

Volker Mauerhofer
Daniela Rupo
Lara Tarquinio *Editors*

Sustainability and Law

General and Specific Aspects

 Springer

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Preface

This volume has been achieved by efforts of many. First, we thank two anonymous book reviewers who gave valuable instructions to the outline of structured abstracts in late winter 2019.

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The editors also thank all organizations that provided the setting for conferences and various meetings, which enabled them to bring together a variety of contributors with diverse backgrounds in this edited volume. These organizations are alphabetically in the order of their abbreviations as follows:

- The annual European Environmental Law Forum (ELFF) (<https://www.eelf.info/home-7.html>)
- The biannual legal conference track of the European Society for Ecological Economics (ESEE) (<http://www.euroecolecon.org>)
- The annual legal conference tracks of the International Sustainable Development Research Society (ISDRS) (<http://www.isdrs.org>)
- The biannual legal conference track of the International Society for Ecological Economics (ISEE) (<http://www.ecoeco.org/>)

- The Annual Colloquium of the International Union for the Conservation of Nature (IUCN) Academy of Environmental Law (<http://www.iucnael.org>)
- Diverse conference tracks conferences of Research & Degrowth (R&D) (<https://degrowth.org/>)
- Diverse meetings of the World Commission on Environmental Law (WCEL) of the IUCN (<https://www.iucn.org/commissions/world-commission-environmental-law>)

We also thank Ms. Partibane ArulVani from SPi Technologies India Private Ltd., who did – in a trustful and reliable manner – most of the actual work in this book on behalf of Springer Nature, Switzerland.

Finally, and of utmost importance, the editors want to highlight the invaluable contribution of the personal surrounding of each author. This kind of support is often unattended but provides the basis for the – often stressful – finalization of a chapter. Therefore, we dedicate this edited volume to all those beloved ones who supported with their great understanding, infinite patience and constant recourse to the authors of this volume.

Östersund, Sweden
Messina, Italy
Pescara, Italy

Volker Mauerhofer
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Lara Tarquinio

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Correction to: Sustainability and Law C1

The original version of this book was revised: The book was inadvertently published with few typesetting errors in chapters 10 and 22 which have now been corrected. The correction to this book is available at https://doi.org/10.1007/978-3-030-42630-9_37.

Introduction



Daniela Rupo, Lara Tarquinio, and Volker Mauerhofer

1 Main Objectives

Sustainability as a central topic in the roadmap for economic growth has been around for several decades, but the theme still remains a key issue in many scientific and political debates, covering diverse areas of interest for both scholars and practitioners.

Given the urgency to translate ethical and academic stance in real action, it is questionable how much coherent is human behavior to a sustainable ecosystem, and what role can the law, in all its various forms, play in pursuing such compatibility.

The edited volume is aimed to explore and discuss on the link between law and sustainability, moving from the assumption that regulation is necessary at a global as well at a regional level to achieve sustainable goals, intended by the UN Agenda (2015) as “an urgent call for action by all countries – developed and developing – in a global partnership”.

The Agenda established the importance to achieve by 2030 17 Goals, including those related to poverty, inequality, climate change, environmental degradation, peace and justice. These goals address the global challenges we face and are the blueprint to achieve a better and more sustainable future for all. The 17 Goals are

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intended in a systemic view to be all interconnected; thus, in order to leave no one behind, it is important that we achieve them all.

In this vein, the edited volume intends to deepen the interrelations between law and sustainability adopting a multidisciplinary approach. A broad variety of themes, all connected with such association, is presented. The structure of the book combines, in a wide spectrum, contributions coming from academic authors, both young and senior scholars, with contributions on specific topics related to practical experience, presented by young as well as expert professionals. The geographical variety of subjects of analysis is another source that enriches the debate on this field, thus assuring the exchange of viewpoints on similar themes.

In this multifaceted way, the volume is capable of making rooms for original ideas together with works that feed into the debate on well-known theoretical frameworks.

2 Main Themes

The book's main themes are law and sustainability. Both themes are covered in a very broad sense respectively. Apart from the introduction and conclusions, the book contains thirty-four contributions. All of them address sustainability and law together. All the contributions are allocated within one of the two larger parts on general and specific aspects respectively. A not negligible role in defining this framework is played by policies, here intended as all kinds of enforceable interactions between the public and the private sector stipulated in and based on the law (Mauerhofer 2016, p. 2). The connections between law and sustainability are investigated, according to a horizontal approach, for topics in which the connecting issues are not related to a particular part of the natural assets. Neither are the issues country-specific or sector-specific ones. Thereby, in the sub-part related to specific aspects, each contribution takes a different geographic and/or thematic angle. These sub-parts will respectively enter deeper into the respective theme. Furthermore, they partly indicate cross-connections with other themes of one or both larger parts of the book.

