

# ***Institutional Adaptive Capacity of Organic Farmer Associations in growing Organic Agrifood Systems***

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**Abstract:** In this paper we present an analytical approach for analyzing the influence of institutional change on the Adaptive Capacity of organic farmer associations in growing organic agrifood systems. We merge certain concepts from theory on complex adaptive systems and neo-institutionalism. Doing so, we define the Institutional Adaptive Capacity (IAC) of organizations and postulate dynamics of its development in growing organic agrifood systems. We use criteria from the Adaptive Capacity Wheel to assess IAC, and the Adaptive-Cycle heuristic to connect it with the growth of organic agrifood systems. We provide a short overview on the institutional change along the foundation and development of Austria's main organic farmer associations, Bioaustria. Then we approach these developments using the concepts mentioned above to give the reader understanding about their application. Furthermore we suggest in what phase of the Adaptive Cycle Bioaustria and its organizational environment could be, and show what this could mean for the IAC of Bioaustria. Finally we ask some questions that could be helpful for a more detailed assessment of the IAC of Bioaustria.

**Keywords:** Adaptive Capacity, Adaptive Cycle, Organic Farmer Organizations, Institutional Change, Growth, Conventionalization

## **Introduction**

In most regions of the world the amount of organic agricultural land, and the numbers of organic producers are increasing (Willer, 2012). Also the global market for organic products shows impressive rates of growth since quite a long time. This was only shortly interrupted by the economic crisis in 2009 (Sahota, 2012). This expansion of organic farming has been accompanied by ongoing institutionalization (Freyer et al., 2001 ; Michelsen et al., 2001). Increasing numbers of national organic agriculture regulations, certification organizations and IFOAM affiliates (Huber et al., 2012) suggest that institutionalization of organic continues to spread around the globe. Alongside this institutionalization, the self - organization and representation of farmers and their interests changed. Arguments about this became famous as part of the “conventionalization – debate” (starting with Buck et al. (1997); for a more in depth analysis of the debate see Constance et al. (2014 [forthcoming])). Authors argue that the growth and conventionalization endanger the core principles of organic pioneers. They are concerned that compared to the “original” something in current organic farming has been lost. Our specific interest is now if this growth of organic agrifood systems led to a loss of Institutional Adaptive Capacity (IAC) of organic farmer associations and how this affects the ability of these associations to deal with a changing organic agrifood system.

Recently there has been increased focus on the influences of institutions on the Adaptive Capacity of systems (e.g., Folke et al., 2005 ; Lebel et al., 2006 ; Gupta et al., 2010 ; Engle, 2011 ; Berman et al., 2012) and, we understand IAC as the ability of institutions to empower social ac-

tors to respond to and/ or to anticipate external or endogenous short and long-term impacts (see also Gupta et al., 2010). We are interested in this for several reasons: (i) Since the beginning of the organic movement, organizations formed by farmers have fulfilled crucial steering functions (Hagedorn & Laschewski, 2003) and are therefore important for the development of the organic agrifood systems. (ii) Adaptive Capacity reduces the vulnerability of systems (Turner et al., 2003 ; Engle, 2011) and helps to manage their resilience (Walker et al., 2004), and can therefore be seen as a key feature of sustainable development. (iii) Growing systems are purported to lose their Adaptive Capacity under certain circumstances (Holling & Gunderson, 2002). Therefore we think a way to approach the institutional influences on the Adaptive Capacity of organic farmer associations in growing organic agrifood systems analytically is important.

In this paper we present an analytical approach to grasp the IAC of farmer associations in growing organic agrifood systems (section 2). In section 3 we provide an overview on the development and institutional change in the Austrian organic agrifood system and Bioaustria. In section 4 we describe how our approach can cast new light on these developments.

