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Political dimensions of climate change adaptation. Conceptual reflections and African examples

Dimensions politiques de l´adaptation au changement climatique. Réflexions conceptuelles et exemples des cas Africains

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POLITICAL DIMENSIONS OF CLIMATE CHANGE ADAPTATION. CONCEPTUAL REFLECTIONS AND AFRICAN EXAMPLES

Dimensions politiques de l´adaptation au changement climatique. Réflexions conceptuelles et exemples des cas Africains

Irit Eguavoen, Karsten Schulz, Sara de Wit, Florian Weisser, Detlef Müller-Mahn

Abstract

This paper supports the argument that social science research should focus on adaptation to climate change as a social and political process, by analyzing the politics and interests of actors in climate change adaptation arenas, and by acknowledging the active role of those people who are expected to adapt. Most conventional climate research depoliticizes vulnerability and adaptation by removing dominant global economic and policy conditions from the discussion. Social science disciplines, if given appropriate weight in multidisciplinary projects, contribute important analyses by relying on established concepts from political science, human geography, and social anthropology. This paper explains relevant disciplinary concepts (climate change adaptation arena, governance, politics, perception, mental models, weather discourses, risk, blame, travelling ideas) and relates them to each other to facilitate the use of a common terminology and conceptual framework for research in a developmental context.

Key Words: climate change adaptation arena, governance, politics, perception, mental models, weather discourse, risk, blame, travelling ideas, discourse, development, Africa, teaching material

Résumé

Cet article soutient la thèse selon laquelle la recherche en sciences sociales devrait se focaliser sur l'adaptation au changement climatique comme étant un processus social et politique, en analysant les politiques et intérêts des acteurs dans les sphères d'adaptation aux changements climatiques, et en reconnaissant le rôle actif de ces gens qui sont appelés s'adapter. La plupart des recherches conventionnelles sur le climat dépolitise la vulnérabilité et l'adaptation en élaguant des discours les conditions économiques et politiques mondiales dominantes. Les disciplines des sciences sociales, au vu de leur poids approprié dans des projets pluridisciplinaires, contribuent à d´importantes analyses qui s´appuient sur des concepts préétablis de la science politique, la géographie humaine et l'anthropologie sociale. Ce papier explique les concepts disciplinaires pertinents (arène de l´adaptation au changement climatique, gouvernance, politique, perception, modèles mentaux, discours sur météo, risques, blâme, travelling ideas) et les relie, les uns aux autres, pour faciliter l'utilisation d'une terminologie commune et d´un cadre conceptuel pour la recherche dans un contexte de développement.

Mots clés: Arène d´adaptation au changement climatique, gouvernance, politique, perception, modèles mentaux, discours sur la météo, risque, blâme, travelling ideas, discours, développement, Afrique, matériel d'apprentissage

POLITICAL DIMENSIONS OF CLIMATE CHANGE ADAPTATION. CONCEPTUAL REFLECTIONS AND AFRICAN EXAMPLES[1]

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1. Introduction

While the issue of climate change mitigation has received a significant amount of political and scholarly attention over the past two decades, engagement with climate change adaptation is a younger phenomenon. Although taken into consideration from the outset of the UNFCCC process in the early 1990s, the concept of adaptation has gained official political momentum in international climate change negotiations only after the finalization of the *Marrakech Accords* in 2001. The reluctance to embrace adaptation as a viable policy option was partly grounded in the fear that a shift to adaptation would weaken the political will to undertake greenhouse gas reductions (Kates 2000, Thornton and Manasfi 2010, Schipper 2009, Burton 2009, Pielke 1998). The main argument that finally paved the way for adaptation was the scientific observation reported by the IPCC that climate change is already happening worldwide, and particularly "in Africa adaptation is not an option but a necessity" because populations are already facing negative impacts (Boko et al. 2007).

The thinking about adaptation in the context of development has changed considerably since the beginning of the new millennium. Public discourse is now dominated by planned adaptation as a policy response to climatic risks. Adaptation to climate variability/ change as a research topic has gained popularity in the natural as well as in the social science disciplines. A large and diverse variety of actors are assembling around the looming "catastrophe of global warming" (Hulme 2008), both in the Global North and South. Development agencies and multilateral institutions, as well as the private sector and civil society organizations, have found their stakes in fighting global warming. And in Africa, we observe the increasing engagement of national and local governments, media, NGOs, churches, and religious and traditional leaders, who shape *climate change riskscapes*.

