation oriented towards ending deforestation in the Amazon and restoring 20 per cent of degraded areas by 2030, in a way that empowers and benefits local populations. By setting a bold, clear, measurable mission, governments in the region can engage private sector actors across sectors, as well as local leaders, scientific experts, and civil society actors in the development of new, bottom-up, participatory solutions to position the Amazon as a leading socio-biodiversity hub.

- 2. Advance green industrial strategies oriented around this mission. The Amazon has the potential to become a leader in bioeconomic innovation. By fostering green industrial policies that align with the region's ecological potential, the Amazonian States can help create and shape markets rooted in sustainability.
- **3. Embracing New Economic Thinking for the common good:** To achieve sustainable development, the Amazon requires new economic models. Specifically, it requires a common good approach that prioritises the how as much as the what. The "how" prioritises collective decision making, collective sharing of benefits, and transparency. Rather than relying on traditional top-down approaches, a common good approach emphasises the importance of engaging local communities as active contributors to development in diverse cultural contexts.
- 4. A just economic transition in the Amazon requires the integration of traditional knowledge systems into the design of the mission and into how it is implemented. Knowledge sharing must be founded on respect for what others bring to the table. Local communities of Amazonian peoples hold crucial ecological knowledge that can inform sustainable development strategies. Their involvement in the mission-oriented approach is foundational for respecting ecological cycles and fostering de facto nature-based solutions. The active participation of Indigenous people and other local communities such as quilombola, riverside and small producers would ensure that the mission benefits from a broad spectrum of knowledge systems, promoting diverse developments.
- 5. Adapt national and regional tools and institutions notably, state-owned enterprises, public financial institutions, and public procurement – as well as public-private collaboration and local engagement to orient them around the Amazon mission and to design them according to the principles of the common good.

This paper offers a strategic framework for realising the economic potential of the Amazon in a way that benefits the people living in the region and the planet. The paper emphasises the importance of a mission-oriented approach that turns the Amazon's specific challenges into opportunities for innovation and investment, and the importance of implementing this approach in a way that aligns all stakeholders, including local communities, around shared goals and produces shared value. In this sense, it lays out a new development pathway that prioritises ecological preservation, sustainable development, and justice for local populations.

1. Introduction: Socio-biodiversity in the Pan-Amazon

Global concerns have been raised about the possibility that Amazon Rainforest system could soon reach a tipping point, in other words, a point of no return in ecological damage inducing systemic collapse (Science Panel for the Amazon, 2021; Marsden et al., 2024; Flores et al., 2024). For 65 million years, Amazonian forests have remained resilient, but the region is now exposed to unprecedented stress from warming temperatures, extreme droughts, deforestation and fires (Science Panel for the Amazon, 2021; Lapola et al., 2023). Overcoming these challenges requires a new approach that directs investment and innovation towards solving the biggest challenges in the region and engages local stakeholders in collective value creation to preserves the region's cultural and biological diversity – its socio-biodiversity (Mazzucato, 2021; Mazzucato, 2023c; Abramovay et al., 2021). This approach, which we call the just transition for the Amazon, prioritises justice alongside sustainability and seeks to position the region as a global hub of socio-biodiversity.

In the context of the social, environmental and economic challenges that it faces, this region's unique socio-biodiversity offers a strategic opportunity for Pan-Amazonian countries to rethink development. This new approach must not only focus on ecological preservation but also unlock economic opportunities through targeted investment and innovation. The key is to turn pressing challenges into opportunities for both conservation and the co-creation of value. By integrating the region's vast natural resources with the potential of green industries, this approach offers a sustainable and inclusive model of development. Crucially, the strategic flow of investment can catalyse innovation across multiple sectors, enabling the Amazon to transition from a region defined by ecological exploitation to one that leverages its resources for prosperity. Without this focus on investment and innovation, conservation strategies might not be an engine for sustainable development.

Achieving this transformation requires a mission-oriented approach (Mazzucato, 2018a; 2021), where policy and governance align to promote cross-sectoral innovation. Investment must be directed toward projects that link socio-biodiversity with innovative technologies, turning the Amazon into a hub for new industrial practices. This approach ensures that development in the region is not only sustainable but also innovative, generating new forms of wealth creation. Importantly, it fosters collaboration among local communities, governments, and international stakeholders in ways that amplify their collective impact. The mission-oriented strategy proposed in this paper aims to converge diverse actors – ranging from local communities to international organisations – and to channel investment and drive innovation towards the just transition for the Amazon. By co-creating a framework grounded in socio-biodiversity, Pan-Amazonian countries can adopt a novel development model that prioritises preservation while advancing green industries. This integrated approach ensures that investment, innovation, and sustainability reinforce one another, positioning the Amazon as a central player in the global bioeconomy.

At the heart of this strategy is a shift away from viewing the Amazon solely as an area in need of protection. Instead, it should be seen as a hub of organisational, social, and technological innovation where biodiversity thrives and knowledge is continuously generated and shared. This

requires significant investment in ecological preservation and also in industries and technologies that can transform the region into a global leader in the bioeconomy. Innovation and investment must be seen as the catalysts for creating a future where the Amazon's socio-biodiversity promotes both environmental resilience and economic prosperity.

This paper is divided into six sections. Section 2 discusses the region's unique challenges and opportunities. Section 3 explains the need to shift from an exploitative economic model to one that works for people and the planet. Section 4 outlines a mission-oriented approach for the Amazon, detailing the overarching goals and strategies required to address the region's challenges. Section 5 focuses on the concept of the common good, discussing how public policies can be shaped to benefit both the environment and local communities. Section 6 then delves into the practical aspects of implementing these approaches, describing the tools, institutions and partnerships required to bring the mission to fruition. Together, these sections provide a comprehensive roadmap for advancing a just transition for the Amazon.

It is important to articulate a new approach to the Amazon in the context of the international biodiversity and climate negotiations at the biodiversity COP16 in Cali, Colombia and at the climate COP30 in Belém, Brazil, where the preservation of the Amazon is being positioned as the front line in the fight against the climate crisis.

2. Challenges and opportunities for a just transition in the Pan-Amazon

The Amazon Rainforest is the largest tropical forest in the world, covering more than 7 million square kilometres across eight countries and one territory in South America (see Figure 1). Analogously, the Amazon Basin covers a huge part of the continent's territory and houses the world's most extensive river system. Brazil, Peru, and Colombia possess the most significant parts of this territory, followed by Bolivia, Venezuela, Ecuador, Guyana, Suriname, and French Guiana. The Amazon's unparalleled biodiversity includes millions of species, not all of which are known to science (Science Panel for the Amazon, 2021).

The Amazon's role extends far beyond its territory. It is a key regulator of global climate, carrying around one-fifth of the Earth's surface water and influencing hydrological cycles and global weather patterns (Crist et al., 2021; Global Commission on the Economics of Water, 2024). Through evapotranspiration, vast amounts of water vapour form 'flying rivers' that sustain South American rainfall and influence water cycles worldwide (Lassman, 2016). The rainforest acts as a major carbon sink, sequestering more than 5 per cent of global emissions, and plays a significant role in oxygen production (Kaiser, 2019; Zimmer, 2019).

The wealth of the Amazon lies not only in its ecological potential but in its socio-biodiversity. The region's incredible biological diversity is intimately tied to the lives of Indigenous and local communities, who act as stewards of this land (Science Panel for the Amazon, 2021; Brenha Ribeiro & Braga, 2022). These communities possess a profound understanding of the balance between human activity and nature, passed down through generations. Their sustainable practices, such as agroforestry and controlled harvesting, are essential to preserving the ecological integrity of the Amazon. As Figure 2 shows, the forest stands where local communities have the legal right to land (IPBES, 2024). Their knowledge recognises the interdependence between the people and the forest as a living entity that supports life (Abramovay et al., 2021).

