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ARTICLE

PLANB Index: Sociological Categories for Climate Policymakers*,**

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This article presents a theoretical-normative instrument for climate policymakers to address the climate issue from the social studies' sociological perspective intersected with political ecology. Climate initiatives and policies are on the agenda of various social groups; at the same time, climate policymakers need instruments. Brazil lacks such theoretical-normative instruments. Based on a comprehensive review of the literature on climate ethics from a sociological perspective, this study developed and tested 'PLANB Index' in twenty-two Brazilian climate instruments formulated by the state, the private and third sectors, and academia. The index is composed of five modeled analytical categories: plurality in decision-making, energy locality, epistemic and material access, planned naturalness, and generational benefit. The results show that there is a mix of anthropocentric and ecocentric principles in the contents created by multisectoral arrangements – including private superclusters and international state investment funds. 'PLANB Index' proved to be an effective tool to identify the guiding principles in Brazilian climate policies; it might also contribute to future climate policymaking. 'PLANB Index' is an original contribution because it was not only empirically tested in the Brazilian context but also modeled from a sociological perspective, in close connection to other social science fields, with an emphasis on the ethical-political dimension.

Keywords: Climate ethics; climate policy; political ecology; planb index; convivialism.

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Formulating climate policies to postpone the end of the world is not only a techno-economic challenge but also an ethical and political issue given the climate emergency and the variety of social agents from different social groups involved (BRULLE, 2019; GARDINER, 2017). Compared to other disciplines, the social sciences have only marginally approached the issue of climate change (FLEURY, MIGUEL and TADDEI, 2019). Theoretical-normative instruments — which comprehend the fields of climate governance and criticisms of the Anthropocene (especially in the Social Studies of Science and Technology — SSST) — have emerged in the Brazilian scientific community, such as the 'Urban Adaptation Index', which seeks to contribute to tackling the effects of climate change in large urban centers (NEDER et al., 2021). This study addresses the topic of politics of climate change (with a focus on climate change policies) in Brazil in a context in which different climate moral agents (State, Market, Civil Society Organizations, among others) interact while competing for utopian perspectives currently under construction.

This article presents a theoretical-normative instrument built based on social studies dedicated to the nexus between ethics and politics. This is the result of research on climate initiatives and policies in Brazil. 'PLANB Index' was developed and tested to help climate policymakers formulate and assess policies guided by ethical values that were normalized through five analytical categories and their respective indicators. The instrument works as a bridge between the reflective-theoretical and normative-empirical spheres. The name 'PLANB' is the Portuguese acronym for the five analytical categories: 'p'lurality in decision-making, energy 'l'ocality, epistemic and material 'a'ccess, planned 'n'aturalness, and generational 'b'enefit.

This study aimed at developing a conceptual framework to evaluate and build climate policies that are morally oriented by a type of science that is politically guided by ethics. 'PLANB Index' thus seeks to address this contemporary challenge that affects human and more-than-human beings[1] differently and aggravates social and ecological inequities. 'PLANB Index' was constructed based on climate ethics (GARDINER, 2017;

[1]'More-than-human and nonhuman' are terms that reflect the criticism of the dichotomous society-nature model – in this study, these terms are used from the perspective of convivialism (INTERNACIONAL CONVIVIALISTA, 2020). As expressed by Costa: 'living together' is understood not only as ordinary life among human beings, but also between humans and nonhumans such as plants and animals, spirits and artefacts" (COSTA, 2019, p. 01).

GARDINER et al., 2010), socio-environmental ethics (FLORIT, SAMPAIO and PHILIPPI JR., 2019), and convivialist ethics (INTERNACIONAL CONVIVIALISTA, 2020).

Baumgarten raises the following concern: In the face of "the crisis of positivist science and its paradigms, its historical relationship with hegemonic interests, the risks of an unethical science for nature and society [...] How are conceptions of the world, ideologies, and utopias built?" (BAUMGARTEN, 2022, p. 63). And, I add, how can the demands of different moral agents be addressed — at least partially — given that climate policies are shaped by imagined utopias guided by different ethical principles? In the climate context, hegemonic interests are organized by large dominant coalitions that create denialist counternarratives and (anti-) climate policies (BRULLE, 2019). The expectation is that, by revealing the ethical dimension in scientific production, 'PLANB index' will directly contribute to an ethically guided political action.

In sum, this article offers a new instrument that might be used by climate policymakers in Brazil. 'PLANB Index' was created based on a new, original concept developed within the sociology of climate change: socio-climatic ethics. The originality of 'PLANB Index' lies in the inclusion of a new analytical layer oriented by the ethical-political dimension.

The transition from environmental ethics to climate ethics and how it affects the politics of climate change and its policies

Climate ethics, which originated in the disciplines of philosophy and political ecology, has broadened the field of environmental ethics and became a scientific field in its own (GARDINER et al., 2010). Climate ethics is a field pervaded by interconnected elements, such as social studies on the relationship between individuals and collectives and between local and global structures, intergenerational issues, ethical approaches to the responsibilities of certain dominant groups with a hegemonic view, and the society-Nature ontological separation[2]. In the early 2000s, the categories climate ethics and climate policy began to be discussed together; in 2010, the term climate ethics started to take shape in global warming policies in a sociological perspective (GARDINER et al., 2010).

[2]Some of the most prominent references in the climate ethics field include Gardiner, Caney, Jamieson, and Shue. Singer and Callicott, originally from the environmental ethics field, also joined this new field of study (GARDINER et al., 2010). The complete list of concepts and authors dedicated to climate ethics is in Appendix 01.

Socio-climatic ethics is what connects the ontological sphere (of various worldviews and utopian perspectives), the ethics sphere (anthropo/techno, bio/eco, climate/geo, or multicentric orientation — beacons for political moral agents), and the political sphere (political actions and practices — from small groups to superclusters — materialized in social 'praxis').

In the climate context, developing science without ethical reflections leads to barbarism (BRUCKMEIER, 2018). Therefore, climate change is approached as a fundamentally ethical issue (GARDINER, 2017) – in this study, the sociological perspective is added to this approach. Socio-climatic ethics, on the other hand, emphasizes the nexus between ethics and politics and the intersection between ethical-sociological criticism and political practice. These moralities[3] are observed in the climate arena dominated by large state-corporate coalitions (BRULLE, 2019).

In this discussion, "the difference between ecocentric and anthropocentric approaches is an ethical-practical separation, given that both perspectives recognize the material unity of the planet" (WELLS and GÜNTHER, 2019, p. 26 – literal translation). Political ecology scholars argue that Nature must be recognized as an entity with intrinsic moral value (GUDYNAS, 2019), that is from an ecocentric perspective of the world and those who inhabit it (human and more-than-human beings simultaneously), unlike anthropocentric approaches, which ignore or erase nonhuman beings. Therefore, in treating climate as an ethical-sociological and political issue, we are able to explore non-anthropocentric perspectives.

The contents of the 'Summary for Policymakers in the Assessment Reports' (IPCC, 2022, 2021) arguably follow the ethics perspective in the international climate agenda. Otto and colleagues (2020) argue that the world needs social tipping interventions (STI), by including social components in the political arena of climate policymakers. This inclusion occurs via objective propositions such as social indicators that clarify the subjective components of the different types of utopia guiding energy and social transition policies. For Smith, Christie, and Willis, this type of methodological proposal is "an important sociopolitical contribution to a debate that is all-to-often technocentric in focus" (SMITH, CHRISTIE, and WILLIS, 2020, p. 01). The issue is not about the technopolitical ways to carry out an energy transition and reduce global warming; rather,

[3]In this article, moralities are understood as moral practices, actions carried out by individuals or groups consciously. These are actions guided by ethical principles.

it is about the ways in which social inequities could be reduced, both for human and non-human beings.

An empirical example of an instrument created based on the nexus between ethics and politics in the international arena is the European Union's 'Next Generation EU' mechanism for responding to the health and climate crisis[4]. This instrument is committed to carrying out a "double transition, green and digital" with a "fair and inclusive recovery" in which "social equity is at the heart of recovery" (COMISSÃO EUROPEIA, 2020, p.12). Politics and ethics are thus intertwined, which makes the current challenge more complex and takes us to the realm of morality (OTTO et al., 2020).

In Brazil, scholars have recently began creating instruments that are directly based on the nexus between the fields of sociological ethics and politics (SALMI and FLEURY, 2022). The scientific-political project 'CiAdapta' is emblematic, as it produced the 'Urban Adaptation Index' — UAI (NEDER et al., 2021). This instrument is climate "a decision-support tool", which was developed and tested in Brazilian cities to "to assess the current potential capacity of cities to deal with climate change impacts" and to be (NEDER et al., 2021, p. 02). Based on normative indicators, the UAI seeks to identify whether cities have established structures and standards such as "municipal housing plan, municipal council and funding, municipal mobility plan, organic agriculture and community gardens, climate program for agriculture, law of land use and occupation related to landslide prevention" among others (NEDER et al., 2021, p. 07-09). The UAI only examines practices — which, from the perspective of socio-climatic ethics, are considered moral practices — from a legal procedural standpoint; it does not analyze issues directly associated with ethical principles (e.g., anthropocentric and ecocentric principles). Ethical-sociological components are not present in the UAI. 'PLANB Index' was therefore partially inspired by the UAI, and it was created to pragmatically address the direct nexus between ethics (principles) and climate change policies (rules established by different types of agents — state, private, or third sectors). 'PLANB Index' is a bridge between the planes of reflection and norms, the connection between ethical principles and political practices.

