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Transitioning from Natural Conservationism to Sustainable Development: A Shift in Environmental Policy

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Transitioning from Natural Conservationism to Sustainable Development: A Shift in Environmental Policy

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> "Dear earth, give me a good harvest", says the religious man. "Whether the earth wants it or not, it must give me a good harvest", says the irreligious man. "The earth will give me when I give what is proper to its essence", says the true man: "the earth does not want to give, neither should it give, but it will only provide good fruit if all the conditions are fulfilled by me".
>
> *Ludwig Feuerbach, 1849*[1]

I. Introduction

The implementation of environmental policies is strictly conditioned by how the ecosystemic balance of the environment is conceived, especially regarding *human involvement* in it. Thus, there are two possible approaches to formulating environmental policies corresponding to the following normative ideals of environmental balance[2]:

- *Conservationist Approach:* Where the environmental balance is conceived as *static*, and it is deemed necessary to limit (or even prohibit) human intervention in environments that require *protection or restoration*.
- *Sustainability Approach:* In which environmental balance is conceived as *dynamic*, harmonizing environmental ingredients (especially other forms of life) with new forms of human presence (pre-existing or not), in order to become positively interdependent.

While the protection or restoration of pre-existing environments governs conservationist environmental policies, the articulation of *news* synergistic interdependencies concomitant with the formulated environmental policy governs *sustainable environmental development* policies.

Only humans extract non-renewable resources from nature for their use, rather than using them directly as they are found. Humans have designed a way of life based on finite elements which can lead to *pollution* and *resource exhaustion*. Such symptoms stem from the same problem — *environmental degradation* —, and both require the same solution — *recycling*. Resources are extracted from the environment, and pollution is the excess that is not recycled through natural processes. In order to *restore* resources as they are consumed and *eliminate* pollution, the recycling process must be accelerated, sometimes in ways that do not occur naturally. However, that is not always the case (Macneil et al., 1991: 27-35). So, why is the extraction of non-renewable resources not observed in their conversion into renewable resources through artificial processes?

The production process is guided by *market* logic, as *a market economy can only function in a market society* (Polanyi, 2001: 81). Thus, *labor and land are essential components of the industry, which ultimately consists of human beings and the natural environment* (Polanyi, 2001: 84). However, including these elements in the market mechanism results in the subordination of society's natural human essence to the laws of the market. This historical industrialization process, driven by the immediate and individualistic logic of capital, decomposed the natural essence of humans and society into tradable elements. As a result, the industrialization process had a low capacity — or no capability — of recycling resources, leading to the

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[1] Vorlesungen über das Wesen der Religion (Gesammelte Werke), pp. 351, Berlin, Akademie Verlag, 1967.

[2] For other distinctions, different from the one adopted on environmentalism in this text, see Enzensberger, 1976 and Bryant & Bailey, 1997. Such authors question the very notion of sustainable development, while I consider, as will be seen below, that its ecological, social and economic characteristics are the same in any planetary quadrant and therefore, sustainability provides only 3 options: denial or containment of development, its exercise predatory or for the sustenance of the lives that make up an ecosystem (not only natural)

pollution that followed the geographic trajectory and energetic evolution through time.

Despite the monopolizing vocation of the market, its dynamics often stimulate movements in opposite directions, including social movements against environmental pollution, — as everyone relies on natural resources, including industrial activity. As the exploitation of natural resources exhausts natural resources, it threatens both the productive organization itself and society as a whole. In response, the principle of *sustainable* development aims to maintain the consistency of the industrialization process while addressing the depletion of resources (Brundtland, 1987).

Acknowledging the predatory nature of the market does not imply attributing to it an intrinsic inability to deal with environmental degradation, as some have misunderstood. Capitalism has recently demonstrated an undeniable adaptive capacity in integrating ecological constraints. This integration is evident in the proliferation of anti-pollution equipment that enables the control of environmental degradation effects. Even the refusal of such effects is possible through the adoption of impact-mitigating or environment-restoring techniques in the production process (Dupuy, 1980: 16).

However, the flexibility to incorporate ecological concerns does not imply the abandonment of the noted predatory nature. There will be tension between *continuing commodication*, with its immediate and individualistic logic averse to social and/or strategic considerations, and *pursuing sustainability* in the production process, threatened by resource depletion. In this sense, the mistake of traditional interpretations of the relationship between the market and environmental issues is evident, as they create a *preservationist versus development* polarization. Either the *catastrophic* pessimism, which only or fundamentally glimpses the *destructive* aspect of commodification, industrialization, and urbanization, not taking into account the permeability of capitalism to the demand for resource sustainability, or the *technicist* optimism, which almost solely visualizes the *creative* aspect of commodification, industrialization, and urbanization, ignoring the partiality of the incorporation of the environmental issue by the system that is limited, by itself (without interference from agents alien to the market logic), to the aspect of resource depletion of environmental degradation (Dupuy, 1980: 39- 48).

Thus, although the movement of the market is necessary to ensure the supply of natural resources, it will be insufficient to address environmental degradation, as it is limited to the aspect of depletion, neglecting the aspect of pollution.

In the second half of the 19th century, the emergence of associations for the protection of flora and fauna is observed in the US and Western Europe. These associations' demands for environmental protection, restricted to the non-human natural environment threatened by urban-industrial expansion, will be fundamentally oriented towards creating nature conservation units such as parks, reserves, and preservation areas. This is the phase of environmentalism commonly known as *conservationism*, as it focuses on maintaining the balance of *natural* ecosystems, protecting them from predatory activities such as hunting and deforestation. *Conservationist* environmentalism was the primary and dominant stance of environmental protection movements in developed countries until after World War II (reaching its peak of organization with the creation of the International Union for Conservation of Nature — IUCN in Switzerland in 1947), when the context of the Cold War and the subsequent nuclear arms race, raised the possibility of human extinction as a species, will lead to a growing concern for the *human environment* in those countries. While for conservationist environmentalism, the environment will be perceived as a private and localized issue, for environmentalism, which emerged after the post-war period, during the 1960s, will correspond to the perception of the environment as *a social and public issue* (McCormick, 1992).

The *plurality of individuals* involved in predicaments generated by environmental degradation will be an element requiring State intervention to deal with it. There are polluters and those affected, those who depend on environmental degradation and those who depend on its preservation, in addition to the interests involved in the various modalities of environmental damage compensation. In the end, there are winners and losers because often the interests that bear the costs will not be the same as the interests of those that benefit from environmental degradation and/or recovery. In the context of environmental degradation, the decision-making processes aimed at resolving conflicts will be dissociated from the involvement of the State and politics. (Conti, 1986: 979-80).

