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Discourses on
sustainability: a
comparison between
Sustainable
Development and
Degrowth theory

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Introduction

This thesis analyses the discourses of Sustainable Development and Degrowth theory, to find the ideological elements that guide their respective climate action.

Through the perspective of eco-linguistics and with the tools of discourse analysis, the analysis serves to understand, on the one hand, which are the elements of sustainable development that prevent the achievement of ecological sustainability and, on the other hand, which are the elements of rupture of Degrowth theory that would lead to sustainability.

Despite international environmental agreements, the environmental crisis is on the rise.

The Sixth Assessment Report of IPCC¹ confirmed the advance of global warming, which has caused extreme weather and climate events and related adverse impacts on ecosystems and people.

Global surface temperature increased 1.1°C above 1850-1900 levels, greenhouse gas emissions increased and abrupt changes occurred in the atmosphere, ocean, cryosphere and biosphere. Rising temperatures are relevant because of their role in reaching tipping points and triggering feedbacks that further increase global warming. Sea levels have and will increase due to deep ocean warming and ice sheet melt.

Adaptation efforts progressed but there are important gaps in terms of rates of implementations and differences in sectors and regions. The same applies to mitigation policies: finance flows are not enough to meet global goals and emissions projections estimate that warming will exceed 1.5°C during the 21st century, making it even harder to limit warming below 2°C.

With every advancement of warming, risks increase in species loss, threats to human health and food production difficulties (IPCC, 2023).

Among the various limitations of current international agreements, one of the main ones is the focus on emissions, which are largely due to economic activity and its continuous growth. Regulating CO₂ concentrations alone is focusing more on the symptoms rather than the core causes of the environmental crisis. Human-induced global warming approximately started in the 1830s, which coincides with the emergence of the Industrial Revolution. Awareness of climate change accelerated the debate on growth and resource consumption (Masterson, 2022). The debate focuses on the impact that infinite and exponential growth has on the natural environment and finite resources, in light of climate breakdown. It also draws from the limited ability of growth to provide well-being and equality.

¹ The Intergovernmental Panel on Climate Change (IPCC) is a United Nations intergovernmental. It assesses scientific knowledge about climate change caused by human activities. It publishes comprehensive and special reports on the latest climate data (from <https://www.ipcc.ch/about/>).

Economic growth represented for a long time the means to prosperity. However, permanent growth and production, enhanced by market competition and the pursuit of profit, lead to resource exhaustion and environmental collapse (Dale, 2019).

Sustainable Development includes economic growth as a key objective. Economic growth, environmental protection and social equality correspond to the three conceptual pillars of Sustainable Development: economic sustainability, social sustainability and environmental sustainability (Mensah, 2019).

Eco-linguists focus on preserving the human relationship with nature, by disclosing destructive discourses that are often concealed by being merged with more ambivalent and innovative ones (Ain et al., 2023). Scholars, such as Halliday, trace back one of the main causes of climate change: the desire of companies, countries and even individuals to grow.

This message is endorsed by advertising and constitutes the attitude called “*growthism*”, present in languages and thinking. Growthism contributes to the recent depletion of resources (fossil fuels, fresh water supplies and agricultural soils, biodiversity loss), pollution and global warming. Halliday argues that the Western worldview is constructed by expressions, such as “unmatched growth rates” or “business climate improving”. Eco-linguists have the task of unveiling growthism, its existence and its influence on consciousness and language use (Penz & Fill, 2022).

Ecolinguistics is useful for critiquing Sustainable Development by revealing how language reinforces a human-centered, utilitarian view of nature. It exposes the focus on economic growth and resource exploitation in sustainability discourse, encouraging a shift toward a more ecocentric perspective. By analyzing the language used in policies, ecolinguistics promotes a deeper understanding of our relationship with nature and advocates for moving away from narratives of control toward respect and interdependence.

In this thesis, the analysis of sustainable development discourse aims to find what human-environment relationship and what other elements guide the environmental action of international governance, which has proved so far to be ineffective in achieving ecological sustainability.

Subsequently, the analysis of Degrowth theory serves the same purpose, to understand what differs, which elements are emphasized and how the environmental crisis can be resolved.

Ecological discourse analysis (EDA) refers to the the analysis of any type of discourse under the ecological framework, on the basis that the physical environment is mediated and influenced by language.

According to EDA, discourses can be either destructive or harmonious with our natural surroundings, influencing the ways human groups interact with the environment.

Researchers Stibbe and Alexander divide the field into two branches, the analysis of ecological discourse and the ecological analysis of discourse.

They respectively focus on the language used to talk about ecology and the general use of language in discourses and how these discourses influence the human relation with the environment and ecosystems (Penz & Fill, 2022).

The most studied topics include the representation of nature, semantic engineering and greenwashing and the representation of animals in discourse.

The tool to approach the representation of nature is metaphors, which are often used to frame topics and highlight an aspect while backgrounding others. One of the most relevant anthropocentric metaphors is the “scala naturae” which views nature as a “chain of beings”, in which each species has a hierarchical place, and variates in “nature as a machine”, “nature as a factory”, all justifying human exploitation of nature.

On the other side, biocentric metaphors, which frame the planet as something active, include “nature as a mother”, present in the Gaia Theory and “nature as web”, which emphasises the interdependence of all beings. Semantic engineering and greenwashing are used by entities such as corporations and industries to label their practices, products or services as more ecologically responsible. However, they sometimes use false, vague, or misleading information to consumers to emphasize apparent sustainability. Together with “eco-advertising”, these terms and related strategies include “*purrr*” words (positive-sounding words), over- and under-lexicalization and rhetorical instruments to present companies as ecologically concerned, even influencing the definition of environmentalism and sustainability and linking these definitions to market economics.

The study of representations of animals strives to promote discourses that include more life-sustaining views on the human-animal relationships, for example raising questions on the importance of sustaining and providing more space to wildlife.

Researchers started to study climate change discourses, focusing on media representations, metaphors and framing, narratives and stories. A very relevant issue is the correlation between uncertainty in climate change and the difficulty of communicating these to the general public and how the interpretation of uncertainty may prevent climate change actions by individuals and society (Penz & Fill, 2022).

Overview of chapters

The first chapter provides an overview of the latest data on the environmental crisis, including current international climate action instruments. Subsequently, the link between economic growth and environmental crisis is explored, followed by the history and meaning of Sustainable Development.

Sustainable Development refers to an approach to social, environmental and economic planning that balances these three different spheres, addressing the needs of current and future generations by ensuring environmental preservation. It's an approach to human development that emerged as the core feature of national and international policymaking, particularly by the United Nations and its agencies.

Sustainable Development draws from modern natural resource management and progressive views of economic development and represents a core element of development theory and policy (Kulik, 2019).

In the second and third chapters, the texts are analysed. They were chosen according to their relevance in the respective discourse. The analysis approach is Critical Discourse Analysis, which is widely applied to environmental discourses. This type of analysis focuses on the linguistic elements that refer to ideologies and social relations of power, to address a political or social problem (Penz & Fill, 2022).

It aims to explain how a discourse reinforces the social reality and to build a basis for action to change that existing reality, on the basis that social and linguistic practice form one another (Blommaert & Bulcaen, 2000).

In the second chapter, UN texts on Sustainable Development are analysed. They are: *The Declaration of the Human Environment* (1972), *The Brundtland Report "Our Common Future"* (1987), Rio+20 outcome document *The Future We Want* (2012), COP 28 outcome document *Global Stocktake* (2023).

The Declaration of the Human Environment represents the first UN text dealing with the environment. It consists of 26 principles and led to the creation of the United Nations Environment Programme (UNEP), which is the main UN agency in charge of global environmental governance.

The Brundtland Report was elaborated by the World Commission on Environment and Development (WCED) and formally introduced the concept of sustainable development². The document explores the causes of environmental degradation, highlighting the interconnections between social equity, economic growth, and environmental problems and aims to propose long-term solutions for enabling sustainable development (WCED, 1987).

The Future We Want is the outcome document of the United Nations Conference on Sustainable Development, held in Rio de Janeiro in 2012. State parties renewed their commitment to sustainable development through the adoption of this non-binding document, which advocates the creation of a set of measurable targets, the

² "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987).

Sustainable Development Goals that focus on poverty eradication, food security, sustainable agriculture, energy, transport, cities, employment, health and population (UNGA, 2012).

The COP 28 outcome document followed the UN Climate Change held in Dubai at the end of 2023. It is the first global stocktake that assesses the international effort to address climate change under the Paris Agreement. Due to the low rate of progress, the document calls for a speeding up of climate action and enabling sustainable development. It also includes the commitment to transition away from fossil fuels (UNFCCC, 2023).

Together with each analysis, there is contextual information and a summary of every document.

The end of the chapter contains further considerations on the separation between human beings and nature and its influence, green capitalism and the textual use of the term “sustainability”.

In the third chapter, the main elements of the Degrowth theory are introduced, as well as the history of the movement and critical aspects.

Degrowth theory encompasses ecological sustainability, social justice and human flourishing. It relies on the values of care, conviviality, mutual aid and direct democracy (Chertkovskaya, 2022). It calls for ceasing to use economic growth as a goal and scaling down economic production and consumption to reduce energy and material use while addressing human needs and well-being (Hickel et al., 2022).

The analysed texts are the report *The Limits to Growth* (1972), the article *La décroissance* published in the French magazine *Silence* (2002), the *Degrowth Declaration of the Paris 2008 conference* and the online description of the international a think-and-act-tank Research & Degrowth International.

The Limits to Growth explores, using computer simulation, the different interaction scenarios between various rates of economic and population growth and the Earth system and its resources, highlighting the importance of restraining resource utilization to avoid an abrupt reduction of population and industrial activity. This report was one of the first documents to oppose the mainstream idea of an “unlimited world”.

Despite being dismissed by businesses and most economists, the report has the merit of having highlighted the interconnections and feedback between various trends, thus influencing environmental reforms (Meadows et al., 1972).

The renewed interest in Degrowth theory in the 1990s led the French magazine *Silence* to publish a special issue that gained much attention, enabling environmental activists and researchers critics of development to use the topic to find a “meeting point”.

The article *La décroissance* (“Degrowth”) introduces the concept of “sustainable degrowth” and outlines the characteristics of a “healthy economy”, based on environmental preservation and reconstitution, reduction of

energy consumption, use of low-energy solutions for performing human activities and a collective change of mentality (Clémentin & Cheynet, 2002).

The first international degrowth conference was held in Paris in 2008 and introduced the English version of “*décroissance*”, degrowth, to spread interest internationally.

This conference was the first of yearly events in which academics, practitioners and civil society revise the latest research and activities.

The declaration contains 19 points divided into three sections that explore the unsuccess of economic growth, the concept of right-sizing and related values and practices (Research & Degrowth, 2010).

Research & Degrowth International is the academic organization that promotes international degrowth conferences and the network that helps build community between degrowth groups across countries. The section *ABOUT* on the organization’s website presents the association and its philosophy, values, accomplishments, vision and short-term goals (Research & Degrowth International, n.d.).

Similarly to the previous chapter, each analysis follows the contextual information and the summary of the text.

The end of the chapter contains further considerations on the relation between the analysis results and ecological overshoot, tipping points and equality.

The fourth and final chapter takes up the elements of the analyses to answer the question of the thesis.

Chapter 1. Climate change, economic growth and ecolinguistics

Foreword

This chapter introduces the key concepts for the following ecolinguistic analyses and ecological considerations. It summarises the progress of the environmental crisis and what international environmental legislation instruments exist at present, which do not include a regulation of economic growth, despite its environmental impacts. Economic growth and its historical advance are connected with the emergence of the concept of development, which evolved into Sustainable Development. Sustainable Development has acquired so much popularity that is now considered a synonym for sustainability.

The chapter ends by mentioning the critiques of ecolinguistics to Sustainable Development and outlines the framework for ecolinguistic analysis.

1.1 The environmental crisis and related international instruments

The State of Global Climate Report by the World Meteorological Organization indicates that 2023 registered as the warmest year since records. Global mean sea level also registered a record high, with a rise rate that more than doubled since 2002.

The Antarctic sea-ice extent reached its lowest in February and its maximum extent was 1 million km² smaller than the previous record low maximum. Between 2022 and 2023 glaciers experienced the largest loss of ice on record and extreme events included widespread heat, wildfires in Canada, Hawaii and Europe, flooding in Greece, Bulgaria, Turkey and Libya (WMO, 2024).

Human-induced global heating has led to more frequent and extreme weather events including droughts, which have impacted the global water cycle.

Droughts impact the poorest people and cause forced migration, as it can also reduce food security, crop production and urban water supply rationing. They damage ecosystems with homogeneous vegetation and can lead to species migration or even extinction. Warm and dry conditions exacerbated the mass loss of most glaciers and widespread global episodes of droughts in the last years have caused loss of grazing land and forests, groundwater-level decline and water-quality degradation and rise in temperature and water temperature and beyond (Tsegai et al., 2023).

Oceans and coasts are subject to warming, acidification and overexploitation of aquatic resources for food and energy production, transportation and resource extraction.

Sea levels rise and temperature changes are driven by human-induced release of greenhouse gases (UN Environment, 2019). In 2023, the global-mean sea level reached the highest level in the modern observation record, due to an accelerated rise from 0.21cm per year between 1993–2002 to 0.48cm per year between 2014–2023.

Global temperature rises have caused mass melting of glaciers and ice sheets, especially Greenland and Antarctic ice sheets, thus adding water to the oceans.

Parallely, the ocean has absorbed the heat from the Earth system due to greenhouse-gas emissions, causing an increase in ocean temperatures and expansion of water and overall sea-level rise.

In 2023, sea-surface temperatures and ocean-heat content reached their highest levels in the observational records and projections estimate that the upper 2,000 meters of the ocean will continue to warm as a result of accumulated heat and sea level will likely rise for centuries to millennia, due to the historical cumulative emissions of greenhouse gases.

Together with sea-level rise, coastal hazards are also expected to increase due to local land sinking, driven by activities such as building dams, groundwater and fossil fuel extraction. These hazards include coastal flooding, saltwater intrusion into groundwater and rivers, shoreline retreat, and change to or loss of coastal ecosystems and affect coastal communities, global food systems, supply chains, and maritime trade and broader ramifications (United Nations, 2024).

77% of land (excluding Antarctica) and 87% of ocean area have changed due to human activities, causing the loss of 83% of wild mammal biomass, and 41% of plants and threatening more species with extinction.

Livestock and humans currently represent nearly 96% of all mammal biomass on Earth.

Harmful activities include the release of greenhouse gases from fossil fuel combustion, industry, agriculture, forestry and other land use.

These have led to global warming above 1°C relative to pre-industrial times, which is still intensifying.

Climate change and biodiversity loss threaten ecosystems and human communities, especially those who are marginalized (Tsegai et al., 2023).

Biodiversity, the variety of living species on Earth, including plants, animals, bacteria and fungi, is going through a major species extinction event, compromising the ability of the planet to regulate the climate and ecosystems functioning. Loss is mainly due to unsustainable agricultural practices, overexploitation, pollution, the spread of invasive species and habitat change, loss and degradation. Climate change will further exacerbate these processes.

Between 25 and 42 percent of global invertebrates are considered at risk of extinction and between 1970 and 2014 population abundances of global vertebrate species decreased by on average 60 percent.

Ecosystem integrity is being compromised by vegetation loss, native and non-native invasive species and decline of pollinator abundance.

These changes have also severe repercussions for the health of animal species, including humans, such as greater susceptibility to disease and food insecurity, and will affect poorer people more severely (UN Environment, 2019).

Climate change alters also the distribution, functioning and interactions of organisms, and thus ecosystems: those with restricted distributions and limited ability to disperse or who are close to their tolerance limits are especially vulnerable.

Tropical coral reefs are highly sensitive to ocean warming and acidification, vegetation shifts are taking place in savannas and tropical forests due to increasing atmospheric CO₂ and drying, high latitude and altitude ecosystems and Mediterranean-climate ecosystems are highly sensitive to high levels of climate warming and coastal ecosystems are exposed to multiple factors. For these island-like biodiversity hotspots, extinction risks are highest.

Anthropogenic climate change has the potential to drain out the adaptation capacity of most ecosystems and loss disproportionately affects communities that are most directly dependent on nature.

Pressure on biodiversity derives from the growing societal and economic demands and high levels of energy and material consumption, especially in wealthy countries (Pörtner et al., 2021).

The most relevant environmental international tools are the Kyoto Protocol and the Paris Agreement.

The former was adopted within the frame of the United Nations Framework Convention on Climate Change in 1997, entering into force in 2005 and regulating the activities of 192 parties.

This protocol coordinates the reduction of greenhouse gas emissions according to developed economies' individual targets, as the principle of "common but differentiated responsibility and respective capabilities" highlights the origin of high emissions levels comes from "first world" economies.

Annex B contains the targets for 37 countries and defines the average percentage of emissions reduction in the first period, which ended in 2012.

The protocol validity was extended by the Doha Amendment until the end of 2020 with more ambitious commitments. However, the amendment entered into force at the end of 2020.

The reduction was to be done through market-based mechanisms: International Emission Trading, Clean Development Mechanism and Joint Implementation. Respectively, emissions countries owned that could be sold to other countries over their targets, the implementation of an emission-reduction project in developing countries by committed countries, the possibility to buy emission reduction units (ERUs) by investing in a project in another committed country.

The protocol also included a monitoring system, composed of registry systems for transactions, a reporting structure, compliance systems and adaptation tools (UNFCCC, 1997).

The Kyoto Protocol received several criticisms, from the reference indicators and values used to set the targets. The Center for Science and Environment argued that sinks should be decided according to per capita calculations and not on emissions. Other comments addressed considering historical emissions, together with energy efficiency and forest use, also because of their residence times in the atmosphere leading to lag effect to subsequent emissions.

During negotiations, developing countries formed the G77 block, to urge the Convention to include historical responsibilities. The controversies were mildly resolved by the principle of differentiated responsibility and the suggested assistance to the developing economies, which had no obligations to reduce emissions during the first period.

The historical emissions basis was rejected in favor of a 1990 baseline, favored by Europe, which registered a CO₂ emissions drop associated with the UK switch to gas from coal and East German industry collapse, and by Russia, which benefited from low emissions levels spread among the republics after the USSR dissolution.

The Association of Small Island States, the most vulnerable entities to climate change, and the G77 proposed that developed economies would follow overall stricter regulations and would cut 15% of emissions, a percentage that was watered down by the inclusion of sinks (carbon-absorbing forests and land cover), reducing for some countries, such as the USA, their fossil fuel footprint.

Moreover, the final goal of a general 20% cut was further reduced, allowing also flexible baselines, a general EU target, a reduced basket of gases and a timetable delay. These negotiations were criticized for their north-south power dynamics and EU-US tensions, which were analysed from anti-colonial and anti-capitalist perspectives.

Together with northern consumption rates and unequal exchanges, the critics focused on climate justice and the clash between high emissions on one side and high vulnerability even with low emissions on the other.

The idea of using market mechanisms was brought by the US, emphasizing the effectiveness of cap and trade schemes and the cost-effectiveness of other flexible mechanisms such as investing in specific sectors and countries in return for carbon credits.

Attempts were made to make these mechanisms additional to domestic actions. The resulting commodification of carbon into carbon credits would undo the difficulty in meeting targets and would allow developed economies to maintain consumption and emission levels by investing in convenient mitigation projects and improving inefficient industrial ones.

Pollution rights were attributed based on historical emissions and not on population; the price of carbon credits in developing economies could be six times lower due to higher risks of investing in those countries.

Carbon trading has overall weakened the effectiveness of the protocol, allowing to trade the excess of reductions to those not reducing domestic emissions instead of leaving it to the benefit of the environment.

The market solution reinforced the political and economic interests of already powerful nations, barely reducing climate change risks and introducing a new commodity for a new form of development investment and speculation (Liverman, 2009).

The Paris Agreement is the continuation of the Kyoto Protocol. It's a legally binding treaty to counteract climate change, adopted by 196 parties in 2015 and entered into force one year later.

Its general goal is to keep the global average temperature below 2°C above pre-industrial levels and to limit the temperature increase to 1.5°C above these levels.

Therefore, emissions should drop by 43% by 2030: crossing the temperature increase threshold would lead to even harsher consequences, such as extreme weather phenomena.

The Agreement considers five-year cycles requiring increasing efforts to include in signatories' nationally determined contributions (NDCs).

With this tool, countries set actions to reduce GHGs emissions and to adapt to climate change impacts, together with efforts in terms of technology transfer, capacity building and transparency.

Countries are encouraged to create long-term low GHG emission development strategies (LT-LEDS). The principle of differentiated responsibility requires that developed economies provide international financial assistance, investing in mitigation and adaptation programs.

Moreover, there is a mechanism that contributes to GHG mitigation and supports sustainable development, similar to the Clean Development Mechanism of the Kyoto Protocol.

The progress is monitored within the enhanced transparency framework (ETF): from 2024 countries are required to report the adaptation measures, the transnational support actions and any action carried out to achieve the 2030 goal. At the end of the cycle, countries will receive recommendations to carry out further actions (UNFCCC, 2015). We will not sideline the climate crisis. Today, one year on from our pledge, we want to update you on our progress.

The Paris Agreement was perceived by many as the first time after 25 years governments acted on the extreme dangers of climate change, directing almost all the international community towards a common goal and consequent obligations.

Contrary to the Kyoto Protocol, the agreement proved to be more resilient: unlike 1997, when negotiations were put on hold for ten years due to the absence of US ratification, when former president Trump decided in 2017 to withdraw the US from the agreement the other countries carried on the work.

On the contrary, China declared -three years later- to be willing to reach carbon neutrality by 2060.

However, in the following five years after the creation of the agreement, GHG emissions increased and so did the production of fossil fuels and deforestation surface areas, causing the global average temperature to rise over 1°C the reference levels and intensifying the frequency of extreme weather events and ice melting (Harvey, 2020).

Despite recognizing the essentiality of forests concerning climate change mitigation, no agreement regulating the forests' role and land-use carbon credits has been formulated (Salzman et al., 2018).

The final target of carbon neutrality in 2060 or 2050, also set by US President Biden after rejoining the Agreement, would not be enough to respect the 2°C limit^[1] and requires bold measures to adopt in the 2020s, for example by submitting challenging NDCs in the next round, starting in 2025 (Harvey, 2020).

Western nations are still responsible for 80% of worldwide greenhouse gas emissions, moving, again, further away from net zero targets (Arora, 2024).

Within the context of climate change, general attention is focused on carbon dioxide (CO₂), being related to the greenhouse effect caused by the use of fossil fuels.

The greenhouse effect refers to the warming of the Earth's surface due to a back-and-forth of radiations between the surface and the atmosphere. Part of the thermal radiation emitted by the sun is initially absorbed mainly by the Earth's surface and by the atmosphere. To balance the energy absorbed in the form of irradiation,

thermal energy is radiated back from the surface and gets absorbed by the atmosphere, from which is radiated once again to the land and the ocean. As a result, the surface of the planet warms up, creating a temperature that is apt for life. Fossil fuel combustion and deforestation have progressively aggravated this effect and triggered global warming.

The increased concentration of CO₂ and other greenhouse gases causes feedback mechanisms, such as the self-reinforcing cycle in which warming entails an increase of water vapour and again an intensification of the greenhouse effect. This water vapour feedback is enough to almost double the increase in the greenhouse effect due to the added CO₂ (IPPC, 2007).

Additionally, as a result also of deforestation, carbon is being transferred from terrestrial sinks into the atmosphere. The current processes of economic development in tropic countries entail substantial deforesting, threatening the species diversity, the indigenous communities and, because of its scale, the global climate system. Deforestation in the Amazon area influences the local and regional energy balance, making the climate warmer (Grace, 2004).

This exclusive focus on emissions is a major limit.

The centrality of the role of CO₂ has caused a simplification of the discourse, eliminating the interconnections between the different processes of ecosystems, as well as eliminating the possibility of questioning current production and consumption models.

The excessive presence of CO₂ in the atmosphere is the focus around which environmental policies and efforts stop: CO₂ represents at the same time the centre of climate fears and desire for change, without considering either a radical rethinking of socio-political systems or the multiplicity and complexity of the current environmental changes.

The result is a process of reification, in which these relations are reduced to a singular component, further reinforced by its use as a commodity within the market and capital exchanges through the Kyoto Protocol and other derivative markets.

Pricing monetizes CO₂ and reduces heterogeneities and complexities of both countries and processes with radically different social, political and ecological framings, making them interchangeable and measurable. CO₂ commodification under the Kyoto Protocol entailed the creation of a governance regime composed of technologies calculating risks, performances, negotiations, intermediations and accountancy rules, reflecting a set of depoliticized imaginaries, arguments and policies of climate change (Swyngedouw, 2011).

Focusing solely on emissions leads to not implementing international regulations on economic activities and their environmental impacts. Exponential economic growth significantly affects natural ecosystems and depletes finite resources, while offering limited potential to enhance well-being and promote equality.

1.3 The environmental impact of economic growth

Recent failures of economic growth rates and severe financial and economic crises have been questioning the effectiveness of these mechanisms.

The debate focuses on the impact that infinite and exponential growth has on the natural environment and finite resources, in light of climate breakdown. It also draws from the limited ability of growth to provide well-being and equality.

Economic growth represented for a long time the means to prosperity. However, permanent growth and production, enhanced by market competition and the pursuit of profit, lead to resource exhaustion and environmental collapse (Dale, 2019).

Economic growth indicates “the increase, in the economy of a country or an area, in the production of goods and services per head of population over a stated period”. Goods and services are considered economic when are produced within a context of scarcity in relation to the demand for them.

It’s common to mistake measures of growth for a definition of growth, for instance when there’s an increase in Gross Domestic Product (GDP) value.

Besides GDP per capita, growth can be measured using the value of “real income” of a population, which is the ratio between their income and prices of goods and services; economic growth means that this value grows, either people earn a higher salary or goods and services are less expensive.

Despite incomes have been increasing globally since 2000, 10% of the global population -more than 700 million people- live in extreme poverty, surviving on 1.90 dollars a day³ (Roser, 2021).

Economic growth is intended to be the gradual rise of a country in terms of goods output, representing an important indicator of economic health. Growth is influenced by investments in technology, capital goods (material assets), infrastructure, availability of natural resources, workforce and technological development.

Positive growth, meaning an expansion of economic activities, is accompanied by higher incomes and, supposedly, a higher life quality and poverty reduction. The job market expands as well and, with higher taxation, it’s possible to fund public services and infrastructures.

³ <https://unglobalcompact.org/what-is-gc/our-work/social/poverty>

Negative consequences of an economic expansion include environmental damage, the emergence of social inequality and inflation (an increase in goods prices or decline of the purchasing power of money) (Gupta, 2023).

Environment and economic growth are strictly tied: raw materials and ecosystem services support economic activities. This economic growth-environment nexus has been widely researched, to test the compatibility between growth and environmental protection, the feasibility of sustainable growth, the impact of environmental policies on growth rates and so on, based on the existing models of growth theory (Gupta, 2023).

Economic growth represents the main feature of developed economies, as it is connected to welfare public services, high standards of living and private consumption (Nuță et al., 2024).

Positive consequences for the environment are green investments and the development of less polluting technologies and transportation, renewable sources of energy, together with a greater effort of corporations and government to invest in environmental measures and research. Finally, economic agents may apply practices that allow more efficient resource use (Gupta, 2023).

Many of those researching the relationship between growth and the environment highlighted the critical impact of economic activities on environmental health and low-income segments of the population, arguing that prevention of environmental harm is more convenient than mitigation.