[4]With respect to material access, this instrument officially allocated '1.85 trillion euros' (COMISSÃO EUROPEIA, 2020, p. 02).

Methodology: 'PLANB Index' as an instrument for evaluating and formulating climate policies

Some preliminary definitions: climate instruments and policies

From a sociological perspective, instruments are "normative sets of customary and regulated social practices that produce (reproduce and transform) society according to principles, values, and norms about collectively shared ways of life" (VANDENBERGHE, 2015, p. 92 – literal translation). 'Climate moral agents' (CRIPPS, 2013) are used to code the Brazilian climate change policymakers.

Climate instruments include initiatives and social mechanisms created by civil society organizations or the private sector, Government or State policies, and even climate mechanisms formulated by multisectoral arrangements composed of scholarly organizations, corporate philanthropic organizations, multilateral agencies, among other social entities. The terms State, Market, and Nature are capitalized to highlight the ontological view from the human perspective. State and Market are socio-political markers of the 'moderns' (GUDYNAS, 2019; KRENAK, 2019; LATOUR, 2017), which maintain the society-Nature split.

Climate policies here are understood in their broad sense: They comprehend public policies and initiatives by civil society, the market, and other societal arrangements. In other words, in this study, I searched for the ways in which the socio-ecological practices of the emerging socio-climatic ethics connect with the content of the emerging structures proposed in the Brazilian climate instruments (BCIs) on socioecological reordering.

This study addresses the climate issue as a sociological issue (BECK, 2018) and focuses on the ethical contents — ethical principles in the plane of reflection — disputed and crystallized — moral practices found in the political plane — in Brazilian political climate instruments. 'Ethical orientation' is understood as the driver of a (ethical) principle, and it is used to identify the types of ethical orientations in each climate initiative or policy. It is my understanding that the anthropo-technocentric orientation is guided by the strictly human neoliberal logic, the bio/ecocentric orientation is guided by the logic of ecosystem preservation/regeneration, the climate/geocentric orientation is guided by the logic according to which human rationality has control over forces a the

planetary level, and the multicentric orientation is guided[5] by a more-than-human logic – and it includes native peoples or representatives of Nature in the BCIs.

In sum, these BCIs are climate initiatives and policies, and they may be examined through the rules and regulations formulated by different agents guided by distinct horizons — from the regeneration of Nature's native territories to the extraction of the planet's 'last ton of fossil fuel'[6]. Climate change policies are crystallized into guiding manuals, sociopolitical databases, national legislation, and ratified international agreements.

Methodological path: from theoretical literature to analytical framework

'PLANB Index' was built based on a review of the literature on socio-environmental, convivialist, and climate ethics in the intersection with the politics of climate change. Twenty-two climate instruments were collected in fieldwork and analyzed (SALMI, 2022).

The instrument was initially tested in a pilot study evaluating the Municipal Afforestation Plan of São Paulo – PMAU (in its Portuguese acronym) (SALMI, 2023). After some adjustments to the categories' theoretical limitations (SALMI, CANOVA and PADGURSCHI, 2023), it was later theoretically and empirically tested in twenty-two Brazilian climate policies (SALMI, 2022). The instrument includes five theoretical-analytical categories that were modeled as part of a research on Brazilian climate instruments. The assumption here is that, to formulate a climate policy, one must mobilize socio-climatic ethics — with its sociological and political content so that its effects are explicit and aligned with a clearly constructed utopian horizon — to build an ethically oriented normative instrument. This instrument's role is to define a clearly established ethical horizon[7] and guide political actions and practices — such as creating legislation and guidelines for government programs — through the five analytical categories of socio-climatic ethics. Because of these analytical categories of socio-climatic ethics, policies aimed at reducing social and ecological inequities are examined and established.

[5]For more details about the typology of ethical orientations (from the anthropocentric to the multicentric orientation), see Florit, Sampaio and Philippi Jr. (2019) and Gudynas (2019).
[6]This classic quote from Weber has been used as a prophetic argument about the strategies used by groups guided by neoliberal capitalist anthropocentric principles and their effects on the sharp rise in social and ecological inequities in the planet (BECK and LOON, 2011).
[7]In line with Ricoeur (1992), the terms 'utopian horizon' and 'ethical horizon' have the same meaning here.

'PLANB Index' draws on Ricoeur's (1992) philosophical-theoretical framework and on the political-sociological framework of International Convivialista (2020). 'PLANB Index' also connects the spheres of reflection (ethical-sociological) and norms (ecological-sociological policies). It is refined based on the four dimensions of the socio-ecological moralities framework (in the normative sphere) modeled by Stock et al. (2018), and it takes into account gaps in the UAI created by Neder et al. (2021). It is refined based on the four dimensions of the socio-ecological moralities framework: 01. Ecological; 02. Social; 03. Time; and 04. Space. Based on the socio-ecological justice framework (STOCK et al., 2018), a fifth analytical dimension was added: the cultural-material dimension. The five categories of 'PLANB Index' are therefore associated with each of the five dimensions: 01. ecological – planned naturalness, 02. social – plurality in decision-making, 03. time – generational benefit, 04. space – energy locality, and 05. cultural-material – epistemic and material access.

This study analyzes the contents of BCIs published and/or updated between June 1, 2019, and March 31, 2021. A content analysis from a sociological perspective (BARDIN, 2011) was conducted on the BCIs and their moral agents' accounts. These categories were tested in a pilot study and subsequently adjusted before they were deemed ready to be hard tested, that is ready to be applied in the selected instruments for climate policymaking. More details on the categories listed below and the theoretical foundation of convivialism are found in section 3.2. To identify and select the climate instruments, the following criteria were used: 01. the instrument is oriented toward tackling climate change; 02. the instrument was formulated or revised after the IPCC report[8] (2018), that is, the BCI was launched, published, and/or updated[9] as of January 2019[10]; 03. the BCI was active between January 2019 and January 2021 ; 04. the instrument is implemented in the Brazilian territory, with emphasis on the federal and state levels; 05. the instrument has

[8]One of the goals of the IPCC is to generate consistent scientific data for developing policies to tackle climate change. Each 'Assessment Report' (AR) produces an executive 'Summary for Policymakers'. For the first time, a section on the nexus between ethics and policy has been included in an AR (IPCC, 2022, p. 01-48-49).
[9]The launch, publication, and/or update was carried out through ordinances, decrees, or other legal means in the case of instruments by state actors; it was done through the publication of guidebooks, platforms, manuals with guidelines, among other means in the case of market actors or civil society organizations; or it was done through the publication of a platform for academic networks.
[10]The publication of the 'Global Special Report Warming of 1.5°C' (available at https://www.ipcc.ch/sr15/) of the IPCC, in December 2018, was used as a cut-off date.

relevance[11] for socio-environmental reordering; and 06. in what concerns the type of goal orientation: in addition to being ecologically oriented, the instrument is socially oriented and can be reproduced in the contemporary context and from the Brazilian sociopolitical perspective.

With respect to data sources, in addition to the websites of BCI policymakers, data was collected from the 'Twitter' profiles of actors linked to movements focused on tackling the climate emergency in Brazil; data on supporting and financing organizations was also collected.

The literature review[12] started from the notions of 'climate ethics' (GARDINER et al., 2010), 'socio-environmental ethics' (FLORIT, SAMPAIO and PHILIPPI JR., 2019), and 'convivialist ethics' (INTERNACIONAL CONVIVIALISTA, 2020). Since the literature review focuses on climate ethics, the most cited climate ethics scholars and the most mentioned terms in this scholarship between 2001 and 2021 were also mapped. The methodology was based on a bibliometric analysis on climate change conducted in the social sciences (SALMI and FLEURY, 2022). The databases 'Scielo Citation Index' and 'Web of Science' were used, and the data were analyzed with the support of the software 'VOSViewer' (Figures 01 and 02).

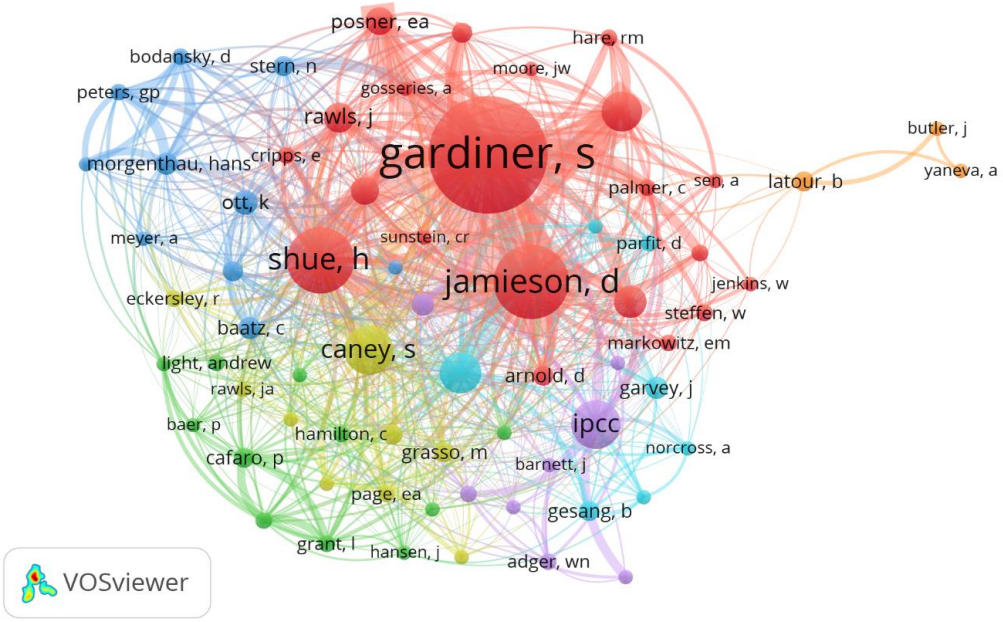
There is a prominent author, Stephen Gardiner, who has consistently published on climate ethics since 2010. According to him, the world is currently experiencing an 'intergenerational extortion' and the 'perfect moral storm', which are characteristic of the Anthropocene era and the result of three factors (GARDINER, 2017): the fragmentation of climate policymakers' responsibilities, the inadequacy of the institutions dedicated to planning (fair and equitable) policies, and the inefficiency of the global governance system.

