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Vulnerability in developing countries: Implications and conclusions

Wim Naude, Amelia U. Santos-Paulino and Mark McGillivray

1 Introduction

Recognizing the multidimensional and complex nature of households and countries' vulnerability to various hazards is a core issue in economic development and policy. This book purposely adopted a multifaceted approach to illustrate how a better understanding of vulnerability is essential if progress is to be made in global development. This approach consisted of dealing with the concept of vulnerability from different viewpoints and in relation to different hazards, so as to consider the relationship between vulnerability, poverty and other hazards such as natural hazards, ill health, famine and macroeconomic shocks. It also consisted of exploring vulnerability in a variety of developing country settings: from some of the largest and most successful developing countries (such as China) to some of the smallest and most struggling developing countries (such as Zimbabwe). The book also contains studies based on a multitude of methodologies, from theoretical constructs to quantitative as well as qualitative studies of vulnerability.

Having approached vulnerability in developing countries from these perspectives, it is appropriate that we pause and take stock in this final chapter. We will therefore now attempt to generalize and place in context some of the implications from this book, in particular implications for further research into the concept and measurement of vulnerability (section 2) and for the policies and measures to deal with vulnerability in developing countries (section 3).
2 Implications for the concept and measurement of vulnerability

We will now draw some implications for understanding and measuring vulnerability, and identify some areas for further research. Before we do so, however, it is useful to summarize the concept and measurement of vulnerability as used in this book, and to do so within the context of the poverty literature. We showed in Chapter 1 that vulnerability can be applied to different levels (e.g. households, countries) and to different outcomes (poverty, natural hazards, etc). At the household (micro) level, vulnerability is most commonly defined as the probability that a household will remain in, or fall into, poverty in future. At a higher level, it is the probability that a country or region will experience a negative shock or perturbation.

At the household level, the concept and measurement of vulnerability should not be seen in isolation from the more general concern with the concept and measurement of poverty. In fact, further progress in conceptualizing and measuring vulnerability is likely to come from various initiatives to define and measure poverty better. We briefly discuss these aspects in section 2.1 below. In a related manner, there is likely to be further progress in measuring vulnerability to various types of hazard, as the availability of data permits. In section 2.2 we discuss the possible directions this could take and summarize a number of requirements for a good measure of vulnerability. At a higher level, concerns about the vulnerability of countries or regions should not be seen in isolation from concerns about state capacity and fragility and the institutional prerequisites for country resilience. It is also important to take into consideration the relationship between country-level vulnerability and fragility and household-level vulnerability. We briefly discuss these aspects in section 2.3.

2.1 Vulnerability and poverty

At a micro level, concern about vulnerability is essentially a concern about poverty. This reflects the fact that there has been significant progress in the understanding of poverty in recent years. However, much of this progress still needs to be fully taken into account by policymakers. Traditionally, poverty was taken to refer to "income poverty" and was measured statically, e.g. as the percentage of people at a particular point in time earning less than the (arbitrarily chosen) poverty line. This is still the measure used in the Millennium Development Goals to measure progress in the fight against poverty.
More recently, and greatly inspired by Amartya Sen's capabilities view of poverty, it is seen as a multidimensional concept extending beyond mere income measures. Hulme and McKay (2005) discuss the shortcomings of being concerned only with income poverty in the context of vulnerability. There is also agreement in academic circles that poverty is not a static concept but a dynamic one (Addison et al. 2008). Two main lines of research into the dynamics of poverty are multi-period poverty and uncertainty. Multi-period poverty refers to the fact that households can move into and out of poverty, as was shown in the case of Tajikistan in Chapter 4. Here the notions of chronic and transient poverty have been put forward to give a time dimension to poverty—thus the chronically poor are those who persist in poverty over a long time period. It is estimated that there are 320–443 million people currently living in chronic poverty (for an overview, see The Chronic Poverty Report 2008–09—CPRC 2008).

