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Snakes and ladders, buffers and passports: Rethinking poverty, vulnerability and wellbeing

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SNAKES AND LADDERS, BUFFERS AND PASSPORTS:

RETHINKING POVERTY, VULNERABILITY AND WELLBEING

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SNAKES AND LADDERS, BUFFERS AND PASSPORTS: RETHINKING POVERTY, VULNERABILITY AND WELLBEING

Andy Sumner* and Rich Mallett*

ABSTRACT

Much research to date has tended to view vulnerability by discipline or sector, yet individuals and households experience multiple, interacting and sometimes compound vulnerabilities. Cross-disciplinary thinking is emerging as multi-dimensional vulnerability is likely to become an increasingly important concept if the outlook over the next 15 to 25 years is one of multiple, interacting and compound stressors and crises, a result of the “perfect-storm” or “long-crisis” thesis of the interaction of demographics, climate change and food and energy prices. A realigned analytical lens is thus useful to bring together the various intellectual strands involved in multi-dimensional vulnerability analysis. In light of the above, this paper reviews the literature on vulnerability and asks what a “three-dimensional human wellbeing” approach—a complement to more traditional ways of understanding poverty—might contribute to the analysis of vulnerability.

Keywords: Vulnerability, resilience, poverty, wellbeing.

1 INTRODUCTION

Much research to date has tended to view vulnerability by discipline or sector, yet individuals and households experience multiple, interacting and sometimes compound vulnerabilities. Cross-disciplinary thinking is emerging as multi-dimensional vulnerability is likely to come increasingly to the fore if the outlook over the next 15 to 25 years is one of shifting and new vulnerabilities or multiple, interacting and compound stressors and crises, a result of the “perfect-storm” or “long-crisis” thesis of the interaction of climate change, demographics, food and energy prices, and resource scarcity (for discussion, see Beddington, 2009; Evans, 2010; Evans et al., 2010; Sumner et al., 2010). As McGregor (2010: 5) argues, the consequences of the recent global financial crisis are likely to manifest themselves not as one-off and acute shocks but rather as recurrent waves of impact that generate “an ongoing level of volatility and uncertainty in the global economic system”. Moreover, the conclusion of the US National Intelligence Council Report (2008: xii), based on a widespread and large academic consultation conducted before the global economic crisis, is sobering: “trends suggest major discontinuities, shocks and surprises”.

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In light of the above, this paper reviews the literature on vulnerability and asks what a three-dimensional (meaning holistic) human wellbeing approach—a complement to more traditional ways of understanding poverty—might contribute to the analysis of vulnerability. We do not wish to suggest that such an approach is “new”; rather, we argue that it is a useful analytical tool. “Three dimensional human wellbeing” has become an increasingly important way of thinking about problems and themes associated with international development and poverty reduction. Not only is it multidimensional in character (composed mainly of three core elements—the material, the relational and the subjective) but it is also a cross-disciplinary concept that draws on development studies, economics, anthropology, psychology and other areas of enquiry. The concept of 3-D human wellbeing thus lends itself to an analysis of multidimensional vulnerability. Furthermore, by rescaling analysis and adopting the holistic lens of wellbeing, it is possible to identify and make visible some of the “invisible impacts” of the current compound crisis (Hossain, Fillaili and Lubaale, 2010: 270).

In this paper we draw upon the metaphors and approach developed by Room (2000) and Wood (2003) in particular, who emphasise two key dimensions of vulnerability. “Snakes and ladders” refers to expected and unexpected variability that can lead to advance (ladder) or decline (snake) in wellbeing; “buffers and passports” refers to resilience capacities (buffer) and abilities to take opportunities (passport).

This paper is structured as follows. Section 2 provides an overview of vulnerability, with reference to the literature from a range of disciplines. Section 3 outlines the “3-D human wellbeing” approach. Section 4 explores vulnerability through a 3-D human wellbeing lens. Section 5 concludes.

2 PERSPECTIVES ON VULNERABILITY

2.1 THE EVOLUTION OF THE CONCEPT OF VULNERABILITY

While it is not possible to provide an absolutely exhaustive overview of the literature on vulnerability in every single discipline, it is worth mapping its disciplinary evolution, particularly in relation to the development-studies literature in recent years and the contours of the wider literature.¹

Birkmann (2006: 11) notes that the emergence of the concept of vulnerability was closely linked to the “purely hazard-oriented perception of disaster risk in the 1970s”. The study of vulnerability was generally dominated by “technical interventions focused on predicting hazards or modifying their impact” (Hilhorst and Bankoff, 2004: 2). While these early origins framed the concept in relatively narrow terms, in the last three decades or so there has been a considerable conceptual expansion of vulnerability, as well as its application into a much wider range of disciplines, from economics to environmental change (see below). It is now the subject of a huge and burgeoning literature, and researchers and practitioners in various disciplines have increasingly recognised that the reduction of vulnerability is necessary to improve human wellbeing, particularly in the face of multiple and compound shocks and stressors (O’Brien et al., 2009: 23). Additionally, in development studies it is increasingly acknowledged that considerations of risk and vulnerability are central to understanding the dynamics of poverty (Christiaensen and Subbaro, 2004).

Furthermore, the concept of vulnerability has been adopted both by those studying climate change—or, more specifically, the human consequences of a changing climate (for example, Gaillard, 2010; Haines et al., 2006; Mitchell and Tanner, 2010) and climate change adaptation and resilience (Bahadur et al., 2010)—as well as those studying human security as an extension of human development (see Box 1). Spurred on by seminal publications such as the 1994 *Human Development Report* (UNDP, 1994), and by key global events (the end of the Cold War, for example) and the rise of new international policy frameworks built around the rights of the individual (for instance, responsibility to protect), the concept of human security has become ever more visible and influential in recent years (Oberleitner, 2005; Paris, 2001). Human security and vulnerability have been conceptualised as interlinked—insofar as human security can be conceived as the capacity to overcome vulnerability—but also as opposite ends of a common continuum (Brklacich et al., 2010: 37). Moreover, as Brklacich and colleagues (2010: 36–37) point out, researchers and practitioners working in a variety of fields increasingly recognise that it is no longer enough simply to identify vulnerabilities, but that it is now necessary to explore strategies to enable a move from a state of human vulnerability to human security (Bohle, 2001; Twigg and Bhatt, 1998; O'Brien and Vogel, 2004). In particular, numerous recent efforts have been made to establish and explore the complex relationships between human security and human development (see Box 1), as well as human security and global environmental change (see for example, Barnett and Adger, 2007; Matthew, 2007; Matthew et al., 2010).

As Barnett et al. (2010: 4) argue: “across the world, the prospects for human security are deeply affected by local and global processes of environmental change” and the “unprecedented threats” that these present. Adopting a human-security lens enables analysts to bypass the sometimes obfuscating nation-state and North-South frameworks, and to focus on the impacts of climate change as experienced by individuals (Barnett et al., 2010). Vulnerability is a central part of this equation insofar as it enables a recognition of the way in which risks emanating from a variety of sources, such as economic change, disease and conflict, contribute to the overall level of threat confronted by individuals in the face of climate change (O'Brien and Leichenko, 2007: 1–2) or potential exposure to potential “harms” or potential “hazards”.

Studies of environmental change aside, the relationship between vulnerability and human security has also been explored in a number of other contexts, including development (Nef, 1999); deprivation and exclusion (Busumtwi-Sam, 2008); urbanism (Milbert, 2009); and violence and conflict (Owen, 2004). In the broad study of human security, therefore, vulnerability has come to play an instrumental role.

Aside from such practical and operational imperatives, the concept of vulnerability has also contributed to the refinement of various academic pursuits. As Cardona (2004) points out, over time vulnerability has helped clarify the concepts of risk and disaster—concepts that make up the cornerstones of a number of disciplines, including disaster management (for example, “vulnerability has emerged as the most critical concept in disaster studies” [Vatsa, 2004: 1]) and environmental change.