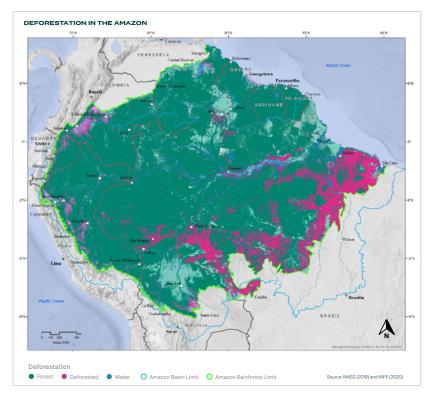
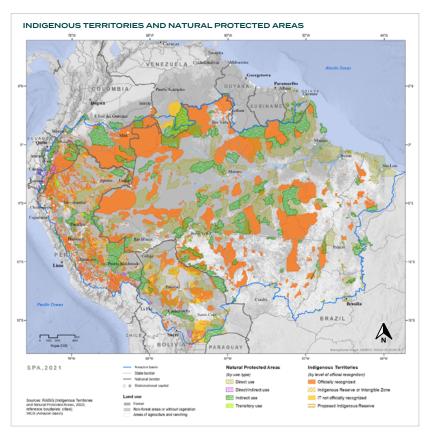


Figure 1: Deforestation in the Amazon





Sources: Amazon Network of Georeferenced Socio-Environmental Information (RAISG) via the Science Panel for the Amazon's Assessment Report (2021)

Today, the Amazon faces a complex web of environmental, social, and economic challenges that have been exacerbated by deforestation, illegal mining, unsustainable agricultural practices, and weak governance (Science Panel for the Amazon, 2021; Chapter 14). These interconnected issues jeopardise the region's long-term sustainability, with dire consequences for local ecosystems, communities, and the global climate. To address these challenges effectively, it is vital to understand their root causes.

Deforestation remains one of the most urgent environmental crises in the Amazon. Largescale deforestation, which is primarily driven by agricultural expansion for crops such as soy and the creation of pasture for cattle ranching, continues to reduce forest cover at alarming rates. According to the World Resources Institute, by 2021 the Amazon had lost 17 per cent of its forest cover, with Brazil accounting for the largest share of deforestation (Fearnside, 2018; Science Panel for the Amazon, 2021). Some conversion of forests into farmland has been legal, but illegal land grabs and the clearing of protected areas have accelerated the trend of deforestation, which makes a significant contribution to biodiversity loss and threatens many species' survival while releasing stored carbon. This undermines the Amazon's role as a global carbon sink. If this continues, the Amazon could even reach a tipping point (Gatti et al., 2021).

Together with deforestation, illegal mining has become a significant driver of environmental degradation in the Amazon (Figure 1). The rise of illegal gold mining, particularly in Brazil, Colombia, and Peru, has had devastating effects on local ecosystems and indigenous communities. These mining operations frequently encroach upon protected areas and indigenous lands, contaminating rivers with mercury and destroying habitats. Mercury pollution harms aquatic life and poses serious health risks to the local populations that depend on these water sources for drinking and fishing (Abramovay et al., 2021). Despite efforts to regulate mining activities, weak enforcement of environmental laws has allowed these illegal operations to proliferate. This is further complicated by the remoteness of many areas in the Amazon, making it difficult for authorities to monitor and control illegal activities.

Unsustainable agricultural practices have further exacerbated environmental degradation in the Amazon. In addition to the large-scale clearing of forests for agriculture, the methods used in farming and ranching are often unsustainable, contributing to soil degradation, water contamination, and biodiversity loss. The ancient and cultural slash-and-burn technique, which has been frequently used to clear land for cultivation, may lead to forest fires that can spread uncontrollably, further accelerating deforestation and the loss of carbon sequestration potential. Intensive cattle ranching is a significant contributor to deforestation (Lapola et al., 2023). Brazil is the world's largest beef and soybean exporter, and the expansion of cattle ranching and soybean production into the Amazon is driving deforestation in the biome. This expansion comes at the expense of forest ecosystems, as large swaths of land are converted, reducing the Amazon's capacity to absorb carbon and contributing to the emission of greenhouse gases (Ritchie & Roser, 2020). Furthermore, unsustainable agricultural practices are depleting the soil of nutrients, leading to decreased agricultural productivity over time and necessitating further land clearing to sustain yields.

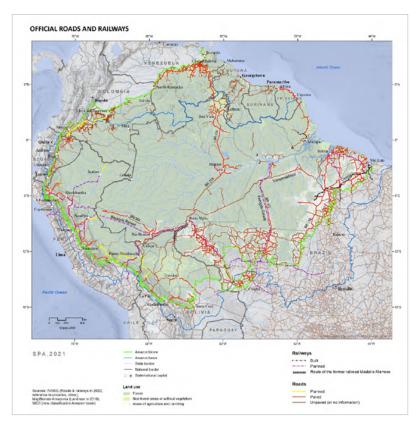
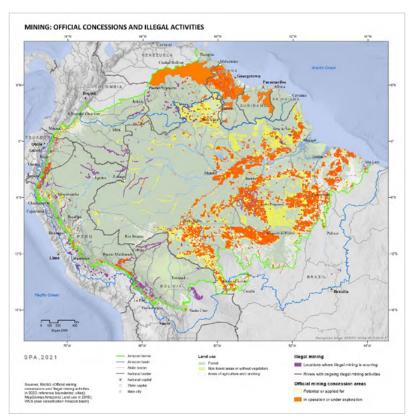


Figure 3: Roads and railway infrastructure in the Amazon





Sources: Amazon Network of Georeferenced Socio-Environmental Information (RAISG) via the Science Panel for the Amazon's Assessment Report (2021)

These environmental issues are compounded by weak state capacity in a region where States are not always present. Moreover, it should also be highlighted that land rights are not formally settled in many countries, including Brazil and Colombia, particularly in remote areas where illegal activities thrive (see Figures 3 and 4). Preservation efforts are undermined by land grabbing, which is often driven by road building or illegal mining, and conflicting political priorities in the governance of the legal and illegal land markets (Costa & Fernandes, 2016; Cordovil and Ravena 2023). The decentralisation of governance also complicates efforts, as local authorities lack capacity to enforce national policies. Conflicts of interest between governments, agribusiness, and local communities frequently result in ineffective land management.

Brazil faces unique challenges in managing its portion of the Amazon, which comprises 60 per cent of the entire rainforest. The country is the epicentre of deforestation in the region, driven by large-scale agriculture, cattle ranching, and infrastructure projects. The previous administration prioritised economic growth and agricultural expansion while weakening environmental protections and enforcement, leading to a surge in illegal logging, mining, and other activities (INPE, 2021). Brazil's economic reliance on agribusiness, especially soy and beef exports, has fuelled this deforestation, which has devastating consequences for biodiversity. Furthermore, illegal gold mining has polluted major rivers with mercury, which has harmed aquatic ecosystems and indigenous communities. The weakening of institutions designed to protect the Amazon, such as the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), has further complicated efforts to control deforestation and environmental degradation. The situation in Brazil highlights the broader tension between development and sustainability in the Amazon region (Abramovay et al., 2021). While the current administration has made important strides in slowing deforestation – committing to put Brazil on a path of zero deforestation by 2030 – progress has been uneven (UNFCC, 2024; WWF Brasil, 2023; Paraguassu, 2024).

Colombia faces different but equally pressing challenges in its Amazon region. Although deforestation rates in Colombia are lower than in Brazil, deforestation has surged since the signing of the 2016 peace agreement between the Colombian Government and the Revolutionary Armed Forces of Colombia. Previously inaccessible areas of the Colombian Amazon have been opened for settlement and illegal logging, which has led to increased deforestation. The expansion of the agricultural frontier, which is often facilitated by illegal land grabs, threatens biodiversity and indigenous territories. Moreover, illegal gold mining is rampant in the Colombian Amazon, with mercury pollution affecting water quality and public health. These issues are further exacerbated by limited state presence in remote regions, which makes it difficult to enforce environmental regulations (Abramovay et al., 2021). Colombia's Amazon is also particularly vulnerable to the impacts of climate change, with rising temperatures and altered rainfall patterns affecting both local ecosystems and agricultural productivity (Science Panel for the Amazon, 2021).

