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Multi-layered social resilience: a new approach in mitigation research

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Abstract: Research on sustainable development tends to focus on risk and vulnerability. This article argues for a shift of emphasis from vulnerability to resilience. It develops a multi-layered social resilience framework emphasising the interactions between enabling factors and capacities operating at different levels of society. Enabling factors help to master threats by facilitating access to and transformation of capitals. Capacities lead social actors not only to cope with adverse conditions (reactive) but also to create responses (proactive) that increase competence and thus create pathways for mitigation. This approach redirects attention from managing risk to building resilience – an important prerequisite for sustainable development.

Key words: vulnerability, sustainable development, social resilience

While much has been written about the resilience of socio-ecological systems (Berkes *et al*., 2002; Folke *et al*., 2002; Holling, 1973; Schoon, 2005; Walker and Salt, 2006) and resilience in child development (Garmezy, 1976; Luthar, 2003; Masten, 2001; Ungar, 2005; Werner and Smith, 1982), the conceptualisation of social resilience remains a neglected issue, especially from the perspective of an actor or practice theory. The present article contributes to fill this gap and suggests a framework for the study of multi-layered social resilience.

A few books on social vulnerability in cities mention resilience in their title (Obrist, 2006; Pelling, 2003). These and other texts agree that social institutions shaping the distribution of, access to and use of resources at the household level are key for building resilience.

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Pelling (2003: 67) introduces the concept of adaptive potential 'to describe actions that utilise social and political assets to enhance local resilience' and emphasises that 'with a supportive institutional framework social capital can be transformed into social organization to build adaptive potential' (Pelling, 2003: 64). Although these ideas remain rather vague, they provide an interesting starting point for further exploration.

Other researchers, like Elinor Ostrom (Anderies *et al*., 2004; Janssen and Ostrom, 2006), have focused on agents in resilience research. But she and her colleagues are mainly interested in meta-analysis and have developed agent-based modelling, that is, the computational study of social agents as evolving systems of autonomous interacting agents to test hypotheses of small-scale empirical studies, for instance about the role of institutional configurations and especially trust in building robust socio-ecological systems.

The aim of the framework we develop in this article is to explore resilience from the point of view of social structuration. How does society structure the resilience of human actors, and how do actors structure resilience in social interaction? This abstract question is of high relevance for mitigation research because self-organisation (Folke *et al*., 2002) is regarded as a constitutive component of resilience. The better we understand processes of social structuration, the better we can plan institutional arrangements that enhance or support self-organisation processes.

After a brief review of closely related approaches to risk and vulnerability, we shift the emphasis to resilience research in ecology and child psychology, highlight converging findings and suggest a set of concepts that are of analytical and practical relevance for studies on sustainable development and mitigation research. We then trace resilience thinking in Sustainable Livelihood (SL) research that is informed by the ecological approach and introduce the concepts of 'waves of adversity' and 'layers of resilience'. These discussions prepare the ground for an outline of what social and cultural theory can contribute to resilience thinking in sustainable development and mitigation research. We finally present a new framework for studying multi-layered social resilience and introduce a few case studies that have examined some but not all of the dimensions and dynamics suggested by the framework. First, however, we briefly discuss how we see the relationship between risk, vulnerability and resilience.

I Risk, hazard, vulnerability and resilience

In disaster research, risk is commonly conceptualised as encompassing both a hazard (a potentially harming event or agent) and vulnerability (people's capacity to anticipate, cope with, resist and recover from the impact of a natural hazard) (Blaikie *et al.*, 1994). Many studies have investigated risk in poor societies as the likelihood of the scale of damage caused by a given hazard and found that damage increases with vulnerability. A well-known definition of risk is:

> The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human induced hazards and vulnerable conditions. Conventionally risk is expressed by the notation *Risk = Hazards × Vulnerability* (UNISDR, 2004).