3 Structure

This book is structured in two main parts related to general and specific aspects of sustainability and law. The part about "General Aspects" spread over five parts with in total 19 chapters. Each of the parts is addressing a horizontal topic respectively. It starts with "Basics of a Sustainable Development Law" where overall questions related to the scope of the term are discussed. Afterward, questions related to the environmental carrying capacity are address and a chapter titled "Overconsumption, Rebound Effects, Degrowth and Planetary Boundaries". The part about "General

Aspects” then continues with two parts related to economic aspects and discusses here especially questions of Corporate Sustainability. The last ‘general” parts covers the horizontal topics of Human Rights from different angles, Non-Governmental Organizations and Public Participation in Environmental Matters, and thereby elaborates individual as well as collective rights.

The part about “Specific aspects” spread over five parts with in total 15 chapters. The first two parts deal with biodiversity and oceans, highlighting aspects ranging from their sustainable use by indigenous people to invasive alien species. The next part is focussing on climate policy and related energy management. The next two parts explore the concept of ecosystem services and particularly food, water, and energy issues.

4 Issues Assessed Within the Thirty-Four Chapters

4.1 Issues Related to General Aspects

The first main part of this edited volume starts with the analysis of general aspects of Sustainable development law and covers five smaller parts with in total 19 chapters.

In Chapter 2, “[Sustainable Development Law in \(Only\) One World: Challenges and Perspectives for Governance And Governments](#)”, Volker Mauerhofer differentiates among stakeholders as the “players of the game” and institutions as the “rules of the game” and adds to these “rule-focused instruments” two further types of instruments, namely economic-incentive focused and information focused one. The Author presents and discusses interventions through rule-focused, economic-incentive-focused, and information-focused instruments for three overall types of stakeholders, that is (1) governmental ones, (2) for-profit ones and, (3) not-for-profit ones.

In Chapter 3, “[Designing Law for Sustainability](#)”, Massimiliano Montini addresses the issue of how to design law for sustainability. The author explores the historical and theoretical roots of sustainability, highlights its ecological core and then analyses the evolution of the concept of sustainability to show how its ecological core has been gradually forgotten and almost lost over time. Then, the focus shifts on the role that sustainability might play in the realm of regulation showing that only considering the preservation of the health and integrity of ecosystems as a priority, it will be possible to put in place a regulatory regime truly inspired by sustainability.

In Chapter 4, “[The Laws of Sustainable Development](#)”, Geert Van Calster provides an overview of the international laws of sustainable development, with the aim to introduce the reader to the overall international legal framework which accompanies policies on sustainable development. The paper shows how an international policy, developed on the premise of individual principles, risks being tripped up on the implications of the set of principles as a whole. Therefore, for a fruitful roll-out of sustainable development strategies a coordinated approach is required.

In Chapter 5, “[Reducing the European Union’s Environmental Footprint Through Territorial Extension](#)”, Joanne Scott, highlights that the EU, among tools to tackle its environmental footprint, has started to enact legislative measures in the environmental domain that gives rise to ‘territorial extension’ in that they seek to regulate the way in which imported products have been harvested or produced in third countries. This includes measures relating to forests, fisheries, climate change, and waste. Scott analyses the case-law of the Court of Justice of the EU and of the World Trade Organizations’ Appellate Body, showing that if carefully designed, measures of this kind may be lawful.

In Chapter 6, “[Resilience: Is Sustainability Dead?](#)”, Trevor Daya-Winterbottom wants to evaluate whether, in the New Zealand and transnational contexts, sustainability is dead. The Author assesses what the guiding ethic for New Zealand environmental law should be using critical law as “engineering” and law as “transformative technology” perspectives. The analysis suggests that resilience, adaptation, and risk assessment could provide a more coherent framework to guide defensible and enduring environmental outcomes grounded on ecological integrity.

Overconsumption, Rebound Effects, Degrowth, and Planetary Boundaries are discussed in the third part structured into three chapters.

In Chapter 7, “[What Does the Rebound Effect Tell Us? Reflection on Its Sources and Its Implication for the Sustainability Debate](#)”, Joëlle Saey-Volckrick investigates the phenomenon of the rebound effect enhancing the theoretical foundations of this phenomenon, developing a comprehensive classification that distinguishes the different levels of the rebound effect and the mechanisms at play and analyzing the implications for the sustainability debate.

In Chapter 8, “[Regulating Our Consumer Culture: What Role Can the Law Play in Addressing Excessive Consumption?](#)”, Melissa Gorrie explores the role of states in addressing personal consumption using the Canadian legal landscape as a case study.

In Chapter 9, “[Biodiversity, Climate Change and Finnish Forest Regulation](#)”, Minna Pappila underlines the relevance of forests for the protection of biodiversity in Finland and for their role in climate change mitigation. The Author argues that existing legislation has been insufficient to halt biodiversity decline over the last 20 years and the situation is becoming more critical due to the increasing amounts of logging in Finland.

The fourth and fifth parts focused on corporate responsibility. The fourth part explores the corporate responsibility practices and product policy. The fifth one clarifies the emerging concept of the political corporate social responsibility and outlines the effects of law on sustainability reporting.

