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Reducing people's vulnerability to natural hazards communities and resilience

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Research Paper No. 2008/34

Reducing People's Vulnerability to Natural Hazards

Communities and Resilience

Terry Cannon*

April 2008

Abstract

The concepts *vulnerability*, *resilience* and *community* are widely used and abused in the literature on natural hazards and disaster risk reduction. This paper seeks to bring greater rigour in their use. In particular, vulnerability must be understood as a set of socioeconomic conditions that are identifiable in relation to particular hazard risks, and therefore perform a predictive role that can assist in risk reduction. Resilience is often confused as a concept, sometimes seen as the inverse of vulnerability, and by others as an independent quality. These confusions may be especially relevant in the context of §policy for disaster risk reduction at the scale of community. Here there is often an idealized notion of community as undifferentiated and unproblematic.

…/.

Keywords: household analysis, political economy, economic development, vulnerability, resilience, community, natural hazards, disaster

JEL classification: Q54

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Vulnerability (to natural hazards) should be understood in the context of the individual and household as being composed of five (interacting) components: livelihood, baseline status, self-protection, social protection, and governance. The paper highlights the key problems associated with disconnections between these that result in rising vulnerability. In particular, it examines vulnerability in the context of the current expansion of interest in community based disaster preparedness (or management). For this to be effective, a clear analysis is essential of the relations between disaster preparedness and governance, especially the way that power operates at the community level. The ways in which community can operate to support, undermine or be irrelevant to disaster preparedness are analysed. It concludes by suggesting the conditions that are required for community to have any real significance as a component of risk reduction.

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1 Introduction

Looking at the enormous literature on disasters, and the documents of innumerable conferences and workshops, several keywords keep coming up: *vulnerability*, *resilience*, and *community*. Yet there seems to be a great deal of confusion about what they mean and their significance in disaster preparedness. To make *vulnerability* meaningful, we need to have a much deeper understanding of it, to be able to use it in analysis, preparedness and with the power of prediction—not of the hazard but of the people exposed to risk. Then there is *community*, a word that always seems to be used to convey such a positive attitude that we might wonder if there is anything that 'community' cannot do! Communities are regarded as if they have qualities that somehow make them immune to the conflicts and antagonisms that permeate the rest of society. And yet as we shall see, despite the rather exaggerated expectations of them, working with communities (whatever that means) does seem essential for disaster preparedness.

Resilience is tricky too. It is noticeable how it is hardly ever used *before* a disaster. Afterwards outsiders find that people—often in a *community*—have apparently demonstrated their coping strategies and resilience. Of course they have been resilient: that is why they are still there. But there may be many more that perished, the coping process may have been appallingly awful, and resilience may mean bouncing back to a situation that is much worse than before the disaster. For it to be useful, we need to know whether people can cope or be resilient *before* a disaster happens. There is the danger that outsiders, impressed by the mere fact of survival, romanticize the virtues of resilience. The task surely is not to marvel at this, but to create the conditions that make coping unnecessary and resilience much more than a return to vulnerability.

This paper tries to unpick the meaning of these words so that we can use them in a more useful way. We can start with *vulnerability*, a word that is often confused with poverty, deprivation, marginalization and other connotations of victimhood. Vulnerability is also often 'discovered' after the event, as in typical disaster reportage that finds that 'most of the victims were from vulnerable groups'. This fails to recognize that for the concept to be at all useful, it must be *predictive*. To begin to make this work, we need to move away from a concept of vulnerability involving passivity and suffering, to one that shows the causes and can point the way to how it can be reduced. This means increasing capacities as well, and therefore fostering and enabling people's resilience.

The idea that people have capacities (or capabilities) and not just vulnerabilities has received increasing recognition in the past fifteen years, especially after the book *Rising from the Ashes* (Anderson and Woodrow 1989/1998) was published. This gave a voice to the more positive side of people in disasters, and developed the framework of capacity and vulnerability analysis (CVA).[1] The idea is that people should not be perceived as helpless victims, but as agents with the ability to cope and demonstrate resilience with their own resources. For instance, it is widely known that the greatest share of emergency response and rescue in most disasters is carried out by the local

[1] There is a review of the CVA approach, together with other methods of assessing vulnerability, in Cannon, Twigg and Rowell (2003).

people themselves, demonstrating that they have important capacities and are not simply vulnerable and waiting passively for outside help.[2]

The plan of this paper is first to examine what *vulnerability* means—to get some deeper sense of its components and causes. This is then linked up with *resilience* to show that for each aspect of vulnerability, people and sometimes communities have positive qualities that can counter their vulnerabilities. By breaking vulnerability down into its components, we can realize that it is not uniform or all-encompassing. We can then examine the relationship of both vulnerability and resilience with the idea of *community*, so that we understand whether community is a valid way of understanding the social context of disasters, and what it can and cannot be expected to do in disaster preparedness.

2 What does vulnerability mean?

Vulnerability has become one of those slippery terms (like 'sustainability') that is now used to signify so many different things that it is in danger of losing any real meaning. It is often used in a very vague way to indicate that there are problems for people who are 'vulnerable', but without making much specific reference to the causes. Often it is even used without reference to any particular hazard or risk—people are simply described as vulnerable because they appear to be living in difficult circumstances, or have already been badly affected by a hazard. We need to understand that vulnerability has a number of components that must be understood separately.

