



POVERTY AND VULNERABILITY PROGRAMME

Poverty and Vulnerability to Environmental Stress: Working with Multiple Dimensions of Poverty

Introduction

Many have argued that poverty and vulnerability are not synonymous – it is not always the poor that are the most vulnerable to environmental stress (Wisner et al., 2004, Lok-Dessallien, 1998). At the same time, it is widely recognised that vulnerability to environmental stress is of particular concern in assuring sustainable livelihoods for the poorer populations. The poor, who more often live in high risk areas (such as marginal lands in urban and coastal areas), are likely to suffer the occurrence of climate changes and severe climatic events most, experiencing serious impacts on their livelihoods, loss of life, negative effects on economy and development, and a large diversion of resources from other pressing needs due to environmental degradation. Most poor countries and poor people are also the least endowed with adaptive capacity or capacity to cope, resulting in higher vulnerability (AfDB, 2002; International Federation of Red Cross and Red Crescent Society, 2002; IPCC, 2001; World Bank, 2001).

The level of income is far from the only dimension of poverty that plays a role in shaping vulnerability to environmental stress. Traditional approaches to poverty, which see it as simply an economic condition (often expressed in relation to living on less than \$1 or \$2 a day for individuals, or as per capita GNP for nations), are therefore not sufficient in capturing the relationship between poverty and vulnerability to environmental stress, nor will such approaches provide sufficient guidance for vulnerability reduction. Instead, a multidimensional approach to poverty is necessary if poor people's vulnerability to environmental stress is to be reduced.

The concepts of poverty and vulnerability to environmental stress

Poverty resists measurement because it is a multifaceted predicament and can thus not be adequately captured by one-dimensional measures based on income or expenditure. Different ways of understanding poverty lead to different ways of dealing with it. The multidimensionality of poverty has therefore gained acceptance by many of the main players in the "poverty arena" (Box 1). A multidimensional

poverty definition includes all of the most important areas in which people of either gender are deprived and perceived as incapacitated in their local context. The main poverty dimensions commonly included by those who view poverty as a multidimensional concept are (OECD, 2001):

- *economic capabilities* – the ability to earn an income, to consume and to have assets, which are all key to food security, material well-being and social status;
- *human capabilities* – health, education, nutrition, clean water and shelter;
- *political capabilities* – human rights, a voice and some influence over public policies and political priorities;
- *socio-cultural capabilities* – the ability to participate as a valued member of a community; and
- *protective capabilities* – enable people to withstand economic and external shocks.

All of these dimensions affect each other. This becomes especially clear in a discussion on vulnerability, where people's protective capabilities may be low due to inadequate income, poor health and a lack of education, or because they lack the possibility to influence political decisions on land tenure and credit systems. The fact that different dimensions of poverty are closely interrelated, while still distinct and imperfectly correlated is a major reason for a multidimensional concept.

In general terms, vulnerability is defined as "the differential susceptibility to loss from a given insult" (Kasperson et al., 2001). A vulnerability analysis commonly addresses three major dimensions of vulnerability:

- *Exposure* to multiple and interacting stresses. Exposure is related to both the environmental stress affecting the poor populations and to the location of the poor populations. Exposure only occurs when the stressors and affected groups are in the same location.
- *Sensitivity* (social and environmental) to experienced stress. Sensitivity is shaped by both socioeconomic and ecological conditions and determines to what degree a group will be affected by environmental stress. For

Box 1. The multidimensionality of poverty

The United Nations Development Programme works with the Human Poverty Index, including five key indicators of poverty: life expectancy, access to safe water and health services, literacy and the proportion of children underweight aged five and under (UNDP, 1997).

The Millennium Development Goals include economic and social development and environmental sustainability which are meant to monitor progress towards the ultimate objective of poverty eradication (OECD, 2001).

The Development Assistance Committee of the Organisation for Economic Co-operation and Development (OECD/DAC) also views poverty in line with the above defining poverty as several dimensions of human capabilities: economic, human, political, socio-cultural and protective. They furthermore mention that the sustaining of the natural resource is essential for poverty reduction to endure (OECD, 2001).

The World Bank works with a definition of poverty, which encompasses not only material deprivation but also low achievements in education and health, vulnerability and exposure to risk, and voicelessness and powerlessness (World Bank, 2001).

According to the Swedish International Development Co-operation Agency (Sida), poverty does not only imply a low income level, but also a lack of access to health services, education, social security, democratic rights, and political participation (Sida, 2002).

example, a group in poorer health condition is more sensitive to certain environmental stresses than a group in good health.

- *Resilience* when faced with environmental stress. Resilience is the extent to which the communities have both coping (short-term) and adaptation (long-term) strategies that help them retain their basic properties under stress, recover from damage, and enact change to prevent future damage.

The inclusion of sensitivity and resilience in the definition of vulnerability ensures that not only the external aspect of exposure to hazards, but also the internal capabilities groups use to resist or recover from damage, are identified.