As for the thematic groups associated with climate ethics, ethics and politics are intrinsically linked as shown by the connections between the different thematic groups in the database (Figure 02). The themes helped identify categories in these subfields and,

[11]Being relevant means that the set of proposals and results projected by each BCI has the capacity to really transform — i.e., effectively reduce social and ecological inequities simultaneously — the social structures where human and nonhuman beings reproduce their ways of living. Due to time limitations, the focus in this study was on the federal and state levels. Although the pilot test was carried out at the municipal level — at a benchmark metropolis for climate studies (and studies on other issues) — municipal agents' involvement with the Brazilian climate issue has become increasingly relevant. I stress that conducting this test at the municipal level opens a promising path for future research.
[12]For methodological details on the literature review, see Appendix 01.

after an assessment of their relevance to the climate issue[13], the main elements made up the five analytical categories condensed into 'PLANB Index'. This index seeks to fill the gap in theoretical instruments suitable for restructuring existing institutions and formulating effective and adequate climate policies for the new times.

Figure 01. Most cited authors in the climate ethics perspective (2001-2020).



Source: Scielo Citation Index and Web of Science integrated database (SALMI, 2022).

After a content analysis (BARDIN, 2011) was conducted on the concepts and categories pertinent to the convivialist ethics from the theoretical perspective of convivialism[14], five categories were compiled and condensed (Figure 03), which were used in this study to select the BCIs and identify the moral relations between the agents.

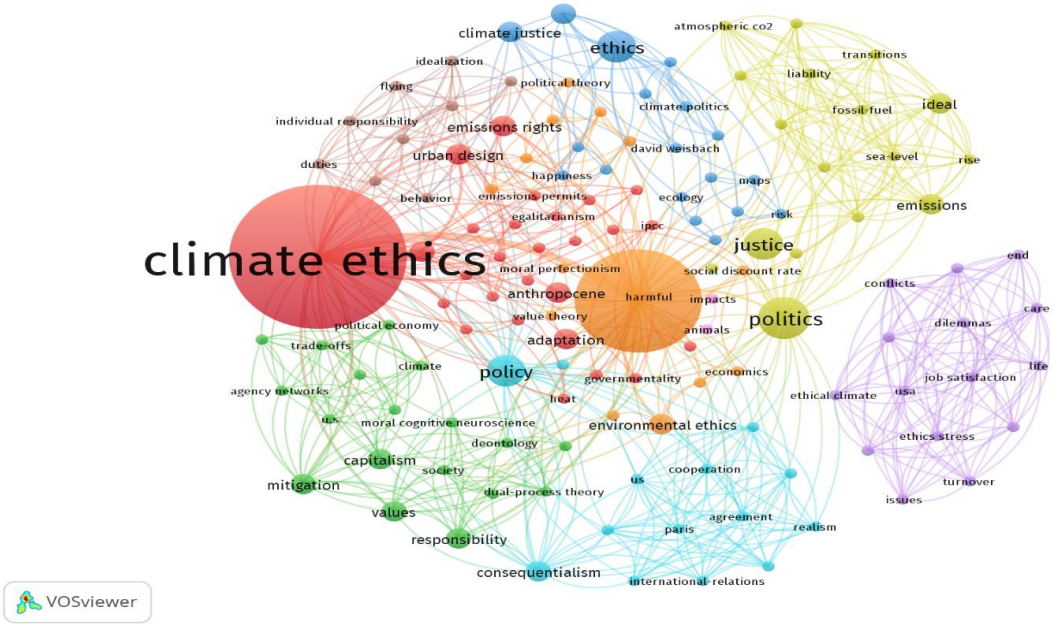
This study has collected mainly state-level climate change policies (PEMC, in its Portuguese acronym) on the official websites of the nine states that make up the Legal Amazon[15].

[13]To assess whether a theme was relevant for the climate issue, this study identified the strictly climate-related elements – that was necessary because some themes focus only on environmental perspectives (e.g., studies related to natural or biological sciences, such as those characterizing physical-chemical elements of the soil) or only on social perspectives (e.g., social sciences studies on labor, such as those dedicated to the social effects of gentrification processes). One can arguably say that every social or environmental issue is currently associated with the climate issue, but for studies to be selected in this study, they had to combine social, ecological, and climate issues.

[14]For details about the list of theorists and notions/concepts associated with each of the five categories of 'PLANB Index', see Appendix 01.

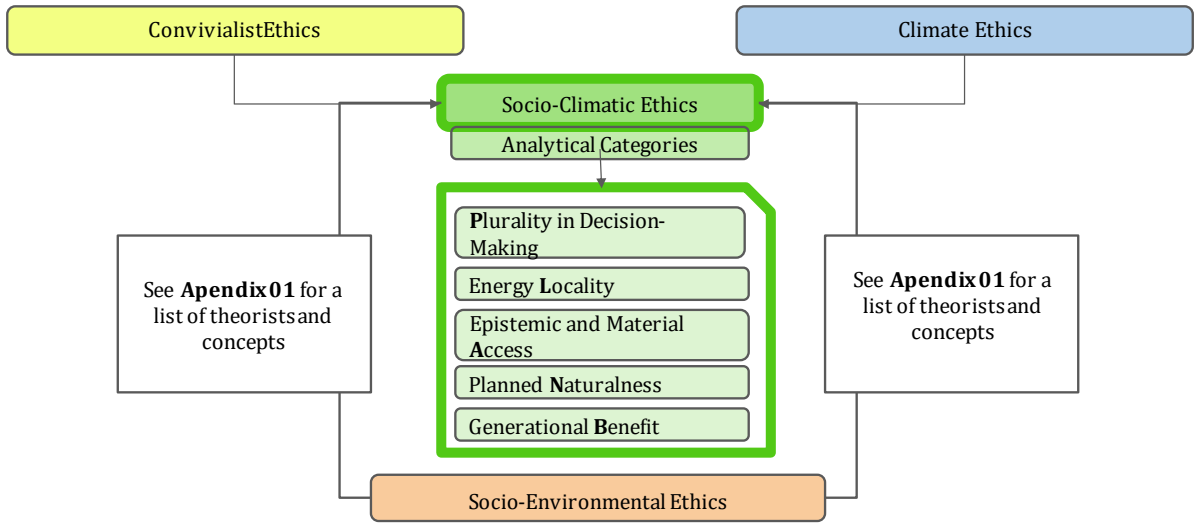
[15]Such an emphasis is justified because of the scope of the research within which this study was developed: the AmazonFACE Program. The Legal Amazon is composed of the following states: Amazonas, Roraima, Rondônia, Pará, Amapá, Acre, Tocantins, Mato Grosso, and Maranhão.

Figure 02. Terms mobilized in the climate ethics perspective (2001-2020).



Source: Scielo Citation Index and Web of Science integrated database (SALMI, 2022).

Figure 03. Relationship between the five categories of socio-climatic ethics and the theoretical concepts of the convivialist, socio-environmental, and climate ethics



Source: Salmi (2022).

The analytical model was designed to analyze the contents of documents related to the BCIs collected between June 2020 and March 2021. However, after the first analyses

of document contents (BARDIN, 2011) were concluded, another methodological stage was included: semi-structured interviews[16] with the formulators of the climate instruments best classified according to this study's criteria. The intention was to confirm or reject the findings of the content analysis of the BCIs.

The contents of twenty-two instruments were analyzed, and nine 'climate moral agents' (CMA) — formulators of BCIs — were subsequently interviewed. The interviews confirmed and consequently enhanced the interpretations of the contents of BCI documents previously made through the categories and indicators of 'PLANB Index'.

Two of the criteria used to select these CMAs[17] were that 01. the respective BCIs had more ecocentric principles (see Appendix 03) identified in the contents of their documents, and that they took an antagonistic view of purely anthropocentric principles[18]; and 02. the CMA had actively participated in the formulation of the instruments. It is important to stress that socio-climatic ethical principles can be empirically identified through the analytical categories of 'PLANB Index', which operate as bridge-mirrors of these principles since the plane of reflection is the 'locus' of ethical principles.

The data and information were categorized through the 'Nvivo12' software. Data were categorized according to the morphology of the BCIs and the identification of the contents and their correlations with the analytical categories. The elements of each category were correlated to the theoretical contents with the help of markers of the Foxit editor.

In analyzing[19] the BCIs, the focus was on the relationship between the socio-climatic ethical principles and the socio-ecological moral practices[20], the latter materialized in the BCIs.