Climate change has become an "unchallenged consensus" with a respective "apocalyptic rhetoric" (Swyngedouw 2010). Critics warn that climate change has become the big "environmental orthodoxy" now, at the turn of the millennium (Forsyth 2003: 36), and threatens to depoliticize the attempt to govern global warming (Swyngedouw 2010). Most climate adaptation research tends to be apolitical, without paying attention to political framework conditions within countries, the interests and power of the actors, or the perceptions, priorities, and bargaining powers of the potentially affected populations. The depoliticization of adaptation leads to a situation that does not call for social science expertise in multidisciplinary research projects, and as a result, we face a severe numerical underrepresentation of critical social and political analysts in these natural science driven projects that are rather conventional and less than critical in their understanding of adaptation.

[1] The paper was written as a chapter for the edited volume by Walter L. Filho „Handbook of Climate Change Adaptation" (to be published by Springer in 2015). The chapter is currently under review. We thank the editor for the permission to pre-publish the paper in the ZEF Working Paper series to allow its earlier use as teaching material.

Within the social science climate and development studies community, we observe methodological rapprochements with, for example, mixed methods, ethnography, and economic survey techniques being applied by geographers and political scientists. The exchange of different theoretical and conceptual understandings to find a common language, however, is also a challenge among social scientists. This is often overlooked in multidisciplinary debates, and over the past few years, multidisciplinary studies on climate change have tended to demarcate fields of expertise by employing distinct terminology and publishing in *climate change journals* that seem increasingly disconnected from debates between disciplinary scholars in the social sciences.

The objective of this paper is to *denaturalize adaptation* and to bring back "the political" (in the sense of Swyngedouw 2010) in the discussion about climate change. This paper suggests a number of established concepts from social geography, social anthropology, and political science that are sensitive to discussing empirical findings in a multidisciplinary and developmental context. These concepts highlight the inherent political dimensions of adaptation, as well as local/ cultural perspectives (*emic perspectives*) on change, risk, and adaptation.

The following section on political agendas will outline the central concepts used in the adaptation debates in political science and geography. In the next section, environmental perception, blame and risk will be discussed, along with their link to power and politics from an anthropological and geographic point of view. The concluding outlook summarizes the argument for why adaptation needs to be analyzed more often as a socio-cultural and political process, with a focus on emic perspectives, as well as on local social and political dynamics.

2. Political agendas

Approaches that look at functional applications from administrative and technical perspectives seem to be on the rise. Governance, a former domain of political science, has been appropriated by other disciplines, as well as the international development community. When this concept is adjusted to a climate change adaptation context it tends to take a rather technocratic turn (Fröhlich and Knieling 2013). There are, however, notable disciplinary exceptions (e.g., Adger and Kelly 1999, Agrawal 2010, Bassett and Fogelman 2013, McMichael 2009, Pelling et al. 2012, Tschakert 2007, Sheridan 2012), as well as multidisciplinary works that provide room for political, historical and cultural analyses (e.g., Brockhaus et al. 2012, Crane 2010, Djoudi et al. 2011, Wisner et al. 2012).

Multidisciplinary studies show the importance of political circumstances on the perception of environmental change and for the creation of local vulnerability, as well as how political framework conditions determine local adaptation. In contrast, studies with a political focus observe that the socio-spatial aspects of risk and adaptation are strategically emphasized or de-emphasized by actors to legitimize their political narratives and interventions; often to serve their own interests.

Adaptation to climate change is understood, here, as a politicized *social arena* which has been opened up by the IPCC reports, the political attention these reports received globally, as well as by international funding opportunities under the UNFCCC for adaptation/ mitigation planning and implementation in Africa. This has been the starting point for the evolution of *Climate Change Adaptation arenas* (*CCA arenas*) in African countries, which clearly display partial overlap and continuity with older political arenas, for instance, Natural Resources Management, infrastructure delivery, or developmental cooperation. The *cross-scalar* and *multi-scalar CCA arenas* are very dynamic, assembling actors with

diverse interests who channel flows of information and resources among each other and beyond the arena. The development context is characterized by uncertainty with regard to climate change, by poverty and vulnerability in the potentially affected population, as well as by the hegemonic distribution of power and resources among the actors, including governments, local authorities, the public media, civil society organizations, international donors, and the climate research community. Access to information and resources is structured by social, political, and economic status and by the interests of these actors, as well as by their networks.

