PhD Program "Sustainability Science" (PZNW)
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Title: Global Asymmetries and Differentiated Sustainability: Towards a balance Political Economy of the Nexus of Biodiversity Between Global North and South

I. Introduction

Sustainability frameworks are often grounded in a technocratic and universalist vision originating from the Global North. As Latour (2015) reminds us, the recognition of ontological plurality is essential to ensure that a transition towards ecological sustainability becomes a political project of the many, a project that receives the broad support it still lacks. The dissertation examines agrobiodiversity —crucial for food security and sustainable agriculture— to understand how governance frameworks can be pluralized by integrating knowledge and epistemologies from the Global South. With this objective, the project situated itself at the crossroads of the natural and social sciences. It proposes to rethink sustainability not as a quantifiable objective or a technological standard, but as a process of intercultural translation combining the recognition of situated, singular knowledge, local agroecological practices, and sensitive attachments to territories with the necessities imposed by earth system science.

At the heart of these intercultural translations lie phenomena related to soils, which are fundamental yet too often invisible components of ecosystems and agricultural models. As Ruellan (2016) notes, soils play an essential role in climate regulation and the carbon cycle. They nourish, filter, recycle, and regulate. They are the matrices of life, yet they are increasingly threatened by intensive agriculture and industrial pollution—factors that undermine the very logic of Sustainable Development Goals (SDGs) 1, 2, 5, 10, 12, and 13. These threats are not only environmental; they are also political, economic, and ethical. The project engages with all three dimensions by critically examining the interpretive axes of global governance agreements—particularly the COPs—and the shifting configurations of power they reveal. These agreements must be questioned with respect to their actual capacity to integrate local singularities and the lived experiences of communities.

II. Context of Research

The current socio-ecological crisis—characterized by the accelerated degradation of biodiversity, increasing socio-environmental inequalities, climate instability, and armed conflicts that weaken global governance—reveals the limits of dominant economic and agricultural models, which are often grounded in an extractivist and standardizing logic (Moore, 2015; Escobar, 2018). In

agriculture, agrobiodiversity and Indigenous farming practices emerge as credible alternatives to enhance the resilience of food systems (Altieri, 1999; Gliessman, 2015). These practices emphasize the diversification of cultivated species, soil preservation, and the integration of local ecological knowledge (Toledo & Barrera-Bassols, 2008; Berkes, 2012).

Although certain normative instruments formally include the participation of Indigenous communities and recognize North–South asymmetries, their provisions remain vague and weakly binding, making them susceptible to instrumentalization and perpetuating power imbalances to the detriment of the Global South (Morgera, 2021; Biermann et al., 2014). In this respect, they contrast with standardized approaches to sustainability by valuing the plurality of ecosystems and cultures (Latour, 2015; Descola, 2013). Such models offer concrete pathways for reducing dependence on chemical inputs, restoring ecosystem services, and sustainably addressing malnutrition (FAO, 2019; IPBES, 2019). Yet, despite the emergence of international instruments—such as UNDROP, FAO initiatives, and the Sustainable Development Goals—the implementation of inclusive sustainability remains limited (Leach et al., 2018; Sachs et al., 2022).

Tensions stem from historical and geopolitical asymmetries inherited from colonization, imbalances in the production and recognition of environmental knowledge, as well as the low representation of peasant agriculture and indigenous epistemologies in global governance (Mignolo, 2011; Ndlovu-Gatsheni, 2015; Santos, 2014). The North-South divide continues to shape the balance of power, undermining the effectiveness and legitimacy of international agreements (Spivak, 1988; Grosfoguel, 2011). In this context, sustainability cannot be reduced to a technical issue: it is a profoundly political field, characterized by conflicts of values, temporalities and priorities (Scoones, 2016; Kothari et al., 2019).

Malnutrition, a global phenomenon with multiple causes, is a powerful illustration of the inability of standardized food policies to meet the real needs of the population (Patel, 2009; FAO, IFAD, UNICEF, WFP & WHO, 2022). It calls for contextualized responses, integrating territorial dynamics, vernacular knowledge and forms of peasant and women's agriculture (Agarwal, 2014; Holt-Giménez & Altieri, 2013). Taking this illustrative potential into account, the proposed project mobilizes a transdisciplinary approach to develop a critical and renewed reading of sustainability in agroecology—one that is attentive to the ontological and cultural plurality of living beings—and, through an epistemological lens, contributes to fostering a more balanced and equitable form of environmental diplomacy (Latour, 2017; Escobar, 2020).