In short, we have now reached a point where the concept of vulnerability has infused numerous disciplines and sectors, resulting in an array of alternative and competing definitions and approaches (see Table 1). As a point of departure, this paper fundamentally questions whether such intellectual fragmentation adequately reflects the reality of compound and complex vulnerabilities that are increasingly likely to be interacting with poverty and wellbeing over the next 10–25 years.

BOX 1

Exploring the Links between Human Development and Human Security

Human security has been defined normatively as “safety from such chronic threats as hunger, disease and repression and; protection from sudden and hurtful disruptions in the patterns of daily life” (UNDP, 1994: 23). The notion of human security is about securing vital individual freedoms in a globalised age of interconnectedness, and offers two general strategies to achieve this—protection and empowerment (Commission on Human Security, 2003). Further, human security opens up discussions on vulnerability, minimum safety thresholds (below which harm can occur) and subjectivities (that is, the loss of a particular “asset”, tangible or otherwise, can mean different things to different people in different contexts) (Gasper et al., 2008: 9).

While the phrase itself was in circulation earlier, “human security” is most often associated with the 1994 Human Development Report (HDR). The report identified four fundamental characteristics of human security: human security as *universal*; the components of human security as *interdependent*; human security as *people-centred*; and the primacy of *early prevention* over later intervention (UNDP, 1994). Together with its joint focus on “freedom from fear” and “freedom from want”, these key characteristics of the 1994 HDR have since continued to shape policy discussions and actions in relation to human security (note, for example, the establishment of the norm of Responsibility to Protect by the International Commission on Intervention and State Sovereignty in 2001). Moreover, as Jolly and Ray (2007: 458) point out, over the last few years several major reports on international policy have used the concept of human security as a frame of reference for policy analysis.

Alkire (2003: 14) argues that the version of “human security” put forward by the 1994 HDR is too broad and fails to convincingly delineate itself from human development—for example: human security is only concerned with providing a strictly delimited subset of human development priorities, or “vital capabilities” (that is, it has a narrower scope than human development); human security is more explicitly concerned with prevention and mitigation efforts, particularly as regards violence and conflict (that is, it has a greater preventative emphasis); and human security is less likely to engage with long-term, durable change (that is, it has a shorter time horizon) (Alkire, 2003: 36-7). Nonetheless, there are important connections between the two concepts.

It is also possible to conceptualise human security as a particular “strand” of human development. As Gasper et al. (2008: 5) point out, over the years the human development approach has “integrated three dimensions—human development, human rights and human security—into an interconnected whole, emphasising the need to conceptualise people’s well-being or ill-being, security and insecurity, in the context of a set of issues arising from global interconnectedness and inequities”.

TALE 1

Selected Disciplinary/Sectoral Approaches to Vulnerability

Discipline/ Sector	Sample definition	Approach to vulnerability
Anthropology	"The insecurity of the well being of individuals, households, or communities in the face of a changing environment" (Moser and Holland, 1997: 5).	Social rather than economic vulnerability; emphasis on household characteristics rather than specific measures of economic outcomes; importance of links between vulnerability and access to/ownership of assets; role of social ties and institutional arrangements.
Development Studies	"Vulnerability to poverty ... can be referred to as the probability of stressful declines in the levels of well-being triggering the individual's fall below a benchmark level which represents a minimum level of 'acceptable' participation in a given society at a specific period in time" (Guimaraes, 2007: 239).	Conceptualised at the individual/household scale; common usage of multidimensional measures of vulnerability (social, economic, political); possible tension between locally sensitive definition and operational definition.
Disaster Management	The "characteristics of a person or group in terms of their capacity to anticipate, cope with, resist, and recover from the impact of a natural disaster" (Blaikie et al., 1994: 8).	Usually defined in relation to hazards rather than outcome; vulnerability as an underlying condition; since 1990s risk seen as a function of hazard and vulnerability; hazard only becomes a risk when its impacts interact with a population; role played by social factors.
Economics (Micro)	"The propensity to suffer a significant welfare shock, bringing the household below a socially defined minimum level" (Kuhl, 2003: 5).	Primarily measured in terms of income/consumption poverty; focus on the dynamics of consumption patterns and the factors which influence them; vulnerability arises from covariant shocks (community-wide) and idiosyncratic shocks (household-specific); poverty does not necessarily correlate with vulnerability.
Economics (Macro)	"Economic vulnerability of a country can be defined as the risk of a (poor) country seeing its development hampered by the natural or external shocks it faces" (Guillaumont, 2009: 195).	A country's vulnerability depends on existence of certain "inherent" features (e.g. economic openness, export concentration, import dependency); exogenous vulnerability arises from structural economic factors.
Environment	"The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity, and its adaptive capacity" (IPCC, 2001: 6).	Perturbations have multiple and compound origins, i.e. not solely environmental; interaction between human activity and environmental processes; usually vulnerability from a hazard rather than to an outcome.
Food Security	The combined effects "of risk and of the ability of an individual or household to cope with those risks and to recover from a shock or deterioration of current status" (Maxwell et al., 2000: 9). Usually defined in relation to a negative nutrition-related outcome (e.g. hunger, malnutrition).	Use of proxy indicators (e.g. child malnutrition, consumption); vulnerability depends, in part, on geographical characteristics of an area (e.g. rainfall patterns, soil fertility); importance of political factors and entitlement failures.
Geography	"The vulnerability of people to fall into or remain in poverty owing to being at a particular place" (Naude, McGillivray and Rossouw, 2009: 250).	Vulnerability a function of economic geography and socio-political determinants in a given geographical region; considers multiple sources of risk; emphasis on interaction of factors.
Health	"Vulnerable populations are defined as being at risk of poor physical, psychological and/or social health" (Aday, 1993, in Rogers, 1996: 65).	Certain demographic groups particularly vulnerable to poor health outcomes; influenced by a range of background characteristics; recognition of links between poor health and wider social factors.
Livelihoods	Vulnerability relates to "the ability to avoid, or more usually to withstand and recover from, stresses and shocks" and/or to maintain the natural resource base (Chambers and Conway, 1992: 10). Stresses include seasonal shortages and rising populations, shocks include floods and epidemics.	Vulnerability viewed as a broad concept; measurement of livelihood capabilities (five livelihood capitals: human, natural, financial, social, physical) and tangible and intangible assets.

Vulnerability also became increasingly prominent within development studies during the 1990s, particularly since the publication of several seminal works, including Chambers (1989), Moser (1998) and Sen (1981, 1999) and the 1994 *Human Development Report*.² Of particular relevance is the poverty-dynamics literature and the research on chronic and transient poverty (for example, Hulme et al., 2001). In countries for which there are data, it has been estimated that the percentage of the poor that are always poor is typically 20–30 per cent of poor households (see Table 2). This implies that two-thirds of the poor move in and out of poverty, depending on vulnerability and capacities to cope.

TABLE 2

Selected Countries: The Chronic Poor (“Always Poor”) as % of Poor Households

Countries	Period	“Always poor” households as percentage of total poor households
Bangladesh	1987–2000	31
Indonesia	1998–1999	18
Uganda	1992–1999	19
South Africa	1997–2001	36
Ethiopia (rural)	1994–2004	22

Source: Dercon and Shapiro (2007: 6–7).

In their wide-ranging review of datasets, Dercon and Shapiro (2007) identify three key factors accounting for an individual’s ability to escape long-run poverty (“ladders”): changes in economic and social assets; and/or social exclusion and discrimination; and/or location in remote or otherwise disadvantaged areas (see Table 3). Further, they find that an individual’s descent into poverty can also be explained by temporary shocks (“snakes”), such as illness and health-related expenses; social and customary expenses on marriage and funerals; high-interest private loans; crop disease; and drought and irrigation failure. Dealing with such temporary shocks often requires strategies (“buffers” and possibly “passports” for some), such as selling assets—which may result in greater vulnerability in the longer term (or what Chambers called “poverty ratchets”).