In Chapter 10, “[‘The Chemicals Between Us’. The Use and Discharge of Chemicals in the Life Cycle of a Pair of Jeans – From Legal Theory to Practice](#)”, Bosman Martine, Lambooy Tineke, Oral Elif, and Jansen Bart provide an analysis of the adverse impacts in each phase of the entire life-cycle of a pair of jeans (‘jeans’). The Authors evaluate the legal standards applicable to the use and discharge of (hazardous) chemicals in each of these phases and then, the legal standards are

compared with industries' best practices that emerged from the gathered information in a case study concerning a specific pair of jeans.

In Chapter 11, "[Fiscal Policy for Sustainable Development: The Italian Way to Promote Innovative Entrepreneurship According to European Union Rules](#)", Patrizia Accordino seeks to fill the existing gap in literature on the synergy between specific fiscal policies introduced in favor of innovative entrepreneurship in line with EU State Aid rules, development, and sustainability. She proposes an overview of Italian legislation to clarify why it is considered compatible with the European rules followed by a proper analysis which clarifies its remarkable outcomes.

In Chapter 12, "[Planned Obsolescence and Criminal Law: A Problematic Relationship?](#)", Emanuele La Rosa evaluates whether the use of "criminal law" can be considered such dissuasive measure against Planned Obsolescence, according to the provisions of Motion for a European Parliament resolution *«on a longer lifetime for products: benefits for consumers and companies»* (2016/2272). The author outlines that the use of criminal law has advantages in terms of general prevention, however, it is a problematic option, if we consider the general principles ruling criminal law (principle of strict legality and principle of offensiveness).

In Chapter 13, "[Political Corporate Social Responsibility and the Role Of Companies. Evidence from Novo Nordisk](#)", Stefanía Carolina Posadas, Lara Tarquinio, and Michele A. Rea investigate the emerging and less investigated concept of Political Corporate Social Responsibility and analyze the political role taken on by corporations to fill regulatory gaps due to weak or insufficient social and environmental standards and norms. The focus of the research is on Novo Nordisk A/S. Using Scherer and Palazzo's framework of five characteristics that define Political Corporate Social Responsibility, the Authors demonstrate that Novo Nordisk exhibits those characteristics and well describes the changing role of corporations as political actors.

In Chapter 14, "[Italy Towards Mandatory Sustainability Reporting. Voluntary Corporate Social Responsibility Disclosure of Italian Companies and Legislative Decree 254/2016 Statements. A Quantitative Analysis of the Last 10 Years](#)", Federica Balluchi, Katia Furlotti, and Riccardo Torelli, investigate the role of company characteristics in influencing voluntary disclosure. The analysis focused on voluntary Corporate Social Responsibility Disclosure (2007–2016) implemented by Italian listed companies in the 10-year period and shows that in a non-mandatory context the number of Corporate Social Responsibility reports published grew steadily. The Authors explore the voluntary behavior of Italian companies before the implementation in Italy of the Directive 2014/95/EU on Non-Financial Information.

In Chapter 15, "[Non-financial Performance Indicators: The Power of Measures to Operationalize the Law](#)", Domenico Raucci, Lara Tarquinio, Daniela Rupo, Salvatore Loprevite explore the effects produced by the 254/2016 Legislative Decree, on Sustainability Performance Indicators (SPIs) disclosed in non-financial reporting produced before and after the Legislative Decree (2015–2017 financial years) by a sample of Italian companies belonging to the "sensitive sectors".

The last part related to general aspects deals with human rights highlighting the role of Non-Governmental Organizations and analyzing human rights from different angles.

In the Chapter 16, “[Collaborative Regulation: Preventing Regulatory Capture in Multi-stakeholder Processes for Developing Norms for Sustainability Conduct](#)”, Karin Buhmann analyses the theory of collaborative regulation to prevent regulatory capture by actors in multi-stakeholder regulatory processes.

In the Chapter 17, “[Right to Development and Right to Environment: Sustainable Development Perspectives](#)”, Ivana Savic wonders about the presence of a conflict between the right to environment and the right to development. The issue of conflict of rights is relevant in the context of the implementation of SDGs, as human rights provide the conceptual and technical framework for the implementation of the SDGs, but also for the de-politicization of international development. The author proposes a brief overview of the different types of environment-development conflicts, as well as an overview of the different types of human rights conflicts, and concludes that there is no actual conflict of rights.

In the Chapter 18, “[Peace as a Right of Humanity](#)”, Iryna Ivankiv offers a new concept of the right of humanity to peace presented through its co-dependence with human rights and sustainable development. The Author provides a broad analysis of the international documents, which had changed the legal definition of peace recognizing it as a human right. Moreover, Ivankiv argues in favor of recognition of humanity as the subject of the right to peace, along with its connection with sustainable development.

In the Chapter 19, “[NGOs as Loudspeakers: Potential Role of NGOs in Bridging the North-South Gap in International Environmental and Sustainable Development Law Making Process](#)”, Kokila Konasinghe states that there is a gap in the international law-making forums in how north and south collaborates and contributes to the development of international laws and policies. The author underlines that in addition to the states, the non-state actors are increasingly becoming an important voice in balancing the scales of international politics and international lawmaking. Konasinghe provides for justification and rationale for legitimizing the NGO participation in international environmental law and sustainable development in order to make it more participatory, equitable and just.