III. Research questions and objectives

The central research question of the proposed thesis is:

To what extent can an anti-colonial and plural approach to sustainability, integrating indigenous and peasant knowledge, transform the international governance of biodiversity and food systems in order to (1.) strengthen environmental justice, food sovereignty, and the fight against malnutrition and (2.) attenuate tensions between SDG 2 and SDG 15?

To answer this question requires an analysis of existing asymmetries, a critical discussion of claims to universality, a detailed assessment of existing agreements and the development of forms of diplomacy that feature strong intercultural translation devices. This analysis is based on three sub-questions and related sets of hypotheses.

The first sub-question relates to historical asymmetries and the contested universalism of sustainability standards: To what extent can contemporary norms of sustainability, historically heirs to power relations and North-South asymmetries, claim universality, and how could an anti-imperial approach transform the global governance of biodiversity, food systems and the fight against malnutrition? The respective hypotheses are: (**H1.1):** International standards predominantly reflect the epistemologies and interests of the Global North. (**H1.2):** The implementation of agreements is marked by structural asymmetries that perpetuate the dependence of the Global South. (**H1.3):** The integration of anti-colonial and Indigenous perspectives would strengthen environmental justice, develop the agrobiodiversity of peasant agricultures, and foster more sustainable outcomes in the fight against malnutrition.

The second sub-question addresses environmental justice and ontological pluralism for biodiversity: To what extent do existing international agreements (ITPGRFA, Nagoya Protocol, CBD, SDGs) promote or limit the fair recognition of Indigenous and agrobiodiverse agricultural systems between the global North and South? The respective hypotheses are: (**H2.1):** Benefit-sharing mechanisms governed by a predominantly Western global governance contribute to the structural dependence of the global South. (**H2.2):** The transverse co-production of knowledge between actors from the global North and South acts as a lever to increase the effectiveness of agrobiodiversity, while reducing the risks of appropriation or marginalization of local knowledge. (**H2.3):** An explicit and non-folkloric revaluation—one that considers a new model for combating hunger through agrobiodiverse models—is necessary to ensure their autonomy and deliver meaningful results.

The third sub-question evolves around the diplomacy of natures and intercultural translation devices: How can the integration of Indigenous knowledge and agroecological practices into international decision-making processes (diplomatic) perform food security and sovereignty, strengthen environmental justice as well as the resilience of local communities, which are often managed by women? The respective hypotheses are: (**H3.1):** Indigenous knowledge can enhance

food diversity and adaptation to climatic hazards. (**H3.2):** Its integration enables the design of policies that are more contextualized and effective, following the soundness of commons (malnutrition) and singular management (agriculture, local nutrition). (**H3.3):** The recognition and inclusion of indigenous knowledge in decision-making frameworks strengthen food security and the resilience of local agro-biodiverse systems. The institutionalization of biocultural protocols reinforces local governance and improves nutritional outcomes (Girard, 2022).

IV. Literature Review / State of Research

Sustainability extends beyond environmental, social, or economic concerns and reflects the ways in which societies produce and prioritize knowledge, generating tensions between global models and local knowledge—particularly between SDG 2 (Zero Hunger) and SDG 15 (Life on Land). This literature review highlights pluralistic and anti-colonial approaches, the role of women's and peasant knowledge, and the contradictions of the global agri-food system, demonstrating that the co-construction of knowledge can promote more just and inclusive forms of sustainability.

Sustainability, initially defined by the Brundtland Report as a balance between economic growth, social justice, and ecological preservation (World Commission on Environment and Development, 1987), has evolved into a dominant technocratic discourse, often disconnected from the realities of the Global South. Scholars such as Latour (1993/2005) and Escobar (1995/2018) critique this universalization, advocating for the integration of diverse knowledges and lived experiences—particularly Indigenous (Shiva, 1989; Mignolo, 2000), women's (Haraway, 1988), and peasant knowledges (de Sousa Santos, 2014)—within an intercultural and political approach to knowledge that breaks with the linear development model.