In the context of poverty, concern with uncertainty arose because a household that is currently not poor may become poor in future—in other words, such a household may be vulnerable to poverty. Thus, the concept of vulnerability to poverty as it is studied in this book can now be seen in its proper context: it is an attempt to expand the concept of poverty from a static to a dynamic one. In this perspective, extensions to the concept and measurement of vulnerability to poverty are likely to be driven by further research into refining the concept and measurement of poverty. One aspect that stands out immediately is the distinction between chronic and transitory poverty, which has implications for household vulnerability. It is recognized, for instance, that there might be path dependency in poverty—the longer a household is in poverty, the more difficult it may find it to escape (Bossert et al. 2008). This implies greater vulnerability to falling into poverty and remaining in poverty. A key result in this book, contained in Chapter 4, is that the factors that explain a household's likelihood of falling into poverty are different from those that explain moving out of poverty. Amongst the latter factors, the extent and persistence of poverty matter. In addition, the causes of chronic and transitory poverty differ. Chronic poverty often has multiple causes, and the chronically poor are often deprived across multiple dimensions. This means that vulnerability to poverty needs to take into account other forms of vulnerability and suggests that poverty, especially chronic poverty, is in itself a fundamental cause of vulnerabilities in other domains. Chronic poverty very often has a geographical/spatial pattern, where pockets of poverty persist in certain geographical regions over time. Chapter 4 has shown how important the geographical dimension is in determining the likelihood that households will escape from poverty.
Another aspect that stands out is that current measures of vulnerability generally treat household vulnerability as time invariant. Current efforts to achieve greater integration between the lines of research on multiperiod poverty and uncertainty are therefore likely to spill over and inform research on vulnerability (Günther and Maier 2008).

Finally, although this book has made a distinction between micro- and macro-level vulnerability, there is a need to integrate the levels across which vulnerability is measured. This would require a consideration both of how household-level vulnerability to poverty adds up to the aggregate vulnerability of a whole region or country, or even perhaps across the world, as well as of how country-wide or region-wide vulnerability to hazards translates into household-level vulnerability to poverty. Dutta et al. (2008) discuss such a potential measure of household vulnerability to poverty that can be aggregated. There remains, however, plenty of scope for further research into integrating the micro and macro levels of vulnerability. In section 2.3 we sketch further linkages between these levels of vulnerability. But first we deal with further extensions of vulnerability to various other hazards.

2.2 Multidimensional vulnerability

The various contributions in this book support the notion of vulnerability as a multidimensional concept, even though most contributions have come from either an economics or a social science background. Given that vulnerability can exist on different levels and in reference to a wide variety of potential hazards, and is studied across various disciplines, there are many ways in which to define and measure vulnerability. As the availability of data in developing countries improves, so will the various ways of measuring vulnerability. A potential danger is that this will see a proliferation of vulnerability measures or “vulnerability indices”. There have already been warnings in the literature that the term “vulnerability” is in danger of being used too loosely, or that its understanding is marred by a proliferation of definitions. To minimize this danger it is perhaps necessary in this conclusion to suggest a number of criteria that a good measure of vulnerability should ideally satisfy. As we point out, satisfying these criteria is not trivial. Given the current situation we also suggest a number of avenues for further research.

The first criterion for a good measure of vulnerability is to bear in mind that vulnerability is an ex ante notion, so that any measure of vulnerability should have a “predictive quality” (Cannon et al. 2003). Yuan and Wan (2008) deal with the prediction of vulnerability and find that not all measures of vulnerability have equally good predictive qualities.
Moreover, measures of vulnerability to poverty are sensitive to the poverty line used.

Second, measures of vulnerability should define vulnerability in relation to a socially acceptable level of outcome (Alwang et al. 2001: 33). What is deemed socially acceptable may of course differ across contexts. For example, in the case of vulnerability to poverty the socially acceptable level of outcome is generally taken to be some "poverty line", expressed in terms of income or assets (see Chapters 2, 3 and 4). Not only is the choice of poverty line often controversial but, as Yuan and Wan (2008) have recently shown, measures of vulnerability to poverty are sensitive to the choice of poverty line. Similarly, in economic vulnerability indices at a country level, arbitrary cut-off levels are used below which countries are deemed to be vulnerable. A major difficulty here is that there will be countries very close to the cut-off levels that may in reality be either vulnerable or not vulnerable but not identified accurately.

To overcome this problem, fuzzy set theory has been proposed (see e.g. Baliamoune-Lutz and McGillivray 2008), which allows for a gradual transition from one condition to another. Clearly, more research is needed into the reference points for vulnerability measures.

Third, measures of vulnerability should ideally contain information on the causes of vulnerability and the relative importance of idiosyncratic and covariate risk (Günter and Harttgen 2006). How this is applied will differ between micro- and macro-level measures. In Chapter 2 of this book it was shown how to identify the relative importance of idiosyncratic and covariate risk at a household level. We have not dealt with this at a macro level in this book. However, we can mention in this regard that Guillaumont (2008) has argued that countries face two main sources of vulnerability: (a) environmental or natural shocks, such as natural hazards; and (b) external shocks related to trade and international prices. How vulnerable a country is to these would depend on (a) the size and frequency of these shocks, (b) the degree of exposure to these shocks, and (c) the capacity of the country to react to these shocks. From this he suggests that one should distinguish between structural economic vulnerability (which is exogenous) and state fragility (which is vulnerability resulting from inappropriate policies and institutions and weak governance). Thus, in dealing with vulnerability it is often most useful to address state fragility. We will return to this aspect in section 2.3 below.