### **The analytical Approach**

In our approach we combine concepts from theory on complex adaptive systems and neo – Institutionalism. We take over the perspective of neo – institutionalism to look at institutions and how they influence the Adaptive Capacity (a concept that we take from theory on complex adaptive systems) of actors. Gupta et al (2010) designed already a tool (the Adaptive Capacity Wheel (ACW)) to analyze the influences of institutions on the Adaptive Capacity of social actors to a certain point of time. In our approach we complement this work to be able to analyze the Adaptive Capacity of farmer organizations in growing organic agrifood systems. Thus we define sources of institutional elements and clarify hereby the role organizations. Furthermore we combine the ACW with the Adaptive Cycle (AC) heuristic to add a time perspective. To do so, we connect the insights on the developments of the resilience in the AC with the outputs that we want to derive from the ACW.

## **Institutional Adaptive Capacity**

### **Organizations institutions and institutional elements**

It is important to clarify the nuances between institutions and organizations. Often these terms are used synonymously. According to Daft (2009:11) we define organizations as:

*“(1) social entities that (2) are goal oriented, (3) are designed as deliberately structured and coordinated activity systems and (4) are linked to the external environment”*

In contrast, institutions also encompass more general characteristics of society and could be seen as social expectations (Krücken & Hasse, 2009), Gupta et al. 2010). For us these expectations are systems of institutional elements including formal and informal rules, norms, values, perception patterns and symbols (Schulze, 1997), Michelsen et al. 2001). The focus on these institutional elements helps to clarify the relationships between organizations and institutions. Organizations do both, they alter their practices according to existing institutional elements in their environment and establish new elements within their organizational structures (Zucker, 1987). Thus organizations can play an important part of Institutions (i.e. systems of rules, values, etc), but they do not equal them.

Furthermore, we regard institutions as generally conservative. They are influenced by the actions of the past (Gupta et al., 2010), leading to a certain path-dependence of actors and organizations

who are related to these institutions (Schimank, 2007). Finally we want to emphasize that we see institutions not as strict constraints of human actions, but also as enablers of human actions (Giddens, 1988 ; Krücken & Hasse, 2009)

We focus upon a specific type of organizations, namely associations. According to Schwarz (1984) associations are characterized as private non-profit organizations based upon collaborations that support their members through certain performances (i.e. representation of interests, coordination of member behavior, etc. (see also Jahrl, 2009)).

Analysis of organizations can focus on the macro- (the relationships between organizations and their environment), meso-, (internal structures and processes of a single organization) and the micro – level (interactions between members of an organization) (Türk, 1978). With our focus on institutional elements, we take all three analytical levels into account (i.e. we look at the institutional influences of interactions, internal structures and relationships between organizations).

### **Adaptive Capacity**

The concept of Adaptive Capacity originates from biology where it describes the ability of organisms to adapt to changing circumstances (Gallopín, 2006). It became also a prominent approach in research on social ecological systems, where the influences of theory on complex adaptive systems are central (Cumming, 2011). The concept of Adaptive Capacity is nowadays prominent in different fields of social science and recently gained a lot of attention in the context of climate change (Smit & Wandel, 2006) and in sustainability science (Berkes et al., 2003). We define Adaptive Capacity (in accordance to the thoughts of Berkes et al., 2003 ; Turner et al., 2003 ; Gallopín, 2006 ; Engle, 2011) as the ability of systems to adapt to internal and external circumstances in a reactive, short term as well as in an anticipative, long term way. Adaptive Capacity decreases vulnerability (Turner et al., 2003 ; Gallopín, 2006 ; Engle, 2011) and enables resilience (Walker et al., 2004). Therefore it helps a system to maintain or achieve a desirable state (Engle, 2011).