Other critical aspects include the incompatibility between the constant growth of global population and finite cultivable land, the inadequacy of economic indicators to measure negative environmental consequences of economic activities and the creation of waste as a byproduct of production (Gupta, 2023).

One of the most popular and debated models on the relation between economic growth and environmental degradation is the Environmental Kuznets curve (EKC), formulated in 1994 by the economists Grossman and Krueger (Gupta, 2023).

This is a further elaboration of the Kuznets curve, the graphical representation developed by the economist Kuznets in the 1950s, to show the relation between the progress of economic growth and inequality: a hypothetical U-shaped curve.

Starting from widespread inequality, the curve rises due to industrialization and urbanization processes and unequal concentration of wealth and resources. In the turning point of “Kuznets threshold” income inequality

reaches the highest value, to later decline in favour of a GDP per capita increase. A more equal distribution is usually possible thanks to the spread of education, welfare and progressive taxation systems.

Despite not being universal, this curve has served as a tool for designing policies contrasting inequality (Ansari, 2023).

The EKC hypothesizes that environmental degradation and economic growth interaction can be represented by an inverted U-shaped curve: as the economy expands, environmental degradation worsens until reaching a turning point in which degradation begins to decrease as economic growth continues.

In most situations, the tipping points occur before the national income per capita reaches eight thousand dollars. This hypothesis argues that different stages of economic development have different impacts on the environment, which are scale effect, composition effect and technical effect.

The scale effect happens at the initial stage of economic progress, which entails changing from being agriculture-based to being industry-based, requiring massive extraction and causing environmental depletion preventing regeneration processes.

Progressively, in the stage of composition effect, the economy moves from being resource-intensive to being technology-intensive, relieving some of the environmental pressure.

In the subsequent stage of the technical effect, economic development favours research for cleaner technologies. The total outcome of the effects determines the inverted U-shaped interaction of economic growth and environmental quality (Kurniawan et al., 2021).

Despite the mainstream consensus, the EKC hypothesis has some limitations: the trajectory varies between countries (Munasinghe, 1999), predictions are vague and only one variable is used to measure environmental impact, failing to cover a relevant set of natural “capital”, such as ecosystem services.

According to the EKC hypothesis, the urgency of reaching economic growth and consequential well-being leads to an over-exploitation of environmental resources and natural depletion and degradation.

Later research argues that this relationship is more complex, considering also that new pollutants and new resource-intensive technologies emerge continuously and environmental quality improvement might be due to the “race to the bottom scenario”, in which degradation sources are moved from developed countries to developing ones, where regulations have been more slack.

Outsourcing delays the positive turning point of global environmental quality in the long term and creates endless environmental pressure, as GDP per capita growth requires more natural extraction and favours the enlargement of the middle-income group, a class that tends to overconsume.

It was also observed that secondary turning points exist, implying that after a reduction environmental degradation will likely rise and that the hypothesis is not valid with other indicators, even showing in some cases a positive relation between exponential growth and environmental degradation.

When more complete elements to measure environmental depletion are included, higher economic growth is related to higher environmental degradation, but for low-income groups a slight change in GDP per capita is associated with strong variation of environmental depletion. Increasing pressure on natural resources is due also to the growing population density (Kurniawan et al., 2021).

Other critical points include the limited number of pollutants⁴ that are considered in the model (Barbier, 2012) and the exclusion of other negative processes, such as deforestation⁵ (Kahuthu, 2006).

Economic expansion is coupled on the aggregate level with negative externalities connected to the extraction, processing and discarding of natural resources (Kerner et al., 2023) and overall pressure on the environment (Munasinghe, 1999). This is because economic growth is exponential, meaning the size of the economy must double in a fixed period (Bartlett, 2012).

Historically, economic growth is triggered by manufacturing industries and later by heavy industries, which also support urbanization processes, causing resource use and pollution to rise intensely. Industrialization is usually desirable to achieve higher levels of employment and knowledge and technologies, but it's a process highly dependent on natural resource exploitation, thus the source of pollution and environmental depletion (Nuță et al., 2024).

Especially when industrialization is rapid and unregulated, it may result in over-exploitation of forests, minerals and other key resources, causing long-term damage and compromising the carrying capacity of the Earth system (Kerner et al., 2023).

These consequences are difficult to calculate and therefore mitigate (Gupta, 2023). Economic activity is further expanded by financial development and financial infrastructure, intensifying energy consumption and economic growth (Nuță et al., 2024).

⁴ including CO₂ emissions, which increase as the economy of a country is integrated into global markets (Barbier, 2012).

⁵ Which on the contrary, increases with economic growth (Kahuthu, 2006).

In terms of policy, measures on the profitability of natural resource exports, such as under-pricing or subsidization, contribute to excessive extraction or harvesting.

Likewise, market-oriented liberalization favours the expansion of energy-intensive activities and market prices that don't reflect adequately negative effects enable further environmental damage.

Measures to stabilize inflation and budgetary deficits usually require a reduction in government spending and cutbacks can include environmental protection or social safety nets; employment policies can increase pressures on fragile lands and establish "open access" to natural resources to create new economic opportunities (Munasinghe, 1999).

Recognized environmental effects are rises in pollution and greenhouse gas emissions, air and water contamination, which collectively affect biodiversity and ecosystems, as well as accelerate global warming and climate change.

These activities require a huge water demand, causing water shortages and over-extraction (Gupta, 2023). Over-extraction concerns mainly natural gas and oil, which are the primary sources of energy and power (Munasinghe, 1999). Resulting waste contributes to environmental degradation and hence deteriorates ecosystem services, in turn damaging natural capital (Gupta, 2023).

A very tight positive correlation exists between the advance of economic growth and the increase of greenhouse gas emissions, which have a major role in the advancement of global warming (Munasinghe, 1999; Nuță et al., 2024; Wahab et al., 2024).

The main source of emissions is fossil fuel usage, also employed in daily-life goods and services (Nuță et al., 2024).

Natural capital availability decreases as intangible capital increases, especially when production is excessive.

Often an income increase favours more consumption, putting more pressure on natural resources due mainly to emissions and mineral extraction, compromising the well-being of coming generations (Gupta, 2023)

Moreover, agricultural and urban expansion can contribute to deforestation and changes in ecosystems and biodiversity due to land use changes.

Other urbanisation processes, such as infrastructural development and inadequate waste management, contribute to the destruction and increased pollution of natural habitats (Gupta, 2023).

The relation between urbanization and carbon emissions can be described by a U-shape curve: over a threshold. Increasing urbanization causes more emissions (Nuță et al., 2024).

The latest UNEP report on resource usage recorded extreme rises in raw materials extraction, as well as in water withdrawal, in these past years, contributing greatly to global climate impacts and health-related impacts. Fossil fuels represent the most traded primary materials, whose extraction and processing contribute 18 percent of total climate impacts. Water stress is mainly due to agricultural activity, which has been continuously increasing and causes intensive use of land, hence deforestation and biodiversity loss, especially in tropical regions and islands.

Extraction happens in upper-middle-income countries, due to higher-income countries outsourcing material and energy-intensive stages of production, drawn by lower environmental standards and labour costs.

Extraction and processing of minerals and fossil fuels, harvesting biomass and land use change contribute to over 60 percent of GHG emissions and up to 40 percent of particulate matter health-related impacts (UNEP, 2024).

1.4 The complementary history of economic growth and development

The growth-based economic model and the development concept are historically linked, since development also meant material wealth.

The evolution of growth is linked to the capitalist system, which is a system of competitive accumulation based on generalised commodity production regulated through the price mechanism. Within capitalism, growth is the instrument to distribute capital accumulation.

In the seventeenth-century, several philosophers and economists contributed to building the effectiveness and the authority of economic growth.

Parallely, the modern idea of development was initially coined by French positivist philosophers of the the first half of 1800. They thought that it represented the antithesis of negative consequences of industrial progress, the tool to improve unemployment and poverty and overall social disorder (Koponen, 2019).

The concept of development was also influenced by the one of progress, which was conceptualized as a linear path of individuals and society. Linearity of progress was already popular during the Protestant Reformation and further reinforced by scientific and technological discoveries from the Scientific Revolution onwards.

A link was progressively created between progress and science with a sense of trust in the future and knowledge of nature.

With the onset of the Industrial Revolution, progress acquired a new nuance of economic growth and material and earthly improvement, moving away from the idea of a spiritual path for afterlife happiness (Du Pisani, 2007). Land and labour were considered a commodity and nature whole started to be considered as a commodity, something external to humans and existing to serve the purposes of landowners.

Together with labour, nature was constituted as a commodity also during the scientific revolution (Dale, 2019). Economics as well ceased to be an ethical and moral discipline with the emergence of 1890s neoclassical theories, remodelling the concept of development on the aspect of material gains. Moral and ethical nuances were again introduced in the development discourse at the end of 1900 (Mirakhor & Askari, 2010).

Economic activity progressively submitted to capital accumulation and continuously “improved” and quantified (Dale, 2019).

Together with the idea of measuring material progress, trade and growth was also used in colonial strategies (Dale, 2019). Development was created to address needs that were created by industrial capitalism but also by European colonialism in North America.

Colonialism used the Christian mission to “civilize” as a moral justification of the exploitation of material resources. Likewise, philosopher Locke advocated the superiority of rational agriculture over Amerindian modes of hunting and gathering.

Moral judgments supported the creation of the rationale for expropriating land: since Indigenous people were leaving resources underdeveloped, their extraction and subsequent development was a right and a duty of colonizers, according to a perspective of mutual advantage (Koponen, 2019).

Improvement and quantification discourses were adopted during the occupation of native lands: settlers catalogued native communities in order to improve them, as well as calculated the value of conquered lands, giving shape to modern accounting techniques and statistical accounting of the wealth of a country. This wealth was found in natural resources and the productive ability to utilise them (Dale, 2019).

From there on, the use of the term “development” gradually spread, as far as being used in the British Colonial Development and Welfare Acts of 1940 and 1945, which set a financial quota for development aid.

These acts were issued to address both the widespread strikes in the empire and the need for more resources to sustain the war, using “welfare” to prove that development wasn’t limited to resource exploitation.

The League of Nations, the predecessor of the United Nations, brought together development and welfare. Development was considered an economic, social and political evolutionary process, achievable by developing resources and ambiguously used to refer to private capitalist ventures or to state-funded projects for human benefit.

It was used to refer to material resource development to allegedly allow the advancement of the colonized communities, gradually becoming “economic and social development” (Koponen, 2019).

After WWII the development of former colonies was supported by international institutions and Western scholars of “development” who were formulating notions and theories on the meaning of progress. Progress was mainly perceived as synonymous with economic growth and attainable thanks to Western knowledge and methods, which included modernization, rural migration to urban areas and market-unmediated mechanisms of prices and resource allocation (K. Locana Gunaratna, 2018).

The economic evolution of Western countries was the blueprint, which favoured industrialization processes and government “big pushes”, i.e. investments mainly on infrastructural projects, to trigger economic growth and escape from the “low-level equilibrium trap”, that is low levels of investments, savings, incomes and productivity mutually reinforcing.

The growth of developing countries was modelled according to fixed strategies, stages, levels of labour productivity and technological progress (Mirakhor & Askari, 2010).

These doctrines were applied in the ex-colonies, later called “underdeveloped”, “developing” or “less developed” countries and collectively called “Third World”, “Developing World”, and “Global South” (K. Locana Gunaratna, 2018).

The presidency of Truman was characterized by the use of global development programs as a political tool of soft power: development -in the sense of improvement and civilization- to eradicate poverty of non-Western countries was mutually beneficial and the word was decoupled from colonialism and exploitation.

At the same time, the matter of development was used by nationalists of ex-colonies to criticize colonial regimes as a whole and to bring forth a self-determined version of development. The combination of the two agendas contributed to giving development the moral shape, making it an ideology -developmentalism- and praxis that include institutions, shared discourses and financial obligations (Koponen, 2019).

Modernisation theory tied development and the idea that social progress requires continuous increase in national income and wealth, possible through economic growth.

The paradigm of growth sustained the globalisation of economic relations and the competition among nation-states, which became focused on national economy.

In the mid twentieth century growth was established internationally and within civil society. It represented the key metric of national progress and security and the tool to close gaps between “developed” and “developing” countries and different incomes and classes (Dale, 2019).

However, the gap created in the colonial period progressively widened even with the application of these theories (Du Pisani, 2007). Poverty, hunger and unemployment rose, leading LMICs and some agencies to demand alternative strategies that would focus on human basic needs, later grouped under the set of proposals called “New International Economic Order” (K. Locana Gunaratna, 2018).

From the 1960s and early 1970s, the new idea of sustainable development emerged. The earlier paradigm of continuous progress justified new forms of exploitation of non-Western societies and environmental destruction.

Negative environmental processes set off from the Industrial Revolution, as a result of the extensive use of raw materials at intensive rates. Awareness of the environmental impact of activities, such as farming, logging and mining, was present already among ancient populations, but from the 18th consumption of materials such as wood became so accelerated that the need for a more responsible use emerged.

However, it was believed that the scarcity caused by the massive consumption of resources would be mitigated by new technologies.

The urgency of addressing the environmental damage was denounced by a series of books, e.g. *The silent spring* (1962) by Rachel Carson, *The population bomb* (1968) by Paul Ehrlich, *A blueprint for survival* (1972) by Edward Goldsmith, *Small is beautiful* (1973) by Fritz Schumacher.

World-wide economic growth failed to solve inequalities and the need for a paradigm shift was needed (Du Pisani, 2007).

Sustainable development was a compromise between the previous notion of development and the one of environmental conservation. Now considered interdependent, these two concepts were earlier considered in conflict, being conservation aimed at the protection of resources.

From that moment on, development should focus also on responsible use of resources, having recognized the limits to growth and looking for alternative ways to grow (Du Pisani, 2007).

The path to creating the concept of sustainable development is, however, not a shift, but a sequence of changes of the same core idea. Sustainable development, in fact, doesn't question economic growth nor confront consumer culture, keeping to abide by neo-liberal logic and failing to set specific criteria (Du Pisani, 2007).

Moreover, since 1970, the majority of rich countries have never respected the international commitment of allocating 0.7% of gross national income to official development assistance.

Sustainable development is considered by some critics a type of economic growth-oriented project that entails instrumentally driven conservation and domination over nature, whereas sustainability requires preservation and harmony with nature (Spash, 2022).

1.5 Sustainable Development and Sustainability

The term sustainability was used for the first time in the 1713 German forestry text *Sylvicultura Oeconomica* by Hans Carl von Carlowitz⁶, accountant and administrator, who advocated for a balance between felled and replanted trees and was followed by more calls for conservation and sustainability of forests.

Similarly, when coal started to represent the main energy source in 1800, advocates warned of the danger of coal deposit exhaustion. Economist Mill argued that a stationery state is needed to preserve the future, naturalist Perkins pointed out physical environment was being depleted with the risk of becoming inhospitable or even causing the extinction of humankind,

Scholar Wallace criticized the destruction and exploitation of natural resources. Other intellectuals raised criticisms in the following century, stressing the limitedness of raw materials and energy sources and the need for a more responsible use of them (Du Pisani, 2007).

While being a cornerstone of environmental policy and international economics, at least 300 definitions of sustainability exist.

The multitude of definitions weakens the concept and the practice, causing the widespread desire, within the related literature, for clarity and an unequivocal definition.

This need is due to the idea that an abundance of definitions indicates a lack of steady meaning and due to the normative component of the term: knowing the meaning of "sustainability" is necessary to assess whether an action is ethically wrong or right and concretely sustainable or greenwashed.

Lastly, knowing the meaning of concepts influences our approach to the empirical world (Ramsey, 2015).

⁶ The expression used was "nachhaltende Nutzung", meaning "sustainable use" in reference to forests.

Some scholars argue the meaning is strongly dependent on the perspective of the context (Shearman, 1990), which provides normative interpretations and instructions (Ramsey, 2015).

Related to each context there is a different association: social sustainability is the continuous satisfaction of human needs and wellness and environmental sustainability is the continuous functioning and health of ecosystems. These perspectives, together with economic sustainability, are the most commonly defined and studied.

The ecological one, scientifically built, offers guidance to the other two.

However, mainstream economists have either ignored the environment-economics relation or worked to adapt neoclassical theories of economic development into environmentally sustainable approaches (Shearman, 1990). In this sense, sustainability acquires a teleological meaning, making it a social purpose consisting of a set of social and economic purposes, goals, values or objectives for human action (Salas-Zapata & Ortiz-Muñoz, 2018).

In economic theories, sustainability is represented by the issue of scarcity of resources, raised for the first time by the economist Malthus in 1798, who believed that the intense population growth would not be compatible with the limitedness of agricultural land (Kuhlman & Farrington, 2010).

Sustainability and well-being are formulated according to either a weak conception of sustainability or a strong one. According to the former, natural capital is replaceable and sustainability is attained if aggregate net capital investment is steadily positive; the latter considers natural capital a factor of well-being and cannot be substitutable by physical or human capital (Kurniawan et al., 2021).

The weak view of sustainability, usually preferred by economists, takes into consideration not only natural resources and the environment but also capital, expecting the loss of some natural resources and compensating the loss by increased capital. The resulting wealth is made of environmental assets and man-made ones.

A strong view of sustainability argues that natural resources are not replaceable by capital and they must be preserved to ensure human survival and later passed to the next generation in the same state they were given to the previous one.

Scientific knowledge helps identify which natural resources can be substituted by capital: for example, it's possible to substitute fossil fuels with other energy sources, whilst substitutability of extinct biological species is not possible. Strong sustainability advocacy is based on the essentiality of ecosystems and related services that allow human life and the ethical belief that humankind doesn't have the power of life and death over other species but the duty of preserving environmental diversity.

These two views are relevant for impact assessment and policy-making, as strong sustainability establishes thresholds and weak sustainability helps gain the largest amount of natural and man-made resources, through the evaluation of trade-offs between material benefits for well-being and intrinsic value of natural resources (Kuhlman & Farrington, 2010).

The term sustainability became mainstream in public policy-making from its use in the 1987 Brundtland Report, which tried to put together well-being, limitedness of natural resources and environmental degradation by formulating the concept of Sustainable Development (SD).

It means “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Kuhlman & Farrington, 2010) and entails improvement of living standards, environmental equilibrium and economic growth, integrated into decision-making processes (Mensah & Ricart Casadevall, 2019).

Its success is due to its virtue of taking into consideration future generations and its vagueness that opens to the use of the term with any meaning (Bartlett, 2012). Also, it hints at a set of measurable criteria to use in programs (Ramsey, 2015). However, the term has been widely criticized as it is an oxymoron: development refers to something progressive, whereas sustainability entails equilibrium between processes (Salas-Zapata & Ortiz-Muñoz, 2018).

The popularity of this new concept was such that even if sustainability and Sustainable Development are distinguished concepts, in current debate they are used as synonyms (Mensah & Ricart Casadevall, 2019; Salas-Zapata & Ortiz-Muñoz, 2018; Bartlett, 2012).

The related report was published by the Brundtland Commission, formerly the World Commission on Environment and Development, a UN sub-organization active from 1983 to 1987.

The Report *Our Common Future* stressed the necessity of considering economics, societies and the environment to ensure global sustainability (Mensah & Ricart Casadevall, 2019).

Later, other international institutions, such as The World Resources Institute and the International Institute for Environment and Development, started to consider sustainability in the frame of sustainable development (Shearman, 1990).

The popular idea was that development and environment, when managed together, can benefit each other: the best choices are environmentally and economically -and socially- viable.

Drawing from Malthus' postulation of resource scarcity, it was more and more evident that the non-renewability of some resources is not compatible with long-term economic growth and production.

The incompatibility of exponential economic growth and physical finitude was well demonstrated in Meadow's *Limits to Growth* (Mensah & Ricart Casadevall, 2019).

The Brundtland Report showed a way out of the pessimism triggered by Meadow's insights, having predicted that crucial natural resources would be exhausted within a few generations (Kuhlman & Farrington, 2010).

Progressively, Sustainable Development was integrated in an increasingly pervasive way into the international agenda, until becoming a UN key priority.

It consists of three sustainability spheres/domains -environmental, economic and social- that are interconnected: any action has implications in each of the three.

Sustainable management aims to preserve resources, protect the environment and create sustainable -resilient- economic growth within a sustainable -peaceful and fair- society.

Economic sustainability requires an approach to present production, distribution and consumption that doesn't compromise the future need of goods and services.

Social sustainability works against poverty, linking poor social conditions to environmental destruction. It strives to preserve the capacity of people to meet their needs, guaranteeing healthcare, education, gender equality, peace and stability.

Environmental sustainability focuses on preserving environmental integrity and capacity, by aligning the rhythm of harvesting resources and their regeneration ability and waste generation and their assimilation.

As the pressure on natural resources increases due to the growing world population, Millennium Development Goals were set, followed by Sustainable Development Goals - SDGs.

They were created to internationally coordinate the achievement of social targets within 15 years, from 2000 to 2015, formulated in 8 goals, and from 2015 to 2030, worded in 17 goals. These goals call to action to preserve the planet, to fight poverty and hunger, to create well-being through gender equality and basic services, education, decent work and protection of the environment, at the same time fostering partnerships among different actors -governments, private bodies and civil society.

The targets are made so that addressing one helps address others and achieving one is indispensable for achieving others. That is true also in terms of trade-offs; for example, increasing food production and security requires land use at the expense of forestry vegetation.

Or, again, switching food crops to biofuel production comes at the expense of food security.

Even, some stakeholders compete: for instance, abandonment of fossil fuel dependence is beneficial to civil societies and results in a loss for the fossil fuel business system.

Another critical issue is that the SDGs achievement requires a massive effort in terms of creating additional land for food production, creating new job opportunities in cities that gradually expand or form, producing additional energy and implementing environmentally-friendly infrastructures, facing climate change mitigation and adaptation costs and investing huge amounts of financial resources.

This effort, however, is not guided by an appropriate framework for monitoring and assessing progress (Mensah & Ricart Casadevall, 2019).

Finally, integrating business goals means integrating goals that are very different from those of public policy, i.e. profit-oriented ones.

This is made more striking by that the main economic indicator of economic activity is the Gross Domestic Product, which has proved to be independent of levels of social well-being, such as equity, health, or inclusion (Kuhlman & Farrington, 2010).

Ecolinguistic scholars argue that Sustainable Development is a frame modification of development, which modifies an existing frame to create one that carries some of the old structure and characteristics, but also some differences. In the case of Sustainable Development, the modification is due to the addition of the adjectival modifier.

As development was causing environmental depletion and damage to ecosystems, the frame modification integrated the concept of environmental limits, while still prioritizing the altruistic goal of helping poor people.

Scholars have demonstrated that Sustainable Development in discourses often shifts into “sustainable growth”. In some discourses, the shift was even beyond, to “sustained growth”.

With every shift of frame, the focus moves from fighting poverty, to protecting the environment and to maximising economic growth in rich countries (Stibbe 2020).

1.6 Introduction to Eco-linguistics

The first connections among the physical environment, such as topography and climate, the vocabulary of a language and the social elements, such as religion, values and political organisation, were made in the 1910s in anthropology debates. These connections led anthropologists to apply the image of ecology to language, formulating the definition of “linguistic ecology”.

The first use of “ecolinguistics” is attributed to sociolinguist Marcellesi and the concept was further elaborated by psychology professor Salzinger and linguist Hagège.

Linguist Halliday argued that language has a role in aggravating or solving environmental issues, by pointing out the linguistic features of ideologies, as in the case of growthism, speciesism, and classism.

The field of Ecological Discourse Analysis (EDA) was founded. It broadly focused on the “interrelations” on all levels regarding languages, their social and physical environments.

Different scholars adopted different approaches, such as language-world-system, dialectics and ecocriticism. More recent contributions proposed ways to unify the conceptualization of the ecology of language.

The two initial strands were ecology of language and ecological discourse analysis. The former focused on the ecology of language contact, studying multilingualism, ecology and language evolution, linguistic and biological diversity.

Ecological discourse analysis refers to the the analysis of any type of discourse under the ecological framework, on the basis that the physical environment is mediated and influenced by language (Penz & Fill, 2022).

Eco-linguistics is an extremely relevant field, now more than ever, in an age in which communication has a pervasive and increasingly important role.

Language belongs to the set of selected and transmitted “images” of reality that have power over members of society, accompanying and encouraging specific actions.

Language can be described as a tool to shape, cope, manipulate natural and social reality through dialogic and dialectical communication.

Recently, the ecological issue has been integrated into political realms and businesses, which depend on a specific framework of ideas for functioning and survival and a set of necessary beliefs.

In our consumer societies, the consumption process is the area where human beings meet and countries put pressure on attitudinal change.

The ecological issue did enter political, commercial and media discourse, but it has been watered down. For example, it is being used as a front for PR and advertising purposes, such as fresh labelling or re-naming the company name after having provoked environmental damage.

Ecolinguistics helps uncover the processes of “common sense” or “naturalization” integrated in the texts produced by dominant groups, amplified by media that aim to mould the thinking of individuals (Alexander, 2010, Chapter 2).

1.7 Analysis framework

Ecological discourse analysis examines language at various levels, including lexicon, grammar, metaphor, narrative, and rhetoric, to uncover the underlying stories and ideologies in environmental discourse.

A key focus is the lexicon, where ecolinguists identify a disconnect between words and their actual meanings.

Three main issues are highlighted: semantic vagueness and under-differentiation and misleading encoding.

In the first two cases words, like "sustainable", are often unclear, leading to confusion about their exact meaning or failure to distinguish different types. Misleading encoding refers to words misrepresenting reality, such as "to clear land", which involves removing native vegetation (Penz & Fill, 2022).

Ecolinguists also emphasize the ideological implications of both scientific and everyday language. They demonstrate how concepts like “uncertainty” are interpreted differently by scientists and the public. Additionally, they examine connotations that promote exploitation, such as "development", euphemisms, such as “timber harvesting”, and pejorative terms for the environment, such as “weed” (Penz & Fill, 2022).

The ecological analysis of discourses can follow different approaches, other than Critical Discourse Analysis, such as Positive Discourse Analysis, Multimodal Discourse Analysis, Ecosystemic Linguistics, and Harmonious Discourse Analysis.

Positive Discourse Analysis seeks out alternative, positive discourses that promote respect for nature rather than economic growth.

Multimodal Discourse Analysis (MDA) examines how various modes, e.g., language, images, color, interact to create meaning.

Corpus-assisted EDA combines quantitative and qualitative analysis to study ecological topics, revealing how environmental degradation is normalized in discourse.

Ecosystemic Linguistics views language as a form of ecological interaction, emphasizing the need for linguistic studies to prioritize life and avoid suffering.

Ecosystemic Discourse Analysis, derived from this approach, focuses on these principles.

Chinese ecolinguists have introduced Harmonious Discourse Analysis (HDA), based on traditional Chinese philosophies of harmony. It examines human relationships with the environment through language, aiming to promote harmony (Penz & Fill, 2022).

The goal of Critical Discourse Analysis (CDA) is to uncover hidden and clear structural relationships of dominance, discrimination, power, and control as they appear in language.

CDA focuses on analyzing real instances of social interaction that are, at least partially, shaped by language. Its distinctive approach lies in how it examines the connection between language and society, and the interaction between analysis and the practices being analyzed.

CDA views discourse as both shaping and being shaped by society. In modern societies, discourse often serves as a hidden tool of power, and CDA seeks to make these power dynamics more visible and transparent (Blommaert & Bulcaen, 2000).

