

**Masaryk University**

**Environmental Policy and Economic Growth in the Anthropocene**

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**Anthropocene: Violence in Places, Worlds and Earth**

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## **Introduction**

The Anthropocene, which is the current epoch where human activities have become the most dominant force in shaping the world, is also a profound shift in humans' relationship with the environment. Scientists have used the term “Anthropocene,” which was introduced by Paul Crutzen and Eugene Stoermer in 2000, to emphasize that we are living in a period in which humans are shaping the global environment rather than the other way around (Edwards 2015). The increase in human activities has contributed to changing the face of earth. Various environmental issues that face humanity today have emerged in this era. In this context, there is a fundamental conflict between protecting the environment and the goal of economic growth. Even though growing the economy has long been seen as a sign of development and prosperity, environmental problems like resource depletion, biodiversity loss, and climate change are frequently becoming worse by trying to achieve economic growth (Xepapadeas 2005). The present essay discusses the relationship between economic growth and protecting the environment in the Anthropocene, focusing on two different strategies that strive to balance these opposing goals while addressing the need for economic growth and sustainability.

## **Understanding the Anthropocene**

In order to understand the Anthropocene, we need to compare it to the former epoch known as the “Holocene”, which began with the end of the last Ice Age. It is when all the significant and fundamental developments in human societies today occurred (Mackay et al. 2003). The Holocene has contributed to the growth and development of modern human civilization. Around 11.7 thousand years ago, a sudden transition from the frigid Younger Dryas epoch to a generally warmer phase marked the beginning of this period (Kich 2005).

Since the end of the Ice Age, climatic changes have followed a pattern of warming followed by periods of cooler and warmer weather. At the same time, vegetation has experienced radical changes, first brought about by the growth of forests and then mainly by human agriculture provoked deforestation. These changes were the result of both human activity and natural processes. The environment was initially formed by natural events and climate shifts, but over time, human activities especially agriculture, deforestation, and urbanization had a significant impact on the ecosystems and the landscape. The way that natural forces and human behavior interact has greatly shaped the Holocene era (Roberts 2014).

The present geological period, known as the Anthropocene, is characterized by the significant and widespread effects of human activities on Earth's systems. With human involvement, the planet's surface, atmosphere, and ecosystems are being shaped by a huge geological force. The Anthropocene is a time when human activities have grown to such an extent that could classify them as a separate geological epoch (Crutzen and Stoermer 2000).

The controversy around the Anthropocene's beginning date was expressed in the SCM report and became common from 2009 after the Anthropocene Working Group was established to investigate the Anthropocene as a possible new period in the Geologic Time Scale (AWG 2020). The industrial revolution, more generally the 1800-1850 period, marked the start of the Anthropocene (Crutzen 2002); however, the Great Acceleration was a turning point in the Anthropocene's history. There have however been suggestions that the Anthropocene began much earlier, around the middle of the Holocene.

Human growth has been remarkable both in terms of population size and individual resource usage, and has been facilitated by major advances in technology and medicine as well as a rich supply of natural resources (Turner et al., 1990). The Anthropocene is, hence, characterized by an acceleration of population growth, resource usage, and technological

advancement. As mentioned above, human's influence on earth began in the Holocene epoch; yet, the impact was minor compared to that of nature. What distinguishes the Anthropocene from the Holocene is, hence, also, the extent to which humans exert their influence on the environment due to the Great Acceleration.

The term "Great Acceleration" (Steffen et al. 2015) describes the period of time beginning in the middle of the 20th century, which was characterized by a sharp rise in human activity and its effects on the planet's systems. This era is marked by the substantial population and economic growth, especially in non OECD nations, even though OECD countries continue to lead in terms of consumption. Since 1950, environmental indicators like greenhouse gas concentrations and rates of deforestation have increased significantly, which has caused fundamental changes in Earth's systems that are primarily caused by human activity. Because of the obvious and significant changes in the condition and functioning of the planet, this era is thought to be the most credible beginning date for the Anthropocene (Steffen et al. 2015).

