

## The evolution of sustainable awareness through key historical milestones



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### ABSTRACT

The research aimed to analyze the trajectory of environmental movements throughout history, highlighting their impacts, public policies and awareness initiatives in the promotion of environmental conservation and sustainable practices. To this end, a bibliographic research was carried out through the survey of articles on the Scopus, SciELO and Google Scholar platforms. As a result, it has been found that, from the Industrial Revolution to recent events such as Rio+20 and the



Paris Agreement, the historical context has shaped these movements and influenced global sustainability policies. The emergence of environmentalism as a political and social force was a response to the challenges of environmental degradation and the unbridled exploitation of natural resources. Events such as the Love Canal disaster and the Stockholm Conference boosted environmental activism, culminating in Rio-92, which laid solid foundations for international cooperation and important environmental agreements. The Kyoto Protocol was crucial in the fight against climate change, while the

Johannesburg Earth Summit and Rio+20 reaffirmed the commitment to sustainable development and global cooperation. Despite advances, challenges such as climate change require collaborative approaches involving governments, the private sector, and civil society. Environmentalism and sustainability represent commitments to the future, requiring continuity in awareness, responsible public policies, and sustainable practices to achieve an equitable and environmentally sound future.

**Keywords:** Environment, Environmental movements, Sustainability.

## 1 INTRODUCTION

Sustainability and environmentalism represent fundamental pillars in the search for a more balanced and harmonious future between human activities and the environment. While sustainability encompasses the idea of ensuring the responsible use of natural resources, reducing environmental impact, and promoting the social and economic well-being of present and future generations, environmentalism emerges as a social and political movement that advocates for the preservation of ecosystems, the conservation of biodiversity, and the mitigation of climate change (MENDES, 2022).

As Santos et al. (2020) reiterate, sustainability and environmentalism are intertwined, with environmentalism often serving as the basis and inspiration for sustainable policies and practices, while sustainability provides the theoretical and practical framework for achieving the goals sought by environmentalism.

In recent years, humanity has witnessed a significant increase in awareness and engagement on issues related to sustainability and environmentalism, both from civil society and the private and government sector. Environmental movements have been pushing for stricter environmental protection policies, while sustainability has been increasingly incorporated into business strategies and public policies. This convergence of efforts is essential to address global environmental challenges, such as biodiversity loss, pollution, scarcity of natural resources and climate change, and to promote fairer and more sustainable development for all (GIACOMETTI; DOMINSCHER, 2018).

In this context, the objective of this research was to analyze the trajectory of environmental movements throughout history, investigating the impacts of environmental movements, public policies and awareness initiatives in the promotion of environmental conservation and the adoption of sustainable practices. To this end, a bibliographic search was carried out through the survey of articles on the Scopus, SciELO and Google Scholar platforms.



## 2 DEVELOPMENT

Since the early nineteenth century, with the rise of the Industrial Revolution, the world has witnessed rapid economic and social transformation. However, along with industrial advances have also come severe environmental impacts, such as air and water pollution, rampant deforestation, and the degradation of ecosystems. These problems aroused growing concerns among the thinkers and activists of the time, who began to warn about the dangers of the unbridled exploitation of natural resources (ROCHA; FILE; WALDMAN, 2020).

The indiscriminate use of coal as an energy source in factories and locomotives has contributed to the emission of large amounts of air pollutants, such as sulfur dioxide and soot, generating air quality problems in industrial urban areas. In addition, the waters of rivers and lakes have been contaminated by industrial waste, resulting in water pollution and destruction of aquatic habitats (ROCHA; FILE; WALDMAN, 2020).

Deforestation was also a direct consequence of the Industrial Revolution, as demand for wood increased for the construction of factories, homes, and urban infrastructure, as well as for the production of charcoal used in the steel industry. These activities have contributed to the loss of natural habitats and the fragmentation of ecosystems, affecting biodiversity and ecosystem services (MENDES, 2022).