There is a clear implication that interventions should distinguish between the chronic poor and the transient poor (Baulch and McCulloch, 1998; Hulme et al., 2001). With chronic poverty the focus should be on expanding assets and ensuring free-at-point-of-delivery public services. In contrast, transient-poverty policy responses are about reducing risks and fluctuations, for example by introducing safety nets and insurance schemes (McCulloch and Baulch, 2000). However, this is not just a question of material assets; relational dimensions and subjectivities also play a crucial role. In Latin America, de Barros et al. (2009) found that ethnic minorities comprise more than two-thirds of the poorest 10 per cent (of the consumption distribution), while a recent ECLAC (2010) study of eight Latin American countries found infant mortality among indigenous peoples/territories to be at much higher levels than infant mortality among non-indigenous people (according to the 2000 census).

A related body of literature is that on the inter-generational transmission (IGT) of poverty (for a detailed discussion, see Moore, 2001). The IGT approach is a well established conceptualisation of how poverty is transmitted from one generation to another (Bird, 2007: 1;

Castañeda and Aldaz-Carroll, 1999: 2). IGT is often conflated with the dynamics-of-poverty literature, but there is an important difference to note. While poverty dynamics and IGT are both temporal and about how people move in and out of poverty over time, IGT is typically about poor adults having poor children rather than poor children becoming poor adults or poor adults staying poor. Most work on IGT has tended to look at American societal and income mobility or state-benefits dependency, because large-scale longitudinal household data have been annually available from the American Panel Study of Income Dynamics since 1968/1969 (for details, see Altonji et al., 1997). In contrast, there are virtually no long-term longitudinal panels from the developing world, and thus the approach is much less well established in the wider development literature (see discussion of the IGT of human wellbeing in Sumner et al., 2009).

TABLE 3

Determinants Associated with Escaping or Falling into Poverty

Country	Years	Ladders , buffers and passports	Snakes
		Factors significant for escaping poverty	Factors significant for entering into poverty
Chile	1968–1986	Area of land owned, age of household (HH) head, average years of schooling of HH workers, accumulation of land and livestock, dependency ratio	Livestock losses
Bangladesh	1987–2000	Factors related to the HH asset base e.g. asset accumulation, multiple livelihood activities, income diversification, occupational shift to off-farm activities	Factors related to lifecycle changes (number of working members, high dependency ratio, abandonment by husband) and crises and shocks e.g. illness and natural disasters
India	1970–1981	Literacy, ownership of a house, increase in cultivated area and income from livestock, better infrastructure	-
Uganda	1980–2004	Income diversification, irrigation and land improvement	Illness and health-related expenses, social and customary expenses on marriage and funerals, high-interest private loans, crop disease, drought and irrigation failure
Kenya	1997–2005	Income diversification, formal sector employment, crop diversification, social factors	High dependency ratio, illness and heavy healthcare expenses, drought
South Africa	1997–2001	Owning more physical assets (livestock, land, etc).	Large household, female headed household, low employment access, low asset endowment, low education.

Source: Adapted from Dercon and Shapiro (2007).

2.2 DEFINING VULNERABILITY: CROSS-DISCIPLINARY COMMONALITIES

Webb and Harinarayan (1999) have proposed that vulnerability itself be used as a “bridging concept” to better link the fields of humanitarianism and development. Multidisciplinary approaches, however, are by no means straightforward undertakings. As Thywissen (2006: 449–450) explains, “multidisciplinarity often results in the same term being defined in different ways ... [as] definitions of the same terms may have been developed simultaneously and

separately in different disciplines". While this undoubtedly presents academics, practitioners and policymakers with both methodological and empirical challenges, in many ways it is understandable that such a multiplicity of interpretations exists. Indeed, that "vulnerability" can be applied in such a diverse range of contexts and disciplines is arguably testament to its strength as an analytical and descriptive tool.

Despite the many disciplinary variations, most contemporary approaches to vulnerability share, to varying degrees, certain common elements (see Bahadur, 2010). For example, vulnerability analysts working in a wide range of disciplines frequently cite Kofi Annan's (2003) observation that hazards only become disasters when people's lives and livelihoods are affected. Many agree that at the foundation of any conceptualisation of vulnerability is this issue of *interaction*: an interaction between an environmental hazard and a population; an interaction between market dynamics and a local community; or an interaction between a food shortage and the characteristics of a particular household. This is expanded upon further below.

A common starting point in defining vulnerability is to separate sensitivity and resilience into hazard exposure (to shocks and stressors) and capacity to cope (that is, resilience and agency) (see Table 4).

TABLE 4

What is Vulnerability?

		Capacity to cope (buffers) and/or advance (passports)	
		High	Low
Sensitivity or hazard exposure (to snakes and ladders)	High	Vulnerable	High vulnerability
	Low	Not vulnerable	Vulnerable

Sources: Synthesised from Alwang et al. (2001); Davies (1996); Room (2000); Sharma et al. (2000).

In its most general sense, vulnerability is seen as the risk that a "system" (such as a household, community, country) would be negatively affected by "specific perturbations that impinge on the system" (Gallopín, 2006: 294). Perturbations that give rise to undesirable outcomes originate from various sources, including environmental, socioeconomic, physical and political (Naude, Santos-Paulino and McGillivray, 2009: 185). The question of risk is thus at the heart of the concept of vulnerability: how systems deal with and react to risk; what kinds of outcome result from a particular risk; and through what processes a risk produces a given outcome. Closely related to this notion of risk is the idea of un/certainty. In a context of imperfect information there an element of risk (for example, not knowing when a natural disaster or a sudden fall in primary commodity prices will occur), thus giving rise to uncertainty about, say, the future livelihood of an individual, the wellbeing of a household, or the performance of an economy. From a development perspective this might mean that vulnerability exists when "poverty cannot be safely ruled out as a possible future scenario" (Calvo, 2008: 1,014).

Furthermore, it is likely that the original perturbation would have combined with, and been shaped by, a series of other factors that together form the nature of the perturbation as experienced by the system. To take a well known example, famines tend to be the product of multiple factors, such as unequal food distribution mechanisms, global demand, and national or subnational politics. Therefore, risk is usually the product of a *complex interaction* of forces and factors within a system. These factors could include anything from the asset stock of a household, to the size and quality of an individual's social network, to the geographical characteristics of a particular place. Accordingly, in any discipline, vulnerability is rarely defined solely in relation to the hazard or source of risk.

Interest in making sense of such systems using “complexity/systems science” has always been evident in some parts of development studies, and interest in such concepts is expanding (see Box 2). This focuses on *interrelationships* rather than linear cause and impact, and pays attention to *processes of change* rather than snapshots (Senge, 1990). Eyben et al. (2008: 203–4) outline complexity science as follows:

Complexity theory posits that it is not possible to predict with any confidence the relation between cause and effect. Change is emergent. History is largely unpredictable ... New inter-relational processes are constantly being generated, which in turn may affect and change those already existing. Small “butterfly” actions may have a major impact, and big ones may have very little impact.

According to Ramalingam et al. (2008: ix; 1, 4–5) this complexity body of ideas aids understanding of the mechanisms through which unpredictable, unknowable and emergent change happens ... [and] can prove particularly useful in allowing us to embrace what were previously seen as “messy realities”.

Ramalingam et al. (2008) list 10 ideas around the composition of systems, adaptive change and agency (see Box 2).

The point of departure is that systems are made up of multiple elements and processes that are not only connected but interdependent. For example, rural livelihoods are not simply a result of adding up factors but of interactions. Longer timeframes bring about greater levels of uncertainty. Thus, changes we discuss are often highly uncertain, and cause is the product of a juxtaposition of factors (one could argue a demarcation of dependent and independent variables is hence problematic). What are the things one might look out for? The first is a sharper focus on the processes of change rather than a focus solely on outcomes. The second is a sharper focus on inter-relationships and juxtapositions producing co-evolving processes and outcomes. The third is a sharper focus on diversity of pathways and contexts—any claims to universality need to be balanced with commentary on the “outliers”.