How adaptation is defined and implemented across multiple scales is strongly influenced by the interests of actors in the CCA arenas who exercise *discursive power* and are capable of dominating political negotiations, and therefore, their outcomes. Political agenda-setting is not always as transparent and straightforward as many scholars and practitioners would like it to be (Brooks et al. 2009) and *selective depoliticization* of the adaptation discourse can often be observed. Conceptualizing adaptation as an exclusively environmental problem, with some social challenges on the side of the affected populations that must be solved by applying quick technological and managerial fixes, meaning it turns a blind eye to the normative underpinnings of international adaptation and developmental discourse. For example, capitalist modes of production and consumption, the economic growth paradigm, corruption (as well as elite capture), and systemic governance failures are usually not denounced by the actors who benefit from the status quo (Brunnengräber 2013, Bailey and Compston 2012).

From a multi-disciplinary social science perspective, it is useful to adopt an analytical approach that frames adaptation beyond an environmental problem with social challenges. Vulnerability to climate change is often related to “unsustainable patterns of development combined with socioeconomic inequity” (Pielke et al. 2007: 597). Consequently, adaptation research needs to take into account that neo-liberalism operates as a form of *meta-governance* and dominates the *discursive arena* of climate change policy (Brunnengräber 2013).

Against the backdrop of the global financial crisis, the thematic focus of national and international adaptation policies has gradually moved away from ideas about environmental regulation to an emphasis on a *Green New Deal*, anchored in market-based instruments and private business solutions. Mainstreaming adaptation and *climate proofing* development projects has ultimately become a “new profit frontier” (McMichael 2009). Payments for ecosystem services, carbon trading, crop insurance schemes, and monopoly patents on climate-ready genes are symptoms of the neoliberal mantra that assumes the market is the solution to environmental problems caused by a fossilistic economy. This idea goes hand in hand with the claim that markets should be the primary means for resource allocation. We need to ask whether it is prudent to expect market-based instruments to facilitate the adaptation of the poor, vulnerable, and marginalized who are most severely negatively affected by climate change, because the same globalized market system is, at times, responsible for creating poverty and local vulnerability in the first place.

This example demonstrates that multidisciplinary research on climate change adaptation needs to critically engage with emerging policy concepts that seem to offer ideological guidance, and claim to countervail classical top-down policy approaches.

To extend this argument, we briefly discuss different concepts of *governance* and their normative underpinnings. The term *governance* is highly contested in academia, but has been applied in a variety of contexts, including global governance, good governance, public and local governance, organizational governance, corporate governance, and knowledge governance. The arbitrary use of the term has

prompted many scholars of political theory to arrive at a similar conclusion. Finkelstein, especially, argues that *global governance* "appears to be virtually anything" (Finkelstein 1995: 368), implying that is it not a very useful concept because it lacks preciseness. Generally, there are three ways in which this concept is used. First, governance can be understood as a *scientific concept* that is employed to conceptualize and empirically trace transformations and institutionalized interventions in societies. Second, governance can be understood as a *normative program* based on the ambition to realize and manage political change. Third, governance also refers to a *critical societal discourse*, which is linked to the wider globalization debate.

These three dimensions of governance are symptomatic for the rapid changes and interactions in a globalized world. We need to make sense of the integrative and disintegrative events which occur simultaneously across space and time, intertwine the public and the private, the global and the local, and which lead to the continuous emergence of new actor networks and regulative mechanisms that transcend the sphere of the classical nation-state. Climate change is characterized by highly interrelated biophysical and social-political processes that cut across jurisdictions, administrative scales, and the boundaries of ecosystems, as well as across fields of disciplinary expertise, and thus require new political approaches (Schulz 2011). Against this background, Finkelstein (1995: 367) concludes that it is indeed "reasonable to be uncomfortable with traditional frameworks and terminologies associated with the idea of international relations in an interstate system."

The idea of *multi-level governance* emphasizes the process character, as well as the multi-scalar nature of contemporary politics. While the traditional notion of governance identifies the nation-state as the center of political power, multi-level governance focuses on "the threefold displacement of state power and control: (1) upwards to international actors and organizations, (2) downwards to regions, cities and communities, and (3) outwards to civil society and non-state actors" (Termeer et al. 2010: 5). The normative bedrock of multi-level governance is the belief that the distribution of political power and responsibility across multiple jurisdictions is more efficient than classical monocentric state governance (Termeer et al. 2010). The main result is an increasing *fragmentation* of institutional systems and actor constellations on a vertical as well as a horizontal scale. Fragmentation is further aggravated by *multiple knowledges*, *conflicting norms*, and *scale mismatches* (for example, between biophysical systems and governance systems), as well as by conflicting or ill-defined political mandates.

