

## Revitalising our Urban Landscapes: A Call for Territorial Regeneration

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### 1 ABSTRACT

The paper addresses the urgent need for a paradigm shift in response to the escalating climate crisis. The paper draws on Jem Bendell's concept of Deep Adaptation, emphasizing the inadequacy of traditional adaptive measures in the face of unprecedented environmental risks. (Bendell, 2018)

The central theme revolves around the imperative to transition from a fossil-fuel economy to a post-carbon society. It underscores the severity of the biosphere crisis, as evidenced by alarming biodiversity loss and the exponential increase in global fossil fuel consumption. The urgency emphasized in Bendell's call for action since 2018 underscores the need for a radical reevaluation of conventional adaptation paradigms. The transition proposed is not only quantitative but also qualitative, demanding a profound societal transformation.

The paper introduces the concept of “Territorial Transition” as a strategic approach to climate-oriented systemic change. This involves spatial strategies that integrate climate potentials and large-scale considerations, aiming for long-term coexistence of all species. It challenges the conventional notion of adaptation and advocates for relinquishing unsustainable practices. (Armengaud et al., 2023)

Additionally, the paper delves into the significance of moving beyond mere resilience to embrace regeneration actively. The call for regeneration goes beyond mitigating harm; it demands active participation in the healing of ecosystems through regenerative agriculture, reforestation, and biodiversity preservation.

The acknowledgment of inevitability is a crucial aspect of Deep Adaptation, recognizing irreversible impacts of climate change. The essay emphasizes the need for agile planning and design in the face of uncertainty, questioning traditional practices and advocating for both immediate territorial transition and ecological regeneration.

The interdisciplinary perspective is highlighted through the Berlin Declaration of the German Academy for Urban and Regional Planning, urging a shift from anthropocentrism to an eco-centric framework. The author urges a shift in systemic thinking and action, recognizing the interconnectedness of urban and rural areas in a spatial network. (DASL, 2022)

In conclusion, the paper emphasizes the necessity for architects, urbanists, and planners to move beyond anthropocentrism and engage in territorial regeneration. This involves reimagining urban spaces as dynamic ecosystems that actively contribute to the well-being of both humans and the more-than-human world. The call is for a profound shift in discipline, from building to regenerating, with territorial regeneration being the key to revitalizing landscapes and addressing the urgent challenges of climate change.

Keywords: Regenerative Design, Deep Adaptation, Territorial Transition, Sufficiency, Uncertainty

### 2 FROM KNOWLEDGE TO ACTION

20 minutes of climate protest have achieved more than 20 years of scientific research. With this sentence, the Viennese climate researcher Reinhard Steurer opened his lecture “Overcoming Fake Climate Protection” at the TU Graz. (Steurer, 2023) He thus addresses accurately the painfully discrepancy between existing knowledge about the environmental state of the planet and the political and societal readiness to act. The complacency of our previous ways of thinking and acting in the face of climate chaos can no longer hold. We stand at a precipice where a radical rethinking of our relationship with the natural world is our only viable path forward. Now we need to decide.

The challenges and uncertainties of our time such as climate change, biodiversity loss or resource scarcity, Deep Adaptation<sup>1</sup> emerges as a compelling necessity. Deep Adaptation is a framework from Jem Bendell – a British sustainability researcher and a professor of sustainability leadership at the University of Cumbria – that deals with the challenges of climate change and the need for adaptation. It emphasizes the necessity to prepare for the worst and to prepare for potentially radical change in social, economic, and ecological systems. Climate change is a reality that already has tangible effects on our world. (Bendell, 2018) Given the urgency highlighted by Bendell since 2018 in his call for preparing for the worst and taking swift action, it becomes evident that in an era of unprecedented environmental risks, the conventional paradigms of adaptation no longer suffice. We need to rethink.

