

Resilience of Planet Earth: A call for degrowth and rewilding

Johan Buitendag
University of Pretoria, South Africa
johan.buitendag@tuks.co.za

Abstract

This paper examines the urgent need to restore Earth's resilience through integrated strategies of degrowth, rewilding, and a renewed ethical framework grounded in faith-based values. It critiques the dominant growth paradigm and advocates for a shift towards sustainable living that respects ecological limits and promotes biodiversity. Drawing on theological, ecological, and economic insights, the study emphasises the role of faith communities in fostering a culture of care and responsibility. It concludes that only through systemic transformation and a collective reorientation of values can humanity avert ecological collapse and ensure a flourishing future for all life on Earth.

Emphasis is placed on the growing concern regarding Earth's resilience over the past century. It explores the necessity for degrowth, rewilding, and a new ethic to restore Earth's biodiversity. The study highlights the role of faith-based organisations and the significance of a shift in cultural norms and values to tackle the ecological crisis. By advocating for degrowth, the paper challenges the conventional growth paradigm and promotes a vision of a sustainable future where human activities are harmonised with the natural world. Rewilding serves as a crucial strategy for restoring ecosystems and enhancing biodiversity, thereby strengthening the planet's capacity to withstand and recover from environmental shocks. The research underscores the interconnectedness of ecological and social systems, emphasising that true resilience can only be attained through holistic approaches that integrate environmental, economic, and social dimensions. As explored later, faith-based organisations play a pivotal role in mobilising communities and fostering a collective ethic of care for the Earth.

This study hypothesises that combining degrowth, rewilding, and a new ethic rooted in faith-based principles can effectively address the ecological crisis and restore the Earth's biodiversity.

Keywords

earth-resilience; degrowth; rewilding; biodiversity; faith-based organisations; sustainable living

1. Theological foundations of ecological responsibility

Earth's resilience has become an increasing concern over the past century. The ecological crisis we face today is unprecedented and requires urgent action. This paper explores the necessity of degrowth, rewilding, and a new ethic to restore the Earth's biodiversity. It underscores the role of faith-based organisations and the importance of shifting cultural norms and values to tackle the ecological crisis.

As stewards of the Earth, we face an urgent task in addressing the pressing ecological crisis. Genesis 1:28 underscores this urgency, calling for a renewed ethic that balances human responsibility with ecological care ("Be fruitful and multiply; fill the earth and subdue it; have dominion ..." [NKJV]), which advocates for developing a new ethic to restore Earth's balance. This new ethic requires a fresh understanding of our solidarity and role, emphasising the immediate need for action.

We are entrusted with safeguarding and sustaining the Earth as part of creation. This responsibility is echoed in the teachings of the world's prominent religions. The United Nations Environment Programme and the Parliament of the World's Religions published "Faith for Earth – A Call for Action" in 2020, a document celebrating the history and diversity of faith teachings and their advocacy for environmental protection (UN, 2020). The shared concern of various religions regarding the future of our planet and their unprecedented call to action for their communities inspires hope and fosters a sense of unity, demonstrating that we are all in this together. Their respect for science and technology, combined with their appeal to sacred texts and spiritual practices, offers a promising path towards ecological action.

2. Ethical perspectives on creation

Today, Christians recognise that we must interpret the creation stories in Genesis in an entirely different manner. Among other things, the principle of submission is supplanted by the concept of stewardship. According to DeWitt (2008:74-88), an ecological doctrine of creation has four moral premises:

2.1 The earthkeeping principle

As God sustains creation, so must man. It aligns with our scientific understanding of ecosystems and the biosphere, emphasising the importance of safeguarding ecological systems and ecosystem services that sustain all life on Earth.

2.2 The fruitfulness principle

Humans can deeply appreciate the beauty of creation and all it has to offer. Scientific knowledge tells us that it is crucial to preserve the richness of life that the biosphere relies on and support its growth. Our responsibility is not just to safeguard Earth's plant and animal species but to uphold and repair the invaluable ecosystem services for the benefit of all living beings, thereby fulfilling our duty as stewards of the Earth.

2.3 The Sabbath principle

Creation must be allowed to rest after human consumption. Exodus 23:10–11 is quite relevant, indicating the rest for both humans and creation: “For six years you are to sow your fields and harvest the crops, but during the seventh year let the land lie unploughed and unused. Then, the poor among your people may get food from it, and the wild animals may eat what is left. Do the same with your vineyard and your olive grove.” (NIV). Therefore, the Sabbath year protects people, families, animals, and all creation from relentless pressure.

2.4 The con-servancy principle

There are definite limits to people's engagement and utilisation of creation. We are meant to reciprocate the service of the garden, just as Adam did, with our service. It is a mutual service, a “service with” – in other words, a con-service, a con-servancy, a con-servation. This reciprocal service fosters an active relationship between the garden and the gardener, as well as between the biosphere and those who protect it.

3. Integral ecology

The late Pope Francis (2015) advocates for the dynamic integration of social and ecological concerns, which he refers to as integral ecology.

Integral ecology represents a shift from prioritising social concerns over environmental ones and fosters a new relationship between society and nature. This shift is crucial for preserving life as we know it and must not be overlooked. Integral ecology should be our guiding principle at this moment in time (Conlon 2017:23–24).