Anthropologists working in Africa provide additional observations to this picture. New decision-making bodies and rules introduced by developmental cooperation do not usually lead to the disappearance of existing authorities and regulations. Instead, these tend to co-exist side by side (Bierschenk and Olivier de Sardan 2003). *Polycephaly* leads to a growing complexity in actors, interests, and legitimate options. It opens up the ground for strategic *forum shopping*, where local people can select from available options and decide for themselves which body to consult or which regulation to use as a frame of reference.

The concept of adaptive governance has gained increased popularity with respect to tackling the fragmentation and *polycentrism* of governance processes. *Adaptive governance* draws on systems and resilience thinking, as well as on ecosystem-management approaches (Plummer et al. 2013). These approaches have, commonly, an emphasis on the importance of institutional flexibility and learning for the management of complex socio-ecological systems. Adaptive governance considers temporal, knowledge, and network scales, while the concept of multi-level governance is mainly related to spatial, administrative, and jurisdictional scales. The normative goal of adaptive governance is to enhance the capacity of governance systems "to create the right cross-scale and cross-level links at the right time, around the right issues" (Termeer et al. 2010: 8). The concept of adaptive governance also stresses the

importance of “bridging”, “boundary” or “brokering” organizations as intermediaries in cross-scalar governance processes (Plummer et al. 2013). The role of these organizations is to enhance cross-scale interactions and networking processes, such as knowledge coproduction and conflict resolution. Yet, this practice is likely to make adaptive governance arrangements prone to nepotism and corruption.

In academia, climate change adaptation is mostly conceptualized as a sub-field of *environmental governance*. Plummer et al. describe it as a normative approach to achieve ecological sustainability and “the exercise of authority over the environment through processes and institutions by which decisions are made” (Plummer et al. 2013: 2). However, the fact that the main focus of environmental governance is identified as the exercise of authority over the environment leads back to the initial critique that the framing of adaptation as an ‘environmental’ problem de-emphasizes some of the political and socioeconomic aspects which underpin processes of adaptation. In practice, climate change adaptation is much rather a question of exercising authority over people and therefore strongly related to questions of power and politics.

In addition, questions of power are also directly linked to the basic sociological question of *agency and structure*. Are actors, as individuals, ultimately shaped and governed by structures? Or are actors free to develop their own potential for volitional and creative action? With respect to climate change adaptation, we need to answer whether political and economic structures that have caused the climate crisis in the first place can be overcome, and how creative space for social and economic transformation can be created (Pelling et al. 2012). This is especially true in Africa, where the negative impacts of climate change already demand practical solutions, legitimate political decisions, and adaptation programs. These, as well as the degree of political inclusiveness and priorities of the affected populations, should, therefore, be of great relevance to our research. But how can we learn more about these priorities?

3. Perception, blame, and power

An increasing number of publications address the climate change perceptions of local communities in Africa. These *perception studies* stem largely from agricultural and economic research projects, with some multidisciplinary aspirations (e.g., Kemausuor et al. 2011, Sanchez et al. 2012). Most studies are based on data from household surveys and focus group discussions, which are compared to regional climate and weather data, such as precipitation and temperature changes. They often aim to investigate, to put it in simple terms, whether farmers perceive what scientists have measured. Many of these studies, however, are very loosely connected to the previous work done in social-science disciplines, and therefore, do not contribute to a more comprehensive understanding of the cognitive *riskscapes* through which people give meaning to climate change. A number of studies conclude that farmers have a fatalistic view on climate change.

> A comparative perception study among ethnic groups in Benin revealed that “No participant mentioned the term climate change (or any similar phenomenon even described in other words) as a possible cause of the observed changes in climate, and no participant suggested that the trend […] was sub-regional, regional or global […] most farmers were found to have a rather fatalistic approach to climate concerns, with statements like ´climate is a divine phenomenon that we are not in charge of´” (Sanchez et al. 2012: 122,124).

Instead of answering the question of whether farmers' perceptions match the 'reality' of scientific findings, the more interesting question is how knowledge and experience shape meanings of climate change, and how they are integrated into their cognitive landscapes.

