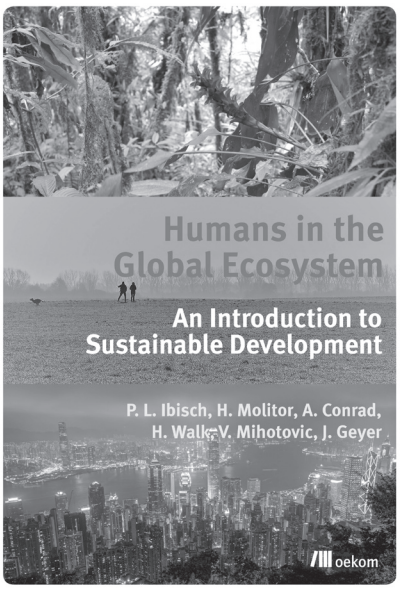
Pierre L. Ibisch / Heike Molitor / Alexander Conrad / Heike Walk / Vanja Mihotovic / Juliane Geyer (eds.): Humans in the Global Ecosystem: An Introduction to Sustainable Development

Reviewed by Melissa Ihlow and Maria Lenk



The term "sustainability" is on everyone's lips these days, as hundreds of thousands of young people and climate activists worldwide rally for more climate action and sustainability every Friday. And though there appears to be a general consensus about the necessity for sustainable development to ensure our and future generations' well-being, the public discourse often lacks a deeper understanding of the interdisciplinary intertwining and the necessary holistic approach to the topic – not to mention the lack of drive to actually act more sustainably.

The anthology *Humans in the Global Ecosystem: An Introduction to Sustainable Development*, edited by Pierre L. Ibisch et al., aims to make clear that everybody is responsible for a more sustainable world by giving a systematic overview of the topic. It aims to give an overview of relevant discourses, give thought-provoking impulses and establish clarity about the term "sustainable development". It undoubtedly meets the current *zeitgeist*, having been published at a time when climate action and sustainability is taking an increasingly important position in the mainstream of society.

The book is the brainchild of professors and scholars (and students) at the Eberswalde University for Sustainable Development, Germany, and the result of an inter-departmental foundation course on sustainable development. In four overarching topical chapters, the authors (not individually named in this review for reasons of space) provide background knowledge on the concept of sustainable development from different research disciplines and analyse humans as agents of sustainable development. They present what sustainability means for the economic and political system as well as for civil society before sketching a roadmap for a successful transformation towards sustainability in these systems. The chapters consist of subchapters written by different authors from a range of academic backgrounds ranging from ecology and economics to political science, cultural studies and physics. Each of the individual subchapters can be seen as self-contained units, equipped with marginal notes, in-depth explanations, highlighted important sections as well as illustrations, making it easy to follow the logic of the authors and the book.

In contrast to other introductions to sustainable development (e.g. Elliott 2013; Sachs 2015; Ossewaarde 2018), this book's strengths lie in its in-depth analysis on a meta level and its interdisciplinary, system-theoretical approach. Most introductory works on the topic of sustainable development, however, focus on the global challenges (Reid 1995; Sayer/Campbell 2004), sustainable economy and economic growth (Asefa 2005; Soubbotina 2004; Keijzers 2004), development issues (Bass/Dalal-Clayton 2012) and the impact of unsustainable living on the developing world (Neumayer 2011; Carley/Spapens 1998; Pearce et al. 1990).

After a thought-provoking and powerful preface, the first subchapter (1.1) gives a shocking overview how human life has impacted the planet in a mere span of few hundred years. The author argues that after the Anthropocene, humankind has now reached the epoch of the Tachycene – the age of the great acceleration (25), with the internet and digitalisation being a possible catalyst for opportunities as well as for inequality. The hyper-exponential growth of population and economic activity has led (and continues to lead) not only to boosts in innovation e.g. through digitalisation, but also to malnutrition, inequality and the escalation of environmental problems. Using current research, he touches on various environmental problems such as the fresh water crisis, the loss of biodiversity and climate change.

He argues that, ultimately, "it would be difficult not to link the many negative trends in the environment with the spread of humans and their activities across the planet" (33). Considering the overwhelming scientific evidence, he admonishes "humanity has been warned" (33).

Building on this, in the following subchapter (1.2), Heike Molitor and Pierre Ibisch take the reader on a journey through time and space, tracing back the origins and reasons for the emergence of the sustainability idea and norm as a reaction to environmental problems. While the term "sustainability" was coined in the 18th century by Hans Carl von Carlowitz in respect to forestry "as a reaction to scarcity and crisis" (37), environmental consciousness per se only emerged in the 20th century in reaction to resource exploitation and environmental pollution (38 f.). This well-structured and comprehensive chapter provides the necessary historic and philosophical background knowledge about sustainable development. It does so, moving away from a solely western-centric view of sustainability and by recognising that sustainable thinking is also present in other societies and cultures (47). The authors go on to introduce a number of models of sustainability, which show great overlap with models of intergenerational justice – however

without making the connection to, nor distinction from, "intergenerational justice" or "intergenerational equity".

