



# Adaptive governance: Livelihood innovation for climate resilience in Uganda



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## ABSTRACT

Adaptive governance is the use of novel approaches within policy to support experimentation and learning. Social learning reflects the engagement of interdependent stakeholders within this learning. Much attention has focused on these concepts as a solution for resilience in governing institutions in an uncertain climate; resilience representing the ability of a system to absorb shock and to retain its function and form through reorganisation. However, there are still many questions to how these concepts enable resilience, particularly in vulnerable, developing contexts. A case study from Uganda presents how these concepts promote resilient livelihood outcomes among rural subsistence farmers within a decentralised governing framework. This approach has the potential to highlight the dynamics and characteristics of a governance system which may manage change. The paper draws from the enabling characteristics of adaptive governance, including lower scale dynamics of bonding and bridging ties and strong leadership. Central to these processes were learning platforms promoting knowledge transfer leading to improved self-efficacy, innovation and livelihood skills. However even though aspects of adaptive governance were identified as contributing to resilience in livelihoods, some barriers were identified. Reflexivity and multi-stakeholder collaboration were evident in governing institutions; however, limited self-organisation and vertical communication demonstrated few opportunities for shifts in governance, which was severely challenged by inequity, politicisation and elite capture. The paper concludes by outlining implications for climate adaptation policy through promoting the importance of mainstreaming adaptation alongside existing policy trajectories; highlighting the significance of collaborative spaces for stakeholders and the tackling of inequality and corruption.

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## 1. Introduction

The idea of resilience has been increasingly incorporated into policy in recent years (Walker and Salt, 2012; Wilson, 2013). Resilience ideas have been embraced by organisations such as the UK's Department of International Development, Oxfam and Christian Aid (Adger et al., 2011; Upton and Ibrahim, 2012; Wilson, 2012, 2013). Resilience can be defined as the ability of a system to absorb shock and to retain its function and form through reorganisation (Walker and Salt, 2012). Resilience presents a solution to the complexity and uncertainty presented by climate change, offering a systems perspective and an approach which champions flexibility through reflexivity (Nelson et al., 2007). Integral to a resilient system is the ability to change whilst retaining structure and function, the capacity to self-organise, and the

capacity to learn. Central to managing resilience are social institutions and networks (Nelson et al., 2007; Walker and Salt, 2012; Hurlburt, 2015). Adaptive governance is postulated as 'managing for resilience,' actions being reflexive and experimental to enable feedbacks from the environment, and to build knowledge to prepare for uncertainty. Effective adaptive governance underpins a system's ability to undergo transition or transformation in the event of a detrimental regime shift (Folke et al., 2005; Maclean et al., 2013). Fundamental to adaptive governance is the ability of stakeholders to self-organise, share knowledge, promote strong leadership, encourage shadow networks and facilitate polycentric decision-making over multi-scales. These stimulate social learning, engaging stakeholders in collective learning and knowledge exchange, leading to flexibility in response, innovation and the restructuring of norms and values (Folke et al., 2005; Pahl-Wostl, 2009; Pelling, 2011; Blackburn, 2014). Examples include: Locatelli et al. (2008) focusing on communities in tropical forests and linkages of vertical scale incorporation of local responses into

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adaptation policy, and [Robinson and Berkes \(2011\)](#) who detailed multi-scale participation of Gabra pastoralists in northern Kenya.

Resilience has attracted much criticism. Its embracement of complexity and its highly context-specific focus challenges its implementation within policy. Also challenged by the lack of knowledge of resilient processes in developing contexts, the dynamism of human-environment systems, different interpretations of resilience, misuse of the term within policy rhetoric and uncertainty to how climate change impacts will unfold ([Adger et al., 2011](#); [Walker and Salt, 2012](#)). The integration of adaptive initiatives into current governmental structures is a major focus for adaptation policy which challenges traditional, governance systems which frequently epitomise the antithesis of adaptive procedures ([Rijke et al., 2012](#)). For example, in Sub-Saharan Africa (SSA), governance is often prescribed through centralised structures with rigid bureaucracies, little or no accountability or transparency, weak institutions, tight controls of information and corruption which could result in maladaptation and exacerbate vulnerability ([Scheraga and Grambsch, 1998](#); [Bräutigam and Knack, 2004](#); [Adger et al., 2005](#); [Leach et al., 2007](#)). Therefore, it is important to understand the dynamics and inter-related drivers in current governing institutional contexts which are adaptive in nature and supporting the resilience of human-environment systems to climate risk ([Plummer et al., 2012](#)).