Anthropological work on environmental perceptions in different societies worldwide has pointed out that the ways humans view their natural and social surroundings and order them into categories is culturally specific, with a lot of variation across time and space (Leach and Fairhead 2003, Casimir 2009b). This is a testimony to the fact that knowing and perceiving nature are context-bound and socially constructed. The term *reception* has been used synonymously in this context (Rudiak-Gould 2012). *Perception*, however, is more adequate for the description of the process, which is not only about receiving information by seeing, hearing, feeling or smelling. The notion of perception includes the cognitive process of constructing social meaning about the received information (Roncoli et al. 2009).

Perceptions can be analytically categorized into different elements. Strauss and Orlove distinguish between *description* and *comprehension* in a meaningful way. The authors underscore that "the cognitive and symbolic aspects of the weather and climate deserve as much attention as the responses to specific weather events or conditions, since these two are ultimately inseparable" (Strauss and Orlove 2003: 6). A more detailed anthropological approach differentiates between *perception, knowledge, valuation, and response* (Roncoli et al. 2009). For the purpose of this text, we will not go into further details of psychological and cognitive studies (for a review on the mental models concept, see Jones et al. 2011).

In as much as knowledge is context specific, so are valuations and responses. Individuals valuate threats and respond in a personal way, which may differ from one person to another; however, there is usually something similar to a cultural consensus about what is commonly considered normal and good, or exceptional and worrisome. Such consensus defines what constitutes a dangerous situation, how it can be prevented, and what is required to adjust to it. In local parlance, dangerous situations are often described as a nontechnical pollution or impurity caused by *moral transgression*, and can therefore be perfectly remodeled into a political argument. "Pollution beliefs trace causal chains from actions to disaster" (Douglas and Wildavsky 1983: 36).

> Farmers in Northern Ghana explained lack of rain with various social causes, including illegal/ immoral land sales, lack of obedience for the older generation, extramarital sex, lack of united action in the community, lack of respect for ancestral spirits, laziness of some farmers and alcoholism of a rainmaker – all examples of moral transgression. They also mentioned other causes. Moral transgression arguments, however, were prominent in the discussions (Eguavoen 2013).

Some common tendencies are found in many societies: the feeling of worry for an unknown future, the need to feel secure, and a drive to reduce uncertainty. Forecasting based on past experience is a common human process. Climate change literature discusses various different models of various scales, and a distinction can be made between *climate models* in their conventional understanding and, so-called, *mental models*. "Mental models of local climate change, then, are a summative conception of all a community´s climate knowledge based on their observations and experiences of past and ongoing climate variability" (Shaffer and Naiene 2011: 224). In addition to their contributions to ground-truth regional climate models, mental models "offer insight into changes and connections that global and regional [statistical] models cannot capture" (Shaffer and Naiene 2011: 235). They open up the debate for research on social-economic transformation, stratification, and power relationships.

On a more general level, people construct culture-specific mental "model[s] of the world whose purpose it is to make predictions" to reduce uncertainty (Casimir 2009: 27). "[I]n most societies even before disaster strikes or while in the midst of deciding how to deal with it, people cogitate about their possible causes" (Casimir 2009: 29). They do so by relying on scientific models, cultural models, or even more often, a mixture of both to explain unwanted events. These explanations assign blame to something or somebody, allowing humans to mentally survive in uncertain environments. They also form a precondition for the application of pragmatic counterstrategies.

For causal chains inherently bearing the notion of cause, responsibility, and blame, one can speak of different *models of blame*, which become relevant when the result of the causal chain is categorized as exceptional and dangerous (Eguavoen 2013). Empirically local models of blame, which we observe in rural Africa today, are often a mixed form of *cultural and scientific models* of explaining the world and its basic causal principles. Local beliefs and scientific smattering merge, and usually intermingle without being in conflict with each other. By identifying the sources of nontechnical pollution, by assigning blame to culprits, or by relying on scientific explanations, people feel that they are regaining control over lives and environments that are full of danger. "To understand principles of liability, we have to uncover […] social goals […] and the strategies used for reaching them. For this we need cultural analysis that puts every concept of normality under scrutiny" (Douglas and Wildavsky 1983: 35).

> "Small farmers [in Ghana] attribute social and religious/moral reasons for changing climate […they] do not seem to engage in a blame game as much as the commercial farmers who find Western nations, mining companies, deforestation, charcoal burners, and poor government policies as major culprits. [Commercial farmers] assume the role of victims even though they use more land, deforest more virgin forest and appropriate a large volume of water resources for their farming" (Yaro 2013).