### **Institutional Adaptive Capacity (IAC)**

After this clarification of the key terms we now are able to define the core concept of our research (altered after Gupta et al., 2010:461):

*The IAC of organizations is the quality to which degree the institutions within its organizational structures and the organizational environment empower the actors within an organization to anticipate or respond to external or endogenous short and long-term impacts. This ability includes the characteristics of the current institutions as well as the extent to which degree these characteristics allow the actors to change them.*

### **The Institutional Context**

The practices within organic farmer associations are influenced by a vast institutional context. We assume that it is helpful for the assessment of the IAC to structure it. To do so, we combine insights from other authors. In a first step we distinguish the possible sites of institutional elements in the organization itself and its environment (see Zucker, 1987). Second, we separate that environment into an organizational field<sup>98</sup> (see DiMaggio & Powell, 1983 ; Zucker, 1987) and a wider environment<sup>99</sup> (Zucker, 1987). Furthermore, according to Michelsen et al. (2001) and their view on the institutional environment of farmers we distinguish the organizational field in the three domains of market, agricultural policy and civil society. Organic farmer associations them-

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<sup>98</sup> An organizational field consists of private and public organizations which constitute a recognized area of institutional life (e.g., producers, consumers, regulatory agencies etc.) (DiMaggio & Powell, 1983)

<sup>99</sup> Zucker means here the influences from on a higher hierarchical level (e.g., the state).

selves are situated within the domain of civil society. We also include the members of the associations (i.e. organic farmers) in our analyses. A structure like this will help to examine the institutional context in a systematic way and help to create a complete picture of it.

### **Capturing the influence of institutions: The Adaptive Capacity Wheel**

For the first step of the IAC assessment of farmer associations we use a tool designed by Gupta et al. (2010): The Adaptive Capacity Wheel (ACW). This tool was developed to capture the influences of institutions on the Adaptive Capacity of social actors to a certain point of time and is a hierarchical set of 22 criteria in six main categories. The authors summarize their basic ideas as follows (Gupta et al., 2010:461):

*“The fundamental story line is that institutions that promote Adaptive Capacity are those institutions that (1) encourage the involvement of a variety of perspectives, actors and solutions; (2) enable social actors to continuously learn and improve their institutions; (3) allow and motivate social actors to adjust their behaviour; (4) can mobilize leadership qualities; (5) can mobilize resources for implementing adaptation measures; and (6) support principles of fair governance.”*

The criteria and categories of the ACW are listed in table 1. So, according to the ACW, institutions that “perform” well in the categories and related criteria foster the Adaptive Capacity of the related actors. We search for these institutions in the different areas of the institutional environment as well as in the organizational structures of the associations themselves and also look at their change along the growth of organic agrifood systems. There are semi – quantitative and qualitative approaches to score the single criteria (for a more detailed description see (Gupta et al., 2010)). To our knowledge this tool has never been applied in the context of organic agriculture and to assess the Adaptive Capacity of organizations.

Table 1: Categories and related criteria of Adaptive Capacity Wheel

<b>Variety</b>	<b>Learning Capacity</b>	<b>Room for autonomous change</b>	<b>Leadership</b>	<b>Resources</b>	<b>Fair Governance</b>
Problem frames	Trust	Information access	Visionary Leadership	Financial Resources	Legitimacy
Multi level/ sector perspectives	Single loop learning	Guidance	Entrepreneurial Leadership	Human Resources	Equity
Diversity	Double loop learning	Ability to improvise	Collaborative Leadership	Authority	Responsiveness
Redundancy	Discuss doubts				Accountability
	Institutional memory				

Source: after Gupta et al. 2010

### **In the face of growth and change: The Adaptive Cycle**

Our interest is to investigate how the IAC of farmer associations developed along with the growth of the organic agrifood systems and the change of the organizations themselves. According to historical neo-institutionalism we consider current actions to be influenced by institutions established in the past. Also current actions could have similarly far reaching influence upon future institutions. Institutional change along this path is seen as abrupt and appearing in the connection with crisis (see Schulze, 1997 ; Miebach, 2010) We combine this view on institutional change with the concept of the Adaptive Cycle heuristic. Although this heuristic was originally developed for the description of ecosystems, it has been applied on social-ecological systems (e.g.,