Thus, the context of the Industrial Revolution marked the beginning of an era of significant environmental impacts, which shaped the basis for the later emergence of the environmental movement. The environmental consequences of this historical period highlight the importance of considering economic development in a sustainable way, seeking to reconcile industrial progress with the protection and conservation of the environment (ROCHA; FILE; WALDMAN, 2020).

However, it was only in the twentieth century that environmental movements gained greater visibility and organization, driven by landmark events such as the Love Canal environmental disaster in the United States in the 1970s. The Love Canal environmental disaster is one of the most iconic episodes in U.S. environmental history. It took place in the city of Niagara Falls, New York, during the 1940s to 1970s. Love Canal was a residential area built over an old navigation canal that had been excavated and abandoned in the late nineteenth century (RABELO, 2019).

In the 1920s, the chemical company Hooker Chemical Company used the canal to deposit toxic industrial waste, including chemicals such as hexachlorobenzene and dioxin. In the 1950s, the area was sold to the City of Niagara Falls at a symbolic price, and a residential neighborhood was built over the site. However, residents began to report health problems, such as congenital malformations, cancer, and respiratory diseases, in addition to noticing the appearance of toxic substances in the soil and water (STEINMETZ; BURMANN; BURGEL, 2023).



In 1978, U.S. President Jimmy Carter declared a national state of emergency in Love Canal, and more than 800 families were relocated to safe areas. The Love Canal disaster had a significant impact on the U.S. environmental movement, leading to the enactment of federal environmental protection laws such as the National Environmental Policy Act (NEPA) and the Superfund Act, which established a program to clean up toxic contaminated sites across the country (STEINMETZ; BURMANN; BURGEL, 2023).

According to Rabelo (2019), the Love Canal disaster highlighted the dangers of uncontrolled industrial pollution and the need for stricter environmental regulations to protect public health and the environment. It has also served as a powerful example of the power of community mobilization and environmental activism in the pursuit of environmental justice and holding corporations accountable for environmental damage.

According to Dellagnezze (2022), another factor that contributed to the intensification of environmental movements was the United Nations Conference on the Human Environment in Stockholm in 1972. The United Nations Conference on the Human Environment, held in Stockholm in 1972, was a historic milestone in the development of global environmental policies. The event brought together representatives from 113 countries, as well as non-governmental organizations and observers, to discuss emerging environmental issues and seek solutions to the environmental challenges facing the planet.

The Stockholm Conference was the first global gathering of world leaders dedicated exclusively to the environment. Its main objective was to sensitize governments and public opinion on the importance of environmental protection and to promote international cooperation to address global environmental problems (DELLAGNEZZE, 2022).

During the conference, a variety of topics were discussed, including air and water pollution, deforestation, biodiversity conservation, and the impact of human activities on climate and ecosystems. One of the most significant outcomes of the conference was the adoption of the Declaration on the Human Environment, which emphasized the urgent need to protect and preserve the environment for present and future generations (ZECA, 2022).

In addition to the Declaration on the Human Environment, the conference also resulted in the creation of the United Nations Environment Programme (UNEP), which is the leading global authority responsible for environmental issues within the United Nations system. The Stockholm Conference laid the groundwork for future international environmental negotiations and agreements, including the Convention on International Trade in Endangered Species (CITES) and the United Nations Convention on Climate Change (UNFCCC) (ZECA, 2022).

With the increased awareness of global environmental issues, non-governmental organizations and social movements dedicated to protecting the environment and promoting sustainability have



emerged. Movements such as Greenpeace, founded in 1971, have become icons of the global environmental struggle, carrying out awareness campaigns, protests, and direct actions in defense of biodiversity and against environmental degradation (ZECA, 2022).

According to Candido, Rédua, and Kato (2021), the 1990s marked an important advance in the field of sustainability, with the elaboration of Agenda 21 at the United Nations Conference on Environment and Development (Rio-92), which established principles and guidelines for sustainable development at the global level. Agenda 21 was a comprehensive document that outlined strategies to promote sustainable development in different areas, including the economy, society, and the environment. This agenda recognized the interconnectedness between these aspects and emphasized the need to address them in an integrated and collaborative manner.