These findings show the cumulative effects of economic stratification, bargaining power, political inclusiveness, education, access to information, and the capability to demand governmental support. More generally, "[b]lameworthiness takes over at the point where the line of normality is drawn. Each culture rests upon its own ideas of what ought to be normal or natural […] But of course the idea of normality changes with new knowledge" (Douglas and Wildavsky 1983: 35). Conditions that seem to suspend normality, such as during or after a hazard, may lead to exceptional and worrisome situations, which may create risky situations for people and require non-routine behavior.

According to Casimir (2009a: 31) it is useful to follow the approach of Lupton (1999), navigating between two established definitions of risk. The first definition follows the scientific line of probability of a loss argument, while the second definition is socially constructed, with risk being a "product of historically, socially and politically contingent ´ways of seeing´" (Ibid.: 31). Casimir also suggests acknowledging that there are objective risks which are "often mediated differentially through individual, cultural and historical processes" (Ibid. 2009: 31, quoting Lupton 1999: 35). Different than in mainstream climate change adaptation literature, risk is not a universal thing in time and space, but a concept that is influenced by individual social status (e.g., age, gender, class, occupation) as well as by natural and cultural surroundings. There are societies that do not use a risk-like concept (Casimir 2009a); for example, studies indicating that drought has been defined as a disaster by external actors, while local communities have categorized the same dry conditions as rather normal, and not dangerous, because they rely on other indicators and modes of valuation (e.g., Meze-Hausken 2004, Müller-Mahn and Everts 2013).

Typical climate-related risks (e.g., losing one´s home through flooding, losing a harvest through drought, or suffering from a higher probability of getting infected with malaria) are just one side of the story. These losses harm basic human needs, such as food, shelter, health, and security, which are relevant to all human beings. Disaster reduction programs are planned in a way to reduce these official risks. Though the distinction between *official* and *unofficial risk* is not established in the climate change adaptation literature, it is helpful in understanding people´s ways of prioritizing risk, assigning blame, and responding to threats (Eguavoen 2013). Official risk, to our understanding, is the consideration of general threats to human well-being. Official risk is formally recognized by governments and aid agencies, and is a legitimate object of policy documents.

Unofficial risk, on the other hand, depends highly on the social and cultural context. Unofficial risk means awareness and fear from causal relations that are not scientific, or at least not easy to grasp empirically, such as a fear of the supernatural. It can manifest itself in a fear of sorcery, of the power of ancestral spirits, or of punishment from the Almighty. Belief and superstition are at the heart of unofficial risk, and may manifest in different domains of the same society, such as in (re)production, kinship, politics, or religion. They are often connected to the immediate social environment: the danger of being betrayed or disregarded, or greed, jealousy, and malevolence from somebody within the family or community. Unofficial risk is usually neglected by scientists, governments, and aid agencies. It is, however, of great relevance to many people in Africa, driving their decisions and activities, because it contributes to the cognitive process of constructing meaning around observations of social and environmental change. Moral transgression as a causal variable in cause-and-effect relationships is often reported under conditions of social and economic transformation which bear an uncertainty about the near future.

The analysis of *cultural weather discourses* worldwide has shown that "[a]ccounts of cultural or moral change are often associated with narratives of changing climate and vice versa […] Weather can be called or diverted by human action, and atmospheric conditions have frequently been explained with reference to a religious context" (Strauss and Orlove 2003: 4, for a systematic review of the studies, see Peterson and Broad 2009). There are numerous manifestations of the idea of weather manipulation, rituals for rain-making and rain-breaking with specialized utensils and offices, oral traditions (proverbs, songs, mythology) that reveal how power is structured within society, as well as scientific technologies for weather manipulations, such as cloud-seeding. The basic idea of this exploration is to understand the linkages between human perception, behavior, and weather phenomena. For example, anthropologist van Beek explores whether environmental problems have repercussions on storytelling and visions of the future. According to him, the relevance of analyzing tales and myths lies in the fact that any presumed past implies a projected future, both hinging on a perceived present. He states that, "whatever the strange forms and curious tales of myths and legends, the topics always address the worries, concerns and crucial dilemmas of the people, including ecological headaches. Often, these are social in kind and political in consequence" (van Beek 2000: 30).