According to the National Oceanic and Atmospheric Administration (2024), Global ecosystems and people are being affected by the ongoing process of human provoked climate change. Global temperatures increased by 1.1C between 1901 and 2020, however climate change is more than an increase in temperature; it also involves changes in weather patterns, such as droughts and flooding, sea level rise, and other environmental changes. Main resources including water, electricity, transportation, wildlife, agriculture, ecosystems, and human health are all impacted by these changes. There are connections between the effects of climate change in several areas. For example, although flooding can spread illness and destroy infrastructure, drought can have a negative impact on food production and human health. These effects differ between areas and communities, frequently escalating the already

existing socioeconomic inequalities and increasing the vulnerability of marginalized populations.

### **Between Economic Growth and Conserving the Environment**

As the acceleration in economic growth depends largely on the exploitation of natural resources in the Anthropocene, reducing economic activities is often regarded as a solution to the environmental problems. Xepapadeas (2005) articulates the necessity of including ecological issues into economic growth theory. He emphasizes how important it is for modern growth theory to acknowledge environmental pollution as a key element influencing economic dynamics. Furthermore, he outlines some important questions that are essential to understanding the relationship between economic growth and protecting the environment. These questions cover topics from determining whether environmental conservation and economic growth are compatible to examining the impact of environmental factors on important economic measures.

The debate over the negative impact of human activities on the ecological system and environmental activism dates back to the 19th century (Carmichael, Jenkins, and Brulle 2012) with the “Early Conservation Efforts” movement in the United States, when activists such as John Muir advocated for national parks like Yosemite and other natural areas to be preserved (McConnell 1954). Industrialization and Pollution Awareness (Mosley 2014) in the late 19th to early 20th century was the next movement to advocate for environmental causes. When industrialization began, pollution and resource exploitation were the main causes of environmental degradation. During this time, campaigns to control industrial activity and stop pollution of the air and water also gained ground.

Other movements emerged in the second half of the twentieth century, including Silent Spring and the Birth of Modern Environmentalism in the 1960s, which marked the rise

of environmental consciousness (McLaughlin 2011). The period of Environmental Legislation and Regulation in the 1960s and 1970s saw significant developments in environmental laws and policies (Burger 1989). Global Environmental Awareness in the 1980s and 1990s brought issues like climate change and deforestation to the forefront (Devett 2015). The Emergence of Green Politics and Sustainable Development in the late 20th century introduced concepts that balanced economic growth with environmental protection (Adams 2008).

Economic growth often comes at the expense of biodiversity due to competitive exclusion in ecosystems (Czech 2008), and biodiversity loss remains constant as economic growth has accelerated in recent decades (Meng et al. 2019). Guo and Ma (2008) clarify the reciprocal relationship between economic growth and environmental effect, suggesting that while economic development increases national power and quality of life, it also contributes to environmental issues including pollution, soil deterioration, and desertification. They discuss whether economic growth has negative effects on the environment and vice versa, as well as whether preserving the economy conflicts with environmental protection. They analyze the role of market regulations and government policies in tackling environmental issues, and emphasizing the importance of methods that balance economic growth and environmental sustainability.

### **Green Growth as a Strategy**

Among the main strategies that aim to find a compromise between economic growth and environment protection we have the Green Growth Strategy. According to Hallegatte et al. (2012), Green Growth refers to making economic growth more organized, cleaner, and flexible without necessarily slowing it down. This concept focuses on preventing irreversible behaviors that could lead the planet into damaging environmental systems, attempting to

balance short term costs and long term benefits while increasing efficiency and economic shared benefits. To capture advantages and promote long term development, effective green growth policies require a diverse collection of instruments, including price based measures, laws, public investments, information distribution, education, and innovation policies.