In the Chapter 20, “[Claims in Environmental Civil Public Interest Litigation in China: Problems and Solutions](#)”, Tianbao Qin and Xuemin Chen, adopting a case study approach documented the status quo of environmental civil public interest litigation in China. The year 2013 is a watershed for the plaintiff’s claims, because, before 2013, more claims were to require the defendant to cease the infringement, eliminate the danger, compensate for the loss, and other forms of traditional tort liabilities. After 2013 more claims focus on ecological restoration, and meanwhile, the compensation requirements become more concrete. The Authors, based on the principle of “reasonable separation of functions of courts, administrative organs, and social organizations”, propose clarifying the limitation of disposition of claims, distinguishing judicial and administrative power in this regard and relaxing the court’s reliance on the inquisitorial system.

4.2 *Issues Related to Specific Aspects*

The second part of this edited volume regards the analysis of general aspects of Sustainable development law and covers five smaller parts, from the seventh to the eleventh smaller part, with in total 15 chapters.

The seventh smaller part is about Biodiversity & Biofuels – Access and Benefit Sharing, Indigenous Peoples’ Knowledge, and Local Implications, and contains three chapters.

In the Chapter 21, “[Rules and Practices of International Law on Benefit-Sharing for Sustainable Development](#)”, Jorge Cabrera and Frederic Perron-Welch examine the principle of benefit sharing in international law and thereby establish the important linkage between benefit sharing and sustainable development.

In the Chapter 22, “[Sustainable Use of Indigenous Ecological Knowledge: A Case Study for Implementing the Nagoya Protocol](#)”, Natalie Stoianoff analyses the Garuwanga Project considered the best legal structure of governance for Indigenous Australians to manage their traditional knowledge and culture, including their ecological knowledge, and enabling Australia to comply with the Nagoya Protocol.

In the Chapter 23, “[Jatropha Cultivation in South India – Policy Implications](#)”, Lakshmi Gopakumar examines the gaps of the *Jatropha* program, introduced in India with great expectations regarding India’s self-sufficiency in biofuel production. The Author underlines the failure of this program due to a lack of proper implementation at different levels.

The eighth part focuses on invasive alien species and ocean and is articulated in three chapters.

In the Chapter 24, “[Invasive Alien Species – The Eradication or Use of Invasive Alien Species under EU Law](#)”, Felix Frommelt provides an overview of the Invasive Alien Species Regulation and discusses the Union list, the listing criteria as well as the restrictions set forth. The concept of ecosystem services is addressed as it is newly introduced in an EU legislative act.

In the Chapter 25, “[The Limited Contribution of Environmental Law to the Sustainable Management of Marine Resources in Brazil: The Need for an Integrated Approach](#)”, Carina Costa de Oliveira, Gabriela G. B. Lima Moraes and Priscilla Pereira de Andrade criticize the Brazilian environmental law because it was not specifically designed for the management of marine resources and so far does not contribute to the sustainable integration, throughout its principles, rules and instruments, of different sectors such as mining, oil exploitation, navigation and fishing. In addition to this, environmental law does not provide for an institutional framework where environmental agencies are at the center of the management of marine resources.

In the Chapter 26, “[International Environmental Law and Law of the Sea: Analysis of Legal and Political Aspects of Institution Interaction](#)”, Ekaterina Vasilenko and Ekaterina Bliznetskaya, seek to find the legal base for interplay management in the sphere of land-based sea pollution between these conventions. The Authors focus their research on the analysis of the sources of sea pollution and on the global legal framework of setting restrictions upon these sources in order to

find the justification for the necessity of cooperation between the relevant conventions. A case study was carried out on how and with what effects the relevant international institutions cope with the gap in the regulation of land-based sea pollution.

The ninth part focuses on climate and energy and is articulated in three chapters.

In the Chapter 27, “[From Global to Local: A Multilevel Approach to the Local Implementation of Climate Policies in Japan](#)”, Hitomi Roppongi investigates how the global climate framework has been incorporated at the national level in Japan, and to what extent the national climate laws have been implemented at the subnational level. Therefore, the Author provides an overview of domestic legislation that incorporates multilateral climate agreements at the national and sub-national levels. Second, the state of local implementation is assessed by reviewing government-disclosed data and policy documents. The concept of multilevel governance is used to guide the legislative review and analysis of local implementation.

In the Chapter 28, “[Integrating Sustainability in Governance and Legal Framework for a Sustainable Builtscapes in Kenya: Towards a Global Approach](#)”, Ruth Onkangi and Yvonne Getugi explores the adequacy of Kenya’s subsidiary legislation to support a transition towards enforceable sustainable construction regulations. Informed by the Green Legal Theory and Legal Theory of Sustainable Development it provides an international comparison between Kenya and United Kingdom regarding legislation and implementation of legal principles of sustainability in the construction industry. It particularly examines in this way the level of fusion of sustainability in laws governing the construction sector in Kenya.