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[16]The interview guide and the guiding questions of the baseline questionnaire are in Appendix 02.
[17]From a theoretical perspective, it is understood that the CMA, the formulator of the climate instrument, is a human subject. This agent produces an agency with other agents, such as the representatives of more-than-human beings, and it also produces the existing (infra)structures. The relationships individual-others and structures-others produce shared agencies and generate morally oriented effects-others. The interviews sought to capture the ethical orientations based on the effects of these relationships (CRIPPS, 2013).
[18]The criteria for selecting the instruments included three or more socio-climatic ethical principles identified in the document analysis stage.
[19]The content analysis of Table 1 focused on the horizontal analysis since the goal in this step was to identify BCIs with a high density of ecocentric principles. For a vertical analysis and its implications for the nexus of the horizontal analysis, see Salmi, 2022.
[20]This study understands that the social and ecological spheres are inseparable; therefore, it presents a critique of the society-nature dichotomy (GUDYNAS, 2019; INTERNACIONAL CONVIVIALISTA, 2020); in other words, moral practices or actions should be understood as being socioecological, their social or ecological aspects should not be addressed separately.

'PLANB Index': five theoretical-normative categories

Socio-climatic ethics is based on three spheres. In the sphere of reflection, socio-climatic ethics is the interface between environmental ethics and social studies on climate equity. In the sphere of analysis[21], it is the study of social relations leading to the moral consideration of Nature and the more-than-human beings. In the sphere of norms, it is a critique of the rules behind the policies governing the coexistence of human beings and more-then-human beings, without one massacring the other. Socio-climatic ethics encompasses ontological aspects (utopian worldviews and horizons), ethical principles (drivers of the actions of CMAs) and moral practices (political moralities materialized in social praxis). Therefore, it ranges from the theoretical, epistemic, and methodological field to the analytical and normative instrument. The instrument 'PLANB Index' is based on five analytical categories: plurality in decision-making, energy locality, epistemic and material access, planned naturalness, and generational benefit, which are summarized next.

'Plurality in decision-making' refers to the notion of social equity between human and non-human beings in decision-making processes based on the ethics of otherness (INTERNACIONAL CONVIVIALISTA, 2020; LEFF, 2021; RICOEUR, 1992), with the redistribution and sharing of agency domain with more-than-human beings. At the sphere of analysis, 'plurality in decision-making' is understood as 01. the recognition that local communities have agency and should be included (BROOKS, 2020; GARDINER, 2017) in territorial decision-making processes (BECK, 2018; INTERNACIONAL CONVIVIALISTA, 2020) that directly or indirectly affects the preservation of other ways of living (GARDINER, 2017), and 02. the formulation and implementation of different climate instruments created by different subjects — more vulnerable subjects (SKILLINGTON, 2017). The anthropocentric approach to decision-making is the counterpoint, as it erases or preclude the agency of other beings.

[21]A list of indicators associated with each of the five analytical categories was created to operationalize the five categories of 'PLANB Index'. The indicators were modeled based on the literature review on socio-environmental ethics and climate ethics with the aim of building climate instruments and refine the definition of the five PLANB analytical categories based on the results of the pilot test (SALMI, 2023) carried out before the final modeling of 'PLANB Index' itself. The full application of the indicators of each of the five categories is the basis for the collection of data and information supporting the assessment and/or construction of effective climate initiatives and policies from the perspective of socio-climatic ethics. The list of 'PLANB Index' indicators is available in Appendix 03.

'Energy locality' refers to the notions of energy autonomy with reduction of 'Anthropocene inequities' in its multiple geographic scales (BECK, 2018), energy sharing (CANEY, 2020; INTERNACIONAL CONVIVIALISTA, 2020), economic degrowth (GARDINER, 2017), and good living at the local level (FLORIT, 2019; GUDYNAS, 2019; LEFF, 2021). In the sphere of analysis, 'energy locality' refers to the fact that the community – human and more-than-human – has control over energy sources in a territory (CALLICOTT, 2017 – see Table A2). It includes the production of renewable energy and locally based food. Categories such as centralizing 'development projects', 'infrastructure megaprojects' by large transnational corporations, and other equivalent notions can be considered a counterpoint.

The category 'epistemic and material access', roughly speaking, refers to the material (COSTA, 2019) and epistemic levels — of wisdom and knowledge (COSTA, 2019; GARDINER, 2017; INTERNACIONAL CONVIVIALISTA, 2020; ULLOA et al., 2021). In the sphere of analysis, material access refers to human and nonhuman communities' ability to move natural and technological materials — including financial resources — within ecocentric principles in the climate context. 'Epistemic access', in turn, refers to access to spaces where ancestral wisdom can be exchanged — such as the recognition of native peoples and more-than-human beings — and the production of scientific knowledge, in addition to the active sharing of the knowledge accessed. The obstruction or erasure of ancestral wisdom and/or scientific knowledge produced and the obstruction of material resources, such as economic resources, constitutes the counterpoint.

'Planned naturalness' is associated with the notions of ecological reciprocity (COSTA, 2019; INTERNACIONAL CONVIVIALISTA, 2020) and restoration of the originary conditions of and for Nature (SHOCKLEY, 2017) – which is in line with the critical thinking on the ontological society-Nature separation. In the sphere of analysis, 'naturalness' refers to practices of rewilding, reforestation, environmental restoration, natural regeneration, and the expansion of Nature's limits, with the epistemic perspective of conceiving Mother Earth as a subject (KRENAK, 2019; SANTOS, 2016) in its originary spaces. 'Common naturalness' refers to practices of renaturalization and reterritorialization of Nature in spaces modulated and planned for human and more-than-human beings to live together and coexist, not without tension (INTERNACIONAL CONVIVIALISTA, 2020). This category can also be used as a marker of anthropocentrism (neoliberalism/neoextractivism). It is based on the plan of returning to the originary

natural state or close to the state of native, which allows humans and nonhumans to live together and coexist in balance, including technologies — but without getting into the logic of planetary geoengineering. The category 'objectification' of any natural element (FLORIT, 2019) is the counterpoint here.

Finally, the category 'generational benefit' is essentially associated with the temporal dimension and with the notions of increasing socio-ecological equity or effectively reducing socio-ecological inequities within a feasible period of time (BROOKS, 2020; GARDINER, 2017) in a given territory (INTERNACIONAL CONVIVIALISTA, 2020). In the sphere of analysis, 'generational benefit' (GARDINER, 2017; SHUE, 2020) is temporally related to the materiality of better physical and symbolic conditions for humans and non-humans, in vulnerable or invisible conditions. The materiality of the benefits is observed in two periods of time: intragenerational and intergenerational. The first type refers to the current generation's possibility of enjoying the benefits within the period of life expectancy of each species. As for the second, it is the expansion of benefits on a larger scale for future generations through the creation of 'intergenerational institutions' and policies. The counterpoint can be captured by categories such as the 'illusion' of redistribution through 'development' projects or 'technological and economic progress' in the present time, 'return' of benefits 'after' economic growth, among other equivalent notions in which the benefits of any type of transition 'are not' equally materialized for all societies today.

Results: applying 'PLANB Index' to the Brazilian context

The results of applying 'PLANB Index' to the 22 BCIs are summarized in Table 01 and Figure 04. These BCIs were collected between June 2019 and March 2021 through the lens of socio-climatic ethics and according to the 'PLANB Index' categories. Table 01 presents these BCIs, their ethical orientation (from anthropocentric to multicentric), and the CMAs directly involved; it also specifies whether each BCI is a new instrument or an update of existing rules (with the corresponding date).

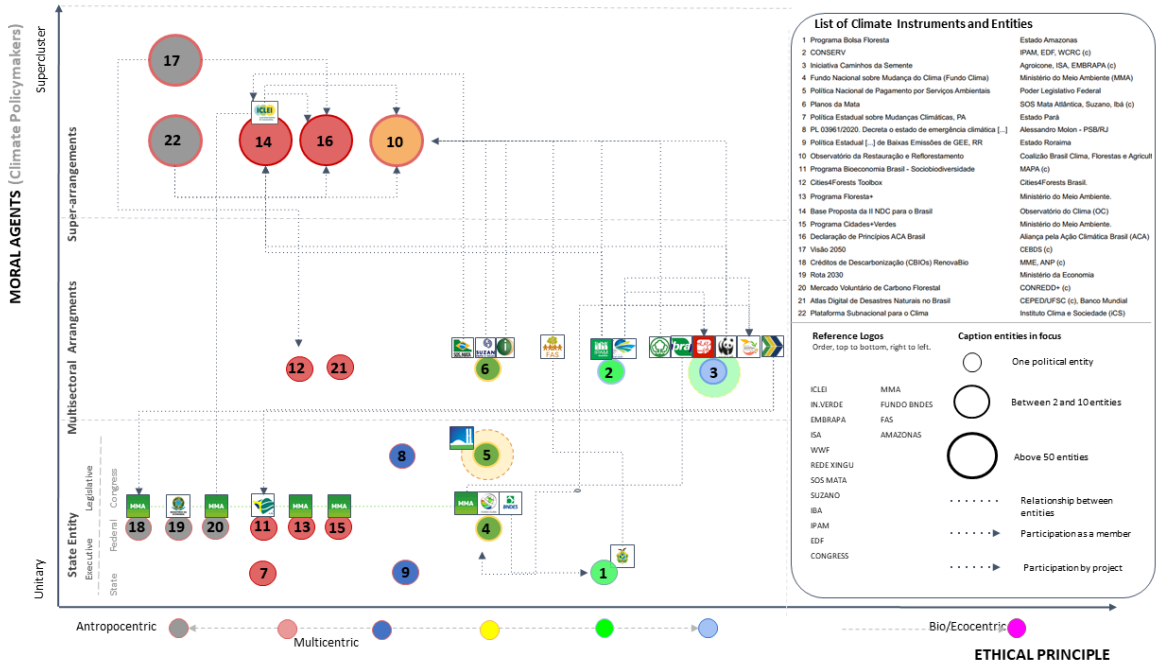
Table 01. List of Brazilian Climate Instruments, their moral agents (policymakers), and their conformity to the analytical categories of 'PLANB Index'.