Michael Jacobs (2012) distinguishes two main concepts of Green Growth. The Standard Green Growth method which emphasizes the long-term economic benefits of environmental conservation, and which argues that including environmental policies can contribute to long-term economic growth by conserving natural resources and decreasing environmental degradation. Strong Green Growth, on the other hand, proposes that environmental policies can actively promote economic growth. Jacobs outlines three mechanisms for this: Green Stimulus, which involves Keynesian-inspired short-term economic stimuli during recessions through investments in green projects; Revised Growth Theory, which emphasizes the importance of investing in natural capital and correcting market failures through environmental policies to boost economic growth; and Technological Innovation, where theories of comparative advantage and long economic cycles suggest that green policies can stimulate technology developments, hence promoting growth.

### **China's Pilot Low-Carbon City Initiative as a Case Study**

The Low-Carbon City Initiative is an example of hope amidst the challenges of sustainable urban development, especially in the context of China's increasing urbanization and industrial growth. The initiative is a coordinated effort to promote cities that value resource efficiency, environmental sustainability, and perseverance. It basically attempts to find a careful balance between urban development and environmental preservation, recognizing the importance of reconciling two seemingly opposing behaviors (Hallegatte et al., 2012).

The initiative's primary goal is to reduce greenhouse gas emissions, particularly CO<sub>2</sub>, which represent significant risk to the environment. With China being the world's greatest CO<sub>2</sub> emitter in 2017, accounting for more than a quarter of global emissions, reducing this impact is critical (BP, 2018). The initiative argues for a paradigm shift in urban development, moving away from previous environmentally damaging practices and toward a model defined by low energy use, little pollution, and the promotion of green industries.

The initiative has made real progress in decreasing carbon emissions through pilot projects launched in several provinces, including Hangzhou, Xiamen, and Shenzhen. These projects included measures such as the development of a low carbon industry and the promotion of environmentally friendly lifestyles. However, problems such as policy ambiguity and competing development goals have drawn attention to the challenges of performing such efforts on a large scale (Khanna et al., 2014; Lo, 2014). Despite these obstacles, the Low-Carbon City Initiative represents a potential move toward sustainable urban development. Its performance in pilot cities demonstrates the viability of the low carbon strategy for promoting economic growth while protecting the environment. The program offers important understanding of the intersection of economic success and conservation efforts by using innovative methods such as the Difference-in-Differences model and Green Total Factor Productivity analysis. As nations around the world battle with the challenge of sustainable development, the Low Carbon City Initiative is a repeatable model for bringing in a greener, more prosperous urban future.



## **Degrowth as a Strategy**

Degrowth is an alternative to green growth, which is widely considered as a solution for environmental degradation (Kallis 2015). As seen above, green growth relies on technological and market innovations to improve production efficiency and separate economic growth from environmental impacts, whereas degrowth questions the viability of maintaining economic growth and advocates for drastic decreases in production and consumption levels, particularly in wealthy nations. Despite a growing amount of data supporting degrowth, it remains a secondary approach to green growth in both academic debate and real policy actions.

Sandberg, Klockars, and Wilén (2019) conducted a study to compare Degrowth and Green Growth. Using critical social theory frameworks, this study compares the normative motives of Green Growth and Degrowth. Critical social theory, which combines social science and practical philosophy, clearly incorporates a normative dimension that investigates the ethical assumptions behind the proposed solutions. The research demonstrates that green growth and degrowth are based on separate normative values, each of them is justified in its own way. While both seek to fix environmental damage, degrowth provides a better moral basis than green growth. The study contributes to the continuing discussion by describing normative reasons for prioritizing degrowth over green growth in efforts to achieve environmental sustainability. By examining the normative foundations of both methods, it clarifies the ethical implications of environmental policy and emphasizes the importance of taking normative assumptions into deeper consideration when developing sustainable development plans (Capasso 2021). Despite the convincing case of degrowth, acceptance remains low for the difficulties of incorporating alternate ideas into the existing environmental discourse and policies (Sandberg, Klockars, and Wilén 2019).