In the Chapter 29, “[Towards a Low/Zero Carbon Society for the Asia-Pacific Region: Policy and Legal Development for Carbon Capture and Storage \(CCS\) in Japan](#)”, Kenchiro Yanagi and Akihiro Nakamura, take part to the discussion about Carbon Capture and Storage (CCS) considered as one of the significant approaches to mitigating a large amount of CO₂ from the global atmosphere. In particular, the Authors aim at identifying a number of key approaches to developing the existing CCS policy and legal framework in Japan to commercialize CCS deployment, based on ongoing research.

The tenth part is related to ecosystem services and consists of three chapters.

In the Chapter 30, “[Framing Ecosystem Services for sustainability?](#)”, Alexandra Langlais analyses current literature in order to provide a reflection on the usefulness and modalities of taking into account ecosystem service (ES) to guide decisions towards greater sustainability. She examines two approaches. The first, which is classic in law, is focused on the legal qualification of ES and more specifically through the relevance of a dedicated legal category. The second, less traditional, wants to demonstrate that an approach based on the legal qualification of ES is not the only possible or most relevant legal approach.

In the Chapter 31, “[Mainstreaming Ecosystem Services as Public Policy in South East Asia, from Theory to Practice](#)”, Huu Loc Ho, Kim N. Irvine, Asan Suwanarit, Pakorn Vallikul, Fa Likitswat, Alisa Sahavacharin Chansopheaktra Sovann and Song Ha Le explore achievements and barriers, to mainstreaming ecosystem service

(ES) within the environmental public policies of Southeast Asia. In particular, the authors examine four Southeast Asian nations (Singapore, Thailand, Cambodia, and Vietnam) using the case study method.

In the Chapter 32, “[Payment for Ecosystem Services in the Congo Basin: Filling the Gap Between Law and Sustainability for an Optimal Preservation of Ecosystem Services](#)”, Blaise-Pascal Ntirumenyerwa Mihigo and An Cliquet explore the laws related to Payment for Ecosystem Services (PES) in force in the Democratic Republic of Congo (DRC) in order to obtain a more sustainable preservation of ecosystem services. The Authors analyze four ecosystem services (namely, carbon sequestration and storage, biodiversity protection, watershed protection, and landscape beauty) and explore the criteria applied to assess the potential of the DRC PES laws to promote sustainable preservation of ecosystems and ecosystem services.

The last part on specific aspects of sustainability and law is titled “Specific Aspects: Food – localized rights, transboundary water/energy nexus with groundwater and urban gardens” and contains three chapters.

In the Chapter 33, “[Municipalities, Social Innovations, and the Co-development of Localized Food Rights](#)”, Paula Fernandez-Wulff states that two contemporary trends in food systems’ work have not received sufficient attention within the discussion on municipal policy-making for sustainable development, namely: recent developments within the human right to food at the international level, and the exponential growth in comprehensive local food strategies. Therefore, the Author analyses, firstly, the achievements of the main actors and institutions working on the right to food at the international level, with an eye to what lessons may be drawn from those processes for the collective implementation of food rights at the local level. Secondly, through two case studies based on semi-directed interviews with actors involved in local collective action experiences with food policy-making in the European Union and the United States, Fernandez-Wulff shows how social initiatives navigate the legal system and the administrative State to craft their strategies, using and pushing for the use of rights’ language strategically.

In the Chapter 34, “[Water-Energy-Food Nexus and Groundwater: Can the Nexus Support the Sustainable Management of Transboundary Aquifers?](#)”, Imad Antoine Ibrahim reflects on the possibility that the Water-Energy-Food (WEF) Nexus concept can be legally implemented in the framework of international groundwater law and whether doing so would actually strengthen the global groundwater regulatory framework. Moreover, he wants to verify if the incorporation of the Nexus concept into international and transboundary water conventions and instruments dealing with groundwater resources, can provide new means of preventing the depletion of transboundary aquifers.

In the Chapter 35, “[Establishing Urban Gardens on Vacant Land While Considering International Good Practices: A Legal Case Study from Portugal](#)”, Alexandra Ribeiro, Raquel Carvalho, and Livia Madureira review the current literature on good practices adopted in different countries on vacant land restorations for urban sustainable development. Afterward, the Authors use five Portuguese Municipal Master Plans as empirical data to support the design of a new legal and regulatory framework. The goal is to enhance the sustainable destination of vacant land by converting them into urban gardens.