In short, the Amazon faces complex environmental, social, and economic challenges driven by deforestation, illegal mining, unsustainable agricultural practices, and a complicated territorial governance. These challenges stem partly from a long historical land use problem that prioritises short-term gains over long-term sustainability and social well-being. A shift towards a new economic paradigm is essential to forge a path forward that aligns with sustainability and justice.

3. Existing initiatives

Over the years, numerous local, national, and international initiatives have been developed to address the complex challenges facing the Amazon. However, despite these efforts, a persistent bottleneck remains: many policies have been implemented in isolation, without fully considering the interconnected social, economic, and environmental dimensions of the region. A key weakness of these initiatives has been their lack of alignment with local communities' knowledge and visions. To succeed in the long term, external actors must shift from top-down approaches to genuine collaboration with these communities. Such collaboration is essential for designing policies that are effective and resilient. This shift also requires a clearer understanding of how policies across different areas – finance, regulation, innovation, and preservation – interact to shape or fix markets. In this section, we analyse some examples, looking both at their impact and limitations.

Financial mechanisms have played a central role in both market-fixing and market-shaping strategies in the Amazon. In Colombia, the Amazon Vision programme, supported by international donors like Norway, Germany, and the United Kingdom, provides critical funding for deforestation reduction. By tying financial support to climate goals, the programme seeks to curb deforestation by incentivising forest conservation. However, while the programme allocates significant resources, its dependence on external finance raises questions about its long-term sustainability. To shape markets more effectively, local financial systems could be empowered, giving local actors control over how funding is distributed and used (Minambiente, 2020).

In Brazil, the Bolsa Verde programme linked environmental preservation with poverty alleviation by offering financial incentives to impoverished families for conserving natural resources. This initiative addressed immediate deforestation concerns while improving livelihoods. However, its discontinuation illustrates a vulnerability common to many market-fixing policies: without consistent political support, financial incentives can be short-lived and fail to bring about deep, structural changes. More innovative financial models, such as community-based forest management funds, could shape markets by embedding sustainable practices into local economies and ensuring long-term alignment with conservation goals (Brazil, 2023).

Regulation has also been central to both preserving the Amazon and controlling destructive activities. One of the most notable examples is Brazil's Action Plan for the Prevention and Control of Deforestation in the Amazon (PPCDAm). By enforcing strict controls on illegal deforestation and land use, the programme led to an 83 per cent reduction in deforestation between 2004 and 2012. However, regulatory policies like PPCDAm often face enforcement challenges (INPE, 2021).

Market-shaping regulations go beyond enforcement and actively incentivise sustainable land use. Brazil's 2023 Ecological Transformation Plan, which sets the ambitious goals of zero illegal deforestation by 2030, represents a more forward-looking approach. By embedding sustainability into economic planning and regulation, this policy seeks to reshape markets in ways that prioritise environmental protection while fostering inclusive economic growth. To be successful, these regulations should be accompanied by mechanisms that align the interests of local communities and industries with long-term sustainability goals (Brazil, 2023a).

Innovation is a crucial area where market-shaping policies can generate transformative change. In Colombia, the Sustainable Amazon for Peace project integrates environmental conservation with post-conflict peacebuilding. This initiative promotes sustainable agricultural practices and links conservation efforts with economic recovery in areas affected by armed conflict. By introducing innovative models of land use that combine biodiversity conservation with economic growth, this project exemplifies market-shaping by encouraging new, sustainable ways of managing natural resources (Viera, 2019).

Colombia's National Bioeconomy Strategy promotes the sustainable use of biodiversity through the development of industries like sustainable forestry and agroforestry. In the Amazon, sustainable cacao and coffee production have become key sectors that provide economic opportunities while also helping preserve the rainforest. This strategy demonstrates how the bioeconomy can drive inclusive development and environmental protection by integrating traditional agricultural practices with modern sustainability techniques (SEI, 2021).

Preservation efforts, such as the creation of protected areas, have been another key component of market-fixing approaches in the Amazon. Brazil's Amazon Region Protected Areas (ARPA) programme is one of the largest tropical forest conservation efforts globally, covering over 60 million hectares. While this programme has been highly successful in terms of creating and consolidating protected areas, it remains primarily a market-fixing initiative that focuses on limiting harmful activities rather than actively transforming the economic dynamics that drive deforestation (WWF, 2019).

All of the above-mentioned examples could act as important parts of a larger strategy. However, for the whole to be greater than the sum of the parts, they should be oriented around clear, common goals and should shift the emphasis from market fixing approaches, which focus on mitigating the symptoms of deforestation and ecological degradation, towards market shaping approaches that address root causes and transform economic structures to align with these goals. For example, policies that promote the bioeconomy can reshape markets by linking preservation to local economic development. Brazil's recent push for an inclusive green economy, outlined in the Ecological Transformation Plan, is a step in this direction. It seeks to position the Amazon not just as a space to be protected, but as a driver of sustainable growth, focusing on social inclusion and aligning preservation with long-term economic benefits for local communities (Brazil, 2023).

Broadly, financial incentives should evolve from external donor dependence to locally governed, community-based systems. Regulatory frameworks should move beyond enforcement (although this will remain important) to actively promote sustainable practices. Innovation policies should focus on integrating biodiversity with economic development, and preservation efforts should be linked to economic activities that provide long-term benefits for local communities. Only through this holistic, mission-oriented approach can sustainability, inclusion, and ecological justice be aligned in the Amazon.

4. A just transition in the Amazon

4.1 A mission-oriented framework

'Missions' orient economic and industrial strategy around societal and environmental challenges rather than specific sectors, technologies or companies (Mazzucato et al., 2024). A missionoriented approach can turn the challenges identified in Section 2 into opportunities for crosssectoral innovation and investment (Mazzucato, 2018). Implementing a mission-oriented approach can help governments proactively shape economic activity in a way that produces inclusive and sustainable outcomes.

Building on the missions framework proposed by Mazzucato (2017 and 2021) and further developed in Mazzucato (2023a) and Mazzucato (2023b), **this section describes a Pan-Amazonian mission to preserve the Amazon's socio-biodiversity.** While the design of this mission would need to be developed with local actors and relevant experts, as an illustrative example, a mission for a just transition for the Amazon could aim to end deforestation in the Amazon and restore 20 per cent of degraded areas by 2030, in a way that empowers and benefits local populations (see Figure 5 in Box 1). This represents a regional development strategy of structural transformation in the Amazon's bioeconomy centred on justice (Mazzucato, 2023c). At the heart of this mission lies the premise that economic, social, and environmental goals are interconnected, and achieving them means co-creating value with local actors.

The success of this mission hinges on a robust green industrial strategy. This strategy must transform how public and private actors interact, including by embedding conditionality at the centre of any form of subsidy or grant (Mazzucato and Rodrik, 2023; see Box 5). Such a strategy requires economy-wide interaction in terms of sectors and forms of production, distribution, and consumption, to achieve the mission goals and generate growth that is sustainable. A mission-oriented green industrial strategy does not focus exclusively on growth as an outcome; rather, it shapes the direction of growth in addition to the distribution of its rewards (Mazzucato et al., 2024).