Attempts to increase the sustainability of the existing agro-industrial model, supported by global institutions (Altieri & Nicholls, 2017; Holt-Giménez & Shattuck, 2011), highlight the disconnect between the technocratic discourse and agricultural realities. They have contributed to ecological and social degradation, disproportionately affecting peasant and Indigenous women (Shiva, 1989; Agarwal, 1992). Vandana Shiva (1993, 2005) and proponents of agroecology (Altieri, 1995; Rosset & Martínez-Torres, 2012) emphasize resilient, circular, and locally grounded agricultural practices that prioritize biodiversity and the reproduction of life, offering an alternative to globalized value chains and masculinist productivism (Salleh, 2017). These approaches call for a reconsideration of social and environmental impacts, including on malnutrition (Patel, 2012) and the SDGs (FAO, 2018).

Problems of malnutrition, in its multiple forms (undernutrition, nutrient deficiencies, and overweight), reflect the contradictions of the global agri-food system and its historical and territorial causes: land grabbing, marginalization of peasant agriculture, loss of dietary diversity, and dependence on agro-industry (Altieri, 1995; Martinez-Alier, 2002; Shiva, 2021; Gliessman, 2015).

Inclusive peasant agriculture, predominantly managed by women, has been described as ensuring local food security while preserving ecosystems (Shiva, 2016). Addressing malnutrition requires an approach that is both collective—emphasizing shared responsibility—and context-specific—supporting locally grounded agro-sustainable models—based on the co-construction of just and ecological food policies that value vernacular knowledge and autonomy (Escobar, 2018; Ostrom, 1990).

Both the academic discourse on agroecology and the one on malnutrition show that global sustainability governance is marked by pronounced asymmetries, with Northern countries retaining disproportionate influence in negotiations, and global mechanisms (SDGs, Paris Agreement) often reproducing top-down logics (Newell & Paterson, 2010; Bond, 2012). A "cosmopolitics" of sustainability—based on the co-construction of norms with local communities and the integration of Indigenous and women's knowledge—is seen as necessary to legitimize and enhance the effectiveness of transition policies. Their exclusion, by contrast, is seen as highlighting the limitations of dominant mechanisms in addressing the differentiated vulnerabilities of the Global South (Santos, 2014; Latour, 1999; Escobar, 2018; Martinez-Alier, 2002; Shiva, 2021).

Overall, the existing literature highlights the tensions between universal ambitions and the plurality of local knowledge and practices (Latour, 2015; Escobar, 2018). In the field of agro-sustainability, critiques of industrial agriculture emphasize peasant and women-led farming as the foundation for resilient and equitable food systems (Shiva, 1989; Altieri, 1995). Political ecology, the economics of the commons, and decolonial feminism stress the need to anchor solutions in local historical, cultural, and ecological realities.

Global environmental governance remains marked by geopolitical asymmetries, making the integration of Indigenous, rural, and women's knowledge into environmental diplomacy essential for the legitimacy and effectiveness of transition policies (Santos, 2014; Martinez-Alier, 2002; Shiva, 2021; Tormos-Aponte, 2021). Global instruments, such as the SDGs or the Paris Agreement, facilitate this inclusion but do not guarantee it systematically. Scientific neutrality cannot be assumed: some scholars advocate for specific causes, while others act as mediators.

Global malnutrition and biodiversity preservation require localized, context-specific responses grounded in peasant knowledge and food sovereignty (Cadena-Zamudio, 2024). Although the literature advocates for the inclusion of Global South populations, it remains crucial to understand the historical and systemic mechanisms that continue to deprive these countries of the means to claim equality and make their voices heard. The goal is to explore epistemological ways to establish more equitable relations, guided by a normative framework more binding and demanding

performance than the current one. Systematic recognition of ancestral knowledge from the Global South is essential to strengthen the resilience of food systems for the future crises.

V. Methodology

By looking at a field strongly dominated by the natural sciences (agroecology) through the lenses of different segments from the social and political sciences, the project is firmly rooted in the sustainability sciences. While it emphasizes a critical approach towards existing international agreements and agroecology, it also talks into account the necessities of earth system science, with its strong foundation in the natural sciences. How can pluralization be achieved without compromising the latter?

Methodologically, the aim is therefore to construct a framework for an intercultural analysis of sustainability norms. The three main functions of such a framework are to (i.) identify the common factors between the problems and possible solutions between the Global North and the Global South; (ii.) develop recommendations for a new diplomacy for biodiversity that more effectively integrates agricultural practices as a solution for malnutrition and ecosystem degradation; (iii.) propose a model of differentiated sustainability, considering territorial and cultural plurality in the study of singular problems between global North and South, such as malnutrition.