Abel et al., 2006) and social systems (Walker et al., 2006). In short, according to this heuristic, systems pass through four phases ( $r$ ,  $K$ ,  $\Omega$  and  $\alpha$  (see table 2) , which can be described using the following variables: accumulated capital, internal interconnection, and resilience. In general a system develops relatively slow from the  $r$ -, to the end of the  $K$  - phase. During this slow process capital is accumulated and the interconnections between the system variables increase. The system becomes more rigid and therefore its resilience decreases. At the end of the  $K$  - phase disturbances trigger a rapid loss of capital and the  $\Omega$  - phase is initiated. In the following  $\alpha$  – phase the interconnection decreases and the system becomes more resilient again. It is possible to re-structure that part of the released capital that was not completely lost. Alternatively the system will fall back into a state of lower organizational density (Holling & Gunderson, 2002).

Resilience and Adaptive Capacity are heavily connected and the heuristic views on the two concepts is quite similar (Holling, 2001 ; Holling & Gunderson, 2002). We postulate that the dynamics of Adaptive Capacity described in the heuristic can be also used to describe the development of IAC. With this hypothesis we achieve the combination of the AC with the other concepts, which we use in our approach. Therefore we take a look at the interconnection and the accumulated capital of the organic farmer associations and their organizational environment during the historic development of the organic agrifood systems. This will deliver insights of the current status and the possible future development of their IAC. A variety of the Adaptive Cycle that has been designed for governance systems by Pelling and Manuel-Navarrete (2011), is also relevant for our analyses. There accumulated capital is replaced by the degree of organization of the agency and the stability of social structure replaces the interconnections. Table 2 summarizes the main features of the two varieties of the heuristic.

Table 2: Varieties of the Adaptive Cycle (AC) heuristic

Variety of ACs	<b>r- phase</b>	<b>K – phase</b>	<b><math>\Omega</math> - phase</b>	<b><math>\alpha</math> - phase</b>
<b>Classic</b>	<b>Growth</b>	<b>Conservation</b>	<b>Release</b>	<b>Reorganisation</b>
capital	increasing	high, stable	rapid decrease	low, increasing
interconnections	increasing	increasing	start decreasing	decreasing
<b>Governance Re-gimes</b>	<b>Polarisation</b>	<b>Institutionalisation</b>	<b>Scatter</b>	<b>Mobilization</b>
agency	increasingly organized	organized/ routine	diffuse	start reorganizing
social structures	increasingly stabilized	stable, reinforced by agency	destabilized by agency	dynamic
<b>Resilience/Adaptive Capacity*</b>	high, decreasing	decreasing	low	increasing

Source: (Holling & Gunderson, 2002 ; Pelling & Manuel-Navarrete, 2011) \* these qualities are treated similar in both varieties of the Adaptive Cycle

### Some thoughts for the application

We plan to apply qualitative methods like participatory observation, focus groups and interviews with farmer association officials and other important actors in the association's environment in our approach to describe their practices and the institutional influences upon them. On the foundation of this data the single criteria of the ACW must be scored and the phases according to the Adaptive Cycle heuristic identified. So we assess the IAC of Bioaustria and its dynamics in a growing organic agrifood system. We want to do this in a collaborative way including important stakeholders. Gupta et al. (2010) emphasize that the ACW is not independent from its context of application. Therefore a refinement of the concept for specific cases of application could be useful. We think that hereby again inputs from stakeholders and practitioners could be very helpful. We therefore recommend a transdisciplinary and qualitative methods for this approach.

## **First Glimpses**

We provide a very short overview on the development of organic farming in Austria and the history of Bioaustria based upon previous surveys, reports and statistics. The aim is not to assess the IAC of Bioaustria, but to give the readers an idea about the potential outcomes of our approach.

