

Institutions and Sustainability

Institutions and Sustainability

Political Economy of Agriculture
and the Environment - Essays in Honour
of Konrad Hagedorn

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Preface

From the first vague idea to use Konrad Hagedorn's 60th birthday as an inspiration for taking stock of his vibrant academic contributions, this joint book project has been a great pleasure for us in many ways. Pursuing Hagedorn's intellectual development, we have tried to reflect on the core questions of humanity according to Ernst Bloch "Who are we?", "Where do we come from?" and "Where are we heading?" In this way, and without knowing it, Konrad Hagedorn initiated a collective action process he would have very much enjoyed ... if he had been allowed to take part in it. But it was our aim and constant motivation to surprise him with this collection of essays in his honour.

Konrad Hagedorn was reared as the youngest child of a peasant family on a small farm in the remote moorland of East Frisia, Germany. During his childhood in the poverty-ridden years after the Second World War, he faced a life where humans were heavily dependent on using nature around them for their livelihoods; meanwhile, he learned about the fragility of the environment. As a boy, he attended a one-room schoolhouse, where his great intellectual talents were first recognised and used for co-teaching his schoolmates. These early teaching experiences might have laid the foundations for his later becoming a dedicated lecturer and mentor.

Between 1968 and 1979, Hagedorn attended the University of Göttingen, undertaking an intellectual apprenticeship in the field of agricultural economics and beyond as well as acquiring a command of the analytical and methodological tools that would later help him to improve the investigation and understanding of complex real-world problems. As a student, he soon attracted the attention of Günther Schmitt, Professor of Agricultural Policy, who subsequently became his Ph.D. advisor and intellectual mentor. Schmitt, who passed away in 2005, was one of the leading agricultural economists in Germany and a pioneer in applying theories and methods of New Political Economy and New Institutional Economics to agricultural economics. Schmitt's strong sense for the importance of theory in practical policy analysis had a long-lasting influence on Hagedorn, who achieved his first notoriety as a Ph.D. student when his comments on social policy in agriculture shocked the establishment of agricultural politics and lobbyists. Without claiming any biographic authority or completeness in this brief encapsulation of Hagedorn's development, we think it is safe to say that the learning environment fostered by Günther Schmitt is primarily where he acquired his skills for engaging in intellectual battles as well as his passion for stimulating provocation and debates with sparring partners from the international agricultural economics community. Leaving Göttingen, he spent 1980 as a Visiting Scholar of the German Research Foundation (DFG) at the University of California, Berkeley, USA, to broaden his perspective.

Back in Europe, Hagedorn joined the Federal Agricultural Research Centre (FAL) in Braunschweig in 1981, rendering conceptually sound policy advice on agricultural issues. During his years as a research fellow at the FAL, he continued teaching, being a guest lecturer at the Universities of Hannover and Wageningen. Besides giving concrete policy advice, Hagedorn went on to dig deeper into the institutional foundations of agricultural policy. His habilitation thesis on “Institutions as a Research Problem in Agricultural Economics” was completed in 1989 and has been considered to be a landmark in institutional agricultural economics ever since.

The fall of the Berlin Wall and the subsequent transformation processes were unique historical moments and significant for Hagedorn’s further career and intellectual development. Institutions at different levels changed rapidly and opened up new “windows of opportunity”. After German reunification in 1990, the Humboldt-Universität zu Berlin announced the establishment of a professorship in resource economics at the again merged agricultural and horticultural faculty. It was Konrad Hagedorn who obtained the position in 1994, and almost simultaneously, he was given the position of executive director of the Institute of Co-operative Science at Humboldt-Universität zu Berlin. From that time on, he has built up an ever enlarging research network. Pushing the frontiers of institutional research soon took Hagedorn across the borders of the New Federal States of the former East Germany (GDR), as he gathered an international team of pioneers and enthusiasts to venture into the unknown territories of the transition states in Eastern Europe. Large international research projects, such as KATO, GRANO and CEESA, paved the way towards the analysis of institutional change in agricultural and natural resource management and the development of concepts like “Institutions of Sustainability” or “Integrative and Segregative Institutions”. Since then, his endeavours to understand institutional change and the demands of a sustainable future have never ceased. In 2002, he commenced a fruitful and enduring co-operative relationship with Elinor Ostrom, of Indiana University, Bloomington, with whom he shares a deep humanity and a belief in the possibility of local people successfully attaining self-governance in managing common pool resources.

Celebrating the 60th birthday of a scholar always holds the promise that there should still be much to expect of him. Meeting the future challenges of sustainability – such as global climate change; increasing food, water and energy scarcity; civil wars, economic crises or natural disasters – requires sound theoretical and empirical research and wise policy advice. We hope – no, we are sure – that Konrad Hagedorn will continue to contribute towards this end. Likewise, the contributions to this volume take stock of and impressively reflect on Hagedorn’s curiosity, ingenuity and scholarship.