As beings created in God’s image, we are not only stewards but also “created co-creators” (Phil Hefner). This profound truth empowers us with the great responsibility to shape the world around us. Every believer has a significant role to play, regardless of their position or influence. We are called to enjoy creation; however, we must remember that it is not a commodity. We merely borrow creation from generations to come and must leave it in a better state than we found it.

In *Laudate Deum* (2023), Pope Francis deepens and sharpens the theological and moral vision first articulated in *Laudato Si’* (2015), offering a more urgent and explicit call to action in the face of the escalating climate crisis. This apostolic exhortation builds upon the foundational concept of “integral ecology” by advancing what may be termed an integral theology. This theological framework insists on the inseparability of care for creation, social justice, and spiritual responsibility. Francis critiques the technocratic paradigm and the illusion of limitless human power, urging a reorientation of human identity as part of, not apart from, the natural world. He reaffirms that ecological degradation is not merely an environmental issue but a profound moral and spiritual crisis that demands conversion at both personal and systemic levels. Drawing from Scripture and the Christian tradition, he presents creation as a sacred gift imbued with divine presence and calls for a renewed sense of communion with all creatures. This theological vision challenges believers to see ecological action not as optional or peripheral but as a core expression of faith, justice, and discipleship in the modern world.

Ken Wilber is widely recognised as the originator of the integral understanding of reality, a comprehensive framework that seeks to synthesise the diverse dimensions of human knowledge and experience. His latest work, *A Post-Truth World* (2024), reiterates his model that integrates the subjective, objective, intersubjective, and interobjective dimensions of existence – what he terms the four quadrants of reality. This integral

vision, grounded in both ancient wisdom traditions and contemporary science, offers a multidimensional approach to truth, encompassing personal consciousness, cultural meaning, empirical observation, and systemic functionality. Wilber's contribution lies in his ability to weave these perspectives into a coherent and dynamic whole, establishing a foundational paradigm for integral studies across disciplines.

4. Historical warnings and systemic overshoot

More than two hundred years ago, Thomas Malthus published his work, *An Essay on the Principle of Population* (1798), in which he predicted that population growth would paralyse the economy, leading to increasing social misery:

It has been said that the great question is now at issue whether man shall henceforth start forwards with accelerated velocity towards illimitable, and hitherto unconceived improvement, or be condemned to a perpetual oscillation between happiness and misery, and after every effort remains still at an immeasurable distance from the wished-for goal. (Malthus [1798] 2018:4).

The Club of Rome, just over fifty years ago, provided concrete evidence to support Malthus's predictions, thereby raising our awareness of the issue. The exponential growth of population and industrial production is inversely related: as wealth increases, population growth decreases; however, in areas where poverty rises, population growth increases. The unfortunate reality is that the wealthiest 20 per cent of the world's population controls more than 80 per cent of the world's gross product and utilises nearly 60 per cent of the world's commercial resources (Meadows, Randers & Meadows 2004:43). When we consider the wealthiest 10% of households globally, their contribution to greenhouse gas (GHG) emissions accounts for 45% of the total. Therefore, the most effective approach to reducing emissions is to change the habits of the wealthy rather than concentrating on the poor (Von Weizsäcker & Wijkman 2018:84).

The Club of Rome was established in 1968 at the *Accademia dei Lincei* in Rome by Aurelio Peccei and Alexander King. It began with thirty members and a twelve-member executive committee. Their first publication, *The Limits to*

Growth, a report for the Club of Rome's project on mankind's predicament (1972), garnered widespread attention. Thirty million copies were sold and translated into seventy-three different languages worldwide. It used the first 70 years of the last century as its basis and made concrete projections for the future. The so-called "development" the Renaissance brought about is an illusion, and progress simultaneously entails destruction.

The extrapolation concluded that the quality of life would deteriorate radically within the next few decades. It would not entail a gradual decline or result in an unforeseen and irreversible turning point. Reference was also made to a so-called "crisis point" when the supply and demand curves intersect. To express this in technical terms, the ecological footprint and the impact of human activities on the environment will then exceed the biosphere's production capacity.

The initial aims of the Club of Rome were (cf. Meadows et al. 1972:9):

- To foster understanding of the varied but interdependent components – economic, political, natural, and social – that make up the global system in which we all live.
- To bring that new understanding to the attention of policymakers and the public worldwide.
- To promote new policy initiatives and action.

The 1973 oil crisis shocked everyone by highlighting the reality and severity of this warning. In 1974, the Club of Rome published a second report, *Mankind at the Turning Point: The Second Report to the Club of Rome*. This report conveyed a somewhat more positive spirit, emphasising that humans were still in charge and should take active steps to protect the environment.

A third update followed in 2004 with the publication of *Limits to Growth: The 30-Year Update*. The computer programme that conducted the extrapolations, World3, was also significantly refined to enhance the scientific process and was later replaced by the Earth4All model of Jørgen Randers. However, the conclusion was damning and, regrettably, significantly more pessimistic than before. In 1972, it was still recommended to slow down, but now urgency demanded a retreat! The research indicated that the planet's demand was already 120% of what it could provide by the

turn of the century. The Club of Rome confessed: We have utterly failed to get the concept of “overshoot” accepted as a legitimate concern for public debate (Meadows, Randers & Meadows 2004:xx).