So, as *depletion of resources*, environmental degradation affects interests whose agents mobilize themselves from the market in favor of increasing the number of renewable items in the production process. According to them, it consists of conferring sustainability to the economic system. As *environmental pollution*, degradation of the environment affects interests of those who are constituted and mobilized outside the market, demanding policies to regulate it as they identify its logic — averse to considerations of ensuring global recycling of the urban-industrial process — as responsible for the harmfulness of the environment.

Therefore, the full incorporation of the environmental issue into the production process and social life does not constitute a reasonable expectation based on market movement. This industry, which is limited to considerations of production sustainability, will neglect the other constitutive aspect of environmental

degradation: pollution. Confronting it, and therefore environmental degradation as a *specific situation*, will depend on interests, agents, and strategies of distinct collective action, often hostile to commodification. It concerns local, professional, and civil environmentalist social movements. It is from the institutional impact of these movements that the demand for the presence of the State in the environmental issue will stem from, and through the implementation of anti-pollution public policies as a method of addressing environmental degradation.

The *policy* is, therefore, a condition for the *full* incorporation of the environmental issue into the social dynamics. And the main reason for this will reside in its agents, constituted and mobilized in the function of the fight against various forms of pollution and representatives of ecological rationality extrinsic to the market. By prioritizing aspects of environmental degradation, distinct from the depletion of resources and absent in the business agenda, they postulate market regulations that protect society from its environmentally negative externalities. Their connection to the issue of pollution reveals the *negativism* of these agents towards environmental degradation to a greater degree than agents motivated by market logic, mobilized solely in the face of resource depletion. However, additional factors suggest the significance of policy in promoting *ecologization*, which refers to the integration of environmental concerns into societal practices.

Another essential reason for the implementation of public policies lies in *interdependence* as a characteristic of environmental degradation issues. This logic stems from the historically verified relationship between the urbanization process and environmental degradation (Macneil et al., 1991). By altering natural environments and replacing them with artificial ones, the process of urbanization progressively and uninterruptedly transforms environmental protection into a collective good. The urban space, inherently concentrated with various activities and populations, brings about conjunctures in which actions taken by some individuals affect others, even if they were not directed toward them. The process of urbanization brings together different human activities and groups, creating interdependence among them. This *interdependence* can result in *environmental issues* that affect everyone indiscriminately. The *policy* will respond to the specific conditions of urban life related to public order and the use of urban space, as any diffuse situation (De Swann, 1965: 127).

On the other hand, although the interdependence scenario means a high vulnerability of various segments of the population to activities developed by certain groups, the reciprocal dependence between them does not imply that the costs of negative externalities fall indiscriminately on everyone. Their dependencies, although reciprocal, are not symmetrical. The negative impact will somewhat affect different groups due to the resources they have for personal protection. Environmental policies are often developed in response to the concerns of different social groups who are affected by environmental issues. However, the specific content of the *policy* is often determined by conflicts between those who are less affected (and in better social positions) and those who are more affected (and in worse social positions). The *policy* will therefore stem simultaneously from the need of various groups to take over the costs of environmental degradation and from the specific distribution of these costs that will affect different sectors of the population. The fact that groups with greater resources for their environmental protection take on such responsibilities is usually linked to their participation in policy *control* (De Swann, 1965: 128).

The high concentration of people in urban areas means that the actions of certain groups can have a significant impact on the public as a whole, affecting not only their own group but also other unrelated groups (De Swann, 1965: 128). This *interdependence* leads to a situation where the costs of certain activities are tendentiously spread across multiple groups in the population, rather than being borne solely by the group responsible for the activity.

The premise of this work is that *environmental degradation* becomes a public concern in situations of intense urban-industrial development, where industrialization relies on non-human energy sources, leading to high energy consumption and consequent waste generation. This is compounded by urbanization, which leads to the concentration of populations in large cities that are incapable of recycling waste through natural or artificial processes, leading to resource depletion and environmental pollution. Consequently, the effects of such depletion and/or pollutant emissions will act upon other segments of the population in the form of *negative externalities*, not limited to those involved in predatory activities.

Therefore, as those affected by environmental degradation increase, distributing the costs of environmental protection becomes essential, since different segments are impacted due to their own unequal resources. Urban movements have emerged to advocate for environmental protection as a collective good, and to push for the inclusion of environmental concerns on the public policy agenda. *Although* the environmental conscience inherited from conservationism, as a pioneering environmentalism, *remains dominant* to the point of preventing (apart from traditional predatory tendencies) the paradigm of sustainable development *from being fully adopted* in environmental policies.

The urban-industrial context, based on the energy and population concentration present in the

industrialized countries of the North after World War II, whose peak occurred in the 1950s-60s when the environmental issue entered government agendas, — and in the industrialized countries of the South, with the migration of energy-intensive and polluting economic activities from the North, in the 1970s-80s (McCormick, 1992: 102-110), did not acquire this format due to technical factors. The insufficient or non-existent recycling of the urban-industrial process derives from its orientation by market logic, which is alien or even hostile to strategic considerations — such as ecological constraints — of the medium and long term. So, enabling the urban-industrial process for recycling is the fundamental objective of various environmental policy modalities.

The concentration of activities and human populations within the *urban* environment results in situations of *interdependence*, whereby the actions and attitudes of certain segments may produce negative externalities that impact other segments of the population. Environmental movements emerged (in the 1960s-70s in developed countries in the North and the late 1980s in industrialized countries in the South) aimed at *democratizing* the costs of environmental damage, since their impact, in addition to being *public* (since it affects everyone), is also *unequal* and *regressive*, affecting more strongly the majority and unprotected segments of the population. These demands will be the fundamental factors in the conception and implementation of *policies* to address pollution and, therefore, environmental degradation[3].

Finally, an ecologically balanced society is inconceivable without assigning the State the responsibility for the conception and implementation of environmental public policies. The *policy* is a basic condition for resource renewal and non-polluting methods to replace those based on non-renewable and polluting resources in the urban-industrial process. This is because the incorporation of environmental costs by market logic is undoubtedly biased, either by transferring them to society (through damage to the physical integrity of the population and/or the price system) or by inertia resulting from private ownership of the means of production (which hinders, or even prevents, the diffusion and substitution of *energy-intensive* and polluting techniques with *cleaner* and less energy-intensive ones), especially when the same economic group holds the technological patents. The *insufficiency* and even inefficiency of the market as an allocator of costs resulting from environmental degradation and as a rational coordinator of the use of natural resources will require effective state intervention to overcome the limits of capital in assimilating environmental logic (Conti, 1986: 979-80).