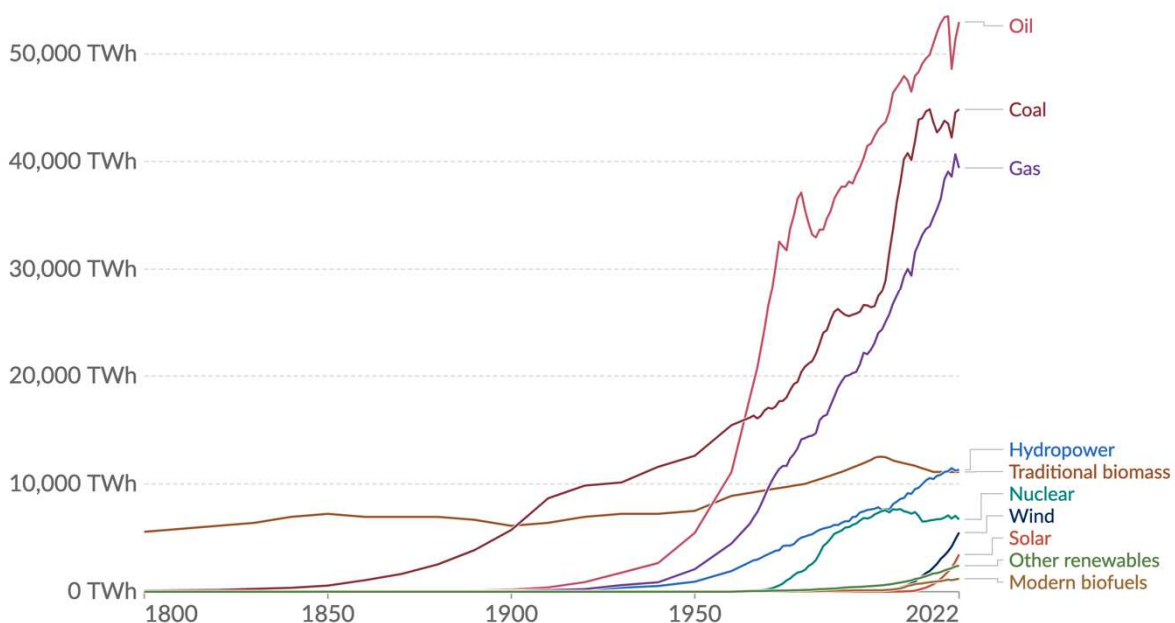
The big challenge humanity is facing today is the transition from a fossil-fuel economy to a post-carbon society. The transition process relates the actions to be undertaken to the time required and aims not only for a quantitative but also for a qualitative transformation.

But we are still on the wrong track. We further remain in a serious biosphere crisis, that is strongly linked to climate change and it's becoming even worse. The Living Planet Index report from 2022 shows a massive biodiversity loss in the last 50 years. It says that “[...] studied animal populations have seen an average relative decline of 69% since 1970” (WWF, 2022). (See Fig. 3) Further data shows also that we are responsible for a continued exponential increase in fossil fuels worldwide over the last 20 years. (see Fig.1) And the latest IPCC report is emphasizing the urgency of taking action to mitigate climate change, for achieving the Paris Agreement's 1.5-degree target. It necessitates comprehensive and immediate measures to reduce greenhouse gas emissions. But if we look at the last five years since the concept of Deep Adaptation emerged the “[...] probable, inevitable or unfolding collapse of industrial consumer societies, due to the direct and indirect impacts of human-caused climate change and environmental degradation” doesn't seem so far (Bendell und Carr, 2021). We have the knowledge about the dramatic climate and environmental situation since at least 50 years, now we need to act.

### Global primary energy consumption by source



Global primary energy consumption here is measured by the 'substitution' method which takes account of the inefficiencies of fossil fuel production.



Data source: Energy Institute Statistical Review of World Energy (2023); Vaclav Smil (2017)  
 OurWorldInData.org/energy | CC BY

Fig. 1: Energy Institute Statistical Review of World Energy (2023); Vaclav Smil (2017)

<sup>1</sup> The article “Deep Adaptation: Navigating the Realities of Climate Chaos” was published in July 2018 by Professor Jem Bendell. The article emerged against the backdrop of growing concerns about the speed and severity of climate change and the limited progress in mitigating greenhouse gas emissions.

### 3 FROM ADAPTATION TO TERRITORIAL TRANSITION

Adaptation, in its traditional sense, often implies incremental adjustments within the existing frameworks. We've believed that technological innovations and minor policy changes would suffice to mitigate the impending climate catastrophe. However, these solutions have proven woefully inadequate. The scale and urgency of the climate crisis demand an entirely new perspective. Territorial transition signifies a comprehensive and systemic shift in the way we interact with our environment. It involves the relinquishment of unsustainable practices and the embracing of regenerative and sustainable alternatives. It calls for a profound reevaluation of our consumerist culture and an earnest commitment to fostering resilience in the face of unpredictable climate disruptions. We must redefine our priorities, with the well-being of the planet and its inhabitants taking precedence over short-term profits and convenience. We need to worry.