5. Strategies over five decades

Building on the earlier Limits to Growth findings, the Club of Rome’s recent strategy is its integrated strategy. It states that we will need to develop new values and cultural norms. According to them, the New Millennium programme centres on the environment, resources, globalisation, world development, social transformation, and peace and security. They also clarify that the 21st century must be a century of suffocation (read: “outgrowth”). This tragedy holds true in all areas. Joy among a country’s people is not proportional to the country’s Gross Domestic Product (GDP).

Remarkably, the Club of Rome has strongly emphasised that a particular understanding of reality is indispensable for survival: People who think differently will also act differently (cf., Buitendag 2023a:9-11; Armstrong 2022:18). Environmental conservation relies on an ecological consciousness. The new paradigm emphasises that there is only one planetary system for all of us. Continuously envisioning, networking, seeking truth, learning, and embracing love are all essential aspects of sustainable living.

Jørgen Randers was the sole author of the fourth update, or forty-year-old report, 2052: A Global Forecast for the Next Forty Years. It made clear that the culture of consumerism needed to be replaced by cultural elements that provide substantial long-term satisfaction and enhance our well-being (cf., Buitendag 2023b:4).

- Darwin’s foundational truth, the survival of the fittest, must be reinterpreted as life developing through cooperation rather than domination.
- Cultures that live in proximity must contribute to a global society that operates at a higher level.
- A new understanding of community, with values of a more favourable form of individualism, develops and emphasises the importance of collective solutions.

The latest ten-year report was released in 2022. The Club of Rome's appeal during this 50-year publication – *Limits and Beyond: 50 years on from The Limits to Growth, what did we learn, and what's next?* – is alarming. This report was based on an earlier alarming call: Come on! We need a crash plan! (Von Weizsäcker & Wijkman 2018:loc. 784). The latest report emphasises that the Paris Protocol 2015 must be taken seriously once more, despite political opposition and governments failing to fulfil their obligations. Former President Biden reinstated the United States' commitment to the Paris Agreement shortly after assuming office in 2021, but when President Trump took office on 24 January 2025, he withdrew the USA's membership again.¹

The Paris Protocol marks the conclusion of the third phase of the United Nations climate change strategy. The first phase, which lasted from 1990 to 1995, involved negotiating and adopting the *United Nations Framework Convention on Climate Change* (UNFCCC). The second phase, which lasted from 1995 to 2004, covered the initiation and entry into force of the earlier Kyoto Protocol. This phase has focused on developing a more global approach that limits greenhouse gas emissions across all countries (cf. Bodansky, 2016:291).

After 2018, a new agenda of the Club of Rome has been adopted as a wake-up call and has indicated five impact hubs of action for the Club of Rome (Bardi 2022:84, 172, 265):

- Climate-Planetary Emergency,
- Rethinking Finance,
- Reclaiming & Reframing Economics,
- Emerging New Civilisation(s), and
- Youth and Intergenerational Dialogues.

1 Trump justified the decision by stating that the agreement was “unfair” and “one-sided”, claiming it placed undue economic burdens on the U.S. while benefiting other nations. His executive order, titled “Putting America First in International Environmental Agreements,” argued that such accords diverted American taxpayer dollars to countries that, in his view, did not merit financial assistance. See for this argument: [Online]. Available: <https://www.usnews.com/news/national-news/articles/2025-01-22/what-is-the-paris-climate-agreement-and-why-does-trump-want-to-pull-the-u-s-out-of-it>. [Accessed: 16/06/2025].

A fourth phase of the United Nations climate change strategy is evident in Resolution 73/284, titled *United Nations Decade on Ecosystem Restoration (2021–2030)*. This Resolution reaffirms the 2030 Agenda for Sustainable Development when it asserts: “This decade aims to prevent, halt and reverse the degradation of ecosystems on every continent and in every ocean” (UN 2019). Its goal is to help end poverty, combat climate change, and prevent mass extinction. Success requires everyone to take part.

6. Degrowth and post-growth

The modification concept is based on four fundamental principles: scarcity, certainty, perfection, and privatisation (Block, Brueggemann & McKnight 2016:1). The basic idea is that human needs should be identified, created, and fulfilled through entrepreneurial endeavours centred on producing and refining natural resources. The well-known “4Ps” of successful marketing encapsulate this approach: product, price, place, and promotion (McCarthy 1960). They stand for a marketing mix – a blend of tools and techniques marketers employ to achieve their marketing goals. Many marketers add a fifth “P” to include customer and staff experiences in the marketing process. This addition involves understanding customer behaviour, product experience, and overall satisfaction with the business. The underlying implication here is a focus on monopoly. PepsiCo’s strategic slogan succinctly describes this business approach as “Beat Coke”. Gary Winters refers to this attitude towards business as a “monomaniac mission” on his blog.²

The above describes the free market economy of the West with all its ramifications. This approach is what has led us into the ecological crisis. In 1972, the Club of Rome named five typologies for the disaster: population, food production, industrialisation, pollution, and consumption of non-renewable natural resources (Meadows et al. 1972:25). The report warns against the exponential growth and projected GNP values for the upcoming century: “We can thus say with some confidence that under the assumption of no major change in the present system, population and industrial growth

2 [Online]. Available: <https://garywinters.com/coke-pepsi-and-monomaniacs-on-a-mission/> [Accessed: 16/06/2025].

will certainly stop within the next century, at the latest.” (Meadows et al. 1972:126).