Fourth, a good measure of vulnerability should refer to a specific cause of vulnerability: a single indicator measuring "total" household or country vulnerability is unlikely to be meaningful (Cannon 2008). Thus we have emphasized in this book that we are concerned with vulnerability "to" some hazard, and the various chapters have studied vulnerability bearing this requirement in mind.
Finally, a useful criterion for a vulnerability measure to meet would be the ability to capture the dynamics of vulnerability. Thus an ideal vulnerability measure should be able to measure vulnerability (say, to poverty) not only before a hazard occurs but also during and after. Birkmann (2007) argues in this regard for measuring the vulnerability of households before, during and after a natural hazard has occurred. This is an important consideration when we want to use vulnerability measures to track the impact of policies and measures. Thus, if for instance after a flood people are left more vulnerable to ill health (owing to a greater incidence of water-borne diseases) or more vulnerable to poverty (owing to lost assets), it would be useful to have measures that could capture these changes in multidimensional vulnerability over time. Measuring the dynamics of vulnerability remains an important area for further research.

2.3 Vulnerability, resilience and state fragility

A number of chapters in this book have discussed the importance of understanding how a household or a country copes with risks. The implication is that vulnerability cannot be properly assessed without considering a system’s ways and means of coping with risk. The term “resilience” is often used to denote a household’s or a country’s coping mechanisms. It has been studied in this book both at a household level and at a country level. At the household level, there is indeed a growing body of work that studies household resilience. Both ex ante and ex post coping strategies have been distinguished. Ex ante, households often attempt to diversify their sources of incomes, and, ex post a negative event, they often rely on various forms of insurance (see e.g. Fafchamps 2003; Dercon 2005). In section 3 we will deal in greater depth with the issue of insurance as an ex post coping strategy. For present purposes though, an important message in this book is that household capabilities, household assets and the fragility of their contexts (including state fragility and fragility of the natural environment) play an important role in vulnerability. The role of household capabilities (characteristics) and assets has been particularly stressed in Part I of this book. We can note that the role of assets in coping has also been studied in other disciplines, and is especially prominent in the sustainable livelihoods approach (e.g. Moser 1998). There is also a growing concern with fragile states and fragility of the natural environment, as the chapters in Part II of this book in particular have shown. Given the scope of this book, we are now in a position to draw these two strands together.

Figure 11.1 is a conceptual framework that summarizes and generalizes the linkages between Parts I and II of this volume. The figure aims to
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summarizes and generalizes volume. The figure aims to illustrate the integrated nature of vulnerability, resilience and fragility. It shows household vulnerability centrally as being determined by household risk and household coping (resilience). The extent to which vul­nerability interacts with idiosyncratic and covariate hazards/shocks (including natural hazards and macroeconomic shocks) determines the outcome in terms of current or expected states of poverty, whether pov­erty is defined in income, consumption or broader wellbeing terms. Both the extent of and sensitivity to hazards, and the coping strategies adopted, are functions of a household’s endowments or assets and the fragility of the external context, be it local, regional, national or global. The type of hazard shock also influences a household’s coping strategy, with covariate shocks being more difficult for individual households to manage or insure against, calling for national or international support (Dayton-Johnson 2006: 7).

Often, the fragility of the context will determine the extent of household assets or endowments. For instance, in fragile states public infrastructure provision is often lacking. However, as the arrows in the figure imply, household assets and endowments can also influence the extent of fragility at the regional or national level, through for instance non-tangible
assets such as trust, social networks and cohesion. The figure also shows that poverty has a feedback effect to household assets and the fragility of the external context. This reflects the fact that poverty is in itself a cause of vulnerability at the household level and of fragility at the national level (Hulme et al. 2001). This fact has been amply demonstrated in the chapters in this book, where adverse coping mechanisms have been emphasized. Elsewhere in the literature, adverse forms of coping have been shown to impact negatively on the fragility of the macro environment, most notably in the case of sustainable livelihoods and natural hazards where poor people often have no alternative but to over-exploit scarce natural resources, in the process also increasing their vulnerability to natural hazards. For example, deforestation is often a significant contributing factor to flooding and mudslides, which claim significant numbers of lives in developing countries.