Rio-92 was an important milestone because it brought together leaders from around the world to discuss and negotiate concrete actions to address environmental challenges. This has led to increased international cooperation and the adoption of important environmental agreements and protocols, such as the United Nations Framework Convention on Climate Change and the Convention on Biological Diversity. These efforts have been instrumental in laying a solid foundation for the promotion of sustainability globally and in laying the groundwork for future environmental initiatives and agreements. However, they also highlighted the continued need for action and commitment to address evolving environmental challenges (CANDIDO; REDUOUS; KATO, 2021).

After the historic United Nations Conference on Environment and Development, better known as Rio-92, the global scenario of environmental movements began to evolve significantly. This event marked a crucial turning point by bringing together leaders from around the world to discuss and negotiate concrete actions to address the urgent environmental challenges facing the planet. Rio-92 not only fostered greater awareness of issues such as climate change, pollution, and biodiversity loss, but also catalyzed growing international cooperation. This has been reflected in the adoption of important environmental agreements and protocols, such as the United Nations Framework Convention on Climate Change and the Convention on Biological Diversity (SCOVAZZI, 2022).

Thus, after Rio-92, a series of landmark events continued to boost environmental movements and influence global sustainability policies. Among them, the Kyoto Protocol, established in 1997, was a crucial step in the fight against climate change, setting emission reduction targets for industrialized countries. This protocol was an important development of the United Nations Framework Convention on Climate Change (UNFCCC), established at Rio-92 (SOUZA, 2008).

The Kyoto Protocol had as its main objective to reduce greenhouse gas emissions, particularly from industrialized countries, recognizing their historical responsibility for climate change. To achieve this goal, the protocol established mandatory emission reduction targets for developed countries in relation to 1990 levels (SOUZA, 2008).



One of the distinguishing features of the Kyoto Protocol was the Emissions Trading mechanism, which allowed countries meeting their emissions reduction targets to purchase carbon credits from countries that exceeded their targets or invest in mitigation projects in other countries. This mechanism aimed to promote a more efficient and cost-effective global reduction of emissions (CHAVES, 2015).

However, despite its ambitious goals, the Kyoto Protocol has faced significant challenges, including a lack of buy-in from some of the largest emitters of greenhouse gases, such as the United States, which has not ratified the agreement. In addition, there were concerns about the fairness of the targets, as developing countries had no obligations to reduce emissions. Despite its limitations, the Kyoto Protocol has set an important precedent for international cooperation in the fight against climate change and has influenced the global environmental agenda. He highlighted the need for concrete and binding actions to address one of the most pressing challenges facing humanity and laid the groundwork for future climate agreements such as the Paris Agreement (CHAVES, 2015).

Years later, the Johannesburg Earth Summit held in 2002 reviewed progress since Rio-92 and highlighted the need to intensify efforts to achieve sustainable development goals. The event aimed to review the progress made since Rio-92 and assess emerging challenges related to sustainable development. The summit brought together world leaders, non-governmental organizations, and civil society representatives to discuss environmental, social, and economic issues. It provided an opportunity for participants to share experiences, exchange knowledge, and make renewed commitments to promote sustainable development on a global scale (AQUINO et al., 2022).

One of the main outcomes of the Johannesburg Earth Summit was the reaffirmation of the principles and commitments established at Rio-92, including the importance of integrating economic, social and environmental development. In addition, the summit highlighted the need to intensify efforts to achieve the Sustainable Development Goals (SDGs), subsequently established by the United Nations (UN) (AQUINO et al., 2022).

The Johannesburg Summit, however, also faced criticism, particularly regarding the lack of significant progress in implementing previous commitments and the absence of binding agreements to tackle pressing environmental issues such as climate change and biodiversity loss. Despite the limitations, the Johannesburg Earth Summit played an important role in maintaining the focus on the sustainable development agenda and bringing together leaders and key actors to promote global dialogue and cooperation in pursuit of a more equitable, prosperous, and environmentally sound future (AQUINO et al., 2022).