Linguist Fairclough's comprehensive framework, presented in his 1992 book *Discourse and Social Change*, represents the blueprint for critical discourse analysis in practice.

His model is three-dimensional:

- Discourse-as-text is the dimension that focuses on the linguistic features of discourse, including vocabulary, grammar, cohesion, and text structure. It emphasizes the importance of analyzing specific language choices, such as the use of passive voice, which can obscure the agent behind actions.
- Discourse-as-discursive-practice refers to how discourse is produced, circulated, and consumed in society. This involves analyzing the processes surrounding specific texts and recognizing the intertextuality present in discourse. Manifest intertextuality directly refers to other texts and constitutive intertextuality is the combination of various elements and styles.
- Discourse-as-Social-Practice addresses the ideological effects and hegemonic processes associated with discourse. Discourse is linked to power dynamics and changes in discourse reflect shifts in hegemony. The representation and recontextualization of discourse can reveal struggles over norms and power, highlighting resistance against dominant regimes.

Critical Discourse Analysis (CDA) focuses on the relationship between language, discourse, and social structure, aiming to reveal how social structures influence discourse patterns and power relations.

Researchers in CDA seek to critically evaluate these relationships, to influence moral and political change in society by empowering marginalized groups, exposing abuses of power and mobilizing efforts to address social injustices.

CDA has a strong commitment to fostering social change, empowerment, and a practice-oriented focus (Blommaert & Bulcaen, 2000).

The ecological analysis in the following chapter will draw to the elements outlined by Arran Stubbe, Professor of Ecological Linguistics, in his 2020 book *Ecolinguistics: Language, Ecology and the Stories We Live By*.

Under the assumption that language is a form of influence on how we think about the world, the “stories we live by” represent cognitive structures or mental models that condition behaviours and contain specific sets of values. Their entrenchment in human minds is such that people experience these stories as the world.

However, from an ecological perspective some of them are destructive, as they weaken or oppose the normative orientation ecology has to protect the physical environment and interactions of all organisms.

Different stories are based on different ecosophies, philosophies of ecological framework that include norms, rules and values and that align along three spectra that differ about the value of life, the role of economy and government and mental attitudes.

Stubbe identifies nine forms that stories take: ideologies, framings, metaphors, evaluations, identities, convictions, erasure, salience and narratives.

These forms are identifiable by their linguistic manifestations (Stubbe, 2020).

Ideologies are foundational beliefs that shape the shared views of social groups.

These views, or representations, serve as the basis for discourse and social practices (VAN DIJK, 2006).

They present one perspective of the world and become the normal way people think about an area of life (Stubbe, 2020).

They are primarily expressed and learned through communication, whether spoken or written. When group members justify their actions, they often use discourse rooted in ideology.

Ideologies are communicated and reinforced through various discursive structures and strategies.

For example, the pronoun "we" is often used to refer to the speaker's ingroup. Any aspect of discourse, including intonation, stress, volume and the choice of topics can carry ideological significance.

Ideological discourse is typically guided by a strategy of positive self-presentation and negative other-presentation. This means that individuals or groups tend to highlight their positive qualities and downplay their negatives, while emphasizing the flaws of others and minimizing or ignoring their good qualities (VAN DIJK, 2006).

The concept of framing refers to the way issues or events are understood differently depending on the perspective or "frame" used. Frames highlight specific aspects while omitting others, influencing public opinion and policymaking. Framing selects parts of reality and emphasizes them in communication to promote a particular problem definition, interpretation, moral judgment, or solution.

Framing connects cues (pieces of information or events) with specific interpretations, such as viewing increased Arctic oil drilling as an environmental issue, an economic opportunity, or a solution to energy demands. Framing shapes socio-political realities, often normalizing the power of elites and the vulnerability of marginalized groups through language and discourse.

It works by embedding specific cues within a particular frame, which shapes understanding in several ways. First, framing includes certain aspects while excluding others, thus creating boundaries around what is considered relevant.

Second, within these selected cues, some are given prominence (foregrounded) while others are downplayed (backgrounded).

Third, framing defines certain aspects as parts of the issue while treating others as the whole.

This process shapes how different people, based on their backgrounds, understand an issue.

As a result, frames may vary significantly depending on the context or the individual constructing the frame (Merlijn van Hulst et al., 2024).

Metaphors are a type of frame that uses a source frame belonging to a specific and different area of life (Stibbe, 2020). Metaphors are recognized as essential for understanding our world, as they "map" familiar concepts onto more abstract ones, making them central to meaning-making.

Rather than being mere rhetorical devices, metaphors shape social realities and guide future actions, often reinforcing themselves in a self-fulfilling way.

From a Critical Discourse Analysis (CDA) perspective, the use of metaphor provides a significant argumentative advantage, especially when qualifying or disqualifying political developments, social groups, or individuals as threats to a nation.

Metaphors allow speakers to bypass detailed factual argumentation and instead invoke familiar concepts -like illness or disease -whose negative associations are already well-known. By using terms such as "cancer," "parasites," or "decomposition," speakers draw on a source domain rich with social, emotional, and aesthetic connotations, which influence interpretation.

These negative metaphors are then applied to the target domain of politics, making the argument seem straightforward and emotionally charged without needing explicit evidence (Musolff, 2012).

Evaluations are mental models defining whether something is positive or negative and are influenced by appraisal patterns, namely linguistic features of tone or mood (Stibbe, 2020).

Evaluations have the power to influence whether people think of an area of life positively or negatively, directing people towards specific feelings.

Appraisal patterns include marked/unmarked words, pairs of contrasting words or words/phrases that are implicitly positive or negative. Appraisal occurs also through “expressions of affect”, which is the description of either positive or negative feelings perceived by the participants involved.

Examples of popular evaluation include: “convenience is good”, “success is good” and “fast is good” (Stibbe, 2020).

Identities are stories about the meaning of being a specific kind of person in terms of appearance, character, behaviour and values (Stibbe, 2020). Identity is largely shaped by discourse, with self-representations and perceptions of others being co-constructed through language and semiotic resources, actual events and their surroundings.

Embodiment plays a crucial role, as people express their identities through choices like fashion, cosmetics, or digital avatars. Individuals are affected in their recognition and representation by their social positions and access to various resources -linguistic, cultural, and economic-.

Additionally, the classifications of self and others are significantly influenced by societal discourses regarding social groups, which are created and perpetuated across different levels of society, including media, education, and politics. These discourses both reflect and shape social structures and divisions, impacting identity formation in various ways (Zotzmann & Regan, 2016).

Convictions assess whether descriptions of the world are true, uncertain or false, detectable by facticity patterns, linguistic clusters shaping descriptions of the world.

The facticity of the descriptions is on a spectrum that goes from certainly true to certainly false.

The position on the spectrum is traceable through adverbs, words such as “notion” or “idea”, use of modals, calls to expert authority, quantifiers (Stibbe, 2020).

Erasure is a story establishing that an area of life is unimportant and unworthy of consideration, characterized by erasure patterns, linguistic representations (Stibbe, 2020).

Erasure entails the omission of significant aspects within a discourse—elements that exist in reality but are either overlooked or intentionally ignored.

This concept is commonly used in social science to highlight how certain voices, perspectives, or issues can be rendered invisible in discussions, thereby shaping the understanding and interpretation of a given topic. By failing to acknowledge these elements, the discourse can distort reality and perpetuate power imbalances or social injustices.

Ignoring or excluding important elements within a discourse is an intrinsic aspect of discourse, which is always partial and selective, highlighting some elements while omitting others.

The concept gains significance when paired with "re-minding," a process in which individuals identify and emphasize the excluded elements, asserting their importance and pushing for their inclusion in the discourse. Thus, erasure is not merely a conscious act of exclusion but part of a discursive struggle where various actors seek to reshape the conversation by reintroducing overlooked topics.

The significance of what is considered important for re-minding is shaped by the interests and goals of those advocating for its recognition (Stibbe, 2014).

Erasure is crucial in examining how nature, especially animals, is excluded or minimized in discourse.

In modern culture, animals are largely erased from people's daily experiences, being categorized mainly as meat, pets, or pests. They are often encountered indirectly, such as through fiction or documentaries, rather than as integral parts of life or ecosystems.

Recent research demonstrated how language in advertisements is often used to diminish or erase the role of nature. In the selected ads, nature is either downplayed or absent, despite companies claiming their products are derived from natural resources. Nature is treated abstractly or as insignificant.

For example, milk is discussed using vague terms like "nature", avoiding specific references to calves or cows. Animals are merely portrayed as producers, with no mention of their treatment.

Similarly, dairy products are presented as company-made, not nature-given. Even fruits are reduced to mere modifiers when describing juices, with their natural origins overlooked (Ain et al., 2023).

Saliency is a story establishing that an area of life is important and worthy of attention, linguistically represented by saliency patterns. Linguistic features that reveal patterns include focus, vitality, levels of abstraction and metaphors.

For example, terms that refer to bodily experience have more power to evoke emotions and images than abstract words. In general, basic-level representations are often the most salient.

Other devices include individualization, which is the representation of individuals as unique, whereas homogenizing represents them as a set of equivalents and activation, which is representations of individuals as active -doing, thinking or saying- (Stibbe, 2020).

Chapter 2. Sustainable Development

Foreword

This chapter analyses four texts concerning the environment and sustainable development from an eco-linguistic point of view, chosen for their relevance and for the possibility to diachronically compare the evolution of the concept of Sustainable Development.

The texts are *The Declaration of the Human Environment* (1972), *The Brundtland Report “Our Common Future”* (1987), Rio+20 outcome document *The Future We Want* (2012), COP 28 outcome document *Global Stocktake* (2023).

Starting from the elements of the discourse, ecological considerations are made on the human-environment relationship and the sustainable solutions proposed by Sustainable Development.

2.1 *The Declaration of Human Environment*

*Summary*⁷

The Declaration represents the first UN document concerned with the environment and its degradation resulting from pollution.

The first chapter includes proclamations on the collective need for environmental protection, scientific and technological influence on nature, development of non-western countries, mitigation of population growth. Principles are listed and concern intergenerational environmental protection, economic and social development, assistance to developing countries, pollution, compatibility between environmental measures and development, demographic policies, the use of technology for environmental action, environmental awareness through education and scientific knowledge, international cooperation on the issues of environment and nuclear disarmament.

The second chapter presents an action plan that contains recommendations, which firstly help identify environmental programs and activities according to a dynamic framework based on assessments, management and support measures. Successive recommendations concern action at the international level and focus on:

- * human settlements management;
- * international development assistance;
- * negative impacts on neighbouring countries of national environmental practices;
- * international bodies, programs, agreements and research for environmental issues;

⁷ It's possible to review the full document at <https://www.un.org/en/conferences/environment/stockholm1972>

- * acceleration of information exchange and training of core figures;
- * UN international support
- * population growth and family planning;
- * malnutrition and life quality, especially in degraded areas;
- * persecution of *the Man and the Biosphere Programme*⁸;
- * noise emissions, forest management and attention to activities impact on climate;
- * formulation of standards for human organism protection;
- * implementation of control tools of marine pollution;
- * identification of major environmental issues by regional agencies;
- * incorporation of environmental considerations in development projects and compensation measures of environmental restrictions on trade and identification of threats to exports.

The third chapter contains recommendations to establish institutional and financial tools: a Governing Council, a small secretariat and an environmental fund. The council's responsibilities would include the promotion of international cooperation, provision of policy guidance, monitor the impact of environmental policies, the secretariat would support the Council and provide advisory and planning services and the voluntary fund would be used for supporting monitoring, assessment and data-collecting activities, with particular attention to developing countries' needs.

Other resolutions adopted include the institution of a World Environment Day, during which UN agencies and governments would express attention to environmental issues. The Conference condemns nuclear weapons tests and urges the abandonment of any related activity. Finally, the General Assembly supports a second Conference.

The second part of the document explains the "background", how the constitution of the Conference resulted from the need for national and international action on limiting and eradicating environmental degradation and enabling social and economic development, by including guidelines for action of governments and agencies. The preparation of the conference entailed four sessions of The Preparatory Committee to establish the topics, the agenda, the documentation, regional seminars and special meetings to study the relationship between development and environment. Emphasis was placed on the need for development for developing countries and the compatibility between ecology and development plans, the importance of complying with national sovereignties. The Conference was joined by representatives of 113 states and specialized agencies; the organization included the President election, the adoption of rules, the election of officers, the adoption of the agenda and the constitution of subsidiary bodies.

⁸ A UNESCO intergovernmental scientific program to enhance relations between people and their environment. More at <https://www.unesco.org/en/mab>.

The third part summarises the proceedings of the conference.

The general debate relied on the need to tackle human-made environmental dangers. It was recognized the interdependence among economic, social and political dimensions and it was noted that developing countries have to prioritize food, shelter, work, education and healthcare services. Factors essential for well-being must be balanced with all the areas relevant for action, evoking the need for a greater sense of responsibility for the common good and international law tools. Developing countries emphasized their main concern for development and clarified the role of international corporations in exploiting their resources and urged developed countries to assume their responsibilities more severely, also stressing the need for technical and scientific assistance. Documents, such as the Draft Declaration on Human Environment and the Action Plan, were discussed, as well as institutional arrangements such as the creation of the Environment Fund. Speakers further discussed the role of population growth, conservation, marine pollution, and multi-sectorial composition of environmental problems. It was often noted that ecological issues can be resolved only if there's a political will.

A resolution submitted by China asked to dedicate more time to the discussion of the declaration draft, despite the fragility of the convergence on the draft, which resulted in the establishment of an open working group, that focused on world population growth and its influence on the economy and development. Linguistic modifications to the declaration text were also made, such as additions, replacements, deletions and insertions.

Further discussions concerned financial resources, especially for developing countries, and nuclear disarmament. Other topics included the size of the Governing Council, the location of the secretariat headquarters, the fund contributions and a second conference.

The Conference was generally acclaimed as an important milestone in preserving mankind and the human environment.

Annexes encompassed the report of the credentials committee, the report of the working group on the declaration on the human environment and general principles for assessment and control of marine pollution.

Context

Awareness about environmental issues emerged from the 1960s, also as a result of disasters such as human deaths caused by pollution, mining incidents and dumps of waste waters, together with massive marine animal deaths caused by oil spills.

Among the studied issues were the effects of agro-chemical substances, side effects of industrialization processes and the Western exploitation of raw materials present in non-Western countries.

Politically, the Cold War divided global affairs and many countries were fighting back

Amid the Cold War and with many countries struggling to free themselves from colonialism, it was clear that a collective response was necessary (Chasek, n.d.).

In preparation for the Conference, state representatives together with scientists elaborated country reports, for a total of 85 documents. According to these reports, the main area causing environmental pollution was industrialization processes, which entailed overexploitation of resources and pollution through modernization and agro-industrialization. It was demonstrated that ecological interrelations are such that, for example, damaging surface vegetation impacts water reserves.

The second area was the world population, its growth and urbanization. Population growth means increasing basic needs and urban growth, which is linked with land preservation after farm abandonment and immigration-related issues including pollution, disease spread and wildlife habitat destruction.

The third area was poverty and under-development, due to a lack of infrastructure services and related pollution (Durkee, 2021).

UN activities were requested to include environmental issues and to expand their mission to peace and human well-being also to environmental protection, to support and supplement the very recent and very few international treaties concerning environmental aspects (Chasek, n.d.).

In 1967 Sweden proposed a UN conference on the human environment: the human impact on the environment was a progressively urgent matter that needed to be addressed through international cooperation. The proposal was brought forward also as a political tool to mitigate Cold War post-colonial opposition within UN bodies and to foster cooperation (Lövbrand et al., 2021). It collected enough international support to obtain a General Assembly resolution calling for a conference to hold in 1972 that would analyse links between economic, social and environmental problems and would elaborate recommendations later to be adopted by the General Assembly.

The outcomes were a declaration of 26 principles, an international cooperation action plan, 109 recommendations for international measures on environmental degradation and resolutions focused on ceasing nuclear tests and creating an environmental databank and fund. These principles have set the framework for the following work in terms of environmental law and cooperation.

In conjunction with institutional diplomacy, citizen and non-governmental groups mobilized to discuss the same issues (Lövbrand et al., 2021).

As a result of the Conference, the UN Environment Programme (UNEP) was created, representing the first UN agency devoted to the environment. Its responsibilities include knowledge acquisition and assessment, environmental quality management and international supporting actions.

Overall, the Declaration identified goals and legal principles, highlighting the political nature of environmental issues and therefore the need for political decision-making (Chasek, n.d.).

Text analysis

The analysis reveals mainly frames.

The ability to shape the environment attributed to human beings has caused, on one hand, environmental damage and on the other hand offers the possibility to solve it. The environment is made up of resources essential to human beings and their development.

The first adjective the reader comes across is “human”, chosen to define the physical environment, starting with the title. This dominant position is also representative of the anthropocentric ideology and perspective on environmental protection of the declaration, which aims to fruition of nature by future generations: “(t)o defend and improve the human environment for present and future generations has become an imperative goal for mankind” (Chapter I, 6).

The environment is made human as a result of the extraordinary ability to shape and yield. THE HUMAN BEING IS A CREATOR AND A MOULDER: the human being (represented by men) is defined “both creator and moulder of his environment” (Chapter I,1), capable “to transform his surroundings” (Chapter I,3) and “to improve the environment” (Chapter I,5).

Human beings, as creators, are the most important creatures and environmental measures must be taken to protect human health and to leave an adequate environment to future generations. “Of all things in the world, people are the most precious. It is the people that propel social progress and the advance of production, science and technology, the capability of man to improve the environment increases with each passing day” (Chapter I, 5).

Human beings are described as holders of rights and responsibilities and oriented towards cooperation. No differentiation is made among humans, who are considered part of a global collective. There is no reference to a specific group of people. Instead, the expressions used are “human race” (Chapter I, 1), “human beings” (Chapter I, 3), “human population” (Recommendation 29), and “humanity” (Recommendation 92). The word “man” is used a synonym of human beings in several occurrences (Principle 1; Principle 4; Principle 8; Recommendation 40; Recommendation 55; Recommendation 75).

The goal of defending and improving “the human environment for future generations” (Chapter I, 6) is practical through “the acceptance of responsibility by citizens and communities”, together with enterprises and institutions. This responsibility is cited several times: in Principle 1 it’s declared that humans have “a solemn responsibility to protect and improve the environment for present and future generations”, Principle 4 adds “a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat”. Education acts as a “basis for an enlightened opinion and responsible conduct by individuals” (Principle 19) and the constitution of a World Environment Day acts also as “a renewal of the determination of the Governments and peoples of the world to recognize their responsibility for the human environment” and to undertake continuing efforts to preserve and enhance it (Chapter VI 2 (I)).

Alongside responsibilities, every human being is entitled to rights, which are stated in Principle I: “equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being”.

Human development and its benefits are at the centre of the ideology of the declaration.

Development provides humans with “the minimum levels required for a decent human existence”, “food and clothing, shelter and education, health and sanitation” (Chapter I, 4). “Economic and social development is essential” for adequate living conditions and environment (Principle 8).

Development is a goal to be reached, a target towards which “the developing countries must direct their efforts” (Chapter I, 4). During the general debate, speakers from developing countries emphasized that “the priority of developing countries was development” (Chapter VIII, 44).

It is both an essential tool for environmental protection and a priority to tune with environmental policies, in fact the latter “should enhance and not adversely affect the present or future development potential of developing countries” (Principle 11) and the governmental development planning approach should ensure that “development is compatible with the need to protect and improve environment for the benefit of their population” (Principle 13). The UN system would “assist developing countries to implement environmental policies and programmes compatible with their development plans” (Chapter III, 1(I)).

Development also takes into consideration uncontrolled population growth and its consequences, using the metaphor “population explosion”: international agencies should work to prevent “the serious consequences of population explosion on human environment”(Recommendation 12). From the 70s population growth was considered threatening to development and states such as India and China implemented controversial policies to discourage births. This type of growth is evaluated negatively, as a source of environmental problems that should be addressed by adequate policies (Chapter I, 5), such as appropriate demographic policies respectful of basic human rights (Principle 16) and further research on human reproduction (Recommendation 12, 2). However, during the general debate preceding the draft of the document, some speakers argued that the issue was not population growth, but well-being disparity that is such that “a number of the people of the world had such a small expectation for a fruitful, happy and long life” (Chapter VIII, 57).

Whilst population growth is considered negative, economic development is promoted in several occurrences (Chapter I, 6; Principle 8; Principle 18; Chapter VI, 1; Chapter X, 300). The urgency of resolving environmental issues is driven also because they hinder economic development (Chapter I, 1): tackling both is equally relevant, especially in developing countries (Principle 10, Principle 11).

“The concept of ‘no growth’” is considered impractical (Chapter VIII, 37), but research should develop “a policy of economic growth compatible with adequate environmental safeguards” (Chapter III, II, 8).

Within development and environmental protection, NATURAL ELEMENTS ARE HUMAN RESOURCES.

Human-induced pollution is destroying “man’s most precious possession” (Chapter X, D, 315) which is “irreplaceable resources” (Chapter I, 3). “(N)atural resources (...) must be safeguarded for the benefit of present and

future generations” (Principle 2), by preserving the earth’s capacity to produce renewable resources (Principle 3) and the available reserve of non-renewable resources (Principle 5). The principles that deal with the preservation of renewable and non-renewable natural resources, the conservation of nature and the halt to discharging toxic substances use the modal “must”, which strengthens their imperative value.

Measures shall reduce marine pollution that would “harm living resources and marine life”, States should ensure a “more rational management of resources” (Principle 13), also through national institutions “managing or controlling the environmental resources” (Principle 17) and according to “the sovereignty right to exploit their own resources” (Principle 21).

Economic assessments include wildlife (Recommendation 30), domestic animal breeds (Recommendation 45(c)) and water resources (Recommendation 50 (c-iv)).

“Resources” not only acts as a frame, but as an umbrella term that erases non-human animals and ecosystems constituents, which are described also with loose terms that group them, such as “flora and fauna” (Principle 2), “wildlife and its habitat” (Principle 4), “domestic animal breeds” (Recommendation 41 (f)), “representative ecosystems of international significance” (Recommendation 60), “marine environment” (Recommendation 92 (a)).

Risks deriving from environmental degradation are defined by using a metaphor: “(t)he Conference was launching a new liberation movement to free men for the threat of their thralldom to environmental perils of their own making” (Chapter VIII, 34). Environmental problems have an anthropogenic root: pollution, disturbances to the biosphere, destruction and depletion of irreplaceable resources, harmful to the physical, mental and social health of human beings.

The Action Plan includes recommendations concerning “environmental aspects of natural resources management”, giving dispositions about natural programmes of conservation of soil resources (Recommendation 20 (c)), to “avoid wasteful use of wasteful use of natural resources” (Recommendation 22 (b)), “methods for evaluation of forest resources” (Recommendation 27 (c-vii)) and “assess the total economic value of wildlife resources” (Recommendation 30). There is a call for the creation of a treaty to tackle “the overexploitation of resources” (Recommendation 32). The term “resources” is mostly accompanied by the trigger words “utilization”, “availability”, “exploitation”, “management” and “conservation”.

The same trigger words refer to the idea that SCIENCE AND TECHNOLOGY OFFER SOLUTIONS: these two things allowed humans to “transform his environment in countless ways and on an unprecedented scale” (Chapter I,1). A wise application of this ability gives way to economic and social development and quality of life improvement, together with a significant contribution to environmental problems management (Principle 18). The value of scientific contributions is strengthened by the use of “must” to compel countries to apply science and technology when dealing with environmental risks (Principle 18) and to support the international spread of the latest scientific information (Principle 20).

The text has a persuasive and, in some sections, a procedural connotation, further emphasized by the regular use of the present tense.

Calls to expert authority are recurrent, as the different aspects in which the issue is declined are to be tackled through the support of international agencies to governments and through research programs. Agencies and programs are more than fifty, whose names and abbreviations are listed on page v and vi.

In Chapter II, recommendations follow a framework that is illustrated through a diagram, increasing the overall facticity (Chapter II, A).

To prove the accuracy that environmental protection is a necessity, in the 6th paragraph “must” is used with “shaping actions with environmental care” and with “using knowledge to create a better environment” (Chapter I,6).

2.2 The Brundtland Report: Our Common Future

Summary⁹

The Brundtland Report formally introduced the concept of sustainable development

The Report intends to design guidelines for achieving sustainable development, encouraging cooperation and stressing the interconnections between environmental degradation, poverty and inequality. It's essential to reform economic growth to produce more, thus defeating the scourge of poverty, but using less raw resources. The Report stresses the urgent need to reduce or stop all those processes, such as pollution or over-consumption of resources, that cause serious damage to the environment, including the greenhouse effect or the ozone hole. The current economic system is criticized, for using more than what creates balance with the processes of resource regeneration and causing poverty, which in turn creates pressure on environmental resources. The concept of safety is no longer understood in the classic sense and includes now the environmental aspect.

The practical and policy indications revolve around the concept of Sustainable Development, a type of development that deals with responding to human needs without compromising the same possibility for future generations, a type of development according to which present and future human needs direct the use of resources, investments and technological development, attainable through the integration of "environmental policies and development strategies".

The Report further explores several themes, such as the international economy and how it created crises in African and South American countries, and how has a key role in achieving sustainable development; the pressure that the global population puts on the environment and how its growth should be managed; how to ensure food security by agricultural and resources management strategies.

Presenting the data on extinction rates to stress the urgency of these matters, the document explores the role of species and ecosystems within sustainable development.

The heavy impact of using energy derived from fossil fuels is acknowledged and measures to be taken to encourage a pollution reduction are listed, such as a conscious use of nuclear energy and the transition to the use of renewable resources.

The Report criticises the current form of industrial growth, which can be redirected towards sustainable development through new objectives, standards and technologies; it outlines the situation of cities and services to citizenship, strategies addressing the most vulnerable segments of the urban population and reducing pollution.

Common resource management problems concern ocean fisheries and waste disposal, satellite communication traffic in outer space, orbit pollution and nuclear power use and Antarctica preservation against mining. Linking environmental stress, conflict and unsustainable development, strategies are outlined for achieving security, disarmament and peace. The last chapter suggests proposals for institutions

⁹ It's possible to examine the full text of the document at: <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>

and regulations, through the action of international cooperation, international programs and institutions, global risk assessments, scientific knowledge and cooperation with the industrial sector, acknowledgment of responsibilities of States and international treaties.

Annex 1 summarizes the principles for environmental protection and sustainable development that were adopted by the WCED Experts Group on Environmental Law; Annex 2 enlists the Commission's members and work.

Context

International governance and relations in the 1980s were characterized by conservatism and free market economics, with manufacturing corporations relocating mainly to Southeast Asian countries. Since many non-western countries faced debt crises, they were supported by the International Monetary Fund (IMF) and the World Bank. In the first half of the decade, the Cold War tensions escalated during President Reagan's administration, to then lessen until the disintegration of the Soviet Union in 1989. Widespread civil wars and conflicts happened in Africa (Sudan, Angola, Uganda and Ethiopia), the Middle East (Lebanon, Afghanistan, Nagorno-Karabakh), Asia (Philippines, Laos) and South America (Chile, Falkland Islands). World population and technological findings increased and the theorization of global warming circulated also within political contexts (Tikkanen, 2023).