Subchapter 1.3 strives to provide a description of sustainability from a system-theoretic perspective. According to Pierre Ibisch, the current understanding of sustainability, based on the question of intergenerational equity and the anticipation of "what future generations will really want or need" (60), is ideologically charged and lacks conceptual clarity (60). This subchapter and objective description of sustainability that is rooted in a scientific perspective is the author's answer to this dilemma. After an analysis of the importance of systems, a summary of which principles working living systems function on, and a look at the anthroposystem, the author concludes that the global ecosystem is the "most sustainable system we know" (80), having self-sustained itself over 4 billion years through conversion, replacement, growth and shrinkage. Therefore it should serve as a role model for humankind. This approach shows that "highly complex and structured organisms" (81) have proved to be less versatile and more vulnerable to rapid environmental changes – a warning to humankind. But as reader with a background in social sciences, one might even after this explanation ask the "ideologically charged" question which the author wanted to avoid in the first place: Is it not the responsibility of today's generation to prevent the collapse of the human social system?

Chapter 2 of the book focuses on humans as agents of sustainable development. In subchapter 2.1, Pierre Ibisch and Norbert Jung give a condensed overview over humankind's biological, cultural and socio-political evolution to beings capable of fairness, cooperation and morality as well as ignorance and dissocial behaviour. They conclude that humans are, in their nature, ambivalent beings, capable both of peace and moral action and of injustice and war. Humankind, therefore, is neither exclusively destructive, nor constructive (104 f.). With this, the authors employ a conception of the human being beyond a "homo oeconomicus", acting solely in its own self-interest and based on a cost-benefit analysis, but rather one that resembles von Hauff's "homo sustinens", a human being which can be driven both by self-interest as well as by altruism, cooperation and sympathy (Hauff 2014). Hence, humankind is "fundamentally 'capable of sustainability'" (109), when given the knowledge and motivation and "when people are able to live in free, balanced and just systems – in other words, when they are able to be truly human" (109). However, keeping in mind the ecological footprint of Western democracies, it remains unclear what exactly constitutes a free, balanced and just system in the eyes of the authors.

If one of the factors humankind needs to act sustainably is the right motivation, then how exactly can they be motivated to do so? This question is explored in subchapter 2.2 from a perspective of environmental education. Using examples from everyday life, Heike Molitor distinguishes between intervening towards a more sustainable behaviour, given incentives so that sustainable behaviour "pays off" in economic terms, and influencing habits and emotions as well as promoting self-efficacy. While all three models combined offer a good tool box of what *could* motivate people to act sustainably, it does not give a conclusive answer to why most people do not.

The third chapter of the book analyses anthroposystems – different spheres (systems) in which humans act and interact in a more or less sustainable way. It commences with a subchapter on ecosystems and ecosystem management. Ecosystems are complex systems using energy and accomplishing work. They emerge through the interaction of living beings with each other and non-living resources (131). Because the use of resources provided by these systems has been the starting point of all human economic activities, ecosystems have been – and are still being – overused for many centuries leading to the loss of biodiversity, adaptability and reparability of the system itself (145 f.). Pierre Ibisch raises the question of who pays for this overuse of the ecosystem, concluding that putting a number to some values of the ecosystem, such as soil fertility, and the damage done is simply not feasible (153), so the question remains: who will bear the costs caused by human impact: the current generations, nature or future generations? According to Ibisch, an ecosystem-based sustainable development is essential, because the system cannot be balanced from the outside.

In the next subchapter (*3.2 The drivers: economic systems*), Alexander Conrad and Jan König give an introduction to our economic system and economic growth with all its downsides. We live in a system and society that is market-oriented and focuses on a permanent, strong growth, while resources are wasted and nature is depleted (164). Classically, economic activity is related to the maximisation of utility and profit. Steady and adequate growth has been one of the four main objectives of economic policy in Germany since 1967. The focus on growth is being argued for by politicians with a potential better supply of goods, a high level of employment, a better financing of public services etc. (185). Conrad and König criticise this approach of economics.

As a motor for the economy and lifestyles around the globe, the energy supply system plays a significant role for sustainable development. In subchapter 3.3 Vanja Mihotovic outlines the current status of energy supply, presents different energy production technologies with their pros and cons and provides an interesting glimpse into the future: currently, there is only modest success in climate protection in the European Union through turning away from fossil fuels (194). For the year 2050 in Germany, the author's possible scenario (215) foresees a major shift towards renewable suppliers of energy: the strongest one supposedly being wind energy (>36%), followed by photovoltaic (26%) and biomass (22.5%).

The following subchapter (3.4) focuses on the entities that are responsible for implementing and controlling sustainability strategies: political systems. Including a case study on the German *Energiewende*, Benjamin Nölting, Hermann Ott and Heike Walk (the authors of this subchapter) refer to the German political system in particular. Sustainability is a relatively new issue in politics, but became a "regulatory goal in the sense of an ideal or vision to be aspired to – like freedom, democracy or justice" (224). There is a tension between the two principles "market competition" and "sustainability", whose parallel maximisation is mutually exclusive (224). Therefore, political regulation is in demand. The authors show that, so far, sustainable development is not the all-encompassing guiding principle of German politics.