If implemented correctly, this mission can create new markets based on the Amazon's sociobiodiversity. By creating new market opportunities that galvanise private sector investment and innovation, a mission-oriented industrial strategy can give rise to new solutions that respond to important challenges and also lead to spillovers with a potential multiplier effect; that is, leading to a higher positive impact on GDP than the initial public investment (Deleidi & Mazzucato, 2019) Economic activities across the Amazon region must reflect shared objectives that bridge local, national, and global interests. These include protecting biodiversity, addressing climate change, and promoting opportunities for traditional communities whose knowledge is vital for maintaining the region's ecological balance. Coordination, especially in such a complex and vast biome, presents certain challenges. Successful initiatives often struggle to scale. The proposed mission has potential to facilitate sustainable development in the region by helping to orient diverse actors around shared goals that address shared challenges. Dialogue between actors with diverse backgrounds and interests is essential for building a common mission and accomplishing it. This idea is expanded upon in the 'common good' section below. This mission should move to the forefront of international, regional, and national agendas, connecting sectors, orienting existing projects, and catalysing new projects that respond to the mission goals

While the Amazon is widely viewed as both a challenge and an opportunity for climate change mitigation, it has yet to be fully integrated into the transition plans of the relevant countries. For the Amazon to become a central pillar of each country's development strategy, financial, investment, and industrial strategies must be coordinated to support this transformation. This is fundamentally about a new approach to economic development that reconciles economic growth with environmental preservation and social welfare goals (G20 TF CLIMA Group of Experts, 2024).

Box 1: A mission map for the Amazon

Mission maps help to clarify what a mission-oriented approach means in practice.

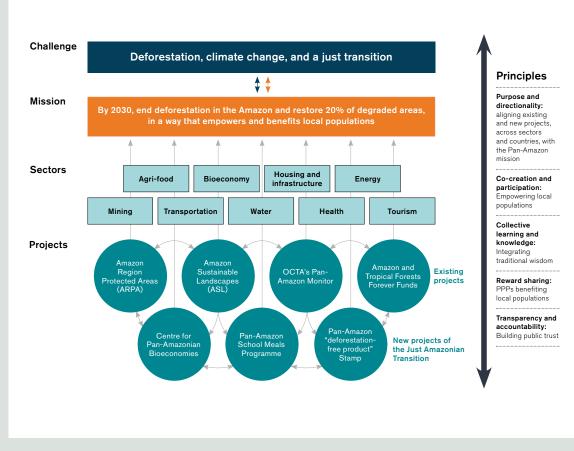


Figure 5: Just transition for the Amazon

Source: Co-authors' construction based on Mazzucato (2018), Mazzucato (2023a) and Mazzucato (2023d)

Grand challenges are difficult but important, systemic, and society-wide problems that do not have obvious solutions. For example, limiting global warming to 1.5°C above pre-industrial levels.

Missions are concrete goals that, if achieved, will help to tackle a grand challenge. They set a clear direction for the different actors and sectors whose investment, innovation and effort is required to develop solutions. To mobilise as much cross-sectoral collaboration as possible, missions should focus less on economic outcomes and more on societal and environmental outcomes. Missions can help transform complex challenges into clear investment pathways. To leave room for innovation, they should set a clear direction without prescribing exactly how the end goal will be achieved.

Ideally, missions should: be bold and inspirational with wide societal relevance; set a clear direction with goals that are time-bound and measurable; be ambitious but realistic; stimulate cross-disciplinary, cross-sectoral, and cross-actor innovation; and foster multiple, bottom-up solutions.

Sectors are the economic sectors that need to be involved in developing solutions to specific missions, in collaboration with one another.

Projects are activities or programs that solve specific problems and, in so doing, help to achieve the broader mission. For example, an initiative aimed at expanding the use of EVs could be a project contributing to mission success. Many of the projects illustrated in this mission map are described in boxes throughout the report.

Principles apply to every component of the mission, specifying how each sector and actor should be engaged, and how each project should be developed.

This mission map description draws on Mazzucato, 2018 and Mazzucato et al., 2024a - reproduced with permission

The illustrative mission map in Figure 5 shows the economy-wide interactions that are needed to address the complex challenges the Amazon faces. A well-designed mission to end deforestation in the Amazon and restore 20 per cent of degraded areas by 2030, in a way that empowers and benefits local populations, could create opportunities for businesses operating across a wide range of sectors. For example, new market opportunities could emerge in (i) agri-food, related to sustainable farming practices and food production systems; (ii) the bioeconomy, related to leveraging biodiversity for sustainable activities, (iii) housing and infrastructure, related to sustainable materials and building practices, and designing with and for local communities; (iv) sustainable energy, such as shifting from oil and gas towards renewable energy; (v) mining, such as moving from extractive and carbon-intensive practices towards sustainable approaches to mining the minerals needed for the global renewable energy transition; (vi) transportation, including building sustainable mobility networks to transport people and goods while minimising adverse environmental impacts; (vii) water, addressing resource management and access to clean water for all; (viii) health, by leveraging the region's bio-innovation potential and building associated pharmaceutical manufacturing capacity; and (xix) tourism, including scaling up ecotourism and programmes that benefit local communities. To ensure that economic activity

transforms in a way that benefits local populations and the Amazon biome, state engagement with businesses responding to this mission must be designed according to common good principles, as detailed in Section 4.2. By aligning key sectors with the mission goal and common good principles, the proposed mission can facilitate structural change.

Achieving this mission requires different sectors and government ministries to work together, guided by an overarching mission and key principles. Inter-ministerial coordination and international cooperation will be essential (Mazzucato et al., 2024), involving different national ministries – including those responsible for environment, economy, innovation and science, agriculture, energy, mining, and health – both within each country and between countries.

Measures to promote international cooperation around shared goals already exist, providing a promising foundation from which to build (see Box 2). Existing initiatives would benefit from new forums to foster equity and deeper collaboration between countries to enable and support green industrial strategies so that all countries can benefit from green growth. This requires wealthier countries, and those with global value chains that touch the Amazon region to promote access to affordable green finance, advance technology transfer agreements, and empower unions to promote the interests of workers (G20 TF CLIMA Group of Experts, 2024).

For businesses, implementing this approach will create market opportunities across a wide range of sectors, and encourage them to invest and innovate – this is not just about the agri-food sector becoming more sustainable; it is also about transforming sectors ranging from health to ecotourism, mining to manufacturing. A mission-oriented approach would help ministries, countries, and sectors converge around collaborative projects in the region, supported by transnational actors.

Box 2: Funding International Cooperation against deforestation in the Amazon via the Amazon Cooperation Treaty Organisation (OTCA)

The Amazon Cooperation Treaty Organisation (OTCA) plays a critical role in fostering international cooperation for the sustainable management of the Amazon Basin, with a strong emphasis on funding mechanisms that support its conservation and socio-economic development. Founded in 1995, the OTCA is a multilateral body that brings together eight Amazonian countries – Brazil, Bolivia, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela – to coordinate efforts in the sustainable use of the Amazon's resources. The organisation works to align national policies and facilitate international funding for conservation, research, and sustainable development projects in the Amazon. A key element of the OTCA's work is its ability to mobilise international financial cooperation. It connects the region with global partners, including multilateral institutions like the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF). These partnerships have enabled the OTCA to secure funding for large-scale projects aimed at preserving the Amazon's biodiversity, tackling climate change, and improving the livelihoods of Indigenous and local communities. In recent years, OTCA has expanded its

focus to include climate resilience, reforestation, and water resource management. The organisation's ability to pool financial resources and coordinate projects across multiple countries is a critical component of its success. Through its international funding efforts, OTCA ensures that the Amazon's unique ecosystems receive the protection they need, while also contributing to regional sustainable development.

4.2 A common good approach

To bring greater specificity to the Amazon mission, this paper proposes the use of a Common Good framework (Mazzucato, 2023c, as shown in Figure 6), which emphasises the importance of how the mission is pursued, not just what it aims to achieve. This framework, with its focus on cocreation, access, and knowledge-sharing, outlines how governments can shape the distribution of value generated through cross-sectoral investment and innovation under a mission-oriented framework. A common good framing can help to ensure that the relationships between economic actors in the Amazon are mutually beneficial. Critically, such framing also emphasises that involving diverse stakeholders in the mission is an imperative.



Figure 6: Five Pillars of the Common Good from Mazzucato (2023c)

Source: Governing the economics of the common good: from correcting market failures to shaping collective goals (Mazzucato, 2023c).