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Part I
**General Aspects: Basics of a Sustainable
Development Law**

Sustainable Development Law in (Only) One World: Challenges and Perspectives for Governance and Governments



Volker Mauerhofer

1 Introduction

Overconsumption by humans in particular from the Global North and a logarithmical human population increase on the planet has led the world to the edge of self-destruction (Huesemann 2001; Hamilton et al. 2015, see also recent details with UNEP 2019, 486ff). The unchangeable biophysical limitations of the planet to sustain all kinds of species (including humans) enshrine multiple challenges also for governance and regulation within an anthropocentrically oriented global society. This society currently lives – indicated by the ecological footprint (Rees 2002; Wackernagel 2009; Lin et al. 2018) – from the biophysical stocks (and not anymore only from the flows), exceeding already multiple limits planetary (Rockström et al. 2009) and regionally (Steffen et al. 2015). That society is meanwhile considered the most pressing driver of such biophysical changes (Crutzen 2002), it continuously reduces the source and sink capacity of the earth system widely in absolute terms, despite some relative decoupling improvements (e.g. Ward et al. 2016; IRP 2019, 8). Trade-offs between robustness and fragility of the environment as well as among short-term interests of this society and long-term overall necessities have been pointed out (Carpenter et al. 2015; Anderies 2015). This comes alongside in particular related to the increasing global interrelations among causes and impacts negatively effecting socio-ecological systems (e.g. Adger et al. 2008; Jiborn et al. 2018). These interrelations are nowadays increasingly summarized under the term “telecoupling” (e.g. Liu et al. 2013; Hull and Liu 2018) and even lead to underuse of certain socio-ecological systems with similar impacts like overuse (Mauerhofer et al. 2018).

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The long-term protection of the environment is not primarily considered a problem to be solved by technics but rather a social and moral problem that can only be solved by drastically reducing the strong influence of materialistic values being the main driving force for both overpopulation and overconsumption (Huesemann 2001). Consequentially, a quest for a sustainable degrowth inevitably follows (Schneider et al. 2011; Mauerhofer 2013a; Kallis 2018). Such a degrowth needs to be sustainable in environmental, social and economic terms. It has to take in particular into consideration Global North – Global South disparities (e.g. Rodríguez-Labajos et al. 2019) and all kinds of yet disadvantaged stakeholders including future human and non-human generations (Hubacek and Mauerhofer 2008).

This is not achieved yet through continuously setting list of global goals such as the Millennium Development Goals (UN 2000) or the SDG's (UN 2015), if they result in the fact that some of the countries with the highest Ecological Footprints – which seriously affect the global environment as the basis for planetary wellbeing of society and economy – are considered in related indices as the overall most sustainable countries due to equally weighting of the goals (see e.g. by Sachs et al. 2019, X and 20; critical e.g. also Janoušková et al. 2018). The necessary new balance among environmental, social and economic interests can neither be achieved through such an – equally weighted – integration of SDGs that ignores clear dependencies, nor through “integration” and “balance” that are mainly stated on paper (UN 2015, p. 1 “*The 17 Sustainable Development Goals and 169 targets . . . are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental.*”). The pure selection of certain – admittedly partly quite ambitious – goals cannot replace an apparent substantive lack of guidance about balancing and integrating of the SDGs (and their targets) as they reflect multiple conflicting interests (see e.g. Spaiser et al. 2017). Rather approaches and concepts should be envisaged and fostered which promote preliminary but flexible priority settings and which also recognize basic dependencies among environment, society and economy as well as a precautionary approach (Mauerhofer 2008, 2019), while enabling choices without economic valuation (Vatn and Bromley 1994) and realizing inconvenient trade-offs (McShane et al. 2011).

The contribution therefore frames around regulation and governance for (only) one world where norms related solely to (technical) quality of products and services without addressing the growth of the total numbers of these products and services are less equipped to mainly stem this sustainability challenge. This chapter assesses which kind of law is needed to address these challenges of only one world. It in particular analyzes in how far law can be a tool to foster degrowth and to reduce the rebound effect (Binswanger 2001; Saey-Volckrick *this volume*) in the over-consumptive Global North in terms of voluntary as well as prescribed behavioral change. Of particular interest are thereby mixes of policies (Rogge and Reichardt 2016) and of instruments (Ring and Schröter-Schlaack 2011; Ring and Barton 2015).

This chapter starts in the following with a short introduction into 3-D Sustainability as its conceptual assessment framework and describes as further part of the analytical framework the differentiation between institutions and organizations. The

findings will discuss first the need for substantial inter-national and intra-national fine-tuning when it comes to the allocation of resources and the related wealth among and within nations. Then, a rough overview on organizations and related mixes of instruments as well as of policies for sustainable governance is provided. Afterwards a multilevel view on instruments of “governments” follows. The findings end with an analysis of sustainability governance for national governments towards absolute reductions of the source and sink capacities and relevant instruments. A summary of main findings and the related conclusions finalize the chapter.

2 Theoretical Framework and Methodology

The contribution bases upon the idea of a Sustainable Development consisting of balancing and integrating multifaceted interests within and among its environmental, social and economic dimensions such as enshrined in the famous “Brundtland Report” (WCED 1987) and reconfirmed recently in the Rio + 20 outcome documents (UN 2012) and its following Sustainable Development Goals (UN 2015) such as already described above. It tries to identify future pathways in regulation and governance through institutional and organizational innovation in substance and procedure of decision-making systems on all societal levels and the trade-offs therein, given the obvious existence of only one world in bio-physical terms and the dependence of all species (incl. humans) thereon and embedding therein. The contribution therefore employs a wide range of inductive and deductive, theoretical and practical approaches and methods, especially but by far not exclusively a decision support concept called “3-D Sustainability” (Mauerhofer 2008, 2019). This concept strives to translate environmental, social and economic capital and (carrying) capacity realities into practically applicable new sustainable regulation and governance solutions (Fig. 1).