### **Organic farming in Austria**

Organic farming in Austria has achieved an outstanding positions within Europe: 19,7 % of the agricultural land, 16,5% of the farms and 6,7 % of the sales of agricultural products are organic (BMLFUW, 2013). In 2009 Austria had globally the third highest per capita consumption of organic products and also the third biggest share of organic agricultural land (Willer, 2012). However, the growth slowed down recently. At least that seems true for some aspects: The number of organic farmers increased from 880 in 1988 to 20.316 in 1998 but only to 21.352 in 2012 (Freyer et al., 2001 ; BMLFUW, 2013). Also the domestic demand is stagnating. However, the amount of organic agricultural land is still increasing after the start of the new millennia (BMLFUW, 2013). This growth went along with vast institutional change. Along these changes organic farming in Austria transformed from a small scale, trust based movement to a, regulated, subsidized and increasingly internationalized food supply system (Freyer et al., 2001 ; Nigg & Schermer, 2005).

### **The merging of Bioaustria**

The first organic farmer association in Austria was founded 1962 (Freyer et al., 2001). However in the beginning the associations got less attention from other actors of the agrifood system. With the growth of organic farming that situation changed. More and bigger associations appeared and draw attention of other actors in the system (Michelsen et al., 2001). At the beginning of the 21<sup>st</sup> century a variety of Austrian organic associations existed, and there was heavy competition between two national umbrella organizations “Arge biologischer Landbau” (which was dominated by the biggest association “Ernte für das Leben” (Ernte)) and “Österreichische Interessensgemeinschaft für biologische Landwirtschaft” (ÖIG). The ÖIG was created through secession from “Aege biologischer Landbau” because of inner disputes (Moschitz et al., 2004). A process of consolidation was initiated and fostered by the Ministry of Agriculture in order to improve the expansion of organic farming (Michelsen et al., 2001). The aim was to have one single partner representing organic farmers (Moschitz et al., 2004). There was also hope that a unified association would strengthen the position of organic farming in interactions with politics, markets and conventional farmer organizations. The process ended in the foundation of one unifying organic farming association, Bioaustria. Since its foundation, Bioaustria has about 13.000 members and is by far the largest organic farmer association. Besides Bioaustria there exist only small, mainly regional associations (Tischler, 2009). Bioaustria heavily interacts with other organizations and actors in their environment. Some aspects of this will be highlighted in the next section.

## **Interactions with and development in the organizational environment**

### **The wider organizational environment**

First formal rules regarding organic farming have been established with the definition and regulation of organic production in the Austrian Codex Alimentarius (1989, 1991). This provided the basis of statewide subsidies for organic farming beginning in 1990. Since the joining of the EU in 1995 the subsidies are included in the ÖPUL program<sup>100</sup>(Michelsen et al., 2001). Since then a vast certification and control system has established that involves none the less than three ministries (Vogl & Darnhofer, 2005). However, in politics the big attention for organic farming can be traced to the personal attempts of the former Minister of Agriculture, Josef Riegler (1988), to re -

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<sup>100</sup> Since then of course EU-law, -regulations and -organizations play a big role in Austrian organic agriculture.

orientate agriculture in a social - ecological way (Michelsen et al., 2001). To summarize, the influence of the Austrian state upon the development of Austrian organic farming is very high in comparison with other European States (Michelsen et al., 2001 ; Moschitz et al., 2004). This became obvious in the role of the state in the founding process of Bioaustria.

### **The organizational field**

*Policy:* In addition to the government, other organizations, such as the co-operatives of the Raiffeisen – Verband and the Agrarmarkt Austria (AMA<sup>101</sup>), as well as the agricultural chambers also play important roles in agricultural policy development (Michelsen et al., 2001). Between co-operatives, chambers and AMA there are dense networks that opposed organic farming in the beginning. Nowadays the situation is more relaxed and Bioaustria cooperates with these organizations in various ways (Michelsen et al., 2001 ; Moschitz et al., 2004).

*Market:* Perhaps the biggest changes in the last decades were the entry of big supermarket chains and the ongoing consolidation in the retail sector. In 2009 65 % of distributed organic products in Austria have been sold in supermarkets (Schaer 2009), at the head the Billa–Rewe Group with its own label: “Ja natürlich” (Michelsen et al., 2001). This new importance of indirect distribution made it necessary to establish organic producer groups (Moschitz et al., 2004), in which farmer associations played an active role. However, the multiple retailers currently need much less information from the farmer associations, whose negotiating power has therefore been reduced<sup>102</sup>.