## **Degrowth Initiatives in the Urban Water Sector as a Case Study**

Domènech, March, and Saurí (2013) conducted a study on degrowth initiatives in the urban water sector in Catalonia. The study focuses on the application of degrowth principles to urban water management in Catalonia. It criticizes current relying on centralized water infrastructures such as desalination facilities and water transfers, which are intended to continuously increase water supply to meet the rising demand. The researchers argue that, while centralized systems are not fundamentally incompatible with degrowth, they now serve growth oriented goals imposed on the planning process from outside. The project investigates how decentralized methods, such as rainwater collection and waste water reuse, might match with degrowth ideals and contribute to more fair and sustainable water management.

According to the researchers, decentralized water supply systems can encourage horizontal governance models that entail collaboration among citizens, local governments, and water businesses. This is consistent with the degrowth movement's principles of decentralization and deepening democratic institutions. Rainwater collection and the reuse of wastewater are sustainable alternatives that may reduce reliance on huge infrastructures, and provide habitats with fresh water while reducing and even cutting energy use. However, the study points out that these systems are frequently limited to new projects or wealthy areas, failing to service existing low income neighborhoods and hence threatening their widespread applicability and validity.

The study concludes that rainwater collection and wastewater reuse are beneficial degrowth technologies due to their simplicity, environmental benefits, and emphasis on independence. These systems, however, have not been utilized as compared to growth oriented options like desalination, owing to established supply side management practices and private interests. To develop a more democratic and sustainable water management paradigm, the researchers suggest integrating decentralized systems into urban planning and

making them accessible to all populations. Transparent decision making and community involvement are suggested in the study to be essential for achieving fairer and more equitable access to water resources, and supporting degrowth aims while fighting water commercialization.

The study on degrowth initiatives in Catalonia's urban water sector matches Law's (2008) discussion of sociology and Science and Technology Studies (STS). STS, according to Law, studies how scientific knowledge, technical advancements, and social institutions interact and influence one another. Aside from examining the Urban Water Initiative, the researchers examine the interaction of water management technology, such as centralized and decentralized systems, with social values and structures, such as democratic governance models and economic interests.

### **Critiques and Controversies**

Hickel and Kallis (2020) criticize Green Growth theory. They argue that no empirical evidence ever supports the theory of green growth. They focus on two main points: first, there is no empirical evidence that absolute decoupling from the use of resources is possible globally while sustaining economic development. Second, even under optimistic policy scenarios, it is extremely unlikely to achieve absolute decoupling from carbon emissions at a rate sufficient to prevent major global warming.

Jackson (2019) criticizes the degrowth model. He questions its economic viability and its negative impacts on innovation. By considering Western political fetish to growth, he argues that moving away from growth oriented models is not economically feasible. He questions whether degrowth can stimulate the creativity and technical advancement that are linked to economic growth. Furthermore, the concerns about the social and political challenges of implementing degrowth remain, including the possible opposition from private

interests and the need for widespread change in society. He also points to possible obstacles caused by weaker worker productivity growth as economies shift to service based sectors which raises concerns about the transition's long term validity.

## **Conclusion**

To sum up, the Anthropocene epoch represents a huge shift in human impact on the environment. In the present essay I emphasize the importance of balancing economic growth and sustainability discussing two important theories that deal with the issue. Green growth seeks to achieve this through technological innovation, whereas degrowth argues for lower production and consumption. Case studies such as China's Low Carbon City Initiative and Catalonia's municipal water management demonstrate realistic approaches to combining economic and environmental goals. However, both approaches receive critiques for certain shortcomings. Hickel and Kallis (2020), for instance, criticize green growth's potential to decouple resource consumption from economic expansion, whereas Jackson (2019) questions degrowth's economic and social feasibility. To solve the Anthropocene's issues, both green growth and degrowth solutions must be integrated to reduce environmental damage and preserve economic stability. The present essay does not discuss all the existing theories over the solution to the environmental crisis and economic growth; however, the two are among the most important ones. Additional research and work are needed in the domain to investigate the possible solutions and identify the existing obstacles to achieving the balance between economic growth and conserving the environment.

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