To advance the just transition for the Amazon, the common good framework organises its key tenets (or 'pillars') into a visual and practical guide. The first pillar – purpose and directionality – promotes outcome-oriented policies that serve the common interest. Explicitly defining the direction of policies, public–private partnerships, and citizen engagement through a mission-oriented approach helps shape the economy in the interests of the common good. Given

the many ongoing initiatives in the Amazon, it is crucial to critically evaluate the purpose and directionality of existing policies to drive greater outcome orientation and alignment.

The second pillar – co-creation and participation – ensures that citizens and stakeholders are actively involved in debates and consensus-building, bringing diverse voices to the forefront. The challenge here is to integrate collective governance into the approach to address global challenges, while balancing interests at individual, regional, national, and global levels. Aligning with existing local organisations and programmes will be essential to overcome cultural and logistical complexities and foster genuine participation. A few existing initiatives explicitly include a focus on inclusion of local communities in conservation and sustainable economic development (see Section 5.3), but many stop short of deeper empowerment and co-creation.

The third pillar – collective learning and knowledge-sharing – enables the creation of purposedriven partnerships that leverage collective intelligence. A key question is how to integrate knowledge-sharing within governance, whether through intellectual property rights, direct-access platforms, or institutional capacity building. In the Amazon, integrating and valuing traditional knowledge systems will be critical, as will ensuring that knowledge is shared widely to facilitate learning from both successful and unsuccessful projects, fostering more effective solutions to complex problems.

The fourth pillar – access for all and reward-sharing – ensures that the benefits of innovation and investment reach all stakeholders; this stands in contrast to the inequities caused by the current model of extractive and unsustainable economic activity. This can, for example, be achieved through conditionalities (see Box 5).

The fifth pillar – transparency and accountability – is critical for maintaining public trust and engagement, as it enforces commitments among actors and sets standards for evaluation. A major challenge in the Amazon is monitoring actions and measuring societal impacts, whether for forest preservation or community well-being. The magnitude of the challenge makes it a critical principle of the proposed mission.

In summary, the mission for a just transition for the Amazon provides a structured approach to integrating economic growth, environmental sustainability, and social equity within the Amazon. By leveraging the common good framework from Mazzucato (2023c), the proposed mission emphasises how equitable processes can yield mutually beneficial outcomes across diverse stakeholders. Each of the five pillars highlights critical areas where collaboration can drive lasting change.

By embracing a mission-oriented approach grounded in these pillars, the mission for a just transition for the Amazon can turn the challenges in the Amazon into opportunities for cross-sectoral sustainable investment and innovation, with benefits that are equitably distributed, positioning the Amazon as a global bioeconomy leader.

The next section looks at what this framework means for the design of some of the key tools, institutions, partnerships, and co-creation models needed to implement the JAT mission.

5. Mission-oriented tools, institutions, and partnerships with common good principles

Implementing the mission for a just transition for the Amazon involves the integration of economic, social, and environmental considerations into a cohesive strategy that preserves socio-biodiversity. This requires the alignment of public sector tools and institutions as well as the design of public–private partnerships with mission goals. Section 5.1 provides examples of how key tools and institutions, including public finance and procurement tools and state-owned enterprises (SOEs), could be designed to drive the proposed mission forward. Section 5.2 focuses on the public–private partnerships needed to drive investment around the mission. Finally, Section 5.3 discusses the essential co-creation to ensure inclusive development in the Amazon region.

5.1 Tools and institutions

The success of the proposed mission depends on deploying tools and institutions that are capable of shaping markets, mobilising and directing resources toward mission-aligned projects, and coordinating cross-sectoral efforts. Public institutions play a crucial role in market creation and innovation. These are not merely regulatory bodies; if designed in a mission-oriented way, they can become key players in shaping markets and ensuring that investments align with long-term sustainability goals. By guiding resources toward key sectors such as the bioeconomy, public institutions can help steer economic growth toward ecological and social objectives.

State-owned enterprises have potential to shape markets due to their intermediate position between the public and private sectors. However, an emphasis on independence often divorces them from national policy priorities. A mission-oriented governance structure – whether through a state holding company, as is the case in countries like France, or through clear policy directives from relevant ministries – can enable SOEs to direct investments and shape markets in alignment with mission goals, while still maintaining an emphasis on transparency and accountability (Mazzucato and Gasperin, 2023).

Among SOEs, public financial institutions (PFIs), such as development banks, guarantee funds, sovereign wealth funds, and community wealth funds, are essential for providing the long-term, patient, outcomes-oriented finance that is required for mission-oriented industrial strategy to succeed. However, leveraging these sources of capital requires PFIs to be redesigned with mission-oriented mandates. It also requires them to become lenders of first resort rather than last resort and to share risks and returns with private sector investors. By investing in a portfolio of innovative, mission-aligned projects and capturing some of the upside, national development banks, for example, can reinvest the profits from successful investments into other projects. Brazil's BNDES is an example of a mission-oriented national development bank that is channelling investment towards preservation of the Amazon (see Box 3 and Box 4). Importantly, national PFIs can benefit from mission-oriented alignment with multilateral and regional development banks and other global financial institutions.

Box 3: BNDES and the Amazon Fund

The Brazilian National Development Bank (BNDES) exemplifies how PFIs can align their financial operations with national and global sustainability goals, mobilizing resources for environmental protection while fostering local economic resilience. BNDES has been instrumental in funding initiatives such as the Fundo Amazônia, or Amazon Fund, a major program aimed at financing projects that combat deforestation and promote sustainable development in the Amazon region (BNDES, 2024).

The Amazon Fund exemplifies how public financial tools can support sustainability-focused projects. Since its inception, the fund has raised over \$1.3 billion to finance initiatives aimed at reducing deforestation and promoting sustainable land use. This includes supporting Indigenous-led conservation efforts and sustainable agricultural practices, ensuring that development aligns with long-term environmental protection goals (BNDES, 2022). The success of the Amazon Fund is reflected in reductions in deforestation rates and the creation of sustainable livelihoods for local communities.

Public procurement is a powerful tool for stimulating demand for sustainable products and services (Mazzucato et al., 2024). By implementing strategic procurement policies, governments can shape markets and drive growth in industries that align with the goals of the mission for a just transition for the Amazon, such as the bioeconomy. To create markets for bio-based products, strategic procurement policies can, for example, establish sustainable sourcing requirements in government contracts, encouraging innovation in sectors like sustainable agriculture, renewable energy, and green infrastructure. (See Box 6 for an example).

Box 4: School meals procurement in Brazil

Brazil's National School Meals Programme mandates that 30 per cent of food for public school meals be sourced from local family farmers. This policy supports over 100,000 small farmers and promotes sustainable agricultural practices while strengthening local economies (Brazilian Ministry of Agriculture, 2023). This initiative illustrates how procurement policies can stimulate demand for sustainable products and drive prosperity.

5.2 Public-private partnerships

The effectiveness of the just transition for the Amazon hinges on forming mutually beneficial collaborations between multiple stakeholders, including the public sector, private companies, and local Indigenous populations. These alliances are crucial for pooling resources, exchanging expertise, and driving the innovations to meet the mission objectives.

To shift from an extractive economic model to one oriented around producing shared value, governments must engage with businesses differently, designing mutualistic partnerships that

are oriented around shared goals. One way to do this is by placing conditions on private sector access to public support. Conditions can ensure that the resulting products or services are affordable and accessible to local populations that could benefit from them, guarantee fair wages for workers, and require sustainable business and land use practices. Profit sharing provisions are also important (through equity schemes, royalties, pricing, collective funds, etc.) as are provisions requiring reinvestment or profits in productive activities like research and development and worker training (instead of unproductive activities like shareholder buybacks) (Mazzucato and Rodrik, 2023). This could also include implementing the Rio Declaration's principle (United Nations, 1992) that advocates for internalising environmental costs into product pricing and utilising economic instruments for environmental policy. Box 5 shows a typology of conditionalities.