II. The Policy-Making of Environmental Balance

From the end of the 19th century to the 1960s, in the developed countries of the North, and from the late 1970s to at least the mid-1980s, in the industrialized countries of the South, the initial and dominant form of environmentalism as a social movement was *conservationism*. The term, coined by environmentalists, refers to environmental protection movements aimed at maintaining the balance of natural environments threatened by urban-industrial expansion. Its scope is to *conserve* nature, which is susceptible to destructive activities. Although its manifestations through flora and fauna protection societies have been observed since the end of the last century in the USA and Great Britain, and in Southern countries undergoing a rapid process of industrialization, it is with the intensification of urban-industrial expansion in the post-war North and in the 1970s, in the industrialized South, that there is an effective proliferation of significant conservationist groups (McCormick, 1992: 151-171).

These movements share a characteristic of harsh criticism towards civilization as a historical process, evaluating industrial progress as essentially negative. Such activists often idealize the pre-industrial context in their countries, typically referred to as romanticism. Conservationists[4], who have been labeled as "prophets of doom" and "new Jeremiahs," warn about disasters — mainly related to resource depletion — that have not yet occurred. They conceive humanity as inherently predatory and therefore stand in opposition to its growth in technical, economic, and population plans (Chisholm, 1974).

This *conservationist tradition* of the environmental movement will correspond to the configuration of a *predominantly regulatory tradition* in environmental public policies. This is because conservationist environmentalism, by limiting environmental protection to preserving the balance of natural ecosystems, will demand measures that prevent or discipline the action of factors that are potentially predatory in natural regions.

[3] Even the slogan of *sustainable development* itself, which emerged in the United Nations Conference on Environment and Development (commonly referred to as Rio-92), also is the product of Latin American economists associated with the issue of development in the capitalist periphery. The vulnerability of these countries to environmental degradation is heightened by their lack of access to the new materials technology and energy conservation that is available in the northern hemisphere countries (McCormick, 1992: 152).

[4] According to its designation, for this environmental bias formulated in the 19th century, environmental balance is synonymous with the conservation of Nature, and its most radical formulators called themselves preservationists. Conservationist influence was flagrant in President Roosevelt (Callicott & Frodeman, 2009; Thoreau, 1854; Muir, 1894; Redekop, 2016).

The destruction of natural ecosystems does not occur without affecting interests. Individuals living in sparsely or non-urbanized areas, who are dependent on them for their livelihoods (usually through primary economic activities), and people whose leisure is linked to access to these districts, are often disturbed by urban expansion. From their association, movements arise to defend the natural environment, threatened by the construction of industrial facilities or the conversion of rural land into urban areas.

The preservationist demands of these movements advocating for the *integrity* (and even the inviolability) of natural ecosystems, will argue in favor of *policies* that safeguard nature threatened by urban-industrial expansion. Environmental *policy-making*, in its initial formulations and implementations, presented a predominant *regulatory* content (Löwy, 1967: 690). Simultaneously, the preservation of the natural environment could only result from regulating its constituent components, especially those external and intervening in it.

In this situation, negative externalities resulting from the degradation of the *natural* environment affect socially defined interests (populations that use natural resources for their sustenance or leisure) and geographically delimited areas (by the territory relative to threatened native heritage). Although these movements did not initially focus on environmental issues as a part of the social agenda, as they were primarily focused on localized environmental degradation in areas that were not yet urbanized, they nonetheless spurred the government to take action to prevent the spread of environmentally destructive practices driven by market logic as a result of urban-industrial expansion.

The regulatory policy adequately served the preservationist demands of the environmental conservation movements. This is due to the broad *sectoral impact* of their measures, which reached various branches of productive activities that depleted ecosystems. Primarily, it is because of its *preventive* aspect by conditioning individual behaviors to general norms and delimiting (expanding or reducing) the possible alternatives of individual decisions (Löwy, 1967: 690). Authorization systems, monitoring, quality standards and emission norms are instruments of direct environmental regulation.

Environmental regulatory policy presents two aspects. The first, which could be considered "orthodox," is characterized by a rigid delimitation of the universe of individual choices, marked by the *veto-authorization* binomial, such as prohibitions or restrictions on hunting certain animal species and extracting plant and mineral resources from particular regions. The most representative instruments of this policy are *nature conservation units*, where access to the population is extremely restricted or impossible due to the level of fragility of the ecosystem. This is the case with ecological stations, where the primary purpose is to conduct basic research applied to ecology, and the secondary purpose is to create spaces conducive to the development of educational campaigns for nature conservation. Another example is ecological reserves, whose sole reason is the preservation of flora and fauna (Juniper, 2019: 328-330).

Another modality of regulatory environmental policy, which could be called "unorthodox," is characterized by flexible delimitation of the universe of individual choices, enabling alternative and cumulative decisions. This is the case of ecological parks, nature conservation units that have scientific, educational, and recreational purposes, allowing access by the population, conditioning it, however, to the preservation of the ecosystem. But the main instrument of this type of regulatory environmental policy, whose superiority over the other modality of direct regulation resides in the reduction of administrative costs (of the intense monitoring required) and the possibility of preventing environmental damage (which is, strictly speaking, irreparable through fines), is the Environmental Impact Assessment — EIA. By enabling the evaluation of the potential degradation presented by urban and industrial projects, the EIA elevates the preventive dimension — characteristic of regulatory policies — to the maximum degree (in environmental terms), making it possible for the state to anticipate the effects of environmental modification (Bessa, 1992: 317).

Expanding or reducing the range of individual choices, regulatory policy aimed at environmental degradation will enable the achievement of two essential goals for the management of highly vulnerable natural areas to pollution. These goals are: (1) *the prevention of degradation*, particularly through the prediction of the effects of environmental damage, and (2) *the fulfillment of preservationist demands* of the environment to prevent its alteration.

The degradation of natural ecosystems is characterized by its localized impact, in that it affects only individuals with access to these areas, which, since they have yet to be urbanized, have an effective population flow, and reduced potential. The people affected by the degradation of these areas have similar income and *social status*, and their association will promote conservationist movements to veto the installation of industries and the conversion of rural land into urban areas. Such movements will comprise individuals mobilized based on their subsistence and leisure. In both cases, they are individuals whose interests are *homogeneous* and *linked prior to the impact* of environmental damage. The delimitation of preservation areas has remained the focus of environmental policy since the beginning of environmentalist movements, whose demands, limited to the conservation of nature, have fostered an essentially regulatory policy-making.

Paradoxically, therefore, pioneer environmentalism or natural conservationism assumes the same separation, between humanity and nature (explicitly or not) assumed by its human predation, in any of its historical forms. Thus, an effectively ecocentric bias of humanity requires its inclusion, even without attributing environmental centrality to it – whose abandonment characterizes any environmentalism or normative ideal of environmental balance tout court[5]

The recent incorporation of redistributive aspects into public policies aimed at environmental degradation will meet the demands and involve agents different from those organized due to pollution of natural environments. The impact of the degradation of *urban* ecosystems will be *diffuse*, as it will affect varied and even unrelated interests. The concentration of individuals with varying income and status levels in urban areas, which reached its peak during the process of *megalopolization* in the developed world during the 1960s and 1970s, and in developing countries during the late 1970s and 1980s, results in interdependence among different segments of the population that can inadvertently inflict harm upon one another.

