

Philipp Lange

Sustainability Governance

Exploring the Potential of Governance Modes to
Promote Sustainable Development



Nomos

Sustainable Development in the 21st Century

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Volume 1

Philipp Lange

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Foreword

This study was accepted as a dissertation in the field of sustainability research by the Faculty of Humanities and Social Sciences at the University of Basel in the Fall semester of 2016. I want to thank the editors of the series »Sustainability in the 21st Century« for accepting the study as the first title of the series and in particular Prof. Dr. Andreas Rechkemmer for very helpful comments. I also thank Nomos for the good collaboration.

The study could not have been written without the support of several people. In the following, I want to express my gratitude.

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Finally, I acknowledge the physical pain, which accompanied me when writing the study. It taught me that thought is the only thing that can disturb the contentment of the now ...

Thanks!

Basel, June 2017

Philipp Lange

Abstract

Within scholarly and political debates, there is a broad consensus that governance is pivotal for the realization of societal transformation processes towards sustainable development (SD). Yet, in view of a variety of existing modes of governance in modern societies, it is an open question how to govern in such a way that SD is best fostered. Within sustainability governance literature, there is an influential normative claim that the promotion of SD calls for so-called 'new' modes of governance, i.e. non-hierarchical forms that feature participative or self-governing characteristics. However, thus far there is lack of empirical evidence to support this claim. One of the most important research desiderata is thus to explore whether certain modes are in fact generally superior to others when it comes to governing societies towards sustainable tracks.

This study contributes to filling the knowledge gap regarding the potential of governance modes to promote SD by exploring the sequence of governance and its results. Addressing existing conceptual confusion on 'governance', 'modes of governance' and 'governance results', it develops a theoretical framework consisting of four elements: (i.) a governance conceptualization that covers the inherent complexity of real-world arrangements and enables understanding of their workings and possible ways to induce change; (ii.) a formal frame for meaningfully differentiating among governance modes; (iii.) a scheme for grasping the societal changes induced by governance, i.e. governance impacts, as changes in the action strategies of affected actors; and finally (iv.) a normative frame for appraising impacts in light of SD. Guided by this framework, the study follows a comparative case study approach of a qualitative nature to empirically explore five real-world arrangements in Swiss energy policy. The arrangements represent the full range of governance modes - from hierarchically centralized and decentralized governance, to public-private and interactive modes up to self-governance.

The empirical research provides a differentiated picture of the workings of governance modes and their inducement of societal changes towards SD. Findings reveal no differences among the modes indicating that certain modes are per se better suited to promote SD than others. In contrast,

the superiority of 'new' to hierarchical modes as proclaimed in mainstream literature is put into perspective. Results indicate that interactive governance can easily fail to induce actions towards SD at all, and a 'shadow of hierarchy' in self-governing can be required as leverage. Moreover, public-private modes can easily fail when there is no threat of a more stringent mode and participatory elements can also hinder faster and more sustainable results. Furthermore, hierarchical modes can be potent in contributing to SD, and certain aspects thought responsible for the supposed superiority of 'new' modes can occur through hierarchical governance, too. Findings also indicate that other factors, such as the particularities of involved actors or the nature of the embedding context, can have a large influence on the potential of governance to promote SD. Based on the findings, hypotheses for future research are formulated.

Overall, the study adds to the discourse on how to govern towards SD in theoretical and empirical respects. It provides conceptual clarification on governance, its modes and results in light of SD and offers empirical insights on the relation between governance modes and SD. In view of the findings, future sustainability governance research should shift its focus from concentrating on 'new' modes to the interplay of modes and the meta-governance of an appropriate mix of modes in different contexts. Likewise, practitioners should increasingly conceive sustainability governance as a meta-governed situational interplay of modes, so that the best of today's variety to govern can be made.

Keywords: Sustainability Governance; Governance Modes; New Modes of Governance; Sustainable Development; Swiss Energy Policy

Contents

List of figures and tables	13
Abbreviations	15
Part I: Introduction	17
1 Overview	17
1.1 Point of departure	17
1.2 Research objective and questions	19
1.3 Research strategy	24
1.4 Structure	27
Part II: Theoretical foundations	30
2 Sustainability governance	30
2.1 Sustainable development	30
2.2 Governance and its modes	34
2.3 Consolidating the sustainability governance discourse	41
2.4 Governance modes and sustainability	44
3 Theoretical framework	56
3.1 Conceptualization of governance	56
3.1.1 A foundation	57
3.1.2 Basic structure: three dimensions and their interplay	60
3.1.3 The conceptualization in detail	63
3.2 Differentiating governance modes	81
3.2.1 Three proposals for meaningfully distinguishing among governance modes	83
3.2.2 Reasoning for the choice of the formal frame	87
3.3 Grasping the impacts of governance	91
3.3.1 A clarification of the results of governance	92
3.3.2 Conceptualizing governance impacts	94
3.4 Sustainability appraisal	101
3.4.1 In search for sustainability criteria	101
3.4.2 Normative frame for sustainability appraisal	105