3 Vulnerability and its components

It now seems widely accepted that 'natural' disasters are not in themselves natural: a disaster only happens when a hazard has an impact on a vulnerable population.[3] What is needed is a precise definition that enables us to identify in advance those who may suffer from the impact of a particular hazard. First we can examine the components of vulnerability to understand what causes some people to be more at risk of a hazard than others. We can then analyse the interconnections of vulnerability with resilience. Can vulnerability be reduced by building up capacities that foster resilience and enable 'positive' rather than 'distress' coping?

Vulnerability can be defined in terms of five components that capture all aspects of the exposure to risk from natural hazards (see Figure 1):

i) Livelihood strength and resilience

ii) Wellbeing and base-line status

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[2] But as we shall see below, it would be wrong to idealize this emergency response as signifying community cohesion. It is difficult in many cases to find an equivalent willingness to engage in collaborative preparedness and mitigation activities, and in many cases as local communities recover they reproduce similar patterns of differential vulnerability to those of the pre-disaster period.

[3] For an elaboration of this argument, see for instance Wisner et al. (2004), especially chapters 1 and 2.

iii) Self-protection

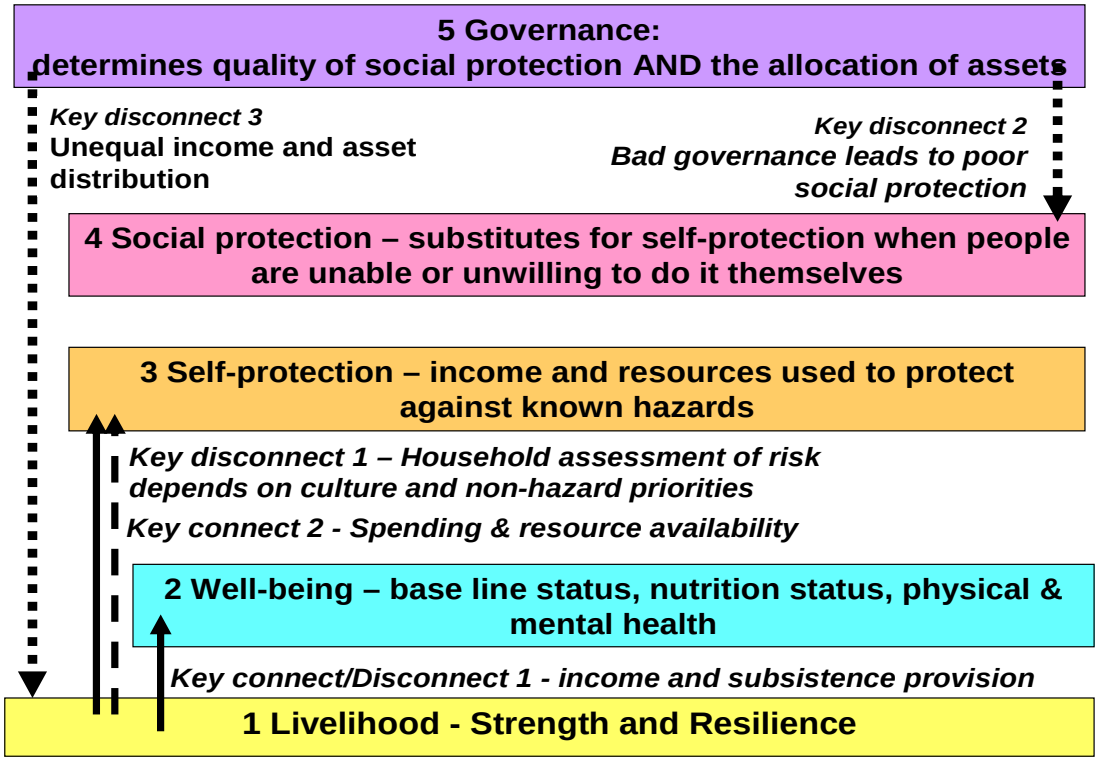
iv) Social protection, and

v) Governance.

These five are interrelated, and the linkages between them are especially important in understanding the causes of vulnerability and the design of policies to reduce it. The most important links are those that affect livelihood strength and social protection, both of which are largely dependent on governance to determine how effective they are.

The basic building block in determining a person's vulnerable is how satisfactory their livelihood is (and how resistant it may be to hazards). A person's wellbeing and self-protection are closely determined by the strength of their livelihood (illustrated in the diagram, Figure 1). In turn, the way that different livelihoods are arranged between different groups of people depends very much on the type of governance that operates. The governance framework of society influences how income and assets are distributed, and therefore the likely success of different people's livelihoods. Likewise, social protection is strongly related to the type of governance in operation, including the way that civil society operates. For instance, in some countries the opportunities for NGOs and other organizations to fill in the gaps in self protection are greater than in others. But in others it is even dangerous for NGOs to press for the government to fulfil its normal duties to the people.

Figure 1
Five components of vulnerability and their main determinants



3.1 Livelihood, its strength and its resilience to hazards

Livelihoods enable people to subsist: on the food they grow themselves, or earnings that are used to provide necessities and hopefully something more. Each livelihood activity requires a person to possess or have access to a range of assets (sometimes called 'capitals') such as farm land, a skill, tools, livestock, etc.[4] Those who do not have their own livelihood (e.g., children, many women, the elderly, the disabled and sick) are either dependent on other household members, or on welfare or charity (from the state or some other organization). In other words, these groups are often entirely or mainly dependent on a type of social protection provided by their kin or some wider grouping.