Our Common Future, also known as *The Brundtland Report*, was a UN publication elaborated in 1987 by its commission, the World Commission on Environment and Development (WCED) and chaired by Gro Harlem Brundtland, Prime Minister of Norway. This working group, composed of environmental scholars, political and civil personalities, was formed in 1983 to elaborate solutions to ensure economic and social development without depleting environmental resources and ecosystem functioning (Jarvie, 2016). Going over previous approaches to social well-being and rights and environmental issues ("Our common vision", 2018), the report introduces the concept of "Sustainable Development" and indicates its core elements, connecting the issues of environmental degradation, economic growth and poverty through adequate policies (Jarvie, 2016) that considered effects beyond national borders (Massey, 2007). The document, being addressed to governments, organizations and civil societies, focuses on action and protocols (Yoshida, n.d.)

Its content was considered revolutionary, as it challenged the popular belief that natural resources were infinite, advocating for the creation of a balance between social and economic equity and ecological finitude, striving to change the status quo despite staying within it. The publication of the Report favoured the 1992 United Nations Conference on Environment and Development (UNCED) to be held (Cayley, 2015).

Analysis

The analysis reveals mainly frames.

Sustainable Development entails a revision of economic growth and is based on environmental resources and technology. Science and technology are the solutions to climate change and sustainability.

Sustainable Development is the core of the ideology.

It seeks to meet “the needs and aspirations of the present without compromising the ability to meet those of the future” (Chapter 1, II, 49 & Chapter 2, 1), tackling poverty and underdevelopment through “a new era of growth in which developing countries play a large role and reap large benefits” (Chapter 1, II, 49). The two key concepts are “needs”, especially the ones linked to poverty, and “limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs” (Chapter 2, 1). Economic and social goals are thus “defined in terms of sustainability in all countries” (Chapter 2, 2) within “a progressive transformation of economy and society”. Development must be “sustainable in a physical sense” between generations and within each generation (Chapter 2, 3), requiring harmony between resource exploitation, investment direction, technological progress orientation and institutional change (Chapter 2, 15 & Overview, I, 3, 30). A sustainable development strategy would stop “present, often destructive, processes of growth” (Chapter 2, III, 27) by reviving and changing its quality, addressing essential needs, conserving the resource base, reorienting technology, considering environmental and economic aspects together (Chapter 2, III, 28). More generally, this strategy aims for harmony “among humans and between humanity and nature” and a framework encompassing a political system based on citizen participation, a self-reliant and sustained economic system, a social system solving tensions, a production system preserving the ecological base, a technological system in constant progress, a flexible administrative system and an international system of sustainable trade and finance (Chapter 2, IV. 81).

Economic growth is a core component of sustainable development and is evaluated negatively, in the case of its past and current form, and positively, in the case of its new version.

Economic growth has enabled improvements of living standards, achieved however through considerable amounts of materials, energy, chemical and synthetic products, causing vast pollution, without accounting costs of these processes (Chapter 1, I, 9).

Nonetheless, growth needs to be revitalized (Chapter 3,IV, 72), there needs to be “a change in the content of growth, to make it less material- and energy-intensive and more equitable in its impact” (Chapter 2, III, 2, 35). The progressive demand for these resources out environmental pressures and leads to price rises (Chapter 3,IV, 73), widening the resource gap between developing and developed countries, that influence key international bodies and have used a substantial part of the environmental capital (Overview, 2, 17).

Essential needs can be met through “a new era of economic growth” that assures a fair share of resources also to disadvantaged countries (Overview, 3, 28), as inequality represents an environmental problem and a development one (Overview, 2, 17).

This new era would include more rapid growth, freer market access, lower interest rates, greater technology transfer and larger capital flows (Chapter 3, IV, 72).

“Far from requiring the cessation of economic growth” (Chapter 1, II, 49), sustainable development aims to achieve full growth potential as a primary goal (Overview, III, 1, 77), especially where essential needs are not met (Chapter 2, I, 6): developing countries’ economies should grow fast enough to a certain minimum and to a rapid rise in per capita incomes (Chapter 2, III, 1, 29), to help improve the rural environment, productivity and consumption standards, and allow to move beyond dependence (Chapter 3, IV, 75), but especially to contrast absolute poverty (Chapter 2, III, 1, 30). It’s fundamental to prevent the coexistence of high productivity and widespread poverty that also endangers the environment (Chapter 2, I, 6).

The economic sector is salient also because is interconnected with ecology.

This interconnection binds humans in “ever-tightening networks” (Chapter 1, 4) and escalates into a connection between environmental degradation and poverty, reversing economic and potential development (Chapter 1, I, 4). Starting from the fact that “environmental stresses are linked one to another”, as in the case of deforestation, soil erosion and siltation of rivers and lakes (Chapter 1, II, 41), daily overuse of environmental resources for survival further causes material impoverishment and progressively compromises survival (Chapter 1, 3). Poverty destroys the “immediate environment in order to survive” with a devastating cumulative effect (Chapter 1, I, 8). This link is further eroded by international economic relationships that impose on developing countries to export natural resources within a context of instability, adverse price trends and rising debt burden (Chapter 3, I, 4).

Economy is core for human improvement, as much as environmental protection (Chapter 1, II, 42). Bad international economic conditions make problems “unmanageable” (Chapter 3, II, 8), economic difficulties determine “devastating social impacts” (Chapter 3, II, 1, 16) and economic policies have a huge impact, as in the case of incentives “that force overproduction and non-competitive production” and those that strengthen food security and the agricultural resource base (Chapter 5, IV, 1, 52), or higher prices that triggered efficiency gains (Chapter 6, VII, 107).

Economic incentives deriving from conservation policies, incentives being enough to justify environmental protection (Chapter 6, IV, 30), are reductions of economic and fiscal burdens (Chapter 6, V, 42), non-existent costs to implement energy efficiency measures (Chapter 7, VI, 99), efficiency, competitiveness and investment opportunities and sales in the market of pollution control: “it makes long-term economic sense to pursue environmentally sound policies” (Chapter 12, II, 6, 94).

Environmental stress of soils, water, atmosphere and forests and related economic impact are closely linked, not only locally but regionally and internationally (Overview, I, 2, 15), as is also the case of processes in the oceans (Chapter 10, I, 6). Hence, a jurisdiction may cause a negative effect in another area (Chapter 2, II, 22) and conflicts may arise from environmental and development degradation (Chapter 11, III, 1, 37).

Thus, it's important to overcome the tendency to manage a sector alone without considering "intersectoral linkages", such as the "energy-industry connection" (Chapter 2, III, 7, 74) or food strategies that include shifting production, securing livelihoods and conserving resources. (Chapter 5, IV, 44).

A sense of urgency is salient, due to the need to slow down the environmental and related crises and the severity of their impact: "(w)e are now forced to concern ourselves with the impacts of ecological stress" (VI, 15). There are thresholds that guarantee the environmental system's balance to which humanity is close, putting at risk the survival of life at such a speed hard to anticipate related effects (VI, 23); the agricultural use and overexploitation of marginal lands, and fishery and forestry resources makes the conservation of these resources "an urgent task" (Chapter 2, III, 57); groups of "biological diversity are in danger of disappearing" (Chapter 6, I, 7) and "(e)ven the high seas are beginning to show some signs of stress from the billions of tons of contaminants added each year" (Chapter 10, I, 12).

There has been a reduction of energy consumption rates of industrialized countries, "(b)ut the process must be accelerated to reduce per capita consumption and encourage a shift to non-polluting sources and technologies", to reduce pollution in the biosphere and to preserve the global amount of fossil fuel (Chapter 2, III, 62).

If governments prefer to wait for actual and certain evidence of climate change to take action, "it may be too late for any countermeasures to be effective against the inertia by then stored in this massive global system" (Chapter 7, II, 1, 23): "(t)his new reality, from which there is no escape, must be recognized - and managed" (VI,1).

The words "danger" and "threat" are repeated several times to frame the consequences and the extent of these changes: industrial gases threaten to ozone shield layer (I,1,7), uncontrolled farming processes "threaten the environmental resource base" (Chapter 5, IV, 5.2, 95), "(h)abitat alteration and species extinction are not the only threat" (Chapter 6, I, 8), "living resources of the sea are under threat from overexploitation, pollution, and land-based development" (Chapter 10, 1, 9), and managing commercial whaling is essential to prevent it from being "a major threat to the conservation of whale stocks taken as a whole" (Chapter 10, 2.2, 36.).

ENVIRONMENTAL CHANGES ARE A THREAT TO THE ENVIRONMENT and ENVIRONMENTAL CHANGES ARE A THREAT TO HUMANS.

Changes represent "damage to natural systems and threats to the survival, security, and well-being of the world community" (Chapter 1, I, 4.3, 94); in the farming sectors the neglect of small producers, resources degradation, soil loss, chemicals use, deforestation processes within the systems of food production "display signs of crises that endanger their growth" (Chapter 5, I, 10). "Environmental threats to security" emerge globally (Chapter 11, I, 15), constituting "real and imminent threats to the future well-being of all people and nations" (Chapter 11, 4, 35).

The concept and the word "change" are used both negatively and positively.

As “major, unintended changes are occurring in the atmosphere, in soils, in waters, among plants and animals” (Chapter 12, III, 122) and “changes in agricultural, energy, and industrial systems” that cause environmental pressures (Chapter 12, I, 8), policies must do the same (Chapter 12, I, 10). Nations are encouraged to “reorient” economic and sectoral policies (Chapter 9, II, 1, 32), including technology (C 2, III, 6), international trade (Chapter 3, III, 2.4, 56), processes of growth and development (Chapter 2, III, 27). Change should involve also organizations and specialized agencies of the UN system (Chapter 12, II, 6.2.3, 113), attitudes (Chapter 12, II, 6.2.3) and approaches to the issues of environment, development, and international cooperation (Chapter 12, I, 11).

The description of the vulnerable global situation is strengthened by data, descriptions of ongoing physical phenomena and consequences and examples of countries’ struggles. Information is given on numerous topics:

- * industrial production growth (Overview, 2, 13);
- * population growth (Chapter 4, II, 1);
- * degradation of local resource bases (Overview, 2, 16);
- * degradation of agricultural resource bases (Chapter 5, II, 3, 20 & 21 & 22);
- * impact of chemical (Chapter 5, II, 3.2, 25 & 26 & 27 & 28);
- * consequences of use pressure on forests (Chapter 5, II, 3.3, 31);
- * advancements of deserts (Chapter 5, II, 3.4, 32 & 33 & 34);
- * consequences of general environmental degradation (Chapter 5, IV, 5.4, 101);
- * the role of tropical moist forests (Chapter 6, II, 16 & 17 & 20 & 21);
- * data on concentrations of CO₂ and other greenhouse gases (Chapter 7, II, 1, 21);
- * damages of acid precipitation (Chapter 7, II, 3, 36 & 37) ;
- * urban areas types of pollution (Chapter 9, I, 2, 19).

ENVIRONMENTAL ELEMENTS ARE RESOURCES to exploit, as stated also in the title of Chapter 6: “Species and Ecosystems: Resources for Development”.

Among principles enlisted in Annex 1, states have the responsibility to “conserve and use the environment and natural resources for the benefit of present and future generations” (Annex 1, I, 2), by using resources and ecosystems in compliance with the principle of “optimum sustainable yield” (Annex 1, I, 3) and making sure that nations “get their fair share of the resources required to sustain” economic growth required for “(m)eeding essential needs” (Overview, 3, 28).

NGOs should also “have access to information on the environment and natural resources” and participate in decision-making (Chapter 12, II, 4.1, 72). Natural elements are defined as “natural resources” while discussing land, water and forest usage (Chapter 5, V, 106), industry and production processes impact

(Chapter 8, I, 2, 11). Orbit space is also considered a resource (Chapter 10, II, 57 & 78) to be managed internationally.

“Resource”s can refer both to natural and to economic ones. In addition to “resources”, “stocks” and “assets”, other economic terms are frequent: aquaculture is positively evaluated for abundant “yields” (Chapter 5, III, 3.5, 77), technologies allow “value-added products” and improvement of “agricultural productivity and resource management” (Chapter 5, IV, 4.1); system conservation results “the most rational way to approach the problem” (Chapter 6, I, 4); species and their genetic diversity “supply benefits to all human beings” (Chapter 6, VI, 48). Finally, human people are defined “a creative resource”, whose “creativity is an asset societies must tap” (Chapter 4, III, 3, 47).

In addition to being resources, nonhuman species are considered human properties, as diversity loss represents something that “robs present and future generations of genetic material with which to improve crop varieties, to make them less vulnerable to weather stress, pest attacks, and disease” and that “deprives us of important potential sources of medicines and industrial chemicals. It removes forever creatures of beauty and parts of our cultural heritage” Chapter 1, I, 3, 30.

Similarly to “resources”, elements of coastal and marine ecosystems are defined as “living resources of the sea” (Chapter 10, I, 1, 9), “assets” (Chapter 10, I, 2.1, 22) and “stocks” (Chapter 6, I 7) that economic development should consider. Economic considerations “must be more soundly based upon the realities of the stock of capital that sustains it” and should take into account costs of regenerating or losses due to degradation (Chapter 2, 2, 36). “Assets” is used also more generally to refer to species and natural ecosystems (Chapter 6, VI, 50).

Ecosystems and species are also defined as a “treasure sadly depleted” (Chapter 6, I, 11), a term that in the collective imagination of adventure stories refers to something precious to conquer.

Extinction results in “a major economic and resource issue” (Overview, 3, 54) and the importance of preserving “living natural resources - plants, animals, and micro-organisms, and the non-living elements of the environment on which they depend” is strictly linked to their ever-expanding role within development (Chapter 6, I; 2) and the material benefits they provide (Chapter 6, I, 7). Wasteful exploitation of the tropical forests equals “enormous losses of potential revenue to the government, and the destruction of rich biological resources” (Chapter 6, IV, 41); “(f)isheries and aquaculture are critical to food security in that they provide both protein and employment” (Chapter 5, III, 3.5, 76).

Global commons, such as Antarctica or outer space, are “part of the common heritage of mankind” (Chapter 10, II, 56), whose use management should be addressed by governments (Overview, III, 100), further explored in Chapter 10.

Ecosystems and living beings are erased, being called “resources” or grouped in umbrella terms: “species” throughout all Chapter 6, “livestock” (Chapter 1, I, 3, 25), “vital processes” (Chapter 6, I, 2), “ocean life” (Chapter 10, I, 1, 13). Specific animals and plants are nominated on the basis of their importance for human

welfare, such as earthworms, bees, and termites (Chapter 6, I, 11), maize and wheat (Chapter 6, IV, 31) and phytoplankton and fish larvae, who are at the basis of ocean food chains (Chapter 10, I, 1, 13).

ENVIRONMENTAL PROTECTION IS A HUMAN RIGHT: “(a)ll human beings have the fundamental right to an environment adequate for their health and well-being” (Annex 1, I, 1) and states have the duty of environmental and natural conservation for “the benefit of present and future generations” (Annex 1, I, 2).

Analysis, considerations, practices and measures have therefore an anthropocentric take: “efforts to safeguard Earth's millions of species” are necessary due to “the many important contributions to human welfare” (Chapter 6, I, 3&5). The Report is addressed to people, being the concern of the Commission (Overview, IV, 107).

Considerations on the use of wood as an energy source and related issues of overexploitation (Chapter 7, IV, 64), as well as pollution damage (Chapter 8, I, 2, 19), chemical production and use (Chapter 8, I, 5.1, 74), industrial pollution and resource degradation (Chapter 8, III, 1, 48), contamination of water due to poor waste management (Chapter 8, III, 5.2, 77), the uncontrolled physical expansion of cities (Chapter 9, 1, 13), air, noise, solid waste and water pollution in developing countries (Chapter 9, I, 1, 2 & 12), nuclear contamination (Chapter 11, I, 1, 20) are made focusing on repercussions for human health, communities and development.

Development itself is for humans, being “(t)he satisfaction of human needs and aspirations in the major objective of development” (Chapter 2, I, 4).

Every human is entitled to a decent life and there are no sets of villains and victims, everyone has to take into account the consequences of their acts on others, ceasing to “pursue narrow self-interest” and assuming that others will behave for the sake of society (Chapter 2, II, 20). When discussing the aspect of population growth, it's specified that this “issue is about humane and not about numbers”. People do not “merely fit”, they are not just “consumers”, but they are the beneficiaries of sustainable development and the well-being it enables (Chapter 4, I, 14).

ENVIRONMENTAL PROTECTION IS A SCIENTIFIC ISSUE.

Efforts must be far-reaching, as argued in Chapter 8, III: 3: “Broaden Environmental Assessments”. Scientific assessments of land capacity must favour the conservation of agricultural resources (Chapter 1, III, 3, 57) and mapping should verify whether threats from acidification exist (Chapter 7, II, 2, 39). Antarctica conservation measures “require increased data collection, monitoring, and environmental assessment” (Chapter 10, III, 1, 97); investments should be “subject to prior environmental assessment” (Chapter 3, III, 3, 62); governments should comply with protocols limiting, monitoring and reporting the use of chlorofluorocarbons (Chapter 7, II, 1, 27); industries have acquired “pollution control equipment, detoxification and waste disposal technology, measurement instruments, and monitoring systems” (Chapter 8, II, 1, 24); progress in space technology could favour the development of remote sensing and satellite imagery, so that they can “facilitate optimal use of the Earth's resources, permitting the monitoring and assessment of long-term trends in

climatic change, marine pollution, soil erosion rates, and plant cover” (Chapter 8, II, 3, 43) and can allow for inventories of marine resources and monitor changes in them (Chapter 10, I, 2.1, 22). Development agencies should support developing countries to widen “their capacity for environmental assessment” (Chapter 3, III, 1.2, 38) and developing countries are encouraged to create assessment bodies that would help to “evaluate the environmental impact and sustainability of planned development projects” (Chapter 8, III, 3, 60). The Report designs “a four track strategy” to tackle climate change that includes “improved monitoring and assessment” and “increased research” (Chapter 7, II, 23) and urges international bodies to “develop a carefully integrated strategy of research, monitoring, and assessment of the likely impacts on climate, health, and environment” (Chapter 7, II, 29). UNEP’s major priorities and functions include “to monitor, assess, and report regularly on changes in the state of the environment and natural resources”, “to support priority scientific and technological research on critical environmental and natural resource protection issues” and “to develop criteria and indicators for environmental quality standards and guidelines for the sustainable use and management of natural resources” (Chapter 12, II, 2.2, 46).

SUSTAINABILITY IS A TECHNOLOGICAL ISSUE.

Broadly, technology improves productivity, living standards, health and overall conservation of the natural resource base (Chapter 8, I, 3, 39), since it allows for productivity increases and reduces pressure on resources (IV, 2). More specifically, technologies leads to an increase in food production (IV, 2) and rural productivity and employment (Chapter 5, 4.1). It results of utmost importance in sub-Saharan Africa, Asia and Latin America countries to provide sustainable livelihoods within contexts of “unreliable rainfall, uneven topography, and poorer soils” (Chapter 5, IV, 4.1, 80). Other technologies, such as energy-saving biological systems, would help “small and medium sized industries for pollution control or waste disposal” (Chapter 8, 4, 63) and general scarcity is contained through more efficient “use, recycling, and substitution” (Chapter 2, 2, 63).

2.3 The Future We Want

*Summary*¹⁰

The Future We Want is the outcome document of the United Nations Conference on Sustainable Development and contains the framework for the creation of a set of measurable targets for the achievement of Sustainable Development.

The Resolution acts as a renewal of state parties' commitment to sustainable development. Poverty still represents the most severe issue for human and sustainable development, which is achieved through the integration of economic, social and environmental spheres and democracy at all governance levels.

Adherence to Rio principles is reaffirmed, as well as to previous action plans. The progress of integration, implementation and coherence to these outcomes is assessed, including considerations on poverty, employment, climate change, gender equality and international law. The importance of governments, legislative bodies and civil society is stressed, as well as the one of indigenous and scientific communities, and partnerships between the private and public sectors are encouraged. The importance of a green economy within sustainable development is stressed and standards for green policies are enlisted, including respect for sovereignty, attention to developing countries' needs and "sustained, inclusive and equitable economic growth" (pp. 2, pt. 4). The power of technology in exchanging information is emphasised and financial and industrial entities are encouraged to take an active role in sustainable development.

An institutional framework is functional to favour sustainable development in its three dimensions: economic, social and environmental. Actions are enlisted to strengthen the framework, outlining guidelines and international bodies.

Further guidelines are identified specifically for environmental development and financial bodies.

The thematic areas for action are:

- * poverty eradication;
- * food security and sustainable agriculture;
- * energy;
- * sustainable tourism;
- * sustainable transport;
- * sustainable cities and human settlements;
- * health and population
- * employment, work and social protection;
- * ocean and seas;
- * small islands;
- * least developed and developing countries and Africa;

¹⁰ To read the full text of the Resolution, visit <https://sustainabledevelopment.un.org/futurewewant.html>.

- * disaster risk reduction;
- * climate change;
- * forests;
- * biodiversity;
- * desertification, land degradation and drought;
- * mountains;
- * chemicals and waste;
- * sustainable consumption and production;
- * mining;
- * education;
- * gender equality.

From these areas development goals must be outlined, renewing commitments initiated through the Millennium Development Goals, and implemented through financial action, technological progress, capacity-building improvement and international trade benefits.

Context

The Resolution is one of the outcome documents of the United Nations Conference on Sustainable Development, also called “Rio +20”, held in 2012 in the Brazilian city of Rio de Janeiro. The conference led to the establishment of more than 700 voluntary commitments and enabled new partnerships that would favor the attainment of sustainability objectives. The event started with the projection of the documentary *Welcome to the Anthropocene*, to stress the evident need not to cross the biophysical limits of the planet (*Rio+20 Outcome: The Anthropocene Challenge*, 2012). The global concerns were very similar to the challenges of the previous Rio Earth Summit Conference (1992), in their exacerbated evolution: economic and population growth putting stress on ecosystems (Ki-Moon, 2012). The three-pillars framework of sustainable development, elaborated in the 1992 conference through the *Agenda 21* document, gave shape once again to integrated economic, social and environmental measures (*Rio 20 Conference Summary*, 2016).

As part of a set of measures for the implementation of sustainable development, the document contains the blueprint of the Sustainable Development Goals (SDGs), which would enter into force in 2015, and the decisions to create a political forum and to strengthen the UNEP (United Nations, 2014). These goals resumed the Millennium Development Goals (MDGs) of *Agenda 21*, which contributed decisively to contrast child and maternal mortality, the spread of infectious diseases and undernourishment in low-income countries (Rasmussen, 2017). The SDGs are divided into 17 goals and 169 sub-targets, acting as basis for national or regional plans. They are non-binding and, differently from MDGs and related indicators later developed by other international bodies, are less precise and measurable. Doubts have emerged concerning

the potential inconsistency of these goals, considering that socio-economic development entails production growth and hence depletion of raw materials and CO2 emissions. This “inherent conflict” however could be sidestepped by concentrating on health programs and ecological sustainability (Bali Swain, 2017).

Despite not being a treaty, the document’s general call contributed to making the goals a priority on the global agenda, trying to revert the idea according to which sustainability and growth are incompatible priorities.

The resolution includes the financial commitment of voluntary pledges in support of development projects and the creation of a fund to promote a green economy, emphasizing its feasibility at the domestic level and its potential to be profitable. However, this approach has been also criticized, due to the economic value that would place on ecosystems and their function, “financializing nature” (*Examining Rio+20’S Outcome*, n.d.). The lack of new financial pledges was associated with a global context of economic crisis, missing to recognize the link between a volatile economic and financial system and the “sustainability crisis” (*Rio 20 Conference Summary*, 2016).

Concerns emerged also due to the lack of legally binding responsibilities, hindering the achievement of specific targets in specific timeframes (“*Future We Want*” *Proposals Are Not the Future We Need: WWF*, 2012). Similarly, no accountability mechanism has been designed (*Rio 20 Conference Summary*, 2016).

The various doubts have converged in arguing that the document lacks concrete measures and immediate measures in support of developing countries struggles (*Examining Rio+20’S Outcome*, n.d.), deepening the tension between the global South and North (*Rio+20 Outcome: The Anthropocene Challenge*, 2012), commitment to eliminate fossil fuel subsidies, specific mention to physical environment thresholds and tipping points (*Rio 20 Conference Summary*, 2016) and the absence of a sustainability approach based on rights, excluding also the right to a healthy environment (*Rio+20 Outcome: The Anthropocene Challenge*, 2012).

Analysis

The analysis reveals mainly frames.

Sustainable Development is technical, human-centred. Environmental protection is scientific and designed to preserve resources.

Sustainable development is the core concept of the document’s ideology: the very conference served to renew commitment to it and ensure its promotion also intergenerationally (I,1). It needs “democracy, good governance and the rule of law, at the national and international levels” (10) and it requires poverty eradication (I, 2) and a balanced integration of the three aspects (3; 75; 93; 94; 100; 189). The SDGs are designed to measure and accelerate progress on “remaining gaps” and “new and emerging challenges” (V, A, 104), they are “action-oriented”, “focused on priority areas” (247) and “based on Agenda 21 and the Johannesburg Plan of

Implementation¹¹ and extension of the MDGs (246). Their nature is global but “universally applicable to all countries” (247).

The main focus of sustainable development is poverty eradication, “the greatest global challenge facing the world today” (I,2). Progress has been made but it’s still uneven (105) and can be fostered by considering the interrelation between “social integration and protection” and “full and productive employment” (147), “in both rural and urban areas” (151) and especially of those who “depend directly on ecosystems for their livelihoods” (30). Multiple measures of the document include the support to developing countries in this effort (23), “access to sustainable modern energy services” (125) and promotion of green economy policies (63). Additional salience to the issue is given by using expressions such as “matter of urgency” (I, 2) and “deeply concerned” (21).

DEVELOPMENT IS TECHNICAL.

All the measures included in the document are legislative, institutional, economic and financial, technological or proving welfare, following “an action- and result-oriented approach” that takes into account “interlinkages among key issues and challenges” (76).

Salience is also given to economic growth: “a key requirement” for poverty eradication and achievement of sustainable development, is “sustained, inclusive and equitable economic growth” (106). Despite acknowledging the necessity to complement gross domestic products with other indicators (38), GDP targets are set for developed countries to achieve by 2015 as an official development assistance commitment and countries are urged to “make additional concrete efforts towards the target” (258). Instruments that reinforce economic growth include sustainable transportation (132), green economy policies (62) and international trade, defined as “an engine for development and sustained economic growth” (281). To foster sustainable production two measures are mentioned: phasing out “harmful and inefficient fossil fuel subsidies” (225) and a ten-year framework of programs, that are voluntary (226).

The document takes an anthropocentric perspective: “people are at the centre of sustainable development”, whose achievement “would benefit all” (6). Everyone is entitled to “freedom, peace and security” and human rights (8), as enshrined in the Universal Declaration of Human Rights (9). Sustainable Development must be inclusive (31), benefiting from the participation of all cultures and civilizations (41): Indigenous peoples (49) and mountain regions communities (211), young people (50), women (31), workers (51), farmers, “fisherfolk, pastoralists and foresters” (52), “women and men living in poverty” (151), “small-scale and artisanal fisherfolk and women fish workers”, communities from developing countries and small islands (175). Among different groups and identities, specific salience is given to women and their empowerment. Gender equality and women empowerment is listed as both among the main targets of sustainable development (11; 31; 45; 120) and core rights (8; 157). Women feature among the main social groups (43; 109; 135) and whose

¹¹ An agreement that focuses on the conditions preventing sustainable development. From <http://www.un-documents.net/jburgdec.htm>.

progress, being women among the most affected groups by poverty (105), is monitored through gender-sensitive indicators (104) and data (V, A, 239). They are the recipients of green policy measures (58;62), health (146) and employment (152; 153; 154; 118) decisions and access to resources (175; 205), as well as of specific goals among the thematic areas and cross-sectoral issues. Outcomes regard education (229; V, A, 241), participation (V, A, 236; 242), politics (V, A, 236), within the UN system (243) and general involvement (V, A, 237; 240), access to justice (238) and basic services and economic opportunities (241), financial support (244).

