



Towards a cultural lens for adaptation pathways to climate change

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Abstract

Adaptation pathways have been conventionally viewed as an approach for planning and identifying different adaptation options and the ways in which they can be realized. However, there has been scant consideration of the wide diversity of cultural and social processes which shape how adaptation pathways emerge. We argue that a cultural lens sheds light on differential vulnerability and the processes that enable or hinder adaptation. A cultural lens focuses intrinsically on intersectional categories which can impact the adaptive agency or resilience of individuals, households, and communities. In particular, we need to examine how cultural beliefs, norms, and practices change over time, and are reflected in adaptation pathways since livelihoods do not remain the same over the life course. Additionally, taking a broader perspective by incorporating concepts from cognitive anthropology helps us understand motivations and choices which influence adaptation pathways.

Keywords Adaptation pathways · Cultural beliefs and values · Climate change · Livelihoods · Life course

Introduction

The world is currently facing various global challenges, ranging from global pandemics to climate change. Adaptation has become the new mantra for individuals, societies, regions, and

even countries to cope with these challenges (Taylor 2014). One of the most used definitions on adaptation to climate change reads as follows: “the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities” (IPCC 2007, p.7). Adaptation among human systems primarily concerns the cultural or social responses societies have to develop and enact in order to survive environmental change, and climate change in particular (Birkmann 2011; Smit and Wandel 2006). While these definitions are useful, we argue that current discourses often adopt a neoliberal approach to climate adaptation, putting responsibility upon the individual without taking into account the broader socio-cultural inequalities, and environmental, historical, and institutional contexts (Radel et al. 2018; Taylor 2013). This is problematic as individuals or households who fail to “adapt” are often blamed for their own “maladaptation” by governments and aid agencies (Paprocki 2018).

The climate adaptation research community highlights that adaptation is a long-term, ever-changing process that requires repeated decisions to be made (Lansing 2003). These characteristics have been best captured by the term “adaptation pathway” (Maru and Smith 2014; Wise et al. 2014; Fazey et al. 2016). Fazey et al. (2016) used a pathway lens to highlight how adaptive trajectories arise and become embedded within particular socio-environmental contexts and along multiple scales. Conceptualizing adaptation in

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such a way enables us to not only better understand how past adaptation legacies, including social institutions and socio-cultural values, shape future adaptation trajectories (Burnham and Ma 2018) but also to set adaptation within “social, subjective, historical, and political processes” which themselves are ever-changing (Manuel-Navarrete and Pelling 2015, p. 561). However, most of the literature merely uses the notion of adaptation pathways as an approach for planning by identifying different adaptation options and the ways in which they can be realized. Scholars then identify the required social, environmental, and institutional changes needed to shift onto these pathways (Fazey et al. 2016).

Consequently, there has been scant consideration of the wide diversity of cultural and social processes which shape the ways in which pathways emerge (Câmpeanu and Fazey 2014). The range of pathways available at any given time are results of contestations revolving around financial investment, resource allocation, and infrastructure placements made years if not decades earlier (Tellman et al. 2018; Wise et al. 2014). Eriksen et al. (2015) argue that analyses of adaptation pathways should be reframed given that the power is always present in climate change responses. They believe that unpacking power relations can help explain why pathways leading to “transformational adaptation” have been difficult to achieve thus far.

Additionally, there has been little bottom-up examination on the role of everyday choices, constraints, and strategies, and the ways in which they affect or build pathways. Another critique is that the pathway approach has often considered paths for an entire community, city, or society (Câmpeanu and Fazey 2014). However, these groups and their vulnerabilities to climate change are not monolithic (Blaikie et al. 1994; Cannon et al. 2014). Instead, their potential pathways are relational: some groups can better adapt because other groups cannot (Taylor 2013). Hence, the pathways of different groups (e.g., women/men, ethnic minorities/majorities, and smallholder farmers/agribusiness companies) are often intertwined which can adversely affect social mobility or reinforce inequalities. Furthermore, adaptation trajectories are embedded within social and environmental contexts across scales and places: processes occurring at different scalar levels or other places can affect these groups’ potential pathways. As an example, dam building in the Mekong—which provides electricity for residents upstream and income to their governments—will likely make it more difficult for powerless aquaculture farmers downstream to adapt and maintain their livelihoods (Betcherman et al. 2019).