Part III: Empirical case studies	107
4 Research methodology	107
4.1 Comparative case study approach of a qualitative nature	107
4.2 Data collection	112
4.3 Data analysis	116
5 Overview of the cases	125
5.1 The case studies in the context of Swiss energy policy	125
5.2 Case 1 - The Swiss CO ₂ levy	128
5.3 Case 2 - The electricity saving fund in the canton Basel	129
5.4 Case 3 - The fuel consumption covenant in Switzerland	131
5.5 Case 4 - The Energy Trialogue Switzerland	133
5.6 Case 5 - The Swiss building label Minergie	134
6 Results of the case studies	137
6.1 Governance within the cases	137
6.1.1 CO ₂ levy	137
6.1.2 Electricity saving fund	143
6.1.3 Fuel consumption covenant	149
6.1.4 Energy Trialogue	153
6.1.5 Minergie label	160
6.2 Allocation to governance modes	166
6.2.1 CO ₂ levy: Centralized governance	166
6.2.2 Electricity saving fund: Decentralized governance	167
6.2.3 Fuel consumption covenant: Public-private governance	168
6.2.4 Energy Trialogue: Interactive governance	169
6.2.5 Minergie label: Self-governance shifting to interactive governance	170
6.3 Governance impacts	171
6.3.1 CO ₂ levy	172
6.3.2 Electricity saving fund	184
6.3.3 Fuel consumption covenant	193
6.3.4 Energy Trialogue	203
6.3.5 Minergie label	207
6.4 Sustainability appraisal	222
6.4.1 CO ₂ levy	222
6.4.2 Electricity saving fund	224
6.4.3 Fuel consumption covenant	226
6.4.4 Energy Trialogue	227
6.4.5 Minergie label	228
6.5 Overview of findings	231

Contents

Part IV: Discussion	235
7 Implications	235
7.1 Does the mode make a difference?	235
7.2 Hypotheses to be tested in future research	251
7.3 Sustainability governance as a meta-governed interplay of modes	253
Part V: Conclusion	265
8 Summary, reflection, outlook	265
8.1 Summary	265
8.2 Reflection on the research	267
8.3 Outlook on further research	277
References	281
Appendix	320

List of figures and tables

Figure 1:	Research steps - interplay of theoretical investments and milestones in the empirical part	25
Figure 2:	Proceeding of the argument	29
Figure 3:	Summary of the conceptualization of governance	80
Figure 4:	First proposal for meaningfully distinguishing governance modes	84
Figure 5:	Second proposal for meaningfully distinguishing governance modes	85
Figure 6:	Third proposal for meaningfully distinguishing governance modes	86
Figure 7:	Continuum of governance modes	90
Figure 8:	Governance impacts	97
Figure 9:	Chain of governance practices and action strategies	100
Figure 10:	Normative frame for sustainability appraisal of governance impacts in the energy sector	106
Figure 11:	Structured qualitative content analysis	117
Figure 12:	Illustration of data analysis by means of Maxqda	124
Figure 13:	Development of energy demand of Swiss households for different energy sources	174
Figure 14:	Development of energy demand of the Swiss industry for different energy sources	174
Figure 15:	Share of heating oil in overall energy consumption of Swiss households	175
Figure 16:	Development of energy efficiency of Swiss companies in the EnAW	176
Figure 17:	Development of CO ₂ intensity of Swiss companies in the EnAW	177
		13

List of figures and tables

Figure 18:	Energy-induced CO ₂ emissions from fossil combustible fuels	180
Figure 19:	Covenant for fuel efficiency of new passenger cars and actual development	194
Figure 20:	Average fuel consumption of new diesel and gasoline cars during and after the covenant	202
Figure 21:	Adjustment of Swiss cantonal building regulations	209
Figure 22:	Average of the energetic effect of single measures in the Swiss Energy program	213
Table 1:	Overview of data collection and analysis techniques	26
Table 2:	Recent references to assumptions regarding new modes of governance	47
Table 3:	Recent references to missing evidence on the merits of governance modes	50
Table 4:	General substantive sustainability rules for a society	103
Table 5:	Overview of interviews conducted	115
Table 6:	Category systems for content analysis	119
Table 7:	Allocation of the cases to governance modes	171
Table 8:	CO ₂ levy - sustainability appraisal	222
Table 9:	Electricity saving fund - sustainability appraisal	224
Table 10:	Fuel consumption covenant - sustainability appraisal	226
Table 11:	Energy Trialogue - sustainability appraisal	228
Table 12:	Minergie label - sustainability appraisal	228

Abbreviations

ASIA	Association of Swiss car importers
cf.	compare (latin: confer)
CHF	Swiss franc
CO ₂	Carbon dioxide
DETEC	Federal Department of the Environment, Transport, Energy and Communications
e.g.	for example (latin: exempli gratia)
et al.	and others (latin: et alia)
EnAW	Swiss Energy Agency of the Economy
FOEN	Swiss Federal Office of the Environment
g	gram
ibid.	in the same place (latin: ibidem)
i.e.	that is (latin: id est)
IWB	Industrial Works Basel
kg	kilogram
km	kilometer
kWh	kilowatt hour
l	liter
NGO	Non-Government Organization
SD	Sustainable Development
SDGs	Sustainable Development Goals
SFOE	Swiss Federal Office of Energy
TJ	terajoule
transl.	translated
UN	United Nations
WCED	World Commission on Environment and Development