A livelihood can involve many types of income-generating activities, ranging from begging to business, from farming to factory worker, from prostitution to servant. In towns and cities, most people depend on being employed or having some activity in the informal sector. The majority of urban dwellers have few tangible assets, and they rely on earning cash by depending on their skills or networks. In rural areas of developing and transition countries (still the majority of the world's population), most people tend to be more dependent on being able to grow food—on their own or rented land. This is often combined with selling some crops or having an extra income-generating activity that provides essential cash. Most people strive to achieve sources of income that provide them with more than the minimum for subsistence, but as we know from the continued high levels of poverty in the world, many millions do not succeed.

People's livelihoods are their first 'line of defence' against disasters: it is the basis for their nutrition, their baseline status and their general health and welfare. It also determines the educational level they are able to secure for their children (who will eventually 'inherit' this as an intangible asset in their own livelihood pattern). In relation to hazards, the livelihood is also the basis for their capacity to protect themselves or not—self-protection is largely determined by the level of income available to a household to construct the right type of home in a safe location.

Livelihoods clearly have different 'strengths' in themselves—they bring about higher or lower returns, usually dependent on the amount and quality of assets available to the person. But in relation to hazards we are also interested in how resilient they are. For example, is the livelihood resistant to the impact of an earthquake, or will the assets be damaged? In Gujarat (India) three years after the 2001 earthquake, many people consider that 'they are still ten years away from getting their life back on track'. But one group of very poor craftswomen have found a way to make their lives better even than before the disaster. The key to this success has been their membership of a union supported by the Self-Employed Women's Association. This has enabled the women embroiderers to get raw materials, tarpaulin covers for working under, and also the opportunity to rebuild safer houses (with roofs that collect rainwater, too) (Gidley 2004). Their livelihood has been restored but to a better condition than before.

Disaster preparedness needs to be about strengthening and protecting livelihoods: resilience needs to be built into the system. This is not easy, for as we shall see later access to assets and the strengths of different livelihoods are largely dependent on wider

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4 The links between livelihoods, assets and disaster vulnerability is covered in depth in what we call the access model in Wisner et al. (2004: chapter 3).

political factors. On the other hand, some remedies can be relatively easy. For instance, people in Vietnam who lose crucial documents (such as wedding certificate, education certificates, and proof of house ownership) in floods are disadvantaged in their access to relief and to new job opportunities. The Vietnamese Red Cross has been able to provide waterproof plastic containers to help solve this problem.[5]

The main determinants of a livelihood are then:

- amount and quality of assets (capitals) owned or accessible to the person, especially to enable productive and income-generating and/or self-provisioning (subsistence farming) activities
- access to employment activities or other income-generating opportunities when lacking productive assets

There is a very strong linkage of livelihoods with governance. The type and quality of assets available to each person is influenced by the way that wealth and income is distributed between different groups of people, and this is affected by power relations. An obvious case is that of land distribution, which is unequal in many developing countries. Without access to enough land for a farming livelihood, people are forced to find other income-generating activities. Likewise, the progressiveness (or otherwise) of taxation and welfare redistribution are largely a function of the type of government. Vulnerability has increased greatly in the countries of the ex-Soviet Union because of the withdrawal of many pensions, welfare payments, health and social services. Problems may be more intractable when governments themselves are a party to the power relations that have led to the inequalities of wealth. We therefore expect there to be a high degree of correlation between inequality of wealth and vulnerability to hazards: if inequality is high, there will be more poor people with weaker and less resilient livelihoods. It is also generally the case that governments that tolerate high levels of inequality pay less attention to the needs of the poor and vulnerable.

3.2 Wellbeing and base-line status

This component of vulnerability is derived mainly from the strength of a person's livelihood—the amount of income or subsistence that is available from the activities that make up the livelihood. This affects the quality and quantity of an individual's diet (and that of their dependents), and whether he can afford adequate health care. In addition to nutritional status, it involves physical and mental health, his morale, and the level of stress and his sense of security and identity in his household and locality. People with poor nutrition are generally less resistant to disease, and less capable of making a good recovery when further stressed by a hazard impact.

Morale and personal resilience, stress and general mental health are all factors that are likely to affect the ability to resist the impact of a hazard. Morale and stress need to receive far more attention than they do. For instance, high levels of baseline stress in China result in a quarter of a million suicide deaths each year, two-thirds of these by young women. In rural areas, suicide is the third most common cause of death in

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[5] This is not just a problem of floods: many people whose homes were devastated in Bhuj lost their documents and this made it difficult for them to claim compensation (Gidley 2004).

women.[6] It is not difficult to guess the potential for disasters to make this worse. Another issue that is now receiving more attention is the impact of AIDS on wellbeing, and the creation of new types of dependents who require nursing and expensive drugs when previously they have often been the main breadwinners in a household. AIDS is both a hazard and disaster in its own right, but also a cause of further vulnerability in the way it undermines people's livelihoods and baseline status. It is also a major factor in reducing morale and increasing stress for both the sufferers and their families.

The contributing factors in wellbeing are then: (i) nutritional status; (ii) physical health; (iii) mental health, and (iv) security and identity. These are mainly determined by: (i) the strength of the livelihood, and (ii) security and freedom from stress—linked largely also to governance.

What are the connections here with community? For the most part, people's wellbeing is not something that is necessarily improved by being part of a community: it is rather a consequence of their livelihoods, and these can be very unequal within what might be called a community. A community can also be a place where some people experience stress and even conflict. The most valuable impact on the wellbeing of people in a place is likely to be the outside interventions that bring health care, vaccination, and feeding supplements—from the wider community that is not connected with place.