In sum, a wide diversity of cultural, social, and environmental processes across scales, time, and places shape adaptation pathways. These pathways vary among different social groups, households, and individuals (Câmpeanu and Fazey 2014). Recent studies in sustainability science have used a variety of conceptual tools and models, such

as mental models and their interrelationship with meta-narratives (Eakin et al. 2019b), human niche theory (Manuel-Navarrete et al. 2019), and loss of sense of place and group identity (Eakin et al. 2019a), to pay attention to and help explain variations in pathways, including at the individual level. Complementing these approaches, we argue that a cultural lens, particularly intersectional analyses of life courses, cultural beliefs and values, and livelihoods, sheds better light on differential vulnerability and the processes that enable or hinder adaptation for each of these groups and individuals and is therefore essential to understand why certain people are more “successful” in adapting to climate change than others.

Adaptation pathways through a cultural lens

A cultural lens added to the adaptation pathways focuses intrinsically on intersectional categories (e.g., gender, social norms, ethnicity, age) which can impact the adaptive agency or resilience of individuals, households, and communities (Adger et al. 2013; Hackmann et al. 2014). Each of these categories provides people with the skills, agentic adaptive capacities, and necessary capitals to further bear the shock of climatic and similar emergencies. This lens thus allows for a more tailored approach to critically understand adaptation pathways to climate change.

The term social-cultural is often used as a blanket term to encompass all unexplainable variables. Yet the complex and dynamic interplay between the ecological processes and these “unexplainable variables” has been the key driver of bottom-up adaptation pathways in the history of human adaptability (Bird 2015). Here we unpack some of these social and cultural variables at the individual and the household levels and illustrate how exactly they impact and are impacted by adaptation pathways. Including a cultural lens enables us to both comprehend the commonalities of what is happening to communities and households for every climatic event, and take a more historical approach to elucidating how different societies and communities have adapted to changes over time (Adamson et al. 2018; Amrith 2018; Fazey et al. 2016). In turn, we need to examine how cultural beliefs, norms, and practices change over time, and are reflected in these adaptation pathways. Most studies take a cross-sectional perspective which glosses over histories of local communities and culturally adapted techniques they have been practicing for generations (Adamson et al. 2018). Compared to previous generations, communities now experience more severe climatic events, often with less time in-between events to recuperate or rebuild structures. In turn, this impacts their adaptation pathways. To better understand the role of culture in the adaptation pathways, we suggest including two key elements in the current discourse:

(1) livelihoods and life course, and (2) cultural beliefs and values.

Livelihoods and life course

When focused on cultural variables from the communities' perspective, we should draw attention to the ways in which their livelihood strategies have been practiced and altered over time by both environmental change as well as modernization (e.g., the Green Revolution). How have people's Indigenous and local environmental knowledge systems changed? It would be erroneous to assume that socio-cultural elements of livelihood remain the same. On the contrary, as anthropologists have demonstrated, adaptive change is the key for cultural reproduction over time. For example, Indigenous Tayal smallholder farmers in Taiwan do not perceive typhoons as disasters but as a natural part of everyday life (Bayrak et al. 2020). Environmental disasters are not thus necessarily "disconnected" from society. As people transform modes of their livelihoods, their ecological structure in which they are embedded, the cultural norms, beliefs, ideas, expectations, and social organization — including gender roles — also change (Arora-Jonsson 2014; Ravera et al. 2016; Scott 2017). Therefore, when studying the role of livelihood strategies in adaptation pathways, we should recognize that people's aspirations towards different forms of livelihoods have changed over generations, and that households consciously make decisions to diversify livelihood options, thus adding to their capitals (human, social, and cultural) to cope with and adapt to events or loss of livelihoods due to climatic events. For example, communities living in cyclone-prone Sundarban Delta in India mostly comprise landless agricultural laborers and marginalized farmers who are also engaged in forest-based livelihood activities (fishing, timber cutting, and collection of firewood and honey) during the agricultural lean season. But climate adaptation strategies, induced largely from "above" by experts and policy makers, have changed their traditional perspectives towards livelihoods, which are now perceived as risky, uncertain, and destructive for Sundarbans (Das and Hazra 2020; Paul 2020). This example challenges the widely held assumption that adaptive change must always be top-down driven and come from the outside (such as from the modern West) as something that must be given to the communities as an option, and that they are always at the receiving end of these changes or interventions. This view robs people of their own initiatives and actions, presenting them merely as passive receivers of information and change. In our reassessment of adaptation pathways, we encourage researchers to examine how changes can be brought about by incorporating socio-cultural systems and giving due recognition to communities as agents of change. This should