Needless to say, without his inspiration as the thoughtful and farsighted helmsman of the Division of Resource Economics, which has at times had to sail through the troubled waters of internal and external higher-education reforms, we would not have had the opportunity to enjoy the Division’s collective spirit, which has in large part made this book possible. In particular, we would like to thank:

- Renate Judis, for her full-fledged support for this project, her kind insistence and communicativeness, her driving force in keeping loose ends together as well as meeting deadlines, her editorial assistance, many cups of tea, friendship and hands-on support;
- Ines Jeworski, for brushing up the graphs and tables to unparalleled standards and Sigrid Heilmann for the discrete supply with vital information on whereabouts of Konrad Hagedorn and literature. We also relied on the valuable experience both of them have gained in previous publishing projects;
- Christopher Hank, for his professional, most friendly and dialogical language editing, at all times and places, and the enormous training effect it provides;
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- All contributors, who responded enthusiastically to our request for a contribution, for their dedication towards putting their thoughts and extensions concerning the work of their colleague, Konrad Hagedorn, onto paper and putting up with our wishes and demands;
- Last, but not least, the collective at the Division of Resource Economics, which makes work and life more enjoyable through a shared belief in intellectual exchange and mutual learning, as continually exemplified at research colloquiums (FoKo) after questions for clarification have been posed.

September 2008

Volker Beckmann and Martina Padmanabhan

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1 Institutions and Sustainability: Introduction and Overview

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Abstract. The analysis of institutions in the field of nature-related human endeavours has always been the key element of Konrad Hagedorn's academic writing and teaching. Pushing the frontiers of institutional economics to integrate sustainability concerns, he pioneered the reflection on institutions, values and norms in agricultural economics. The aim of this introduction is to outline the main facets of his conceptual and applied work, show the impact and inspiration it has had on the work of other academics in the area of institutional analysis, introduce the papers collected in this volume, and look ahead to further challenges to come.

Keywords: Agriculture, Konrad Hagedorn, Natural resources, Institutions, Sustainability

1.1 Introduction

The present collection of papers takes an institutional perspective on the management of natural resources in light of Konrad Hagedorn's work as an agricultural economist and his special interest in the interdisciplinary debates on sustainability. The essays aim to describe the latest trends in combining institutions and sustainability, summarise new conceptual developments in environmental economics, outline new approaches towards the analysis of governance of natural resources and present findings on the political economy of agriculture.

The authors brought together in this volume discuss institutional analysis of agriculture and natural resources in honour of Konrad Hagedorn on the occasion of his 60th birthday. The contributors are scholars from different disciplines, reflecting Hagedorn's spirit of academic cooperation worldwide. These original papers are extensions and applications of the innovative concepts developed by Konrad Hagedorn, particularly drawing on his theoretical foundations for institutional analysis in the field of environmental sustainability. Part 1 focuses on the "Political

Economy of Economic Development and Agricultural Policy”, highlighting the fundamental role of political institutions and some difficulties encountered in implementing reform towards sustainability. Part 2, “Institutions, Governance and Sustainability”, outlines different approaches and frameworks for analysing management structures in various natural resource settings. Part 3, “Property Rights, Collective Action and Natural Resources”, presents empirical studies and frameworks concerning the role of collective efforts for coping with environmental challenges. Part 4 outlines the “Challenges of Institutional Analysis for Sustainability” with regard to further theoretical and empirical research. Contributing to the interdisciplinary debate on sustainability in the field of institutional, agricultural and natural resource economics and management, the present volume responds to the prominent global-political issues of food and energy security. The state-of-the-art discussion taking place here among members of the agricultural economics community and beyond, draws from debates in political sciences, development studies, sociology and environmental and resource economics, thus resonating Konrad Hagedorn’s continual openness to concepts from different social disciplines.

This introduction to the volume is structured as follows: First, we present the key ideas of Konrad Hagedorn’s scholarly work on institutions and sustainability within the four subject areas just mentioned. Second, we present an overview of the papers presented in this volume, drawing linkages between them and Hagedorn’s contributions. We close with a perspective on future developments.

1.2 Konrad Hagedorn’s Contributions to Institutional Analysis

This introductory section aims to provide an overview of Hagedorn’s oeuvre: which ranges from the political economy of agricultural and environmental relations, through conceptual work towards developing and identifying institutions to govern sustainability, to concrete and categorical questions on how to manage the commons. Last but not least, his intellectual programme is driven by a keen interest in methodological, epistemological and visionary considerations.

1.2.1 The politics of agricultural and environmental relations

Konrad Hagedorn has made seminal contributions to the political economy of economic development and agricultural policy. His application of political economy concepts in the field of agricultural economics consisted of a great expansion or rather connection of these obvious themes that remained hitherto outside the research focus of conventional agricultural economics (Hagedorn, 1993a, 1996a, 1998b). Hagedorn’s major theoretical works elaborate on the importance of political

institutions for understanding agricultural policy and the limits of policy reform (Hagedorn, 1985a, 1988, 1996a). Besides classical farm income policy (Hagedorn, 1981; Hagedorn & Schmitt, 1985), he has applied the political economy perspective to a broad range of policy arenas, such as social policy (e.g., Hagedorn, 1977, 1981, 1982, 1985b, 1991a; Hagedorn & Mehl, 2001), agri-environmental policy (e.g., Hagedorn, 1993c; Eggers & Hagedorn, 1998; Hagedorn & Eggers, 1998; Hagedorn, 1999a, 1999b, 2007) and transition policy (e.g., Hagedorn, 1991b, 1992b, 1993b, 1996b, 2004b; Beckmann & Hagedorn, 1995, 1997, 1999, 2007).