# ICB	Climate Instrument (Iniciative or Policy)	Climate Moral Agent (Policymaker)	Date	(a)	Ethics (b)	P	L	A	N	B	(c)
1	Programa Bolsa Floresta	State of Amazonas	1-Sep-2019	r	◩✿∮	-	▲	▲	▲	▲	4
2	Mecanismo CONSERV	IPAM, EDF, WCRC (c)	9-Oct-2020	l	◩✿	-	▲	▲	▲	▲	4
3	Iniciativa Caminhos da Semente	Agroicone, ISA, EMBRAPA (c)	16-Feb-2020	l	◩✿∮	▲	▲	▲	▲	▲	5
4	Fundo Nacional sobre Mudança do Clima (Fundo Clima)	Ministry of Environment (MMA)	28-Nov-2019	r	◩✿◉	-	▲	-	▲	▲	3
5	Política Nacional de Pagamento por Serviços Ambientais	Federal Legislative Branch	13-Jan-2021	l	◩✿◉	▲	-	-	▲	▲	3
6	Planos da Mata	SOS Mata Atlântica, Suzano, Ibá (c)	12-Mar-2021	l	◩✿	-	▲	▲	▲	-	3
7	Política Estadual sobre Mudanças Climáticas, PA	State of Pará	29-Apr-2020	l	◩✿◉	-	-	-	▲	-	1
8	PL 03961/2020. Estado de emergência climática [...]	Alessandro Molon - PSB/RJ	28-Jul-2020	l	◩◉	-	▲	-	▲	-	2
9	Política Estadual [...] de Baixas Emissões de GEE, RR	State of Roraima	2-Dec-2020	l	◩◉	▲	-	-	▲	-	2
10	Observatório da Restauração e Reflorestamento	Coalizão Brasil Clima, Florestas e Agricultura	9-Mar-2021	l	◩✿◉	-	-	▲	▲	-	2
11	Programa Bioeconomia Brasil - Sociobiodiversidade	MAPA (c)	18-Jun-2019	l	◩	-	▲	-	-	-	1
12	Cities4Forests Toolbox	Cities4Forests Brasil.	19-Feb-2020	l	◩✿◉	-	-	-	▲	-	1
13	Programa Floresta+	Ministry of Environment	2-Jul-2020	l	◩	-	-	-	▲	-	1
14	Base Proposta da II NDC para o Brasil	Observatório do Clima (OC)	8-Dec-2020	l	◩✿◉	-	-	-	▲	-	1
15	Programa Cidades+Verdes	Ministry of Environment	1-Jan-2021	l	◩	-	-	-	▲	-	1
16	Declaração de Princípios ACA Brasil	Aliança pela Ação Climática Brasil (ACA)	27-Jan-2021	l	◩✿◉	-	-	▲	-	-	1
17	Programa Visão 2050	CEBDS (c)	1-Oct-2019	l	◩◉	-	-	-	-	-	0
18	Créditos de Descarbonização (CBIOs) RenovaBio	MME, ANP (c)	5-Dec-2019	r	◩◉	-	-	-	-	-	0
19	Rota 2030	Ministry of Economy	3-Jul-2020	r	◩	-	-	-	-	-	0
20	Mercado Voluntário de Carbono Florestal	CONREDD+ (c)	20-Jul-2020	l	◩◉	-	-	-	-	-	0
21	Atlas Digital de Desastres Naturais no Brasil	CEPED/UFSC (c), World Bank	1-Oct-2020	l	◩✿	-	-	▲	-	-	1
22	Plataforma Subnacional para o Clima	Instituto Clima e Sociedade (iCS)	4-Mar-2021	l	◩◉	-	-	-	-	-	0

Source: SALMI (2022).
Note: ("~date" = establishment of a Forum, not a state-level policy.
Caption
a. Meaning: (l) for launch or (r) for revisions/updates of the indicated instrument.
b. Ethical orientation: ◩ anthropo-tecnocentric, ✿ bio/ecocentric, ◉ climate/geocentric, ∮ multicentric.
PLANB: categories: (P): Plurality in Decision-Making. (L): Energy Locality. (A): Epistemic and Material Access. (N): Planned Naturalness. (B) (Intra/inter) Generational Benefit.
c. BCI conformity to PLANB: [0] BCI is more anthropocentric ←→ [5] BCI is more ecocentric.
d. Acronyms: Ministério da Agricultura, Pecuária e Abastecimento (MAPA - Ministry of Agriculture). Conselho Empresarial Brasileiro para o Desenvolvimento Sustentável (CEBDS - Brazilian Business Council for Sustainable Development). Ministério de Minas e Energia (MME - Ministry of Energy), Agência Nacional do Petróleo, Gás Natural e Biocombustíveis (ANP - National Agency for Petroleum, Natural Gas, and Biofuel). Instituto SocioAmbiental (ISA - Socio-Environmental Institute), Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA/MAPA - Brazilian Agricultural Research Corporation). Conselho Nacional REDD+ (CONAREDD+ - National Council REDD+). Centro de Estudos e Pesquisas em Engenharia e Defesa Civil (CEPED/UFSC - Center for Studies and Research on Engineering and Civil Defense). Instituto de Pesquisas Amazônicas (IPAM - Amazon Research Institute), Woodwell Climate Research Center (WCRC), Environmental Defense Fund (EDF). Instituto Brasileiro de Árvores (Ibá - Brazilian Institute of Trees).
Observations: Legal Amazon: AC (2010), AP (2013), AM (2007), MG (F~2009), PA (2009), RO (2018), RR (-), TO (2008), MA (F~2006).

Figure 04 allows for an analysis of 01. the ethical position of each BCI (x-axis), 02. the size of each arrangement through an analysis of the composition of the entities participating in each BCI and its effect on the construction of each instrument (y-axis), 03. more influential and/or dominant agents, 04. the mediation of conflicting ethical principles regarding the sharing of CMAs (entities) in the composition of several BCIs and their different moral practices in certain configurations.

Figure 04. BCI network, moral agents by socioclimate ethical orientation



Source: Salmi (2022).

As for the ethical position of BCIs, most instruments (16 out of 22 BCIs, 73%, gray, red, and orange circles) have anthropocentric principles in their contents. The other instruments (06 out of 22 BCIs, 27%, yellow, green, and blue circles) have higher density of ecocentric principles that coexist/compete with anthropocentric principles.

With respect to cluster size, the constellation of supercluster entities is directly or indirectly part of the BCIs with more ecocentric principles (BCIs with green and blue circles). The ontological disputes brought by the BCIs can be located (identified) in the analysis between the ethical principles (PLANB Index) and the social practices of the CMAs.

Chart 01 presents the way in which moral agents are grouped: type of arrangement (state, multisectoral, or supercluster), level in which they act (in case of state entities, whether they are linked to the executive, legislative, or judicial branch; in case of a multisectoral arrangement or supercluster, the level of agent density (if less than ten agents, it is classified as a multisectoral arrangement; if more than ten agents, it is classified as a supercluster).

Chart 01. Relationship between the social ordering of moral climate agents and ethical principles

Policymakers' Arrangement	Arrangement Sublevel	Type of Normativity	Climate Instrument	Ethical Principles Observed
State arrangement	Federal Legislature	legislative (law)	05, 08	+ecocentric
State arrangement	State Government	legislative (decree, law)	01, 07, 09	+ecocentric: 01 +anthropocentric: 07, 09
State arrangement	Federal Government	legislative (decrees, ordinances, programs)	03, 11, 13, 15, 18, 19, 20	+anthropocentric
Multisectoral	Composition between 2 and 10 entities	mechanisms and programs	02, 04, 06, 12, 21	+ecocentric: 02, 04, 06 +anthropocentric: 12, 21
Supercluster	Composition with more than 10 entities, emphasis on arrangements in 'hubs' (network of networks[22]) with more than 100 agents.	Mechanisms and programs	10, 14, 16, 17, 22	+anthropocentric

Source: Salmi (2022)

The results show that when the agent is a state organization in its pure form, initially isolated from other arrangements or disconnected from other sectors, the moralities observed refer, with rare exceptions, to anthropocentric ethical principles guided by neoliberal and/or neoextractivist logics. Similarly, supercluster arrangements, or 'supercoalitions' (BRULLE, 2019), are guided, without exception,

[22]Since this is an arrangement with a diversity of sectors and high numbers of entities (greater than three digits), I treat it as a 'super-arrangement of collectives'. Similar terms such as 'institutionalized brokers' and subcategories such as 'peak associations', 'associations hubs', 'multisectoral bodies', can also be used. More information in Lavalle and Bülow, 2015.

by anthropocentric principles. Only the third group, multisectoral arrangements (civil society, private and/or state organizations), refers to normativities guided, to varying degrees, by ecocentric ethical principles.