Box 5: Typology of conditionalities

Ensure that citizens and businesses have ACCESS to goods, services, and technologies.

DIRECT investments towards climate and inclusion objectives.

Include **PROFIT-SHARING** provisions between contributing parties.

Promote the **REINVESTMENT** of business profits into productive activities.

(Mazzucato and Rodrik, 2023).

5.3 Co-Creation and Participation Models

At the heart of the mission for a just transition for the Amazon is the principle of co-creation, which emphasises the importance of inclusive governance and community participation in shaping development strategies. Co-creation ensures that development policies are informed by the needs and knowledge of local and Indigenous communities, making them more effective and sustainable in the long term. As highlighted in Mazzucato (2023c), 'co-creation fosters innovation that is more inclusive, ensuring that solutions are tailored to the needs of communities and aligned with the common good.'

Co-creation ensures that development in the Amazon respects the rights of Indigenous peoples and local communities. By involving these communities in decision-making processes, cocreation confirms that policies are culturally appropriate and ecologically sustainable and helps foster bottom-up innovation. Indigenous and local communities possess critical knowledge of the Amazon's ecosystems, which can inform more sustainable land-use practices and contribute to long-term conservation efforts. Moreover, co-creation enhances the legitimacy and effectiveness of public policies, aligning the goals of economic development with the preservation of socioeconomic value. By embedding local knowledge into policy frameworks, governments can create innovation ecosystems that are more responsive to societal and local challenges. Notably, local communities can introduce nature-based solutions and sustainable practices that not only address ecological challenges but also support development. These approaches can build on existing initiatives that prioritise community-level engagement in preserving the Amazon (described in Boxes 6–9) but stop short of truly empowering local actors to make decisions about the approach to development and about the design of the projects that will impact them.

Box 6: The Robustas Amazônicos Initiative (Brazil)

The Robustas Amazônicos Initiative is situated in the geographical indication area of "Matas de Rondônia" in Brazil and exemplifies the power of partnerships to promote both economic and environmental sustainability. This region involves more than 60 per cent of the state's coffee-growing areas and generates 83 per cent of Rondônia's production. Over the course of 20 years, the cultivated area in the state has been reduced by around 80 per cent, and productivity has increased by almost 500 per cent through the adoption of technologies (Rosa Neto, 2024). One of the projects in this area, Robustas Amazônicos, integrates Indigenous knowledge with modern agroforestry techniques to promote sustainable coffee production. Through integration of local communities, private investors, and government support, the initiative demonstrates the role of partnerships in fostering inclusive growth while protecting the Amazon's ecosystems. This is an example of how local voices play a critical role in achieving the goals of the mission for a just transition for the Amazon. Their traditional knowledge is essential for ensuring that development is both sustainable and inclusive, respecting their cultural practices and land rights while promoting conservation.

Box 7: The Caquetá Biodiversity Conservation Initiative (Colombia)

In Colombia, the Caquetá Initiative engages over 3,000 families in agroforestry practices, aimed at reducing deforestation and improving livelihoods. By combining traditional knowledge with modern agricultural techniques, the initiative has developed a sustainable model for land use that protects biodiversity while generating income for local communities (Ministry of Environment, 2023). This example highlights the importance of including local communities in decision-making processes to ensure that development aligns with the mission for a just transition for the Amazon.

Box 8: Cooperation in the Triple Frontier between Brazil, Colombia, and Peru

The Triple Frontier region, where Brazil, Colombia, and Peru converge, offers unique opportunities for sustainable development through eco-tourism and resource management, despite challenges such as illegal logging and drug trafficking. This area has seen efforts by organisations like the Amazon Cooperation Treaty Organisation (OTCA), which focus on Indigenous community resilience and health.

Box 9: Amazon Region Protected Areas (ARPA) and Amazon Sustainable Landscapes (ASL)

The Amazon Region Protected Areas (ARPA) Programme and the Amazon Sustainable Landscapes (ASL) initiative are two cornerstone projects in Brazil's effort to protect its biodiversity while promoting sustainable economic development. ARPA, launched in 2002, is one of the world's largest conservation programmes, working to preserve millions of hectares of the Amazon's most critical ecosystems (FUNBIO, 2018). The programme focuses on creating, expanding, and maintaining protected areas, with a longterm goal of ensuring that these areas are sustainably managed. It has been successful in securing long-term funding and international support, leveraging partnerships with global environmental organisations, national governments, and local stakeholders. This programme is integral to Brazil's climate action, contributing to carbon sequestration and biodiversity conservation while engaging local communities in sustainable land management practices (FUNBIO, 2018).

Similarly, the Amazon Sustainable Landscapes (ASL) initiative, launched in 2015, complements ARPA by promoting sustainable land use across the region. ASL seeks to integrate sustainable agriculture, forestry, and biodiversity protection while reducing deforestation. It emphasises the inclusion of local communities, helping them adopt sustainable practices that generate economic value while preserving their land (Juelsgaard, 2022). ASL's multilateral funding model, supported by the World Bank and the Global Environment Facility (GEF), ensures that the programme continues to expand its reach, building on the successes of ARPA and contributing to both regional and global sustainability goals. Both programmes, housed under the Ministry of the Environment and supported by international and national partners, aim to conserve vast areas of the Amazon while also integrating local communities into sustainable development (GEF, 2023).

The challenges of preserving the Amazon and fostering sustainable development cannot be addressed by any single actor alone. Governments, private enterprises, and local communities must work together to ensure that development strategies align with the principles of sustainability and inclusivity. Partnerships that prioritise the common good will be key to ensuring that development in the Amazon is both socially just and environmentally sustainable.

6. Conclusion: A new social contract for the Pan-Amazon

A just transition in the Amazon Rainforest is not only a regional development strategy for Pan-Amazonian states but also a global imperative. The Amazon is unique, given the extent of its biodiversity and the critical role it plays in global climate regulation and water cycles. There is a clear imperative to shift from extractive economic models towards a model that prioritises sustainability, justice and deep engagement with local populations and systems of knowledge.

This paper proposes a mission-oriented approach grounded in common good principles. This framework for a just transition for the Amazon can turn the region's challenges into opportunities for cross-sectoral innovation, investment and sustainable development, with benefits that are equitably shared, positioning the Amazon as a global leader in sustainable, inclusive development. To succeed, this framework must galvanise both local and transnational efforts directed around a shared mission, adapt public sector tools and institutions to make this mission achievable, design public–private collaboration to produce shared value, and co-create solutions with local communities.

The paper's key recommendations include:

- 1. Implement a mission-oriented approach to catalyse investment and innovation oriented towards ending deforestation in the Amazon and restoring 20 per cent of degraded areas by 2030, in a way that empowers and benefits local populations. By setting a bold, clear, measurable mission, governments in the region can engage private sector actors across sectors, as well as local leaders, scientific experts, and civil society actors in the development of new, bottom-up, participatory solutions to position the Amazon as a leading socio-biodiversity hub.
- 2. Advance green industrial strategies oriented around this mission. The Amazon has the potential to lead in bioeconomic innovation. By fostering green industrial policies that align with the region's ecological potential, the Amazonian States can help create and shape markets rooted in sustainability.
- **3. Embracing New Economic Thinking for the Common Good:** To achieve sustainable development, the Amazon requires new economic models. Specifically, it requires a common good approach that gives priority to the how as much as the what. The "how" prioritises collective decision making, collective sharing of benefits, and transparency. Critically, rather than relying on traditional top-down approaches, a common good approach emphasises the importance of engaging local communities as active contributors to development in diverse cultural contexts.
- 4. In particular, a just economic transition in the Amazon requires the integration of traditional knowledge systems into the design of the mission and into how it is implemented. Knowledge sharing must be founded on respect for what others bring to the table. Local communities of Amazonian peoples hold crucial ecological knowledge that can inform sustainable development strategies and their involvement in the mission-

oriented approach is foundational for respecting ecological cycles and fostering de facto nature-based solutions. The active participation of Indigenous people and other local communities, such as quilombola, riverside, and small producers, would ensure that the mission benefits from a broad spectrum of knowledge systems, promoting diverse developments.

