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PERSPECTIVE

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Livelihood resilience in the face of climate change

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The resilience concept requires greater attention to human livelihoods if it is to address the limits to adaptation strategies, and the development needs of the planet's poorest and most vulnerable people. Although the concept of resilience is increasingly informing research and policy, its transfer from ecological theory to social systems leads to weak engagement with normative, social and political dimensions of climate change adaptation. A livelihood perspective helps to strengthen resilience thinking by placing greater emphasis on human needs and their agency, empowerment and human rights, and considering adaptive livelihood systems in the context of wider transformational changes.

Resilience has become a popular research and policy concept within climate change adaptation and development contexts[1]. Emerging from a wide range of disciplines[2], resilience in policy-making has often been based on the ability [**AUTHOR: OK?**] of systems to bounce back to normality, drawing on engineering concepts[3]. This implies the return of the functions of an individual, household, community or ecosystem to previous conditions, with as little damage and disruption as possible following shocks and stresses. This stable-equilibrium view has been challenged by research on linked social–ecological systems (SES), which emphasizes nonlinear change, the inevitability of uncertainty and surprise (which may destabilize attempts to manage the capacity of systems to cope with change), and interrelationships and dynamism of multiple cross-scale systems[4]. Crucially, resilience is increasingly providing an integrative 'boundary concept' that brings together those interested in tackling a range of shocks and stresses, including food security, social protection, conflict and disasters[5].

This Perspective article argues that linking aspects of human agency, rights and transformation with livelihood approaches can help to overcome the challenges of using resilience thinking in order to inform improved climate change adaptation research on the issue of highest normative priority — human livelihoods.

Challenges of resilience for adaptation

Applying the concept of resilience to climate change adaptation raises complex challenges. Climate change is not exclusively an environmental problem that can be addressed purely in scientific, managerial or technical ways. Climate change is also crucially a conundrum of politics and justice, with unequal contributions to the problem globally, disproportionate impacts on future generations, marginalized groups and poorer citizens, whose poverty may itself be the result of historical inequities, and asymmetries in decision-making power to determine appropriate responses[6].

The concept of resilience requires strengthening in three main ways. First, we need to recognize its contested nature. When considering resilience as an 'end', it cannot be assumed that there is consensus around the nature of 'desired states'. Resilience is contingent on social values regarding what we deem important and how we ought to allocate resources to foster it[7]. People may be perpetually locked into resilient but undesirable states of poverty and marginality. Instead, we need to ask, "Resilience of what type, and for whom?" and then consider who decides, and on the basis of what value systems[8,9].

Second, we need to understand how values and ideologies translate into the activities and institutions that characterize the political economy of climate change resilience[10,11]. For example, resilience studies concerned with ecosystem services for human well-being need to focus more on whose needs are being met, on the politics of ecosystem management and distribution of benefits[12]. This enables us to engage directly with power relations, differentiated access to resources, and issues of inequality that might otherwise be lost in resilience approaches[13]. In particular, there are trade-offs in which the resilience of some people's [**AUTHOR: OK, or peoples' (plural), in the sense of nationalities?**] livelihoods may result in the increased vulnerability of others' (for example through downstream impacts of flood protection measures[14]). These questions help to bring normative issues to the fore, and emphasize the distributional and political dimensions of the response options available to different actors[9].

Third, although climate change impacts manifest through local ecosystems, the focus of resilience thinking on 'natural' systems may lose sight of the people inhabiting these ecosystems, and their differentiated vulnerability and capacities to adapt to change. Both disturbances and responses are determined by levels of on-the-ground social inequality, rights and unequal access to resources, poverty, poor infrastructure, lack of representation, and inadequate systems of social protection, planning and risk management. The unevenness of these factors translates climatic fluctuations into disproportionate concentrations of suffering and loss[15].

Much work on resilience therefore pays insufficient attention to fundamental issues of human agency and empowerment, including politics and power relations, ideologies, risk perception and the diversity of cultural values, as well as capacities for human (rather than environmental) transformation that lie at the heart of adaptation[16]. We argue that livelihood perspectives can usefully address some of these challenges. In doing so, we move resilience approaches beyond the predominantly scientific and technical discourses that lack resonance with the daily practices of ordinary people[17].