3-D Sustainability starts from an embedding theory (Mauerhofer 2008). Therein, environmental assets form the safety “web of life” (Capra 1997) in the sense of the basic system where the social system is embedded in as well as dependent upon and where the economic system is embedded in and dependent upon both of them, such as also intensively reflected in the 2019 Corona crisis. The social system is represented in this concept as social/human capital (the “stock”) and the social capacity (the flow, incl. its limits expressed as social carrying capacity; for an pictorial expression of this carrying capacity see Mauerhofer 2013b). Important for this chapter’ analysis, 3-D Sustainability provides a preliminary but flexible hierarchy among six criteria for decision-making (Fig. 1, left side). The first four of these criteria (namely sufficiency, ecological equity, eco-effectiveness, socio-effectiveness) are particularly equipped to support the further assessment of tools for the implementation of absolute reduction goals in this chapter.

This contribution also employs as theoretical background Noble Prize winner Douglass C. North’s (1990) differentiation within governance between institutions (as “rules of the game”) and organizations and their entrepreneurs (as “players of the

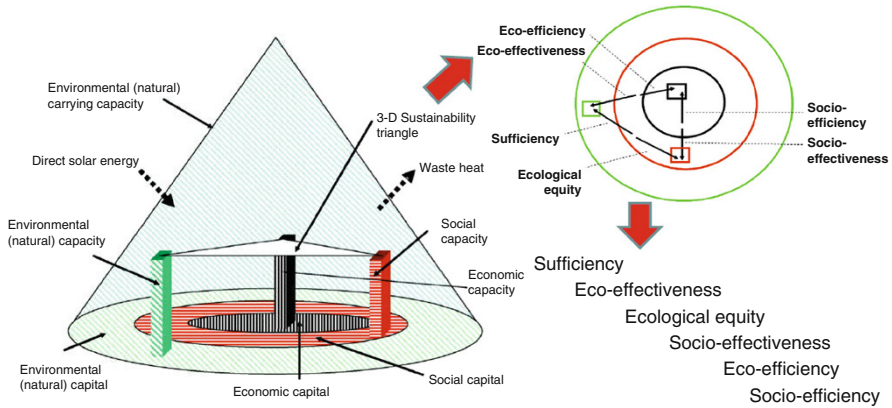


Fig. 1 3-D Sustainability in detail and from above. (Adapted from Mauerhofer 2008:498ff, 2016a:38ff; triangle based on Dyllick and Hockerts 2002)

game”). It extends latter from the coverage of solely entrepreneurs of collective players to all kinds of individual players and uses the overall term “stakeholders” (sometimes also called “agents”) for all types of players. Bevir (2009) briefly describes about 50 concepts of governance. This chapter applies none of them particularly, but uses instead what they all have in common and what was mentioned above, namely this multifaceted interaction between stakeholder and instruments to implement political goals.

3 Findings and Discussions

The findings start with a short analysis of the levels of the geopolitical scope and of the measures necessary to address the absolute reductions mentioned. The larger part afterwards assesses the interplay between stakeholders, legal institutions and other available tools.

3.1 Substantial Inter-national and Intra-national Fine-Tuning

Inequality in terms of use and accumulation of environmental source and sink capacities is a global phenomenon between and within continents and nations. The unequal consumption of Earth’s biocapacity among continents and countries (Lin et al. 2018) requires substantial international fine-tuning. While the unequal distribution of income within countries expressed for example by the varying Gini coefficients (UNDP 2019) is calling for substantial intra-national fine-tuning.

Even in regions of the world, where fine-tuning among nations takes place in a much-institutionalized way, such as in the EU through its Cohesion Policy (EU 2019a), the approach and the results are questionable from a global viewpoint of sustainability. Because bringing economically poorer regions of EU – Member States closer up to a certain EU-Member State average, does – as a purely relative measurement – not exclude (but even increases the likelihood of) an higher global ecological footprint of those regions and the EU as a whole at the end of each cohesion period. The popular principle of inclusiveness (“to leave nobody behind”), enshrined also in the SDG Resolution (UN 2015 preamble and paras. 4, 26 and 48) can lead – if it is understood only in relative terms and if no overall limits or reduction goals particularly for affluent nations are set and obeyed – to the same outcome regarding the global ecological footprint.

In the following, the contribution shows situations where intra-national and international fine-tuning are essential in order to address a sustainable development, especially towards degrowth and towards a reduced or fully excluded rebound effect.

3.2 Organizations and “Policy/Instrument Mixes”

Policies and their purposes influence the development through concretely related instruments (Rogge and Reichardt 2016, p. 1624). Rule-focused instruments such as the law can foster also the use and effectiveness of economic-incentive-focused instruments or information-focused instruments in order to modify values and behavior that deteriorate environmental carrying capacities. These three sets of instruments are often simply referred to as “sticks”, “carrots” and “sermons” with manifold interrelations (e.g. Vedung 1998; Serbruyns and Luysaert 2006; Mauerhofer 2018b).