As a result, all groups can be affected by the actions of any individual or group, resulting in unintended or intentional environmental damage due to their shared presence in common environments. The environment becomes a common good and the impact of environmental destruction will fall upon individuals whose interests, prior to the damage, are *heterogeneous* and *not associated* with each other. What will unite them is the widespread impact, as opposed to the localized effects of natural environmental degradation, of the deterioration of the urban and shared ecosystem. By affecting varied interests (previously separate, and even in conflict with each other), it will encourage the alliance of individuals whose goals and movements differ significantly from those of conservationist environmentalism aimed at preserving natural ecosystems.

The elements of the urban environment must be organized according to their balance, including productive activities and all factors that shape the urban space. Movements advocating for the restoration of balance in urban ecosystems will call for *predominantly redistributive* public policies, whose economic instruments will be more suitable than mere regulation for inducing sustainable behavior in constantly changing urban environments. As urban-industrial expansion continues (and has continued) to concentrate energy and population at an intensive pace driven by the market, natural environments decrease, allowing demands for the *preservation* of natural ecosystems to emerge alongside demands for the *recovery* of degraded artificial (urban) ecosystems.

Urban areas that display ecological imbalances, such as material degradation, contamination of vital resources, and high levels of noise, are likely to give rise to conflicts among stakeholders. These conflicts will not only pit interests linked to pollution against those related to environmental restoration, but also opposing demands corresponding to the plurality of feasible solutions in view of environmental degradation. This will be accomplished through *policies* that go beyond regulatory frameworks.

Redistributive policies can be classified into two types: those that *concentrate benefits and socialize costs*, and those that *concentrate costs and socialize benefits* (Lowi, 1967: 708-712). The former type is carried out through the provision of subsidies (such as financing, goods or services) by the state, mainly in response to the demands of market agents affected by the depletion of resources resulting from environmental degradation.

The provision of recycling equipment is essential for business segments that compete with predatory market segments. Due to occupying favorable market positions, the established and predatory segments tend to maintain their dominance by relying exclusively on their concentration logic, which typically favors those with greater resources[6]. Redistributive environmental policies that concentrate benefits and socialize costs also meet the demands of environmental management professionals who rely on funding for research and anti-pollution equipment to carry out their work and protect themselves.

Therefore, market agents and corresponding professionals are in favor of policies that contain the depletion of resources, leading to a limited (as it is restricted to sustainability considerations) but effective process of *ecologization* through the market. Another example of the importance of state clientelism in meeting demands lies in providing affected

[5] Philosophically pioneering, against both environmental predation and with a dynamic understanding of sustainability is the ecocentric bias of Ludwig Feuerbach (1804-1872): "Our world [...] is an inverted world. The triumph of our culture, of our civilization, resided for the most part only in withdrawing and deviating as much as possible from nature, and the triumph of our science [...] in withdrawing and deviating as far as possible of simple and evident truth." Unlike natural conservationism, then emerging, it postulated development, but in alliance with nature: "Our task is to avoid extremes [...] of considering, treating and venerating nature as what it is – as our mother [...] not, however, with the eyes of a religious child, but rather with the eyes of an adult, self-conscious man." Vorlesungen über das Wesen der Religion (Gesammelte Werke) (Feuerbach, 1967). As to conceive of nature (planetary) as active omnipresence, by environmental science, see Lovelock (1995). In an interdisciplinary scientific perspective, fusions between humanities and nature are analyzed by Lopes (2023).

[6] The *green market* — consisting of activities and products composed exclusively or mainly of items renewed through natural and/or artificial processes — requires government support to compete with the *gray market*, which is characterized by its inability to renew resources in the short or medium term (Conti, 1986: 981).

communities with adequate tools for restoring degraded areas.

The impact of urban ecosystem degradation is not only widespread, affecting diverse population groups and immobilizing heterogeneous interests due to environmental pollution, but also *regressive*. This is because it *disproportionately* affects different population segments based on their resources, with income being an obviously relevant variable for their protection. In other words, the *costs* of negative externalities arising from urban environmental pollution will be borne by various segments, especially those who are economically and environmentally less privileged and lack private resources for protection.

The *aggregate* and *differential* impact of urban environmental degradation will link heterogeneous and previously unrelated (if not hostile) interests together, deprived of a common good: the ecologically balanced environment constituted by urban space.

The organization and association of these individuals will be their main resource in the conflict aimed at distributing the costs of degradation and restoring the environmental balance of the urban ecosystem. These movements will identify responsibility for environmental harm and assign the resulting costs of damage to polluters to prevent the generalization of the harm facilitated by the scenario of urban interdependence, which primarily affects the various majority and unprotected population segments.

The following table relates both aspects of environmental degradation to the market and its eventual solutions:

Environmental Degradation	Market	Solutions
Exhaustion	Negative Internality	Intercompany Cooperation
Pollution	Negative Externality	User Cooperation

Redistributive environmental policies that concentrate costs and socialize benefits will meet the demands of movements in favor of environmental protection as *a collective good*, specifically in the conversion of an ecologically balanced environment from a *necessity* to a *right*. These movements are composed of individuals from various segments of the population, mobilized in response to the diffuse and differential impact of urban degradation. They are *urban* movements because it is in this context that negative externalities of environmental degradation are generalized. The presence and relevance of these movements in associative life is a fundamental factor in converting the environment from a private and localized issue (the second perception of conservationist environmentalism) into a *social issue* (involving diverse interests, particularly of those lacking private resources for their protection) and a *public issue* (by advocating for the establishment of state environmental protection agencies).

The redistributive and cost-concentrating policies that aim to *democratize the costs* of negative environmental impacts advocated by these movements will be expressed through the incorporation of the polluter-pays principle into national environmental legislations (Bessa, 1992: 245). The polluter-pays principle, as the polluter assumes responsibility for pollution, will enable the emergence of two mechanisms: a *compensatory* one, which obligates the polluting agent to bear the cost of destruction or repair; and a *redistributive* one, to the extent that costs are imposed that go beyond the compensatory line of penal and administrative sanctions, thus inhibiting polluting activities. The legal principle of polluter pays extends beyond the monetary obligation to clean up, but also entails the assignment of responsibility (regardless of fault) to those who engage in risky activities that may cause harm, both in terms of cleaning up and *preventing pollution*.

This is a redistributive policy in the *classical* sense (as argued by Löwy, 1967: 715), in that these redistributive environmental policies concentrate costs and socialize benefits, characterized by their impact on the level of class, revealing *a division between owners and non-owners* in the case of economic activities whose environmental predation affects broad segments of the population. Such policies will directly affect segments of the population in terms of their income and property. Once a payment is established in the *short term* that exceeds the perceived level of services — another classical redistributive characteristic (Idem) — and the affected target group can be grouped as a class, it is possible to identify redistributive aspects in this type of environmental *policy*.