not only be applied to non-Western or Indigenous cultures. We argue that all communities, households, and individuals draw upon specific socio-cultural and livelihood resources to shape their adaptation pathways. Indigenous knowledge systems, for instance, should not be used outside of its cultural context, and can be used in parallel to other knowledge systems "without mixing them or trying to test one against the other" (Berkes et al. 2021, p. 5).

Adaptation pathways also need to consider the social and historical time in the lives of the people. Livelihoods do not remain static over the life course. The life course framework views the development of life paths of individuals over time and in social processes (Elder and Giele 2009). It facilitates "an ecological understanding of people at the nexus of social pathways, developmental trajectories, and social change" (Daaleman and Elder 2007, p. 87). This framework can help us understand the different requirements people have while participating in these adaptation pathways. Older adults, disabled groups, and youth often have different requirements, motivations, and abilities to participate in adaptation pathways. Smallholder farming, for example, is increasingly practiced by the elderly among Taiwan's Indigenous farmers as younger households are unable to cope with farming's hardships (Bayrak et al. 2020). For individuals and households to benefit from the pathways, we need to also consider what capacities and capital they have accumulated over their life courses which they can employ to overcome negative impacts of climatic conditions. Similarly, environmental hazards can have long-term impact on children and adolescents. Diwakar et al. (2019) apply a life cycle approach to projects in India and Kenya and show that hazards can have a direct impact, such as injury, and long-term impacts in terms of deprivation or household poverty, thereby reducing the abilities of families and communities to adapt to new climatic events.

The life course framework also discusses the different careers (family, employment, and education) that can function both sequentially and in parallel to each other. A change in one member's career affects others' careers. For example, delay in education may lead to a delay in entering the labor force, thus delaying the household or family career. Climatic events and emergencies further complicate the transitions people face from one career to another. Hallegatte and Rozenberg (2017) observe that climate-related shocks heavily affect poor households as they wipe away accumulated assets and cause irreversible damage to human capital. In Malawi, young women's exposure to growing-season drought accelerated their transitions into first unions—including both cohabitation and marriage—and their initiation of child-bearing because households will have fewer people to feed (Andriano and Behrman 2020).

Current discourses on adaptation pathways ignore the fact that climatic events lead to different outcomes to different

members within the household. The life course framework introduces the concept of “linked lives” to the interaction with and interdependence of social relationships. It helps us to recognize the role of others in forming the life course trajectories and transitions of an individual. Lives are linked through life course events and transitions, which shape the life course trajectories of other persons as well as power dynamics within households. The linked lives approach sheds light on varied adaptive capacities within households and families. For example, the process of diversifying risks by sending younger female household members to work in garment factories in Dhaka, Bangladesh, and the ensuing economic support is a way in which loss of livelihood (fishing or farming) is supplanted by significant others in the households.