Moreover, this transition also entails a reconciliation with the irrevocable losses we face. Some damage is already done, and as we adapt to our rapidly changing world, we must find ways to see and remember the species we've lost and the ecosystems forever altered. This collective memory can be a catalyst for change, fostering a deeper connection with nature and reinforcing our commitment to preserving it. (See Fig. 2) Now we need to remember.

Territorial transition is a process that starts from the necessity and urgency of climate-oriented territorial and systemic change. To reaching the common goal of becoming climate-positive it offers quantitative metrics but more importantly strategical spatial approaches, which are both climate-oriented and large-scale. Transition combines the climate potentials with spatial qualities and creates multi-scalar, measurable added value to make possible a long-term existence of all species. (Armengaud et al., 2023) Now we need to transition.

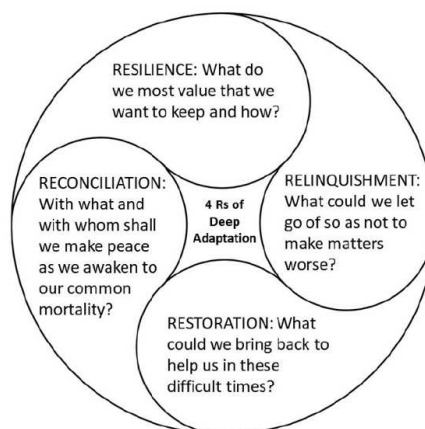


Fig. 2: The Four Rs of Deep Adaptation: The concept of Deep Adaptation is offered with a framework of four questions to support people's consideration of implications of anticipating societal collapse

**Figure 3: The global Living Planet Index (1970 to 2018)**  
The average change in relative abundance of 31,821 populations, representing 5,230 species monitored across the globe, was a decline of 69%. The white line shows the index values and the shaded areas represent the statistical certainty surrounding the trend (95% statistical certainty, range 63% to 75%). Source: WWF/ZSL (2022)<sup>184</sup>.

**Key**

- Global Living Planet Index
- Confidence limits

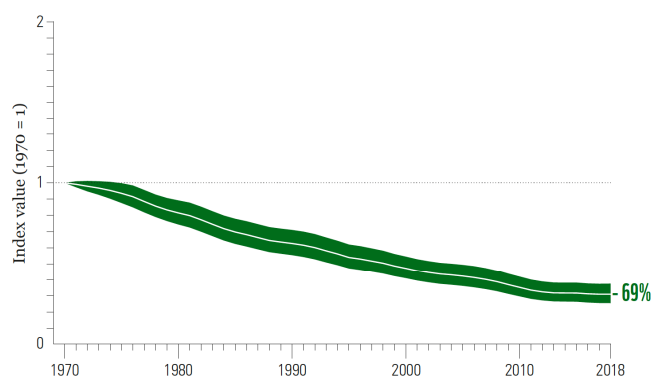


Fig. 3: The global Living Planet Index (1970 to 2018) The average change in relative abundance of 31,821 populations, representing 5,230 species monitored across the globe, was a decline of 69%. The white line shows the index values and the shaded areas represent the statistical certainty surrounding the trend (95% statistical certainty, range 63% to 75%). Source: WWF/ZSL (2022) 184.

#### 4 FROM RESILIENCE TO REGENERATION

Another key aspect of Deep Adaptation is the emphasis on resilience. The concept underscores the need to strengthen the resilience of societies and communities to better confront the growing challenges of climate change. This resilience extends across social, economic, and ecological domains, with the aim of enhancing adaptability to these changes. But resilience alone is not enough. To reverse the damage, we've inflicted upon our planet, we must also embrace regeneration. Regeneration embodies the essence of rebirth, restoration, and renewal. It is a call to action, urging us to not only mitigate the harm we have caused but to actively participate in the healing of ecosystems. It necessitates regenerative agriculture, reforestation, rewilding and the preservation of biodiversity. It is a commitment to not just “do less harm” but to “do more good” for our planet. In the face of climate chaos, regeneration is not mere concept; it is our guiding principle, our beacon of hope. It reminds us that even in the midst of chaos, we possess the power to adapt and to heal. Now we need to regenerate.