The availability of these three types of instruments is crucial for the implementation and success of policies towards a sustainable development. However, the extent to which different main stakeholder groups can make use of these instruments is structurally varying (Fig. 2).

Figure 2 schematizes a crucial relationship in an admissible rather general manner. However, this generality is supposed to provide a larger and overall picture while many differentiations and exemptions naturally exist and occur in a global setting of increasingly privatized power and resources.

In general, all kinds of governments have all the three types of instruments mentioned above available. These instrument types can each alone, together with one other type of instrument or altogether change values of other stakeholders, their behaviour or both. Thereby, governments act on one or more levels of the geopolitical scale (Cash et al. 2006) and multilevel interactions are rather the rule than the exemption. Governments are – due to legal frameworks – the only of the three stakeholders who can create rule-based instruments which are individually or generally binding and which are enforceable by the own public authority of this government. Company standards, in the sense of e.g. quality prescriptions within supply chains, could also be considered as norms as they are obliging delivering

Main stakeholder Triology (but overlaps)	Instruments available to change values & behaviour		
	Information-focused	Economic-incentive-focused	Rule-focused
“Government” (supranational, national, subnational)	●	●	●
For-Profit Stakeholders (e.g. all sort of companies)	●	●	
Non-Profit stakeholders (e.g. NGO’s)	●		

Fig. 2 Rough overview on organizations and instruments for sustainable governance

companies to stick to certain minimum criteria. While for many of these suppliers this compliance is essential for their economic survival, the compliance is – in comparison to public laws – at least in theory voluntary and subject to negotiation. The reasons for the recognition of these kinds of company standards are therefore rather originated in and based upon the economic incentive. Thus, governments are unique in the sense that they are the only ones that have also rule-focused instruments, besides the other two types of instruments. In many if not all areas, rule-focused instruments show relations to the other two types of instruments, when governments apply them. Because, at least in democracies, each information-focused and or economic-incentive focused activity or omission of a government shall have its basis in a rule-focused instrument. Examples are manifold and prominent in this regard, e.g. public procurement laws or even more in general budget laws. Later can prescribe for instance itself or by thereon based other public laws and regulations, which public funding is available for the public sector to implement information campaigns in the public interest.

These findings are valid, non-withstanding that some for-profit stakeholders (in particular global enterprises) and non-profit stakeholders (such as well-funded foundations) have also economic-incentive focused instruments available. These instruments outnumber in quantity multiple times the available financial resources of certain governmental stakeholders including budgets of nations (for instance the budgets of numerous “Least Developed Countries”). Especially those for-profit and not-for-profit stakeholders are able – individually or collectively – in the following also to influence in qualitative terms the values and behaviour of governments at all geo-political levels. A recently widely discussed example in this regards is the legislative introduction of special decision-making bodies (besides regular courts) in the sense of rule-focused instruments including the creation of new related bodies, which decide about investment conflicts between governments, and enterprises (see e.g. Dromgool and Ybarra Enquix 2016).

Governmental stakeholder (examples)	Instruments available (overall view)		
	Information-focused	Economic-Incentive-focused	Rule-focused
“Governments” National (all)	●	●	●
“Governments” Regional Integration (e.g. EU, ASEAN, AU)	●	●	◐
“Governments” International (e.g. UN)	●	●	◑

Fig. 3 Multilevel view on instruments of “governments” (AU African Union, ASEAN Association of Southeast Asian Nations)

Governmental stakeholders occasionally also transfer the application of one rule-focused instrument through another rule-focused instrument to other stakeholders. Thereby, an entrusting with duties and legal implementation rights (partly including enforcement) takes place. The extent of involvement of the entrusted stakeholder in the initialisation and preparation of this entrustment can spread widely, from active intervention to receive this public power to being obliged against its will to execute it. These transfers constitute a minority of situations. Hence, for-profit as well as non-profit stakeholders usually do not have such entrusted powers.

Non-profit stakeholders – due to their values and often-explicit description by law – usually do not even have these economic incentive focused instruments – also outlined in Fig. 1 – available. However, they widely depend on information-focused instruments in order to change behaviour and values. Notable exemptions are e.g. well-funded private philanthropic foundations.

Among the non-profit organisations, a crucial differentiation can be made between those with mandatory and those with voluntary membership. The organization form earlier mentioned has the right to ask for payment of membership fees (as the financial basis of the organization) and to enforce this right, both provided for by rule-focused instruments (such as many trade unions, chambers of commerce etc.). Organizations of the form latter indicated, do not have the right to ask for this payment until anybody has voluntarily agreed upon to become member.

Both types of those non-profit organizations work with similar information-focused instruments (such as public campaigns, lobbying with politicians . . .) to change values and behaviour.

The unique nature of governments and their rule-focused instruments was already pointed out. In the following, structural differences among governments of different geopolitical levels regarding rule-focused instruments are shown in an, admittible again, rather general manner; this should similarly provide a larger and overall picture while many differentiations and exemptions naturally exist and occur within the global setting (Fig. 3).