Discussion: Ethical principles under dispute among Brazilian climate policymakers

The following questions guided the discussion of the results obtained after applying 'PLANB Index' to BCIs: Which socio-climatic, onto-ethics principles are guiding recent BCIs? How do the socio-ecological practices associated with these principles emerge and coexist – with a mix of consensus and tension – in these climate instruments?

Roughly speaking, 'hybridized' anthropocentric 'and' (emerging) ecocentric principles were identified in recent BCIs (2020-2021) – with some exceptions (as in the case of purely anthropocentric principles). Socio-ecological practices, on the other hand, began to emerge through simultaneous ontological disputes, often in multiple layers of agency, some more tense, accessed by a diversity of moral agents organized in superclusters — in the case of anthropocentrically guided agents — and in small groups — in the case of agents with a more ecocentric inclination — in spaces where the line between local and global are blurred, and in hybrid temporalities, some nonlinear and recent, others expanded over the large historical trajectories of certain agents — such as multinational corporations that, organized into 'large global coalitions', have formed a climate countermovement.

There is a type of relationship based on ecocentric principles. The 'convivialist relationship'[23] (taken as the dynamics in which ethical-political practices emerge) is found in BCIs, although marginally. In this study, the dynamics and societal arrangements involve a variety of CMAs guided by different ethical principles, which are grouped into two major drivers: anthropocentric and ecocentric. Only two instruments associated with a multicenter driver were found; moreover, the only groups of human agents that explicitly recognize nonhuman

[23]'Convivialist relationship' is that which is fueled by tensions, dissent, and consensus among different moral agents, one that enables a socio-ecological reordering based on a normatively defined horizon in which structural equities are increased and differences coexist without mutual massacre. (INTERNACIONAL CONVIVIALISTA, 2020).

agents (e.g., entities of Nature as subjects of rights[24]) were the native peoples who acted directly in the societal arrangements associated with these instruments; however, no nonhuman agents directly involved in decision-making spaces were identified.

With respect to 'plurality in decision-making', it is the climate instrument itself that materializes the space for decision-making; in other words, agents and entities put their ethical and moral differences on the same table. CMAs 'recognize' that building a common horizon against the (high confidence) scenario[25]of climate collapse (IPCC, 2021) is necessary. Beck (2018) argues that only a process of global catharsis will lead dominant agents to embrace a more ecocentric horizon that could take us toward the emancipation of civilization. Other studies demonstrate that current climate policies are still created to reproduce the existing social and ecological order without major changes in dominant structures (IPCC, 2022). The axiological principles of these climate policies are still rooted in an anthropocentric view; consequently, these policies are not breaking with the dominant neoextractivist system. I believe that the IPCC's high confidence scenario might materialize unless an effective ethically guided change is made toward 'more realistic utopian horizons' (BECK, 2018; INTERNACIONAL CONVIVIALISTA, 2020), that is unless those groups in a position of power assume new moral practices that are more consistent with scientific evidence.

As for 'energy locality', the analysis shows that, whenever there are societal arrangements based on ecocentric principles and organized by some type of network structure that connects plural moral agents 'mediated' (INTERNACIONAL CONVIVIALISTA, 2020) by local communities, which work in partnership with one or more agents, the so-called 'morally guided ecological collectives' (CALLICOTT, 2017), agency moves towards these more structured local communities. These communities are aware that actions must be taken at various levels, a fact observed in relationships between local agents and international development entities (the case of multisectoral arrangements). In other words, these communities recognize

[24]An example are the social and political studies on the relationship between Latin American constitutionalism and the rights of Nature as a subject of rights, with the prospect of transitioning from an anthropocentric model of social organization to anecocentric one (GUDYNAS, 2019).
[25]The IPCC uses this rating (low, medium, and high confidence) to indicate the likelihood of a specific type of irreversible human-induced climate change (IPCC, 2022, 2021). The IPCC 'does not' specify which types of subjects or worldviews or even types of ethics cause climate change.

the power of multilevel action. Local agency is thus closely related to the other levels and their various agents.

With respect to 'epistemic and material access', the Brazilian context indicates that making fairer climate instruments and policies depends on dominant moral agents granting permissions – an example being the creation of publicly available databases, but with few data. It is possible to achieve normalized and consensual actions, and these can help prevent socio-ecological inequities from rising at all levels if the climate emergency is taken as empirical evidence of the effects of the current neoliberal and neo-extractive system. Recent BCIs incorporate worldviews and ways of life that are based on more ecocentric and less anthropocentric principles, but it is necessary to let go of climate policies based on purely technoeconomic and anthropocentric principles. The state structures associated with these climate policies are not only fragile, or flexible, they also reveal that one should "consider social regulation of the state" (GUDYNAS, 2019, p. 250). The (infra) structures of the state 'must' — from a deontological perspective — be flexible enough to allow for the social transitions and social reordering that could affect human and more-than-human agents ecologically. On the other hand, these same structures 'must' be robust if they are to lead us to certain desired horizons, which, according to the post-anthropocentric worldview, involve socio-ecological practices guided by ecocentric ethical principles. In the Brazilian climate context, the 'common' — whose horizon is the precautionary principle in the face of social and climate collapse (GARDINER, 2017) — is a feasible driver for climate policymaking — even if guided by sometimes violent conflicts (ZHOURI, 2018). The challenge for the ethical-political field is to find 'common' principles (INTERNACIONAL CONVIVIALISTA, 2020) guided by a 'political principle of the common' (DARDOT and LAVAL, 2017) so that 'common policies' could be formulated by a diversity of moral agents in the climate context. These common elements enable mediated and fair agreements.

With respect to 'planned naturalness', two major ethical groups are found in the *corpus:* anthropocentric and ecocentric, both hybrids in some way. The first group, which includes anthropocentric BCIs and agents, loses its apparent ecocentric grammar when confronted with other ecocentric categories. The second group is more consistently ecocentric, to different degrees when compared to the

other ecocentric categories. These political practices of regeneration, restoration, and reforestation, among other similar practices, are aimed at reducing unlimited growth in wildlands and local communities. BCIs and moral agents in this second type of ethical group seek to repoliticize life based on other non-anthropocentric ontologies and epistemologies[26] (ULLOA et al., 2021). These instances of repoliticization entail spatial reconfigurations among dominant agents (anthropocentric agents such as large extractive and agribusiness corporations) and non-dominant agents (ecocentric agents such as the native peoples and new arrangements between organizations established by the most vulnerable communities). From the perspective of socio-environmental justice, the challenge of overcoming the negative effects of climate change is as formidable and complex as the roots of the extractive neoliberal ideology that pervades bodies and territories.

Finally, in what concerns the 'generational benefit', BCIs are closely associated with practices of regenerating Nature in close relation with time (Table 01, cases of BCIs that are more ecocentric). There are empirical examples of Brazilian climate policies that could be planned with the support of CMAs guided by ecocentric principles, but time is an imperative and crucial issue. From the perspective of socio-climatic ethics, intergenerational benefits are a challenge for societies today. Since climate scientists issued a red alert to policymakers (IPCC, 2022; IPCC, 2021), it became more evident how urgent it is to review the socio-ecological order and break with the dominant system (KNUTTI and ROGELJ, 2015) in its multiple levels – dominant moral agents still have control over the narratives and, therefore, over the dominant model of social and ecological order (BRULLE, 2019). An ontological and moral turn is necessary to allow for a new social order. Dominant agents should support and lead such an endeavor by discontinuing the current model of 'thermo-fossil civilization', which produces current social and ecological inequities – the 'socio-environmental collapse is not an event, it is an ongoing process' (MARQUES, 2020). Here the Kantian imperative of 'anthropocentric duty' meets intergenerational imperatives, from the 'imperative of responsibility' (JONAS, 2006) to the 'intergenerational logic

[26]Knowledge asymmetries (ULLOA et al., 2021) directly affect political action associated with the planning of how to relate with the natural territories and Nature. Therefore, it is worth noting that the 'PLANB Index' categories are interdependent and that such interdependency is crucial for understanding the broad context of ethical principles and political practices.

of the climate precautionary principle' (BROOKS, 2020; GARDINER, 2017). These intergenerational principles seek to build horizons so current and future generations can enjoy a more just, decent, and equitable world before the climate collapses. In other words, it is necessary – even crucial in light of scientific evidence (IPCC, 2022, 2021) — to include and overcome the 'climate horizon dilemma' in discussions about climate change.

A summary of this study's normative-theoretical findings follows: 01. there are 'multi-layered decision-making spaces' where different MCAs operate and where different ethical principles and moral practices coexist and compete without one eliminating the other; 02. 'local' socio-ecological practices are promoted by societal arrangements composed of multilayered agents guided by different hybridized ethical principles; 03. databases are available for different segments of Brazilian and international societies to be used freely as a form of socio-ecological and convivialist practice; 04. there is a strong presence of financial 'international' resources in BCIs oriented to promoting ecocentric practices, although on a 'small scale' ; 05. the planning of territories to be preserved or regenerated is competing with 'climate-washing' practices ; 06. there is an 'incipient' intragenerational benefit for the present generation of human and more-than-human beings and 'absence' of benefits for future generations; 07. the 'utopia of intergenerational benefit' appears as a planned horizon without pragmatic implementation; 08. the 'common good' has emerged in the state-level political arena; 09. and there is an indication that a new globalizing structure operationalized by dominant oligarchic groups is being formed, and there is the observation that a 'conviviality threshold' exists — from the tension to the homogenizing structural violence among different agents and their multiple ethical principles in a common planet made of common elements.