Tim Jackson calls this view Fargonomics, i.e., the law of the jungle or gangster ethics of our day (Jackson, 2021:21-22). Fargonomics has developed a form of capitalism that has benefited a few while continuing to disadvantage the majority:

We are trapped in an iron cage of consumerism. But the cage is of our own making. We are locked in the myth of growth. But the key was forged in our own minds. There is physical, material limits to our existence. But there is a creativity in our souls that can free us to live meaningfully and thrive together. (Jackson 2021:14).

The concept of sustainable development is outdated. The GDP accounting system does not consider environmental assets such as water resources, soil fertility, quality of life, and a stable climate in its calculations. Ecological economists have distinguished between growth (a quantitative increase in size by accumulating or assimilating matter) and development (qualitative improvement in design, technology, or ethical priorities). Ecological economists advocate for development without growth, aiming for qualitative improvement without a quantitative increase in resource use that exceeds what is ecologically sustainable (cf. Von Weizsäcker & Wijkman 2018:106).

The critical concept has now become a surviving development. This approach implies limiting our growth and slowing down the economy (trade and industry). The technical term for this approach is degrowth or post-growth. Both production and consumption must be drastically curtailed. John Cobb Jr (1992:77–81) pleads subsequently for a proposal to include all social and environmental costs in the price of goods. The environmental and social well-being perspective about the future comes into play. Relatedness to the neighbour and the environment replaces self-interest and departs from the consumer culture. This approach opens a vista of what Block, Brueggemann, and McKnight (2016:5–6) call for, a “culture of covenant” that supports neighbourly disciplines rather than market disciplines.

Based on Peter Ferguson's (2018:9–13) arguments, it is essential to analyse four distinct entities to achieve a future ecologically sustainable post-growth society. First, we need to examine the current dominant concept of economic growth. Second, we should investigate the historical evolution of economic growth. Third, we need to scrutinise theoretical explanations for the commitment to growth. Last, we should analyse the ideologies and discourses of economic growth. These steps will help rearticulate the emerging discourses of a “green economy” and “economic security” in a direction supporting sustainability.

This approach necessitates the full cooperation of all citizens. As discussed in the final section, *Faith-Based Organisations* (FBOs) are essential to this transformation (cf. Puglisi & Buitendag 2022).

As later discussed, GDP is an inadequate measure of well-being. It is thus in the interest of humanity to pursue a “de-anthropocentric” take on creation to obtain degrowth. *The Manifesto for an Intergenerationally Just Post-Growth European Economy* (2023) provides a plausible synopsis of the aim of this section of the article.³ This Manifesto was drafted in preparation for the COP28 Conference.⁴

The science is clear: as young people, we are set to inherit an uninhabitable planet. The eco-social crisis has put our future at risk – defeating the objectives of intergenerational justice – and it is already impacting the lives of many around the world. This crisis is driven by the current capitalist economic system – our obsession with the endless pursuit of growth and profit is at odds with finite planetary boundaries and human well-being. We must put an end to it! Alongside hundreds of youth-led social movements around

3 This *Manifesto* was drafted and promoted as a time-bound project between Generation Climate Europe (GCE) and the Federation of Young European Greens (FYEG). Authored by: Mrówczyńska N., Beier J., Karamperi M., Stabile T., D'Angelo S., and Abraham S. 14 May 2023. [Online]. Available: <https://gceurope.org/manifesto-for-an-intergenerationally-just-post-growth-european-economy/>. [Accessed: 04/06/2025].

4 COP28 refers to the United Nations Climate Change Conference in Dubai, United Arab Emirates, from 30 November to 12 December 2023. *UN Climate Change conferences* (or COPs) take place every year. They are the world's only multilateral discussion forum on climate change and have almost complete membership in every country. For more background, see <https://unfccc.int/process-and-meetings/conferences/un-climate-change-conference-united-arab-emirates-nov/dec-2023/about-cop-28>.

the world protesting the endless exploitation and extraction that characterise the current system, we, as youth organisations, demand a post-growth and post-colonial society. In this Manifesto, we call for a change in the current economic system and introduce specific and actionable policy proposals directed at EU policymakers, outlining how this change can be achieved.

South African political parties have expressed their views on environmental concerns in the lead-up to the national election at the end of May 2024. It is praiseworthy that all parties acknowledge the importance of this issue, although their commitment levels differ. A summary of each party's stance provides insight into their distinct positions on climate action. While socio-economic development is a crucial focus, detailed plans are sometimes lacking to tackle climate issues. Nonetheless, it is vital to acknowledge the urgency of the climate crisis and ensure that the promotion of sustainable livelihoods is not overlooked.⁵

In 2018, a few hundred scientists urged the European Commission (EU) to stop using the GDP index as a measurement tool and prioritise human well-being and ecological stability. The following year, over 11,000 scientists from more than 150 countries published an article in *The Guardian*, calling for governments worldwide to cease pursuing GDP growth and affluence as a criterion, and instead focus on sustaining ecosystems and enhancing well-being (cf., Hickel 2020, loc. 362).

This aligns with the late Pope Francis's (2015:142) approach in his Encyclical Letter regarding the Paris Protocol, called *Laudato Si'*. The Letter asserts that balancing the protection of nature with financial gain in the medium term or weighing the preservation of the environment against progress is insufficient. Taking half measures only postpones the inevitable disaster. Pope Francis emphasises the necessity of redefining our notion of progress. He states that technological and economic development, which does not lead to a better world and a higher quality of life, cannot be deemed progress.