3.3 Self-protection

Being able to acquire adequate self-protection from a hazard depends on people's capability (and willingness) to build a home that is safe from the prevalent hazards, and the ability to site the house somewhere out of harm's way, e.g., from floods or landslides. Whether or not someone is able to build a house that is wind or earthquake resistant is largely determined by their income. Of course they must also want to build safely, and have the knowledge and skills available to achieve proper construction when they do have adequate resources. If knowledge or skills are missing locally, more social protection is needed to fill this gap.

Outsiders are sometimes frustrated by people's apparent unwillingness to take adequate precautions for protecting themselves. This shows up the different priorities and attitudes to risk. An NGO working in a Caribbean island, or even the government itself, may look at the apparent high risk of being struck by a hurricane, and find it difficult to understand when the people do not quickly respond to the encouragement to put in roof reinforcements. But sometimes people are just prepared to take the risk: why spend money on a roof that will be proof against hurricane winds that may never happen, when each and every day the household has to cope with an inconvenient and unhealthy kitchen? When faced with this dilemma in a programme to make roofs wind-proof in a Caribbean island, the Red Cross society decided to help people to improve both.

But of course ideally self-protection should be the goal, though many people are vulnerable precisely because they do not have the livelihood that can 'buy' adequate security. A major reason that people suffer in floods in Bangladesh is because their homestead is not build above the level of what are regarded as normal floods, and it is

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6 BBC News, 29 November 2002 at: http://news.bbc.co.uk/1/hi/ world/asia-pacific/2526079.stm

too expensive for them to achieve this. In Rio de Janeiro (Brazil), the many thousands who endure flash floods and house collapse in the *favelas* (slums) on steep slopes in the city are prevented from constructing their homes in safe places by the high land prices.

So the main determinants of self-protection are: (i) sufficient income; (ii) availability of suitable materials, technical knowledge, and construction skills, and (iii) willingness to take the necessary steps. These are mainly dependent on: adequate livelihood to provide the finances and motivation.

The linkages of these factors with community are not so strong. Community may play some role in providing the networks of skills and knowledge that can facilitate self-protection, but in most situations self-protection is likely to be a very individual process. Where it is inadequate—through lack of income or motivation—the role of social protection is crucial.

3.4 Social protection

Sometimes the type of protection people need against a hazard cannot be done by the individual or the household. It involves perhaps the regulation of land use or the construction industry, to ensure that residences are built away from flood plains or that their structure is resistant to earthquakes. These are functions that must be carried out by society, and if they are not done properly the results can be catastrophic. In the 1999 earthquakes in Turkey and Taiwan, tens of thousands of people died because of the collapse of buildings where construction firms had not followed the seismic codes, and where inspection was inadequate or corrupt.

In other situations, the precautions for disaster preparedness are simply not feasible at the individual or household level, and so the only way to do it is through the wider society (which may include the community). The large concrete shelters built in Bangladesh as refuges from cyclones are only possible on a large scale. They require a sizeable investment that needs help from an outside organization, and some support was provided by the Bangladesh Red Crescent and German Red Cross.

Social protection, therefore, involves forms of hazard preparedness provided by levels of society above that of the individual or household. And sometimes social protection is needed when individuals are just too poor to do it for themselves. It is either a substitute for self-protection (i.e., a function that should be performed by government when people are too poor or not motivated to provide protection for themselves) or it involves precautionary or preventive measures that can only be provided by a higher-level institution because of the cost or scale of operation required.

Social protection is also imperative for specific groups of people that may not have their own livelihood, or cannot acquire adequate self-protection within their households. For example, the elderly are particularly at risk in heatwaves like those in 2003 that affected India (where temperatures reached 50 degrees Celsius) and parts of Europe, where it is estimated as many as 35,000 people died (*New Scientist* 2003a). Clearly, where children, the elderly, the sick cannot or do not receive adequate hazard protection from their own families and households, there is a need for other social groupings to step into the gap. These might range from government through to local religious groups, or national and international organizations and NGOs, including the Red Cross/Red

Crescent movement. These stereotypical vulnerable groups require special attention to ensure that they are properly socially-protected, in case they are unable to rely on a household for support.

The main factors involved in social protection are:

- adequate revenues for the local or national government to do what is needed;
- political will at local and national government level; this provides the motivation to implement building codes, mitigation measures, protection of schools and infrastructure, etc., and
- availability of relevant technical knowledge and ability to implement.

These are mainly determined by the type of governance in operation: the efficiency of planning and building regulation, the level of corruption, whether or not NGOs and civil society groups can operate to promote disaster preparedness, reduce vulnerability and provide assistance.

It would seem that community ought to be highly relevant to social protection: in many cases it would be the logical place for its implementation. But different people play different roles in a community that may show that there is no guarantee of benevolence in their behaviour. For instance, in the 1999 Turkish earthquake, some of the contractors who put up the substandard buildings that collapsed and killed the majority of the people, and the local officials who were supposed to enforce the codes, must have been members of the community. Social protection needs to be based on much more solid understanding of the strengths and weaknesses of the concept of community.

3.5 Governance

Are there still any problems where a dose of good governance is not prescribed to make them better? For more than ten years the World Bank and other development agencies have promoted governance as a key factor that needs to be addressed in trying to improve people's lives in regard to a wide range of issues, often through conditionality attached to aid. So how can it help in disaster preparedness? We need to be quite specific about what the links are between governance and disaster vulnerability, and show what elements of vulnerability and resilience can be improved by better governance. Governance has been defined as 'the arena in which *everyone…* negotiates for their share of space, resources, and entitlement to fulfil their needs and develop their interests. It is about who gets to make or influence decisions, how those decisions are made, and for the benefit of whom' (*World Disasters Report 2004*: chapter 1).