With this in mind, exposure to a perturbation is generally considered insufficient in itself to constitute a robust conceptualisation of vulnerability, meaning that the interaction is made up of more than simply the “convergence” of shock and individual. Using Bohle's (2001) conceptual framework, (the degree of) vulnerability is “produced” through the interaction between exposure to *external* events and the *internal* coping capacity of the affected individual or household. This has led some to talk of the “double structure of vulnerability” (for example, van Dillen, 2004). Coping capacity in this sense can broadly be understood as

“resilience” and as such cannot be thought of as distinct from vulnerability. Resilience and vulnerability do not represent opposite ends of the spectrum, but rather form part of the same equation: resilience determines in large part how people or systems respond to shocks, and hence determines how people or systems are affected by those shocks and how vulnerable they are to experiencing a particular outcome (see Bahadur, 2010 for a systematic review of resilience as a concept).

BOX 2

Key Ideas in Complexity/Systems Science**Systems are composed of:**

- Interconnected and interdependent elements and dimensions.
- Feedback processes that promote and inhibit change within systems.
- System characteristics and behaviours that emerge often unpredictably from the interaction of the parts, such that the whole is different to the sum of the parts.

Systems change occurs via:

- Nonlinearity—that is, when change happens, it is frequently disproportionate and unpredictable.
- Sensitivity to initial conditions—that is, small differences in the initial state of a system can lead to massive differences later; butterfly effects and bifurcations are two ways in which complex systems can change drastically over time.
- Phase space or the “space of the possible”—that is, the dimensions of a system, and how they change over time.
- Attractors, chaos and the “edge of chaos”—that is, the order underlying the seemingly random behaviours exhibited by complex systems.

Agency is a function of:

- Adaptive agents, who react to the system and to each other.
- Self-organisation—a particular form of emergent property that can occur in systems of adaptive agents.
- Co-evolution, which describes how, within a system of adaptive agents, the overall system and the agents within it evolve together, or co-evolve, over time.

Source: Extracted from text in Ramalingam et al. (2008).

Resilience is shaped not only by the kinds of activities engaged in by individuals or systems, but also by the underlying characteristics of an individual or a system. More specifically, internal fragilities that in some way reduce resilience will influence the degree of vulnerability an individual or a system experiences. It is also important to note that resilience has costs: portraying resilience as “good” and vulnerability as “bad” is far too simplistic and overlooks much of the complexity involved in the debate on short-run versus long-run trade-offs. As suggested above and at several points throughout this paper, building resilience or managing a particular risk has consequences for other dimensions of a system’s vulnerability.

For example, in order to avoid starvation a household may reduce the quality of food bought and consumed; this may have longer-term health implications. Similarly, a parent choosing to work longer hours in order to boost household income may be confronted with a number of problems affecting various dimensions of his or her wellbeing. We can imagine, for instance, an increase in stress-related health problems (material), strained relationships with family members (relational) and a reduction in leisure time (subjective).

Vulnerability is also influenced by the characteristics and nature of wider social, political and institutional structures. In some cases, structural factors can actually prove to be more influential than the perturbation itself. For example, Devereux (2009) argues that structural conditions are more responsible for the persistence of famines in twenty-first century sub-Saharan Africa than the shocks that trigger them.

In defining vulnerability, therefore, we must consider a number of factors: the “pre-risk” (*ex ante*) characteristics—that is, the underlying conditions—of a system, as well as the various factors and processes that determine them; the wider structural conditions in which the system exists; the type of perturbation or risky event that the system experiences; and the various complex interactions between these dimensions. Furthermore, it is important to apply this framework to a specific outcome, and to ask the question: “vulnerability to, or from, what exactly?” and to think of complex systems facing shocks and stressors.

2.3 SHOCKS AND STRESSORS

It is important to distinguish between vulnerability *to* something, and vulnerability *from* something. Alwang et al. (2001: 3) argue that when we talk about an outcome—for example, malnutrition, homelessness, bankruptcy—we are talking about vulnerability *to* that particular outcome, whereas when we talk about the relationship between vulnerability and risk, we are talking about vulnerability *from* exposure to (whatever) risk.

As noted, vulnerability is influenced by resilience (or coping capacity), as well as by structural features of the surrounding environment. These are the things that determine the degree of *ex ante* vulnerability (that is, before the onset of a risky event). So before an individual or a system is even threatened by a hazard, it is possible to identify certain socioeconomic fragilities (underlying conditions) and pre-existing contextual elements that increase vulnerability (Carreno et al., 2005). But vulnerability is also determined by the type of risk or perturbation that the individual or system faces. For example, a particular building might already suffer from poor architectural design and shoddy construction (fragilities), but its overall vulnerability to major structural damage from an earthquake will ultimately be determined by the scale and magnitude of that event. Hence it is important to ask “vulnerability from what—what (potential) exposure to what (potential) harm or hazard?” because the answer to that question greatly influences just how vulnerable an individual or a system is to a particular outcome.

Perturbations or risks are understood broadly as “a potentially damaging influence on the system of analysis” or an “influence that may adversely affect a valued attribute of a system” (Fussel, 2007: 158). This is what Chambers (1989) refers to as the external side of vulnerability—the risks, shocks and stresses with which an individual or system is confronted (the internal side representing a lack of coping capacity). While risks are generally considered

as external to a system, this is not always the case, since dangerous practices within a community (such as business practices that produce negative externalities) may also present themselves as threats (Fussel, 2007).

Yet perturbations can also be disaggregated into two broad categories: shocks and stressors. Shocks refer to sudden risk events, such as floods, droughts and price spikes, whereas stressors refer to more gradual shifts, such as changes in service delivery, land degradation, socioeconomic marginalisation, and the HIV/AIDS epidemic (Hart, 2009: 363). A key distinction is thus the difference in time scale. While the duration of a shock may be short-term, however, the impacts of a shock can persist for many years after the initial event. For example, Dercon et al. (2005) show how a collapse in output prices in 2001 and a serious drought in 2002 were found to be still affecting consumption outcomes in rural Ethiopia several years later.

It should also be recognised that shocks and stressors can threaten a system's wellbeing in indirect ways. As Dercon (2005: 484) points out, in dealing with the impact of a shock, the *ex post* coping responses of a household may "destroy or reduce the physical, financial, human or social capital of the household" (that is, the cost of resilience). This might happen, for example, as a result of the sale of important or valuable material assets, leaving the household more vulnerable in the future.

Moreover, shocks and stressors regularly interact with one another. Various disciplines have started to recognise this complex interplay, resulting in renewed efforts to build interdisciplinary or multidisciplinary understandings of vulnerability and resilience. For example, those working on global environmental change have begun to acknowledge that the vulnerability of people to the negative consequences of climate change does not result solely from environmental changes by themselves, but from a mixture of stressors (O'Brien et al., 2004). Further, Leichenko and O'Brien (2002) note that food security in developing countries is influenced by political, economic and social conditions, as well as climatic factors. This multiple-stressors approach to vulnerability assessments has an important advantage over conventional approaches: as O'Brien et al. (2009: 24) argue, "interventions that address the outcomes of single stressors may provide measurable results, but if they do not consider the dynamic context in which a stressor is occurring, they are unlikely to enhance human security over the longer term".

Vulnerability is thus best understood as a multidimensional concept (Birkmann, 2006; Bohle, 2002; Cutter et al., 2000). Even if we were to take as an example a very specific type of vulnerability and outcome (such as the vulnerability of household *x* falling below a pre-determined poverty line within five years), there would still be a wide range of factors to consider when carrying out a vulnerability assessment. Indeed, vulnerability in its broadest sense is a concept that encompasses physical, social, economic, environmental and institutional features, something that reflects the complex relationships that shape the overall impact of a given shock or stressor. It is this multidimensionality that aligns the concept of vulnerability with the approach of "human wellbeing".

3 A (3-D) HUMAN WELLBEING APPROACH

Human wellbeing or "three-dimensional human wellbeing" (meaning both a holistic approach as well as the three actual dimensions discussed below) is emerging as a complement to the

more traditional and material ways of conceptualising and measuring poverty and deprivation. Evidence of this is most visible in the recent Sarkozy Commission (Stiglitz et al., 2009: 10. 14-15), which has provided one of the strongest signposts with its conclusion that there is a need

to shift emphasis ... to measuring people's wellbeing ... Objective and subjective dimensions of well-being are both important ... The following key dimensions that should be taken into account ... (a) Material living standards (income, consumption and wealth); (b) Health; (c) Education; (d) Personal activities including work (e) Political voice and governance; (f) Social connections and relationships; (g) Environment (present and future conditions); and (h) Insecurity, of an economic as well as a physical nature.