The emergence of demands for environmental balance due to the degradation of artificial ecosystems did not imply a decline or displacement of demands for preservation of the balance of non-urbanized areas. Alongside these demands, there are claims for the preservation of the balance of urban ecosystems, calling for regulatory improvements (mainly through the extension of Environmental Impact Assessment requirements and their increasing complexity). Environmental protection movements in urban ecosystems - as in rural ecosystems - will advocate for preventive measures against environmental degradation, calling for increased state intervention in urban environments and the establishment or expansion of regulation of its components.

Therefore, the environmental protection movements in urban ecosystems represent the key variable for introducing the environment into the public policy agenda, by advocating for the *institutionalization* of the environmental issue through the establishment of state environmental agencies. The importance of these

movements in associational life will determine the presence (which will be peripheral, important, or central) of the environmental issue on government agendas. The strength of these movements to combat urban pollution in the developed countries of the North and their recent and incipient emergence in the industrialized countries of the South explain the effective incorporation of redistributive aspects into national environmental legislation in the former and their weakness in the latter. However, in the latter, there is a growing number of urban environmentalist demands and the presence of the environmental issue in public life.

Even the formulation of distributive environmental policies (Löwy, 1967: 708) is conditioned, sometimes by distributions focused on non-consumer individuals or universalized for the construction of new collective habits[7].

The evolution of public environmental policies, from mainly regulatory instruments to its recent incorporation into redistributive aspects, is not only observed in national environmental legislations but also in the innovations regarding the perception of the environmental issue in the international agenda.

Although the topic of the environment had been relevant within the United Nations' sphere, as all thematic meetings organized by the organization dealt with issues related to the environment, it was not until the Stockholm Conference in 1972 and, particularly, the Rio de Janeiro Conference in 1992 that the environmental issue definitively entered the international agenda. The former highlighted the environment as the focal point of the North-South divide. While the developed North was already affected by transboundary environmental problems such as toxic waste transportation, acid rain, chronic smog, nuclear control, pesticide use, waste disposal, and marine pollution, the South promoted or consolidated industrialization processes. The debates were deadlocked, with the North advocating for the adoption of environmental commitments to limit economic growth, which was identified as the source of environmental problems. This proposal was promptly rejected, along with the environmental issue itself, by the countries of the South. The primary outcomes of the Stockholm Conference were the implementation of strict internal environmental controls by developed Northern countries and the large-scale migration of polluting and high environmental impact industries to developing Southern countries (Viola, 1992, p 7-8).

The context of Rio-92 (also known as *UNCED*) was entirely different, as global environmental problems had already emerged or intensified (depletion of the ozone layer, greenhouse effect, and reduction of biodiversity), composing *the global disorder of the biosphere*, that foster international conflicts regarding the distribution of *costs* of degradation and recovery of the planetary environment. This environment had become essentially urban, due to the accelerated urbanization of the main developing countries in the 1970s and 1980s, presenting relations of interdependence, alongside communication mechanisms and financial globalization (Viola, 1992: 10-12).

The end of the Cold War and the breakdown of the East/West polarization allowed for the full expression of the North/South cleavage, with the environment becoming a central focus of attention in the development strategies of both hemispheres. The North aims to prevent the depletion of the South's biological resources by its populations, ensuring their flow to the emerging *bio-industry*, while the South seeks access to the North's more energy-efficient technologies (and therefore less environmentally harmful) due to the high vulnerability of its development strategies, which lack the *North's sciences of new materials* and natural resources. At this conference, the South is presented as a hemisphere affected by environmental degradation, primarily resulting from the intensive and polluting activities that migrated from the North in the 1970s. Furthermore, the *megalopolization is* worse in developing countries, particularly in Latin America, where a quarter of the population resides in cities, and most of its population lack proper sanitation, deals with polluted air and water conditions, and are vulnerable to natural disasters (Viola, 1992: 13).

Thus, Rio 92 took place in a context where the costs of global environmental degradation became a subject of international conflict due to their distribution. The strategy of the North was to assign these costs to the international community as a whole, committing to recycling their urban-industrial processes and demanding from the South the limitation of the use of natural resource deposits, which are mostly located below the Equator. The strategy of the South will be to differentiate the responsibilities for the planet's environmental crisis, committing to the preservation of natural resources and demanding from the North mechanisms for the transfer of technologies that allow for *sustainable* development on a non-commercial basis, ensuring its recyclability. The perception of the lack of sustainability of development (and not of development itself) as the source of environmental problems will be the main consequence of the active presence of the G-77 in the preparation and progress of the Conference (Viola, 1992: 13-14).

The formulation of intergovernmental environmental policies will be marked by a conflict between the *preferably regulatory strategies* of the North, which aim to conserve natural reserves (primarily biological) located mainly in Southern countries, and the *preferably redistributive strategies* of the South, which

[7] This is the case of Portuguese Law 69/2018, which proposes to reward consumers for returning packaging, sometimes with eco-friendly products, sometimes with new forms of consumption.

aim to transfer resources (primarily technological) that promote energy efficiency, held by northern hemisphere countries, to implement *sustainable development*. This conflict was evident during the Conventions on Climate Change and Biodiversity.

During the Climate Change Convention, there was a dilemma on how to address the issue of carbon dioxide concentration in the atmosphere. The South nations proposed the reduction of emissions resulting from the use of fossil fuels through the imposition of taxes, which would predominantly affect wealthy nations. The revenue generated would be used to finance sustainable development, primarily benefiting peripheral countries. On the other hand, the North suggested the preservation of existing forests in Southern countries, as their vegetation can absorb excess carbon dioxide. Eventually, the Convention established long deadlines for the reduction of emissions, and there was a commitment to cooperate in the preservation of areas with high biological diversity through the World Bank (United Nations, 1993: 41-45).

In the Biodiversity Convention, the impasse between Northern *regulatory* approaches and Southern *redistributive* approaches, which pitted holders of scientific knowledge against those of genetic material, both necessary for the advancement of emerging *biotechnology*, was resolved. The North advocated for preserving forests, designating them as a *heritage of humanity* and guaranteeing free access for researchers. Meanwhile, the South asserted its right to benefit from the *bioindustry* to enable access to research and forest preservation, rejecting patents from multinational laboratories. Due to the isolation imposed on the United States by the European Economic Community (EEC) and Japan, possibly aiming to undermine the current almost exclusive U.S. dominance in biotechnology, which voted with the G-77, the latter position prevailed in the final text[8] (United Nations, 1993: 50-54).