Clearly this also means that governance affects the distribution of risk—the allocation of different levels of vulnerability among groups of people. Governance has also been defined by the World Bank as 'the manner in which power is exercised in the management of a country's economic and social resources for development' (World Bank 1992). This means that it involves not only formal government but also the other systems of power, some of which are possibly more significant than the government itself. The keyword is power. But those who use the term governance often seem reluctance to accept that bad governance is a consequence of those who enjoy the benefits of power wanting to keep it that way. The issues are often discussed as if there

is a rationalist and neutral way of improving governance that is not going to disturb those who benefit from the *status quo*.

Governance is about much more than government, and involves power in the much broader sense in which it is exercised by all actors and stakeholders, including the private sector, civil society and international organizations. Improving governance may mean changing the behaviour of the already-powerful so that their activities do not enhance vulnerability—for instance companies that engage in logging that provokes landslides and flooding. It also means enabling ordinary, less powerful people to affect the priorities of government (e.g., in disaster preparedness), perhaps through self-organization (e.g., community-based organizations), freedom of association, and generally having a voice.

This wider 'power system' also affects people's capacity to take precautions against hazards, their rights to express their needs, and to have access to the relevant technical knowledge and preparedness measures and therefore reduce their vulnerability. This becomes very evident in the *World Disasters Report* 2004 chapters on 'The Urbanization of Risk' and on 'Heatwaves', both of which discuss the problems of inadequate or bad governance in making vulnerability worse. In the slums of Mumbai (Bombay), 'illegal' slum dwellers may be afraid to make their homes more flood-proof for fear that the authorities will evict them and their investment lost. In some countries it is even difficult to campaign against corruption and inefficiency. For instance, in China medical staff were afraid to expose the official cover-up of the SARS epidemic in 2003, though eventually there was sufficient pressure that the minister of health and mayor of Beijing were removed from their posts (*New Scientist* 2003b).

If there is a relationship between bad governance and high levels of vulnerability, then it is essential to include governance as a component of vulnerability. This factor has been discussed in terms of democracy and freedom of the press in relation to famines by Amartya Sen (Nobel Prize winner in economics) and Jean Drèze (Drèze and Sen 1989). In countries where the press is relatively free, they consider that famine has been largely avoided because of the potential for the press to draw attention to the problem. By contrast, some of the worst famines in the twentieth century occurred in totalitarian states where information was suppressed, as in China (1958-62), Ethiopia (1974), and currently in North Korea. No better demonstration of the relevance of governance to disaster vulnerability is needed, both in its effects on livelihoods and on social protection.

4 Resilience and vulnerability

The concept of resilience is similar in some ways to the idea of capacity. It reflects both the fact that people (some people?) can show an amazing capability to bounce back after a hazard has struck, and also that their 'non-victimhood' deserves to be acknowledged. Resilience involves the ability of systems to restart quickly after a hazard has struck, and to 'adapt existing resources and skills to new systems and operating conditions' (Comfort, quoted in Davis 2004). Pelling defines it as:

> the ability of an actor to cope with or adapt to hazard stress. It is a product of the degree of planned preparation undertaken in the light of a

> potential hazard, and of spontaneous or premeditated adjustments made in response to felt hazard, including relief and rescue (Pelling 2003: 48).

This suggests that it involves people's conditions before a hazard strikes, as well as their ability to respond and recover afterwards. In other words, like vulnerability it has a predictive aspect: it should be possible—on the basis of the characteristics of a group of people who are exposed to a particular hazard—to identify their capacity for resilience. In fact, if people have a high level of resilience, they will not be so vulnerable. The two concepts can by and large be seen as the two ends of a spectrum. High levels of vulnerability imply a low resilience, and vice versa. If we now relate the idea of resilience to the five components of vulnerability outlined above, we can identify the ways that vulnerability can be reduced by increasing resilience. The pattern of highs and lows in the different components of vulnerability and resilience will vary between individuals, households, groups, communities and so on.

So we find that:

- A strong and resilient *livelihood* means that a person's income-generating activities are sufficiently robust and adaptive in the face of a hazard;
- *Wellbeing and base-line status*: greater resilience is possible when people are facing a disaster with more robust health and good nutrition. They are likely to resist illness and have better morale to cope with the aftermath of a hazard;
- *Self-protection*: high levels of self-protection will enable people to guard their assets and homes, reduce mortality and injury, and not have to spend time working to replace key possessions or rebuild homes; if adequate self-protection has not been possible, then social protection should be filling the gap;
- *Social protection*, when properly in place, will mean again that people can more quickly become operational after a hazard strike, restoring their livelihoods, making good the damage, and providing the resources needed for relief and recovery;
- *Governance* that works well should be improving livelihoods and the effectiveness of social protection. But the institutions involved in governance must themselves be resilient—capable of remaining in operation to fulfil their relevant tasks in relief, recovery and the incorporation of measures that reduce future vulnerability as well.

This all seems very straightforward, especially at the household level. But it becomes more difficult when we consider wider aspects of society, and community. For example, if some people in a community have a 'strong' livelihood (and are wealthy) is this a 'resilience factor' for them, or a partial cause of the weaker livelihoods of others? And is being part of a particular network a capacity, or a denial of capacity to others (as with castes in India)? In other words, we need to acknowledge that within communities, resilience varies according to opportunities that are distributed unequally. But this is difficult, because many governments are reluctant to deal with inequality and inadequacies in people's livelihoods. Development and disaster preparedness agencies find it difficult to challenge this directly.