There is further evidence in the OECD's *Measuring the Progress of Societies* that suggests that current approaches to poverty are being rethought (Giovannini, 2009). The 2010, 20-year review of human development by the UNDP Human Development Report Office adds to this sense (see UNDP, 2010). One might also note the five-year, multi-country research of the ESRC Wellbeing in Developing Countries (WeD) network (for example, Copestake, 2008; McGregor, 2007; White, 2008, 2010) and the Oxford Poverty and Human Development Initiative (OPHI), which have stimulated academic debate (for instance, Alkire and Santos, 2010). Indeed, although wellbeing in its broadest sense has a long intellectual history, the concept has been hotly debated, particularly over the last 10 years or so, if the amount of published books and articles is a measure (for overviews, see Gough and McGregor, 2007; McGillivray and Clarke, 2006).

The approach to human wellbeing that is outlined here draws upon and synthesises various traditions (see McGregor, 2007). Human wellbeing not only shifts our focus even further beyond income alone—which Seers (1972), Streeten (1980), Stewart (1985) and Sen (1999) have critiqued in seminal works—but also beyond narrow human-development indicators, such as the Human Development Indices, to take account of what people can do and be, and how they feel about what they can do and be.

Wellbeing thus seeks to build on Sen's (various, notably 1999) vision of human development—that is, moving beyond “beings” and “doings”—by focusing on the interactions between beings, doings *and* feelings. The exact differences between human development and human wellbeing approaches has yet to be outlined in detail. As Kapur et al., (2011: 41) note,

Amartya Sen has emphasised that well being is subjectively assessed and emphasises “capabilities” and “functionings” that reflect a particular subjective valuation. However, in empirical practice this conceptual insight has congealed into merely emphasising a slightly different set of outcomes (and slightly different set of summary statistics) while the question of whose views matter in the design of the survey instrument is ignored.

Also important and influential in this regard is Robert Chambers's (1997) emphasis on the need for the development profession to listen to the voices of poor and to their perceptions

and feelings about poverty. (Of course, feminist development thinkers have always stressed the importance of listening, and of inclusiveness and looking out for the silenced exclusions.)

McGregor (2007) suggests a comprehensive way of understanding people's wellbeing. He emphasises that a practical concept of wellbeing should be conceived of as the combination of three things: (i) needs met (what people have); (ii) meaningful acts (what people do), and; (iii) satisfaction in achieving goals (how people be). Copestake (2008: 3) echoes this: "wellbeing is defined here as a state of being with others in society where (a) people's basic needs are met, (b) where they can act effectively and meaningfully in pursuit of their goals, and (c) where they feel satisfied with their life". Human wellbeing can thus be discussed as three-dimensional (meaning that wellbeing is holistic and that it has three discernable dimensions): it takes account of material wellbeing, relational wellbeing and subjective wellbeing, and their dynamic and evolving interaction. People's own perceptions and experiences of life matter, as do their relationships and their material standard of living.

These three core dimensions of wellbeing are summarised in Table 5, bearing in mind that the categories are *interlinked and their demarcations highly fluid*. For this reason the table's columns should not be taken as barriers. The material dimension of wellbeing emphasises "practical welfare and standards of living"; the relational emphasises "personal and social relations"; and the subjective emphasises "values, perceptions and experience" (White, 2008: 8). The wellbeing lens can take both the individual and the community as the unit of analysis.³

Jodha's work (1988) is illustrative of wellbeing debates. Jodha studied the same households in rural India over a 20-year period (1963–66 and 1982–84), both by conventional household income surveys and by villagers' perceptions of their poverty and wellbeing, and found that: "households that have become poorer by conventional measurements of income in fact appear better off when seen through different qualitative indicators of their wellbeing" (Jodha, 1988: 2,421). People felt they were better off because they consumed a wider range of commodities (that is, the material wellbeing dimension), were less reliant on particular patrons (the relational wellbeing dimension), and felt more independent with greater levels of mobility (the subjective wellbeing dimension). Consistent with Jodha are proposals from Ryan and Deci (2000: 6–7) and others that autonomy—meaning "self-determination, independence and the regulation of behavior from within"—is one of the three fundamental and universal psychological needs (along with relatedness and competence). More recently, Kapur et al. (2011: 39) analyse a unique survey designed and implemented by a Dalit community in Uttar Pradesh, India, which they introduce as follows:

[The survey] capture[s] social practices and conditions important to them which are not captured in the usual household surveys ... The survey results show substantial changes in a wide variety of social practices affecting Dalit well-being—increased personal consumption patterns of status goods (e.g. grooming, eating), widespread adoption of "elite" practices around social events (e.g. weddings, births), less stigmatising personal relations of individuals across castes (e.g. economic and social interactions), and more expansion into non-traditional economic activities and occupations. These findings suggest that placing exclusive focus on measures of material well-being, such as consumption expenditure and its inequality, is misplaced as it misses important changes socially structured inequalities and hence in individuals' "functionings." ... [T]he decline of unfreedoms resulting from the reduction in social inequalities in the case of Dalits in UP was itself development – and for them perhaps more fundamental than any other yardstick of development.

TABLE 5

Three-Dimensional Human Wellbeing: Areas of Study, Determinants, Indicators and Examples of Existing Datasets

	Material wellbeing—“needs met” and “practical welfare and standards of living”	Relational wellbeing—“ability to act meaningfully” and “personal and social relations”	Subjective wellbeing—“life satisfaction” and “values, perceptions and experience”
Area of study	The objectively observable outcomes that people are able to achieve.	The extent to which people are able to engage with others in order to achieve their particular needs and goals.	The meanings that people give to the goals they achieve and the processes in which they engage.
Key determinants	Income, wealth and assets. Employment and livelihood activities. Education and skills. Physical health and (dis)ability. Access to services and amenities. Environmental quality.	Relations of love and care. Networks of support and obligation. Relations with the state: law, politics, welfare. Social, political and cultural identities and inequalities. Violence, conflict and (in)security. Scope for personal and collective action and influence.	Understandings of the sacred and the moral order. Self-concept and personality. Hopes, fears and aspirations. Sense of meaning/ meaninglessness. Levels of (dis)satisfaction. Trust and confidence.
Indicators	Needs satisfaction indicators. Material asset indicators.	Human agency indicators. Multi-dimensional resource indicators.	Quality of life indicators.
Examples of existing datasets (cross country, in UNDP Human Development Report, 2010)	<i>Human Development Index and Multidimensional Poverty Index</i> <i>Decent Work</i> : employment to population ratio; formal employment; vulnerable employment; employed people living on less than \$1.25 a day; unemployment rate by level of education; child labour; mandatory paid maternity leave. <i>Achievements in Education</i> : adult literacy rate; population with at least secondary education. <i>Access to Education</i> : primary enrolment ratio; secondary enrolment ratio; tertiary enrolment ratio. <i>Efficiency of Primary Education</i> : dropout rate; repetition rate. <i>Quality of Primary Education</i> : pupil-teacher ratio; primary school teachers trained to teach. <i>Health Resources</i> : expenditure on health; physicians; hospital beds. <i>Risk Factors</i> : infants lacking immunisation (DTP and measles); HIV prevalence (youth and adult). <i>Mortality</i> : infant; under-five; adult (male and female); age-standardised death rates from non-communicable diseases.	<i>Gender Inequality Index</i> <i>Political Freedom</i> : democracy. <i>Civil Liberties</i> : human rights violations; press freedom; journalists imprisoned. <i>Accountability</i> : corruption victims; democratic decentralisation; political engagement. <i>Human Security</i> : conventional arms transfers. <i>Civil War</i> : fatalities; intensity. <i>Limitations to Freedom from Fear</i> : refugees by country of origin; internally displaced persons; homicide rate; robbery rate; assault victims.	<i>Overall life satisfaction</i> : negative experience index. <i>Satisfaction with Personal Dimensions of Well-Being</i> : job; personal health; standard of living; community; affordable housing; healthcare quality; education system; air quality; water quality. <i>Elements of Happiness</i> : purposeful life; treated with respect; social support network; perception of safety.