Part I: Introduction

1 Overview

1.1 Point of departure

Modern societies have become increasingly complex, both in terms of existing problems and in terms of dealing with them. Facing unstructured, persistent problems of unsustainability, the notion of sustainable development (SD) calls for putting societies on a more sustainable path. This entails ensuring the well-being of present and future generations in view of the limitedness of resources and fragility of ecological and social systems - a goal that requires deep societal transformation processes. Within scholarly and political discourses, there is a broad consensus that the far reaching changes in human-nature relations implied by SD need to be actively shaped. Accordingly, governance is regarded as pivotal for the realization of the needed transformation processes (cf. e.g. Adger & Jordan, 2009; Meadowcroft et al., 2012; Barnes & Hoerber, 2013; Ayre & Callway, 2005; Petschow et al., 2005; OECD, 2007). It is vividly argued that 'SD' and 'governance' have to go hand in hand. Some authors also consider the lack of sustainability that characterizes existing development patterns to be mainly a crisis of governance (e.g. Van Zeijl-Rozema et al., 2008; Farrell et al., 2005; Mahanti & Manuel-Navarrete, 2015). It is thus further argued that governance practices have to be reoriented towards SD. Along this line, it is even claimed that »*sustainable development is really all about governance*« (Meadowcroft, 2011, p. 536; cf. also e.g. Frödin, 2015).

'Governance' has emerged as a concept in political science, sustainability science and other fields as a response to the growing awareness that over the past decades governing has increasingly become a shared responsibility of state, market and civil society (e.g. Pierre & Peters, 2000; Kooiman, 2003; Stoker, 1998; Rhodes, 1997). Resulting from these changes in governing, a variety of modes of governance have emerged in modern societies. These modes range from hierarchical governance to

formalized public-private partnerships, up to multi-actor networks and more or less autonomous self-governance by societal actors.

In view of the variety of co-existing modes, the question arises how to govern in such a way that SD is best fostered. Governance modes are at the core of the debate on sustainability governance and there is a lively discussion regarding the suitability of certain modes for promoting SD. Within mainstream sustainability governance literature, there is a strong and highly influential normative claim that dealing with sustainability problems requires so-called ‘new’ modes of governance (see e.g. in Newig et al., 2008; Bäckstrand et al., 2010; Hogl et al., 2012). Such modes are marked by non-hierarchical governing that exceeds ‘traditional’ government control and features participative or self-governing characteristics. Typical examples are collaborative, deliberative and multi-level governance modes that emphasize partnership among multiple actors. In fact, the realm of SD governance has increasingly become an experimental field for new modes of governance within recent years (cf. also e.g. Meadowcroft, 2011; Bressers, 2004). These modes are commonly regarded as being able to handle the complex, dynamic, multi-scale, cross-sectoral and long-term temporal aspects of SD in a more adequate manner than hierarchical ones. According to this perspective, new modes should thus be explicitly advocated in practice. Frequently mentioned key terms associated with suitable sustainability governance are closely related to the characteristics of new governance modes: participation, adaptiveness, reflexivity, integration of policies and scales, deliberation and social learning (cf. e.g. Steurer, 2010; Kemp et al., 2005; Huh, 2011; Shiroyama et al., 2012; Voss et al., 2007; Meadowcroft et al., 2005; Rist et al., 2007; De-deurwaerdere, 2005; Monkelbaan, 2015; Sajeva et al., 2015; OECD, 2002). Some scholars, for instance, argue that in view of uncertainty, ambivalence about goals and distributed power, sustainability governance should be organized as a reflexive and experimental process (e.g. Voss et al., 2006; Loorbach, 2010; Grin et al., 2010).

Overall, it is claimed that new modes of governance are generally better suited to promoting SD than traditional hierarchical steering. However, thus far there is lack of reliable empirical evidence supporting this claim (cf. e.g. Jordan, 2008; Filho et al., 2016; Bäckstrand et al., 2010; Hogl et al., 2012). There are hitherto no empirical studies that comparatively explore the merits of the range of different governance modes with regard to their contribution to SD on the ground. Seeing certain modes as generally

superior to others - and thus as a panacea that is not questioned - entails the danger that empirical scrutiny is pushed into the background. Griffin (2010, p. 366) points exactly to this knowledge gap when highlighting that *»many governance and sustainability scholars have argued that governance work is short on studies that assess the sustainability potential [...] of new governance initiatives«*.

Empirical research in the sustainability governance field frequently adopts a rather static perspective, exploring solely the presence or absence of certain modes in specific sectors (cf. also Adger & Jordan, 2009). Moreover, there is often a failure to clearly separate procedures from results. Arguing for a specific way of organizing governance processes in light of the challenges coming along with SD seems to have given rise to the assumption - and some scholars tend to assume a priori - that these arrangements also perform best with regard to results. While procedures and results are naturally linked, a 'good' governance process in light of SD does not necessarily ensure that an actual contribution to SD is made on the ground. Apart from this, the research field is characterized by a lack of conceptual clarity regarding 'governance', 'modes of governance' and 'governance results'. This has clearly hampered empirical inquiries of normative claims.

Against the backdrop of these shortcomings, one of the most important research desiderata within contemporary sustainability governance research is to explore if certain modes of governance are in fact generally superior to others when it comes to governing societies towards sustainable trajectories.