*Farming community:* Besides farmer associations another crucial actor within the farming community are the agricultural chambers. In Austria membership to the particular federal agricultural chamber is obligatory. The chambers have high influence on politicians and also on the AMA (Michelsen et al., 2001). Despite initial opposition between the agricultural chambers and the organic farmers and their associations the growth of organic in Austria has improved the relationships between them chambers and associations work now together in several topics (e.g., organic extension systems). However, organic farmers and their associations still feel that the chambers do not represent their interests (Michelsen et al., 2001).

### **Discussion, Conclusion and further Questions**

We can now give some indications of what such a development might look like, if we approach it with the combination of the concepts described above:

It would be premature to identify here the current phase of the Adaptive Cycle of Bioaustria, its organizational field and its wider environment. Yet, there are certain indications: After years of growth there is certainly more capital in this system: More farmers, more agricultural products, bigger sales and markets etc. However, as already described this growth of capital slowed down recently. Due to the growth in organic farming and the consolidation process the number of members of Bioaustria increased. Also the organization itself grew in regard of staff, budget and areas of operation. The former associations now are integrated in one organizational structure. Due to its size, professional structures are needed.

After the consolidation process within the organic farmer associations and the retail sector the remaining actors depend more on each other. This development could be read as an increasing degree of interconnection, because the obligatory dependencies decrease the flexibility among the actors (also in this context Milestad and Darnhofer (2003) see here a decrease of the adaptability of the organic agrifood system). There are connections between Bioaustria and other organizations

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<sup>101</sup> AMA is a semi – public organization that takes over the marketing for Austrian agricultural products and the operative administration of ÖPUL and introduced a, not very successful, label for certified organic products (Michelsen et al., 2001)

<sup>102</sup> According to an interview conducted with an official of Bioaustria in 2013

also via its engagement in sales companies and marketing. Also the connections between Bioaustria (and its predecessors) and the state heavily strengthened over the time and there is the attempt to work closer with other organizations in its environment like AMA and the chambers.

If we take over the perspective of the second variety of the Adaptive Cycle it can be seen that there had been a phase of more opposing opinions within the farmer association scene. With the formation of Bioaustria this dispute (i.e. opposing positions) has stopped and a kind of consensus has been established. It was clearly an aim of the foundation that the associations should speak with one voice. In Austrian politics, the consensus that organic farming is good established even earlier. Also the conflicts with the chambers, the co-operatives and the AMA decreased.

If we combine the insights of the two varieties hints get obvious that Bioaustria as an organization itself could have moved from a r – to a K – Phase. In our opinion the same thing could be said for the organizational environment of Bioaustria but in attenuated way. Those suggested phases of the Adaptive Cycle of Bioaustria and its organizational environment can indicate the potential for a decreasing IAC of Bioaustria. This would mean that there is the current need for responsible actors to reflect about the role and influences of certain institutions. Thus a in -depth analysis of the IAC would be necessary to confirm this trend, but we cannot deliver that here. However, we can point out some questions that would be important for such an assessment according to the ACW:

- How did the role of trust changed in comparison to the original organic agrifood system (see Nigg & Schermer, 2005)?
- How does the increasing regulation and institutionalization of the agrifood system and the professionalization of organic farmer associations affect for the possibility of autonomous change of actors within Bioaustria?
- How does the consolidation process within the farmer association - scene (and also to lesser degree in the market) influence the variety and fair governance within Bioaustria and between it and other organizations?
- Does one, unified associations “produce” leaders for the organic movement?
- Did the consolidation process equip Bioaustria with more financial, authoritative and human resources and did this increase the IAC of its officials?

These issues have to be addressed before the IAC of Bioaustria can be assessed. We believe that this analytical approach will help to raise and answer crucial questions about the institutional change and sustainable development of organic farmer associations. We suggest it could be a useful tool for researchers and officials to reflect upon ongoing processes and help to guide organic farming through a changing world.