Presently there are very few applied case study examples in the literature comprehensively exploring the specific facets of adaptive governance within developing contexts, particularly in Africa ([Plummer, 2013](#)). This lack of contextual research presents palpable implications for the guidance of adaptation policy through the limited availability of relevant information and knowledge. Furthermore, as identified by [Plummer \(2013\)](#), the current lack of experience of adaptive governance within the context of climate change, deems necessary the transfer of research on adaptive governance from other environmental contexts (in this case climate risk) to mould future adaptive governance processes. Therefore, the principal aim of this paper is to evaluate the potential of adaptive governance mechanisms to contribute to the resilience of livelihoods to climate risk and to produce recommendations for more effective adaptation policy. Analysis focuses on the resilience of rural livelihoods to climate risk at the parish (local) scale and then broadens out over multi-scales to analyse the specifics of adaptive governance within those institutions which are facilitating resilience at the parish scale, e.g. agricultural extension services and informal institutional processes such as cultural norms and values. Similar to [Blackburn \(2014\)](#), the research provides a whole system perspective to critique dynamics over multi-scales. Specific research objectives determine the policy and processes initiated by institutions to make them more resilient, evaluate the extent to which the present institutional structures allow for social learning processes, and illustrate how social learning is potentially contributing to the resilience of institutional and livelihood systems. Main findings highlight the importance of both formal and informal learning pathways for livelihood innovation, particularly shadow networks which were key for multiscale dynamics of learning and communication. However there was limited evidence of self-organisation at the local scale and challenges of inequality, elite capture and issues of power were limiting opportunities for shifts in governance. The paper proceeds as follows: Section 2 conceptualises adaptive governance, breaking it down into each of its major constituent features and outlines proposed resilient outcomes, Section 3 provides an overview of the case study, Section 4 outlines data collection, Section 5 describes and discusses the enabling characteristics of adaptive governance within the case study, and the paper concludes with Section 6 providing recommendations for adaptation policy.

## 2. Adaptive governance

Adaptive governance is characterised by policy and legislation which prepares for uncertainty by using novel approaches to learning and experimentation within institutional processes ([Olsson et al., 2006](#); [Leach et al., 2007](#); [Plummer, 2013](#)). These approaches facilitate learning responses to feedbacks from the environment and society, thus building knowledge and initiating innovation to prepare for surprise and uncertainty, so promoting resilience within a system ([Folke et al., 2005](#); [Macleán et al., 2013](#); [Parlee and Wiber, 2014](#)). Adaptive governance represents the antithesis to formal institutions and organisations which frequently reinforce rigid trajectories, leading to path dependencies and reduced resilience ([High et al., 2005](#); [Pelling and High, 2005b](#); [Rijke et al., 2012](#)). An example of this is typified by [Haddad \(2005\)](#), who describes the misalignment between donor and recipient priorities concerning the allocation of international aid money as a result of standardised procedures which then lead to project failure.

Integral to adaptive governance is multi-stakeholders in the decision and management processes creating the potential for social learning ([Olsson et al., 2004a](#); [Ros-Tonen et al., 2014](#)). [Cundill and Fabricius \(2009\)](#) express reflexivity as one of the core principles of social learning, which examines not only objectives, actions and outcomes, but also the learning process itself. There are many definitions of social learning, but the concept generally reflects the engagement of interdependent stakeholders in collective learning and knowledge sharing ([Leeuwis and Pyburn, 2002](#); [Hurlburt, 2015](#)). Social learning is an iterative process of reflection where individuals share their experiences and ideas with others, leading to the eventual transformation of routines, values, beliefs and innovative governance protocols and norms ([Maarleveld and Dangbégnon, 2002](#); [Röling, 2002](#); [Keen et al., 2005](#); [Stringer et al., 2006](#); [Armitage et al., 2008](#)). This notion parallels with the well-known experiential learning cycle developed by [Kolb \(1984\)](#), a step-by-step process of actions, reflections and experiences of the world, determined by problematic issues ([Maarleveld and Dangbégnon, 2002](#); [Hurlburt, 2015](#)). These steps are often defined through the triple-loop learning process developed by [Argyris and Schön \(1974\)](#). The single loop stage focuses on incremental improvement of performance, with no questioning of underlying assumptions that underpin goals and outcomes, the double loop stage indicates renewal, where underlying assumptions of rules and regulations are questioned and reframed and triple loop learning questions paradigms, values and beliefs ([King and Jiggins, 2002](#); [Keen et al., 2005](#); [Armitage et al., 2008](#); [Pahl-Wostl, 2009](#); [Herrfarhrdt-Pähle and Pahl-Wostl, 2012](#)).

The chief enabling characteristics of adaptive governance and social learning for enabling resilience and potential transformation are illustrated in [Fig. 1](#). The interaction of diverse multi-stakeholders over multi-scales and decision-making in polycentric, nested systems maximise knowledge sharing and social learning, resulting in innovation and experimentation ([Bauer and Steurer, 2014](#)). Particularly important is the use of novelty and ‘windows of opportunity’ events to initiate change, represented by flexible pathways, shifts in frames of reference, the restructuring of norms, beliefs, values and regulatory frameworks. Strong leadership and shadow networks are key to maximising these opportunities, as well as self-organisation and communication networks ([Pahl-Wostl, 2009](#); [Rijke et al., 2013](#)). The arrow at the bottom of the diagram represents the reinforcing nature of the features of transformation on the characteristics of adaptive governance.

Taking each of the major characteristics in turn, the collaboration of multi-stakeholders including non-state actors creates a platform for the exchange of different sources of knowledge from

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