In analyzing the interconnected set of categories, one notices that CMAs gained new, emerging frontiers — from small clusters to transnational superclusters. The definition of which is the unit of analysis when it comes to the subject in the climate context can (and should) be revised to account for the agency and the identification of who and where the agency domain is. Identifying a non-heterogeneous entity is a challenge because there are clusters formed by hybrid groups that are made of CMAs from different segments. Classic analytical categories,

such as State, Government, Market, Civil Society, are not sufficient for circumscribing homogeneous groups or entities since the level of connection, interdependence, and intertwinement between individuals and groups can be observed in multiple layers, both spatially and temporally.

The analyses of the contents of recent BCIs show that these instruments have a normative horizon, they envision the improvement of social and ecological well-being at the planetary level, resulting in morally planned climate change policies. However, the proposed scales for the socio-ecological practices included in these climate policies are still incompatible with what is necessary to effectively reduce greenhouse gases and tackle social inequalities — such as the growing hunger crisis affecting about one billion human beings — and ecological and climatic inequities — ranging from the reduction of native ecosystems to the deterioration of planetary climatic conditions, which affect all species unequally, including humans. In line with Gardiner's findings (2017), I consider *the* 'climate issue to be essentially an ethical issue'. The results and analyzes in this study show that, despite the emerging initiatives and policies formulated in the last two years, Brazil is still a victim of a generational extortion by dominant CMAs.

Between the end of the world and possible heterotopias

This study has shown that moral practices for total (and possible) control of the planet are already emerging in the Brazilian context. Such practices are informed by a 'Climate Leviathan' (WAINWRIGHT and MANN, 2018), a type of moral project that was orchestrated and designed by a small oligarchic group — superclusters associated with state arrangements — that has global dominance. On the other hand, there is also a diversity of initiatives and societal arrangements that are in place or emerging that could lead to an ontological change and an eco-territorial turn at the planetary level, which in turn could allow for many planets to fit inside the same planet, for example, the 'pluriverse' type of moral project guided by a 'radical ecological democracy'.

It follows that climate policies are the moral and political effects of having moral agents in dominant positions. Climate initiatives created by non-dominant human groups reveal that there are creative spaces that could be expanded — with tensions — and/or be used as input for fostering open and in-depth public

discussions towards more inclusive climate policies. The moral practices of other agents – non-dominant human groups and more-than-human subjects – should be observed as they also have intrinsic value.

The 'PLANB Index' instrument could — and must, according to socioclimatic ethics, — guide climate policymaking on any scale. This study not only presented the 'PLANB Index' but also modelled this instrument through empirical cases by demonstrating the instrument's applicability to the Brazilian reality. The new climate initiatives and policies can and should use the five categories presented here — which are ethical principles that should guide good policies from the post-neoliberal extractivist perspective (INTERNACIONAL CONVIVIALISTA, 2020) — and their indicators — which are ways to materialize the structuring elements (those that structure the social fabric and those that make up the very structure of the social fabric) — to build other climate heterotopias. It is not a matter of choosing one 'PLANB Index' category or another alone; it is the combined categories condensed into a single instrument that allows for the divide between ethics and politics to be effectively bridged.

Improvements to this analytical model — the theoretical-analytical framework and the 'PLANB index' instrument — could be made in the future as more comprehensive or specific methodological procedures are included. There is also room for dialogue with other areas and fields, such as other applied human sciences and exact sciences. Other research programs that take the forest and the climate as analytical objects – with a focus on the field of socio-climatic ethics and the 'PLANB Index's' analytical model – could mobilize this instrument to build theory on climate change and create other analytical instruments that support climate policymaking in Brazil and elsewhere. Another potential ramification is refining the concepts of the emerging socio-climatic ethics for the Brazilian context, in addition to other theoretical and methodological developments.

The climate emergency is a scientific fact, not a narrative consensus in societies (BRULLE, 2019). Therefore, one question remains: Will there be enough time to achieve socio-ecological transitions guided by a form of socio-climatic ethics? And would these transitions lead to a more just and decent utopian horizon for human and more-than-human beings before the climate collapse?

In view of the emerging climate initiatives and climate policies found in Brazil, it is possible to envision a potential emancipation of civilization through an ethically guided science with a transformative — in addition to interpretive — political and normative action, an action that incorporates other types of knowledge so we can create more just, equitable, and decent relationships for human and more-than-human beings.

Finally, it seems the issue is not so much to postpone the end of the world, but rather to realize how humanity will live through the end of the world as we know it: Will we go hand in hand with the 'Climate Leviathan' or with a diversity of human and more-than-human beings amid a multiplicity of heteropolicies that can coexist before the climate apocalypse.

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Appendix 01

The 'PLANB Index' analytical categories were built based on a systematic review of how ethics overlaps with the theme of climate change. Two tables resulted from this review (Table A1 and A2). Table A1 shows the relationship between theorists and concepts (emphasis on convivialist ethics) and the socio-climatic categories of 'PLANB Index'. Table A2 shows the relationship between theorists and concepts (emphasis on socio-environmental and climate ethics) and the socio-climatic categories of 'PLANB Index'.

The literature review was based on the notion of 'climate ethics' (GARDINER et al., 2010), 'socio-environmental ethics' (FLORIT, SAMPAIO and PHILIPPI JR., 2019), and 'convivialist ethics' (INTERNACIONAL CONVIVIALISTA, 2020). This review also used the descriptor 'socio-environmental ethics'. 64 articles related to this theme were identified. 'Google Scholar' and 'Scielo' databases were used between January 2019 and October 2020. Other references on climate change were searched whenever relevant. The sociological perspective on ethics is what guided the analysis of the authors mentioned in the documents.

As for the 'Portal de Periódicos CAPES', when the search procedure was to insert in field a) 'Any', .a.1) terms 'ethics' AND 'socio-climatic', a single article was identified (until the cut-off date for this part of the work, July 27, 2021). When the procedure was changed to a.2) 'ethics' AND 'climate', the result was 272 articles in the last 20 years. When restricted to field b) 'Title' with b.1) 'ethics' AND 'climate', only 03 articles were identified, one of which is an article of mine. When in b.2) the terms used were 'climate' AND 'ethics', 41 articles were identified in the last year, and 654 in the last 20 years (without examining the pertinence of sensibility within the climate context under study). The articles mobilized in this study were selected after the sensitivity and relevance of the articles identified in the search were analyzed.

In the case of theorists and concepts associated with socio-environmental ethics, the year with relevant publications on the notion/concept was included. The year criterion was used because, unlike the emerging climate ethics field, which since 2010 has been constantly and prominently publishing (GARDINER et al., 2010), the field of environmental and socio-environmental ethics emerged in the 1960s-1970s (SALMI, 2021). To align the two fields (climate ethics and socio-

environmental ethics) temporally, the literature review included publications as of 2010; the aim was to capture similarities and differences between these two fields – which were not analyzed this article.

Table A1. Relationship between theorists/concepts (emphasis on convivialist ethics) and socio-climatic categories

Convivialist	Field	Notion/Concept	P	L	A	N	B
International CONVIVIALISTA[27]	CoE, CE	Convivialist ethics	▲	▲	▲	▲	▲
Alberto ACOSTA	CoE, NR	Good living. Decentralization	-	▲	-	-	▲
Frank ADLOFF	CoE, SEE	Conviviality as a praxis	▲	-	-	-	-
Christophe AGUITON	CoE, SEE	Common good	▲	▲	-	-	▲
Alain CAILLÈ	CoE, NR	Anti-utilitarian ethics	▲	▲	-	-	-
Eve CHIAPELLO	CoE, CE	Social practices of transition	-	-	-	-	▲
Noam CHOMSKY	CoE	Hierarchical legitimacy	▲	-	▲	-	-
Sergio COSTA	CoE, NR	Convivial inequities	▲	-	▲	-	-
Federico DEMARIA	CoE, SEE	Transformative initiatives	-	-	-	-	▲
Axel HONNETH	CoE, SEE	Recognition of the other	▲	-	-	-	-
Hans JOAS	CoE, CE, NR	Affirmative moralities	-	-	▲	-	-
Ashish KOTHARI	CoE, SEE, NR	Radical ecological democracy	▲	▲	-	▲	▲
Serge LATOUCHE	CoE, SEE	Degrowth	-	▲	-	-	-
Bruno LATOUR	CoE, SEE, NR	Nature-society dichotomy	▲	-	-	-	-
Paulo H. MARTINS	CoE, SEE	Socio-ecological reciprocity	▲	-	▲	-	▲
Geoffrey PLEYERS	CoE, SEE	Alternative futures	-	-	-	-	▲
B. SOUSA SANTOS	SEE	Alternative epistemologies	▲	-	-	-	▲

Source: Salmi 2022.
Caption: Field: CE (Climate Ethics); NR (Nature Rights); CoE (Convivialist Ethics - the theorist is one of the signatories of the *Second Convivialist Manifesto*); SEE (Socio-Environmental Ethics). About the Portuguese acronym PLANB: P for 'P'lurality in decision-making, L for energy 'L'ocality, A for epistemic and material 'A'ccess, N for planned 'N'aturalness, and B for generational 'B'enefit.