5 For the entire document and exact wording, see <https://sacan.africa/2024/05/23/south-africas-2024-elections-prioritising-climate-change-in-political-agendas/>. [Accessed: 05/07/2024].

It is appropriate in this regard to take cognisance of the other 50-year report of the Club of Rome, *Earth for All: A Survival Guide for Humanity* (Dixson-Declève et al. 2022). However, Gaya Herrington's *Earth4All Deep Dive* (2022) offers a rigorous reassessment of the *Limits to Growth* (1972) model through empirical comparison with updated World3 scenarios. Her analysis reveals that current global trends most closely align with the “Business as Usual 2” (BAU2) and “Comprehensive Technology” (CT) scenarios – both of which forecast significant declines in human welfare, with BAU2 culminating in societal collapse due to pollution and ecological degradation. While CT avoids outright collapse through unprecedented technological innovation, it still results in welfare decline due to the diversion of resources. In contrast, the “Stabilised World” (SW) scenario – characterised by a deliberate shift in societal values away from material growth towards well-being and ecological stewardship – offers the most sustainable trajectory. Herrington concludes that although collapse is not inevitable, the window for transformative change is rapidly narrowing, and that technology alone will not suffice without a fundamental reorientation of societal priorities.

7. Rewilding as an ecological restoration strategy

Rewilding was developed in the 1990s by a group of US conservation biologists led by Dave Foreman, who was influenced by wilderness and deep ecology philosophies. It involves a shift in focus from individual components of an ecosystem to the collective properties of ecosystem interactions. This approach moves away from linear thinking and embraces ecosystem theory (Jepson & Blythe 2021:8). As previously defined, rewilding is a shorthand term for “wilderness recovery”. The focus is not solely on wilderness areas but on wildness per se: “The restoration of wildness, rather than wilderness, is thus the key goal of rewilding efforts.” (Perino et al. 2019:2).

Rewilding aims to restore fully functioning native ecosystems that include a variety of species at all trophic levels while reducing human control and pressures (Carver et al. 2021:1888). However, initial interactions among species can enhance biodiversity and ecosystem resilience, demonstrating how rewilding can restore and promote these vital connections. Ambitious

rewilding efforts are essential to restore populations of large-bodied animals (megafauna) and enhance biodiversity across expansive natural areas, thereby mitigating human-induced climate change through effective carbon sequestration.

Svenning provides us with the following definition of rewilding:

Rewilding should be central to the massive restoration efforts needed to overcome the global biodiversity crisis and enhance the biosphere's capacity to mitigate climate change. Key elements include large areas for nature, restoration of functional megafaunas and other natural biodiversity-promoting factors, synergy with major societal dynamics, and careful socio-ecological implementation. (Svenning 2020:357).

This strategy aims to reinstate self-sustaining and intricate ecosystems with interconnected ecological processes that promote and support each other while minimising or gradually reducing human interventions (Perino et al., 2019:1). The United Nations emphasises that ecosystem restoration complements conservation efforts. Priority should be given to conserving biodiversity, preventing the degradation of natural habitats and ecosystems, reducing pressures to maintain ecological integrity, and providing ecosystem services (UN, 2019). These themes are the pulse of the Global Deal for Nature (GDN), which encompasses a time-bound, science-driven plan to conserve the diversity and abundance of life on Earth. Dinerstein et al. (2019:1–17) provide the following concise exposition:

7.1 Protecting biodiversity

The aim is to protect at least 30% of the Earth's surface by 2030 and at least half by 2050. Protecting habitats with minimal human impact is the most cost-effective approach to conserving numerous species and aiding their adaptation to climate change. These areas also store carbon and contribute to supporting biodiversity. For instance, ancient grasslands are home to many unique species and store as much carbon as forests.

7.2 Mitigating climate change

Protecting 30% of the Earth as high-priority conservation areas will be essential but insufficient for keeping emissions below 1.5°C (as outlined

in the Paris Agreement). In ecosystems, the presence of large predators and herbivores contributes to increased carbon storage. For example, many large tropical trees significantly enhance carbon stock and depend on large vertebrates for seed dispersal and regeneration. An earlier study demonstrated that forested areas with tigers have three times the carbon density compared to forests and degraded lands where tigers have been eradicated.

7.3 Reducing major threats

To stay below 1.5°C is crucial to slow and halt the clearing of intact natural habitats for industry or agriculture, which is the primary type of land use today. This approach can be achieved by increasing intensification, focusing cropland expansion on degraded lands, and reducing food waste. By doing so, we could meet the world's food demand in 2050 without the need for additional land clearing.

7.4 Ecosystem services

Similarly, to meet the SDG target of preventing and significantly reducing pollution, the world must shift from its current linear economy (characterised by consumerism and resource extraction) to a circular economy. In a circular economy, resources do not become waste but are recovered and regenerated at the end of each service life. Ecosystems are, in essence, integrated into human sciences. Effective rewilding plans require a thorough understanding of the interconnected ecosystem processes that contribute to resilience, as well as the socio-economic context in which rewilding occurs.