1.2 Research objective and questions

The knowledge gap on the relation between governance modes and SD forms the point of departure for this study. My research objective is to comparatively explore the potential of the range of different governance modes to promote sustainability. Therefore, I include the entire continuum of existing modes, from hierarchical governance at different levels, to public-private collaborations, deliberative networks and self-governing. In so doing, I aim to contribute to clarifying whether certain modes are generally superior to others in fostering SD (though I only aim at qualitative conclusions and thus do not aspire generalizations in terms of which mode

performs better, cf. below). My overall motivation is to make a contribution to the debate on how to govern societies towards sustainable pathways.

The crucial aspect in order to scrutinize the merits of a governance mode in terms of SD are the induced results on the ground. Although I regard governance procedures, i.e. how governance is conducted, as important, I primarily view governance - especially in the field of sustainability - as a means to an end (cf. also e.g. Young, 2009, p. 30: »*Governance is not an end in itself. We seek to create governance systems [...] in order to steer human societies toward advantageous outcomes.*«). Since governance aims to bring about societal changes to resolve collective problems, it is crucial what 'ultimately comes out'. Thus, the complex sequence of governance and its results has to be addressed. Desirable for exploring the merits of modes would be capturing their *end* results, i.e. changes in environmental and socio-economic conditions, in this study called *governance outcomes*. However, when the notion of SD is taken seriously in its broad societal and holistic meaning, the assessment of such macro-level outcomes raises vast research challenges. This especially concerns data availability, long time horizons and multiple interacting variables (cf. also e.g. Koontz & Thomas, 2006).¹

Taking this into account, this study aims to explore the potential of modes to promote SD by focusing on the *interface* between governance and its outcomes: the societal changes occurring in the meantime of governance workings and end results. Thus far, this linkage - the entire range

1 Assessing SD means more than assessing environmental effectiveness. The attainment of environmental targets can be measured more easily (for instance, the question if participatory governance leads to more environmentally benign results is increasingly being investigated in the literature, cf. chapter 2.4). However, SD represents a complex challenge and calls for considering numerous environmental and socio-economic goals in different sectors across multiple temporal scales. Furthermore, the influences of governance modes on SD are difficult to isolate as multiple consequences from other governance arrangements may intervene. Altogether, sustainability governance represents a field with a multitude of interdependencies. Accordingly, an overall sustainability assessment would require a long-term analysis that gives consideration to countless sectors, scales and side-effects.

of societal changes induced by governance - represents some sort of a 'black box' within (SD) governance research. While usually behavioral change of target groups is considered, other aspects are neglected. I conceive of this intermediate missing link as *governance impacts*².

Based on this, the following *background assumption*, on which this study relies, can be formulated. In order to promote SD, a governance mode must fulfill two requirements. On the one hand, it has to induce certain impacts, i.e. changes in societal conditions. Only if societal changes are induced (such as institutionalization processes, changes in infrastructures or behavioral change of actors) does governance have an actual influence in practice. On the other hand, the induced impacts must be in line with the goals associated with SD (i.e. reflecting its functional and normative prerequisites). When a governance mode induces impacts that are consistent with sustainability goals, the mode will ultimately lead to sustainable outcomes. Overall, the potential of governance modes to promote SD is thus determined by its ability to induce impacts that are in line with SD.

Against the backdrop of the research objective, this study addresses the following *overall research question*:

Q 1: Are there differences among modes of governance indicating that certain modes are generally better suited to promote SD than others?

In order to answer this overall research question, four theoretical tasks have to be addressed first. This is required in light of missing conceptual clarity on 'governance', 'modes of governance' and 'governance results'. The first theoretical task is to develop a sound conceptualization of governance. As a prerequisite to exploring the sequence of governance modes and their results, a deepened understanding of the multifaceted phenomenon of real-world governance is needed. The conceptualization shall enable understanding the workings of governance and reveal possible

2 To avoid confusion, it should be noted here that in the literature there is also a contradictory use of the terms, where outcomes are conceived as intermediate results and impacts as end results (cf. chapter 3.3).

ways for inducing societal change. In view of existing conceptual vagueness on ‘modes of governance’, the second theoretical task is then to find a way to meaningfully distinguish among governance modes. Likewise, a heuristic device for grasping the range of impacts of governance must be developed. Finally, for appraising impacts in light of SD, a normative frame with sustainability criteria has to be at hand. Taken together, these tasks are addressed in the following four *theoretical sub-questions*:

Q 1.1: How can governance be conceptualized in a way that covers the inherent complexity of real-world governance?

Q 1.2: How can modes of governance be meaningfully differentiated?

Q 1.3: How can the impacts of governance be grasped?

Q 1.4: How can governance impacts be appraised in terms of sustainability?

The four theoretical sub-questions each have a counterpart addressed in the empirical part of the study. The subjects of this empirical part are five real-world governance arrangements within Swiss energy policy that display the full range of different modes of governance. To answer the overall research question, first of all, an understanding of governance workings in these different real-world arrangements is needed. This means to retrace by which means, actor constellations, institutional rules and so forth certain policy outputs are achieved. In so doing, it can be revealed how the arrangements induce change - as the foundation for understanding the chain of governance and results. Second, the arrangements each have to be allocated to a specific governance mode. These two steps together reveal a detailed picture of the workings of different modes while disclosing their specific characteristics. Afterwards, the impacts of the governance arrangements need to be determined. In this regard, it is also necessary to establish the link between the identified impacts and the specific characteristics of governance modes. Accordingly, it has to be explored how the impacts were actually induced through governance. In this way, it is disclosed, which role the characteristics of the pertinent governance modes actually played. Finally, the impacts must be appraised in light of sustainability goals. Overall, this leads to the following four *empirical sub-questions* that are addressed in the empirical part of the study:

Q 1.5: How does governance unfold within five real-world arrangements in Swiss energy policy that display the range of different governance modes?