Sources: Synthesised from Copestake (2008); McGregor (2007); McGregor and Sumner (2010); NDP (2010); White (2008; 2010).

Subjective wellbeing itself (for a detailed review, see Samman, 2007) is composed of two aspects: affective (mental health or hedonic balance) and cognitive (life satisfaction or eudemonic). The focus for wellbeing is the latter. As Alvarez and Copestake (2008: 154) and Diener (2006: 401) respectively note, the “eudemonic approach emphasises more the nature of human beings as searchers of meaning (actions consistent with their values) through fulfilment of cherished goals” and “life satisfaction represents a report of how a respondent evaluates or appraises his or her life taken as a whole. Domain satisfactions are judgments people make in evaluating major life domains, such as physical and mental health, work, leisure, social relationships, and family”.

There is, of course, a whole debate on preference setting to consider (for a discussion, see Clark, 2007). Indeed, in keeping with a strong historical tradition, perhaps most famously symbolised by Oscar Lewis’s (1959) “culture of poverty” thesis, it has been argued that psychosocial factors might be working as additional reinforcement mechanisms to keeping people in poverty. For example, Harper et al. (2003: 547) note the importance of individual agency and the role of attitudes and aspirations in the inter-generational transmission of poverty. Further, a circle of low (or frustrated) aspirations and endemic poverty may be a self-sustaining outcome (Ray, 2006). In an empirical review of the determinants of the inter-generational transmission of poverty, Bird (2007: ix) also notes, “low aspirations probably contribute to reduced income and asset formation and may influence parenting patterns and investment decisions ... thus contributing to IGT poverty”. This is not a reason to discount people’s own perceptions of poverty and wellbeing, but rather to recognise the limitations of researching wellbeing and poverty.

What, then, does a wellbeing approach add? Many contemporary conceptualisations of poverty already go beyond income-based definitions and include more sociocultural and subjective dimensions of deprivation (such as human development, rights-based approaches, social-exclusion approaches, sustainable livelihoods). We do not wish to suggest that using a three-dimensional human wellbeing lens to analyse vulnerability is “new”; indeed, in many respects, such an approach is consistent with current practice. Further, many of the issues raised by a wellbeing approach to vulnerability—including the role of institutions, the importance of an individual/household focus, and the contradictions of risk management—are addressed by existing frameworks such as Social Risk Management (SRM) (see Holzmann and Jorgensen 1999). Rather, we argue that a wellbeing lens is a useful analytical tool and that it sharpens the focus of a “traditional” poverty lens in at least three ways.

In the first instance, it emphasises the non-material (the relational and the subjective), and what people feel they *can do* or *can be* influences what people will actually be able to *be* and *to do*. In turn, these feelings and perceptions are determined both by people’s experiences and by socially and culturally determined norms and values. In the case of child poverty, this might include prevailing notions of “normal” adult-child interactions or relationships at school, home or the workplace, as well as norms about child participation. An example of this is offered in White and Choudury’s (2007: 530) research in Bangladesh, which explores the empirical realities of “genuine” or “meaningful” participatory initiatives with children. They argue that while participation is ideally about raising children’s collective voice in development matters, in reality participation is “produced” through the “projectisation” of participation. Drawing on primary data collected with Amra, a children’s organisation in

Dhaka, they observe particular understandings of what counts as “participation” as determined by development agency staff, and therefore find that children’s agency is constrained and determined by adults in development agencies (that is, what can be said, when it should be said).

An example of subjectivities can be found in Cornwall and Fujita’s (2007) analysis of representations of “the poor” in the World Bank’s *Voices of the Poor* exercise. Drawing on the *Crying Out for Change* volume, they argue (2007: 60) that

The “voices” are editorialized so as to tune out any discordant sounds and present an overarching narrative that is in perfect harmony with the bank’s own policies: their “cries” for change are harnessed to support a particular set of highly normative prescriptions. In order to obtain quotes that could pack a punch, *Crying Out for Change* obscures other linkages, other perspectives, other parts of the conversation that provide less convenient justification for the overall narrative.

Second, a wellbeing approach is about positives. It is based on what people *can* do/be/feel, rather than *deficits* in what they can do/be/feel. This resonates with Nancy Fraser’s work (for example, Fraser, 2000) on recognition, respect and issues of stigma. The labelling or “othering” of people as the “poor” infers a status inferior to the “non-poor”, and in itself can lead to material and relational deprivation via social exclusion. Wellbeing is also about self-determination rather than exogenously defined wellbeing.

Third, wellbeing addresses a need for an analytical approach that is sufficiently flexible to take account of the different experiences of different groups of people. This is particularly evident when considering poverty and wellbeing across the life course. As Hird (2003: 25) suggests, citing Ryff and Heidrich (1997) and Westerhof et al. (2001): “older adults tend to refer to life satisfaction and health in their spontaneous descriptions of self and life, whereas young adults focus more on self, personality, happiness, work, and education. [In contrast] middle-aged individuals were found to emphasise self-confidence, self-acceptance, and self-knowledge, as well as job and career issues”.

If we develop this further we can understand better how some people’s wellbeing is distinct from other people’s—in this instance, children’s from adults’. We can thus seek to identify dimensions to be explored further in order to better understand that difference. For example, we can posit that child poverty is different from adult poverty because not only do children have differing needs, wants and capacities depending on their stage of childhood, but the meaning of “childhood” itself is also defined by the prevailing context and culture. Adult poverty differs by age and context, but arguably to a lesser extent than childhood poverty. We can also posit that a further key difference in children’s experiences is that childhood poverty and wellbeing are more intensely relational in nature. Adult poverty is also relational, but arguably to a lesser extent than childhood poverty, because for children—and differing at various ages—there is a greater reliance on “others” for care and nurture, typically adults or older children; greater physiological and psychological vulnerabilities; and less autonomy/power.

We can illustrate this further if we consider poverty tracking via a wellbeing lens during the recent global crisis, using the empirical work of Green et al. (2010), Hossain et al. (2009, 2010) and Turk (2009) (see Table 6). In terms of child wellbeing and the material wellbeing dimension, there are some cross-country reports of school absenteeism and dropout, some

reports of child labour and/or education expenses being reduced, and some reports of children combining labour with education. At the same time, in the relational domain, there are some clear findings of changes in the household division of care labour, social tensions, family conflict and crime. In Turk's (2009) study there are cross-country reports of children being left unattended for long hours while mothers worked late into the evening, and of the unpaid work of childcare sometimes being undertaken by elderly household members or by older children. As a general rule, respondents were trying to protect the nutrition and education of children. Normally, respondents suggested that food consumption for adults would be cut in order to protect the nutritional intake of children, but there were nevertheless changes in the quality of food. Finally, in terms of the subjective domain there is relatively little to report, perhaps because it was not explicitly or formally asked about.

TABLE 6

**Using the Human Wellbeing Approach to Analyse Impacts of Global Crisis
and General versus Child-Specific Impacts**

Wellbeing dimension	Impacts reported	Hossain et al. in five countries	Green et al. in 11 countries	Turk in 8 countries
Material wellbeing	General	Food prices still higher than 2007; export-sector job losses in Jakarta but not in Dhaka; micro and informal credit markets affected; higher proportion of income being spent on food; less diverse/lower nutritional value; range of health impacts reported.	Women, particularly in supply chains in Southeast Asia, have been hard hit via falling wages, less decent work and shorter working hours; families have reported reducing their food consumption or quality; borrowing money and selling assets is extremely common.	Workers in the urban informal sector are facing particularly high levels of income insecurity; some layoffs; reduced working hours; laid-off workers remaining in urban areas; reduced hours; altered adult food consumption patterns and reduced remittances; increased competition for local, day-labouring jobs in rural areas; smallholder, rural households remain vulnerable to falling commodity prices. Nearly all groups in all low income countries were unable to access formal safety protection mechanisms.
	Child-specific	School absenteeism and dropout; child labour reports.	Education is being prioritised by families but education costs are being reduced by moving children from private to public schools, cutting tuition or going into debt; research did not find evidence of significant numbers of children being taken out of school.	Reports of children combining work/labour with education.