In a courageous statement, Guyton et al. (2020:712–724) conclude, after research on Gorongosa National Park in Mozambique, that “trophic rewilding” contributes to the rehabilitation of ecosystems by reintroducing functional species, such as herbivores and carnivores, and causing the subsequent ramifications of these interactions. These results highlight the resilience of ecosystems to decades of defaunation and provide real-world evidence for the effectiveness of trophic rewilding in restoring top-down interactions and related functions. Trophic rewilding has the potential to reverse human-induced environmental degradation and enhance nature's resilience.

Among several examples worldwide, the wildlife recovery in the Chernobyl exclusion zone in Belarus is fascinating. The 1986 nuclear reactor meltdown led to an environmental catastrophe. Perino et al. (2019:6) explain the process of rewilding the zone. The evacuation of the entire local population within a 30 km radius exclusion zone around the reactor, as well as the most highly contaminated areas outside this zone, resulted in the abandonment of approximately 1,400 km² of agricultural land. Furthermore, following the collapse of the Soviet Union, widespread outmigration and the abandonment of an additional 36% of all farmlands in Belarus and Ukraine led to a decrease in human presence in the region surrounding the Chernobyl site. Minimal human intervention was permitted, apart from the introduction of herbivores such as the European bison and the Przewalski's horse.

Today, the region hosts all the existing European large carnivores (wolf, lynx, and brown bear), large herbivores (bison, wild horse, moose, red deer, roe deer, and wild boar), a diverse mesopredator community (including European badger, raccoon dog, and red fox), and essential ecosystem engineers like the Eurasian beaver. Perino et al. (2019:6) conclude:

The Chernobyl exclusion zone is the only area where these species interact in sizable numbers in a large wilderness complex and can thus be considered one of the most iconic natural experiments on rewilding in recent history. (Perino et al., 2019:6).

The vision of the *Kunming-Montreal Global Biodiversity Framework* (GBF) was adopted during the COP15 meeting in Montreal and sets out an ambitious pathway to reach a world of living in harmony with nature where “by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.” (UN 2022:8). Rewilded ecosystems should strive to be self-sustaining to the greatest extent possible.

This approach will involve a shift in perspective on the relationship between humans and nature. Humanity's role should be characterised by respect and affection for nature, playing an adult partner role, and providing a service that is self-sacrificial (McFague 2021). Rewilding is, therefore, to

re-create, in Hebrew, to ‘*asah* (not *bara*’), as mentioned explicitly in the first creation narrative (cf. Ollenburger 2023:22–23).⁶

8. A faith-based approach

As we explore the subject of this article, it becomes evident that humans are an integral part of nature. Humans possess an inherent understanding of “tacit knowing”, as Polanyi (1966:3–25) argued, and as believers, we hold a faith-based perspective that regards nature as creation. This viewpoint suggests a significant role for FBOs in its preservation. Choosing a covenantal culture over a culture of commodification and self-interest necessitates a shift in mindset. Embracing this approach to our existence and responsibility requires humility and sacrifice. As Moltmann states, the creation is God’s contraction and the first self-humiliation of God (Moltmann 1985:224). The Biblical concept of kenosis is therefore particularly valuable in illustrating humanity’s relationship with the rest of creation.

In her posthumous publication about the ecological crisis, *A New Climate for Christology: Kenosis, Climate Change, and Befriending Nature* (2021), Sallie McFague concurs and is very explicit that reality is relational and based on the Trinity: “It is impossible for an individual to exist alone. Hence, our status is relational, both up and down, and in every way. Trinitarianism and nature are both radically relational.” (McFague 2021:xi). A new paradigm encompassing God’s relationship with the world is imperative. It is essential to recognise the genuine humanity of Jesus and the pivotal role of his crucifixion in Christian theology. This view needs a primary focus on understanding the immanence of God through a bottom-up approach, which involves dismantling power structures (McFague 2021:15–16). She accurately summarises that in the West, theology aims at individual redemption from sin, while in the East, the goal is to invite the entire creation to live by participating in God’s own life (McFague 2021). It requires abandoning the dualism of Western subject-object and embracing the relational or ecological self. It is not about imitating Christ

6 For a more popular explanation, see <https://www.quora.com/What-is-the-difference-between-Hebrew-words-bara-and-asah>.

but participating in God's life and receiving self-sacrificial empowerment from God's being, since we can never "love all the neighbours" on our own.

The well-known ecumenical theologian of Tübingen, who passed in 2024, Jürgen Moltmann (1985; 2016; 2018), draws the following contours for us in this regard:

- We need a fresh understanding of what the image of humans represents. It must be a movement from humans as the centre of creation towards planetary or cosmic integration. Before humans saw themselves as the image of God, they were seen as images of the Earth (*imagines mundi*), a microcosm into which all earlier life forms were integrated. The Earth comprises five concentric spheres: the exosphere, the thermosphere, the mesosphere, the stratosphere, and the troposphere.⁷ All the circles are concentric and interdependent. However, the movement is one-way. We need nature, but nature does not need us. Therefore, humans are a "cosmic image," seeing that people's *Gestalt* is embedded in both nature and society.
- We also need a new image of God. It must move away from the image of an exalted and remote God towards an embodiment of a near and present God. God is not a foreign God. The Trinity is the hermeneutic key to interpreting history. God creates everything, inhabits this creation, and communicates in, through, and with creation. The implication is that the crown or apex of creation is not humans but the Sabbath, when God and creatures are in harmony.
- We need a new understanding of the creative undertaking that moves away from domination and submission towards that of cosmic love. Humankind is not the lord and possessor of nature (Descartes), and Genesis 1:28–29 shows how food is to be obtained: the animal lives on the field's green yield. Humans must live on the fruit- or seed-bearing yields, which implies cultivation (cf. Gen 2:15's "to tend and keep it" [NKJV]). We must get beyond anthropocentrism and develop an anthropocosmic mentality that "unites the individual with the community and preserves the harmony between the human species and the non-human world." (Armstrong 2022:183).