ENVIRONMENTAL PROTECTION IS (IMPLICITLY) AS A HUMAN RIGHT, as a component of the “right to development and the right to an adequate standard of living” (8), being functional to human activities, survival and health. The impact of the changing environment is “on human well-being” (90) and protecting the climate system is “for the benefit of present and future generations of humankind” (191). Biological diversity has “ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values”, maintaining ecosystems that “provide essential services” core to development and well-being (197). The Resolution supports “the consideration of the socioeconomic impacts and benefits of the conservation and sustainable use of biodiversity and its components” (201), highlighting the roles of marine ecosystems and fisheries “for food security and nutrition” and “livelihoods of millions of people”(113), of forests contribution to “social, economic and environmental benefits” (193), of mountain regions role in “providing water resources to a large portion of the world’s population” (210). It’s essential to strengthen sustainable agriculture that maintains those “natural ecological processes that support food production systems” (111) and sustainable livestock production systems “to eradicate and prevent the spread of animal diseases”, as these animals’ lives are intertwined with the ones of farmers and shepherds (112). Access to safe drinking and basic sanitation must be guaranteed also with “integrated water resource management” (120), “sustainable cities and urban settlements” should represent “a safe and healthy living environment for all” (135), because “health is a precondition for and an outcome and indicator of all three dimensions of sustainable development” (138). The Assembly therefore commits “to strengthen health systems” (141). Likewise, environmental protection is functional to sustainable development: climate change is also considered “a crisis” whose impacts affect sustainable development and the survival of nations (25). However, harmony with nature would allow “to achieve a just balance among the economic, social and environmental needs of present and future generations” (39), but the gravity of climate change impacts to all countries is currently undermining the achievement of sustainable development and Millennium Development Goals (25). As natural resources and ecosystems support “economic, social and human development” (4), environmental protection is both a goal and a requirement for sustainable development, whose achievement is threatened, together with “food security and efforts to eradicate poverty” by climate change (190).

CLIMATE CHANGE IS A SCIENTIFIC PROBLEM, that requires scientific and technical solutions.

States have the responsibility to “sustainably manage” ecosystems that maintain “water quantity and quality” (122), regional organizations in charge of “fisheries management” shall pursue undertaking “performance reviews” and sharing the results (172), “sustainable forest management” requires support from “areas of finance, trade, transfer of environmentally sound technologies, capacity-building and governance” (193), “area-based conservation measures” that are “based on best available scientific information” should be provided in marine areas (177). “(s)cientifically based” methods and “indicators for monitoring and assessing” are required also to address desertification, drought and land degradation (208), as well as “science-based assessments” are necessary to understand the risks of chemical substances use.

“(I)nclusive, evidence-based and transparent scientific assessments” and “access to reliable, relevant and timely data” are part of the institutional framework for sustainable development (76) and activities of the forum¹² include to “(s)trenghen the science-policy interface through review of documentation” also by collecting “dispersed information and assessment” and “(e)nhance evidence-based decision-making” (85).

CLIMATE CHANGE IS A GREAT CHALLENGE, whose sources are increasing, causing “profound alarm” and whose impactful consequences cause deep concern, making countries “vulnerable” and “threatening food security and efforts to eradicate poverty and achieve sustainable development” as a result of widespread depletion of ecosystems and biological cycles (V, A, 190).

Within the resolution NON-HUMAN ANIMALS, VEGETATION AND NATURAL PROCESSES ARE RESOURCES and are called as such. The protection and the management of the “natural resource base of economic and social development” are objectives and essential requirements for sustainable development (4) and protection of the climate system guarantees “the benefit of present and future generations of humankind” (191). It’s essential to provide people with “decent jobs and incomes” to foster “sustainable livelihoods and practices and the sustainable use of natural resources and ecosystems”, as well as to encourage government initiatives that “create jobs for poor people in restoring and managing natural resources and ecosystems” (30). Green economy policies framework should include respecting “each country’s national sovereignty over their natural resources” (58) and increasing “resource efficiency” (60). Measures contrasting water scarcity should incorporate “non-conventional water resources” (123), water bodies are protected by the “legal framework for the conservation and sustainable use of the oceans and their resources” within the Convention on Law of the Sea (158) and another international instrument is being developed for the “conservation and sustainable use of marine biodiversity beyond areas of national jurisdiction” (162). Attention is directed to “alien invasive species” and climate change that threaten “marine ecosystems and resources” (164), as well as coastal ecosystems (166), to maintaining or restoring fisheries to levels “that can produce maximum sustainable yield” (168), also by opposing illegal and unregulated fishing that deprives “countries of a crucial natural resource” (170). Similarly, forests offer a “wide

¹² An intergovernmental body instituted the Assembly that would monitor the progress of sustainable development implementation.

range of products and services” (193), mountain ecosystems provide “water resources to a large portion of the world’s population” (210) and mineral resources “make a major contribution to the world economy and modern societies” (227).

Despite formally promoting “harmony with nature” and calling for holistic approaches to sustainable development (41) given that the “planet Earth and its ecosystems are our home” and that some communities use the expression “Mother Earth” (39) and despite the “intrinsic value of biological diversity” (197), natural elements are erased. They are generally labelled, as seen, “resources”, they are gathered under umbrella terms such as “ecosystems” (111), “biodiversity” (111; 130), “wildlife” (130) “the environment” (213; 221), plant species are “crops” and “forestry” (111) or “flora” (130), and agriculture animals as “livestock” (111; 112), aquatic species are grouped as “fisheries” (111), “marine ecosystems” (113 & 168), “marine biodiversity” (162).

The document is a Resolution, therefore the text is persuasive, procedural and imperative. Despite presenting few data concerning climate change-related climate and weather phenomena, facticity is still proved through the scientific and technical measures the Assembly urges to take and the widespread use of the present tense. Projections about future emissions are used to enforce the necessity of action (191). Calls to authority are represented by mentioning numerous UN documents, plans and conventions, especially present in the section “A. Reaffirming the Rio Principles and past action plans” and concerning general UN principles and mission, such as the Universal Declaration of Human Rights (9). The strong commitment to the claims is recognisable by the pervasive use of “we” to introduce each point. The use of “must” is very limited, being used twice: to stress that colonial and foreign occupation “must be combated and eliminated” to preserve the right of self-determination of communities (27) and that “sustainable development must be inclusive and people-centred” (31). However, the feelings of concern and urgency are frequently repeated. Deep concern is expressed for the excessive number of people living in extreme poverty and undernourished (21), the high level of unemployment and low work conditions (24; 148), the gravity of climate change impacts (25), of pollution (163) and fertilization (167) of oceans, the increase of greenhouse gases emissions (190). The alarm is also communicated for the consequences of periodical famine and drought in Africa (205), the discrepancy between emissions reduction pledges and current pathways of emissions and related consequences of cumulative effects (191) and the unsafe management of chemicals (215), the inhomogeneity of development progress in small island developing countries (178). Commitments to urge action include achieving sustainable development (12; 13), together with climate change (25) and biodiversity loss (198) halting and climate change adaptation (190), contrasting these very challenges faced by small island developing nations (33), enabling disaster risk reduction and disaster resilience (186), fighting unsustainable production and consumption. Other issues that need to be urgently addressed include people health’s needs (139), sustainable use and conservation of marine biodiversity (162), implementation of science-based management plans (168) and non-legally binding instruments for forests (194), measures to

deal with consequences of famine and drought in Africa (205), to reverse land degradation (206) and to fight corruption in every form and at all levels.

2.4 Global stocktake

*Summary*¹³

The document is the first global stocktake that assesses the international effort to address climate change under the Paris Agreement.

It opens with several mentions of principles of the Paris Agreement that guide action, including the aim to contrast climate action within the context of sustainable development, “the principle of common but differentiated responsibilities and respective capabilities” (*pp.* 1), the periodical assessment of stock implementation. Climate change is a “common concern” (*pp.* 1), linked to food security, ecosystem protection and biodiversity loss and the achievement of SDGs.

The first section stresses the relevance of tipping points of global warming and the negative aspects of the current climatic situation, it mentions scientific data that supports action and elements in support of the achievement of the Agreement’s goals, such as transferring finance, capacity-building and technology, social and civil participation. A point is raised regarding the delay in implementing key measures.

The following section includes a general assessment of the progress made towards the long-term goals of the Agreement. Although the so-far results obtained through the Nationally Determined Contributions are appreciated, findings require to carry out greater emissions reductions. These reductions will be supported by increasing renewable energy capacity, reducing and eliminating non-renewable sources of energy and other types of emissions. Other actions include implementing domestic mitigation measures, halting deforestation and embracing sustainable lifestyles.

Adaption efforts must be carried on globally, with the support of specialized bodies such as UNFCCC, also to make up the gaps in implementing measures. More extreme weather events are expected, thus reinforcing the need to find adaptation solutions through assessments and planning. Parties should design the national communication adaptation and synthesis reports. Areas specifically involved include water scarcity, food production, health, infrastructures, poverty eradication and cultural heritage.

Several financial measures are listed, based on estimations, with the support of the private sector, with special attention to the needs of developing countries and through the Financial Mechanism. Contributions are for the Green Climate Fund, the Adaptation Fund the Least Developed Countries Fund and the Special Climate Change Fund. Calls to parties are made about the importance of financial tools and of reforming the multilateral financial architecture.

¹³ It’s possible to access the full document at https://unfccc.int/sites/default/files/resource/cma2023_L17_adv.pdf.

The role of technology is positively underlined, although there are gaps in development and transfer. There are several encouragements to implementing the Technology Mechanism initiative assuring financial and capacity-building support, cooperating on innovation and scaling up clean technologies production. A technology implementation program is established.

Capacity-building is just as important. Progress has been made, but gaps still exist and effective capacity-building requires coherence and cooperation. Requests made include identifying developing countries' needs, new activities and support from the Financial Mechanism and the Adaptation Fund.

Parties should enhance efforts to minimize and address loss and damage of negative effects of climate change, which will increase, also through the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts. Actions and support should be within coherence, complementarity, synergies and transparency. The Executive Committee of the Warsaw International Mechanism are in charge of elaborating guidelines and the secretariat has the task of delivering a synthesis report.

Overall, it's important to consider with positive and negative impacts of response measures, thanks to the support of the Katowice Committee of Experts on the Impacts of the Implementation of Response Measures, which is asked to intensify efforts to implement previous recommendations. Parties are encouraged to develop methodologies and case studies, partnerships and sustainable development policies, to provide information on national assessment.

International cooperation enables the achievement of the Agreement's goals, sustainable economic growth and development, general climate action, together with the help of civil society, economic and financial institutions, domestic authorities, Indigenous Peoples, local communities, youth and research institutions. Parties are urged to join efforts with non-parties at all levels.

Parties are required to proceed with Nationally Determined Contributions and domestic mitigation measures following the Agreement's modalities, as well as to submit their transparency report and national inventory report and information on their learning out of the stocktake. The importance and the role of all the insights that emerged during the stocktake is underlined: scientific knowledge, Paris Agreement Implementation and Compliance Committee, Action for Climate Empowerment, Intergovernmental Panel on Climate Change and climate policies that incorporate human rights, gender, youth and employment aspects.

The Chair of the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation are in charge of initiating technical dialogues. All the bodies mentioned in the document will continue their work and comply with their responsibilities.

To conclude, considerations and implications derived from the stocktake will be implemented in the following actions.

Context

COP (Conference Of Parties) is the decision-making body of the United Nations Framework Convention on Climate Change (UNFCCC), composed of representatives of each member State. COP is held since 1995 every year to review and decide on the implementation of the Convention and its instruments, including national communications, emission inventories and measures efficacy. The presidency rotates among the UN regions and the location can too if a Party offers to host the session, otherwise the Conference takes place in Bonn, where the secretariat is located (UNFCCC, 2019). These summits have the potential for international agreements that set guidelines for national measures, at the same time enabling “near-universal climate action” (Poynting, 2023).

The UNFCCC is an international treaty drawn up to prevent harmful anthropogenic disturbance to the climate system and takes action on mitigation, adaptation, finance, technology, reporting and transparency. The treaty entered into force in 1994, was created through the 1992 Rio Convention, and currently counts 198 party States; it was first created to urge states to act on climate warming when fewer data could back up the urgency. The general goal is stabilizing GHG concentrations in the atmosphere at a level that doesn't cause harmful interference and at the same time allows ecosystems to adapt to human-induced changes, safeguarding food production and economic development.

As the most polluting countries, Western nations have to cut a larger emissions quota and are supposed to provide with financial support to the measures against climate change of non-Western countries, where the climate damage is greater (UNFCCC, 2024).

COP28 was held after a year of extreme weather events, so far recorded as the hottest ever. It's the biggest climate conference ever held: almost 100 hundred politicians, diplomats, journalists and activists participated. It was located in Dubai (Poynting, 2023), where the ban on protesting in the United Arab Emirates (UAE) was violated by activists marching to condemn the Gaza invasion. Choosing the UAE as the host country and Sultan al-Jaber as the chairman was perceived as controversial and gave rise to allegations the UAE would use COP to make oil and gas deals (Carbon Brief, 2023). The UAE is one of the biggest oil-producing countries and the Sultan is the chief executive of the national oil company, which is incidentally expected to expand future production (Poynting, 2023). Others believed that including oil-producing countries was necessary precisely because of the nature of the agreements (Carbon Brief, 2023). Decisions and considerations included setting global targets for 2030 on renewable energy capacity, strengthening low- and zero-emission technologies, enabling a “loss and damage” fund (Poynting, 2023), accelerating drastic reduction of non-carbon dioxide, setting the framework to protect human and ecosystems well-being and health for the Global Goal on Adaptation, establishing emissions cut from

cooling devices (Carbon Brief, 2023), establishing funding for the Green Climate Fund and the Adaptation Fund (Stuti, 2023).

The most remarkable decision was to include an explicit call out of fossil fuels, a “phasing out”, after 30 years of hesitation and delays, despite the opposition of OPEC members within the group of Arab nations (Carbon Brief, 2023). However, no further indications on practical actions nor timescale were mentioned, but only the suggestion to do it “in a just, orderly and equitable manner” (Poynting, 2023). Moreover, the scope of “fossil fuels in energy systems” didn’t include their use in industry, agriculture or chemical feedstocks.

Other criticisms concerned the inadequacy of the funds in support of non-Western countries, the choice not to include the principle of “common but differentiated responsibilities and respective capabilities” in every pledge, the decision to implement only voluntary carbon markets commitments and the lack of outcomes in Action for Climate Empowerment. Moreover, financial operations would involve the support of the World Bank, historically considered by recipient countries too rigid and the calls for strengthening renewable energy capacity and energy efficiency by 2030 didn’t include numerical targets.

Overall, the final version of the global stocktake was regarded as much less ambitious than previous draft versions (Carbon Brief, 2023) and previous summits were accused by some of greenwashing and of not taking adequate climate action.

Discussions and outcomes have renewed the 2015 target of limiting the rise of long-term global temperature to 1.5°C (Poynting, 2023), despite some reports indicating the near-inevitability of crossing this threshold (Carbon Brief, 2023).

It’s argued that this target of global mean temperature is the result of a political decision, scientifically informed but not specifically defended by scientific assessment. The very baseline is a potential drawback, since the definitions of pre-industrial conditions are defective.

There are many other indicators and targets, such as concentrations of greenhouse gas in the atmosphere, energy uptake, sea level rise, acidification of oceans, rates of temperature change, changes of regional climate, specific unacceptable local impacts, avoidance of tipping points such as the Greenland ice sheet loss, yearly emission reductions, timing of global zero emissions, or economic quantities such as the costs of environmental damage.

Setting a target for limiting global mean temperature is not sufficient, because a global change doesn’t necessarily lead to local consequences: some changes may be abrupt, threshold behaviour can be a function of equilibrium temperature and small local changes may be positive. Moreover, further research is needed to map what its local impact would be and change in time and how it differs from 1.5 °C or 2.5 °C.

A 2 °C temperature rise looks small and doesn’t convey urgency and it is unknown whether temperature targets represent a threshold not to be exceeded or long-term goals.

The 2 °C target stems from past IPCC¹⁴ findings of high risks associated with above-2°C warming, but more recent assessments proved that the temperature rise of less than 1°C has already provoked global consequences.

Irreversibility of impacts, due to additional feedback in warming caused by changes in vegetation, ice sheet area and permafrost surfaces, together with difficulty in tracking progress add up to inconsistent and differentiated participation of countries in global climate action (Knutti et al., 2015).

Since the late 1950s, there has been progressive attention to the concentration of CO₂, which however has become "excluding". In 1988 the (IPCC) was created and its first report was published in 1990. Negotiations on an international treaty on climate change lasted until 1994, when The UN Framework Convention on Climate Change (UNFCCC) was founded. In 1997 the Kyoto Protocol was created, expanding the UNFCCC, which designed carbon trading and other economic instruments to reduce emissions, without specific commitments. Similarly, the 2015 Paris Agreement included "pledge and review" mechanisms, but without being binding. The historical evolution of international relations on climate action has led many to doubt the effectiveness of the UN's role (Hudson, 2019).

There have been multiple calls for reforming the UNFCCC, mainly focused on modifying the consensus principle for decision-making, which slows down progress. Other suggestions argue that reforms should limit the influence of the vested interests involved in decision-making processes, as they can obstruct climate action policies through the preservation of the status quo and business-as-usual. One of the strategies to overcome impasses is limiting access to non-Parties however preserving the inclusivity of processes (Naghme Nasiritousi et al., 2024).

Analysis

The analysis revealed two main frames on climate change, which is defined as a threat escapable thanks to technology. The risks deriving from climate change corroborate the need to implement the measures under the Paris Agreement.

The main component of ideology is the content of the Paris Agreement.

References to the articles of the agreement are continuously reiterated. The document opens with stating the aim of the agreement: "to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty"(1; 6). The agreement also contributes to "strengthen the global response to the threat of climate change" (1), "in a nationally determined manner, action and support" (II). The current inadequacy of GHG emissions trajectories is criticised (24), together with the overall lack of

¹⁴IPCC is an intergovernmental body of the United Nations that regularly publishes assessments on scientific research on human-induced climate change and its consequences (from <https://www.ipcc.ch/about/>).

collective alignment of Parties towards the goals and Agreement purpose (2) in order to reduce climate change impact (3).

Mitigation efforts within sustainable development can increase efforts in terms of reductions, which can again be widened through “policies that shift development pathways towards sustainability” (16), such as the one that covers 87% of global GDP with climate, carbon, GHG neutrality (20). Parties are requested to collaborate to create an international economic system based on “sustainable economic growth and development” (154).

CLIMATE CHANGE IS A THREAT.

Dangerous effects on society, the economy and the environment, such as extreme climate and weather impacts and temperature increases, will worsen (126).

Throughout the document concern for insufficient progress on climate action and a sense of urgency are salient.

There has been progress on mitigation, but “Parties are not yet collectively on track” regarding the goals of the Agreement (2), as well adaptation measures show a lack of “adequacy and effectiveness” (48) and the adaptation finance gap is expanding (81). 2020 emissions reduction targets for developed countries were not achieved (17) and overall GHG global emissions projections are not compatible with the temperature goal of the Agreement (24). Gaps are present in technology transfer and development (114) and in the implementation capacity of the Agreement (103).

Acceleration on implementing measures is thus needed for mitigation (31) and adaptation support and actions (63), integration of nonmarket approaches for development and poverty eradication (32), scaling up of adaptation financial pledges (86) and use of available clean technologies (108). Developed countries are urged to provide general support (188) and Parties together with non-parties are urged to “join efforts to accelerate delivery” (161).

Callings to action are based on the facticity of climate data and projections: findings gathered in the Sixth Assessment Report of IPCC show that 2023 will likely be the warmest year in recorded history, that emissions will peak (4) between 2020 and 2025 (26) 1.1°C has been mainly caused by GHGs emissions, with global consequences, but the response is still inconsistent (15) and more ambitious NDCs are required to adequately reduce emissions (21). Though, “near-term mitigation and adaptation actions” to keep global warming below the 2 °C would significantly weaken climate change impacts (3; 53), which have already been devastating and will increasingly be as such (22). Economic and non-economic damage will be especially severe for developing countries (129) and the amount of usable carbon budget respecting the Paris Agreement’s limits is small and being quickly depleted (25).

CLIMATE CHANGE IS A TECHNICAL ISSUE: measures indicated by the stocktake concern carbon dioxide and non-carbon-dioxide emissions (27 & 28) and related strategies (40), energy systems and capacity (28), use

of fossil fuels in energy systems and subsidies (28), Nationally Determined Contributions (39), adaptation targets (63), food and agricultural production and distribution, nature-based solutions, basic essential services, infrastructure that is climate-resilient (63). And a framework for adaptation (64).

Contrasting climate change is essential for human well-being: for example, the conservation of water-related ecosystems enables “climate adaptation benefits and cobenefits” (introduction). The majority of measures are related to human rights (introduction) and activities: potable water, food, health, settlements, poverty and culture (63).

ENVIRONMENTAL PROTECTION IS A HUMAN RIGHT, the right to a “healthy and sustainable environment” (introduction) and is connected to “economic, social and environmental benefits such as improved resilience and well-being” (55). Biodiversity loss is framed within the context of the SDGs (introduction), the importance of protecting marine and forest ecosystems is emphasised, as they act as sinks and GHG reservoirs and concern is expressed for the vulnerability of developing countries and their population, “as well as the ecosystems that they depend on” (122).

Everyone is entitled to human rights and protection, especially when belonging to diverse social groups and/or vulnerable categories, the right to development and intergenerational equity, through the work of Parties (introduction).

Among the measures listed, one concerns the reduction of climate impacts on ecosystems and biodiversity, together with their sustainable use and nature-based solutions (63). Despite “the importance of ensuring the integrity of all ecosystems” and mentioning the concept of “Mother Nature” (introduction), the physical environment and processes, plant and animal species, are erased.

They are mentioned under umbrella terms and because of their benefiting humans.

2.5 Further considerations

The documents belong to the discourse of diplomacy and represent the formal expression of the UN opinion. They are different in nature, being a declaration, a report, a resolution and a stocktake, but they share basic characteristics, such as the structure of the preamble and operative part, -ing forms, performative verbs such as “call”, “decide”, “request”, the use of inclusive “we” -but in the last document, in which the third person is instead used-, and modals “must”, “should” and “shall” to express obligation and connection to future. The elements relevant to the ecolinguistic analysis were sometimes hard to detect, due to the vagueness of diplomatic language, which is functional to the purposes of argumentation and negotiation (D’Acquisto, 2017).

The blueprint for sustainable development comes from the Declaration, which contains the main elements that are diachronically re-proposed in subsequent documents.

The essence of Sustainable Development relies on the centrality of the human being and its needs, economic development and utilitarian protection of the environment.

The danger, called “thralldom” in the first document, or threat, as labeled in the following ones, of climate change is promptly linked to the damage to individuals and communities.

The perspective is anthropocentric, although it is more visible in the first document, where the idea of property is present -“man’s most precious possession” (*UNDHE*), “global commons and part of the common heritage of mankind”- (*Brundtland Report*), together with the discourse on the use of resources.

This corresponds to the egocentric narrative, characterized by the verticality of relations among living beings and human exceptionalism (Stibbe, 2020).

The separation between humans and nature is one of the dominant paradigms in Western culture. This metaphor is already present in Greek mythology: when humans were created they were given the art of creation and production, abilities that separated them from the animals. The Judeo-Christian stories of creation describe the genesis of humans as last and separate in a hierarchically crescent succession, in God’s image and over everything else. The formulation of the scientific method first and Romantic and transcendentalist philosophies later strengthened the separation: the complexity of the universe was translatable into mathematic and physical equations, allowing the manipulation of nature but it also introduced the idea that nature’s majesty had a divine source, encouraging to preserve nature unadulterated. Nature represented a place separated from human society, paradoxically fostering the disassociation between nature and man. Lock’s and Smith’s theories, which base civilization on human dominance of nature and value objects according to their utility to people, shaped the modern capitalist ideology that conceives nature’s value on its ability to satisfy human needs. The last step of this conceptualization path was added by the New Deal, which tied capitalist free-market and democracy. As it was believed the Great Depression

was caused by underconsumption, the government's responsibility was to establish an equilibrium between production and consumption, through the incorporation of all power groups into policy-making, including neglected groups such as labor. Democratic process and capitalism were thus fused, crystallizing the idea of nature as a resource and raw material.

The ideology of Sustainable Development incorporates the concept of the creation of material wealth as a basis for well-being and the tension between economic growth and natural limits (Geisinger, 2009).

In each document nature's value is due to being a useful resource. Hence, protecting nature is based on the idea that natural resources, like any other resource for development, should benefit any generation.

The dichotomy of human/society-nature is also mirrored in concepts such as ecosystem services, which emphasises the value of nature in serving human prosperity and economic growth.

The environmental crisis has one of its root causes in mute human-nature relations, as it leads to control and exploit non-humans. This approach assigns nature primarily utilitarian value, leading to significant environmental changes. These changes are pushing the planet beyond its safe boundaries, threatening the stability of Earth's systems. Researchers argue that human patterns of production and consumption, in particular, are driving profound transformations in the Earth system's status and functioning (Artmann, 2023).

Economic growth is mentioned as a core aspect of tackling environmental issues in the Human Declaration and of allowing, in a new "form", the achievement of Sustainable Development in the following documents. In order, the documents reject the concept of "no growth" (*UNDHE*), call for "a new era of economic growth" (*Brundtland Report*), define growth as "a key requirement" for the achievement of Sustainable Development and ask for international cooperation for achieving "sustainable economic growth" (*Global Stocktake*).

The prominence of economic growth is also visible within SDGs, whose environmental indicators are 29 out of a total of 244. However, only two of those -Domestic Material Consumption and Material Footprint-monitor total trends in resource use by human societies, allowing us to identify in metric tons where ecosystems and sink functions are overexploited from production-based and consumption-based perspectives. Five indicators are expressed in per-capita values and the other twenty-two are intensive indicators that express changes in the composition of production and consumption.

To complement, six indicators measure efficiency as a relation between GDP and resource use, which can grow or decrease regardless of the increase or decline of resource use, and twenty-nine indicate societal climate action (Eisenmenger et al., 2020).

Sustainable production monitors improvements in pollution decrease and resource productivity and applies environmental management accounting for assessing flows and usage of resources and monetary activity related to the environment.

Sustainable consumption aims to establish adequate policy and infrastructure to inform consumers and hence to favour wiser consumption choices (Staniškis, 2012).

However, within the Sustainable Development Goals, definitions and targets of sustainable production and consumption are general and vague. There are quantitative indicators, such as the Material Footprint and Domestic Material Consumption, but there is no measurable target, only simple statements that often start with imperatives such as “achieve”, “promote”, “improve”, “promote”, putting as direct object the focus of that target (Our World in Data, 2023).

Despite being key elements that ensure Sustainable Development, sustainable production and consumption are very marginal in the discourses.