This research adopts a mixed, interdisciplinary and comparative approach, articulating qualitative, empirical and critical analyses in order to understand how norms circulate, impose themselves and are negotiated in North-South diplomatic relations. This research explores the tensions between ethical universality, cultural sovereignty and the sustainable imperatives of living biodiversity in global value chains.

1. Researcher's Positionality

I position myself in this research as both an observer and a participant shaped by my trajectory across the Global South and North. I am an Amazonian woman, born on the banks of the Amazon River, whose identity and lived experiences are deeply rooted in the realities of biodiversity, food systems, and cultural resilience. My international journey has led me to live in South Korea, Morocco, Spain, Florida, and, for the past fifteen years, France. This diverse background provides me with a plural lens through which to analyze the asymmetries and negotiations that define sustainability governance.

Professionally, I have worked for both the Brazilian and French governments, including in close proximity to the President of the French Republic, and as a member of MEDEF, where I represented business and policy connections between the Global North and South. Today, my

doctoral research is carried out at h_da, a German university, offering yet another vantage point within the European academic tradition. This positionality — an Amazonian woman embedded in international and institutional contexts — shapes the way I approach this work. It gives me access to the epistemologies and diplomatic frameworks of the Global North, while maintaining a profound connection to the lived realities, struggles, and knowledge of the Global South. By making this explicit, I embrace a reflexive methodology that acknowledges potential biases while turning my trajectory into a resource for bridging perspectives, amplifying plural voices, and critically interrogating the universalist claims of sustainability norms.

2. Field description

To answer the questions formulated above, I plan to analyse two types of frameworks to agrobiodiversity:

1. European Normative Frameworks: European Regulatory Frameworks: Agenda 2030 and the SDGs, Convention on Biological Diversity (CBD), United Nations Framework Convention on Climate Change (UNFCCC) and COPs, Committee on World Food Security (CFS/FAO), Principles of Agroecology and Sustainable Agriculture (FAO, 2018), United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP, 2007)
2. Multilateral Frameworks: Convention on Biological Diversity (CBD, 1992), Committee on World Food Security (CFS), Sustainable Development Goals (SDGs, 2015).

In the next step, selected transnational case studies will be carried out. For this work, the world will be divided into four regional blocs: Three Southern blocs (South America, Sub-Saharan Africa, and North Africa) and one Northern bloc, represented by the 27 members of the EU.

A cross-cutting theme will be examined across all blocs: malnutrition, a common topic with unique consequences directly dependent on current policies. This comparative methodology will highlight regional specificities, while identifying global trends and systemic correlations between malnutrition, sustainable environmental policies, and development models. This will help answering question 1 and confirm or reject one of the hypotheses in question regarding the asymmetries and standardization of these agreements. As a continuation of the comparative approach by regional blocs, a selection of five representative countries will be carried out for an in-depth analysis (Figure 1).

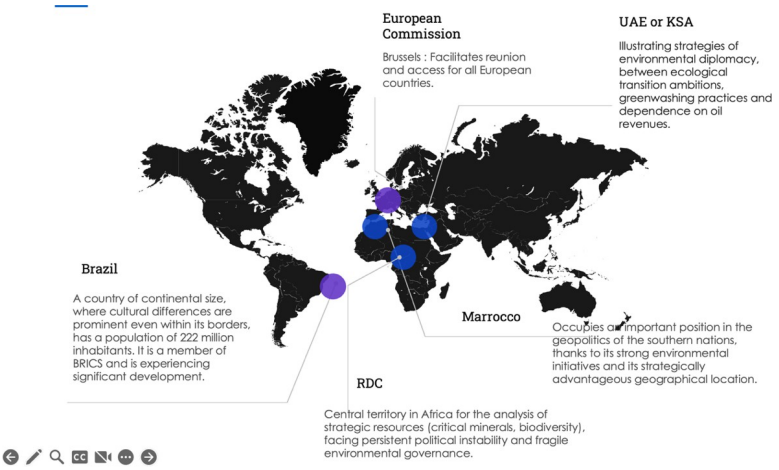

Figure 1: Area of observation

These countries were chosen for their strategic, environmental, economic and geopolitical weight in their respective regions:

1. **Brazil:** emblematic case of a country rich in natural resources, at the heart of issues related to deforestation in the Amazon, the rights of indigenous peoples and ecological preservation policies.
2. **Morocco:** an example of an African energy model in transition, committed to enhanced environmental cooperation with the European Union, and a strategic player in North-South dynamics, particularly in terms of water management.
3. **Democratic Republic of Congo (DRC):** central territory in Africa for the analysis of strategic resources (critical minerals, biodiversity), facing persistent political instability and fragile environmental governance.
4. **Gulf countries (Qatar or United Arab Emirates):** An illustration of environmental diplomacy strategies, ranging from ecological transition ambitions to greenwashing practices and dependence on oil revenues.
5. **EU** Considered a key global player, particularly through its financial sustainability policies (e.g., the European Central Bank's strategy) and its resource-related redistribution or conditionality mechanisms. The perspective of the 27 countries comprising the country alone will be analysed.