#### 5 FROM INEVITABILITY TO UNCERTAINTY

The third critical point in this concept is the recognition of inevitability. Deep Adaptation acknowledges the fact that some impacts of climate change may no longer be reversible. This awareness necessitates our adjustment to a world where certain changes are unstoppable, and it calls for taking appropriate measures to cope with these unavoidable changes. Tipping points in climate change (such as melting of the Arctic ice sheet, changes in ocean currents, or loss of permafrost) are critical thresholds at which the Earth system can abruptly and often irreversibly transition to a new state. These points mark critical changes in environmental conditions that affect the stability and functioning of our planet. Crossing these thresholds could lead to drastic impacts on climate, ecosystems, and human society. This volatile eco-systemic dynamic asks for agile forms of planning and design, questioning traditional routines and practices. Now we need to prepare.

Climate catastrophes, hazards, health crises or humanitarian disasters can change spatial demands and necessities within days. Transitions are situations of high uncertainty, doubt, and contradictions. They question the velocity of dynamic urban or economic developments, advocating for an immediate territorial transition but at the same time for slowness as a valuable asset for ecological regeneration. Now we need to cherish.

### Global greenhouse gas emissions and warming scenarios Our World in Data

- Each pathway comes with uncertainty, marked by the shading from low to high emissions under each scenario.
- Warming refers to the expected global temperature rise by 2100, relative to pre-industrial temperatures.

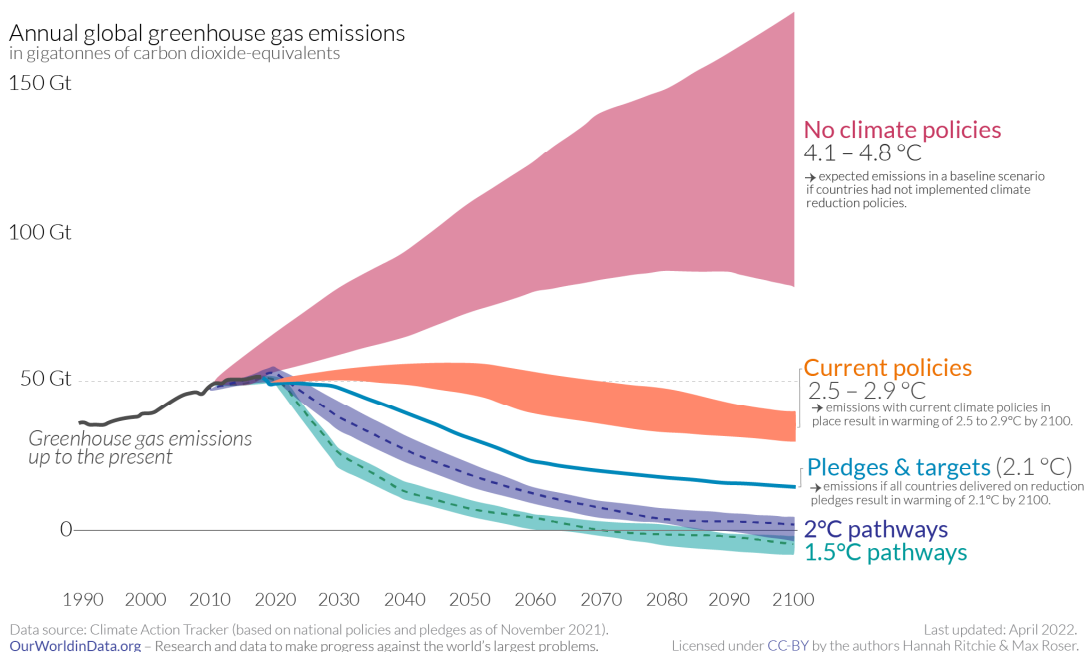


Fig. 4: The existing climate policies will result in a reduction of emissions, but the pace of reduction is insufficient to meet global targets.