Since the 1980s Hagedorn has included political institutions in his studies of agricultural policy in order to consider the processes whereby political institutions change and the decision-making processes they govern. In doing so, he met a number of methodological obstacles, such as in agricultural economics, where the spheres of objectives and values had been considered to be outside of scientific bounds (1993a, p. 850). Similarly, moral institutions like ethics and norms were widely neglected in agricultural economics at that time. However, the existing “inadequate feasibility” of policy recommendations was a great shortcoming of agricultural economics as an applied science. Using the ideas of the “new political economy” and public and institutional choice theory, Hagedorn set out to make the domain of political choice a systematic element of agricultural economic theory, strictly sticking to his credo that only theoretical conceptions enable individuals to perceive the existence and structure of complex issues (1993a, p. 851). The encountered paradox appeared to Hagedorn as something like “policy advisors do not reflect on institutional and political issues”, the solution of which he broke down into two tasks. First, he searched for reasons for the dire theory deficiency and the obstacles causing it. Second, he set out to push for theoretical advances and the conceptual integration of found solutions. Hagedorn’s strong devotion to theory development, in combination with the declared intention to contribute to real world problem solving, is one of his unique qualities or, as his fellows at the *Deutsche Forschungsgemeinschaft* would acknowledge, his *Alleinstellungsmerkmal*, that is, his outstanding feature as a scholar.

Starting from the hypothesis that norms and expectations regulate the relationship between applied social sciences (among them agricultural economics) and practical politics, Hagedorn encountered a dual orientation within the discipline: A certain division of labour exists where, like in other theoretical disciplines, conceptual work is central, while at the same time there is a demand for practical policy advice. This results in a conflict of loyalties, with an attempt being made to neutralise contradicting claims by conceptually separating and building “firewalls” between different research aims. Economists mainly focus on instruments, while politicians have a major interest in institutions (1994a). Taking aim at this disintegrative model, Hagedorn has dissected the epistemological norms that exclude values and institutions from scientific study, suggesting the integrative concepts of public and institutional choice theory as one step to solve the either-or dilemma. His attempt to combine institutions and decision-making processes has raised new research questions about the costs and deficits of collective action in political decision-making

processes, with the New Political Economy thus promoting the integration of economic and political concepts and interests as essential elements of analysis.

1.2.2 Developing institutions to govern sustainability

Analysing the role of political, economic and social institutions for sustainable development requires new analytical frameworks to understand and design rules for governing the increasing complex interaction between ecological and social systems of modern societies. Konrad Hagedorn has proposed such a framework, known as *Institutions of Sustainability (IoS)* (Hagedorn, Arzt, & Peters, 2002; Gatzweiler & Hagedorn, 2002a, 2002b, 2004a, 2004b; Hagedorn, 2002, 2003, 2004a, 2004c, 2005, 2007, 2008a, 2008b), which requires in-depth analysis of actors and transactions as well as institutions and governance structures from the perspective of institutional performance and institutional innovation. Regarding the topic of cooperative strategies to cope with agri-environmental problems, Hagedorn has developed an analytical framework to approach theoretical and methodological questions in a systematic way. The IoS framework serves as a tool and procedure to conceptualise and implement environmental cooperatives and cooperation in agriculture and rural areas.

This institutional approach towards agri-environmental coordination focuses on institutional change in property rights regimes and governance structures as a response to technological, biological and economic factors, on the one hand, and societal and political influences on the other. The IoS is an explorative concept to analyse relationships and their interplay, whereby it is useful to distinguish four groups of determinants: First, institutional arrangements depend on the biophysical features and implications of transactions. Second, institutional change relies on the characteristics and objectives of actors involved. Third, these changes affect the design and distribution of property rights and cost and benefit streams. Fourth, such changes are accompanied by changes in governance structures for supervision and sanctioning, with organisation and coordination being based on self-organisation and/or government regulations.

The properties of transactions affecting the natural environment and ecological systems, in other words the perceived types of interaction between actors having impacts on ecosystems, form the central units of analysis of the IoS framework. Environmental problems often arise around public goods, entailing difficulties with regard to legal transformations that regulate their transfer between different actors. The IoS identifies the main properties of transactions arising at the junction between private and public goods. Considering the features of a specific resource use in the context of different governance options is a central contribution to the debate on institutions. The excludability of actors, rivalry asset specificity, site specificity, capital specificity and the particular knowledge comprising group-specific human capital (Ostrom, 1998) – such characteristics frame the options of

institutionalisation. A low degree of separability and overall frequency of transactions may induce learning processes and bring about economies of scale, whereas uncertainty causes transaction costs for measuring, monitoring and information. Moreover, the complexity of environmental processes may produce opportunistic behaviour, while the heterogeneity and variability of stochastic phenomena, like the weather, also shape the properties of transactions.