As Sugahara and Rodrigues (2019) point out, twenty years after Rio-92, the World Summit on Sustainable Development, known as Rio+20, brought together global leaders to adopt the document "The Future We Want", outlining a collective vision for sustainable development. The event brought together world leaders, representatives of governments, non-governmental organizations, the private



sector and civil society to discuss and take action on global challenges related to sustainable development. The main objective of Rio+20 was to renew the political commitment to sustainable development and to assess the progress made since Rio-92, as well as to identify new ways to move towards a more sustainable future. The event also aimed to strengthen global environmental governance and promote integration between the economic, social and environmental dimensions of development.

At the Rio+20 event, the document entitled "The Future We Want" was adopted. This document outlined a collective vision of world leaders on sustainable development, highlighting key principles and priority areas for action. Among the topics covered were the eradication of poverty, the promotion of sustainable patterns of production and consumption, the protection and management of natural resources, and the promotion of gender equality and women's empowerment. In addition to the outcome document, Rio+20 also promoted a series of thematic dialogues, high-level panels and side events, which provided opportunities for exchanging experiences, sharing good practices and mobilizing resources for sustainable development initiatives (SUGAHARA; RODRIGUES, 2019).

One of the most significant events was the Paris Agreement in 2015, a milestone in the fight against climate change. This agreement set global goals to limit global temperature rise and strengthen resilience to climate change. It represented a renewed response to the challenges identified since Rio-92, highlighting the importance of international cooperation and the mobilization of civil society in the search for a more sustainable future (GUEDES, 2021).

Today, environmentalism and sustainability remain central themes in the public and political debate, in the face of urgent challenges such as climate change, biodiversity loss and ecosystem degradation. Local and global environmental movements play a crucial role in pushing for environmentally responsible public policies and promoting sustainable practices in society (COSTA; FERREZIN, 2021).

The emergence of new technologies and innovative approaches has contributed to driving the sustainability agenda forward, offering creative solutions to the environmental challenges facing the planet. In this sense, environmentalism and sustainability represent not only a concern for the present, but also a commitment to the future of the next generations and of planet Earth itself (COSTA; FERREZIN, 2021).

### 3 FINAL THOUGHTS

In view of the above, the research aimed to analyze the trajectory of environmental movements throughout history, focusing on the impacts of such movements, public policies and awareness initiatives in the promotion of environmental conservation and the adoption of sustainable practices. Through retrospective analysis, it was possible to understand how the historical context, from the



Industrial Revolution to more recent events such as Rio+20 and the Paris Agreement, has shaped and influenced environmental movements and global sustainability policies.

In examining the evolution of these movements, it became clear that the emergence of environmentalism as a significant force in the political and social sphere was a response to the growing challenges of environmental degradation and the harmful consequences of the rampant exploitation of natural resources. From events such as the Love Canal disaster and the Stockholm Conference in 1972, environmental activism gained prominence, culminating in Rio-92, which established a solid foundation for international cooperation and the adoption of important environmental agreements and protocols.

The Kyoto Protocol, for example, was a significant milestone in the fight against climate change, highlighting the need for concrete and binding action by industrialized countries. Similarly, the Johannesburg Earth Summit and Rio+20 reaffirmed the commitment to sustainable development and promoted global dialogue and cooperation to address emerging environmental challenges.

However, it is important to note that despite the progress made, there is still much to be done. The emergence of global challenges such as climate change and biodiversity loss require a more comprehensive and collaborative approach, involving not only governments, but also the private sector, civil society, and citizens at large.

In this sense, environmentalism and sustainability represent not only a concern for the present, but also a commitment to the future of the next generations and of planet Earth itself. Therefore, it is essential to continue promoting awareness, adopting environmentally responsible public policies, and encouraging sustainable practices at all levels of society. Only through coordinated and committed efforts can we achieve a more equitable, prosperous and environmentally sound future for all.





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