7 For a discussion of these layers and their interconnection, see <https://scied.ucar.edu/learning-zone/atmosphere/layers-earths-atmosphere>

- The new heavens and the new earth motivate a transition from world politics to Earth politics, from the world economy to Earth economy, and from world religions to Earth religions (cf. Moltmann 2018). Eschatology is not the end but the beginning of all things. One world or no world, and the closer we get to God, the closer we get to each other. The new heavens and new earth are the integrated cosmic temple of God (cf. Moltmann 2016:26–31).

9. Towards a covenant of ecological renewal

Humanity must address the human-driven environmental emergency, which encompasses the crises of biodiversity and climate, as human activities primarily cause them. Functional ecology goes beyond evolutionary biology, aiming to understand the role of various ecosystem components in generating energy, water, gases, nutrients, and organisms. This approach includes restoring grasslands through the reintroduction of “functional” species (Jepson & Blythe 2021:16, 26).

Mamphela Ramphele, a South African former Vice-Chancellor of the University of Cape Town, has been one of the two co-presidents of the Club of Rome since 2018. She emphasises the importance of understanding how living systems change and advocates for a catalyst role in promoting transformative systemic changes (Bardi 2022:180).

Let us all be encouraged by this commitment to sustainable living practices. Walter Brueggemann (2014) effectively reflects this idea in the title of one of his works: *Sabbath as Resistance. Saying No to the Culture of Now*. We must acknowledge the unsustainable ideology of commodification and work towards reconciliation and restoration, bringing hope for the future. Theological reflection unleashes significant energy. By tuning into our inner guidance, we recognise God’s transformative power as the origin of personal and societal change (Conlon 2017:49). In the documentary *A Life on Our Planet*, Sir David Attenborough suggests that “we must rewild the world” for everyone’s sake.

In conclusion, within the context of biodiversity, we acknowledge the principles of interconnectedness and responsibility. Tackling one issue can help resolve others and contribute to overall healing. As Karen Armstrong

(2022:20) contends, it is not a question of believing religious doctrines but about incorporating insights and practices into our lives to help us meet today's severe challenges and transform our hearts and minds. Sir Laurens van der Post (1983:14) maintains that wilderness restoration precipitates human transcendence and enables us to recover our lost capacity for religious experience.

Bibliography

- Armstrong, K. (2022). *Sacred Nature: How we can recover our bond with the natural world*. Random House. Kindle Edition.
- Bardi, U. (2022). *Limits and Beyond: 50 years on from The Limits to Growth, what did we learn and what's next?* Exapt Press. Kindle Edition.
- Block, P., Brueggemann, W., & McKnight, J. (2016). *An other Kingdom. Departing the Consumer Culture*. John Wiley & Sons Inc.
- Bodansky, D. (2016). The Paris Climate Change Agreement: A New Hope? *The American Journal of International Law*, 110(2), 288–319. <https://doi.org/10.5305/amerjintelaw.110.2.0288>
- Brueggemann, W. (2014). *Sabbath as Resistance. Saying No to the Culture of Now*. Westminster John Knox Press.
- Buitendag, J. (2023a). Integral ecology: Response of an emeritus professor to the contributions of his septuagenarian Festschrift. *Stellenbosch Theological Journal*, 9(1). <http://dx.doi.org/10.17570/stj.2023.v9n1.a8a>
- Buitendag, J. (2023b). New lenses for a new future. Why science needs theology and why theology needs science. *HTS Teologiese Studies/Theological Studies*, 79(1), a8191. <https://doi.org/10.4102/hts.v79i1.8191>
- Carver, S., et al. (2021). Guiding principles for rewilding. *Conservation Biology*, 35, 1882–1893. <https://doi.org/10.1002/cobi.13730>
- Cobb, J.B. (1992). *Sustainability. Economics, Ecology, and Justice*. Wipf & Stock Publishers.

- Conlon, J. (2017). *Geo-Justice: The Emergence of Integral Ecology*. John Tintera. Kindle Edition.
- DeWitt, C. B. (2008). Science, Scripture, and Con-serving Creation. In *Holy Ground: A Gathering of Voices on Caring for Creation* (pp. 74–88). Sierra Club Books. [Online]. Available: <https://www.academia.edu/6704594/ConServingCreation>
- Dixson-Declève, S., Gaffney, O., Ghosh, J., Randers, J., Rockström, J., & Stoknes, P. E. (2022). *Earth for all: A survival guide for humanity* (Kindle ed.). New Society Publishers.
- Dinerstein, E. et al. (2019). A Global Deal for Nature: Guiding principles, milestones, and targets. *Science Advances*, 5(4). <https://doi.org/10.1126/sciadv.aaw2869>
- Ferguson, P. (2018). *Post-growth Politics: A Critical Theoretical and Policy Framework for Decarbonisation (Green Energy and Technology)*. Springer.
- Francis, Pope. (2015). *Encyclical Letter LAUDATO SI' of The Holy Father Francis on care for our common home*. Vatican Press. [Online]. Available: https://w2.vatican.va/content/dam/francesco/pdf/encyclicals/documents/papa-francesco20150524enciclica-laudato-si_en.pdf
- Francis, Pope. (2023). *Laudate Deum: Apostolic exhortation to all people of good will on the climate crisis* [Apostolic exhortation]. The Holy See. [Online]. Available: https://www.vatican.va/content/francesco/en/apost_exhortations/documents/20231004-laudate-deum.html
- Generation Climate Europe (GCE) & Federation of Young European Greens (FYEG). (2023). *Manifesto for an intergenerationally just post-growth European economy*. [Online]. Available: <https://gceurope.org/manifesto-for-an-intergenerationally-just-post-growth-european-economy/>
- Guyton, J.A., Pansu, J., Hutchinson, M. C., et al. (2020). Trophic rewilding revives biotic resistance to shrub invasion. *Nature Ecology & Evolution*, 4, 712–724. <https://doi.org/10.1038/s41559-019-1068-y>