Taking into account the characteristics of actors involved in agri-environmental coordination and their differences and particularities as land users, regulators or coordinators enhances understanding in the search for sustainable institutions. Important attributes of actors are not only their values and beliefs, but also their reputations for reliability and trustworthiness. Resources for participation, such as time, capacities to collect information, access to networks and bargaining power, are instrumental in influencing policy implementation through the mechanisms of interest representation in agrarian policy networks (Hagedorn 1994a). Acquiring and processing, retaining and using knowledge is vital under conditions of often asymmetric information, as principal-agent theory informs us. An actor's method of action selection (Ostrom, 1998) is based on his or her ability to learn from mistakes. The social embeddedness of actors regulates behavioural norms, preferences and distribution of resources. Culture refers to a common set of values and rules which governs the interaction between nature and actors.

Institutions of environmental sustainability are guided by property rights over natural components and governance structures for agri-environmental relations. Right holders can be favoured by benefit streams or burdened by cost components. Nevertheless, the institutional design of a right or duty can differ. Defining, establishing, quantifying and supervising measures all lead to transaction costs. The latter may be lowered by bundling rights in the hand of one actor, though a higher degree of centralisation has social and political consequences, affects motivation and participation of land users, and may precipitate moral dilemmas and undermine identification processes. Agricultural production results in a variety of cost and benefit streams with positive and negative effects for the public to bear. Often, rights and duties are conditional on the fulfilment of other rights and duties.

To analyse governance structure for regional or local agri-environmental coordination, different categories have been distinguished. Williamson (1996) differentiates between markets as (1) voluntary bilateral agreements between individuals, (2) hierarchies compulsorily selected by an authority as in organisations and (3) hybrid forms of contractual relations that are voluntary prior to the contract and compulsory afterwards. The third means of cooperation thus emerges as a type of horizontal non-market coordination. These categories reflect the relationships between the actors involved and the role of action selection as a relevant subject in negotiating these relationships.

The institutional interpretation sees sustainable development as a comprehensive process of searching, learning and gaining experience with regard to organising principles and policy instruments. Hagedorn sees sustainable development as a regulative idea that requires adequate institutions to become effective. Basing

himself on the Enquete Commission's "Protection of Man and the Environment" (Enquete-Kommission, 1998) Hagedorn formulates four basic strategies for achieving "Institutions of Sustainability" in the long run: (1) the call for *reflexivity* builds on the reinforcement of actors' sensitivity to push for institutional reforms; (2) *self-organisation* and *participation* in the political process has an integrative impact; (3) *Interest harmonisation* and *conflict regulation* is central to balancing power and control over resources, thus requiring an investment in the development of conflict-solving mechanisms; and (4) *institutional innovation* emerges as a creative process of searching and learning using a cooperative approach. In line with Haberer (1996), Hagedorn et al. (2002) call for transparency-creating institutional arrangements.

1.2.3 Managing common pool resources

Property rights over agricultural land and other natural resources has been a principal subject of the research by Konrad Hagedorn. He has contributed, in particular, to the theoretical and empirical analysis of the economic and ecological consequences of land privatisation in transition economies (Gatzweiler & Hagedorn, 2002a, 2002b, 2004a; Gatzweiler, Judis, & Hagedorn, 2002; Hagedorn, 1991b, 1992b, 1993b, 1994b, 1996b, 1997, 1998a, 1998b, 2003, 2004, 2004c; Lütteken & Hagedorn 1998). Furthermore, he has analysed the importance of property rights for contractual arrangements and collective action in order to effectively manage common pool resources (Hagedorn, 2000, 2002; Hagedorn et al., 2002). As the director of the Institute of Cooperative studies, he has studied extensively the role of self-organised cooperative structures in solving economic, social and environmental problems (Hagedorn, 1998c, 2000; Eisen & Hagedorn, 1998, 2000).

Hagedorn's interest in the governance of natural resource use, especially common pool resources, has guided his work on collective action and property rights (Di Gregorio et al., 2008). Besides sustainability outcomes, poverty has increasingly become a focus of this work. Inspired by the prospects of applying theoretical conceptions to real world phenomena within larger international empirical research projects, for example in Ethiopia (Beyene, 2008; Beyene & Korf, 2008; Hundie, 2008; Hundie & Padmanabhan, 2008) and India (Sreedevi, Suhas, Wani, Chennamaneni, & Chaliganti, 2007), he has contributed to extending the analytical lens for investigating collective action and property rights by focusing on specific outcomes in terms of poverty in the realm of managing natural resources.

As Di Gregorio et al. (2008) propose, the insights gained on the role of formal and informal property rights and collective action in improving natural resource management can inspire policies for poverty reduction. This is especially important, as an incomplete understanding of the complexity of property rights can lead to reduced tenure security for poor and marginalised groups by weakening customary rights or allowing for elite capture. Collective action is furthermore required

in order to adopt many technologies and natural resource management practices at higher levels (Meinzen-Dick, Knox, Place, & Swallow, 2002). Poor people and women are often disadvantaged in collective action through social exclusion, lack of time to participate, lack of education and confidence to speak in meetings and domination by local elites.

Property rights are “the capacity to call upon the collective to stand behind one’s claim to a benefit stream” (Bromley, 1991, p. 15), involving a relationship between a right holder, group members and institutions backing up a claim. Titles combine a bundle of rights, such as those to use (*usus*), appropriation (*usus fructus*), decision-making (*abusus*) and, finally, alienation (Pejovich, 1990). Supporting institutions provide recognition and legitimacy for property rights to be effective, enforcing rights and their corresponding duties.