5. Adapt national and regional tools and institutions – notably, state-owned enterprises, public financial institutions, and public procurement – as well as public-private collaboration and local engagement to orient them around the Amazon mission and design them according to the principles of the common good.

At the heart of this approach is a reimagining of value creation: rather than seeing the region as a natural resource to be exploited or simply to be 'saved' from deforestation, it must be understood as a dynamic hub for value co-creation.

References

Abramovay, R. et al. (2021). Chapter 30: The new bioeconomy in the Amazon: Opportunities and challenges for a healthy standing forest and flowing rivers. In C. Nobre, A. Encalada, E. Anderson, F. H. Roca Alcazar, M. Bustamante, C. Mena, M. Peña-Claros, G. Poveda, J. P. Rodriguez, S. Saleska, S. Trumbore, A. L. Val, L. Villa Nova, R. Abramovay, A. Alencar, C. Rodríguez Alzza, D. Armenteras, P. Artaxo, S. Athayde, H. T. Barretto Filho, J. Barlow, E. Berenguer, F. Bortolotto, F. A. Costa, M. H. Costa, N. Cuvi, P. M. Fearnside, J. Ferreira, B. M. Flores, S. Frieri, L. V. Gatti, J. M. Guayasamin, S. Hecht, M. Hirota, C. Hoorn, C. Josse, D. M. Lapola, C. Larrea, D. M. Larrea-Alcazar, Z. Lehm Ardaya, Y. Malhi, J. A. Marengo, J. Melack, R. M. Moraes, P. Moutinho, M. R. Murmis, E. G. Neves, B. Paez, L. Painter, A. Ramos, M. C. Rosero-Peña, M. Schmink, P. Sist, H. ter Steege, P. Val, H. van der Voort, M. Varese, & G. Zapata-Ríos (Eds.), Amazon Assessment Report 2021. United Nations Sustainable Development Solutions Network. https://doi.org/10.55161/UGHK1968

Ambiente. (2023, November 14). Visión Amazonía. Available at: <u>https://www.minambiente.gov.co/enlaces/</u> <u>vision-amazonia/</u>

BNDES. (2024). Fundo Amazônia: Environmental protection in the Amazon. Available at: <u>https://www.bndes.gov.br</u>

Brazil (2022). Action plan for prevention and control of deforestation in the Legal Amazon (PPCDAM). Available at: <u>https://www.gov.br/mma/pt-br/assuntos/</u> <u>combate-ao-desmatamento-queimadas-e-ordenamento-</u> <u>ambiental-territorial/amazonia-ppcdam-1/ppcdam_5</u> <u>en.pdf</u>

Brazil (2023). Ecological transformation plan: Inclusive and sustainable development to address the climate crisis. Ministry of Finance, Government of Brazil.

Brazilian Development Bank (BNDES). (2022a). Amazon Fund Annual Paper. Available at: <u>https://www.bndes.gov.br</u>

Brazilian Development Bank (BNDES). (2022b). Socioenvironmental responsibility policy (PRSA) 2022-2024. Available at: <u>https://www.bndes.gov.br</u>

Brenha Ribeiro, H., & Braga, J. (2022, January). The Amazon and its peoples: Land rights in Brazil as a global ecological issue. Paper presented at the Ecological Challenges Seminar of the Master Economic Policies for the Global Transition (EPOG+), Paris, France. Costa, F. de A., & Fernandes, D. A. (2016). Dinâmica agrária, instituições e governança territorial para o desenvolvimento sustentável da Amazônia. Revista de Economia Contemporânea, 20(3), 517–518. <u>https://doi.</u> org/10.1590/198055272036

Cordovil, B., & Ravena, N. (2023). Fatores condicionantes da estrutura da governança: teoria e prática no programa Pará Rural. Interações (Campo Grande), 24(3), 863–876. https://doi.org/10.20435/inter.v24i3.3782

Crist, R. E., Parsons, J. J., & Schultz, A. R. (2021, January 28). Amazon River. Encyclopaedia Britannica. Available at: https://www.britannica.com/place/Amazon-River

Deleidi, M. & Mazzucato, M. (2018). Putting Austerity to Bed: Technical Progress, Aggregate Demand, and the Supermultiplier. UCL Institute for Innovation and Public Purpose, 2018, www.ucl.ac.uk/bartlett/public-purpose/ sites/public-purpose/files/iipp_wp2018-02_putting_ austerity_to_bed-_technical_progress_aggregate_ demand_and_the_supermultiplier.pdf

Embrapa. (2022). Robustas Amazônicos: Impact Study. Available at: <u>https://www.embrapa.br</u>. Accessed 18 Oct. 2024.

Fearnside, P. M. (2018). Brazil's Amazonian forest carbon: The key to Southern Amazonia's significance for global climate. Regional Environmental Change, 18(1), 47–61. <u>https://doi.org/10.1007/s10113-017-1149-8</u>

Flores, C., Montoya, E., Sakschewski, B., et al. (2024). Critical transitions in the Amazon forest system. Nature. Available at: <u>https://www.nature.com/articles/s41586-023-06970-0</u>

FUNBIO. Amazon Region Protected Areas (ARPA) Program: 15 Years of Achievements. Global Environment Facility, 2018, <u>www.thegef.org/sites/default/files/</u> <u>publications/Arpa_GEF%202018_22.01.18-v2.pdf</u>. Accessed 18 Oct. 2024.

Gatti, L. V., Basso, L. S., Miller, J. B., & Domingues, L. G. (2021). Amazonia as a carbon source linked to deforestation and climate change. Nature, 595(7867), 388–393. https://doi.org/10.1038/s41586-021-03629-6

Global Commission on the Economics of Water. (2023). Turning the tide on the world's water crisis. Available at: <u>https://www.watercommission.org</u> Global Commission on the Economics of Water. Turning the Tide: A Collective Call to Action. Global Commission on the Economics of Water, Mar. 2023, <u>economicsofwater.watercommission.org/report/</u> <u>economics-of-water.pdf</u>. Accessed 18 Oct. 2024.

Global Environment Facility (GEF). "GEF Council Provides \$1.4 Billion Boost for Environmental Action." Global Environment Facility, 26 June 2023, <u>www.thegef.</u> <u>org/newsroom/press-releases/gef-council-provides-1-</u> <u>4-billion-boost-environmental-action</u>. Accessed 18 Oct. 2024.

Group of Experts to the G20 Taskforce on a Mobilisation Against Climate Change (G20 TF CLIMA Group of Experts) (2024). A Green and Just Planet: The 1.5°C Agenda for Governing Global Industrial and Financial Policies in the G20. Available at: <u>https://www.g20.</u> org/en/tracks/sherpa-track/climate-change/the-g20taskforce-on-a-global-mobilisation-against-climatechange-tf-clima

Grupo Bicentenario (2021). Green Investments in Colombia. Available at: <u>https://www.bicentenario.gov.co</u>

INPE (2021). Annual deforestation rates in the Brazilian Amazon. Instituto Nacional de Pesquisas Espaciais.

IPBES (2024). Indigenous and local knowledge in IPBES. Available at: <u>https://ipbes.net/indigenous-local-knowledge</u>

Juelesgaard, A. (2022). Amazon Sustainable Landscapes Project: Restructuring Paper. World Bank Group, 13 May 2022, <u>documents1.worldbank.</u> <u>org/curated/en/099050110132219903/pdf/</u> P159233078d5bf0620954f04be898140cc6.pdf. Accessed 18 Oct. 2024.