Q 1.6: Which governance modes do these arrangements represent?

Q 1.7: What are the impacts of the arrangements and how were these induced?

Q 1.8: To what extent do the identified impacts meet the criteria of a sustainable development?

Taken together, the questions explore whether the mode of governance makes a difference when it comes to inducing sustainable impacts (i.e. investigating the specific characteristics of governance modes and their role for promoting SD). Based on this, insights regarding normative claims can be deduced, i.e. if there are indications that the characteristics of certain modes make them generally superior to others in light of SD. The proceeding also helps to disclose other influencing factors that determine the potential of governance to promote SD.

In the following, two important remarks are given in view of the demarcation of the research interest. First of all, since the focus of this study is on the result side of governance, I do not aspire to an assessment of 'the governance mode itself', e.g. based on certain 'good' governance criteria. Instead, I am interested in whether a governance mode promotes SD in terms of changes in society. Apart from that, the study does not aim at producing generalizable conclusions in terms of which mode performs best. My goal is not to identify causal relationships between modes and (un)sustainable results. Rather, I aim at qualitatively shedding light on the characteristics of modes and their potential to promote SD. The goal is to provide a differentiated picture of the workings of different modes and their triggering of societal changes towards SD. Against the background of the normative claim in the literature putting emphasis on new modes, the study aims to explore if there are differences among modes that would support such a claim. This proceeding serves as a basis for formulating hypotheses at the end of the study to be tested in future research.

1.3 Research strategy

Having elaborated on the research objective and questions, I will in the following introduce the research strategy, i.e. how to reach the objectives and answer the questions (cf. also e.g. Verschuren et al., 2010, on general project design). In *theoretical respects*, I develop a framework that consists of four elements - as addressed by the theoretical sub-questions elaborated above: a conceptualization of governance, a formal frame for differentiating governance modes, a scheme for grasping governance impacts, and a normative frame for appraising impacts in terms of SD.

The development of this theoretical framework is supported by relying on different literature strands: governance research and the broader political science literature, sustainability governance literature (both empirical-analytical and normative) and normative foundations of sustainability. The framework then serves as the foundational basis for the empirical research.

With regard to the *empirical part*, I follow a comparative case study approach of a qualitative nature. As already mentioned, it consists of five in-depth case studies in the realm of Swiss energy policy that display the range of different governance modes. The cases are each explored through the four elements of the theoretical framework.

Accordingly, the study unfolds along the following main steps of research: The five cases are first of all investigated by means of the governance conceptualization to reach a deepened understanding of governance workings in each case (*research step 1*). Based on this, the formal frame for modes is used to allocate each case to a specific governance mode (*research step 2*). Subsequently, via the scheme for governance impacts, the particular societal changes within each case are identified (*research step 3*). Finally, with the help of the normative frame for sustainability appraisal, the impacts are appraised in terms of SD (*research step 4*). Figure 1 illustrates the research steps by highlighting the interplay of theoretical investments and milestones in the empirical part.

The general process of the case study research is geared towards the steps of planning and preparing the cases as well as collecting, analyzing and interpreting the data (cf. e.g. Yin, 2009). It is important in this respect to note that the function of the cases is directed at illuminating the research question and to enable the formulation of hypotheses (and thus not to explicitly validate the theoretical framework). Also, they are to be seen as exemplary cases that were selected in light of the overall research goal.

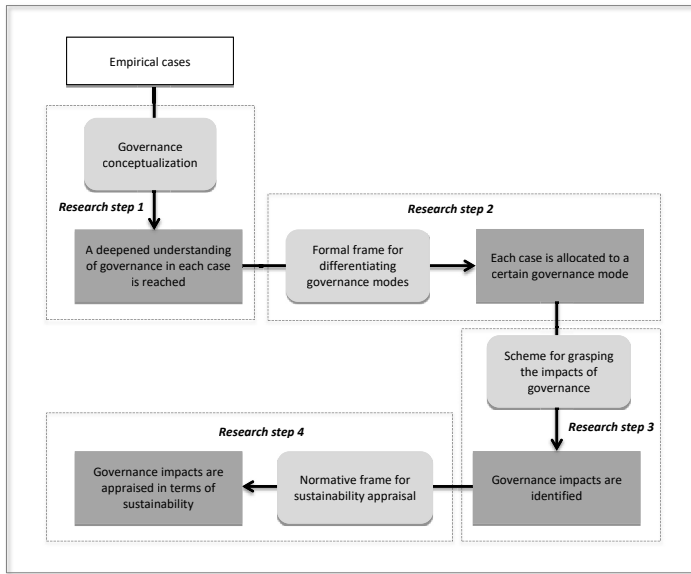


Figure 1: Research steps - interplay of theoretical investments and milestones in the empirical part. Theoretical investments: light grey, milestones for empirical research: dark grey (own illustration)

With regard to *data collection*, I make use of a triangulation of both methods and sources. Three primary techniques are combined to provide different sources of evidence for each of the five cases. First, existing research on the cases is reviewed. Second, official political-administrative documents and documents from societal bodies participating in governance, such as firms and other initiatives, are studied (e.g. laws, programs, evaluations, plans and strategy papers). Finally, qualitative expert-interviews (semi-structured) with key representatives from governments, administration, the market and civil society are conducted.