## References

- Abel, N., Cumming, D. H. & Anderies, J. M. (2006). Collapse and reorganization in socialecological systems: questions, some ideas, and policy implications. *Ecology and Society* 11(1): 17.
- Berkes, F., Colding, J. & Folke, C. (2003). Introduction. In *Navigating social-ecological systems: building resilience for complexity and change*. F. Berkes, J. Colding and C. Folke, Cambridge: Cambridge University Press.
- Berman, R., Quinn, C. & Paavola, J. (2012). The role of institutions in the transformation of coping capacity to sustainable adaptive capacity. *Environmental Development*.
- BMLFUW (2013). *Der Grüne Bericht*. Wien, Bundesministerium für Land- und Forstwirtschaft Umwelt und Wasserwirtschaft.
- Buck, D., Getz, C. & Guthman, J. (1997). From farm to table: the organic vegetable commodity chain of Northern California. *Sociologia ruralis* 37(1): 3-20.
- Constance, D., Choi Young, J. & Lara, D. (2014 [forthcoming]). Engaging the Organic Conventionalization Debate. In *Re - Thinking Organic Food and Farming in a Changing World*. B. Freyer and J. Bingen, Springer.
- Cumming, G. S. (2011). *Spatial resilience in social-ecological systems*, Springer Science+ Business Media.
- Daft, R. L. (2009). *Organization theory and design*, South-Western Pub.
- DiMaggio, P. J. & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American sociological review*: 147-160.
- Engle, N. L. (2011). Adaptive capacity and its assessment. *Global Environmental Change* 21(2): 647-656.
- Folke, C., Hahn, T., Olsson, P. & Norberg, J. (2005). Adaptive governance of social-ecological systems. *Annual Review of Environment and Resources* 30: : 441-473.
- Freyer, B., Eder, M., Schneeberger, W., Darnhofer, I., Kirner, L., Lindenthal, T. & Zollitsch, W. (2001). *Der biologische Landbau in Österreich–Entwicklungen und Perspektiven*. *Agrarwirtschaft* 50(7): 400-409.
- Gallopín, G. C. (2006). Linkages between vulnerability, resilience, and adaptive capacity. *Global Environmental Change* 16(3): 293-303.
- Giddens, A. (1988). *Die Konstitution der Gesellschaft*, Campus-Verlag.
- Gupta, J., Termeer, C., Klostermann, J., Meijerink, S., van den Brink, M., Jong, P., Nooteboom, S. & Bergsma, E. (2010). The Adaptive Capacity Wheel: a method to assess the inherent characteristics of institutions to enable the adaptive capacity of society. *Environmental Science & Policy* 13(6): 459-471.
- Hagedorn, K. & Laschewski, L. (2003). Institutionelle Erfolgsfaktoren einer Ausdehnung des Ökologischen Landbaus–Analyse anhand von Regionen mit einem besonders hohen Anteil an ökologisch bewirtschafteter Fläche. Bonn, Bundesanstalt für Landwirtschaft und Ernährung.
- Holling (2001). Understanding the complexity of economic, ecological, and social systems. *Ecosystems* 4(5): 390-405.