The table below summarizes the impacts of conservationist and sustainability guidelines on environmental policies:

Environmental Bias	Regulatory Policy	Distributive Policy	Redistributive Policy
Conservacionist	Hard Alternatives	Focused	Concentration of Benefits
Sustainabilityist	Flexible Alternatives	Universalists	Socialization of Benefits

The Amazonian case or the viability of its forest continuity currently exemplifies the same double environmentalist orientation. Both offer redistributive policies that concentrate benefits on forest users, socializing diffuse burdens (conservationist solution) or socialize benefits to sustainable production and consumption in the region, concentrating burdens on predatory segments of the forest (sustainability solution).

Recently, a mechanism adopted by the United Nations Economic Commission for Europe (UNECE), therefore, for a (European) region of the Planet in which forests are no longer territorially capillarized, it has been postulated for their maintenance. It is a redistributive public policy that confers economic benefits to populations settled in forested (or forested) areas and provided by the community interested in the continuity of the current forest magnitude, even if it does not reside in it.: "Payments for Ecosystem Services (PES) describes the situation where the user of an environmental service (…) pays the landowners who provide that service. For PES to exist, it requires a clear definition of ecosystem users, and their payers. The range of forest environment, with political and public relations implications of PES are discussed at length, and recommendations include the need for clarity about where PES may be a useful tool in moving towards a green economy and where other methods may be more appropriate (UNECE, 2014: 10-12).

However, transplanting such a mechanism to the Amazon forest, whose biome has a complexity and dimension that makes it, notoriously and directly, a fundamental variable for the planet's climate stability, ignores its population and forest diversity, causing problems that would not even exist if not implemented PES:

> *Landless people will not be able to participate in PES schemes where ownership of land, natural resources, or ecosystem services is a formal requirement*. A possibility might be to refer not exclusively to ownership as a PES requirement but also to allow for participation of holders of use rights. [...] *In practice, the establishing and tracking of property rights records is a recurring difficulty in PES*. In Bolivia, for instance, the legal obligation to register such activities exists. *However, implementation has proven slow*. In addition, registration during the development of PES schemes will most likely raise transaction costs. (IUCN, 2009: 32-33).

In theory, ecosystem service servitude could be granted by the landowner. In practice, this will depend on how much the landowner is offered for giving up his use rights. However, *a servitude may also be implied or acquired by the government, as is the case in Brazil where conservation easements/servitudes permanently restrict specific activities* on a piece of land in order to protect its natural resources. As a consequence, servitude could be deliberated, if a certain land use, established by a PES contract, created some kind of practice (IUCN, 2009: 34).

Another solution for forest continuity (more viable and recent), would be the establishment of an Amazonian bioindustry, as the economic potential

[8] Such an impasse on the financing of sustainable development, in the South and North of the Planet, remains the main global challenge, blocking even the effectiveness of the recent global decisions on climate control and adopted by the international Summits of Kyoto (1997) and Paris (2016) (Juniper: 318-321).

(medicinal, food, ornamental and cosmetic) of its flora and fauna biodiversity are obvious, including – at least partially – already the object of research. regional traditional knowledge. In this sense, the Paiter Suruí tribe has shown, since the end of the last century, that tribal integration with national and even international integration is possible, as in the village coffee production without pesticides and with unique flavors in relation to similar products.

His own tribal self-definition highlights the economic content of the indigenous integration he seeks: "The Paiter Suruí people's main objective *is the sustainable development of their community*, focusing on autonomy and the search for a better quality of life for all its members. To achieve this goal, we work *with planning, professionalism and a lot of effort"*. (Paiter Suruí, [2022])

> *"Ecotourism is already benefiting the PaiterSurui families through the purchase of products such as Bananas, Yams, Cassava, Sweet Potatoes, Oranges and others, in addition to the urine made by women, which are offered to tourists in the Complex Yabnaby". (Paiter Suruí, [2022]).* Tourists are served traditional products: "Moqueado fish in patois leaf, the *traditional way* of the Paiter to roast fish."

Indigenous-oriented social participation in sustainable development also qualifies the process: "Last Thursday, January 5, 2023, the Paiter-Suruí People's Governance System, was carried out through its largest institution, the General Cacique [...] discussion and deliberations on the most emerging issues that involve national, state and municipal politics, mainly on those that directly affect indigenous rights. Among the highlighted guidelines were:

- Strengthening and Making recognized by authorities around the world the Governance System of the Paiter-Suruí People;
- Dialogue and Participation in the transition of the new government of Brazil, SESAI, FUNAI, MEC and MPI and other related bodies;
- *Infrastructure* and Investment policy *for the Villages* through socioeconomic, productive and environmental projects" (Paiter Suruí, [2022])

Its third tribal directive (after indigenous rights and tribal health) is "Strengthening the Economy of the Paiter Surui People: Supports the general activities of indigenous workers, seeking partnerships and training for *better performance and productivity*. (Paiter Suruí, [2022]) The content of the second directive is "Valuing *traditional and non-indigenous medicines*, ensuring health and quality of life also by valuing *traditional food Paiter*." (Paiter Suruí, [2022]).

Coffee, harvested by indigenous villages and farmers of the Suruí ethnic group, has already achieved relevance in the Brazilian and international market: "His persistence made him the first Indian to reach the shortlist of the award. In 1982, Nakodah started tending the coffee and planting more trees, but the crop devaluation discouraged him. "The price was very low. The bag was being sold for BRL 15-20 (USD 4-5), so I stopped planting for a while," he recalled. In 2013, when he discovered local varieties, the so-called "clonal coffee," he tried planting again. "We learned about clonal coffee online," explained he, who also produces peach palms, nuts and bananas. "Around the crops, there are areas of capoeira and forest. *It's a sustainable production. When the focus became coffee, deforestation declined. This year, which saw a coffee recovery, deforestation was almost zero,*" Funai coordination stressed. [...] They are Amazon fermented robusta coffees. *The Suruí coffee is an Amazon delicacy*, is very fruity, have 88 points," says Janderson Dalazen with Brazilian Agricultural Research Company (Embrapa) in Rondônia and one of the only Brazilian tasters who specialize in canephora coffee who call themselves Q-Robusta Grader (ANBA, 2019).

The municipality itself close to the Suruí villages is already known as the "regional capital of coffee": "The indigenous people's relationship with *the practice and planting began with the homologation of the Sete de Setembro Indigenous Land*, in the 1980s. Over the years, *the Paiter-Suruí contributed to consolidate the success of the cultivation of specialty coffee*. The partnership with the private sector crowned the sustainable experience *in 2018* when, with the support of Funai, the production of indigenous coffee began to be sold to the 3Corações group, through an agreement that *provides for increased productivity* with a focus on coffee quality especially sustainable. [...] Coffee growing became a source of income for the communities. In the Sete de Setembro Indigenous Land alone, 115 indigenous families from 15 villages organize themselves into cooperatives to gain scale and distribute the crop, special fertilizer or irrigation, with care to harvest at the right time, treat and store the grains of coffee produced" (FUNAI, 2022).