Based on evidence from the South African Lovedu society in the 1940s, Douglas and Wildavsky argue that "for a total disaster, responsibility is located at the top. The geographic and social range of the natural disaster indicates the place in the political hierarchy where the likely transgression has taken place" (1983: 39). One could simplify this argument by saying that *different scales of blame* exist and that people tend to ascribe responsibility to the scale where the unwanted condition occurs or to the scale where they believe it occurs. Thus, if a harvest fails and farmers do not receive information about similar failures of harvests in other countries, they receive only a knowledge fragment, and thus, perceive failure as a local problem. As a consequence, farmers assign responsibility and blame to the

local and sub-local scales (individuals, their community, and their local authorities) instead of ranking it on a larger scale (e.g., a West African region which is affected by climate variability) with other frames of responsibility. Scientific smattering about global environmental change and uncertainty leads to a fallback on familiar models of blame at the local scale. At times, themes of international politics merge in mental models depending on the exposure of farmers to research, global news, and national political interest. Again, these examples can be understood as outcomes of sense-making:

> Senegalese farmers identified two main causes for climatic changes; resource (mis)management and meteorology though "a few participants – those who had taken part in our […] field research on carbon sequestration – cited CO2 and other greenhouse gases as drivers of climate change. The most […] controversial factor discussed was […] a cloud seeding device […] Although none of the discussants had seen the device, the ´machine´ was (wrongly) believed to be responsible for the 2005 rains throughout the entire country" (Tschakert 2007: 390).
>
> While weather discourses during the 1990s in Tanzania elucidated moral transgression in the community, the loss of the traditional institutions, and the El Nino for the negative changes in rainfall, the discourse in 2004 was that George W. Bush was personally responsible for the hot and dry weather: "it´s all because of that Bush and his [Iraq] war. We don´t know why God is bringing *us* these problems for *his* mistakes" (farmer quoted by Sheridan 2012: 233).
>
> Late Ethiopian Prime Minister Meles Zenawie explained on several occasions that the industrial pollution and CO2 emissions were responsible for the devastating droughts in Ethiopia during the 1980s. The debate on climate change adds another facet to the older debate on the origins of poverty in Africa. The old call for fairness and compensation gets rephrased during international climate negotiations: "we are prepared to walk out of any negotiations that that threaten to be another rape of our continent" (Meles quoted in Eguavoen and zur Heide 2012: 107f).
>
> The vulnerability to climate change discourse is wholeheartedly embraced by the government of Tanzania as a welcoming scapegoat to explain the marginalized situation of the Maasai population. The same government recently evicted thousands of pastoralists of their land, and excluded them from their most vital natural resources, to sell the land to a royal Arab family for game hunting purposes (de Wit, Forthcoming).

One debate that materializes into the studies on climate change in Africa, if done by social anthropologists or historians, is the well documented *connection between rain and politics*. "Rain is a political process across much of sub-Saharan Africa […] the authority of leaders in colonial Africa rested, in part, on the performance of rituals to bring rain and ensure the fertility of both people and land […] secular notions of power, legitimacy, and authority now co-exist and hybridize with discourses about rain, morality, and metaphysics […] the politics of rain are deeply interwoven with the politics of kinship, class, ethnicity and gender […implying] the notion that political order brings ecological order in the form of reliable rain – but that conflict brings drought – functions as the rhythm of political improvisation" (Sheridan 2011: 231). There are a number of historical examples for the rain-politics link (for a brief review, see Sanders 2003), as well as numerous empirical examples of our times:

> Climate change in Mozambique is understood as the result of "lack of rain ceremonies or improper rain ceremonies" (Shaffer and Naiene 2011: 233). The background of this lack is political. During the civil war, the government banned traditional rituals, some of the local

authorities and many cattle died during the conflict, herds could not be replaced easily after the civil war - both preventing the conduct of the rituals that use animal sacrifices. In the discourse, post-war disorder was correlated to negative changes in the weather (Shaffer and Naiene 2011).

The Maasai pastoralists in Northern Tanzania perceive changing patterns of rain to have coincided with the introduction of Christianity. With an explicit ban on visiting the traditional spiritual leader, the church contributed to the degrading power of the so-called *oloiboni*. Instead of praying under the tree, the collective rain ritual nowadays largely takes place in churches, where the power of establishing the connection between God and His people – through mediating rain – lies in the hands of the pastor (de Wit, Forthcoming).