## 6 DISCIPLINARY SHIFT

In the Berlin Declaration of the German Academy for Urban and Regional Planning with the title “Our Cities and Regions: What Must Change – How We Must Change” (DASL, 2022) the Academy redefined its societal responsibility for the future of cities and regions. The Berlin Declaration is intended as a political stimulus and as a self-commitment. The Declaration puts out first that a new balance in the relationship between humans and nature is needed. Leaving behind traditional concepts of domination over nature, perpetual growth, and the primacy of technical solutions that do not rely on sustainability (no more resources taken than added) and sufficiency (produce differently, use resources more efficiently, and consume less). This demands a not only a cultural shift but a shift in systemic thinking and action, recognizing that urban and rural areas are interconnected through various metabolisms and must always be understood as a spatial network, in order to establish a circular economy. Now we need to change.

However, while some progress is being made compared to a scenario with no climate policies, we are still far from achieving the international targets set for mitigating climate change. The existing climate policies will result in a reduction of emissions, although the pace of reduction is insufficient to meet global targets. (See Fig. 4) Now we need to hurry.

We as architects, urbanists, landscape architect and planners need to leave anthropocentrism and reimagine urban spaces as dynamic ecosystems that actively not only contribute to but also really care for the well-being of both human and the more-than-human world. This horizontal approach acknowledges the interdependence between cities and their surrounding environments, advocating for a shift towards an eco-centric framework that give equal importance to the welfare of the entire planet and its diverse inhabitants. Now we need to connect.

So how do we need to change our discipline? How can Post-sustainable<sup>2</sup> architecture and urbanism look like? Benedikt Boucsein puts it like this: “The egalitarian city is the city that doesn't get built” (Boucsein, 2021). We need to stop building and start regenerating. Territorial regeneration, in this intricate relation of transitions and territorial systems, is the key to revitalizing and restoring urban and rural landscapes. It is the promise of healing ecosystems, of reconnecting fragmented habitats, and of reclaiming spaces for both natural and human communities. Spatial regeneration involves rewilding urban areas, restoring degraded ecosystems, and breathing life back into once-barren lands. It is a journey of profound transformation, one that encompasses our relationships with the natural world, our fellow human beings, and future generations. Caring for our planet means putting the living systems in the urban-rural continuum at first place. Deep territorial regeneration is crucial in order to at least have a chance to invert climate change and ecosphere crisis. Now, we need to truly care.



Fig. 5: Fossil fuel infrastructures and natural co-habitats. Source: Anna Positano

<sup>2</sup> Post-sustainability suggests that conventional sustainability efforts, as implemented in politics and the economy, are insufficient to address pressing issues such as climate change, resource depletion, and social injustices. It emphasizes the need for more radical approaches.

## 7 CONCLUSION

In view of the available evidence and the increasing urgency of global environmental issues, the conclusion is clear: territorial regeneration is an indispensable strategy for overcoming the complex challenges of the 21<sup>st</sup> century. Climate change, the loss of biodiversity and the scarcity of natural resources require not just marginal adjustments, but a fundamental reorganisation of our approaches. The concepts presented, such as regenerative design, territorial transition and sufficiency, offer not only theoretical approaches but also concrete frameworks for transformative implementation.

The demand for territorial regeneration is not in contradiction to technological innovation or economic efficiency, but opens up an evolutionary path for a sustainable, systemic transformation. The transition from a fossil fuel economy to a post-carbon society requires not only quantitative but also qualitative changes. A comprehensive reassessment of our consumer behaviour and a serious commitment to promoting resilience to unpredictable climate disruption are essential.

Recognising the inevitability of some impacts of climate change requires adaptive planning and design that relies on agile forms of adaptation and uncertainty management. The introduction of a horizontal, eco-centric perspective in urban planning and architecture marks a paradigm shift that emphasises the interdependence of urban and rural areas. The shift to post-sustainable architecture requires not only a cultural but also a systemic change that emphasises the need for a spatial network to establish a circular economy.

However, given the prevailing pace of climate change and the shortcomings of existing climate policies to date, urgency is required. Transforming our thinking and actions away from anthropocentric models towards environment-centred approaches is essential. Territorial regeneration is not just a concept; it is the way to revitalise and restore urban and rural landscapes. It is a commitment to heal ecosystems, reconnect fragmented habitats and restore space to both natural and human communities. Caring for our planet requires not only knowledge, but above all concrete action. Now is the time to turn these words into effective action and pave the way to a sustainable and regenerative future.

## 8 REMARK

Parts of this essay were produced with the assistance of an AI. The purpose of using the AI here is to assist in researching relevant information and to broaden the scope of the discussion.

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