Another strand of research has conceptualised vulnerability as an alternative concept to 'poverty'. The main argument here is that the conventional definition of poverty does not capture the day-to-day reality of people living in developing countries (Chambers, 1989). It is formulated in terms of low income or consumption in order to make it amenable to measurement. If people's lived experience is taken into account, additional dimensions have to be considered, such as vulnerability and livelihood. In an often quoted definition, Robert Chambers (1989: 4) wrote:

> Vulnerability is not the same as poverty. It means not lack or want, but defencelessness, insecurity, and exposure to risk, shocks and stress.… Vulnerability here refers to exposure to contingencies and stress, and difficulty in coping with them. Vulnerability has thus two sides: an external side of risks, shocks, and stress to which an individual or household is subject; and an internal side which is defencelessness, meaning a lack of means to cope without damaging loss. Loss can take many forms – becoming or being physically weaker, economically impoverished, socially dependent, humiliated or psychologically harmed.

Although the disaster and the livelihood research strands differ in many ways, what they both have in common is an understanding of vulnerability which includes the dimension of human capacity to anticipate, resist, cope, adapt or recover from the impact of a hazard. As we shall see, this human capacity is also at the centre of an actor-focused conceptualisation of resilience. One could say, therefore, that studies on vulnerability that investigate the 'coping capacity' – or the related topic of 'survival strategies' – already cover the topic so that there is no need for a new analytic construct like 'resilience'. Or, as others argue, resilience can be seen as the opposite or positive equivalent of the incapacity component of vulnerability. We don't agree with this perspective, but suggest that resilience goes beyond the capacity component of vulnerability. In our view, a combining of vulnerability and resilience as equivalent concepts, leads to a more comprehensive understanding of the underlying social phenomena.

As this discussion shows, it is difficult to draw semantic boundaries between concepts referring to these complex and interrelated social phenomena. Risk, vulnerability and resilience are analytical constructs and, at the same time, normative concepts which represent values of those who define them. From an actor or practice theory perspective, we are primarily interested in the human capacity to act. If we take resilience rather than vulnerability as analytical point of departure, we emphasise the positive and prospective connotations of the term 'capacity'. We think this orientation has potential for understanding social dimensions and dynamics of living with adversity and change. It can further contribute to mitigation research for sustainable development defined as 'research that contributes to problem-solving by producing knowledge for decision support and by developing tools to enable stakeholders to initiate mitigation measures and processes and work towards sustainable development' (Hurni *et al*., 2004: 11). At the same time, we acknowledge conceptual and methodological limitations of the concepts that require continued scientific attention (see Luthar *et al*., 2000).

II Learning from ecology and child development psychology

In studies on global environmental change, resilience has been identified as a multi-dimensional and multi-scale key concept that can facilitate the understanding of various complex interactions among a broad range of social and natural dimensions (Vogel, 2006). Definitions of this key concept vary across and even within scientific communities. The Resilience Alliance (www.resalliance.org) defines resilience as applied to integrated systems of people and nature as (*a*) the amount of disturbance a system can absorb and still remain with the same state or domain of attraction, (*b*) the degree to which the system is capable of self-organisation and (*c*) the degree to which the system can build and increase the capacity for learning and adaptation (Carpenter *et al*., 2001). In child development psychology, common definitions see resilience as referring to 'a dynamic process encompassing positive adaptation within the context of significant adversity' (Luthar *et al*., 2000) or 'to a class of phenomena characterized by good outcomes in spite of serious threats to adaptation or development' (Masten, 2001). Research on resilience aims at understanding the processes

that account for this positive adaptation or good outcomes in response to adversity.

In ecology, the main objective of resilience research is to gain a better understanding of the dynamics of social–ecological systems. Proponents draw on complex systems theory to investigate how human societies deal with change in linked social–ecological systems and build capacity to adapt to change (Folke *et al.*, 2002). They show that social–ecological systems with higher levels of resilience have the potential to sustain development by responding to and shaping change in a manner that does not lead to loss of future options. Moreover, such systems provide capacity for renewal and innovation in the face of rapid transformation.

In child development psychology, most research has been conducted in the United States and in Europe and focused on resilience as individual capacities, behaviours, and protective processes associated with health outcomes despite exposure to significant risk. Path breaking longitudinal studies examined children growing up in poverty and multiproblem families, and found that only small numbers developed psychological disorders or behavioural problems. Resilience was embedded not only in personal factors but also in protective-enabling factors, that is influences like supportive parents, peers, caring non-family adults or community organisations which fostered the development of attitudes and values to respond competently.

