# ARTICLE IN PRESS

# Adaptation and pathways of change and response: A case study from Eastern Europe

Claudia N. Câmpeanu [a,*], Ioan Fazey [b]

[a] *School of Sociology and Social Work, University of Bucharest, 9 Schitu Magureanu St, Bucharest 010181, Romania*
[b] *School of Environment/CECHR, University of Dundee, Perth Road, Dundee DD1 4HN, UK*

## ABSTRACT

There are increasing calls for conceptualizing adaptation as future pathways as a foresight tool for adaptation planning and implementation. To assist understanding of future adaptation pathways, this paper used ethnographic approaches to understand past pathways of response to major social and political change over the last seven decades in a rural Transylvanian community. The results identified five main socio-ethnic groups that had different pathways of response to key periods of change. These periods provided different constraints and opportunities, and shaped the accumulation and loss of different categories of assets for each socio-ethnic group. Findings show that adaptation is an ongoing process in which responses and decisions are patterned along multiple, socially contingent trajectories with continuities and legacies. Importantly, while the different groups had interrelated pathways, these were associated with a powerful normative pathway that was implicated in producing and reinforcing local social hierarchies. In this case, the normative pathway was a mix of practicing subsistence agriculture and small scale flexible income generation. The nuanced understanding of the change and response dynamics in the village provide important insights for anticipating responses to, and the impacts of, future change. It also highlights the need for holistic and multi-perspective approaches when developing and implementing adaptation pathways. These approaches should responsibly and carefully consider the implications of particular future paths for all concerned, but especially for those that are the most marginalized in society.

## 1. Introduction

Anthropogenically driven change is unprecedented and accelerating (Steffen et al., 2004) and there is an urgent need to prepare for inevitable climatic change. While much attention has been given to researching adaptation, it has largely focused on broad strategies and identifying opportunities and barriers and less on implementation (Berrang-Ford et al., 2011; Wise et al., 2014). How adaptation is framed influences adaptation practice (Juhola et al., 2011; Wise et al., 2014) leading to calls for more appropriate ways of approaching adaptation that are "multi-linear, relational, and capable of theorizing the interrelated dynamics of social structure, human agency and the environment(s)" (McLaughlin and Dietz, 2008) and that recognize that vulnerability and adaptation are socially constructed and affected by a range of social and political processes (Juhola et al., 2011; McLaughlin, 2011; McLaughlin and

Dietz, 2008). At the same time, the urgent need to navigate the complex challenges of implementing adaptation has also led to increasing interest in the concept of adaptation pathways, used as a foresight tool to assist planning and implementation of adaptation (Haasnoot et al., 2012, 2013; Wise et al., 2014). This concept views adaptation as occurring through linear time, where key decision and intervention points are identified to help navigate and influence directions of change toward more adaptive and sustainable futures (Haasnoot et al., 2013; Wise et al., 2014).

This paper takes the approach that adaptation is one of many forms of responses embedded in wider processes of pathways of change and response. It takes a retrospective view to understand how people have responded to major social and political change in order to provide insights relevant for understanding future adaptation pathways. The research focuses on an in depth case study of an Eastern European village and how it has transformed and adapted over the last seven decades. It involves understanding how different socio-ethnic groups have followed different but interrelated pathways in response to political and land use change, their social dynamics and through human agency. The paper first

discusses recent trends in approaches to understanding responses to change, followed by explanation of the conceptual approach taken, and description of the methods and research findings. While the research predominantly focuses on social and political change, it is intended to provide a deeper understanding of change processes and dynamics and to inform thinking about change more generally, including responses to climatic change. The research therefore joins interdisciplinary efforts to conceptualize adaptation in ways that are methodologically tractable while also recognizing the complexities of the social aspects that shape social-ecological systems. Overall, it provides a more nuanced understanding of how pathways for different groups emerge in response to change and their interdependencies and considers their implications for how adaptation pathways are conceptualized and implemented.

## 2. Background

### 2.1. Conceptual and theoretical background

In the climate change and socio-ecological literature, responses to change have been approached mainly through two distinct perspectives: actor and system based (Nelson et al., 2007). Actor centered approaches have been used more in the vulnerability tradition, which in the past has conceptualized vulnerability as a function of exposure and sensitivity to particular risks (Smit and Wandel, 2006). While responses to change are acknowledged to be on-going processes, the vulnerability perspective has relied on a fragmented temporality marked by the event/stimulus/risk that generates action or is an anticipated stimulus that results in some form of preparatory action or adaptation. The perspective is useful because of its attention to human agency and processes of decision making, including cognition and learning (Fazey et al., 2007; Grothmann and Patt, 2005) and is relatively amenable to operationalization, measurement, and comparison (Adger, 2006). Such approaches have mostly been applied to fields such as disaster management or environmental change, including managing the impacts of marked weather and other events caused by climate change (McLeman and Smit, 2006; Wisner et al., 2004).