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Livelihood resilience for research and practice

In responding to recent calls for a social and political turn in resilience thinking[18–21], we define livelihood resilience as the capacity of all people across generations to sustain and improve their livelihood opportunities and well-being despite environmental, economic, social and political disturbances. Such resilience is underpinned by human agency and empowerment, by individual and collective action, and by human rights, set within dynamic processes of social transformation. This approach takes the additional step of integrating livelihoods and resilience[22,23] with a normative framing, centred on people as the main actors within adaptation policy and practice, underpinned by rights and justice, and engaged with wider development processes.

Climate change and associated stressors influence human development through their support or destabilization of the livelihood systems of the poorest and most vulnerable people. Consequently, there is a human imperative to frame research and practice on climate change around livelihoods. A livelihood is understood to comprise "the capabilities, assets (stores, resources, claims and access) and activities required for a means of living"[24]. Within the field of development, the concept of livelihoods has drawn from diverse origins to evolve into a more coherent set of ideas during the past two decades. The development of a 'sustainable livelihoods framework' accelerated the extension of livelihoods research into the worlds of policy and practice. This framework was developed for use by international agencies to guide programmes for poverty alleviation by situating household livelihood assets within wider sets of ecosystems, cultural contexts and policies that promote or hinder access to these diverse resource inputs[25,26]. Crucially, a livelihood perspective places people at the centre of the analysis, located within, rather than dominated by, ecosystems, technologies, political contexts, markets and resource networks.

Livelihood resilience therefore highlights the role of human agency, and our individual and collective capacity to respond to stressors. People and their lives are too often reduced to homogenized vulnerable communities or countries, becoming merely 'resilient pixels'[21]. Even in discussions of agency, human responses to environmental change are too often expressed as generalized inputs within prescriptions for resilience[27,28]. In contrast, a livelihood resilience approach emphasizes people's capacity for, and differences in, perceiving risk and taking anticipatory actions, either individually or collectively. Information and resource flows through social networks (as understood in theories of social capital) are vital inputs to resilience, providing informal insurance, and delivering accessible financial, physical and logistical support in the midst of environmental disturbances[29]. Modelling such agency and behaviour remains a critical challenge[30].

A livelihood resilience lens also incorporates a human rights perspective into resilience thinking. Human rights principles are based on the fundamental freedoms inherent in human dignity. These rights are translated into entitlements that transcend the sovereignty of nation state governments[31]. Articulating universal principles guaranteeing the right to food, housing, health and property — all critical to human dignity — and incorporating these into a resilience approach establishes a normative and legal basis for defining, measuring and promoting 'desirable states' in livelihood systems. A human rights framework also prioritizes the harm caused by climate-induced environmental change and creates a moral and legal obligation to respond, including through anticipatory adaptive measures.

By prioritizing the freedoms and entitlements explicitly outlined in human rights as a foundation for adaptation, livelihood resilience also emphasizes the fundamental obligation of governments to protect and support their citizens' development. Reframing resilience in terms of rights places a duty on nation states to improve the living conditions of poor people living in vulnerable situations. Where nation states do not have the resources or capacities to protect the rights of their citizens, then a human rights perspective requires a focus on building the capacity of a nation state to meet its obligations to its citizens[32]. This includes the enactment of legislation to regulate and control private sector and other actors from committing human rights violations, and also to define access to basic necessities, such as housing and healthcare.

Rights-based approaches to development popularized in recent decades have drawn on these rights framings, but have also emphasized advocacy activities to secure wider popular participation in formal and informal decision-making processes, and the deepening of democratic engagements with governmental processes. They have focused on empowerment of the most marginalized people and given greater attention to diversity and difference in relation to gender, ethnicity, culture and age[33]. Such approaches have linked individual and community empowerment with advocacy for human rights protections.

The right to self-determination provides an opportunity for the qualities and dimensions of resilience to be informed or determined by individuals and communities themselves (see Box 1 for examples in practice). Linking livelihoods and self-determination in this way also highlights the importance of empowering people so that they can develop political influence and relationships with local government in order to access the resources they need to adapt to climate change impacts[34]. This cross-scale incorporation of human rights protections into the concept of livelihood resilience can thus challenge longstanding power structures and weak governance that reproduce vulnerability, rather than conceptualizing resilience as absolving states and the international community from duties around environmental impacts[35–37].