- Holling & Gunderson, L. H. (2002). Resilience and adaptive cycles. In *Panarchy: Understanding transformations in human and natural systems*. C. S. Holling and L. H. Gunderson. Washington; Covelo; London, Island Press: 25-62.
- Huber, B., Schmid, O. & Napo - Bitantem, G. (2012). *Standards and Regulations*. Bonn, Frick, Fibl, Ifoam.
- Jahrl, I. (2009). *Supporting Organic Agriculture - A Comparative Analysis of Support Organizations in Austria and Michigan/Midwest, USA*. Wien, Universität für Bodenkultur, Department für Nachhaltige Agrarsysteme
- Krücken, G. & Hasse, R. (2009). Neo-institutionalistische Theorie. In *Handbuch Soziologische Theorien*. K. Georg and S. Markus. Wiesbaden, Verlag für Sozialwissenschaften: 237-251.
- Lebel, L., Anderies, J. M., Campbell, B., Folke, C., Hatfield-Dodds, S., Hughes, T. P. & Wilson, J. (2006). Governance and the capacity to manage resilience in regional social-ecological systems. *Ecology and Society* 11(1): 19.
- Michelsen, J., Lynggaard, K., Padel, S. & Foster, C. (2001). *Organic farming development and agricultural institutions in Europe: a study of six countries*. Stuttgart - Hohenheim, Universität Hohenheim.
- Miebach, B. (2010). *Soziologische Handlungstheorie: eine Einführung*, Springer DE.
- Milestad, R. & Darnhofer, I. (2003). Building farm resilience: the prospects and challenges of organic farming. *Journal of Sustainable Agriculture* 22(3): 81-97.
- Moschitz, H., Stolze, M. & Michelsen, J. (2004). *Report on the development of political institutions involved in policy elaborations in organic farming for selected European states*. University of Southern Denmark.
- Nigg, D. & Schermer, M. (2005). *Von der Vision zur Richtlinie*. Vienna, Bundesanstalt für Bergbauernfragen.
- Pelling, M. & Manuel-Navarrete, D. (2011). From resilience to transformation: the adaptive cycle in two Mexican urban centers. *Ecology and Society* 16(2): 11.
- Sahota, A. (2012). *The Global Market for Organic Food & Drink*. Bonn, Frick, Fibl, Ifoam.
- Schimank, U. (2007). Neoinstitutionalismus. In *Handbuch Governance: Theoretische Grundlagen und empirische Anwendungsfelder*. A. Benz, S. Lütz, U. Schimank and G. Simonis. Wiesbaden, VS Verlag für Sozialwissenschaften: 161 - 176.
- Schulze, H. (1997). Neo-Institutionalismus: ein analytisches Instrument zur Erklärung gesellschaftlicher Transformationsprozesse. *Arbeitspapiere des Bereichs Politik und Gesellschaft* 4: 5 - 28.
- Schwarz, P. (1984). *Erfolgsorientiertes Verbands-Management: Grundlagen der Verbandsbetriebslehre und der Verbandsführung*, Asgard-Verlag W. Hippe.
- Smit, B. & Wandel, J. (2006). Adaptation, adaptive capacity and vulnerability. *Global Environmental Change* 16(3): 282-292.
- Tischler, K. (2009). *Biologische Landwirtschaft in Österreich*. Wien, Bundesministerium für Land- und Forstwirtschaft Umwelt und Wasserwirtschaft.
- Türk, K. (1978). *Soziologie der Organisation: eine Einführung*, Enke.

Turner, B. L., Kasperson, R. E., Matson, P. A., McCarthy, J. J., Corell, R. W., Christensen, L., Eckley, N., Kasperson, J. X., Luers, A. & Martello, M. L. (2003). A framework for vulnerability analysis in sustainability science. *Proceedings of the National Academy of Sciences* 100(14): 8074-8079.

Vogl, C. R. & Darnhofer, I. (2005). *Das Bio - Kontrollsystem in Österreich*. Vienna, Bundesanstalt für Bergbauernfragen.

Walker, B., Gunderson, L., Kinzig, A., Folke, C., Carpenter, S. & Schultz, L. (2006). A handful of heuristics and some propositions for understanding resilience in social-ecological systems. *Ecology and Society* 11(1): 13.

Walker, B., Holling, C. S., Carpenter, S. R. & Kinzig, A. (2004). Resilience, Adaptability and Transformability in Social-ecological Systems. *Ecology and Society* 9(2): 5.

Willer, H. (2012). *Organic Agriculture Worldwide – The Results of the FiBL/IFOAM Survey*. Bonn, Germany; Frick, Switzerland, IFOAM, FiBL.

Zucker, L. (1987). Institutional theories of organization. *annual review of sociology* 13: 443-464.