Although there are obvious and important differences between these two strands of research, a number of converging findings can be identified. Resilience is seen as a dynamic process, not as a state (ecology) or a trait (psychology), and may change over time. It is a scientific construct that has to be inferred and cannot be directly observed or measured. Resilience refers to an ability, capability or capacity of individuals, social groups and even social–ecological systems to live with disturbances, adversities or disasters, and 'the ability to persist and the ability to adapt' (Adger, 2003). In the ecological strand, resilience is seen as a key to adaptive capacity which has to do with learning, not only on an individual level but also on the level of organisations and networks that store knowledge and experience, create flexibility in problem solving and balance power among interest groups. From a child development psychology perspective, adaptation results from the interplay of risk factors and the capacities to deal with these risk factors. What is important to note here is that pure risk factors like car accidents do exist, but most factors are actually bi-polar (for example, parenting may either be good or bad). Although risk factors are assessed, the emphasis of resilience studies is on protective-enabling factors.

Since resilience is based on judgments about threats, disturbances or adversities, as well as outcomes, it is a normative concept. An important debate in child development psychology is about who should define what constitutes a threat or adversity, and what is a positive or negative outcome (Luthar *et al.*, 2000; Masten, 2001). One suggestion is to consider 'positive adaptation' as that outcome which is substantially better than what would be expected given exposure to the risk circumstance being studied (Luthar, 2003: 515).

III Sustainable livelihood approaches

Resilience thinking is implicit in the SL approaches. Rather than focusing on the barriers to sustainable development, the SL approach of the United Kingdom Department for International Development (DfID), for instance, draws attention to people's capabilities, assets and activities, as well as to transforming structures and processes leading to positive outcomes like more income, increased well-being or improved food security. While recognising that poor people are always on the brink of extreme insecurity, sometimes falling below, sometimes rising above, the SL approach 'seeks to mitigate against such

insecurity through building up resilience' (our emphasis, DfID, 2000).

In the DfID SL approach, five livelihood assets play a crucial role in the building of resilience: human capital (ability to work, health and knowledge), social capital (networks, groups and trust), natural capital (land, water and wildlife), physical capital (transport, shelter and energy) and financial capital (savings, credits). All five assets may be fostered or constrained by transforming structures and processes of the wider society.

Drawing on the ecological approach outlined above, Glavovic *et al*. (2003) suggest seeing livelihood assets and transforming structures and processes as a 'livelihood system' that is subject to 'disturbances'. A sustainable livelihood system enables people to pursue robust livelihood strategies that provide 'layers of resilience' to overcome 'waves of adversity'. The aim, then, is to enable people to cope with and adapt to change, and even transform adversity to opportunity.

In every society, people are exposed to a variety of social, economic, political, ecological and other 'disturbances', and these adversities vary in intensity, scale, location and character. Living with change is an ordinary human experience, but if change becomes more rapid and wide reaching, for instance in the process of globalisation and global environmental change, the adaptive capacity of livelihood systems can be overstrained. In such situations, changing circumstances resulting in increased insecurity can be experienced as 'waves of adversity' (Glavovic *et al*., 2003).

Sustainable livelihood systems consist of 'layers of resilience' (Glavovic *et al*., 2003). On the lowest level, individuals can build resilience, for instance, by learning technical skills to cope with or even prevent a 'disturbance'. For a better understanding of individual resilience, we suggest that much can be learnt from the resilience approaches developed in child psychology. Transferred to the SL approach, this would mean to study individual capacities, behaviour and protective-enabling processes associated with positive outcomes, like increased well-being or improved food security despite exposure to significant risks. On the next higher levels of livelihood systems, households, social groups, communities and (public or private) organisations can strengthen their resilience, for example, through collaborative efforts. Resilience may be socially differentiated within and across groups and individuals. On national and even international levels, resilience building on the lower levels of livelihood systems may be fostered through institutions (that is, norms and regulations) that enable people to access private and public services. Resilience building on upper levels may influence resilience building on lower levels, but measures on one level do not automatically translate to the next lower level. To think of 'layers of resilience' thus draws attention to the interconnectedness of different dimensions and scales in a livelihood system.