Dealing with resilience then tends to focus on three areas of potential support that should benefit a community and which are focused on the social protection of

infrastructure, community assets (e.g., schools, clinics), and sometimes livelihoods. The objective is to:

- increase the capacity to absorb or withstand abnormal pressures or stresses—a *risk reduction* function;
- achieve the ability to cope with hazard impacts and quickly restore activities without significant damage—an *emergency management* function;
- promote adaptive behaviour and the ability to make adjustments to any new circumstances that may apply after a hazard impact—*mitigation, emergency management* and *recovery* function (adapted from Davis 2004).

Policy for promoting resilience is then an arena where vulnerability is reduced through a focus not so much on each component of individual or household vulnerability, but rather on the aspects that can actually be more directly affected by action taken by community-based organizations and outside agencies. It is akin to finding the aspects of resilience that can be dealt with as an 'aggregated' system rather than dealing with the varying degrees of vulnerability across the entire five components.

5 Communities and resilience

What does a community feel like, what does it involve, and does everybody belong to one? And how is it different from just yourself or your household? These seem rather important questions in disaster preparedness and recovery. The idea of community is frequently used as if it is the 'level' where, as a bare minimum, consultation should take place, where participatory activities are conducted, and disaster preparedness should be carried out. This is because we tend to take it for granted that a community is a good thing: it evokes a sense of collaboration and harmony, an assumed coherence, usually associated with a place or location, often a village or an urban neighbourhood (which itself embodies an assumption of 'neighbourliness').

This 'place' or location is supposedly the reason that there is a community—it is assumed that a group of people who share this place by living and working there together are somehow connected with each other in a more meaningful way than they are with others. It is this benign and supposedly beneficial aspect of community that outsiders want to tap into: these are qualities that, outsiders hope, exist in a place to promote disaster preparedness. A typical sign of this is evident in a report from the UNDP India office:

> There is a growing realization that many top down approaches to disaster management fail to address the specific local needs of the vulnerable communities, as it does not take into account the potential of local resources and capacities. The community being the first to confront and respond immediately in the exigency of any emergency, there is a need to build up the capacities of the communities, enhance the skills and traditional coping mechanisms for minimizing losses resulting from disasters (GoI 2003).

But how valid is this notion of community as a caring, moral and cooperative group of people attached to a place: is it just wishful thinking? Are there any dangers in assuming

that such communities exist and is the 'place' or 'group' of people where something should be done? At times it seems that it can work extremely well, as in the case of flood preparedness carried out in a highly sophisticated way by the people living on an island in the River Nile in Khartoum, Sudan (*World Disasters Report* 2004: chapter 1). There are many examples in the literature of the success of disaster preparedness when organized on a community basis, as for example in India and the Philippines. But even in these examples, we find a rather constrained idea of community: it becomes defined in terms of those people who will cooperate with each other, and does not necessarily include everybody in a particular location. One disaster preparedness project in Cambodia found considerable difficulties in dealing with the internal tensions within community. As the project leader says:

> The more powerful in society may not want the most vulnerable to participate. Therefore changing this may require advocacy by the NGO which is not really compatible with a participatory research methodology, or by-passing the more powerful in society which is not sustainable once the NGO has left. Doing this may actually endanger the most vulnerable, putting them at risk of reprisals (Williams 2003: 22).

We need to be realistic, or disaster preparedness may not work. There is a lot of evidence that people who live in what are assumed to be communities do not always behave favourably towards others. In the past ten years we have seen the most appalling examples of the disintegration of communities in Rwanda and former Yugoslavia. In sociology the problem has been known for many years. A recent survey of the concept shows the concerns:

> An oft-repeated message of the community studies literature is that communities are not very community-like. They are as rife with interest, power, and divisions as any market, corporation, or city government (Brint 2001: 6).

He reports on sociology studies from more than fifty years ago that show 'the comforting image of community-centred governance' was acknowledged to be an illusion, and instead that supposed communities had 'a self-interested and self-reproducing power structure ruling from behind the scenes' (ibid.: 6). Yet half a century later, we find that policies for decentralization and local governance in developing countries are a cornerstone of World Bank and UNDP policies, pushing an idealized notion of locality and community to the forefront of policy.[7] Alongside this, the idea of community in disaster work enjoys unprecedented legitimacy today.

Communities are places where normal everyday inequality, exploitation, oppression and maliciousness are woven into the fabric of relationships. These are then scaled-up from this micro-level to become part of the national social and economic problems. For example, half the people in any community are female: can it really be called a community when the gender divide itself is so significant in much of the world? Just

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7 The sociology studies of community invoked by Brint are mainly concerned with developed economies, but I am convinced that readers who are familiar with most other parts of the world will recognize this analysis are being relevant to developing and transition countries the world over. What seems extraordinary is the uncritical faith in the community that seems to have arisen, which seems to be out of desperation to make things better.

because it happens at the grassroots, the daily grind of oppression and inequality is just as harsh. A community may function in relative harmony for much of the time, but the apparent cohesion and collaboration is a false impression based on the necessity of those who have less power to work with and for those who have more power.