Therefore, the coffee experience of the Suruí proves that government investments in technical training, for traditional or just differentiated products, would socialize benefits to forest populations, in terms of regional and even Brazilian. Thus, it would be a traditional economic expansion that would strength their role as "guardians of the forest", including against predatory incursions and begins to receive recent government attention:

III. Conclusions

Environmental degradation, due to its inherent conflict of interests, gives rise to multiple social cleavages. Those who benefit or promote environmental degradation are opposed by those who suffer from it. Similarly, those who benefit from environmental preservation are in opposition to those who are

disadvantaged by it. Moreover, those who seek to restore environmental equilibrium are opposed by those who are held responsible for environmental damage. Finally, the different beneficiaries of corresponding approaches to restoring environmental damage may have conflicting interests.

In order to assess the complexity of the interests involved, it is necessary to consider the *dual nature* of environmental degradation once again: first, the depletion of resources resulting from the market's incapacity to anticipate and provide adequate mechanisms for resource replenishment that match their expansion. Consequently, companies that deal with scarce resources are forced to focus on the sustainability of their production processes to maintain or improve their market position. This phenomenon has led to the emergence of a *green market* that demands organic farming, high energy-efficient cars and appliances, reusable containers, recycling of materials (such as paper, metal, and glass), and products made exclusively or predominantly from renewable items produced through natural or artificial processes. This market is growing in developed countries and is emerging in industrialized countries located in the periphery.

The depletion of natural resources in the Western societies of the North has triggered an impetus for the acceleration of the technological revolution in energy conservation. This has been facilitated by the development of innovative heat recovery devices, combustion gas utilization, co-generation of electricity from boiler steam (previously wasted), as well as material recycling programs and enhancements in engine energy performance. Additionally, a group of administrators has emerged who implement a management paradigm for production processes that prioritizes efficiency, material usage, energy conservation, pollution reduction, and total quality control (Viola, 1992).

On the other hand, environmental degradation that results in pollution mobilizes a variety of interests. It impacts individuals whose well-being, health, or subsistence depend on natural or urban ecosystems that are affected by pollution generated from waste that is incapable of natural or artificial assimilation or processing. As a result of this association, several social movements have emerged with the aim of combating different types of pollution, particularly those focused on the preservation and restoration of urban ecosystems. These movements advocate for environmental protection as a social right and a condition for the common good of the environment. As environmental deprivation in urban contexts potentially affects diverse segments of the population, these movements are attributed to the creation or strengthening of state environmental agencies and the incorporation of ecological issues into the public agenda as objects of *policy-making*.

The *ecological* transformation of society, resulting from the institutionalization of the environment as an intrinsic variable in social dynamics, will emerge from the resolution of the conflicts of interest to which it is subject. The *ecologization* of society is likely to be most successful when different agents working towards environmental balance can effectively coordinate and collaborate. Achieving this outcome relies on anti-pollution social movements recognizing the inherent ambiguity of the market and distinguishing between its relationships with predatory and sustainable segments. By aligning themselves with the latter and politically isolating the former, these movements can help implement redistributive environmental policies.

However, a successful coalition of agents also depends on acknowledging the strength of the market's predatory tradition and the urban-industrial process. The level of institutionalization of the environmental issue as a marginal, relevant, or priority dimension of social life will ultimately depend on how conflicts of interest arising from negative externalities resulting from environmental damage are resolved. For example, if electrifying cars and electric public transport are both solutions against urban air pollution, allying social segments interested in each of them is, in addition to being necessary against polluting segments, made possible by the broad consensus of urban capillarization of non-polluting public transport, as its capillarity would satisfy individual car owners.

But environmentalist theoretical frameworks (environmental conservation or sustainable development) are the main constraints of policies: while the conservationist bias favors *alternatives* to the market to prevent or compensate for its negative environmental externalities, sustainable development implies *reforming the market* so that it adopts sustainability in *its usual operation*.

Under conservationist bias, in which the global dimension is the parameter of the local:

- The Amazon rainforest is maintained by national or global payment to the regional population for forest maintenance (IUCN, 2009);
- Oceans are preserved, preferably, by banning their fishing activity, given the (literally) immensity necessarily covered by international inspection (Juniper, 2019: 267-268);
- The reuse of products in a circular economy is a priority (or even exclusivity), as the circulation of existing ones has less ecological impact than any production (NEA, 2021: 38-45);
- Industrial energy generation must be contained as much as possible, also because its subsequent expenditure also disseminates heat (Wackernagel & Rees, 1996: 58);

- Human consumption of animals should ideally be immediately banned, as strict agricultural production (no pesticides denounced by Carson, 2015) entails less ecological impact (Henriques and Gorvett, 2022);
- Urban sprawl must end immediately, as cities are hotbeds of temperature rises (White, 2013: 63);
- The world population can no longer grow, due to current consumption exceeding planetary finiteness (Meadows, 1972);
- Economic degrowth is the general solution to the planetary environmental crisis: conclusion drawn from the indisputable fact that environmental imbalances are negative externalities of the market *tout court* (Roegen, 2006).

Under sustainability bias, in which the local dimension is the parameter of the global one:

- The Amazon rainforest would be maintained by regional *bioindustry* in medicine, cosmetics, ornaments and food (SEDAM, 2010);
- Oceans can be better supplied by the dissemination of sustainable fishing, internationally promoted (Mail & Guardian, 2013);
- Recycling of products in a circular economy is guaranteed (although never exclusively), as current economic waste has already *reached as much magnitude as recyclable materiality* (EU, 2020)
- Energy generation must *correspond to renewable sources and the cleanest* content as soon as possible, also because they tend to be fed back *between alternating energies* (Juniper, 2019: 302);
- Organic animal production can be as diversified as articulated in agroforestry complexes (Nandhini and Suganthi, 2018)
- Urban expansion should prioritize smaller cities (preferably medium-sized, whose attractiveness exceeds that of small ones), *especially in metropolitan areas*, alleviating their systemic overload (OECD, 2009);
- The world population needs to spread out through regulated migrations, given that it currently occupies *around 60%* of the globe, concentrated *in some* planetary quadrants, there is *a lack of populations in several developed nations* and the global perspective is of population *deceleration* in the immediate future (UN Population, 2018; UN Desa, 2019);
- The economic growth of immaterial and renewable goods (superseding that of material and non-renewable goods) is the general solution to the planetary environmental crisis: a conclusion drawn from the fact that the negative externalities of the market, which lead to environmental imbalances, can be *positively internalized through policies that strengthen their cooperative or collaborative* competition (Anand & Sen, 1994; Lopes, 2012: 22-26, 147-156).