Cultural beliefs and values

Van der Brugge and Roosjen (2015) in their article on the institutional and socio-cultural framework for an adaptation pathways take a more conservative approach to belief systems. They assume that belief systems can lead people to not adapt to new mechanisms or approaches. From an anthropological perspective, we find this troubling as cultural systems are reduced to belief systems, which are then presented as archaic and static frames that prevent people from adapting to newer living situations. This negative association to culture undermines the ability of the communities themselves to draw upon their histories and Indigenous and local knowledge to enact their adaptive agency and build resilience (Sillitoe 1998). A closer reading of this approach reveals the inherent power relations and bias inherent in these frameworks. For example, in coastal South Africa, communal faith in Christianity has created unity and a sense of security. Many draw on their faith to help cope with climate stresses and build adaptive capacity through a sense of community by belonging to the same faith and the development social networks (Leck 2017). Studies on Indigenous adaptation pathways to environmental change (Hill et al. 2020; Parsons et al. 2019; Wilson 2019) contend that the ways in which Indigenous communities adapt to environmental change are outcomes of knowledge systems, worldviews, cultural values, place attachment, but also colonialization, power asymmetries, and settler-colonial state relationships. A clash in cultural values concerning human-environmental relations often leads to ill-adapted, top-down adaptation interventions imposed upon Indigenous communities. In contrast, Indigenous adaptation pathways are often better suited to local socioecological and cultural contexts.

Adopting a broader perspective by incorporating concepts from cognitive anthropology and anthropology of knowledge

helps us understand the motivations, choices, and practices of adaptation pathways. Individual reasoning, actions, heuristic decision-making, and interpretation are motivated by cultural schemas (Bailey and Hutter 2006; D Ándrade 1992; Haas and Hutter 2019; Vaisey 2009). These cultural schemas are historically formed and shared in every cultural group; they take on an motivational force and form part of the larger cultural meaning system (D Ándrade 1992; Strauss and Quinn 1997; Rutagumirwa et al. 2020), in which, for example, a mental model of a particular risk is embedded (Eakin et al. 2019b). Such a motivational force aids in recognizing the reasoning behind actions and choices people make. These cultural schemas-as-beliefs are reflected also in religious beliefs. Consider how in the coastal town of Navalady, Sri Lanka, tsunami survivors’ anger towards the Sea Goddess and the construction of family memorial shrines played an important role in helping survivors recover from the disaster (Lawrence 2013). Similarly, islanders in the Sundarban Delta strongly believe that worshipping Bonobibi, the forest’s guardian goddess, and Dakkhin Ray, the tiger God, before entering forests for fishing and collecting honey and fire woods, would protect them from dangers and misfortune, such as negative climatic events and animal attacks. Consequently, the islanders perceive the forest as an “ecomother” which is a result of a complex interplay between ecology, culture, and spirituality (Chowdhury et al. 2016). Concurrently, we acknowledge that culture does not exist in a vacuum outside state apparatuses and therefore research on adaptation pathways needs to continue to pay attention to power relations within the state and between the state, its intermediate agencies, and other actors (Nightingale et al. 2020).

Concluding remarks

The cultural lens framework presented in this paper advocates for better contextualizing relational adaptation pathways. Through the medium of intersectional categories and due to recognition of historical adaptation practices, we can have a deeper engagement with the themes of livelihoods, life course, cultural beliefs, and values. Each of these themes can be further unpacked. Analyzing livelihoods also needs to include people’s changing aspirations towards life and work, as well as perceiving both communities and individuals as agents of change. The life course framework entails recognition of different life stages, long-term social impacts, and the concept of linked lives. Cultural beliefs and values include the plurality of difference knowledge systems but also cultural schemas which motivate behavior. The empirical application of our proposed framework can provide more nuanced understandings of adaptation pathways. In particular, taking a broader perspective by incorporating concepts

from cognitive anthropology helps us better understand motivations and choices which influence adaptation pathways. There is therefore a greater need to recognize local issues and solutions at which can be arrived by culturally situating pathways. Doing so could also prompt policymakers and scientists to design and execute interventions that better respect local realities.

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