On a visit to Tamil Nadu (south India) I went with a friend to his home village. There I was introduced to the headman, who proudly showed me round the temple he was constructing to earn religious merit on this earth. While the headman shook my hand in welcome, my friend explained that he was actually the largest landowner, and that a few years before some of the agricultural labourers in the village had demanded better wages. This man had arranged for the two ringleaders to be killed as a lesson to them all. We could find similar stories in many communities around the world. Another extreme example of this dilemma comes from Cambodia, where an international NGO found it difficult to get some villagers to accept the need to help the most vulnerable people. The other villagers' attitude was that they were suffering because of their reincarnated status: they were being punished for what they had done in a previous existence, and so it would be wrong to intervene on their behalf (Williams 2003).

In the place we want to call a community, some have better opportunities than others, some are richer than others, and some are safer than others. In the flood-prone north Indian villages I have visited, the outcaste untouchables (now often referred to as Dalits) live in squalid, flood-prone settlements on the low-lying edges of villages, while the better-off have homes that are on raised land at the centre. Red Cross workers in a village in the Philippines found that the school was at the bottom of a hill and was frequently flooded, while the mayor lived on dry land at the top. Fortunately the presence of outsiders embarrassed him enough to allow the school to be relocated on safer land that he owned. So to understand vulnerability is to understand community not as a harmonious place with the potential for mutuality and risk sharing, but a place of unequally distributed risks and vulnerabilities.

What we have to establish for DP is what may be positive and helpful about community, and what its limitations are. The crucial aspect that needs to be considered is the motivation—the set of incentives—which people may have to connect them with each other in a particular place, and how these can be utilized in the specific context of hazards and disaster preparedness. We need to:

- examine the components of vulnerability, and the relevance of community to each of those components and any allied process of building resilience;
- highlight the significance of community in disaster preparedness—before and after a hazard strikes;
- show that community has many meanings—from the neighbourhood, up to the international community—and each one has differing significance depending on the vulnerability faced;
- avoid the idealising the concept of community;
- show that community has real meaning in disaster preparedness only when it can properly compensate for the lack of individual vulnerability and can contribute to resilience for the benefit of the most vulnerable;

– show that these areas of benefit are mainly concerned with governance, social protection, and the protection and strengthening of livelihoods; and

– show where disaster preparedness policies can be a crucial component of community-based disaster prevention.

6 What role for community in disaster preparedness?

The lessons are then that we must not idealize communities—they may be able to cohere and enable collaboration for some purposes but not others. And sometimes the way they produce collaboration may be possible only under the 'moral influence' or with the additional incentives provided by outsiders. This suggests that the 'internal imperfections' of community can be compensated by external influences. A non-disaster example of this is the significant progress that has been made in women's rights in many countries around the world in societies and communities where internal pressure for such changes would be taking a lot longer to produce results. Sometimes external support provides legitimacy for existing but suppressed views that exist unvoiced within the community. But equally, having enabled those voices to be heard, what happens after the outside agency leaves the scene? Have new dangers—of recrimination, envy, or hurt pride—been instigated for the vulnerable to face afterwards?

The issue of motives to encourage collaboration is also crucial: as with all aspects of human behaviour, people respond to incentives. In what types of situations in DP is it legitimate for outsiders to provide the shift in motivation—the encouragement of changed behaviour—by the provision of additional or *different* incentives? It is doubtful that people within a community can be expected to respond purely and simply to non-material 'feel good' incentives—even if they imply future disaster reduction. We need to understand what will motivate people to collaborate in vulnerability reduction. The best option here may be to encourage community involvement in social protection measures that fill the gaps in self-protection, and that strengthen and protect livelihoods of all members of the community. This is the basic idea behind the concept of disaster resistant communities that originated in the USA, where existing business interests and patterns of assets and livelihoods are left untouched, but a form of collaboration by all is fostered through the catalyst of disaster preparedness advice, and mitigation incentives.[8] A key component of the idea is that livelihoods are protected and the normal pattern of economic activities is made resilient to expected hazards.

However, in many poor countries, this continuation of the existing economy is likely to perpetuate precisely the conditions that generate vulnerability in the first place. Communities may involve areas of common interest in some activities; but the community is also the basis for competition, not collaboration. Disaster preparedness has to recognize that communities do not necessarily allow for the best conditions for reducing vulnerability. Sometimes it takes the wider community of outsiders to shake up the aspects of community that are preventing the reduction of vulnerabilities. This is

8 An introduction to the concept and how to promote disaster resistant communities is given in Geis (2000: 151-60).

confirmed by the experience of the 'capacity building for climate change' project in Vietnam, where the project leader has reported:

> It was realized that the effective and successful disaster reduction initiatives are often attributed to the spontaneous participation of the communities and involvement of the people in Vietnam. However, in most cases, it can be observed that the community initiatives produce results so long as there is external support from the NGOs and international organizations (Khan 2004).

Working at the community level in particular places may make it possible for a meeting of minds, objectives and programmes when an outside organization wants to encourage change. For programmes that are meant to be for the benefit of people at the grassroots, communities may be the essential basic level for understanding how those changes can be planned and implemented. But community work like this may only be possible in situations where poor and less powerful people feel strong and safe from reprisal. It is interesting that much of the advance made in community-level work has been in areas where local empowerment has taken root, e.g., in the Philippines, Bangladesh, parts of India, South Africa and parts of Latin America.

A CARE flood proofing project in Bangladesh may provide evidence for this potential. Running from 1999 to 2004, it is a:

> Community-based approach and strategy, and includes a wide range of components like: community mobilization and awareness, household flood proofing measures, small-scale agriculture, social forestation, infrastructure and community resource management, and income and livelihood protection.

The results seem to have been very positive:

> The project has changed significantly the livelihood of char [island] people. In recent discussion sessions, the communities spontaneously identified the difference that occurred due to the project interventions… [in one village] for example, people from the mainland now express interest in marrying with people living on char lands (Islam 2004).