It is urgent to overcome the conservationist bias, while recognizing its pioneering contributions, especially to the visibility of environmental degradation. The current magnitude of which is (always) growing globally, requires an environmentalist approach that, still a minority in environmental policies, needs to be recognized as the one that can ensure sustainable *development* (and therefore, economic regularity) for life in environments where things and beings are interdependent with the human.

References Références Referencias

1. Anand, S., Sen, A. (1994). Sustainable human development: concepts and priorities (Human Development Report Office Occasional Paper, 8) New York, UNDP.
2. Agência Brasil (2023), Lula quer criar programa para financiar produção agrícola indígena. https://agenciabrasil.ebc.com.br/politica/noticia/2023-03/lula-quer-criar-programa-para-financiar-producao-agricola-indigena Accessed on: Apr. 13, 2023.
3. ANBA – Arab-Brazilian Chamber of Commerce, (2019), The forest is the ingredient for renewing Brazilian coffee. https://anba.com.br/en/the-forest-is-the-ingredient-for-renewing-brazilian-coffee/ Accessed on: Apr. 13, 2023.
4. Henriques, M., Gorvett, Z. (2022), The climate benefits of veganism and vegetarianism. BBC. https://www.bbc.com/future/article/20220429-the-climate-benefits-of-veganism-and-vegetarianism Accessed on: Apr. 17, 2022.
5. Bessa, (1992), Direito Ambiental como Direito Econômico Brasília, Revista de Informação Legislativa, n 115, Brasília-Brazil: Senado Federal.
6. Bryant, Raymond; Bailey, Sinead L. (1997), Third World Political Ecology. New York: Routledge.
7. Brundtland, G. (org) (1987), Our common future New York, Oxford University Press.
8. Carson, R. (2015), Primavera silenciosa São Paulo, Gaia.
9. Chisholm, A. (1974), Ecologia: uma estratégia para a sobrevivência Rio de Janeiro, Zahar.
10. Conti, L. (1986), Política e Ecologia (verbete) in Bobbio, N. Dicionário de Política, Brasília-Brazil, UNB.
11. De Swann, A. (1965), In care of the State New Jersey, Press University.
12. Dupuy, JP. (1980), Introdução à crítica da ecologia política, rio de Janeiro, Civilização Brasileira.
13. Enzensberger, H. M. (1976), Contribución a la crítica de la ecología política. México: Escuela de Filosofia y Letras. Universidad Autonónoma de Puebla.

14. EU - European Commission. (2020), Leading the way to a global circular economy: state of play and outlook Brussels, European Commission.
15. Feuerbach, L. (1967), Vorlesungen über das Wesen der Religion (Gesammelte Werke), Berlin, Akademie Verlag.
16. Funai (2022), Café da etnia Paiter-Suruí é destaque em premiação em Rondônia. https://www.gov.br/funai/pt-br/assuntos/noticias/2022-02/cafe-da-etnia-paiter-surui-e-destaque-em-premiacao-em-rondonia Accessed on: Apr. 13, 2023.
17. IUCN (2009), Payments for ecosystems services. Environmental Policy and Law Paper No. 78, Gland, IUCN.
18. Juniper, T. (2019), The ecology book London, DK.
19. LEI (Portuguesa) 69/2018 in: https://www.sgeconomia.gov.pt/destaques/lei-n-692018-sistema-de-incentivo-a-devolucao-e-deposito-de-embalagens-de-bebidas-em-plastico-vidro-metais-ferrosos-e-aluminio.aspx Accessed on: May. 09, 2023.
20. Löwy, T. (1967), American Business, Public Policy, Case Studies and Political Theory New Jersey, Press University.
21. Lopes, J. (2023). Uma concepção integrativa de humanidade, Estudos Avançados, 37(107): 303-318.
22. Lopes, J. (2012), Contemporary Cooperativism: path to sustainability Brasilia, Confebras.
23. Lovelock, J.E. (1995), The ages of Gaia: a biography of our living earth. New York: W.W. Norton e Company.
24. Macneil, J., Winsenius, P., Yakushiji, T. (1991), Beyond interdependence. New York: Oxford University Press.
25. Mail & Guardian (2013), Sustainable fishing will save oceans. https://mg.co.za/article/2013-10-11-00-sustainable-fishing-will-save-oceans/ Accessed on: Apr. 17, 2023.
26. Mccormick, J. (1992), Reclaiming Paradise: the global environmental movement Indianapolis, Indiana university Press.
27. Meadows, D. et al. (1972), The limits of growth. London: Potomac.
28. Muir, J. (1894) The Mountains of California. New York: The Century Co.
29. Nandhini, U & Suganthi, S. (2018), Livestock importance in organic farming Approaches in Poultry, Dairy & Veterinary Sciences, 5(1): 394-395.
30. NEA (Netherland Enterprise Agency). (2021), From linear to circular in the textile and apparel industries Netherland.
31. OECD - Organization for Economic Co-operation and Development. (2009), Competitive cities and climate change, Paris, OECD.
32. Paiter Suruí [2022], História. https://www.paiter-surui.com/historia Accessed on: Apr.13, 2023.
33. Polanyi, K. (2001), The great transformation: The Political and Economic Origins of Our Time, Boston, Beacon Press.
34. Redekop, B. W. (2016). Embodying the story: Theodore Roosevelt's conservation leadership. Leadership, 12(2), 159–185. https://doi.org/10.1177/1742715014546875 Accessed on: May. 22, 2023.
35. Roegen, N. (2006), La decroissence: entropie, ecologie, economie Paris, Sang de la Terre.
36. SEDAM - Secretaria estadual de desenvolvimento Ambiental. (2010) 21 anos de zoneamento socioeconômico e ecológico de Rondônia Porto Velho, Government of Rondônia.
37. Thoreau, H.D. (1854) Walden or Life in the Woods, Boston, Ticknor and Fields.
38. UNECE (2014), The Value of Forests: Payment for Ecosystem Services for a Green Economy, Geneva, United Nations Editor.
39. United Nations. (1993), Report of the United Nations Conference on Environment and Development. Rio de Janeiro.
40. UN (2018), Population: Demographic Yearbook, New York, UN. https://unstats.un.org/unsd/demographic-social/products/dyb/dybsets/2018.pdf Accessed on: Mar. 25, 2020.
41. UN (2019), DESA: Population Facts 2019/4. https://www.un.org/en/development/desa/population/migration/publications/populationfacts/docs/MigrationStock2019_PopFacts_2019-04.pdf Accessed on: Mar. 25, 2020.
42. Viola, E. (1992), A dinâmica do ambientalismo e o processo de globalização São Paulo, são Paulo em perspectiva, Fundação SEADE.
43. Wackernagel, M., Rees, W. (1996), Our ecological footprint. Gabriola Island: New Society Publishers.
44. White, G. (2013), The natural history of Selborne. Oxford university Press.