IV Contributions of social and cultural theory

As already mentioned several times, the concept of resilience and its components is a scientific construct and represents values and goals of those who define them. Social scientists agree and emphasise that researchers have to be sensitive not only to their own representations of resilience, but also to the representations of those they study, especially in milieu and societies the researcher is not familiar with (Caplan, 2000; Douglas, 1985; Macamo, 2003; Macamo and Neubert, 2004). This sensitivity is all the more relevant since resilience has to be inferred and cannot be directly observed and measured.

Meanings and practices related to resilience are always embedded in larger social, economic and political contexts. Current psychological definitions of resilience represent late twentieth century Western if not US-American views of human agency (Ungar, 2005). Social workers and researchers who follow a humanist or

human rights agenda admonish that these definitions may be easily co-opted by proponents of a neoconservative agenda: Why do we need to intervene, if some can survive and thrive? Especially in mitigation research, meanings of resilience have to be negotiated, not only in interdisciplinary but also in transdisciplinary debates involving scientists, social actors representing different interest groups, politicians and practitioners.

Several approaches developed in social and cultural theory can help to sharpen the analysis of social resilience. Of particular interest are theories of structuration which draw on and go beyond the idea of the social construction of reality (Berger and Luckmann, 1966). Structuration theories focus on practice – rather than system or action – and examine the dialectic relationship between human capacity to act (agency, *Handlungsfähigkeit)* and opportunities as well as constraints (structure) shaped by broader economic, political and social forces (Ortner, 1984).

Pierre Bourdieu (1984; 1986), for instance, draws attention to material and non-material resources that determine human agency and distinguishes between three types of capital: Economic capital (command over economic resources, mainly cash and assets), social capital (various kinds of valued relations with significant others) and cultural capital (legitimate knowledge of one kind or another, that is, skills and education). Of special interest to resilience research is his notion of cultural capital. Bourdieu (1986) divides cultural capital into three forms: embodied (personal dispositions and habits), objectified (knowledge and tradition stored in material forms) and institutionalised (educational qualification). Cultural capital, in other words, to a large extent shapes human agency through social experience and practice as well as education. Bourdieu later added symbolic capital (honour, recognition and prestige), which he sees as power-related resources that influence the ways in which actors can access capitals. Bourdieu underscores that these capitals are continuously transferred and transformed, (for example, cultural capital in terms of higher education can turn into symbolic capital).

Although this account simplifies Bourdieu's practice theory, it helps to improve the conceptualisation of social resilience. At the centre of interest is the human capacity to act in view of a threat, but this capacity is structured by – and also structures – material and non-material resources (economic, social and cultural capital). Power-related resources (symbolic capital) play a particularly important role because they influence not only the capacity to act but also the ways in which actors can access the other three types of capitals.

Bourdieu developed his theory on the assumption of social inequality. He introduced the concept of 'social field' to refer to the configuration of social positions held by individuals or organisations. The notion of social field helps to capture the idea that actors have differential packages of capitals and power and that they are differently exposed to the same hazard, and thus face different constraints and opportunities in building resilience. In line with this thinking, the role of access to the capitals in specific social fields defines relationships of domination, subordination or equivalence among actors. In a nutshell, the concept of social field draws attention to the fact that threats, and consequently also resilience building occurs in specific social fields where actors can access different forms of capital.

Practice or structuration theory seems particularly appropriate for studying resilience in heterogeneous and rapidly changing settings, where not only broader political and structural forces but also climate and environment changes have a direct impact on daily life, and fail to create material and spiritual security for sustaining life (Obrist, 2006: 62). Such circumstances force human beings to fall back on their capacity to structure and restructure social order with reference to the challenges and threats they face in daily life.