For the first two research steps sketched out above, I make use of the same data set extracted through all three techniques of data collection (see also table 1 below). The third step is also based on all three techniques, yet the focus lies on gaining data by means of expert-interviews (due to limited available information on governance impacts through desk research). The fourth step in turn consists of an interpretation of the data gathered in step three.

Table 1: Overview of data collection and analysis techniques (own illustration)

Research step	Methods for data generation	Method for data analysis
<i>Research step 1:</i> The five empirical cases are explored by means of the governance conceptualization to reach a deepened understanding of governance in each case	<ul style="list-style-type: none"> • Review of existing research related to governance within the cases • Studying of official documents related to governance within the cases • Expert interviews with key participating actors in the governance arrangement in question 	The governance conceptualization is translated into a deductive category system. The analysis of the data is conducted by means of the content structuring technique.
<i>Research step 2:</i> Each case is allocated to a specific mode of governance via the formal frame for governance modes		The formal frame for governance modes is translated into a category system and data analysis follows the content structuring technique.
<i>Research step 3:</i> The impacts in each case are identified by making use of the scheme for governance impacts	<ul style="list-style-type: none"> • Review of existing research related to impacts of the cases • Studying of official documents related to impacts of the cases • Expert interviews with key actors that are either affected by the governance arrangement in question or general experts for its results 	The scheme for governance impacts is translated into a category system and data analysis follows the content structuring technique.
<i>Research step 4:</i> The identified impacts are appraised in terms of SD	No additional generation of data	Interpretative appraisal of results from research step 3 in light of the normative frame for sustainability appraisal.

In terms of *data analysis*, I apply a qualitative content analysis, i.e. category guided text analysis. More specifically, I follow the procedure of deductive category application (also known as directed content analysis, cf. e.g. Mayring, 2015; Hsieh & Shannon, 2005). Therefore, the first three elements of the theoretical framework (the governance conceptualization, the frame for modes and the scheme for impacts) are translated into deductive category systems. On that basis, I use the content structuring technique to analyze the data. Finally, I interpret the findings in light of the normative frame for sustainability appraisal. Table 1 gives an overview of data collection and analysis techniques in connection with the four introduced research steps.

1.4 Structure

The formal structure of the study unfolds as follows. The following *Part II* is dedicated to providing the theoretical groundwork. In this part, *chapter two* first of all works out the state of research regarding the field of sustainability governance, and clarifies the understanding of respective key terms in this study. The chapter starts with an introduction to the key concepts of sustainability (chapter 2.1), governance and governance modes (chapter 2.2). After that, the overlap of these notions is addressed by consolidating the sustainability governance discourse (chapter 2.3). In light of the research perspective of this study, a particular focus is then set on the linkage between modes of governance and sustainability as well as further connected research fields (chapter 2.4). In relation to the foundations laid in chapter two, the *third chapter* develops the theoretical framework, consisting of four elements: a conceptualization of governance (chapter 3.1), a formal frame for differentiating governance modes (chapter 3.2), a heuristic for capturing governance impacts (chapter 3.3) and finally a normative frame for sustainability appraisal (chapter 3.4).

Based on this theoretical groundwork, *Part III* of the study then deals with the empirical case studies. At first, *chapter four* will go into detail with regard to the research methodology used - in terms of the general case study approach (chapter 4.1), data collection (chapter 4.2) and data analysis (chapter 4.3). The *fifth chapter* then provides an introduction to the five case studies. First of all, an overview is given to the embedding of the cases in terms of Swiss energy policy, which relates the cases to each

other (chapter 5.1). This is followed by an elaboration of the individual cases in the subsequent chapters (chapter 5.2-5.6). After that, in *chapter six*, the results of the case studies are presented. This includes the deepened understanding of governance workings within the cases (chapter 6.1), the allocation of the cases to specific governance modes (chapter 6.2), the identification of governance impacts (chapter 6.3), and finally their sustainability appraisal (chapter 6.4). An overview of the empirical findings concludes this part (chapter 6.5).

Subsequently, *Part IV* of the study provides a discussion of the results gained and elaborates implications of the findings in *chapter seven*. The chapter starts with a discussion of whether the mode of governance indeed makes a difference when it comes to promoting sustainability (chapter 7.1). Based on this, hypotheses that are to be tested in future research are formulated (chapter 7.2). In view of the findings, overall implications with regard to the field of sustainability governance are deduced (chapter 7.3).

Finally, *Part V* concludes the study in *chapter eight* with a summary (chapter 8.1), a reflection on the research in substantive and methodological terms (chapter 8.2), and ultimately an outlook on the directions for future work in the field (chapter 8.3).

In addition to this overview of the formal structure, figure 2 illustrates in more detail the logical procedure of the study, i.e. the successive development of the argument.