Other trajectories of blame can be revealed when investigating *translation practices of climate change discourses* from the global to the local scale, and what happens at the intersection of their discursive encounters. Often, climate change is not perceived as a global phenomenon with remote causes and diverse manifestations worldwide, but as a phenomenon localized in cause and effect. However, these perceptions might be altered when *the idea of climate change travels*, and fuses in the encounters between this externally imposed idea and local explanatory regimes about a changing climate. In order to explore this "multi-level connection between global and local phenomena," enticed by global environmental discourses, Adger et al. employ a political ecology approach (Adger et al. 2001). In line with Stott and Sullivan, they demonstrate how political ecology forms a fertile analytical lens to trace the *genealogy of environmental narratives*, which identify the power relationships that are supported by such narratives, and the policy prescriptions that emanate from them (Stott and Sullivan 2000).

4. Outlook

In a recent critique of the adaptation concept in the climate change literature, Bassett and Fogelman come to conclude that there is a "strong sense of déjà vu in reading the IPCC reports and climate change journal articles" (Bassett and Fogelman 2013: 51). Their content analysis shows that 70% of the literature under review deems climate impacts as the major source of peoples' vulnerability (Bassett and Fogelman 2013: 42). This conceptualization of adaptation bears many resemblances with earlier arguments of the hazard school of thought, which sees vulnerability as the outcome of exposure, sensitivity, and mitigating responses (Bassett and Fogelman 2013: 51). With this paper, we intended to underline why the inherent *climate determinism* (Hulme 2011) in the climate change adaptation literature is highly problematic, and why the political needs to be brought back into the discussion of climate change.

First, academic explanations based on political perspectives are still marginalized in the major adaptation discourses (as the social science disciplines are in climate change research), with the effect that structural causes that make people vulnerable in the first place (and that we have discussed under the political agendas) are overlooked. Donor and government interventions, therefore, often remain technocratic, as they do not challenge and address the social factors that lead to peoples' vulnerability. These politically conservative approaches do not challenge the status quo, but tend to fix the deficiencies at the surface (Bassett and Fogelman 2013: 44-46).

Second, in a similar vein, with the emergence of the *Adaptation Imperative* (a normative imperative invoking the plight of the most vulnerable), there is a strong need for analyses of the discursive framings

of adaptation and what they reveal about power relationships (Wisner et al. 2012). Through increased funding possibilities, adaptation programs could share the same characteristics as James Ferguson's *anti-politics machine of development* (Ferguson 1994). Studies need to include an analytical separation of *knowledge about climate change* (mental models of local climate change) on one hand, and *knowledge about adaptation resources* (funding, programs, and career opportunities) on the other to get a clearer picture of the dynamics within the CCA arenas.

Third, and closely linked to what has been written above, actors respond to climate change impacts, as well as to the *idea of adaptation*, as articulated by science, politicians, the media, and the donor community (Head 2009). Answers to the "adaptation to what" question (Pittock and Jones 2000) will have to take into account the fact that actors act upon the scripts provided by potential supporters (Rottenburg 2009, Watts 2001). Adaptation to climate change is more than the IPCCs envision, and therefore, "adaptation cannot be adequately explained as a response to climatic stimuli, but […] also involves reactions to prevalent ideas and the incentives of new funds" (Weisser et al. Forthcoming).

Fourth, due to the fact that climate funds channeled to the Global South might surpass Official Development Assistance (ODA) in the future, Ireland and McKinnon argue that not only should adaptation research focus on vulnerable communities, but also on those "places where policies are made, funding decisions taken, or new themes and approaches circulated amongst development professionals" (Ireland and McKinnon 2013: 2). Thus, the research also needs some new agenda-setting.

Fifth, while the previous argument proposes a new ontology for adaptation, we stipulate that *epistemological reflections about adaptation* similarly deserve attention, as they reveal how different actors may assemble around the adaptation paradigm in the CCA arenas. Adaptation means different things to different people (Bassett and Fogelman 2013, Head 2009), for adaptation activities are embedded in particular socio-cultural contexts (Nelson et al. 2009, O´Brien 2009, O´Riordian and Jordan 1999). As Rottenburg has shown for North-South cooperation, in general, project parties are united under a *common meta-code* (Rottenburg 2005), and in this way, donors and recipients act upon the common objective of adaptation to climate change. While in their interactions they refer to adaptation as a common meta-code, the distinct cultural codes of each of the partners differ profoundly. Program and project activities might be labeled as adaptation to climate change, however, the rational to do so might differ starkly.

Finally, to better highlight the inherent political dimensions and social dynamics of adaptation, as well as the *emic perspectives* on change, risk, and adaptation, it is helpful to look beyond the climate change adaptation context. Multidisciplinary research could, more often, build on social environmental sciences and their theoretical contributions. We hope that the suggested concepts and terminology help to support future research in Africa and elsewhere in this regard.

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