Kaiser, A. J. (2019, August 27). Explainer: Role of the Amazon in global climate change. Phys.org. Available at: <u>https://phys.org/news/2019-08-role-amazonglobalclimate.html</u>

Lapola, D. M., Pinho, P., Barlow, J., Aragão, L. E. O. C., Berenguer, E., Carmenta, R., Liddy, H. M., Seixas, H., Silva, C. V. J., Silva-Junior, C. H. L., Alencar, A. A. C., Anderson, L. O., Armenteras, D., Brovkin, V., Calders, K., Chambers, J., Chini, L., Costa, M. H., Faria, B. L., ... Walker, W. S. (2023). The drivers and impacts of Amazon forest degradation. Science, 379(6630). <u>https://doi. org/10.1126/science.abp8622</u> Lassman, A. (2016, October 4). Flying rivers of the Amazon Rainforest – a critical rain generator for the planet. Pachamama Alliance. Available at: <u>https://pachamama.org/news/flying-rivers-of-the-amazon-rainforest</u>

Mazzucato, M. (2018). Mission-Oriented Research & Innovation in the European Union: A problem-solving approach to fuel innovation-led growth. Paper for the European Commission, ISBN 978-92-79-79918-1. Available at: <u>https://op.europa.eu/en/publicationdetail/-/publication/5b2811d1-16be-11e8-9253-01aa75ed71a1/language-en</u>

Mazzucato, M. (2021). Mission Economy: a moonshot guide to changing capitalism. Penguin, Allen Lane, London.

Mazzucato, M. (2023a). Innovation-driven inclusive and sustainable growth: challenges and opportunities for Brazil. UCL Institute for Innovation and Public Purpose, Policy Paper 2023/06. Available at: <u>https://www.ucl.</u> <u>ac.uk/bartlett/public-purpose/publications/2023/dec/</u> <u>challenges-and-opportunities-brazil</u>

Mazzucato, M. (2023b). Transformational Change in Latin America and the Caribbean: A Mission-Oriented Approach. Economic Commission for Latin America and the Caribbean (ECLAC). Available at: <u>https://www.cepal.</u> org/en/publications/48299-transformational-changelatin-america-and-caribbean-mission-oriented-approach

Mazzucato, M. (2023c). Governing the economics of the common good: from correcting market failures to shaping collective goals. Journal of Economic Policy Reform, 27(1), 1–24. <u>https://doi.org/10.1080/17487870.2023.2</u> 280969

Mazzucato, M (2023d). A Mission-Oriented Strategy for Inclusive and Sustainable Economic Growth in Barbados. UCL Institute for Innovation and Public Purpose, Policy Report 2023/05. Available at: <u>https://www.ucl.ac.uk/</u> <u>bartlett/public-purpose/Barbados Policy Report 2023</u>

Mazzucato, M. and Rodrik, D. (2023). Industrial Policy with Conditionalities: A Taxonomy and Sample Cases. UCL Institute for Innovation and Public Purpose, Working Paper Series (IIPP WP 2023- 07). Available at: <u>https://</u> www.ucl.ac.uk/bartlett/public-purpose/wp2023-07

Mazzucato, M. et al. (2024). Mission-oriented industrial strategy: global insights. UCL Institute for Innovation and Public Purpose, IIPP Policy Paper No. 2024/09. Available at: <u>https://www.ucl.ac.uk/bartlett/public-purpose/policy-paper-2024-09</u>

Mazzucato, M. et al. (forthcoming). Brazil Paper. 2024/12.

Mazzucato, M. et al. (forthcoming). Colombia Paper. 2024/10.

Marsden, L., Ryan-Collins, J., Abrams, J., and Lenton, T. (2024). Ecosystem tipping points: Understanding risks to the economy and financial system. UCL Institute for Innovation and Public Purpose, Policy Report 2024/03. Available at: <u>https://www.ucl.ac.uk/bartlett/publicpurpose/2024/apr/ecosystem-tipping-points</u>

Ministry of Environment, Colombia. (2022). Amazon Vision Initiative Paper. Available at: <u>https://www.</u> <u>minambiente.gov.co</u>

Ministry of Environment, Colombia. (2023). Caquetá biodiversity conservation and sustainable livelihoods initiative. Available at: https://www.minambiente.gov.co

Nobre, C. A., et al. (2023). New Amazon Economy (Paper). WRI Brasil. Available at: <u>https://www.wribrasil.</u> org.br/nova-economia-da-amazonia <u>https://doi.</u> org/10.46830/wrirpt.22.00034

Paraguassu, Lisandra; Spring, Jake. "Lula's Brazil Amazon Deforestation Rises for First Time in 15 Months." Reuters, 7 Aug. 2024, <u>www.reuters.com/world/</u> <u>americas/lulas-brazil-amazon-deforestation-rises-first-</u> <u>time-15-months-2024-08-07/</u>. Accessed 21 Oct. 2024.

RAISG. (2024). Geospatial information on the Amazon: Indigenous territories and protected natural areas, infrastructure works, concessions, and requests for the exploitation of natural resources. Retrieved October 21, 2024, from <u>https://www.rafig.org/map</u>

Ritchie, H., & Roser, M. (2020). Greenhouse gas emissions. Our World in Data.

Rosa Neto, Calixto. Perfil socioeconômico e produtivo dos cafeicultores da região das Matas de Rondônia / Calixto Rosa Neto e Enrique Anastácio Alves. – Porto Velho, RO: Embrapa Rondônia, 2024. PDF (26 p.): il. color. (Documentos / Embrapa Rondônia, ISSN 0103-9865 / e-ISSN 0000-0000, 170)

Science Panel for the Amazon (2021). Amazon Assessment Report 2021. United Nations Sustainable Development Solutions Network. <u>https://doi.</u> org/10.55161/RWSX6527 Science Panel for the Amazon (2023). Transforming the Amazon through "Arcs of Restoration" (Policy Brief). United Nations Sustainable Development Solutions Network. <u>https://www.theamazonwewant.org/spa_</u> <u>publication/transforming-the-amazon-through-arcs-of-</u> <u>restoration-policy-brief/</u>

Trujillo, M. (2021). Colombia's National Bioeconomy Strategy. Available at: <u>https://www.ksla.se/wp-content/</u> <u>uploads/2021/05/2021-06-08-Monica-Trujillo-</u> <u>Colombia-Bioeconomy-Strategy.pdf</u>

United Nations. (1992). Rio Declaration on Environment and Development. United Nations Conference on Environment and Development (3–14 June 1992). Available at: <u>https://www.un.org/en/development/ desa/population/migration/generalassembly/docs/</u> globalcompact/A_CONF.151_26_Vol.I_Declaration.pdf

UNFCCC. Federative Republic of Brazil First Nationally Determined Contribution (NDC) 2023 Adjustment. United Nations Framework Convention on Climate Change, 2023, <u>unfccc.int/sites/default/files/</u> NDC/2023-11/Brazil%20First%20NDC%202023%20 adjustment.pdf. Accessed 21 Oct. 2024.

WWF Brasil (2023). "Before the World, Lula Commits to Put Brazil on the Path of Zero Deforestation by 2030." www.wwf.org.br/?84100/Before-the-world-Lulacommits-to-put-Brazil-on-the-path-of-zero-deforestationby-2030. Accessed 21 Oct. 2024.

WWF, Vieira, R. M., Cavalcante Da Silva, N. M., & Moreira, A. (n.d.). Amazon Sustainable Landscapes Program. In World Bank, WWF, & UNDP. Available at: <u>https://www.</u> <u>thegef.org/sites/default/files/publications/wb_gef_asl_factsheet_2019_en.pdf</u>

WWF (2024). O Programa Áreas Protegidas da Amazônia (Arpa). Available at: <u>https://www.wwf.org.</u> <u>br/natureza_brasileira/areas_prioritarias/amazonia1/</u> <u>nossas_solucoes_na_amazonia/areas_protegidas_na_</u> <u>amazonia/arpa/</u>

Zimmer, K. (2019). Why the Amazon doesn't really produce 20% of the world's oxygen. Environment. Available at: https://www.nationalgeographic.com/ environment/article/why-amazon-doesnt-produce-20percent-worlds-oxygen



ucl.ac.uk/bartlett/public-purpose/