Relational wellbeing	General	Women eating least/last; intra-household tensions; abandonment of elderly; signs of rising social tension.	Women, particularly in supply chains in Southeast Asia, have been hard hit via falling wages, less decent work and shorter working hours; also increased time burdens and reproductive pressures. The first port of call has been the family and social networks. Some evidence of family conflict and domestic violence.	Some sectors hit hard by the crisis are those that are dominated by female employment. Economic stress was understood to be generating tensions and sometimes shifting roles in the households; tensions associated with competition for scarce work were mentioned in some instances; young, single women appeared more resilient to these impacts than those that were married with children.
	Child-specific	Intra-household tensions; abandonment of children; youth crime reported.	Some evidence of family conflict and domestic violence.	Children were being left unattended for long hours while mothers worked late into the evening. Sometimes unpaid work of childcare was taken over either by elderly households members or by the older children. As a general rule, respondents were trying to protect the nutrition and education of children. Normally respondents suggested that food consumption for adults would be cut in order to protect the nutritional intake of children but changes in quality of food.
Subjective wellbeing	General	People's own crisis indicators identified: changes in prices; reduction in the amount of paid workers; number of vacant dormitories rented for export workers; reduced working hours; termination/broken contracts; lay-offs; returning migration.	n/a	Economic stress was understood to be generating tensions: both men and women made many references to increases in the number of arguments between husbands and wives, sometimes including violence; much of this was driven by stress over money.
	Child-specific	Levels of everyday stress rising and the interconnection of material, relational and subjective child and adult wellbeing. Note, for example, the stress around sending children to school on an empty stomach and how this is connected psychological stress, food insecurity and children's educational access.	n/a	n/a

Sources: Green et al. (2010); Hossain et al. (2009, 2010); Turk (2009).

The data are striking since they provide evidence of rising levels of everyday stress and of the interconnection of material, relational and subjective child and adult wellbeing. For example, it is possible to note how the stress involved in sending children to school on an empty stomach embodies the multiple connections between psychological stress, food insecurity and children's educational access. Economic stress was also understood to be generating tensions: both men and women made many references to increases in the number of arguments between husbands and wives, sometimes including violence; much of this was driven by stress over money. Again, this suggests that there are inter-linkages between material, relational and subjective dimensions of wellbeing, and that there is a need for research design to seek to capture these dimensions and their interactions. In the following section we discuss vulnerability and resilience in each of the wellbeing dimensions previously outlined.

4 ANALYSING VULNERABILITY AND RESILIENCE THROUGH A HUMAN WELLBEING LENS

In this section we show how a wellbeing lens helps to approach the different dimensions of vulnerability analytically by taking the material, relational and subjective dimensions and considering their interactions.

It has long been commonplace to think about vulnerability in terms of its material wellbeing dimensions. Traditionally there has been a focus on tangible assets and entitlements (such as income, labour, capital, as per the Sustainable Livelihoods approach), a focus that is still today proving influential in economic approaches to vulnerability. The assumption here is that assets and entitlements represent the resources that can be mobilised and managed when an individual or a system is confronted with a threat; in other words, resilience (Moser, 1998: 3).

Households can also make "material-based" decisions in order to increase their resilience. Morduch (1995) presents a range of examples that demonstrate how individuals and households engage in "income smoothing" activities, such as making conservative production or employment choices and diversifying economic activities, in order to protect themselves from "adverse income shocks" before they occur (that is, *ex ante*). Indeed, such "risk-averse" strategies become even more important under conditions of compound and complex shocks and stressors.

People or systems respond differently to the same threat (as determined by their "asset portfolio"). A person's ability to establish their command over a set of commodities or avoid exposure to potential harms is dependent on the power they hold in the first place and the agency they are able to achieve.⁴ We can understand this as their agency, and the successful command of commodities as the exercise of that agency. It is important to remember, however, that the agency of one individual is influenced by both the agency of others and wider structures. For example, in their study of resource accessibility and vulnerability in India, Boser et al. (2007) find the caste system to be a key factor in determining who has assets, who can access public facilities, who has political connections, and who has supportive social networks. Thus there is also a relational aspect to an individual's or household's access to material assets and entitlements, a mix of "power as political economy" and "power as institutions".

Material aspects of vulnerability have been typically measured as “vulnerability to poverty” or the probability of falling below the poverty line in the next time period (for example, Pritchett et al., 2000). In response, many have criticised the economics literature for “its use of money metrics and the underlying presumption that all losses can be measured in monetary terms” (Alwang et al., 2001: 5). While it would be short-sighted to claim that this is true of all the literature—Moser (1998), for example, adopts an approach characterised by the relationship between asset ownership and vulnerability, but also includes intangible and unquantifiable assets such as household relations and social capital—there is certainly a case to be made that by focusing overwhelmingly on the material aspects of vulnerability, it is easy to overlook its other dimensions. For instance, a material focus on the geographical characteristics of a particular place has, in the past, and particularly in the disaster-risk literature, been used to identify people living in particular areas as vulnerable, when it is now widely acknowledged that “hazard risks, their impacts and local responses are not predetermined by individual or location” (Webb and Harinarayan, 1999: 293). Table 7 takes the example of a material stressor, market volatility, and illustrates across the wellbeing dimensions.

As North (1995: 23) notes in his seminal work, institutions are the “humanly devised constraints that structure human interaction ... composed of formal rules ... [and] informal constraints”. While the risk of a household falling below the poverty line is minimised in a society in which formal safety nets exist, such as the provision of basic levels of welfare and social protection, in many developing countries life is “non-insured” (Duffield, 2008). This can be related to McGregor’s earlier work (1991, 1994) on patron-client relations in Bangladesh. He found that in order to cope with their environment and avoid poverty and vulnerability in the present, poor people enter into “bargains” with wealthier patrons who in turn provide a level of welfare and security. As a consequence of this “bargain” or negotiation, however, the client’s ability to seek routes out of poverty in the longer term are diminished. As McGregor (1991: 391) argues, “consenting participation in the existing hierarchical organisation of rural society, which assures some degree of security, reinforces the institutions which serve to deny the possibility of easy recourse to other organisational arrangements (for example, co-operation amongst the poor, or open access to markets, or to government social security)”.⁵ Thus, in reality the poor face something of a trade-off: longer-term aspirations are foregone in favour of more immediate imperatives regarding basic livelihood security. So where formal welfare regimes are non-existent, informal institutions, such as the organisational hierarchies of Bangladeshi rural society described by McGregor, take on a greater significance.

Informal institutions are generally deeply connected to the cultural and social norms of particular places, and can often provide a means of coping when people become especially vulnerable to experiencing a particular negative outcome. As an example, more than 25 years ago Bardhan (1984) demonstrated how tied labour contracts, commonly thought of as “inefficient relics of an age when slavery was condoned” (Morduch, 1995: 110), actually mitigated the risk for agricultural workers of facing low consumption levels in slow seasons characterised by low employment rates. Another example might be reciprocity arrangements and inter-household transfers whereby households cope with misfortune by drawing on the resources of extended families and communities (Morduch and Sharma, 2002: 575). Table 7 illustrates across wellbeing dimensions with a relational “variability” or potential exposure to “harm” of changes in entitlement to state benefits/transfers as a result of migration.

Finally, it is important to note the ways in which vulnerability, risks and hazards are, perhaps above all else, socially constructed and highly subjective. Insecurity itself is form of poverty and lack of wellbeing, and is experienced subjectively.