[27]For more information on convivialist theorists who identify themselves as 'Convivialist International', see <https://ateliedehumanidades.com/signatarios-internacionais/>.

Table A2. Relationship between theorists/concepts (emphasis on socio-environmental and climate ethics) and socio-climatic categories.

Year	Author	Field	Notion/Concept	P	L	A	N	B
2020	Intl. CONVIVIALISTA[28]	CoE	Socio-ecological reciprocity	▲	▲	▲	▲	▲
2020	Tom BROOKS	CE	Multiscale Justice	-	▲	-	-	-
2020	Henry SHUE	CE	Distant Strangers (Individual-World)	▲	-	-	-	-
2019	Byron WILLISTON	CE	Precautionary principle	-	-	-	-	▲
2019	Byron WILLISTON	CE	Intergenerational and international justice	▲	▲	-	-	▲
2019	Byron WILLISTON	CE	Individual-collective responsibility	▲	-	-	-	▲
2019	Luciano FLORIT	SEE, NR	Socio-environmental inequity	▲	▲	▲	-	▲
2019	Eduardo GUDYNAS	SEE, NR	Political Ethics of Nature	▲	-	-	▲	▲
2019	Ailton KRENAK	NR	Political ethics of more-than-human beings	▲	-	-	-	▲
2019	Maristella SVAMPA	NR	Eco-territorial turn	▲	▲	-	-	-
2018	Hein BERDINESEN	CE	Rational ethics of respecting nature	-	-	-	▲	▲
2017	Tracey SKILLINGTON	CE	Climate justice and human rights.	▲	▲	-	-	▲
2017	Stephen GARDINER	CE	Intergenerational climate politics	▲	-	-	-	▲
2017	Eric GODOY	CE	Responsibility of Governments	▲	-	-	-	▲
2017	J. Baird CALLICOTT	SEE, CE	Ecological collectives	▲	▲	-	-	-
2017	Elizabeth CRIPPS	CE	Climate moral agent	▲	-	-	-	▲
2017	Marion HOURDEQUIN	CE	Ethical pragmatism	▲	-	-	-	▲
2017	Luciano FLORIT.	SEE, NR	Interspecies intercultural equity	▲	▲	-	-	▲
2016	Joseph HEATH	CE	Institutionalized responsibility	▲	-	▲	-	-
2016	Joseph HEATH	CE	Institutional morality	-	-	▲	-	▲
2016	Joseph HEATH	CE	Intergenerational cooperation	-	-	-	-	▲
2016	Joseph HEATH	CE	Polluter pays	-	▲	-	▲	-
2011	Stephen GARDINER	CE	Equity of opportunity	▲	-	▲	-	-
2010	Dale JAMIESON	CE	Utilitarian informational accessibility	-	-	▲	-	-
2010	Henry SHUE	CE	Redistribution of wealth	-	-	▲	-	▲
2010	Stephen GARDINER	CE	Intragenerational burden	-	-	-	-	▲
2010	Stephen GARDINER	CE	Right to self-defense	▲	-	-	▲	-
2010	Simon CANEY	CE	Cosmopolitan Responsibility	▲	-	-	-	▲
2010	Simon CANEY	CE	Intersocietal egalitarian defense	▲	-	-	-	▲
2010	Dale JAMIESON	CE	Ethics for Climate Public Policy	-	▲	-	▲	-

[28]For more information on convivialist theorists who identify themselves as 'Convivialist International', see <https://ateliedehumanidades.com/signatarios-internacionais/>.

2010	Dale JAMIESON	CE	Duty to respect Nature	▲	-	-	-	▲
2010	Derek PARFIT	CE	Climate Identity	▲	-	-	-	-
2010	Peter SINGER	SEE, CE	Common atmosphere	-	-	-	▲	▲
2010	W. SINNOTTI-ARMSTRONG	CE	Individual Responsibility - Global Issue	▲	-	-	-	▲

Source: Salmi (2022)
Caption: Field: CE (Climate Ethics); NR (Nature Rights); CoE (Convivialist Ethics - the theorist is one of the signatories of the 'Second Convivialist Manifesto'); SEE (Socio-Environmental Ethics). About the Portuguese acronym PLANB: P for 'P'lurality in decision-making, L for energy 'L'ocality, A for epistemic and material 'A'ccess, N for planned 'N'aturalness, and B for generational 'B'enefit.

Appendix 02

This Appendix presents the questionnaire and the methodological procedure adopted for the semi-structured interviews.

In addition to the analysis of document contents, two techniques were used: 01. questionnaire and 02. semi-structured interviews.

Questionnaire

The baseline questionnaire (Table A3) included the creation of an online form through 'Google Forms', which was applied to selected agents (SAMPIERI, COLLADO and LUCIO, 2013) to be later interviewed. The selection was based on the number of 'PLANB Index' categories in which each agent fell: those with the highest number of ecocentric-related categories (three or more) were selected[29].

The agents who did not respond to the online form before the interviews took place were interviewed based on the questions in the baseline questionnaire. At the time of the interview, they were instructed to formalize their answers through the questionnaire, if they considered it pertinent.

Table A3. 'PLANB Index' questionnaire from the socio-climatic ethics perspective

Basic information (closed-ended questions):

- name
- current job title
- entity you represent
- Contact email
- name of the Brazilian climate instrument (BCI)

Primary information (open-ended questions):

01. Who were the key people and what were your responsibilities for materializing the initiative/instrument before official publication? Are there any extraordinary or unusual responsibilities to be highlighted?
02. Which key element was mobilized and proved decisive for the publication/launch?
03. If other complementary or external forces have also played a key role, please cite and justify.
04. What was the main obstacle or challenge that had to be overcome?
05. From your perspective, which are the success factors, mentioned by the members/participants, that allowed the obstacles and challenges to be overcome?
06. When you think about the future, what are the main contributions, on a political level, that you would like the next generation to remember?
07. Free space reserved for additional considerations on the topic addressed.

Source: Salmi (2022)

[29]See Table 01.

Semi-structured interviews

The interviews were carried out after the basic questionnaire had been applied. The interviews sought to capture the agents' ethical orientations (drivers) through the effects of the relation between the interviewee and the BCI. They were also useful to interpret the contents of the instruments – the ethical drivers crystallized in the BCI documents that had been previously identified during the stage of document analysis.

The interview guide was prepared to collect verbal data and information (FLICK, 2009; RUBIN and RUBIN, 2011) about the processes of ethical-political construction and the dynamics related to the launch of climate initiatives and climate policies designed to tackle global warming in the Brazilian context.

This study's method of semi-structured interview was guided by a flexible structure (RUBIN and RUBIN, 2011) and, whenever possible, I used the answers to the questionnaires that were returned before the interview took place.

All interviews were conducted virtually, and they were not recorded. My decision not to record was viewed as positive[30] by the interviewees because confidentiality was maintained – consequently, more in-dept information was shared.

The contents of the interviews were written down in fieldnotes and consolidated by NVivo® along with previous analyses of BCI documents so these contents could be latter analyzed.

[30]An analysis of the implications of interviewees' perception that the recordings were positive was not carried out.

Appendix 03

List of the indicators (Table A4) used to operationalize each of the five analytical categories of 'PLANB Index'.

Table A4. List of indicators of the five categories of 'PLANB Index'

'PLANB index' Category	Plurality in decision-making	Energy locality	Epistemic and material access	Planned naturalness	Generational benefit
Indicators	Presence in the same space of individuals or groups affiliated with different worldviews The decision-making process is open In the case of councils or forums: the decision-making mechanism is deliberative (not advisory) Dialogue mechanism with consensus techniques (not voting) Nature is recognized in formal documents as a subject with rights Non-human agents (wildlife) have human representatives in decision-making processes related to territorial reordering Native peoples or local communities have the final decision on their territory's destiny	Harmonious (non-contentious) presence of local communities in energy source territories Knowledge of energy sources by local communities Local energy from renewable sources in use by the local community (preferably off-grid) Nonpolluted natural sources of food (energy) for non-human beings (fauna and flora) Presence of preserved natural ecosystems (not invaded/threatened) Fossil or mineral energy extraction is halted Infrastructure megaprojects are barred through judicial decisions	Financial resources available: non-reimbursable Partnership with groups of financial donors Credit lines with state-subsidized rates Ancient and traditional spaces of knowledge are maintained and organized Academic spaces to which the local community have direct access Active process in which other forms of wisdom (beyond scientific knowledge) and scientific knowledge are exchanged between different communities The knowledge produced is transmitted under the logic of 'copyleft', free access, or similar. Programs to promote scientific dissemination with local communities in the face of infrastructure megaprojects	Reforestation area (flora) in operation (peripheral areas/high ecological vulnerability) Regeneration area in the process of fauna recomposition Rewilding area (restoration of ecosystems) in operation (flora and fauna) New blue-green areas in planned urban areas Common goods (drinking water, public lands) taken over by local communities in urban areas Presence of updated plans and programs for revitalizing natural territories Ecologically oriented social technologies are used by local communities	The most vulnerable community is prioritized for planned social benefits Non-human agents (wildlife) are prioritized for human benefits. Programs to reduce social and ecological inequalities are in operation (community urban agriculture, local solid waste management) Occurrence of noticeable short-term (less than one year) results (materiality) regarding the effective reduction of social inequities Process of generational succession on the management of the territory in operation 'Disasters in waiting' (e.g., mining dams in critical condition) are stopped

Source: Prepared based on Salmi (2022).