In *The future we want* sustainable production and consumption are only mentioned in three occurrences, out of a total of 283 (224; 225; 226, pp. 43), although their relevance for achieving sustainable development is stated. The text recalls previous commitments and calls for the adoption of another framework and the abandonment of inefficient fossil fuel subsidies. The voluntary nature of the adoption of these measures is stressed (UNGA, 2012). In *Global Stocktake* there’s only one point (36, pp. 6) over 196 that mentions the importance of sustainable lifestyles and sustainable patterns of consumption and production to address climate change (UNFCCC, 2023).

The consequent absence of ethical analysis makes environmental protection and sustainable development achievement a universal goal, despite being the result of Western cultural paradigms, if not true modern imperialism (Geisinger, 2009).

Recurrent framings refer to technological and technical fixes. Technologies allowed humans to transform the environment, enabling development (*UNDHE*). These solutions encompass scientific assessments (*Brundtland Report*) and emissions stocks (*Global Stocktake*).

Technological and technical fixes refer to the idea of “green capitalism”, which argues that the free market and technological development is how we can achieve sustainability (Fox, 2022). Presenting environmental protection and achievement of Sustainable Development as a technical problem allows not to call into question production and consumption models and/or social lifestyles, attributing to the same economic model that caused the environmental crisis the ability to solve it (Geisinger, 2009).

Economic growth on which capitalism relies is due to investors’ choices and related ripple effects. A lack of investments translates into layoffs, then a decrease in consumer-goods consumption, causing a further decrease in aggregate demand and overall economic recession, jeopardising public services and funds. Thus, steady exponential growth is necessary to support all of these delicate gears (Schweickart, 2010). Being the paradigm of economic growth so embedded in the idea of a successful economy and so delicately supports societies, it incorporated environmental sustainability and became “inclusive green growth”. Related policy is focused on the quality of the output product to reduce the environmental impact and boost social benefits,

at the same time pursuing GDP growth. As long as environmental pressure and inequality decrease, growth is a positive trend that supports employment, public and welfare services, investments and technological advances (Likaj et al., 2022).

Green growth is a core component of the UN-endorsed “Green Economy”, a solution suggested in *The Future We Want* and endorsed by ecological modernization theorists and neoclassical environmental economists, who conceive environmental degradation as a product of market failures. The main instrument to solve environmental depletion is the absolute decoupling of economic growth from the use of natural resources, which progressively decreases and stabilises to a sustainable level (Sandberg et al., 2019).

Decoupling is possible thanks to technological innovation that relies on low- or zero-carbon sources of power such as renewables, increasing resource productivity and energy efficiency.

Green growth is considered by the UN a tool for achieving sustainable development, supporting investments for sustainable production, green goods and services and contributing to change in consumption patterns (Staniškis, 2012).

Finally, how is the term "sustainability" used? Does it exist as a concept separate from development? Is it defined?

Out of 30 times in which the word is used, five times refer to the concept of sustainable development (Chapter 1, II, 51; Chapter 2, 2; Chapter 8, III, 6, 91; Chapter 2, III, 4, 48; Chapter 3, II, 2, 24).

Two uses refer to “the sustainability of ecosystems” that “must be guaranteed”, as the global economy depends on it (Overview, III, 1 75; Chapter 3, I, 2). In point 2 of paragraph 3, Chapter 3, “physical sustainability” should be guaranteed by development policies and imply social equity between and within generations. Three points discuss “environmental sustainability” that has to be ensured in developing countries (Chapter 8, III, 6, 94), whose limits should be preserved by financial subsidies to producers so that they are encouraged not to overproduce (Chapter 3, III, 2.1, 48) and that will be respected through “contracts covering forest use” (Chapter 5, IV, 3.4, 72).

Sustainability is both ecological and economic and are to be included in international food trade (Chapter 5, IV, 2, 54).

In the remaining uses, sustainability is not accompanied by adjectives and refer to different issues: consumption standards (Chapter 2, 5), economic growth (Chapter 2,6), equitable access to “the constrained resource” and technological help (Chapter 2, 10), energy use (Chapter 2, III, 7, 76; Chapter 7, 4) “major changes in international economic relations” (Chapter 3, 1), World Bank “policy-oriented lending” when managing resources (Chapter 3, III, 1.2, 35), “the work of UNCTAD, GATT, OECD, CMEA, and other relevant organizations” (Chapter 3, III, 2.4, 56), investments criteria (Chapter 3, III, 3, 62), planned development projects (Chapter 8, III, 3, 60), new facilities of international trade (Chapter 8, III, 3, 62), establishing an early-warning system for environmental risks and conflict in UN bodies (Chapter 11, III, 3, 43).

It can be inferred that the more general use of the term refers more to the concept of environmental sustainability, despite the concept is not yet fully understood and defined. The only elements mentioned include “views of human needs and well-being that incorporate such non-economic variables” (Chapter 2, III, 2, 39) and require “the enforcement of wider responsibilities for the impacts of decisions” that entail “changes in the legal and institutional frameworks that will enforce the common interest” (Chapter 2, III, 7, 76).

Chapter 3. Degrowth theory

Foreword

This chapter gives an overview of Degrowth theory, its key concepts, history and critical elements. The introduction is followed by the analysis of four texts of Degrowth theory, studied from an eco-linguistic point of view and chosen for their relevance.

The texts are *The Limits to Growth* (1972), the article *La décroissance* published in the French magazine *Silence* (2002), the *Degrowth Declaration of the Paris 2008 conference* and the online description of the international think-and-act-tank Research & Degrowth International.

Starting from the elements of the discourse, considerations are made on the current trends of ecological overshoot, the role of ecological tipping points and wealth redistribution.

3.1 Theoretical overview

The term "degrowth" originated in France as "décroissance," introduced by philosopher André Gorz to argue for a "no-growth" approach to balance Earth's resources. It gained traction following the 1972 "Limits to Growth" report by the Club of Rome and was discussed by thinkers like economist Georgescu-Roegen, who emphasized the scarcity of resources.

Interest in degrowth waned during the 1980s with the rise of neoliberalism but resurfaced in the 1990s in France, with figures like Bernard and intellectuals Clémentin and Cheynet advocating for "sustainable degrowth."

The movement gained momentum in 2002 through a special issue of *Silence* magazine and a UNESCO conference, where activists and academics came together (Kallis et al., 2015).

The idea of degrowth spread across France, Italy, and Spain, fueled by grassroots activism and publications like *La Décroissance* (Demaria et al., 2013).

In 2007, researcher Schneider traveled across France to raise awareness and founded the Research & Degrowth collective. The term "degrowth" was officially introduced at the first international Degrowth Conference in Paris in 2008, further establishing it as a global research topic.

Since then, degrowth has expanded internationally, with conferences, academic research, and initiatives in Europe, Latin America, and North America, and is now taught in universities worldwide (Kallis et al., 2015).

Degrowth is a socio-economic critique of growth, as it is socially unjust and ecologically unsustainable, and calls for overcoming the latter and for establishing a new model for natural resource use and for consumption behavior, based on the concepts of sharing, simplicity and care (Kallis et al., 2015). Stemming from multiple streams of thought and authors, it deals with different aspects (Demaria et al., 2013).

The subversive use of a “negative” word is reclaimed to debunk the idea of a “one-way future” residing on growth only and the automatic association of something better and desirable with the word “growth”.

Another word and related concept considered problematic is “development”, which aims at a specific form of development, that is Western industrialization, and evolved from being a tool for well-being to something to pursue relentlessly.

The focus is instead on “qualitative flourishing”, which includes renewable energy and universal basic services and involves primarily economically-developed countries, whereas the others are encouraged to find their alternatives to socio-economic development, such as Buen Vivir in South America, the Gandhian Economy of Permanence in India, Ubuntu in South Africa, Sumak Kawsay in Ecuador (Kallis et al., 2015).

The limits of growth include mental illness, long working shifts, pollution and welfare costs.

Growth relies on invisible and gendered reproductive work, as well as unequal resource exchange among states, affecting the most Indigenous and low-income areas and lower-class and/or black and brown communities.

Commodification processes transform care, spiritual relations and services into objects of market exchange and profit at the expense of social well-being, while extra incomes are spent on positional goods, related to economic status, that gradually become more and more expensive (Kallis et al., 2015).

Economically, Degrowth aims at “equitable down-scaling” of consumption and production, to reduce the overall use of energy and materials, but also to build a different society in terms of relations and roles among humans and with non-humans, employment and work models.

The movement incorporates different proposals, but they all entail critiques of economic growth, capitalism and commodification and suggest an economy of care and implementation of commons. The essential claims include the impossibility of dematerialization as a result of technological progress, irreversibility and aggravation of climate change impacts due to growth progression, the inevitability of systemic stagnation also because of resource depletion, the possibility of restoring democracy and politics thanks to a stop to growth (Kallis et al., 2015).

To highlight the importance of the availability of resources and carbon sinks, the theory uses the concept of “bioeconomics”, introduced by the ecological economist Georgescu-Roegen (1971).

Energy and materials transformed into waste and pollution by human activities should be slowed down through a degrowth transition. Financial and economic crises derive from an increase of private and public debts against a decrease in natural resources, whose biophysical limits cannot be overcome by new technology and efficiency advancements, also due to the risk that efficiency can lead to investment in new materials and energy sources acquisitions.

Degrowth calls for setting limits to technology and energy and reducing the consumption of materials beyond technical solutions (Demaria et al., 2013).

GDP growth and emissions growth are correlated, decarbonization yearly rates are not high enough and absolute reduction in resource and energy use is incompatible with growth unless outsourcing industrial activities, and technological progress, due to a decrease in materials prices. Service economies also require embodied energy, e.g. computers and the internet.

From the degrowth perspective, economic crises result from systemic limits. Examples include peaks in non-renewable resources having repercussions on trade, workers’ mobility and mortgages, financial bubbles growing artificially due to a lack of other sources for growth and private and public debt-sustaining growth rates.

The need to withdraw from the use of fossil fuels is also due to their relation to elaborate technology that requires expertise and bureaucracy and the undemocratic hierarchies that follow. Degrowth scholars call for autonomy, a concept that draws from conscious reproduction theories¹⁵ and that entails collective self-limitation, rather than limits to growth, as a consequence of a social choice, fostering democracy and equality enacted by participants that create understandable tools.

There is also a clash with capitalism and its goal of profit, which is based on the imperative of growth, that otherwise destabilizes liberal democracy and capitalism: growth prevents conflict of redistribution. Capitalist institutions, such as private properties, corporations, workforce and private credit, follow the dynamic of accumulation -profit for profit-, enhanced and enacted by growth.

Despite Degrowth aiming to build a different society and to move from accumulation goals, it requires a transition from and beyond capitalism and its need for productivity (Kallis et al., 2015).

¹⁵ Limiting reproduction as a project for social and political change (Kallis et al., 2015).

Degrowth theory aims to “ecologize society”, finding an overall alternative to development through the politicization of science and technology and democratization of knowledge, adopting, for instance, the use of a peer-review method also in decision-making processes (Kallis et al., 2015).

The imaginary of development and utilitarianism, in the account of having uniformed cultures through the adoption of technology, consumption and production of Western models.

Western development model represents, according to Latouche¹⁶, a mental model adopted by remaining countries, as well as an oxymoron (Demaria et al., 2013).

Unlike “unsustainable development”, which could eventually end due to its inherent contradictions or resource depletion, “sustainable development” suggests an endless continuation of the same harmful practices. This, in Latouche’s view, strips away any hope for change, as it implies perpetual development without addressing the underlying issues or offering a vision for a more positive future (Latouche, 2003).

Another element of this development model is the “homo economicus”, driven by utility-maximisation, corresponding only to one of the representations or of social construct taught in university courses.

On the contrary, degrowth encourages economic relations based on reciprocity, gifting and sharing and revolves around social relations and conviviality, suggesting a change in values, culture and a human identity separated by economic logic (Demaria et al., 2013).

It focuses on ecology and the intrinsic value of ecosystems, beyond their usefulness as providers of services and resources, stressing the conflict between ecosystem and industrial production and consumption and the interrelation between industrial expansion and environmental depletion.

Therefore, degrowth works for ecosystem preservation by reducing human pressure and supports the “res communis” approach, according to which environmental components are commons to share and care for by integrating humans into nature and regenerating ecosystems (Demaria et al., 2013).

Degrowth also aims to repoliticize environmental stances, made purely technical by consensus on sustainable development and its view on developing without harming the environment.

Sustainable development has been made apolitical and technocratic within a wider process in liberal democracies of public debate depoliticization, that pre-frames problems as technical, avoiding antagonism among different views.

¹⁶ Economics professor and famous thinker of degrowth theory (from <https://www.persee.fr/authority/25157>).

Degrowth scholars argue that this process is not only due to the rise of neo-liberalism and the Washington Consensus, which prioritized free markets, but also because of the focus on growth and the routine use of social surplus for more production. This limited society's ability to control how the surplus was used and altered the concept of a "good life".

Modern societies' paradigm of well-being entails commodification and individualism, triggering growth to satisfy individual demands and, at the same time, subordinating to it the political -and collective- sphere (Kallis et al., 2015).

Well-being in degrowth theory is conceived beyond professional career, material success and consumption, drawing on the Easterlin Paradox, which argues that satisfaction decouples from income increase over time, and on the relation between material wealth increase and emotional disorder.

Degrowth proposes to embrace voluntary simplicity, that is a reduction of individual consumption and an attribution of value to simple life¹⁷.

Justice is also a core element to actively pursue. To counteract the impossibility of voluntary reduction and redistribution of income, growth follows a "trickle-down" system that however enforces competition.

On the other side, degrowth introduces large-scale redistribution and sharing, reduction of disproportionated incomes and material wealth and prioritizing satisfaction of needs.

For some advocates, social and environmental crises are perceived as a result of social comparison focused on luxurious lifestyles, operating a cultural change and requiring a degrowth of the lifestyle of rich people.

Others believe that setting a maximum income or wealth level will lead to the same result and support repairing past injustice done to past colonized countries or instituting an ecological debt.

There is overall consensus regarding resource and wealth distribution having to be done internationally, intra- and inter-generationally: LMICs¹⁸ must be guaranteed access to ecosystem services (Demaria et al., 2013).

Transition to degrowth requires new welfare services to adjust decoupling paid work from growth, such as making the state an employer or guaranteeing a basic income to citizens, and worksharing¹⁹.

The moment that basic needs are satisfied, it's possible to contribute to grassroots practices, integrating welfare services with voluntary ones that cover care, education, health and environmental restoration.

Money and credit institutions would also be downsized and integrated locally with community currencies, time banks and alternative exchange systems. National finance would still be relevant for taxation and trade,

¹⁷ Authors that explored the concept are Henry David Thoreau, Pierre Rabhi, Serge Mongeau, E. F. Schumacher, J. C. Kumarappa and Frederick Soddy.

¹⁸ Low and lower-middle income countries.

¹⁹ Redistribution of working hours between employees and unemployed people, without loss of income.

resuming control from private banks over the creation of new money free of debt and financing job and income policies, welfare services or production of renewable energy and halting the growth dynamic that springs from money issued as debt and related interest rates, at the same time running citizens-led audits to determine which debts are legitimate.

Overall, transitioning envisages the establishment of convivial societies living simply and jointly.

Grassroots practices include eco-, digital or “back-to-the-landers” communities, cooperatives, urban gardens, barter markets and time banks, which all share common features, starting with being the result of “commoning” processes, made of relations and connections with intrinsic value, and without aspiring to accumulate and expand.

Moreover, production is not for exchange but for use, labour is de-commodified, de-professionalized and substituted with voluntary activity and circulation of goods is not for profit.

They are new forms of commons, rejecting private property and wage labour. Carbon content and material production are also reduced, despite less technological efficiency, precisely as a result of rejecting productivity that limits the scale.

These practices can complement public services, halting their privatization and reducing their costs, on the basis that user involvement is, in general, more democratic and economical, as in the case of neighbour networks offering preventive health checkups and first aid (Kallis et al., 2015).

Politics and strategies for a degrowth transition vary and include non-wage labour nowtopians²⁰, existing movements, parties and unions. There is however general agreement on the possibility of transition to be carried by various actors and strategies, as a “movement of movements”. They can be sorted into “civil” and “uncivil”, the latter characterized by organized disobedience outside government dynamics. This type of activism includes house or land occupation and non-violent actions and financial boycotts.

“Civil” movements focus on institutional politics and tools, such as an agenda for parties and assemblies (Kallis et al., 2015).

Other strategies for action include reformism, which operates within the existing institutions, and opposition, which is the creation of alternative institutions (Demaria et al., 2013).

²⁰ Communities that rely on voluntary work, reclaiming and reinventing it against capitalistic logics.

These grassroots practices taking place outside of political arenas are based on the idea that systemic change towards degrowth may follow the evolution of other historic changes: formation of connections, new economic practices and finally institutions in support of practices (Kallis et al., 2015).

Oppositional activism encompasses efforts to stop infrastructure highways, including highways, airports or high-speed trains, through demonstrations, boycotts, civil disobedience, direct action and different forms of art practices.

Participatory alternatives include active mobility, reuse practices, dietary choices, agroecology, eco-villages, co-housing, solidarity economy, consumer and credit cooperatives, ethical banks and renewable energy cooperatives.

They are alternatives to present institutions that promote individual and social transformation by embracing voluntary simplicity and critical consumption, reducing formal work and focusing on the activities good for well-being: social relations, political activity, physical and spiritual exercise²¹.

Reformist approaches, based on the recognition that growth is not only economic but also social, act within existing institutions and defend some, such as social security forms and welfare services.

However, revolutionary and reformist positions can coexist in multiple cases: for example, democratic institutions must be defended by the consequences of economic crises, but there is a need to make them more participative. Introducing basic income for citizens, eliminating debt-based money and strengthening the commons can be depicted as reforms that go beyond the current system (Demaria et al., 2013).

Research has an essential role to guide action. Knowledge derives from experience-based notions of different groups -communities, women groups, trade unions, grassroots associations-.

Important concepts that emerged from grassroots experience and later refined academically include the ecological debt, the climate debt, climate justice and corporate accountability.

Degrowth was born as an activist movement and later entered the academic agenda in 2008; literature has increased and International Conferences on Degrowth for Ecological Sustainability have been held regularly since 2008. Conferences have followed direct democracy techniques to discuss policies and research priorities and conference topics have included cooperative research with scholars, activists and practitioners (Demaria et al., 2013).

²¹ Practical cases are Italy's Reti di Economia Solidale (Solidarity Economy Networks) in which Distretti di Economia Solidale (Solidarity Economy Districts) group hundreds of small enterprises that as business clusters under strong socio-ecological principles; the Catalan Integral Cooperative (CIC), which is based on economic and political self-management with egalitarian participation of its members and attempts to include ways of satisfying all basic human needs, including the creation of a local currency (the 'ECOS').

Degrowth is a theory relatively recent and research is at the dawn, making several aspects subjected to debate: means of implementation of proposals, the possibility of the outcome to still be capitalistic, the aptness of action scale, possible ways to organize networks, the possibility to build degrowth alternatives within a context focused on growth and profit, evaluation of the best political conditions and institutions to support the implementation of degrowth policies, transition at the macro scale.

Debate also concerns philosophical approaches to the main aspects, for example, differences within Marxist currents, and complexity of degrowth, for example focusing not only on the ecological and bioeconomic aspects, but taking into consideration the concepts of well-being, justice, anti-utilitarianism and democracy, to avoid authoritarian and/or technocratic solutions.

Discussion is particularly relevant concerning strategies: opposition approaches can seem in conflict with those who propose alternatives and researchers (Demaria et al., 2013).

However, challenges to degrowth are so many and so various that diversity is in reality needed. Combining strategies may favor the process of transition, according to the scale and the goal, as a “matrix of multiple alternatives” (Demaria et al., 2013).

Degrowth acts as an interpretative frame that is an umbrella reference for diverse collective activities: identification of the causes of the social crises and production of alternatives outside the mainstream, opening new spaces and perspectives for action (Demaria et al., 2013).

Further research is needed to support the claims, the adjustment measures and the direction for social transition (Kallis et al., 2015).

Critics of degrowth argue that there has been a significant change since 1970, where economic growth in wealthy countries continued while environmental harm, especially air pollution, decreased. For example, in the US and UK, air pollution dropped significantly despite rising GDP and population. This reduction was primarily achieved through cleaner technologies and regulations rather than outsourcing pollution to poorer countries. High-income nations still manufacture extensively and have reduced domestic pollution. This pattern is explained by the Environmental Kuznets Curve (EKC), where pollution rises initially with economic growth but eventually declines as countries become wealthier, a trend now emerging in China (Mcafee, 2020).

Other critiques focus on welfare systems.

Strong welfare institutions are necessary in an economy where well-being is achieved with lower resource use and environmental impact. However, no modern welfare states have yet succeeded in breaking the links between affluence, well-being, and environmental degradation.

Current welfare states remain tied to growth-focused ideologies and face real dependencies on economic growth. Even if these could be reduced, it raises the question of whether some existing demands for publicly funded welfare would also need to be scaled back (Kongshøj, 2023).

Another critical point is public support of degrowth processes. For degrowth to successfully transform societies using both interstitial and symbiotic strategies, it must broaden its support base beyond small activist groups and academic circles.

Gaining public backing significantly increases the chances of policy ideas enduring through the policy process. This is a major challenge, given that the dominant growth paradigm forms the basis of the current political order. For example, Buch-Hansen & Carstensen (2021) describe degrowth as a 'fourth-order change,' which goes beyond the more familiar third-order paradigms within the growth economy.

As a result, degrowth is seen as antagonistic to most major elites, including influential experts, established policymakers, and particularly economic interests (Kongshøj, 2023).

From an ecosocialist perspective, degrowth proponents are criticized for failing to distinguish between sustainable and unsustainable economic growth.

Degrowth advocates focus on inequalities between workers in the global North and South but overlook how growth in essential sectors could benefit both. Their call for reduced energy consumption is seen as harmful, potentially worsening energy poverty and hindering renewable energy development for climate mitigation. On the contrary, the expansion of wind and solar power could end energy poverty, improve life expectancy, and support climate efforts. They emphasize reducing extractive mining through recycling, material substitution, and public transit, while addressing the rights of indigenous communities and affected workers (Schwartzman, 2022).

A review of 446 degrowth papers from 2005 to 2020 revealed several critical points about policy proposals in the movement. Many proposals, like "ecological reparations," are mentioned without sufficient detail or a clear connection to specific issues. Few studies offer concrete comparisons of policies, such as work-time reduction, and how they align with degrowth ideals, limiting their usefulness for policymakers.

Some policy instruments receive more attention than others, but the reasons for this popularity are unclear.

Often, necessary supporting changes for proposed policies are overlooked. The review also found that degrowth policies are typically studied in isolation or competition, with little interaction between them.

Overall, the degrowth policy agenda appears more like a collection of ideas than a coherent, organized strategy (Fitzpatrick et al., 2022).

3.2 The Limits to growth

The Limits to Growth was among the first documents to challenge the prevailing belief in a limitless world. Although it was largely disregarded by businesses and many economists, the report is notable for emphasizing the interconnections and feedback loops between different trends, which helped shape environmental reforms (Meadows et al., 1972).

Context

Limits to Growth is a book published in 1972 based on the study elaborated by the Club of Rome, an intellectual organization founded four years earlier by industrialist Peccei and scientist King.

The study is characterized by skepticism on technological fix and economic growth, following the group's discussions about international issues that linked economy society and technology, unlimited growth and technological progress from an integrated and apolitical perspective (Schmelzer, 2017).

The report is one of the first to be based on a computer-simulated world model, focusing on trends of international development: population growth, technological progress, industrialization and food production and related depletion of natural resources and pollution (Döring & Aigner-Walder, 2022), laying out 12 possible scenarios on the social and environmental impacts -such as resource depletion, thermal pollution, overshoot and collapse (Eastin et al., 2011)- of industrialization within 1972 and 2100, among which the “sustainability scenario” would prevent collapse and keep high living standards.

The study was received ambivalently.

The report contributed to the emerging environmental concern and drew attention to the issues of pollution and overconsumption (“Understanding “The Limits to Growth”: A clear warning and a message of hope”, 2022), through a technical and policy-action orientation.

Critics, including journals such as the *Economist* and *Newsweeks*, contested its data and predictions, focusing on their reliability in the short-term (Eastin et al., 2011) and labelling it as a “prediction of collapse and a doomsday scenario” (“Understanding “The Limits to Growth”: A clear warning and a message of hope”, 2022), despite the authors stressing that the document didn't forecast nor its data was accurate to predict (Eastin et al., 2011). It was hard to accept that some of the core elements of industrialization, such as coal, oil

and fertilizers, could cause permanent damage (“Are There Limits to Economic Growth? It’s Time to Call Time on a 50-Year Argument,” 2022).

There have been updates to the original version, on its 20th and 30th anniversaries, integrating data with the Ecological Footprint and Living Planet indexes, highlighting issues such as biodiversity and biocapacity loss (Eastin et al., 2011). The report led the way to following contributions that are critical towards growth, such as “post-growth” and “degrowth” movements, that focus on consequences of growth, including global warming, environmental depletion, social inequity, and directed the concept of “limits to growth” to ecological functions and their boundaries (Döring & Aigner-Walder, 2022).

On the other side of the spectrum, other researchers drew from the study to advocate that economies can keep on growing and reduce emissions at the same time (“Are There Limits to Economic Growth? It’s Time to Call Time on a 50-Year Argument”, 2022).

Summary

The study explores increasing trends of five “basic” elements: population, food production, industrialization, non-renewable resources consumption and pollution.

The first chapter introduces the concept of exponential growth: its mathematical definition, some examples and its use in models to better study it, as in the case of dynamic modeling theory.

The analysis of the world situation is based on the description of the positive feedback loops -mutual enforcement of two growth processes- between population and industrialization, thanks to a decrease in mortality rates and capital investment.

Data shows that economic growth is widening the gap between poor and rich people.

The second chapter tries to establish what is needed to support the international population and economic growth beyond 2000.

In terms of food, the study refers to FAO calculations on calorie intake and calculates land use. Making assumptions from results, it is stated that food production expansion cannot keep up with population growth, even if land limits were supported by technology, which is in turn based on non-renewable materials, such as minerals and fuel.

Resource consumption is growing exponentially due to positive feedback loops of population and industrialization growth, compromising the future availability of these resources and determining considerable

price raises. These consequences imply major political considerations about the usability of these resources throughout time and generations, also because of the pollution that is caused by generated waste.

Considerations about pollution include observations on the exponential growth of the types of pollution considered, lack of knowledge about limits of tolerance and the consequences of delay between the moment of emission and environmental effect and their global impact. The chapter concludes by affirming the finitude of the world.

The following chapter deepens interactions between the factors using the same world model, after explaining which steps were followed to construct it. It is used to understand behavior modes, the tendencies of the variables changing with time and which one of them emerges.

Despite data being insufficient to make forecasts, it is still important to understand growth causes, its limits and the behavior of the systems when these limits are hit.

The elements relate through positive loops which are illustrated through diagrams. It is shown that growing wealth is correlated to growing resource consumption and decreasing fertility and increasing pollution is related to worsening of health.

Despite the hypothetical value of predictions, the loop structure is accurate. Current trends without any change would bring “overshoot and collapse” due to a resource crisis.

In the fourth chapter technological advances are applied as a variable to the model, such as extracting ability. In this case, collapse would be prevented at first by limiting pollution, but happen due to food shortage.

The conclusion argues that, despite policies that act on the growth of one of the variables, the system reaches another limit. Technology doesn't act on the problem source and side-effects include the widening of disparity, as in the case of the Green Revolution in Mexico.

In a finite system, there must be restraints to exponential growth, reaching stability gradually. Despite it being a challenge, exponential growth should be stopped.