V Towards a new framework for social resilience

Based on this brief review of various approaches and also inspired by the empirical case studies presented in this issue, we suggest a new framework for the study of social resilience. We define social resilience as the capacity of actors to access capitals in order to – not only cope with and adjust to adverse conditions (that is, reactive capacity) – but also search for and create options (that is, proactive capacity), and thus develop increased competence (that is, positive outcomes) in dealing with a threat (see Figure 1). Access to economic, social and

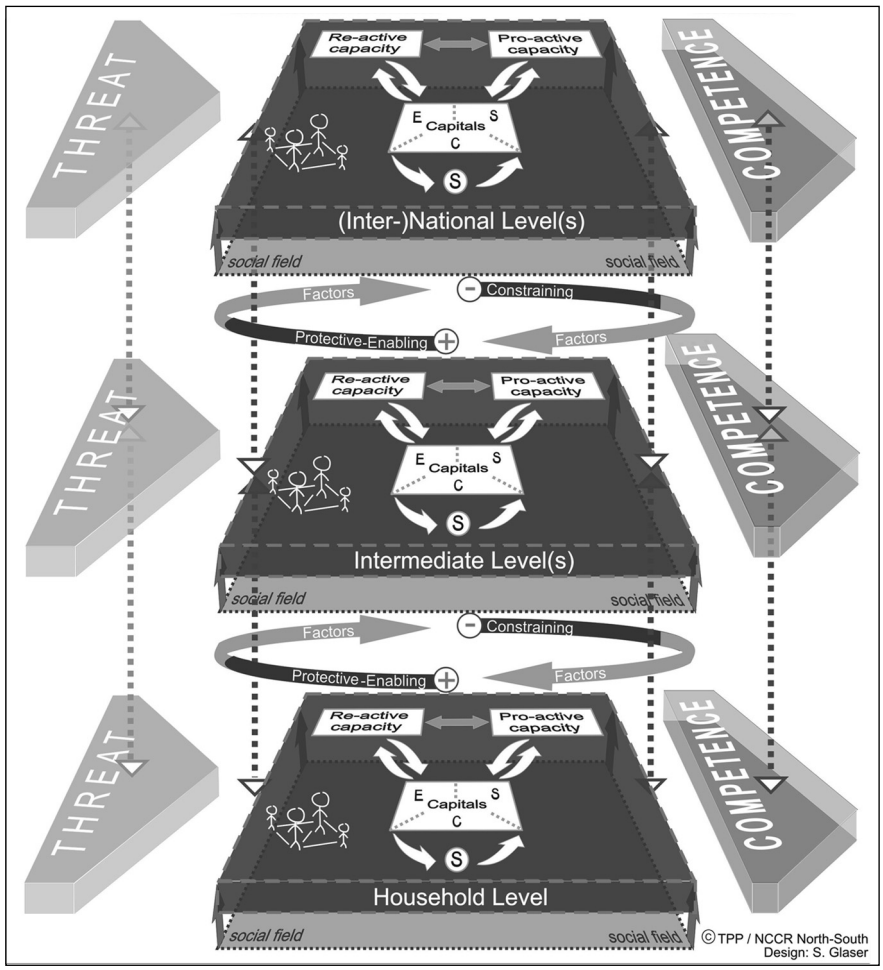

Figure 1 Multi-layered social resilience framework

Source: Author's own.

Note: According to this framework, resilience building must be examined with reference to a threat and to the competencies that should be developed to deal with this threat. Depending on the threat we examine, we see different social fields emerge, each of them consisting of a network of actors across various layers of society. These individual, social and societal actors can build resilience by strengthening reactive and proactive capacities to deal more competently with a threat. To strengthen their capacities, they can draw on and transform economic, social and cultural capitals and thus increase symbolic capital. The ability to mobilise capitals varies according to actors' position in the social field.

cultural capitals is to a large extent structured by power-related symbolic capital. With Glavovic *et al*. (2003) we see social resilience as multi-layered. On each layer, but also across layers, actors are part of a social field that is defined with reference to the identified threat.

This framework sharpens our analytical approach by drawing attention to highly relevant dimensions and dynamics of resilience processes and manifestations. First, resilience depends on the *threat* we examine. An important entry point for an empirical study is thus the questions: Resilience to what? What is the threat or risk we examine? Risk may be environmental (for example, landslides), individual (for example, victim of violence), community based (for example, threat of eviction), life event type (for example, serious illness or death of close person) or a long-term threat (for example, continuous shortage of food). Researchers have to be explicit about whether they study resilience to a single hazard or to multiple hazards, to recurring, chronic or seasonal threats, to slow-onset or rapid-onset risks. We further have to assess whether the affected individuals, groups or organisations are aware that a threat exists, can be tackled and thus presents not just a danger but also a risk (Beck, 1992). We also need to learn about the ways in which they prioritise the various risks they face: Is the threat we consider a priority risk also of relevance for them? The same applies for 'capacity': We have to investigate – not assume – which capacities are regarded as being important in order to develop competence in dealing with threats. It is important to bear in mind that understandings and judgments of risk and capacity may vary between contexts, groups and actors.