The objective of this selection is to analyze the logics of understanding, appropriation, adaptation, or contestation of international environmental standards. By means of assessing the differential effects of climate and environmental policies on the economic, social, and institutional structures of these countries, I will explore the tensions and synergies between sustainable development, resource sovereignty, and environmental justice in diverse regional contexts and translate them into malnutrition outcomes.

3. Empirical approach

The documents and frameworks outlined in the previous section will be analysed through thematic content analysis with the support of qualitative coding software (NVivo or Atlas.ti). Initial coding categories will include implicit ethics, the coloniality of norms, the inclusion or exclusion of local knowledge, geopolitical power relations, and the global social consequences of sustainability standards, such as malnutrition. These categories will be refined iteratively throughout the analysis. In addition to document analysis, I will conduct semi-structured interviews. Using interest-based sampling, I aim to collect data from at least 25 interviews across three main groups: regulatory experts (European Commission, UN, World Bank), NGOs and indigenous movements, as well as diplomats and climate negotiators.

Fieldwork will be carried out in four key regions to ensure geographic and political diversity: Brazil (10 interviews), Morocco (5), the Democratic Republic of Congo (5), and the European Union (5). My accreditation with the OECD will be leveraged to facilitate collaboration and access to experts within its member countries, particularly in the context of the EU, thereby optimizing the logistical and operational aspects of the research. The objective is to capture a diversity of perspectives on sustainability standards, their political and ethical implications, and their intersections with national and cultural contexts. A particular focus will be placed on comparing and bridging the viewpoints of the Global North and the Global South. Interview analysis will combine thematic coding, cross-referencing with research on the commons, and discourse analysis in order to identify the underlying logics of legitimation and resistance.

The interviews will be complemented by indirect observation of international negotiations, through the close examination of official documents and protocols. Where possible, this will be supplemented with direct observation of negotiation dynamics and the role of the selected countries, using participatory institutional ethnography. This ethnographic approach will enable the mapping of networks of influence and dominant narratives, providing a basis for a comparative and critical analysis of evolving practices.

Through document analysis, interviews as well as direct and indirect observations, a cross-sectional dataset will be created. With this dataset a differentiated analysis of sustainability practices will be prepared and contextualized with cultural, economic and political developments. In this way, I plan to construct typologies for the reception or appropriation of sustainability standards. and to mobilize an interdisciplinary theoretical framework as a tool for analysis and validation of the literary framework, in order to cross-reference the results with software: *NVivo / Atlas.ti* (qualitative), *Excel / R* for comparative tables. In the last step, I will cross-validate results by means of a triangulation of interviews, documents and field data. Among other things, coding by a double

rater, for example in the context of a Master thesis on the same topic, will be used to validate results.

4. Research Limitations and Mitigation Strategies:

One of the main potential limitations of the project relates to remote access to geopolitically sensitive areas. In several regions of the Global South, collecting truly reliable data remains difficult when relying exclusively on remote methods. Building a relationship of trust with local actors—often essential to ensure the credibility of the information collected—requires physical presence and direct human interaction. Another significant constraint is of a financial nature. Participation in international conferences, the organization of meetings with political and diplomatic representatives, as well as the acquisition of specialized software, all entail substantial costs. Limited financial resources therefore restrict access to crucial information and may, as a result, affect the overall quality and depth of the final outcomes.

To mitigate the impact of these constraints, several strategies have been envisaged. First, diversifying the sources and profiles of respondents makes it possible to offset the limitations imposed by the physical inaccessibility of certain research sites. Second, the systematic contextualization of primary data strengthens their relevance and reliability, even when they are obtained through indirect channels. Finally, access—made possible by the researcher's professional background—to a reliable network of contacts, will facilitate the initiation or completion of data collection in a more secure and credible manner.