Collective action can be understood as an action taken by a group of individuals to achieve common interests (Marshall, 1998). As with property rights, it is important to look at both the formal and informal institutions that govern collective action. In the action arena, the actors, their action resources and the existing rules define the parameter of choice and decision within which the actors cooperate, discuss, negotiate, etc. Over time these actions create certain patterns in the form of regularised and observable behavioural outcomes based on a certain set of rules. Existing institutions mark the rule-bound space within which actors can make their choices. In patriarchal society, for example, often rules and norms particularly constrain women’s voice and their ability to assert claims. While institutions do constrain, allow and affect it, collective action can bring about institutional change, thus altering the initial conditions.

Collective action is affected by social bargaining over the distribution of benefits and costs. Three sets of rules have been identified by Ostrom (1992): *operational* rules regulate day-to-day decisions, *collective-choice* rules prescribe how and who can change such daily routines, while *constitutional-choice* rules are those which govern the crafting of these very rules. In interaction processes, actors reinforce existing institutions while creating new ones. These patterns of action gradually come to form social relationships and structures.

Norms, legal structures and power relations have strong impacts on the assignment of property rights and the scope for possible change; meanwhile, the negotiation of property rights affects collective action, income generation and participation. Legal and power structures differ between countries and between governance levels. Federalism ideally reduces local and central information costs, though uniformity and standardisation decreases the fit of institutions. Decentralisation can help to change power structures (see Birner and Wittmer in this volume) and improve participation by engaging local voices in the political process. However, any decentralisation of services critically depends on the accountability of decision-makers and their ability to impose sanctions following violations (Ackerman, 2004). Participation through self-help is often regarded as a solution to break the vicious cycle of power, marginalisation and poverty. But participation will remain weak as long as the right to form groups cannot be enforced.

Cognitive schemata or mental models define what is imaginable in terms of both our understanding and normative perspective. North (1990) uses the term *ideology* to capture both aspects. On the one hand, ideology offers a mental model or cognitive map of the world, while proposing a normative idea of how the world should be structured on the other. Cognitive dissonance arises when differences appear between existing mental models – or “half-baked theories” as Schlüter puts it convincingly in this volume – and events. The normative side of ideologies serves the important task of providing legitimation and, thus, group solidarity. Cognitive schemata influence actors concerning whether to participate in deliberation or whether they dare to speak in public – and what is appropriate to say if they do so. The habitus of an actor in the public and private spheres is essential for gaining recognition in public discourse and collective action. Social standing is furthermore contingent upon the degree of embeddedness in social networks, either formal or informal.

1.2.4 The future of institutional analysis

Although the institutional analysis of sustainability has progressed significantly during the last three decades, important challenges remain for further theoretical, empirical and practical research. Konrad Hagedorn has often critically examined the methodological basis of political economy (Hagedorn, 1983, 1985a, 1985c) as well as of institutional analysis (Hagedorn, 1993b, 2004c, 2008a). He has stressed the importance of “mental models” for explaining both policy choices and institutional changes (Hagedorn, 1992a, 1998b, 2004b).

A centrepiece of Hagedorn’s academic interest is the sustainable handling of natural resources, ranging from pastures in the lowlands of Ethiopia to water regulation in East Germany and the transformation of whole agricultural systems in Central and Eastern Europe. In view of the long-term consequences of inadequate and simplistic institutional regulations over the environment, he has continuously pushed for the development of more adequate theory in this domain. Looking ahead from the current state of the art, Hagedorn always digs into remaining conceptual black boxes with such rigour and intellectual enthusiasm that it can be expected that he will produce many more insights and even more questions.

One of Hagedorn’s long-standing topics of interest has been segregating and integrating institutions (Hagedorn, 2003, 2008b). With his writings on the particular properties of transactions concerning natural systems, he proposes a heuristic framework to analyse the processes involved in institutionalising nature-related transactions (Hagedorn, 2008a). The physical world is just as important for institutional analysis as the social world. The challenge is that the particular properties of human–nature transactions are shaped by the attributes of natural systems, which have not been designed by humans and are not fully comprehended. In his keynote address to European agro-economists, Hagedorn builds upon his IoS framework,

with its focus on transactions as the main analytical unit, proposing that researchers distinguish between the basic attributes of physical entities, the properties of transactions influenced by them and the derived need for institutional and organisational governance. As transaction cost economics and the old institutionalism share transactions as their central unit of analysis, both dwell on the principles of conflict, mutuality and order. However, Hagedorn points out that concepts developed for industrial purposes cannot adequately fit attempts to explain human–nature relationships. In particular, he asks whether concepts from transaction cost economics that emerged from the analysis of industrial organisation are capable of grasping the complexity and interconnectedness of nature-related transactions, which from Hagedorn’s perspective require polycentric and hybrid forms of governance structures.