The equilibrium state requires constant sizes of capital plant and population, input and output rates kept to a minimum and a balance between population and capital in accordance to social values.

The equilibrium state would allow the emergence of desirable leisure activities for humans, the improvement in production and in life quality thanks to technological progress. It would also be the occasion to question distribution and enable equity.

Despite there is need for research and discussion about individual freedoms and consideration of future generations, there is the urgency to act.

The report finishes by pointing out that the continuation of exponential growth brings closer to the world system limits and exhorts to use of available data.

The commentary chapter explains the goals of elaborating the report -testing the compatibility between growth and finitude and exploring interactions among global trends- and addresses criticisms.

Final considerations are further made about the urgency to implement international constraints and avoid inaction, favouring changes in values that entail individual sacrifices.

Analysis

The analysis revealed mainly frames.

The most relevant one argues that the earth is a finite system and motivates the research of the report.

The other frames indicate that technological advance doesn't constitute a permanent solution, that putting limits to economic growth is challenging and the environment represents a source of resources.

The most relevant frame of the report is EARTH IS A FINITE SYSTEM (*pp.* 163, 190), representing the basis for the thesis within. As the world is labelled "system" several times (*pp.* 28, 94, 189, 192) its finiteness is underlined (*pp.* 93; 160): exponential growth in a limited space can cause the shift from abundance to scarcity in a few years (*pp.* 60; 152; 159).

This constitutes the ideology of the report: explaining the role of exponential growth, of feedback loops and consequences within physical limits.

Exponential growth is "the time it takes a growing quantity to double in size" (*pp.* 37).

This type of growth of the elements considered -population, food production, industrialization, non-renewable resources consumption, pollution- is supported by positive feedback loop mechanisms (*pp.* 39), a closed "chain of cause-and-effect relationships", where the increase of one element enables "a sequence of changes" that fosters further increase (*pp.* 39).

The report unfolds population growth, of which the average fertility level determines the positive feedback loop and the average mortality level the negative one (*pp.* 42), and industrialization growth, of which additional capital and consequential investment for capital stock create a positive feedback loop (*pp.* 46). These two loops drive resource consumption (*pp.* 69). Based on these interrelations, basic behaviour modes

are designed (*pp.* 127, 149) to test the compatibility of exponential growth with the system's limits and social needs (*pp.* 189).

Results show incompatibility and potential risk of overshoot (*pp.* 194).

The ideology is backed up by the use of data to increase facticity: examples, graphs -for a total of 48- and calls to authority, such as the United Nations agencies (*pp.* 35, 57).

The thesis is based on computer modeling, the "System Dynamic model" (*pp.* 26, 38, 74, 98-106, 113, 128-134, 145-147, 164-169, 172, 173) and examples are used to explain exponential growth (*pp.* 33), the mechanism of feedback loops (*pp.* 39), population growth (*pp.* 61, 100), minerals depletion (*pp.* 69, 71, 75), delays (*pp.* 89, 150), pollution increase (*pp.* 81), food production growth (*pp.* 97), the world model (*pp.* 113), the role of technology (*pp.* 138, 152, 154).

The thorough explanation focuses on "the correctness of the feedback loop structure and only secondarily with the accuracy of the data" to facilitate discussion and further research (*pp.* 127): existing and unavoidable restraints have the potential to lead exponential growth to overshoot and new forms of thinking to revision the human behavior are essential (*pp.* 149).

The document had the objective to warn about potential crises deriving from growth trends, mutual influence and finiteness of the planet, without being "a piece of futurology", and to offer adequate changes to prevent them (*pp.* 189).

Within the explanation, salience is given to the strong connection between the different growths, described with the metaphor of the "web of interlocking feedback loops" (*pp.* 150).

These quantities are "interrelated in a complicated way" (*pp.* 38), further enforced by feedback loops: population and industrialization (*pp.* 41), food supply, agricultural capital and capital investment (*pp.* 63), food and population, discarded resources and pollution and again population (*pp.* 98, 125), population and capital influence (*pp.* 105), both industrial and service capital and resources use (*pp.* 107), population and fertility (*pp.* 119).

Another salient aspect is the incessant increase of the five elements (*pp.* 33), but also of freshwater (*pp.* 63), human activities and related resources (*pp.* 97) and resource consumption related to population growth (*pp.* 113). Exponential growth is defined as "overwhelming" (*pp.* 165), "uncontrolled" (*pp.* 168), "unrestricted" (*pp.* 175), gradually diminishing the time of the possibility to use resources (*pp.* 72), creating more difficult trade-offs between goods and food (*pp.* 62) and leading to crisis points caused by each element exponentially growing (*pp.* 61; 62), despite considering to adopt different energy sources -that produce pollution nonetheless, such as nuclear waste- (*pp.* 86).

The issue is made more relevant due to limited knowledge regarding the future state of ecosystems (*pp.* 78), the “upper limit of the earth’s ability to absorb” pollutants (*pp.* 92), especially due to the delay effect (*pp.* 89) “without causing irreversible changes in the earth’s climate” (*pp.* 88), the “upper limit to the fresh water runoff” (*pp.* 63) and “to pollution growth curves” (*pp.* 78) and “which limitation will occur first or what the consequences will be” (*pp.* 94).

Instead of assuming that it is possible to reach “some “natural” limit” and rise to collapse (*pp.* 149), understanding causes of growth, its limits and socioeconomic systems’ behaviour is essential.

Finally, salience is given also through a sense of urgency: we are currently overexploiting the environment and the biocapacity of the earth (*pp.* 195), having potentially caused irreversible damage (*pp.* 92), getting closer to limits to growth and collapse (*pp.* 188), reducing the possibilities to reach a stable state (*pp.* 174).

Despite the need for further research, “(e)nough is known already” for the general action (*pp.* 187).

Another relevant frame is TECHNOLOGY IS NOT A SOLUTION.

Technological optimism was favoured by historical successes of overcoming physical limits (*pp.* 137). However, it can only “relieve the symptoms” and “divert our attention” from the core problem, which is the exponential growth that happens in a finite system (*pp.* 152, 159).

Not only it’s “a problem with no technical solutions” (*pp.* 156), but has side effects influencing lives (*pp.* 152) and requiring raw materials and energy from the physical environment (*pp.* 63).

However, LIMITING GROWTH IS A CHALLENGE (*pp.* 199), a “tremendous” challenge (*pp.* 176), a “supreme effort” (*pp.* 196) of a “significant redirection” (*pp.* 197).

Most consuming societies have the responsibility to deal with important decisions about consumption patterns (*pp.* 76), since negative effects, such as atmospheric pollution and DDT, are distributed globally (*pp.* 92) and resources progressively remain concentrated in limited geographical areas, raising questions about relations among countries (*pp.* 75).

Growth is strictly related to discussions about equality.

The report argues that assumptions a bigger industrial output leads and will keep on leading to equal distribution are false (*pp.* 48, 183).

On the contrary, economic growth widens the gap between rich and poor nations and people (*pp.* 50), also because prices of raw materials will severely increase, due to increasingly intense environmental depletion

(*pp.* 75) and the average amount per person will not be enough for survival, especially if population growth won't stop (*pp.* 183).

The Green Revolution in Mexico is used as an example to show that effects include unemployment, mass migrations and malnutrition (*pp.* 153). Considerations about temporal and geographical consequences and who will be the most vulnerable should be made (*pp.* 94).

Within the report ENVIRONMENTAL ELEMENTS ARE RESOURCES, called as such in several points for assessments (*pp.* 55), their availability for future benefits (*pp.* 76), their role for the industrial capital stock (*pp.* 132), and the effects of shortages on industrial output and stability (*pp.* 169).

“Deers” and “goats” are used as examples to illustrate depletion due to the absence of natural constraints (*pp.* 100) and whales to illustrate biodiversity loss due to the growth of the whaling industry (*pp.* 157).

Undoubtedly, the perspective is anthropocentric and presents a new human identity: the output of the model exhorts to stop the exponential growth of the five elements, without putting “an end to progress or human development” (*pp.* 184).

Rather, policy changes are recommended to create “a stable equilibrium for mankind”, in which people have access to material wealth, as well as “for limitless individual and social development” (*pp.* 198), allowing “the most desirable and satisfying activities of man -education, art, music, religion, basic scientific research, athletics, and social interactions” to flourish (*pp.* 180).

Overcoming the growth pattern, established when our civilization was growing (*pp.* 149), requires considering future generations (*pp.* 186), “a joint venture based on joint conviction, with benefits for all”, where economically-developed countries decelerate their material output growth and assist the others to further advance their economies.

The new leadership -and the new identity- requires “a basic change of values and goals at individual, national, and world levels” (*pp.* 198), new societal goals compatible with physical limits (*pp.* 187), motivated “to accept the individual sacrifices and the changes in political and economic power structures required to reach an equilibrium state” (*pp.* 198).

3.3 “*La décroissance*” (“*Degrowth*”)

The article *La décroissance* (“Degrowth”) attracted significant attention, allowing environmental activists and development critics to use the topic as a focal point for discussion.

This publication supported the spread of the concept of degrowth.

Context

The word “degrowth” made its first appearance in France as “*décroissance*” by philosopher and precursor of political ecology Gorz to argue that the earth balance needs “no-growth” or degrowth, wondering whether it would still be compatible with capitalist societies.

The same term was used in the follow-up to the report “Limits to Growth” issued by the Club of Rome. In 1973 Philosopher Amar wrote about opposition to growth, economist and pioneer of bioeconomics and ecological economics Georgescu-Roegen pointed out the scarcity of resources and the need to decrease consumption.

The word “*décroissance*” was also used to translate “decrecent” by Professors Grinevald and Rens (Kallis et al., 2015) and as a synonym of recession²² (Demaria et al., 2013).

Interest in degrowth decreased in the 1980s after the end of oil crisis and emerge of neo-liberalism; in the 1990s debate surfaced again in France: in 1993 activist and magazine *Saliency* founder Bernard asked Grinevald to write an article on Georgescu-Roegen’s insights, in 2001 intellectuals Clémentin and Cheynet coined the term “sustainable degrowth” (from “*décroissance soutenable*²³”), registering it as intellectual property.

As a social movement, degrowth started in the city of Lyon following protests advocating for pedestrianized cities, communal street meals, food cooperatives, and opposition to advertising (Demaria et al., 2013).

The debate on degrowth significantly expanded in 2002 as a result of a special issue of *Silence*, carrying on the second phase of the movement, whose focus moved from resource limits to critique to “sustainable development” (Kallis et al., 2015).

²² However, recessions, particularly when paired with fiscal austerity, tend to amplify existing inequalities, disproportionately affecting the poorest members of society. The undemocratic and unplanned nature of a recession or cost-of-living crisis further exacerbates these impacts. Additionally, in an economy reliant on growth, a recession often has negative environmental consequences, as it threatens public spending and undermines investor confidence in low-carbon developments in areas like transport, housing, and energy (Richter, 2023).

²³ In French, “sustainable” can be translated as “durable” or “soutenable”. The first one expresses a long-term temporality and the second is mainly related to the ecological dimension (“*Développement durable ou soutenable?*”, 2020; Plante, 2013).

*Summary*²⁴

The article introduces the concept of “degrowth and “healthy economy” starting from the finite scale of planetary resources. The current model, based on the extraction of resources on a permanent and exponential basis, is not rational but ideological and without any type of restraint.

On the contrary, a healthy economy aims to preserve and reconstitute the environment, based on responsibility towards the collectivity and the finiteness of resources. Overall, the energy consumption is such that the atmosphere is not able to absorb the consequential pollution. The time over which primary resources will be exhausted is narrow and damages to the environment due to resource consumption are the most severe.

The economist Georgescu-Roegen is considered the father of degrowth, as a result of his contributions to energy research.

The reason why the economy relies on growth is to avoid social conflicts and within that context, an ecologic crisis has the potential to lead to “chaotic degrowths” and the formation of regimes, to the detriment of democratic principle, as in the case of Russia.

On the contrary, healthy economies require downscaling without social implosion.

Making the example of energy sources and related impacts, the authors call for a drastic reduction of energy consumption and use of alternative solutions for transportation and common activities and needs, halting unequal relations between countries.

The economic model delineated includes the stop to the franchise system. Investment to produce work tools and the establishment of basic public services.

Implementing sustainable degrowth will be a challenge for rich countries, which are the minority asked to question the status quo, as the U.S. population.

However, the obstacle is mentality, rather than real elements.

The priority is engaging in voluntary simplicity at the individual level, in order to enact wider change.

Finally, the concept of “sustainable degrowth” is explained as addressing the needs of current generations without compromising the ability of future generations to address their needs.

²⁴ It's possible to access the full issue at: <https://www.revuesilence.net/numeros/280-La-decroissance/>.

Analysis

The analysis revealed the frequent use of metaphors to describe the current overexploitation of natural resources, the impact of consumer society and the powerful influence of advertising.

The article argues that the difficulty of changing the current economic model can be overcome through people's commitment.

The metaphor of "plunder" used to criticize the current use of environmental resources is an example of the critique the article makes of the current economic and social system. This system not only plunders "this capital"²⁵, but requires a constant increase of these extractions (*pp.* 5).

On the contrary, "(t)he healthy economy imposes us to cease this plunder" (*pp.* 6)²⁶.

This system is based also on the drive of mass consumption which is defined by the metaphor "an endless thirst"²⁷, fueled by the long-lasting influence of the "ideology of advertisement" (*pp.* 6), defined metaphorically as "a baby bottle of mediatic advertisement of the consumer society"²⁸ (*pp.* 7).

The ideological nature of the current economy, negatively evaluated (*pp.* 5), means "denying reality for profit"²⁹ (*pp.* 5) and establishing an economic model that is "disconnected from physical reality and functions in the virtual"³⁰ (*pp.* 5), as if economists were still living "in the religious world of the 19th century, where nature was considered inexhaustible"³¹.

The current scenario clashes with reactions of rejection dictated by the growth mentality, creating "(a) cocktail that is oddly similar to Soma, a euphoric drug"³² (*pp.* 7).

This economic model is based on permanent growth "not to create social conflicts"³³ (*pp.* 6), however, this infinite growth "is not possible on a finite planet"³⁴.

This statement is enforced by data on exhaustion rates based on current consumption: there are 50 years to secure ecosystems; oil reserves amount to suffice for 41 years, gas ones for 70 and uranium for 55.

²⁵ "Non content de piller ce capital, notre modèle économique, fondé sur la croissance, induit en plus une augmentation constante de ces prélèvements" (*pp.* 5).

²⁶ "L'économie saine nous impose de cesser ce pillage" (*pp.* 6).

²⁷ "(U)ne soif sans fin de consommation attisée par des années de conditionnement à l'idéologie publicitaire" (*pp.* 6).

²⁸ "(B)iberon médiatico publicitaire de la société de consommation" (*pp.* 7).

²⁹ "Nier la réalité au profit" (*pp.* 5).

³⁰ "(D)éconnecté de la réalité physique et fonctionne dans le virtuel" (*pp.* 5).

³¹ "Les économistes vivent en fait dans le monde religieux du 19^e siècle où la nature était considérée comme inépuisable" (*pp.* 5).

³² "Un cocktail ressemblant étrangement à la Soma, drogue euphorisante" (*pp.* 7).

³³ "(P)our ne pas générer de conflits sociaux" (*pp.* 6).

³⁴ "Il n'est pas de croissance infinie possible sur une planète finie" (*pp.* 5).

Regardless of precise figures, “we are going towards the end of the majority of these planetary resources shortly if we don’t radically change direction³⁵”, as, in addition, consumption rates far exceed the amounts of resources newly discovered and consistent increases in energy use are expected as a result of cars market (*pp.* 5).

Urgency is further boosted by scientifically knowing that is not possible to access energy sources different from those available on Earth (*pp.* 5).

The authors affirm that one doesn’t need to be an economist to understand that is not ecologically sustainable to base economic resources on capital (*pp.* 5).

DEGROWTH IS RATIONAL: there is no other viable way for those nations that account for 20% of the world and yet consume 80% of resources (*pp.* 5). It’s “the only possible³⁶” objective for humanity, morally and scientifically (*pp.* 5).

The ideology is concentrated on the concept “healthy economy³⁷”, an economic model that does not rely on natural capital and seeks to restore parts already destroyed (*pp.* 5).

This goal is achievable through a “drastic reduction of our energy consumption”, and the use of fossil energy limited to a few cases, such as medical services.

High-drain modes of transportation would be replaced by soft mobility and less-intensive vehicles, there would be radical changes in economic dynamics due to the downsizing of trade and elimination of intensive agriculture and overall a general downgrading of activities and tools (*pp.* 6).

It’s not only a matter of resources, but of justice among countries: “cheaper labour of third-world countries would be no longer possible³⁸” and conditions of production location will be applied in the selling location (*pp.* 7), contributing to the ending of slavery and neo-colonialism (*pp.* 7).

Receivers of this call are rich countries, for which DEGROWTH IS A CHALLENGE.

The problem of changing lifestyle is not something that concerns the majority of Earth’s inhabitants, whereas rich countries’ populations should “envison humanity as one and indivisible³⁹”.

³⁵ “(N)ous nous dirigeons vers le terme de la plus grande partie des ressources planétaires à brèves échéances si nous ne changeons pas radicalement de cap” (*pp.* 5).

³⁶ “De toute manière, cet objectif est le seul envisageable pour l’humanité, tant d’un point de vue moral que scientifique” (*pp.* 5) .

³⁷ “(É)conomie saine” (*pp.* 5).

³⁸ “(L)a main d’œuvre peu chère des pays du tiers-monde ne serait plus disponible” (*pp.* 7).

³⁹ “(E)nvisager l’humanité comme une et indivisible” (*pp.* 7).

Transitioning to a healthy economy requires shifting from the mentality that in the first place led economists not to include the index “nature” in their theories (pp. 5), inducing to overuse of resources, thus weakening the capacity of ecosystems to absorb the pollution (pp. 5), and most of the times trigger “a reaction of animosity⁴⁰” whenever it is asked to question the status quo (pp. 7).

However, the obstacle to degrowth “lies in our heads rather than in actual difficulties of realization⁴¹” (pp. 7).

The identity delineated includes individual and collective responsibility to preserve the environment and to give it to future descendants, at least, in the same condition (pp. 5), balance between individual and collective needs, democratic and mutual control between politics and consumers based on responsibility (pp. 7). Individual commitment to voluntary simplicity is essential: “(i)t is by changing ourselves that we will change the world⁴²” (pp. 7).

The perspective is human-only: the concept of sustainable degrowth encompasses “democracy and humanism⁴³” (pp. 6) and means “addressing the needs of current generations, without however compromising the ability of future generations to meet their own needs⁴⁴” (pp. 7).

Despite the erasure of the environment and natural elements, called “capital” (pp. 5; pp. 6), but also “a common heritage⁴⁵”, the article attributes agency to the biosphere when discussing the approaching to resources exhaustion: “the biosphere does not negotiate additional time⁴⁶”.

⁴⁰ “(U) ne réaction d’animosité” (pp. 7).

⁴¹ “(S)e situe plus dans nos têtes que dans les réelles difficultés à la mettre en place” (pp. 7).

⁴² “C’est en changeant nous-même que nous transformerons le monde” (pp. 7).

⁴³ “(D)émocratie et l’humanisme” (pp. **MANCANTE!**)

⁴⁴ “(R)épondre aux besoins des générations actuelles, sans pour autant compromettre la capacité des générations futures à répondre à leurs propres besoins” (pp. 7).

⁴⁵ “(U) n patrimoine commun” (pp. 5).

⁴⁶ La biosphère ne négocie pas de délais supplémentaires (pp. 5)

3.4 *Research & Degrowth International – ABOUT section on website page*

This text describes Research & Degrowth International, the academic organization that promotes international degrowth conferences and the network that helps build community between degrowth groups across countries (Research & Degrowth International, n.d.).

Context

The 2002 conference “Défaire le développement, refaire le monde” at UNESCO headquarters, connected Lyon-based activists and post-development academics.

In the same year, the Institute for Economic and Social Studies on Sustainable Degrowth was created in Lyon, which organized a year later the first international seminar on sustainable degrowth (Kallis et al., 2015).

“Décroissance” became a slogan in France and later in Italy and Spain (Demaria et al., 2013): it flourished in Lyon after the early 2000s protests for walkable cities, communal meals food cooperatives and campaigns against advertising, and then spreading.

The debate further grew with conferences and the issues of *La Décroissance*, which had enormous success. Research activist Schneider travelled on a donkey through France to spread awareness of degrowth in 2007 and founded the academic collective *Research & Degrowth* (Kallis et al., 2015).

*Summary*⁴⁷

The section presents the association and its philosophy, values, accomplishments, vision and short-term goals. *Research & Degrowth International* is “a think-and-act-tank” of degrowth that carries out research, advocacy, education and training activities.

Degrowth is a layered path that entails the reduction of production and consumption to achieve ecological sustainability and social well-being.

It draws from different disciplines and follows democratic principles; core values are care, simplicity, conviviality and equality and the main practices include self-reflection and dialogue.

⁴⁷ It's possible to read the full description at: <https://degrowth.org/about/>.

Among the most relevant initiatives, the association has founded the first master's programs on degrowth and summer schools, organized a conference in the European Parliament, supported experimentation spaces and the central hub of the global degrowth community.

The vision is planned degrowth by creating alternatives together with civil society.

Theory of change envisions personal, collective and political transformations beyond capitalism, cultivating “common senses”, ideas with the counter-hegemonic potential to support political projects.

Short-term goals are strengthening networks to further spread degrowth theory, training people and creating knowledge, helping develop solutions, supporting existing initiatives and activism and proving the value of simplicity.

Analysis

The analysis revealed a frame and a metaphor.

Degrowth transformation is a path that needs the commitment of people, change carriers.

The ideology is represented by the connection between economic and social transformation and advocacy and research. The association is in fact “a think-and-act-tank” whose activities encompass also education and training, based on ecology, economics and social sciences, democratic practices and “backed by science-based research” to convert into policy briefs.

The mission is to design slower societies, avoiding disaster by engaging society in the establishment of “common senses” and “alternative, post-capitalistic senses of being.

Ideology is enforced by being based on research, but also on commitment to the mission.

The social and economic transformation is defined using the metaphor “path” multi-level, voluntary, “towards reduction of production and consumption aiming at ecological sustainability, good life, liberty, and social justice”.

On one side, there is an inclusive “we” of collective members:

- “(w)e dream of societies becoming slower by design”,
- “we want to spread in civil society a conversation about the costs and limits of growth”,
- “our vision is to create the knowledges, practices and politics necessary for living well within limits”,
- “(w)e envisage a coevolution of transformational personal, communal and political change”,

➤ “we want to cultivate alternative, postcapitalist senses of being”.

On the other, the advocacy performed is based on science and research.

One of the main goals is described with a metaphor: the creation of “a network of living labs” to demonstrate the value of alternative modes of living based on simplicity and conviviality.

In the process of creation, salience is given to the coevolutionary aspect of change: political and policy change must happen together with change of people.

Institutions and people are interrelated and mutually reliant.

Values positively evaluated and considered indispensable are simplicity -living simply-, mutual care -aid and support-, conviviality -sharing and joyful togetherness-, equality -equal access to commons-, together with the principle of dialogue “about the limits of the current model and alternatives to it”.

Salience is given also to people, CHANGE CARRIERS: “we have to be the change that we want to see in the world – dedicating more and more of our time in post/non-capitalist spaces of production and consumption”.

The resulting identity is made of: care for others, in the sense of will to aid and support, “a culture of sharing and finding joy in togetherness”, and entitlement of access to commons. Moreover, self- and collective reflection and action on “invisible hierarchies” and on privilege.

3.5 Degrowth Declaration of the Paris 2008 Conference

The Declaration, drawn up at the first international degrowth conference, contains the basic principles and topics for those involved in the movement.

Context

“Degrowth” was introduced as the English correspondent of “*décroissance*” at the first Degrowth Conference in Paris in 2008, contributing to making it an international research topic.

Other conferences took place in the following years, for a total of 10. At these events, scholars, professionals, and members of civil society review the most recent research and initiatives.

After the first conference, groups and activities spread in European countries, Mexico, Brazil, Puerto Rico and Canada, and degrowth theory is taught internationally in universities (Kallis et al., 2015).

*Summary*⁴⁸

The declaration contains 19 points divided into three sections.

The first section explains why the model of economic growth has proved to be unsuccessful and damaging, ecologically and socially.

The second section calls for a paradigm shift, unfolding the concept of right-sizing, based on the decrease in ecological impact and economic redistribution.

The third section explains another element of this shift, which is degrowth, which is based on democratic values and practices, the satisfaction of societal needs, reduction of the role of economic activities in favour of social relations and well-being and public action through policies and tools for implementation.

Analysis

The analysis revealed two main frames that argue that economic growth is damaging and that changing is a choice.

GROWTH IS HARMFUL is the frame that starts the reasoning of the declaration.

⁴⁸ Full text is available at: <https://www.sciencedirect.com/science/article/pii/S0959652610000235>.

Not only is not beneficial in terms of social and economic gains (pt. 6, 1st section), but not putting constraints on economic activity to preserve biocapacity will lead to a “decline of collapse” (pt. 8, 1st section).

Also, the growth of the wealthiest countries causes negative environmental impacts on the others (pt. 7, 1st section) and international inequality, proving to be unable to reduce poverty due to flawed trade and financial markets (pt. 3, 1st section).

The validity of the frame is backed up by statements based on data: production and consumption have a proven limit beyond which there are environmental and social costs (pt. 4, 1st section).

Data has proved that this limit has been surpassed due to exponential growth, mainly of the richest countries (pt. 5, 1st section), as well as having shown economic and social unsustainability (pt. 6, 1st section).

The ideology built on these circumstances entails “right-sizing” and “degrowth”.

The first requires a reduction of the global ecological footprint, to make it ecologically sustainable (pt. 1, 2nd section), within a limited time frame (pt. 2, 2nd section) and prioritizing income and wealth redistribution (pt. 4 2nd section).

A sustainable increase of consumption “to a level adequate for a decent life” is possible to eradicate poverty (pt. 3, 2nd section).

Degrowth, “a voluntary transition towards a just, participatory, and ecologically sustainable society” (introduction to the 2nd section) aims to satisfaction of basic human needs, high life quality and the establishment of a sustainable and distributed level of the ecological impact of the global economy (pt. 3, 3rd section). Degrowth entails “societal change”, focusing on community dynamics and democratic values (pt. 6, 3rd section).

Salience is given to redistribution processes among and within countries (pt. 4, 2nd section; pt. 3, 3rd section) and fighting social negative impacts (pt. 4 & 6 & 8, 1st section, pt. 7, 3rd section).

Quality is positively evaluated, over quantity consumption (pt. 6, 3rd).

However, CHANGE IS VOLUNTARY: countries are required to reduce the level of per capita footprint within “a reasonable time-frame” (pt. 2, 2nd section), degrowth requires transforming the economic system and its policies (pt. 4, 3rd section), introducing the concept “into parliamentary and public debate and economic institutions”, as well as new measurement indicators of activities and objectives (pt. 7, 3rd section).

All the goals and conditions “will not be achieved by involuntary economic contraction” (pt. 3, 3rd section).

Ecosystems and non-humans are erased, making the declaration embrace an only-human perspective: the global limit to production and consumption must be respected, otherwise environmental and social costs will harm other national economies or future generations (pt. 4, 1st section).