It is worth noting the inclusion of resource management and livelihood issues in the project, and the fact that what was intended as a disaster management project had the effect of connecting up with broader development issues, and improved the marriage prospects of the people!

But there are lots of problems involved in working with communities. One of the most serious is also the most obvious. It is impossible for outside organizations to work in every community! This problem has two aspects. First, the sheer number of communities makes it impossible for organizations to be everywhere. Second, some issues can only be resolved at national or even the global level. The factors that will reduce vulnerability in the areas of livelihood strength and in governance are not capable of being resolved locally.

7 Where do we go from here?

When asked about their vulnerabilities and the dangers they face, people at the grassroots often surprise outsiders with their answers. This shows the mismatch between outsiders' and the local people's own perception of risk. The community is often more concerned about the hazards of everyday life rather than the random and infrequent chance of being struck by an earthquake or hurricane. But if we analyse vulnerability and resilience as outlined above, we find that a crucial component of it is the strength of people's livelihoods. In other words, the people's priorities in their everyday lives do join up with the narrower concern about the potential impact of hazards.

So at community level—and with full awareness of the problems of using that concept—vulnerability and capacity assessments need to be carried out that examine each of the five components of vulnerability. These must then be cross-checked against the validity of the community idea in each place:

- Which groups or sections of the community experience greatest vulnerability on each of the five vulnerability components?
- How are the different aspects of vulnerability and resilience distributed among the various groups?
- Are any aspects of vulnerability and resilience for one group being made worse by the behaviour of another group within the community?
- What are the prospects for collaboration between groups in overcoming these problems, given that they have not been adequately tackled so far?
- Are some people or groups likely to benefit more from any policy interventions than others, and if so what are the potential consequences of this?
- What role do outsiders have in being catalysts for any changes, and is their impact divisive or enhancing of cooperation, leading to a dependency culture, and likely to be permanent or only last as long as they are there?

Where the local community may be inadequate to the task of reducing vulnerability, then other ways of building different types of wider community may be considered. For instance, where local community is not appropriate to the task of vulnerability reduction, we may need to think of community as something that extends much further afield, to include the national and international solidarity that is highlighted in the IFRC *Strategy 2010*: 6: 'To improve the lives of vulnerable people by mobilizing the power of humanity'. If the only way to reduce vulnerability and increase resilience is for wider communities to act as a surrogate and support for the difficulties of local communities, then perhaps that is what has to happen.

References

Anderson, M. B., and P. J. Woodrow (1989/1998). *Rising from the Ashes: Development Strategies in Times of Disaster*. Boulder: Westview Press 1989 and Intermediate Technology Publications/Lynn Rienner 1998 reprint.

Brint, S. (2001). ‘ “Gemeinschaft” Revisited: a Critique and Reconstruction of the Community Concept’. *Sociological Theory*, 19 (1): 1-23.

Cannon, T., J. Twigg, and J. Rowell (2003) ‘Social Vulnerability, Sustainable Livelihoods and Disasters’. Report to DFID Conflict and Humanitarian Assistance Department (CHAD) and Sustainable Livelihoods Support Office. Available at: www.livelihoods.org/static/tcannon_NN197.htm .

Davis, I. (2004). ‘The Application of Performance Targets to Promote Effective Earthquake Risk Reduction Strategies’. Paper presented at 13th World Conference on Earthquake Engineering, 1-6 August. Vancouver

Drèze, J., and A. Sen (1989). *Hunger and Public Action*. Oxford: Clarendon Press for UNU-WIDER.

Geis, D. E. (2000). ‘By Design: the Disaster Resistant and Quality-of-life Community. *Natural Hazards Review*, 1 (3): 151-60.

Gidley, R. (2004) ‘Gujarat Quake Survivors Get on with Life’. Reuters AlertNet, 5 March. Available at: www.alertnet.org/thefacts/reliefresources/107850640458.htm

GoI (Government of India) (2003). ‘Disaster Risk Management project, Quarterly Report April-June’. Available at: www.undp.org.in/dmweb/Report/Quarterly/3QtrlyRprt.pdf

IFRC (nd). *Strategy 2010*. Geneva: International Federation of Red Cross and Red Crescent Societies.

IFRC (2004). *World Disasters Report 2004: Focus on Community Resilience*. Edited by J. Walter. Geneva: International Federation of Red Cross and Red Crescent Societies.

Khan, S. (2004). ‘Vietnam Case Study’. Paper presented at the international symposium on Community Legacy in Disaster Management, 7 February. Kobe. Available at: www.hyogo.uncrd.or.jp/publication/proceedings/2004Symposium/pages/materials.htm

New Scientist (2003a). 10 October.

New Scientist (2003b). 22 April. Available at: www.newscientist.com/news/news.jsp?id =ns99993648

Pelling, M. (2003). *The Vulnerability of Cities*. London: Earthscan.

Williams, A. (2003). ‘The Viability of Integrating Community Based Disaster Management within NGO Strategic Management’. Coventry: Coventry University. Mimeo.

Wisner, B., P. Blaikie, T. Cannon, and I. Davis (2004). *At Risk: Natural Hazards, People’s Vulnerability and Disasters*, 2nd ed. London: Routledge. Chapters 1-3 are available (item ID 7235) from the UN ISDR virtual library at: www.unisdr.org/eng/library/lib-select-literature.htm

World Bank (1992). *Governance and Development*. Washington, DC: World Bank.