As Beckmann (2002) notes, the impact of transaction cost economics on environmental and resource economics has been small because, he argues, the transaction as the unit of analysis and the scope of governance structures developed for analysing industrial organisation are not appropriate for the problem settings and solution sets discussed in environmental and natural resource economics. In order to fill this obvious gap and to make the analytical power of transactions available to institutionalists in the field of natural resources, Hagedorn (2008a) has developed a typology of nature-related transactions, posing three questions to guide his enquiry: First, what are the basic attributes of the physical entities affected by the transactions in question? Second, which properties of these transactions result from these attributes? Finally, what do the attributes and properties imply for governing these transactions? The dimensions of modularity and decomposability, on the one hand, and of functional interdependence of processes, on the other, provide for a basic typology, upon which Hagedorn categorises all transactions along a continuum between “atomistic-isolated” and “complex-interconnected”.

Ostrom’s (2007a) call to do justice to the complex realities of the actual world by applying diagnostic methods that grasp actors’ subjection to diverse governance systems echoes Hagedorn’s concerns. A key term to unpack the complexity of nature-related interactions is decomposability. Here, again, Hagedorn returns to the central topic of cognitive scripts in the making of institutions: What cannot be imagined cannot be institutionalised, even if relationships in the physical world do exist beyond the grasp of humans. As partial decomposability of nature-related interactions cannot be achieved at the physical level, the task of conceptualising needs to be taken to the analytical level; similarly, if functional interdependence cannot be grasped at the physical level, then interrelatedness can be made transparent at a conceptual level (Hagedorn, 2008a, pp. 371–377). Following these thought experiments, a transaction-interdependence cycle can be developed. Instead of pondering over an institutional change that has already occurred, an ex-post institutional situation is imagined and subsequently broken into the possible stages through which a physical transaction could become an institutionalised transaction.

Building on this puzzle of increasing knowledge regarding ecological interconnectedness and the need for adequate institutional reflection of these circumstances in the light of sustainability concerns, Hagedorn sets out to decompose the process of discovery of nature-related transactions and their subsequent entry into the social world of institutions. Picking up the idea of discriminate alignment for governance requirements from Williamson (1996), he extends the scope of institutional analysis to investigating the particular properties of nature-related transactions. Matching transactions with governance structures has consequences for transaction costs. Continuing along this line of thought, Hagedorn proposes discriminating between integrative and segregative institutions: the former contain decision-makers liable for the transaction costs they cause, while the latter relieve decision-makers from transaction costs and place the burden partially on others. The discriminating alignment hypothesis regarding nature-related transactions invites empirical testing and further theoretical refinements. In this way, Hagedorn is continuing to explore the future of environmental institutionalism.

1.3 The Contributed Papers

The occasion for celebrating Konrad Hagedorn's contributions to institutional economics has inspired many scholars to reflect on a variety of current issues. The authors whose work is gathered in this volume come from Australia, the United States, Kenya, Norway, the Netherlands, Belgium, Switzerland and the East, West, North and South of Germany, working on problems in China, Russia, Bulgaria, Sri Lanka, Uganda, Guatemala and their respective home countries. Related to Konrad Hagedorn through research projects, professional cooperation or as his students, these scholars are now carrying forward the topic of institutions and sustainability, as summarised in the following sections.

1.3.1 Political economy of economic development and agricultural policy

Konrad Hagedorn's work on political economy has inspired work on economic development in a more general sense as well as on core issues of agricultural policy. The essays in this section give an idea of the variety of Hagedorn's manifold academic collaborations and his keen interest in areas ranging from problems in transition and war economies to social and agri-environmental concerns.

Scott Rozelle and Johan F. M. Swinnen compare agricultural reforms in China and the Soviet Union as two prominent cases of economic transition in the post-communist era, unravelling the political economy of these seemingly similar

processes. From an institutional perspective, the authors analyse the conditions under which radical market reforms were introduced in both countries, with the less-mechanised agriculture in China and industrial farming structures in the Soviet Union emerging as key dimensions. They reveal a political paradox: The early institutionalisation of market mechanisms through the household responsibility system in China stabilised the communist regime in the long run, as it tremendously increased the well-being of peasants and the larger population alike. In contrast, the envisaged market reforms in the Soviet Union in the mid-eighties were initially heavily resisted by farmers and local officials, fearing decollectivisation and loss of power. Under the old system, farming was largely mechanised and structured by food supply chains, which smaller production units would put at risk. Using the tools of political economy to search for explanations of the transition paths taken has been a shared interest of Swinnen and Hagedorn, which brought them together in the KATO project (Comparative Analysis of the Transition Process in the Agricultural Sector of Selected Central and Eastern European Countries) (see Beckmann & Hagedorn, 2007).