Environmental stress can be of many different types. In this note it is defined as including slow stress (for example, land degradation), recurrent stress (for example, drought), or sudden shocks (for example, hurricanes and floods). All of these affect poor people, even though some consider the vulnerability of poor populations to be most pronounced during sudden shocks (see for example Mabogunje, 2002, and AfDB et al., 2002).

When viewed as a multidimensional phenomenon, poverty often plays a role in contributing to an increased vulnerability to environmental stress. High levels of vulnerability furthermore risk leading to chronic poverty. It is therefore clear that these two concepts interact and need to be dealt with in parallel.

Poverty and vulnerability interacting

The poverty and vulnerability dimensions often overlap. In terms of exposure, it is primarily the access to safe land and settlement areas that matter. Being forced to settle on

or cultivate marginal lands, and other environmentally unsafe areas, is not uncommon among large parts of the populations in developing countries. This trend is further exacerbated by demographic pressures, which result in an intensified utilization of more marginal land in most of the least developed countries (UNDP, 2001, Mabogunje, 2002). In Central America, for example, economic constraints force the poor to live in precarious homes on the least-valued and often most marginal plots of land. The poor build their shacks on steep hillsides and floodplains, in fragile ecosystems and watersheds, and on contaminated land (Martine & Guzman, 2002).

Several poverty dimensions affect sensitivity. Age, gender, and health conditions are typical factors influencing how sensitive people are to environmental stress (Mabogunje, 2002, Siegel & Alwang, 1999). Children, the elderly, widows, the chronically ill, the disabled, and women are therefore among the groups frequently cited as most vulnerable (Naryan et al., 2000). Physical well-being can determine how well people can cope with adversity, and thus how sensitive they are. This becomes clear when looking at the large populations in Africa, for example, who are suffering from HIV/AIDS, which increases their vulnerability to environmental stresses (Mabogunje, 2002).

The political, socio-cultural, and protective capabilities are all important to the resilience of people. To be part of decision-making processes within the communities, both locally and at more aggregated levels, is an essential way for people to be able to influence their own capabilities of coping with and adapting to environmental change. Many decisions on preparedness, mitigation, and response policies and programs related to environmental stress are made collectively. Being marginalised politically then means that people's interests are overlooked (Anderson, 2000). Reducing political inequities is therefore a key first step to building the capacity to cope (Sharma et al., 2000). Being part of social networks, building on trust and reciprocity, is another asset, which can be a central resilience strategy in times of environmental stress (UNDP, 1997).

The number of coping and adaptation strategies available to a person in times of environmental stress is significantly reduced with a lack of access to certain assets, such as land, livestock, housing, labour, and financial capital, which provide a basis for generating income and production (UNDP, 1997). Not being able to buy insurance, or to get credits for investments in, for example, land management, makes it more difficult for people to cope with and adapt to environmental stress. Being less educated limits employment, and thereby livelihood, options, and to leave an area in times of natural hazards to rebuild a life somewhere else is often expensive and thus not an option for everybody (Anderson, 2000).

Finally, poverty, as expressed through a lack of various assets, can also lead to environmental stresses becoming more severe. The poor can be forced to exploit environmental resources for survival. If the exploitation of forests, soils,

wetlands and water resources is unsustainable, the increase in disaster risk can be quite significant. Landslide, drought and flood patterns can thus be altered due to environmental management actions (UNDP, 2001).

Conclusions

A reduction of the adverse impacts of environmental stress experienced by poor populations requires a more nuanced view of poverty than the traditional under \$1/day definition. Because the poor are often excluded from decision-making processes, discriminated against by others in society, and have only limited access to assets of various kind, the solutions to their vulnerability situation require a multifaceted approach based on an understanding of broader deprivation than “just” a lack of income.

Having recognised the importance of different types of assets to the vulnerability of poor people to environmental stress, it is also important to realise that large stocks of one kind of assets may be of little use. The more assets people have access to in the “right mix,” the greater their capacity to buffer themselves against external stressors.

Despite the fact that many players in the “poverty arena” seem to have realised this (based on the interpretation of their poverty definitions) it is noteworthy how many of the recent documents on the subject on vulnerability and poverty still treat poverty as a homogenous, income-focused, concept. One reason for this may be the complexity a multidimensional poverty definition brings to the policy discussion – a narrow definition of poverty could be argued to provide clearer policy relevance.

Several developments within the field of indicators and measurements of poverty have occurred over recent years, however. The Human Poverty Index, described in Box 1, is one example. The Unmet (or Unsatisfied) Basic Needs (UBN) method is another, defining poverty as the deprivation of requirements including access to such necessities as food, shelter, schooling, health services, potable water and sanitation facilities, employment opportunities, and even opportunities for community participation. The continued development of these measures will lead to a broader understanding of poor people’s vulnerability to environmental stress, and thus to a vulnerability reduction in the long-term for those populations in greatest need.

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See also (other briefing notes)

- Food security scenarios
- Adaptation framework and nomenclature
- Vulnerability toolkit
- Vulnerability, Global Environmental Change and Food Systems