It's possible to distinguish into two groups of recipients:

1. The inclusive “we” refers both to the “participants in the Economic Degrowth For Ecological Sustainability and Social Equity Conference” (opening), that make the calling for a paradigm shift (introduction to the 1st section) and explain the definition of degrowth (introduction to the 2nd section).
2. Another “we” refers to collective humanity and responsibility for disastrous consequences that will follow inaction on “bringing global economic activity into line with the capacity of our ecosystems” (pt. 8, 1st section).

There is a call for taking responsibility for current and future planetary circumstances, especially needed from the richest countries (pt. 5; 7, 1st section; pt. 2, 2nd section), efforts to redistribution (pt.4, 2nd section), individual and collective action for societal change, focus on voluntary activities and social relations within the community, respect of democratic values and diversity, spirituality (pt.6, 3rd section).

Further considerations

In the article *La décroissance*, there is an extensive use of metaphors: “plunder” is used to refer to the continuous overexploitation of environmental resources, “endless thirst” to indicate the never-ending need of mass consumption and “ideology” to criticize the subconscious pervasiveness of advertisement. In the description of *Research&Degrowth*, the degrowth transformation is a “path”, which involves a trajectory and a moving object.

Metaphors are mostly used to introduce new concepts:

- They are cognitive tools that allow people to understand abstract ideas through more concrete experiences. They are not just isolated linguistic occurrences but are deeply embedded in human cognition and language. Metaphors reflect complex mental processes and human evolution by shaping language, creating compact expressions, and prompting associative thinking.
- Cognition plays a key role in metaphor processing, helping individuals map physical experiences onto abstract concepts, extending knowledge from simpler domains to more complex ones.
- Image schemata, which are clusters of knowledge, aid in connecting physical realities to figurative ideas, forming a structure that links different domains of thought. These schemata are essential in helping people transition from concrete experiences to abstract understanding (Dávid & Furkó, 2015).

Frames are found in each text.

Framing refers to how issues or events are perceived differently depending on the perspective or “frame” used. By emphasizing certain aspects and omitting others, framing shapes public opinion and policymaking. It selectively highlights parts of reality to promote specific problem definitions, interpretations, or solutions (Merlijn van Hulst et al., 2024).

There is a prioritized reference to the finiteness of Earth and staying within limits, the importance of perverse ecological biocapacity in order to avoid collapse and disaster.

In *The Limits to Growth*, there is a consistent use of “finite system” to define the earth; the purposes of *Resource&Degrowth* include understanding and guiding “for living well within limits”; the *Declaration* argues there is a “proven limit beyond which there are environmental and social costs”.

Human activities and human-induced global warming can trigger tipping points across a range of ecosystems and scales (Lenton et al., 2019).

Ecological tipping elements are components of the planetary system that can cause rapid changes on a large-scale as a result of rather small changes (Ritchie et al., 2021).

Tipping elements can be grouped into three sub-systems: ice bodies or cryosphere, the circulations of the oceans and the atmosphere or circulation patterns and the biosphere.

The change of the states of the elements is often irreversible over several human generations.

Tipping points, which are where the elements change their state and usually are activated to specific global warming levels (Ritchie et al., 2021).

Tipping points emerge due to strong positive feedback within the system, a closed loop of causal connections that progressively amplify until causing an abrupt transition towards another set of states of the system (Lenton, 2013).

Recent findings indicate that these points can be crossed with lower levels of warming than previously found.

The thresholds of the tipping point and the likelihood of crossing are still very hard to predict (OECD, 2022).

Tipping points are the key elements that urge limiting global warming to 1.5 °C above pre-industrial levels, so that low levels of warming would avoid triggering other tipping points. For example, at 2 °C of warming, the Arctic region has a 10–35% chance of becoming largely ice-free in summer and 99% of tropical corals are projected to be lost (Lenton et al., 2019).

Current data shows that some of the key elements of these sub-systems, such as the Arctic Permafrost, the Atlantic Meridional Overturning Circulation and the Amazon Forest, may have already crossed or are being pushed to cross critical thresholds.

Crossing the threshold would lead potentially to a change in the state of regional or global climate that in turn would cause severe consequences, such as forest fires, higher sea-level rise rates and extreme temperatures.

Tipping one element can trigger others and cause a cascade effect. Socioeconomic and ecological shifts can be so rapid not to allow human societies to adapt (OECD, 2022).

Ecological overshoot is linked to biocapacity, which is the area, usually calculated in global hectares -hectares of biologically productive land and sea area-, providing biological capacity, the ability of ecosystems to regenerate resources and to absorb human wastes.

Overshoot refers to an over-budget consumption of natural resources. 1961 was the first year in which it was possible to calculate, using UN statistics, human demand on natural resources: from the early 1970s, human societies have been using resources at a higher pace than regeneration rates and therefore exceeding the budget of these resources, going into global overshoot and causing ecosystems degradation -desertification, soil erosion, deforestation, biodiversity loss, carbon concentration and so on-.

Overshoot is measured by reference to the Ecological Footprint, which considers the amount of productive land and sea -measured in global hectares- needed to produce resources for a considered population and to absorb related waste.

Every year the international research organization Global Footprint Network⁴⁹ calculates Earth Overshoot Day, the date from which human yearly demand for ecological resources and services exceeds the yearly regeneration capacity of global ecosystems. The most recent global Ecological Footprint, is used to estimate for how many days in that year global biocapacity can address the same Ecological Footprint. The remainder of the days correspond to overshoot.

Technically, the calculation is made by dividing global biocapacity by the Ecological Footprint and multiplying by 365 or 366 (in leap years). Currently, the ecological demand humans required from ecosystems would need 1.7 Earths to avoid overshoot.

Data to make calculations is based on about 15,000 data points per country each year and is drawn from UN data sets and additional data from the most recent scientific literature, though it's not possible to verify the reliability and precision of all information.

The Network uses conservative data sets underestimating the gap between human resources use and natural regeneration rate and estimates precision to be between 10% and 20%, confirming a progressive improvement each year.

Despite insufficient data to capture the impact of current trends and despite the steady technological improvement of productivity, it's evident that the use of ecological resources and services has been expanding beyond biocapacity and regeneration rates, increasingly causing soil and water depletion and, most importantly, compromising future biocapacity.

⁴⁹ It's possible to know more at: <https://www.footprintnetwork.org/about-us/>.

Data show that an increase in world population and consumption lead, even singularly, to higher per capita demand and a smaller pool of resources.

Projections reveal that by 2030 we would need the capacity of two Earths to keep up with our demand level. But it's extremely doubtful whether these continued levels of overuse are physically possible, posing a severe risk to the well-being of the majority of the planet's inhabitants (Earth Overshoot Day, Global Footprint Network., n. d.).

Drivers of these trends encompass economic growth and fossil fuels use, marketing and pronatalism.

Within the economic growth model, the human is depicted as a self-interested and utility maximiser consumer, with unlimited material demands and without social attachments that further stimulated economic growth, facilitated, on the practical level, by continuous technological development and use of fossil fuels.

This energy source still represents the main one –81% of primary energy in 2022–, increasing by 175 times in terms of average use per capita compared to the same value in 1800 and consuming half of the amount of fossil fuels ever used in the last 30 years.

The use of these cheap resources allowed to reduce the negative feedback on population growth, contrasting food shortages and supporting the development of medicine: in about 200 years world population went from 1 billion to 8 billions, inevitably leading to an increase of consumption and waste.

Individual overconsumption is stimulated by marketing strategies that, through the collection of data and analytics, profit from psychological responses to boost the mood and reinforce the self-identity and social status.

Individual overconsumption goes together with a significant growth of the global population, boosted by pronatalism influences that pressure people to have children for patriarchal, religious, nationalist, militarist or capitalist reasons. Historical components of pronatalism include society settlement and progressive relegation of women to domestic and reproductive work, remarkable progress in medicine and public health - and neoliberal narratives that glorify motherhood both as a component of individual success and the performance of a gendered function (Merz et al., 2023).

However, the massive use of ecosystems does not correspond to social well-being gains.

While there has been a constant increase in resource use, environmental degradation and CO₂ emissions, improvement of social values such as life satisfaction, social support, democratic quality and equality has not been as substantial nor as rapid. Studies have however proved that social improvements are possible without economic growth, through inequality reduction and social provisioning (Fanning et al., 2021).

Reasoning on growth is also a matter of equality.

Growth not only leads to equal distribution, but widens the wealth gap (*Limits to Growth*), hinders social justice (R&Di *ABOUT* section) without being able to avoid social conflicts (*La Décroissance*) due to flawed trade and financial dynamics (*Declaration on Degrowth*).

Wealthiest societies not only cause more environmental impact, but perpetuate international inequality.

Overshoot and inequality are related: excessive consumption is mainly located in high-income countries, while having a greater impact on low-income ones. The former have generated 70% of historical emissions that enacted human-induced climate change and that have more intense consequences in the latter, facing most of the monetary costs of climate change and climate change-related deaths.

Negative consequences include a decrease in agricultural products and consequential increase of hunger that will inevitably affect the poorest segments of world's population (Hickel, 2019).

The top 10% highest income-earners are responsible for 25–43% of environmental impact and 47% of CO₂ emissions, while the bottom 10% generates the 3–5% of environmental impact; the bottom 50% contribute 10% of CO₂ emissions.

The top 20 wealthiest individuals produce 8000 times the carbon emissions of the poorest billion people (Merz et al., 2023).

In 2022, the top carbon dioxide emitter countries were North America and China, which account respectively for 13.6% and nearly 31% of global emissions, for a total of almost 45% of the global amount.

The United States is also responsible for the majority of cumulative CO₂ emissions since 1750, that account for more than 400 billion metric tons (Tiseo, 2024) and a group of 20 fossil companies has generated one-third of current CO₂ emissions despite executives knowing from the late 1970s about the relationship between fossil fuels and global warming (Alberro, 2020).

Not only do these values make more complex any discourse on the relationship between overpopulation in low-income countries and emissions levels (Ritchie, 2024), but they open discussion on responsibility and inequality.

Differences between countries can be assessed on the basis of GDP and PPP (Purchasing Power Parity), with the integration of indicators such as the Human Development Index (HDI), which considers aspects of life

expectancy, years of schooling and income per capita. Notable gaps concern economic and material wealth, but also social and immaterial types (Liu, 2022)⁵⁰. Data from the 2022 World Inequality Report show that the richest 10% of the world population currently earns 52% of global income, whereas the poorest 50% of the population earns 8.5% of it. Regarding wealth, the poorest half of the global population owns 2% of the total wealth and the richest 10% of the global population owns 76% of all wealth.

The highest levels of inequalities within countries are registered in countries such as Brazil and India. These inequalities are the result of deregulation and liberalization programs that started in the 1980s and yielded different results in different countries, confirming that inequality is the result of political choices.

There has been a substantial reduction in the average income gap between the richest 10% of countries and the poorest 50% of countries, but inequality quite increased within countries, due to an increase in private health.

Despite a general increase in wealth, the net wealth of the public sector in rich countries is close to zero or negative, with considerable implications in terms of governments' capacities to face challenges such as inequality and environmental crises.

Within the global private sector, from the mid-1990s the top 1% took 38% of all additional wealth accumulated, whereas the bottom 50% was just 2% of the wealth. During the Covid crisis, the trend intensified: governments borrowed the equivalent of 10-20% of GDP from the private sector, which kept accumulating wealth.

Once again, income and wealth are tightly connected to ecological inequalities and inequalities in negative environmental impact: the top 10% of individual emitters are responsible for close to 50% of all emissions, while the bottom 50% of emitters produce 12% of the total emissions, despite being high emitters in low- and middle-income countries and low emitters in rich countries⁵¹ (World Inequality Lab, 2022).

Moreover, different scholars have argued that the conventional value of the absolute extreme poverty line of \$1.90 per day calculated by the World Bank is inadequate for being too low. To ensure minimum basic nutrition an individual needs about \$5 per day, to reduce infant mortality about \$7 per day and to permanently escape poverty at least \$10 per day.

⁵⁰ It's important to remember that social and economic assessments derive from the Western scientific communities and their cultural products -UN agencies and international law- (Liu, 2022).

⁵¹ The bottom 50% of the European population emits around 5 tonnes per year per person, the top 10% yields 29 tonnes; in East Asia the bottom 50% generates around 3 tonnes, the top 10% emits 39 tonnes; in North America the bottom 50% around 10 tonnes and the top 10% of population yields 73 tonnes (World Inequality Lab, 2022).

The poverty line should rise to \$12-15 per day, highlighting even more the severity of inequalities despite the sufficiency of material assets (Hickel, 2019).

The roots of inequality lie in colonialism, development policies, trade mechanisms and climate change.

Colonialization allowed the enrichment of European countries by enclosing lands and substituting traditional farming systems with cash crops to export.

Trade treaties imposed asymmetrical tariffs that kept colonies mainly exporters of primary goods and consumers of imported ones, giving access to Western countries to raw materials and export markets and weakening the development of industrial economies in the other countries.

In the post-colonial epoch, newly independent nations were prevented from adopting policies that would develop their economies, such as protective tariffs, import substitution and nationalization, by the orchestration of Western-backed coups that established dictatorships convenient to Western economic interests and structural adjustment programs required by the World Bank and the International Monetary Fund that demanded the liberalization of economy and the privatization of public assets.

New markets and investment opportunities were created for Western countries as they held the voting power within the institutions.

The system of international trade imposed licensing fees and unfavourable tariff imbalances, as well as favoured illicit financial flows mainly for tax evasion and unequal exchange, that is lower wages for exported goods made by non-Western workers compared to the real labour value on international markets, corrected for productivity.

Costs of climate change, which strengthen inequalities and as another form of inequality, fall on lower-income countries, in terms of drought, floods, landslides, storms, wildfires and deaths mainly due to hunger and contagious diseases (Hickel, 2019).

The poverty reduction model embraced by international institutions is based on economic growth and “trickle-down” income, however increasing incomes of rich people only. This model not only includes avoiding more fair distribution, but it’s very inefficient for the purpose: estimates have predicted that at recent levels of income distribution through GDP, it would take more than 200 years to end poverty, requiring the global economy to grow about 175 times. This growth would entail extracting, producing, and consuming that many times more commodities, triggering in all probability environmental catastrophes.

Ecological limits, including the politically recognized 2°C temperature rise, require to find alternative measures to economic growth to avoid ecological breakdown and to reduce poverty (Hickel, 2019).

Finally, these discourses acknowledge the cultural and mentality factors, urging individuals to take action to enact change, embracing alternative values and behaviors.

Behaviors are determined also by rewarding experiences, which are the focus of marketing manipulation, guided in turn by social power dynamics determining needs and desires. Human behaviors that served to adapt throughout evolution contribute now to overconsumption. They include seeking pleasure and avoiding pain, acquiring and defending resources from competitors, displaying status through beauty or aggression, acting for immediate survival benefit. These characteristics are therefore volatile before an economic model that creates and meets increasing material demand.

Focusing on behaviour and mentality change rather than technological solutions aims to deal with cultural causes that are core to the matter, by finding new social norms and therefore influence consumption, population and waste patterns. Human behavior is driven by individual perception but also by the social values of the context and the system.

Regardless of the cultural group individuals belong to, the human need to demonstrate positive attributes is expressed through species-specific signals, which, being a physical expression, change in time. Values and qualities influence social perceptual framing that in turn affects behaviour (Merz et al., 2023).

Mass production shifted its focus from creating useful products to prioritizing profit.

To sustain this model, a culture emerged that equated possession and consumption with happiness.

Advertising played a crucial role in fostering consumer culture by generating new needs and diminishing the value of thrift and leisure time in favour of material goods.

Consumer desire was redefined as a form of progress, driven by the constant replacement of old items with new ones, ultimately facilitating economic growth (Higgs, 2021).

Research shows that household consumption behaviors account for 72% of global carbon emissions, making consumers essential for meeting the 1.5 °C target of the Paris Agreement.

While corporations and governments are under scrutiny, the role of households in climate policies is often overlooked and not prioritized.

In a capitalist and globalized world, encouraging sustainable consumption is crucial for policy development and presents new opportunities. Capitalism promotes consumerism, which encourages excessive acquisition of goods, while globalization blurs the lines between genuine needs and profit-driven production.

Advertising, especially online, convinces people they need products, leading to unnecessary purchases and environmental harm through poor waste management.

Studies indicate that factors such as environmental knowledge and personal values influence individual behaviours. However, there is a disconnect between how individuals perceive their responsibility to address climate change and the roles outlined by climate policies.

To bridge this gap, policies should promote consumption changes through market-based or command-and-control approaches, shaping attitudes and practices to foster sustainable habits (Namakula, 2021).

Degrowth advocates a “societal change” by embracing simplicity, care, mutuality, participation and shifting self-worth and social status to ecological and collective responsibility.

Chapter 4. Conclusions

This thesis analysed the discourses of Sustainable Development and Degrowth theory, to find the ideological elements that guide their respective climate action.

Through the perspective of eco-linguistics and with the tools of discourse analysis, the analysis revealed, on the one hand, which are the components of Sustainable Development that prevent the achievement of ecological sustainability and, on the other hand, which are the elements of rupture of Degrowth theory that would lead to sustainability.

The Ecological discourse analysis enables to analyse of any type of discourse under the ecological framework, on the basis that the physical environment is mediated and influenced by language.

The analysis of the discourse of Sustainable Development revealed that it is based on the separation of human and nature and the domination of the former over the latter to the benefit of human needs, the search for technical and scientific solutions and the integration of economic growth.

The analysis of the texts of the Degrowth theory revealed a particular salience on the concept of finiteness and limits, as well as the rejection of economic growth, source of environmental damage and social inequality, and technical solutions, proposing new values of simplicity and care for individuals and societies

The first chapter opens with an overview of the advancement of the environmental crisis.

In 2023, the world experienced record-high temperatures, rapid sea-level rise, and intensified extreme weather events, including wildfires and floods. Human-induced warming has led to severe droughts that threaten food security and ecosystems, particularly harming poorer communities. Oceans are warming, and coastal areas face increased flooding risks. Human activities have transformed 77% of land and 87% of oceans, resulting in significant biodiversity loss, with many species nearing extinction. The degradation of ecosystems due to biodiversity loss and climate change disproportionately impacts disadvantaged communities, while high consumption levels in wealthy nations exacerbate these crises.

The Kyoto Protocol (1997) and Paris Agreement (2015) are the major climate treaties aimed at tackling climate change.

These agreements allow wealthier countries to offset rather than reduce emissions domestically and emissions and fossil fuel use continue to rise, with Western nations responsible for 80% of emissions, jeopardizing net-zero targets and climate goals.

Another major limit is precisely this exclusive focus on emissions.

Environmental policies that prioritize CO2 reduction simplify the complexities of climate change by focusing narrowly on carbon emissions. This approach neglects the need for a fundamental reevaluation of socio-political systems and broader environmental changes. The commodification of CO2 transforms it into a tradable asset, reducing diverse social, political, and ecological contexts to a single measurable entity. This depoliticization of climate change fosters a governance model that emphasizes risk assessments and economic performance, rather than tackling the underlying systemic issues.

One consequence of the exclusive focus on emissions is the absence of international regulation of economic activity and its environmental consequences. Exponential growth vastly impacts the natural environment and finite resources, as well as has a limited ability to provide well-being and equality.

Economic growth is defined as the increase in a country's production of goods and services per capita over time, often measured by GDP and real income. Despite rising global incomes since 2000, over 700 million people still live in extreme poverty. Economic growth is linked to higher incomes, job creation, and improved public services, but it also poses challenges such as environmental damage, social inequality, and inflation.

Growth can foster green investments and efficient resource use. However, economic expansion often results in significant environmental degradation due to resource extraction and industrialization, leading to deforestation, over-extraction of minerals, and increased greenhouse gas emissions, particularly from fossil fuels.

Financial development drives energy consumption and can exacerbate environmental pressures. Policies that undervalue natural resources or promote energy-intensive activities further contribute to excessive extraction. This cycle is tightly linked to rising pollution and global warming. Additionally, increasing income and consumption accelerate resource depletion, threatening future generations. Recent UNEP reports indicate significant rises in raw material extraction and water use, especially in developing countries, which often outsource resource-intensive production, contributing to over 60% of global greenhouse gas emissions and significant health impacts from air pollution.

Economic growth and Sustainable Development are tightly linked. The idea of material well-being has been historically integrated into the concept of development, applied also in colonization.

Economic growth evolved with capitalism, prioritizing capital accumulation through commodity production. In the 17th century, philosophers promoted growth as a societal goal, and by the 19th century, development was linked to economic progress to address poverty. The Industrial Revolution intensified resource exploitation, commodifying land, labor, and nature.

After WWII, development became a tool for Western countries and international institutions to modernize former colonies, often based on Western growth models. However, these models worsened inequality and environmental damage, leading to calls for alternative approaches.

Sustainable Development emerged to balance economic progress with environmental conservation, but critics argue it still prioritizes growth over true sustainability, failing to address consumerism or set clear environmental goals.

Currently, Sustainable Development and sustainability are used as synonyms.

The concept of sustainability emphasizes the balance between resource use and conservation. Despite its importance in environmental policy, there are over 300 definitions of sustainability, leading to confusion and a need for clarity to differentiate genuine practices from greenwashing.

Sustainability is often viewed through social, environmental, and economic lenses, with debates on whether natural resources can be replaced by capital (“weak sustainability”) or must be preserved (“strong sustainability”). The 1987 *Brundtland Report* defined sustainable development as meeting present needs without compromising future generations.

Sustainable Development integrates environmental, economic, and social dimensions, aiming to balance resource preservation with growth and equity. The UN's Sustainable Development Goals (SDGs) coordinate global efforts to address poverty, environmental harm, and inequality.

Despite its use in international governance, climate data proves that this model has not produced sufficient contribution to solve the environmental crisis.

Analysing the discourses of sustainability can provide useful insights. There is a proven relationship between language, society, and the environment. Ecolinguistics explores these relationships, uncovering how dominant groups use language to shape public narratives and normalize harmful practices.

The analysis is based on Arran Stibbe's concepts in his book *Ecolinguistics: Language, Ecology and the Stories We Live By*. It posits that language influences our cognitive structures, or "stories," shaping behaviors and values. Some of these stories can be destructive to ecological norms.

The second chapter analyses Sustainable Development discourse by referring to key UN texts. The analysis disclosed the following key points:

1. Anthropocentrism and economic growth.

Sustainable Development, rooted in human-centered concerns, emphasizes economic growth while aiming to protect the environment for utilitarian purposes. Economic growth is seen as essential for

achieving development, with each document advocating for increased economic activity as a means to address environmental issues.

2. Dichotomy of nature and society.

Historically, Western thought has perpetuated this division, from Greek mythology to Judeo-Christian beliefs and Enlightenment philosophy, which positioned humans above nature. Capitalist ideologies further entrenched the view of nature as a resource for human consumption, linking democracy and free-market capitalism with resource exploitation. This utilitarian view of nature, prioritizing economic benefits, has contributed to environmental degradation. Researchers argue that human production and consumption patterns are key drivers of these harmful changes.

3. Green capitalism and technological solutions.

Market solutions and technological innovations alone cannot solve environmental issues. This framing tends to avoid challenging existing production and consumption models.

4. Lack of sustainable production and consumption.

While these concepts are crucial for sustainable development, they are often mentioned only marginally in key documents, reflecting a lack of concrete commitments. Indicators for measuring sustainable production and consumption are often vague and lack specific targets.

5. Use of sustainability.

The term "sustainability" appears throughout the documents but lacks a clear definition. Its usage tends to refer more to environmental sustainability, but without a comprehensive understanding or framework.

The third chapter introduced Degrowth theory and the analysis of relevant texts. The analysis disclosed the following key points:

1. Risk of triggering tipping points.

Human activities can trigger ecological tipping points, leading to rapid changes in ecosystems due to climate change, with critical thresholds potentially being crossed at lower warming levels than previously thought. Tipping points pose severe risks, including drastic climate changes that could outpace human adaptation.

2. Current trends of ecological overshoot.

Ecological overshoot relates to biocapacity—the ability of ecosystems to regenerate resources—showing that since the 1970s, humanity has consumed resources faster than they can be replenished, leading to environmental degradation. The Ecological Footprint measures this overshoot, with current estimates indicating that humanity's demands would require 1.7 Earths to sustain. Overconsumption is driven by economic growth, fossil fuel use, and marketing strategies, which promote individualism and constant consumption, often without corresponding social well-being improvements.

3. The role of economic growth in disparities.

Economic growth often exacerbates inequality, particularly as the wealthiest countries and individuals contribute significantly to environmental degradation, disproportionately impacting lower-income populations. While growth is commonly viewed as a means to achieve equitable wealth distribution, it frequently leads to widening wealth gaps and undermines social justice. High-income countries are responsible for 70% of historical greenhouse gas emissions, worsening conditions like hunger in poorer regions. Economic policies focused on deregulation since the 1980s have deepened inequalities, especially in countries like Brazil and India. Despite global wealth growth, the public sectors in affluent nations struggle with negative net wealth, limiting their ability to tackle environmental and social crises. Inequality is also tied to historical factors such as colonialism and exploitative trade practices that entrenched economic disparities. The prevalent model for poverty alleviation—focused on growth and "trickle-down" economics—proves inefficient, suggesting that ending poverty could take over 200 years without significant systemic changes.

4. The need for behavioral and cultural shifts.

This need is highlighted as essential for fostering sustainable consumption. Individual behaviors are influenced by broader social dynamics, and current marketing practices exacerbate overconsumption by equating material possession with happiness. With household consumption responsible for 72% of global carbon emissions, promoting sustainable consumption behaviors is critical for achieving climate goals. Policies should therefore encourage individual responsibility and incorporate market-driven approaches to reshape consumer habits and attitudes towards sustainability.

The major limitation that influenced the writing of this was my limited knowledge of linguistics, rhetorical elements and all linguistic components that reveal covertly what is the discourse that guides the individual in relation to the outside world.

However, the thesis question found an answer. The analysis disclosed the components that influence the ineffectiveness of climate action taken by Sustainable Development. The following analysis of the Degrowth theory has shown that its concept of sustainability is backed up by ecological data. I argue that Sustainable

Development is not ecologically sustainable, whereas Degrowth theory introduces a theoretical framework and practices that are ecologically based.

The history of the concept of development proves that Sustainable Development is a compromise between the previous notion of development and the one of environmental conservation. The path to creating Sustainable Development is not a shift, but a sequence of changes of the same core idea. This is crystal clear in its discourse as well.

Finally, the very formulation of Sustainable Development is vague and fails to specify the which are the necessary steps for sustainability, specifying only elements of development -addressing human needs and generating economic growth-.

Degrowth theory is a compelling alternative to sustainable development, it addresses social and cultural roots, as well as economic destructive dynamics, refusing to adopt the same model that has caused global warming and the deterioration of ecosystems and loss of biodiversity. It rejects the idea of infinite growth on a finite planet, arguing that true sustainability requires reducing economic activity to alleviate environmental pressures rather than merely making growth more efficient. . It emphasizes that a fulfilling life can be achieved without constant consumption and production.

Degrowth theory advocates abandoning the supposed universality of Western well-being and progress, establishing new alternatives connected through networks.

Its strengths are continuous scientific research to allow the creation of initiatives and direct involvement of people, “change carriers”.

Mission and steps of Degrowth are clear: “right-sizing” by scaling down production, addressing basic needs, redistributing wealth and income. Although this theory is in its infancy and still has to coordinate different internal positions, its coherence with the data -ecological overshoot, wealth unequal distribution, emissions, energy and resource use- shows that it is time to move beyond Sustainable Development and rethink the human dimension on the planet.

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