Taking a core theme of political economy, namely that of institutional change during a period of civil war, Benedikt Korf shows how powerful different fields of inquiry like the New Institutional Economics and anthropology can be in explaining the political economy of violence and appropriation. Previous contributions on this topic have more or less explicitly assumed the state to be a strong actor in the development of policies, though confronted with problems of acceptability, equity and implementation or transaction costs. Posing the question of institutional change in a situation of civil war requires a conceptualisation of the emergence and logic of the intrinsic rules of intra-state conflict. The idea of contracting, as in warlord or bandit models, is placed at the centre of the new institutional analysis. The different models of grabbing, looting or exploitation are dismissed by Korf on empirical grounds, as they do not sufficiently explain the ambiguous relationship between the state of civil war and the existing laws. The actor conceptualisation of rational agents in an institutional vacuum hinders our ability to grasp the complexity of a situation in flux. On the contrary, the real world of civil war is better understood as a simultaneous making of both war and law. Based on his ethnographic fieldwork in Sri Lanka, Korf can show how a hybrid set of overlapping and contradictory sets of rules on many different scales and between civil persons and combatants emerges. Besides rules of violence, new norms for appropriation emerge, strongly influenced by the properties of transactions (Hagedorn, 2003, p. 52), determined by the characteristics of a resource in time and space. Recognising that civil war is not beyond human attempts to order actors' relationships, but rather an equally institutionalised process, opens new analytical approaches to political economy and highlights the complexity of this violent order (Padmanabhan, 2008b). Though dynamic and shaped by conditions of fear, the mental models of all involved actors are based on norms formed under conditions of competitive social relationships.

Peter Mehl, a fellow researcher of Hagedorn at the Federal Agricultural Research centre in Braunschweig, picks up the notion of policy development as an institutionalised process and analyses the reform of the social insurance system for farmers' pensions in Germany that took place from the 1980s on. While assessing the success of the measures taken in terms of equity, efficiency and acceptability, he elucidates the political economy of this agricultural policy as actually being a social policy stretching over decades. Consequently, Mehl shows that the assessment of the success of policy reform and policy impact has to be separated analytically. Mehl's historical case study of this insurance reform concretely illustrates the factor of complexity in institutional change – an issue elaborated later on at the theoretical level by Clem Tisdell. Mehl's taking the aim of induced institutional change from the abstract level of agricultural externalities to the domain of political bargaining and implementation, often with unintended consequences in the field of social policy, reminds us of Hagedorn's concern with the situated, rationally bounded and institutionally furnished environment of policy making. It is not always the economically superior policy that proves to be the ecologically, socially and politically sustainable one.

The fact that some key conclusions from Hagedorn's 1982 doctoral thesis were not implemented by the farmers' pension-scheme reform until 1994 illustrates that institutional change can often be contingent upon shocks or historical events, such as in this case the end of the Cold War and the subsequent German reunification. Looking at the history of this reform process in terms of its goals and main components, Mehl shows how targets were reached and what kinds of intentional and unintentional impacts emerged. While the improvements concerning social security for farmers' spouses, the stabilisation of the pay-as-you-go pension system, the elimination of disparities between insured farmers and the development of compatibility with other pension systems illuminate the many political dimensions of the economics of old-age insurance, the integration of the agricultural sector into mainstream social policy reflects the changing position of farmers in a highly industrialised country.

Building on Hagedorn's institutional perspective on the political economy of policy choices, Tisdell illustrates it by dissecting agricultural and environmental externalities. He proposes that public policy making aiming at sustainability must not only take economic criteria into account, but also social and political reasoning. To assess policy choices with regard to agricultural externalities and their relationship to sustainability, the transaction costs for non-marginal alternatives, equity and political acceptability are key. Difficulties in selecting public policies for regulating externalities generated by agricultural activity arise from attempting to maintain a perspective of economic efficiency when the natural functions involved are actually irregular and erratic. Bounds on rational choice become apparent once more in examining the complexity of public decision-making. The distribution of rights affects what an efficient economic solution to resource allocation can be and inevitably necessitates equity considerations. Each policy option entails specific

institutional structures and resulting administration and transaction costs. Existing social structures and cultural factors influence what a politically acceptable or feasible policy can be. The challenge of choosing policy options regarding agricultural externalities is vividly illustrated, for example, by the International Convention on Biological Diversity and its belief in the suitability of establishing private property rights over genetic material to achieve sustainability.

1.3.2 Institutions, governance and sustainability

The analytical framework of IoS, has inspired structured and theory-led research on interactions between actors and their transactions, property rights and governance structures, with a pronounced interest in institutional outcomes and institutional innovation. The essays in this section expand on this and other analytical frameworks to understand the challenges facing the attainment of sustainability.

In his theoretical overview article, William Blomquist reviews the literature on the conditions for the sustainable management of natural resources. In the spirit of “The Workshop in Political Theory and Policy Analysis” at Indiana University, with which Konrad Hagedorn established fruitful transatlantic cooperation on the promotion of institutions for natural resource and environmental management in Central and Eastern Europe, Blomquist sketches an interdisciplinary research agenda. Proceeding from multi-disciplinary findings, including some from resource economics, ecology, law, and political science, he discusses the conceptual obstacles for natural resource management. He concludes that highly differentiated socio-ecological systems require equally complex and diverse governance structures spread over many levels. Striving for sustainable management of natural resources, he deduces that multiple and polycentric arrangements appear to be favourable, as they have the capacity to process and collect information, to reflect and adapt.

Taking up the notion of polycentric governance as a panacea for the production of non-private goods without central coordination, Markus Hanisch puts the theoretical assumptions on the development of metropolitan areas to a test concerning whether they also apply to rural areas in the enlarged European Union (EU-27). He shows that polycentric governance may be difficult to implement in rural areas, despite the lip service paid in favour of self-organisation and subsidiarity by the official agenda of the EU-27. Hanisch draws a rather dismal picture of public services in the countryside: confronted with problems of rural poverty, local budget crises and often missing services. In a search for reliable provision of public goods, and based on a historical example, he proposes cooperative associations to fill the service gap in the EU-27’s rural economy.