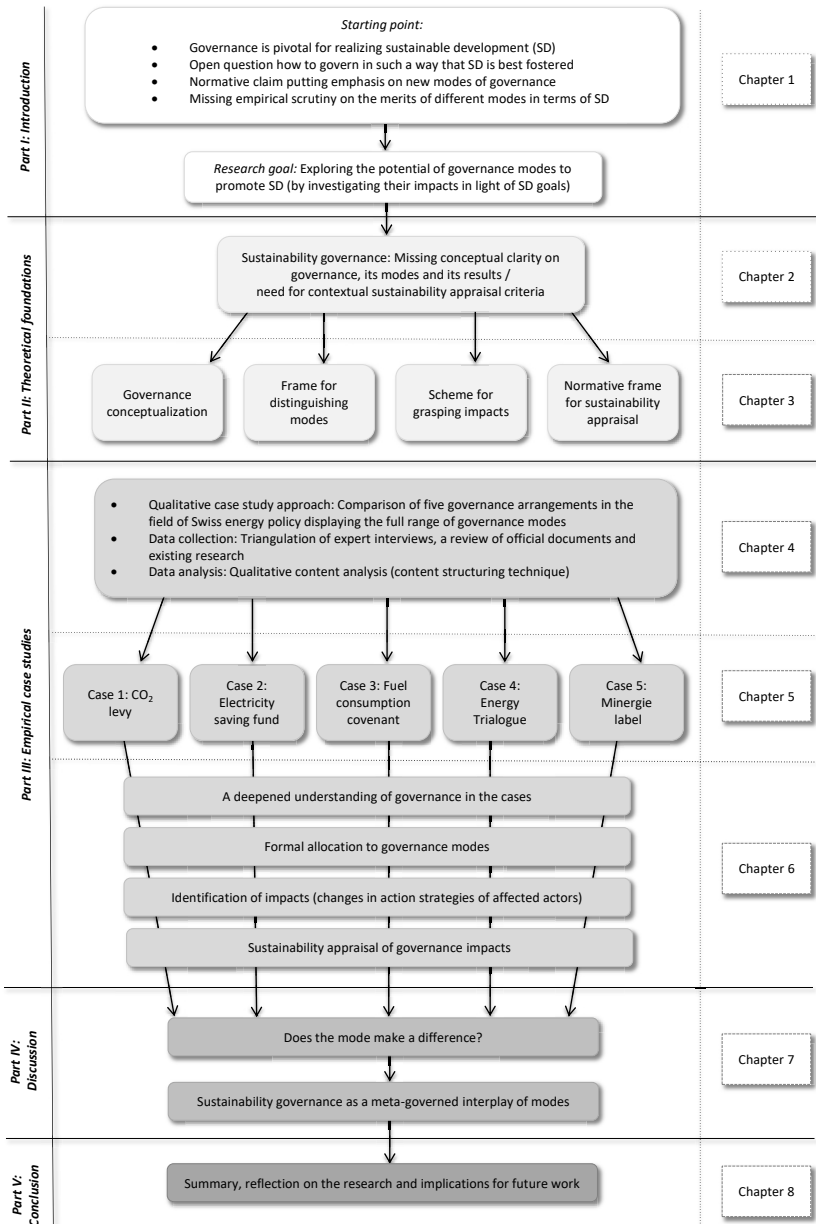


Figure 2: Proceeding of the argument (own illustration)

Part II: Theoretical foundations

2 Sustainability governance

As a foundational basis for the study, this chapter provides an overview of the state of research regarding the field of sustainability governance. In so doing, this section will also demonstrate the research desideratum addressed by this study as well as the need for the development of the theoretical framework.

Within academia, the concepts of both sustainability and governance serve as bridges among disciplines, thus provoking interdisciplinary debates. The number of publications comprising both notions has grown remarkably over the past decades, indicating the increasing relevance of the rapidly developing field. Yet, both terms are characterized by significant conceptual ambiguities. Kemp et al. (2005, p. 13) accordingly argue with regard to SD and governance that *»neither of these terms is yet mature or clearly defined. Perhaps more importantly, the overlaps between their wider meanings remain understudied.«* In line with this, Jordan (2008) characterizes the notions as two of the most contested terms in the entire social sciences. In light of this, this chapter will clarify the understanding of the two terms in this study, alongside the more specific notions of modes of governance and new modes of governance.

I will in the following first provide an introduction to SD (chapter 2.1), governance and governance modes (chapter 2.2), and then address their overlap by consolidating the discourse of sustainability governance (chapter 2.3). Finally, I will focus on the linkage between governance modes and SD - and further connected research fields (revealing what kind of work already exists in the wider sense connected to the research objective and thus positioning the study in the multi-faceted field) (chapter 2.4).

2.1 Sustainable development

Against the backdrop that the current global development trajectory can be characterized as unsustainable, the notion of SD has become increasingly

prominent in scholarly and political debates as well as in the public domain. Since the publication of the landmark Brundtland Report »Our Common Future« in 1987 (WCED, 1987), SD has become a broadly accepted mission statement and nowadays commands almost universal support (for a recent overview cf. e.g. Michelsen et al., 2016).