Finally, climate change is already contributing to physical transformations of planet Earth, threatening habitability in semi-arid regions, coastal regions, islands and deltas. Such impacts are a pressing concern given the scale and speed of global environmental changes, the potential for anthropogenic climate change in excess of 4 °C, and their likely interactions to generate new hazards[38]. A focus on livelihood resilience calls us to focus less on recovery from shocks and more on how coping and adaptation strategies are related to aspects of social transformation[39–41]. Mainstream views of

Box 1 | Rights and resilience in action

The *gono gobeshona* (people's research) approach of NGO ActionAid Bangladesh (AAB) has emphasized local-level problem diagnosis and action based on articulating rights. Following basic training, community-level teams researched local climate change impacts, developed adaptation options, and articulated their experiences and needs to external audiences. One agricultural community, close to a commercial shrimp cultivation area, negotiated government agreement to close embankment sluice gates that were salinizing local water quality, as well as trialling a new saline-tolerant rice variety (BRRI Dhan 47) to strengthen agricultural livelihoods[47].

In Alaska, the Newtok Traditional Council is using a livelihood resilience framework to guide the relocation of their community. Newtok is a Yup'ik Eskimo community highly dependent on subsistence hunting and fishing for food and a small cash economy. The community has decided to relocate as the only means to protect itself from climate-induced environmental change. To improve the standard of living of community residents and increase the community's cash economy, the Council has designated funding to train community members in construction skills so that they can build the infrastructure at their relocation site and generate income[33].

resilience have tended to privilege the persistence of a system over its transformation, and the reassembly of the same societal conditions that contributed to the original disruption[35,42]. Integrating transformational perspectives means asking difficult questions of adaptation strategies that may interpret resilience as a move to low-risk, low-return activities that may in turn close potential pathways to commercialization, diversification and poverty reduction.

Research into linked social–ecological systems (SES), which emphasizes the inseparability of human and natural systems, has engaged deeply with thresholds and transformations, and has shown the linkages of biophysical parameters to human systems[43]. This has pushed systems thinking into the domains of human institutions, studying the effect of resource management regimes and resource politics, and their relationship to ecological transformations[44]. These extensions of resilience thinking are critical. A livelihood perspective pushes further to situate local thresholds as influencing and influenced by wider development transformations, such as processes of democratization, globalization, social and political movements, urbanization, and diffusion of information and communications technology.

Focusing on these transformational aspects of resilience helps us to consider radically different livelihood strategies that may be necessary to respond to climate change and the significant trade-offs involved. Some forms of adaptation may impoverish people and build very powerful systems of negative resilience. In this way, adaptation, for example from traditional modes of agriculture to more precarious urban waged employment, is recast as a contested transformation. Adaptation of this kind can therefore be seen as a process of triage involving the things society values least, with some adaptive responses equated to the relinquishing of certain values, development goals and possibly even the acceptance of conditions of poverty. Instead, livelihood resilience, as we frame it here, prioritizes reformulations of livelihood systems that **deliver the most vulnerable people through [AUTHOR: i.e. assist them to cope with such changes? Ambiguous as written]** destabilizing global changes on their own terms, in ways that protect basic human dignity.

Livelihood resilience for adaptation futures

Livelihoods are increasingly caught between major global transitions in both climate and social systems. The impact of dangerous climate change falls disproportionately on the livelihood systems of the poorest citizens, undermining their capacity to build sustainable livelihoods and increasing their vulnerability. Understanding the resilience of livelihood systems of poor people in the context of wider transformational shifts — social and political as well as biophysical — must now be seen as a normative priority[45]. Even incremental improvements in livelihoods and small shifts in power relations can have transformative developmental benefits for future generations.

Resilience discourse is increasingly permeating the development cooperation landscape, including bilateral donors, UN agencies and the World Bank. Aid agencies are using resilience largely as a framing concept to link multiple problems, stressors and responses[21,46]. A livelihood resilience approach helps to expand these efforts beyond such technical approaches to minimizing harm and loss by bringing issues of people's lives, rights, justice, politics and power to the fore. In doing so, it demands greater attention on the societal root causes underlying differences in vulnerability and resilience.

The Rio+20 agreements have set in motion an ambitious articulation of Sustainable Development Goals (SDGs) in the light of new scientific and policy attention given to global environmental change during the past two decades. Simultaneously, 2015 will see the negotiation of a new UNFCCC climate treaty to supplant the Kyoto Protocol and development of a revised Hyogo Framework for Action on disaster risk reduction. Livelihood resilience can become a constructive 'boundary object' to enable communication, coordination and coherence across disciplinary and policy boundaries, situating action around a common objective: anti-poverty climate and development policy.

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[AUTHOR: note renumbering of refs from 38 onwards, as Box refs are listed after those in the main text. Please check carefully].

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Additional information

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