Second, researchers should further specify the *outcome(s)* of interest. Are we looking for generalised well-being, livelihood security, physical or mental health? Who defines these outcomes, and what indicators can be defined to assess or measure them? Since resilience is a process, it may be unstable and not durable. Moreover, an individual, social group or organisation may develop resilience to threat A and B but not to threat C. Following approaches in child psychology (Masten, 2001), we suggest focusing on manifested competence in the context of a significant threat or livelihood challenge as an observable and measurable outcome of resilience. This, of course, involves assessing culturally appropriate definitions of competence from the perspectives of different actors in specific social fields.

Third, we suggest distinguishing between the process of resilience building (pre-impact) and the manifestation of resilience (post-impact). Resilience is more than coping in the sense of minimising the consequences of an adversity and managing vulnerability to ensure short-term survival. In fact, people may cope but erode their own resilience by consuming less (for example, food), or spending less (for example, on education) or harming the resilience of others (for example, by stealing). Resilience thus refers to learning from past experience, from one's own experience and from the stock of experience available in a community or society and thus encompasses acting before (ex-ante) not just afterwards (ex-post). Resilience thus involves planning, preventing, evading, mitigating, avoiding as well as coping with and reacting to challenging livelihood conditions. It refers to proactive capacities like capabilities to anticipate, change and search for new options.

It is crucial to note that actors do not act in a social vacuum. Agency is the capacity to affect things and is therefore linked to power (Giddens, 1979). Some actors have more and others have less power to influence ways in which events unfold (Ortner, 2006). Drawing on Bourdieu (1984; 1986) we can say: Depending on their social, economic and cultural capital which is linked to their position (symbolic capital) in a threat-related social field, actors can be exposed differently to the same hazard, and thus face different constraints and opportunities in building resilience. Of critical importance here is access to capitals

that are at stake, which defines relationships of domination, subordination or equivalence among the actors. A related question is how capitals are transferred and transformed, and how these processes can improve resilient trajectories and pathways.

We further have to identify the enabling factors that foster resilience building by facilitating access to social, cultural and economic capital on the various layers of resilience. The key question here is what others do to support building resilience. Governance is of particular relevance because it shapes regulations, and structures political and social processes. Gender also matters since it influences values and norms in diverse social fields, and is an essential principle of social organisation. We need to investigate whether enabling factors, for instance public attention and government support, change when a hazard strikes. Another question is whether international, national and local efforts privilege some individuals, groups or organisations more, and lead to inclusion of some but exclusion of others. Outsiders often become catalysts of change, not only because of the financial resources they may command, but also when trust in the capability of mastering an adversity has to be restored.

Narrowing the focus on the heart of resilience, the key question is what enhances capacities of individuals, groups and organisations to deal with threats more competently. In contexts of adversity, diverse capacities are of critical importance, for instance anticipating threats, changing rules and regulations, creating new options, planning ahead, recognising danger, mobilising assets, organising support and developing new and flexible institutions and organisations. Drawing upon Giddens (1984), the capacity to reflect, discuss and learn from past experience is an important dimension of human agency. In contexts of adversity, positive adjustment based on a learning process is an essential dimension of resilience that leads to increased competence in dealing with challenging livelihood conditions.

VI Conclusion

The framework for multi-layered social resilience developed in this article emphasises the interactions between enabling factors and capacities operating at different levels of the environment and society. Enabling factors protect against and help to master the threats of adversity by facilitating access to economic, social and cultural capitals that, in turn, transform into and reinforce each other. Capacities enable social actors not only to cope with and adjust to adverse conditions (reactive), but also to create options and responses (proactive) that increase competence, and thus create pathways for mitigating or even overcoming adversity. Such an approach opens new and fascinating lines of inquiry and redirects attention of researchers, policy makers and practitioners from managing risk to building resilience, an important prerequisite for sustainable development.

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