Echoing the search for viable governance structures to improve human well-being, Regina Birner and Heidi Wittmer take a close look at the requisite conditions for effective administration of environmental resources, focusing specifically

on the setting and enforcement of environmental standards and regulations, management of publicly owned natural resources and provision of environmental advisory services. Applying analytical concepts from the New Institutional Economics, particularly transaction cost economics, they identify *degree of decentralisation*, *degree of autonomy* and *level of participation* as critical organisational dimensions. Their focus on environmental administration is a unique one within this collection of essays, taking into account the necessity to take decisions on the institutional design of organisations.

Furthermore, similar to Blomquist and van Huylenbroeck et al., Birner and Wittmer pose questions regarding how well transactions match with governance structures. It should be obvious that governance structures that do not get the chance to be implemented remain paper tigers. Yet the “implementation gap” in environmental policy is faced both by developing and industrialised countries. To understand the effects of institutional arrangements on the performance of environmental administration, such as in ministries, departments and other government agencies, Birner and Wittmer propose an analytical framework for creating a mental model mapping out the interplay of autonomy, decentralisation and interaction between actors, illustrating it with empirical results from Guatemala and Uganda.

Similarly to Hagedorn’s typology of transactions to conceptualise segregative and integrative institutions, Birner and Wittmer work with Williamson’s “discriminating alignment hypothesis” (1991) to identify transactions relevant to administrative performance. According to the attributes that they have derived, such transactions have to be aligned with governance structures to achieve effectiveness. The comparative cost-effectiveness of different governance structures depends on their attributes and the functions they have to perform, revealing that trade-offs have to be considered when choosing an institutional design. Linking their conceptual, analytical framework with a translation into policy advice based upon specific empirical needs – in the very sense of Hagedorn’s insistence on conceptual integration – Birner and Wittmer show how plans for administrative reform can be drawn. For building institutions of sustainability, it is not only necessary to gain political support for environmental issues, but also to keep in mind the political economy of organisational reform.

Hybrid governance structures hold promise for institutions as a means for achieving sustainability. In their conceptual paper, Guido van Huylenbroeck, Anne Vuylsteke and Wim Verbeke remind us that markets are not naturally given, but rather socially constructed. With this awareness, the authors discuss the particularities of markets for public goods and take the first steps towards suggesting how to frame these markets under conditions of uncertainty. Van Huylenbroeck et al. argue that hybrid governance structures enable actors to transfer part of their property rights to transaction partners without giving over their complete bundle of rights. Referring to Hagedorn’s (2003) observation that public goods are defined as non-private goods, the authors set out to theorise on hybrid governance structures for private goods. They see the chance that, for those aspects of the

market that are socially constructed, hybrid governance structures can facilitate the allocation of public goods and their development, thus contributing to “institutions of sustainability”. Their concern about the need and demand for public good markets is also shared by Swallow and Meinzen-Dick.

1.3 3 Property rights, collective action and natural resources

The management of common pool resources in the field of natural resources has always been a principal research focus for Konrad Hagedorn. In this domain, property rights over land and collective action for stewardship of the environment are of eminent scientific interest. The essays gathered in this section offer empirically grounded studies on property rights, collective action and contracting for land, water and carbon sequestration.

Esther Mwangi and Elinor Ostrom review a century of institutional change and its effects on the ecology of East Africa’s Rangelands, with a focus on the linkage between institutional robustness and ecological resilience. Their contribution provides evidence of the methodological diversity of institutional analysis, as emphasised by Beckmann and Padmanabhan.

Mwangi and Ostrom meticulously demonstrate that nested governance structures for natural resource management can support social and ecological resilience, as in the case of pastoralist areas of Kenya’s Maasailand. Presenting a detailed case study – which is outstanding for its ecological and economic data and spans a period of analysis from prior to British colonial rule until early in the present century – Mwangi and Ostrom investigate the interaction patterns of varying governance institutions and dynamic ecological phenomena. They arrive at a conclusion concerning human behaviour and incentives, proposing that the indigenous institutions of the Maasai people were not only the most robust set of institutions, but have also been associated with a more resilient ecology. These authors share with Vatn (this volume) a deep concern over contemporary resource use and stress that the boundaries between social and natural systems are artificial (Berkes & Folke, 1998), preferring the term social-ecological systems.

Digging even deeper into the mechanisms of collective action, Insa Theesfeld investigates the decline of trust brought about through abuse of power. For the irrigation sector of the transition country Bulgaria she demonstrates how power abuse of central actors may lead to increasing distrust, undermining the sustainability of self-governed water management systems. Analysing the interdependency between unclear property rights and the deterioration of irrigation infrastructure, Theesfeld produces new insights into the failures of collective action for sustainable resource use. Reputation, trust, and reciprocity are the core features affecting cooperation (Ostrom, 2007b, Padmanabhan, 2008a) and are influenced by structural variables like the heterogeneity of participants. The empirical evidence from Bulgaria reveals that the disparity of regulations invites opportunistic