Despite this, the particular meaning of sustainability³ remains regularly contested (cf. e.g. Jacobs, 1999; for a recent synthesis of different understandings see e.g. Bolis et al., 2014). A large discrepancy exists between the intuitive version of the regulative ideal that frames public and political debates and its theoretical conceptualization and operationalization (cf. e.g. Kates et al., 2005; Dobson, 1996; Christen & Schmidt, 2012; Burger & Christen, 2011; Franklin & Blyton, 2011). While it is on the one hand argued that the concept of SD is elusive and marked by arbitrariness, it is also proclaimed that the act of debating the meaning of SD entails a value itself. In this sense, implementing SD is also concerned with a societal process of deliberation and negotiation on shaping humanity's future. Yet, a clear distinction has to be made between SD as a societal discourse and the theoretical approach to SD within sustainability science. The latter contributes to rationalizing the societal discourse and to informed decision-making by providing reliable knowledge (for recent overviews on sustainability science cf. e.g. Wiek et al., 2012; Miller, 2013; Kajikawa et al., 2014).

The literature on SD is generally vast, characterized by a broad scope and multi-dimensional heterogeneity (cf. e.g. Redclift, 2005). It can be roughly mapped in terms of two different poles of understandings (cf. e.g. Van Zeijl-Rozema et al., 2008; Bornemann et al., *forthcoming*). On the one hand there is a 'well-being perspective' (where societal concerns and uncertainties shape the normative SD concept related to quality of life). This understanding stands in the Brundtland tradition and conceives SD as a comprehensive trajectory of societal development towards safeguarding the well-being of present and future generations. On the other hand, there is a narrow 'ecological sustainability perspective' (wherein ecological

3 In this study, the two terms 'sustainable development' and 'sustainability' are used synonymously.

limits determine SD and the concept is objectified based on scientific evidence). Contributions in this vein perceive SD as an improved management of ecological resources, furthering resilience in light of limited carrying capacities. Apart from this distinction, there are differences in terms of substantive or procedural interpretations. While the former identify a fixed and universal normative core of SD, the latter regard it rather as a contested idea that needs to be specified in different contexts.

Since within this study I am not dealing with the concept of SD itself but with the relation of SD and governance modes - directed towards a better understanding of governing for promoting SD - I refrain from presenting a full outline of the sustainability discourse here. For the more specific conceptualization of sustainability, I refer to recently published contributions particularly dealing with this (e.g. Christen & Schmidt, 2012; Burger & Christen, 2011). Yet, what is important here is (i.) the pertinent understanding of SD, and (ii.) why governance is pivotal for reaching a more sustainable development.

(i.) The basic understanding of sustainability within this study builds upon the framing of the notion in the Brundtland tradition (*»development that meets the needs of the present without comprising the ability of future generations to meet their own needs«*, WCED, 1987, p. 43). The report related the satisfaction of needs with the idea of limitations. It connected the political goal of global justice and the discourse on human development with the fact of restricted environmental resources and the fragility of ecosystems. Accordingly, the pursuit of SD is connected with decoupling the pressures of existing socio-economic drivers on natural systems and thus embraces a balance of social, economic and environmental goals.

More specifically, I perceive of SD as a hybrid term linking normative, i.e. intra- & intergenerational justice, with systemic foundations, i.e. mechanisms of human-nature-interaction (coupled human-nature systems). It is thus about shaping development given the risks emerging from present activities and upholding societal abilities to (re)act. With this as the point of departure, SD is conceived in this study as a societal role model aimed at *ensuring the well-being of present and future generations within the frame conditions of finite environmental and social resources as well as fragile social-environmental systems*. Based on this understanding, in chapter 3.4, a frame for SD appraisal in the context of energy policy is developed.

(ii.) In terms of why governance is pivotal for reaching SD, it already became apparent above that SD is about directing development in light of the dissatisfaction with existing, unsustainable patterns. The notion of SD can thus basically be seen as an answer to a practical problem. It claims that the international development path needs to be reoriented in the direction of SD (this includes the implicit assumption that it is basically possible to direct societies on a desirable path, a supposition that is shared by the governance discourse, cf. below). As a means for organizing this reorientation, governance for organizing collective action is a necessary condition. The fundamental societal transformation processes need to be actively shaped (cf. also Meadowcroft, 2007, p. 302: »*Sustainable development is not a spontaneous social product: it requires goal-directed intervention.*«). This emphasizes the importance of steering when addressing SD, i.e. a purposive endeavor to lead a system from a certain state to another by influencing its development. Sustainability science in general is thus not interested solely e.g. in systems knowledge in terms of understanding and explanation but also in how societal transformation can be achieved, i.e. knowledge for action. Moreover, sustainability is an issue not only on the individual level, but on a societal level as a whole (cf. also Burger & Christen, 2011, p. 2: »*The scope of actions towards sustainability comprises not only individual, but also institutional, i.e. high level strategic actions decided by structural agents. Accordingly, sustainable development includes structural and political elements.*«). Moreover, as flawed governance practices encourage unsustainable development patterns, improved governance is needed. Overall, governance plays a vital role in shifting the societal development trajectory on to more sustainable lines.

The policy content of SD was amongst others developed at the UN summits of Rio in 1992 (United Nations Conference on Environment and Development) and Johannesburg in 2002 (World Summit on Sustainable Development), boosting sustainability to the role of being a key principle for policy action across levels (from the local to the global level) and sectors. The concept gained recognition in international policies and gave rise to sustainability strategies on different political-administrative levels. It has also extended beyond the realm of governments to businesses, other institutions and civil society. These developments depict the generally acknowledged action-guiding power of the concept. This was recently strengthened by the Rio+20 conference in 2012 as well as the '2030