TABLE 7

Examples of Vulnerability Viewed by a Wellbeing Lens

Variability—shock or stressor	Wellbeing dimensions					
	Material wellbeing –		Relational wellbeing –		Subjective wellbeing –	
	“needs met” and “practical welfare and standards of living”		“ability to act meaningfully” and “personal and social relations”		“life satisfaction” and “values, perceptions and experience”	
	Material snakes and ladders	Material buffers and passports	Relational snakes and ladders	Relational buffers and passports	Subjective snakes and ladders	Subjective buffers and passports
Material variability e.g. market volatilities – seasonal variation in income	Uneven income stream	Income smoothing	Access to welfare receipts mediated by gatekeepers	Informal knowledge and networks to navigate institutions	Higher propensity to be exposed to economic stresses	Re-appraising daily situation in a positive light
Relational variability e.g. variability in entitlements to state benefits/transfers as a result of migration	Loss of access to rural credit line entitlement	Taking ad-hoc opportunities to earn income	Loss of entitlement to welfare receipts due to lack of official identity card and formal urban status	Borderline non-compliance with welfare conditions (e.g. conditional cash transfers)	Isolation and hopelessness	Group based collective action (i.e. urban poor collectives).
Subjective variability e.g. prevalent attitudes to lower caste or status people (as an exposure to potential “harm”).	Poor access to formal sector employment	Taking informal sector work	Discrimination in access to state institutions	Mediating state institutions via non-caste networks or payments	Social exclusion	Collective action based on caste identity

Further, in terms of subjective wellbeing, Quarantelli (2005) contends that any disaster is rooted in the particular social structure of the community that has been affected by a given hazard. Depending on one’s characteristics, perceptions of what constitutes being or *feeling* “vulnerable” can vary enormously. For example, research by Valentine (1989) into how public spaces are experienced differently by men and women explores the various ways in which perceptions of vulnerability can be influenced and defined. As Cannon (1994) explains, the determination of vulnerability is a complex characteristic formed by a mix of factors, which are themselves derived in large part from class, gender and ethnic attributes, as well as from personal perceptions of vulnerability.

The same ideas apply to perceptions of risk. As Cutter (2003: 2) points out, if rational choice is framed in relative (and therefore subjective) terms, then it is easier to understand an “irrational” choice. The example she goes on to offer brings this point to light: “the same risky behaviour (e.g. suicide bomber) would seem like a perfectly rational choice in one setting (disenfranchisement of Palestinian youth), but appear as totally irrational in another (American

mass media)". The value of a subjective approach to vulnerability is that it compels us to question the assumptions that go into both vulnerability assessments and common attitudes towards vulnerabilities. It also represents a step in the direction of privileging hitherto silenced voices, and tailoring a perspective of vulnerability that is more contextually sensitive (see Table 7 for examples of subjective variability—prevalent attitudes to lower caste or lower status people). Recent work by Deneulin and McGregor (2010: 501) illustrates how "a person's state of wellbeing must be understood as being socially and psychologically co-constituted in specific social and cultural contexts". Subjective understandings of wellbeing, and vulnerability stem from a realisation that all meaning is socially constructed, contingent on a number of circumstantial and personal factors. Thus, analysing vulnerability via the subjective dimension of wellbeing illuminates the culturally and personally specific ways in which an individual or household views and experiences risk. In short, as wellbeing is subjective, different households will be affected differently by the same or similar perturbation. The impact depends on the level of importance attached to the affected aspect of wellbeing (such as a reduction in household income, or a reduction in leisure time).

5 CONCLUSIONS

5.1 THE POINT OF DEPARTURE

We noted at the outset that while research has tended to view vulnerability by discipline or sector, individuals and households experience multiple, interacting and sometimes compounding vulnerabilities at the same time. Subsequently, multi-dimensional and compound vulnerability is likely to become increasingly central to future research agendas. Drawing on Room's (2000) "snakes and ladders" (decline and advancement in wellbeing due to expected and unexpected variability) and "buffers and passports" (resilience stock and ability to take opportunities) approach, this paper has sought to review different approaches to vulnerability in order to help further the analysis of multi-dimensional vulnerability and resilience.

5.2 WHAT DOES WELLBEING ADD TO THE ANALYSIS OF VULNERABILITY AND RESILIENCE?

In light of the above, what might a human wellbeing approach contribute to the analysis of vulnerability? The discussion thus far can be used to identify six contributions to the analysis of vulnerability and resilience, as follows:

- i. Insecurity is a dimension of poverty and illbeing in its own right (subjective wellbeing), and perceptions of insecurity can frame and influence both material and relational domains of wellbeing.
- ii. If insecurity is chronic or the "norm", rather than a crisis/shock, then wellbeing helps understand various sources of stressors.
- iii. Vulnerability and resilience are not opposites—resilience is a sub-set of vulnerability as capacity to cope—and wellbeing helps to identify material, relational and subjective dimensions.

- iv. A wellbeing lens aids analysis of information on the causes of vulnerability, and considers the dynamics of vulnerability before, during and after the hazard occurs.
- v. Wellbeing helps move analysis from thresholds to continuums and dynamics—from vulnerability to poverty (based on a poverty-line threshold), to vulnerability to greater poverty severity—and towards a focus on processes.
- vi. Wellbeing can help with the question of “vulnerability/resilient to what?”, and with the identification of different entitlement losses, not only in the material domain (land, labour, state transfers, remittances) but also as regards the relational and subjective dimensions. For example, the actual experience of feeling vulnerable and of being exposed as vulnerable can have implications for the behaviour of individuals or households in the future.

5.3 TOWARDS AN AGENDA FOR FUTURE RESEARCH

Analysing vulnerability through a three-dimensional human wellbeing lens illuminates a number of avenues for future research. While we have mapped out a preliminary framework here, many questions surround the specific *processes* of how harm and vulnerability are shaped. For example, how do entitlement failure types—production-based entitlement, labour entitlements, trade entitlements, transfer entitlements—interact with stressors and shocks? And how are vulnerability and resilience transmitted across time and generations? There is also a need for disaggregation in future analyses. Recognising how relational and subjective aspects of wellbeing vary according to an individual’s or household’s position in society is central to understanding how exposure to risk is experienced (do attributes such as class, ethnicity and gender, for example, affect what kinds of snakes and ladders are faced?), and how it is dealt with. And how does the nature of the exposure (shock or stressor, for example) shape vulnerability and resilience? Under what circumstances does a response to an exposure negatively affect vulnerability in the longer term? Finally, taking into account subjective differences, there is also a need to identify which buffers and entitlements are likely to provide the best “form of defence” against various risks. Clarifying these matters could have implications for future policy geared to build resilience and reduce vulnerability.

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NOTES

1. For more comprehensive reviews, see Alwang et al. (2001); Bohle (2001); Sharma et al. (2000).
2. The literature on entitlements and famine has had a “major theoretical, empirical and policy impact” (Fine, 1997: 619). Aside from influencing the practice of major global institutions, the literature has also driven the concept of entitlement into other areas of interest, from the welfare system (entitlement to benefits) and the legal system (entitlement to property rights) to human rights (Fine, 1997). Entitlement failure exists when there is a failure to establish command over sufficient resources for survival (Dreze and Sen, 1981). This is fundamentally about the relationship between endowment and exchange. As Elahi (2006: 544) points out, endowment, which is determined by one’s entitlements, refers to an individual’s ability to command a resource through legal means by means of a process of exchange. For example, an individual can sell (exchange) his or her labour power (endowment) in return for a wage (resource). Entitlement underpins the entire process. Although strongly influenced by a material approach insofar as the framework tends to deal with the ownership of tangible assets, entitlement also incorporates relational aspects as vulnerability depends to some extent on the nature of “terms of trade relationships” (Vatsa and Krimgold, 2000: 136).
3. The WeD research group based at the University of Bath in the United Kingdom found that the relational and community aspects of wellbeing were particularly emphasised in the countries of study and “relatedness” in people’s lives was central for wellbeing. Further, there was often a strong moral aspect of subjective wellbeing related to collective aspects of wellbeing and the community, rather than just individual preferences (see discussion in White, 2008).
4. Entitlements are “the set of alternative bundles of commodities over which one person can establish ... command” (Dreze and Sen, 1989: 9–10).
5. See also Kabeer (2002) for immediate needs/long-term goals balancing among South Asian households.



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