The second perspective is system-oriented approaches, which have been increasingly used in the resilience research tradition. Here, responses to change are seen to be embedded in multi-scale changes and adjustments that influence the social-ecological system's capacity for flexibility, responses to future challenges, and ability to re-organize and rebound to a desirable state (Folke, 2006). The advantages of using a resilience framework is that dynamic complexity is recognized, including context-specificity, embedded temporal dimensions, attention to non-linear feedbacks and connections that change the nature of the context, and the systemic integration of different relevant temporal and spatial scales and societal and biophysical components (Folke, 2006; Holling, 2001; Walker et al., 2004). The disadvantages are that the perspective is less able to take account of human agency and decision making, such as in management and governance (Folke, 2006). The approach also often results, or is influenced by, a positivist epistemology that does not recognize the multiplicity of ways people understand and behave, with possibilities for misunderstanding the underlying causes of the observed emergent behavior of the system generated by human subjective experiences (McLaughlin, 2011).

More recently, researchers have made efforts to harmonize and articulate the two approaches both conceptually and in practice using existing concepts. Such approaches conceptualize vulnerability also as a property of a system (Adger, 2006) or as embedded in a complex of nested and differently scaled relationships that connect (household, for example) vulnerability in one setting to vulnerabilities in other settings (Eakin et al., 2009). To sum up, we can think of vulnerabilities as structural, embedded in the system at multiple levels, interconnected, yet particular to the social actors and their unique positions and relationships. Adaptive capacity has also been used indirectly as a bridging concept, by asking question about how to advance its measurement and characterization with insights from both research frameworks (Engle, 2011) and by proposing ways to define vulnerability, resilience, and adaptive capacity in ways that are shared by the research community and build around the linkages among the three concepts (Gallopín, 2006). Integrating the two perspectives focuses an analytical eye both on the parts and on the sum of the parts (Holling, 2000). That is, integrating the role of human agency and decision making in a complex, multi-scalar, and dynamic conceptualization of the environment can be done by rethinking vulnerabilities and capacities for response as something that has relevance beyond particular risks and events. Integrated approaches have resulted in greater focus on synergistic impacts of stressors, such as interactions of climate change and globalisation (O'Brien and Leichenko, 2000), the social and political contexts that shape vulnerabilities and response capacities (Eakin, 2005; Ford and Goldhar, 2012), and spatial and socio-political scales (Allison and Hobbs, 2004; Eakin et al., 2009; Forbes et al., 2004). There has also been increasing focus on understanding integrated socio-environmental dynamics that give rise to certain response and change outcomes. These studies highlight the importance of path-dependency, lock-in, and sunk cost effects (Allison and Hobbs, 2004; Anderies et al., 2006; Janssen and Scheffer, 2004) and the subtle relationships between response diversity, capacity to take up response options, and exposure to uncertainty and change that affect future flexibility and resilience (Cliggett et al., 2007; Fazey et al., 2010). Approaches that take into account responses to change as interacting feedbacks also provide explanations as to why actors are unwilling or unable to change, such as when there are strong synergistic interactions between desires for material prosperity and responses to stress in communities that reinforce resource depletion and increase vulnerability (Fazey et al., 2011).

Overall the examples above highlight two key developments and trends in research on understanding processes of change and response. The first has been the move away from privileging moments of change/disruption toward perceiving change processes that involve both change and continuity/persistence (Folke, 2006; Nelson and Finan, 2009). Research that has examined processes of change over long time scales clearly show that legacies of response and socio-environmental context influence the ways people can respond to future change (Anderies et al., 2006; Bankoff, 2004; Fazey et al., 2010; Janssen and Scheffer, 2004) and that the way people respond to change has major implications for the outcomes of change in the future. For example, societies that have a high degree of connectivity and suppress innovation can prolong rigidity and reduce adaptation, which in turn can cause more severe transformations when change inevitably occurs (Dugmore et al., 2009; Hegmon et al., 2008). Studies of past societies using archeological data have been fruitful and have highlighted the importance of understanding vulnerability and responses to change over time and the "slow" underlying variables that have major influences on short term dynamics. There has, however, been very little work on the continuities and legacies of previous adaptation and change over medium-term time scales that inform contemporary settings. This is particularly important as latencies in assets, resources, characteristics and solutions in responses to change often remain hidden and may only be mobilized and made visible during particular contexts or events (Engle, 2011). Such assets and resources include social capital (Pelling and High, 2005) and local/traditional knowledge (Berkes et al., 2000). The nuances involved in medium-term change