The civil society – the focus of subchapter 3.5 – plays an important role as another sphere of the anthroposystems in different parts of our life: at national and international level. There has been a substantial growth in forms of participation over many years now, which can help to expand democracy and transparency in democratic systems (258). While many people shift away from large organisations and long-term civic engagement, there is a ten-

dency towards short-term, issue-based and project-related forms of engagement and a rise of internet participation (250). As more people are withdrawing from conventional democratic participation, civil society systems become more important in promoting sustainability. The "how", however, only takes up a marginal part of the subchapter and leaves the reader wanting more.

The last chapter of the book shows, how a transformation towards sustainability can succeed in practice. Pierre Ibisch starts with recommendations for the transition towards "Ecosystem-based sustainable development" (4.1). In our modern culture, there is a nature-culture antagonism, meaning that post-industrial societies desire less interaction with nature and think of themselves as superior. Ibisch gives an insightful view as to why this is problematic, stating that "human beings […] depend on [the] proper functioning [of the global ecosystem]" and thus "the protection of nature is also the protection of humanity" (268). He calls for a turn towards ecosystem-ethics and ecosystem-based sustainable development. This mission needs a fast and effective approach as the potential for a change in direction is diminishing as the ecosystem is being increasingly damaged (279). What we need is a "Great Transformation" – the focus of the following subchapter – a transformation to sustainable development which will cause fundamental structural changes to society, affecting almost all areas of our human coexistence, and as a result, provoke resistance and conflict (289 f.). According to Heike Walk and Pierre Ibisch (subchapter 4.2), a sustainable German society needs a new social contract as well as changes in the democratic system, as this "is poorly equipped to incorporate the interests of future generations" (299). In order for the transformation to succeed, several aspects need to be brought together: politics must be open and provide social spaces and a multitude of different actors and change agents have to get involved – civil society, thought leaders and practitioners.

In subchapter 4.3, Alexander Conrad, Jan König and Hans-Peter Benedikt outline what a sustainable economy could look like. Although capitalism has delivered prosperity and innovations for broad sections of the population, it is also responsible for economic crashes and ecological crises (304 f.). Whilst for conventional economists, environmental damage and social problems are externalities, a sustainable economy would still focus on growth and profit maximisation, but also take into consideration certain ecological and social aspects. In the systemic understanding of sustainability, limits to growth are already incorporated (307). Emerging from the contrast of capitalism and the planned economy, this new economic system needs to take the limits of the ecosystem as its starting point and put them in the centre of economic activity. In that way, potential objectives can be the recovery of costs, reasonable profits and high ecological, economic and social standards adapted to the natural resilience of the environment (311).

Education is another significant system, which shapes our society and strengthens certain ways of thinking. In subchapter 4.4, Heike Molitor recommends the move towards a sustainable society through an orientation to Education for Sustainable Development (ESD) that emphasises values and respect (for future generations) (337). Some important features of this form of higher education are designed to address relevant topics or areas within sustainable development regarding the Sustainable Development Goals (SDGs), to implement a competence orientation in teaching and to encourage participation through self-organisation and Co-determination (343). This subchapter is especially interesting in the context of the global movement Fridays for Future, as the approach of ESD finally brings the topic of climate change to the classroom or lecture halls.

The book's last subchapter (4.5) gives an example of the institutional transformation to sustainability by describing the change process of the Eberswalde University for Sustainable Development – one of the pioneers of the transformation referred to in subchapter 4.2. Not only has the university's name changed and the teaching areas have expanded from forest sciences to sustainable development, but also the systematic orientation towards sustainability is remarkable, e.g. the university has been CO_2-neutral and has had its own environmental management system since 2014.

Overall, the anthology gives vast and profound insights into all aspects of sustainable development and contains a wide range of thought-provoking impulses. The comprehensive structure makes it a valuable and highly recommendable introductory read for students and activists alike. It is the ideal starting point for deepening and correcting one's knowledge about sustainable development. The generally well-connected subchapters – though one sometimes has to turn back and reread pages to figure out the bigger picture – offer long-lasting aha-moments and a lot of new insights. The system-theoretical approach of the book makes it possible to mentally step into the different systems of our daily lives, and to recognise not only their impact on the damage to the ecosystem, but also their potential transformation processes from an interdisciplinary perspective. The book doesn't generally paint humanity's future black or make accusations against all of us for damaging our and future generations' basis of life, but rather points out solution proposals to slow down or reverse current alarming global developments in the earth's ecosystem. And last but not least, published by the Oekom Verlag, the book itself sets an example in terms of sustainability as it is printed on certified, recycled paper and the CO_2-emissions caused by this publication are compensated for.

Ibisch, Pierre L. / Molitor, Heike / Conrad, Alexander / Walk, Heike / Mihotovic, Vanja / Geyer, Juliane (eds.) (2019): Humans in the Global Ecosystem. An Introduction to Sustainable Development. München: Oekom Verlag. 414 pages. ISBN: 978-3-962-38578-1. Price: €29.

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