- Herrington, G. (2022). *The Limits to Growth model: Still prescient 50 years later* (Earth4All Deep Dive Paper 02). The Club of Rome. [Online]. Available: https://www.clubofrome.org/wp-content/uploads/2022/05/Earth4All_Deep_Dive_Herrington.pdf
- Hickel, J. (2020). *Less is More: How Degrowth Will Save the World*. Random House. Kindle Edition.
- Jackson, T. (2021). *Post Growth: Life after Capitalism*. Polity Press. Kindle Edition.
- Jepson, P., & Blythe, C. (2021). *Rewilding. The Radical New Science of Ecological Recovery*. Icon Books.
- Malthus, T. (2018). *An essay on the principle of population*. Gianluca Ruffini. Kindle Edition.
- McCarthy, E.J. (1960). *Basic Marketing. A Managerial Approach*. Richard D Irwin, Inc.
- McFague, S. (2021). *A New Climate for Christology: Kenosis, Climate Change, and Befriending Nature*. Fortress Press. Kindle Edition.
- Meadows, D.H., Meadows, D.L., Randers, J., & Behrens, W.W. (1972). *The limits to growth. A report for the Club of Rome's project on the predicament of mankind*. Universe Books.
- Meadows, D.H., Randers, J., & Meadows, D.L. (2004). *Limits to growth. The 30-Year Update*. Chelsea Green Publishing Co.
- Moltmann, J. (1985). *Gott in der Schöpfung. Ökologische Schöpfungslehre*. Chr. Kaiser Verlag.
- Moltmann, J. (2016). *Hoffen und Denken*. Neukirchener Verlagsgesellschaft.
- Moltmann, J. (2018). *Christliche Erneuerungen in schwierigen Zeiten*. Claudius Verlag.
- Ollenburger, B.C. (2023). *God the Creator. The Old Testament and the World God is Making*. BakerAcademic.

- Perino, A., et al. (2019). Rewilding complex ecosystems. *Science*, 364(6438). <https://www.science.org/doi/10.1126/science.aav5570>
- Polanyi, M. (1966). *The Tacit Dimension*. The University of Chicago Press.
- Puglisi, A., & Buitendag, J. (2022). A faith-based environmental approach for people and the planet: Some inter-religious perspectives on our Earth-embeddedness. *HTS Teologiese Studies / Theological Studies*, 78(2), 7 pages. <https://doi.org/10.4102/hts.v78i2.7582>
- Randers, J. (2012). *2052: A Global Forecast for the Next Forty Years*. Chelsea Green Publishing. Kindle Edition.
- Seth, S. (2023). GDP vs. GNP: What's the difference? *Investopedia*. [Online]. Available: <https://www.investopedia.com/ask/answers/030415/what-functional-difference-between-gdp-and-gnp.asp>
- Svenning, J-S. (2020). Rewilding should be central to global restoration efforts. *One Earth Commentary*, 3(6):657–660. <https://doi.org/10.1016/j.oneear.2020.11.014>
- UN. (2019). United Nations Decade on Ecosystem Restoration (2021–2030). A/Res/73/284. [Online]. Available: https://unosd.un.org/sites/unosd.un.org/files/greendealecosystemmr.tim_christophersen.pdf
- UN. (2020). United Nations Environment Programme and Parliament of the World's Religions. Faith for Earth: A Call for Action. UNEP, Nairobi. [Online]. Available: <https://www.unep.org/resources/publication/faith-earth-call-action>
- UN. (2022). Kunming-Montreal Global Biodiversity Framework. CBD/COP/DEC/15/4. UNEP, Montreal. [Online]. Available: <https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf>
- Van der Post, L. (1983). Introduction. In *Wilderness. The Way Ahead*, edited by Vance Martin and Mary Inglis. Findhorn Press. [Online]. Available: <https://wild.org/wp-content/uploads/2010/02/Wilderness-The-Way-Aheadwebpart1.pdf>

- Von Weizsäcker, E.U., & Wijkman, A. (2018). *Come On!: Capitalism, Short-termism, Population and the Destruction of the Planet*. Springer. Kindle Edition.
- Wilber, K. (2001). *The eye of spirit: An integral vision for a world gone slightly mad*. Shambhala.
- Wilber, K. (2024). *A Post-Truth World: Politics, Polarization, and a Vision for Transcending the Chaos*. Shambhala. Shambhala.