3 Implications for policies and measures to deal with vulnerability

Vulnerability can never be eliminated. However, a number of suggestions for dealing with vulnerability in a manner that will contribute towards a reduction in household poverty can be drawn from this book. Our conceptual framework as presented in Figure 11.1 suggests that, in order to deal with vulnerability, policymakers and development institutions need to focus primarily on households (their risks and resilience), on assets (including insurance) and on the fragility context. In focusing on these, at least three basic requirements need to be met.

3.1 Basic requirements

First, households cannot be left on their own to deal with the hazards they face, even though they are remarkably inventive and resilient. Their efforts at insuring themselves against risk need to be complemented by community, government and international actions. There are three reasons for external assistance to mitigate household vulnerability. One is that the sheer impact of shocks is often overwhelming for individual households. This has been amply illustrated in this book in the chapters dealing with vulnerability to natural hazards in small-island states. A second reason is that many of the goods needed to strengthen household resilience are public goods. Several of the chapters in this book have emphasized the importance of basic goods and services, including education, health services, public infrastructure and protection of property.
IMPLICATIONS AND CONCLUSIONS

Over, a number of suggestions that will contribute towards an end from this book. Our conclusion 11.1 suggests that, in order to development institutions need to acknowledge that poverty is a multidimensional, dynamic and forward-looking concept. As is clear from our conceptual framework in Figure 11.1, poverty is the outcome of the relative impacts of risk and resilience, both of which are affected by policies. It would therefore be very useful if performance indicators related the success of poverty reduction strategies and policies to their impact on risk and resilience.

Third, based on the discussion of Figure 11.1, it is clear that the nature of vulnerability will differ from household to household and from country to country. Local knowledge is therefore vital in addressing vulnerability. This is an important lesson from Chapter 4. It is unlikely that a one-size-fits-all approach will be useful in addressing vulnerability.

Fourth, as implied by the previous requirement, vulnerability and resilience need to be measured and measurements need to be continually improved. As has been shown in this book, this applies to various levels and outcomes of vulnerability. The proper and useful measurement of vulnerability and resilience will require much better data than are currently available. It is especially in the most vulnerable countries, for instance those in sub-Saharan Africa, where data constraints are often the most serious. Investing in sound, reliable, timely and regular data to capture poverty/vulnerability/resilience will in itself be an investment in resilience.

3.2 Appropriate responses

How can vulnerability be reduced or managed? Here we propose an approach that aims to reduce risks, to mitigate risks and to assist risk coping, through three broad classes of interventions: (a) strengthening resilience, (b) building bulwarks, and (c) ensuring quality institutions. The approach is outlined in Figure 11.2, which argues, based on the various contributions in this book, that vulnerability should be dealt with by governments, donors and development institutions by focusing on household capabilities, on assets and insurance, and on the fragile context facing households in developing countries. The aim is to reduce risks, mitigate risks where they exist, and help households to cope in a positive manner with risks. This could be achieved in a number of ways, as described under “Policies & measures” in Figure 11.2.

The first is by strengthening household resilience. The various chapters in this book have identified a number of ways in which this can be done. For instance, raising incomes (Chapters 2, 7 and 9), providing education...
and health (Chapters 4, 6 and 7), addressing the challenges faced by migrants (Chapters 6 and 9), and empowering women (Chapters 5 and 9) are all crucial means through which to improve household resilience.

The second way is to build bulwarks. Bulwarks are primarily intended to help households to manage risk ex post. Thus, from the contributions in this book we can identify a number of measures, such as raising household saving and providing access to micro-credit (Chapter 3), facilitating remittances (Chapters 6 and 9), strengthening networks (Chapters 2, 3, 6 and 9) and improving emergency responses and aid (Chapters 7, 9 and 10). Also, based on the assessment of the relative importance of idiosyncratic and covariate risks in this book (Chapter 2), we can stress the general importance of insurance (both formal and informal) for coping. For both households and countries, insurance mechanisms are essential in limiting adverse shocks to income from also causing adverse shocks in consumption. Insurance is thus said to be “consumption smoothing”.

Unfortunately, as many studies have found, households in developing countries tend not to have adequate insurance, as evidenced by the degree to which they cannot smooth out their consumption in times of crisis. We did not deal in depth with the issue of insurance in this

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**Figure 11.2** Responding to vulnerability: A generic approach.
The third class of measures to deal with vulnerability relate to ensuring the establishment and functioning of quality institutions. Much has been written about institutions and development in recent times, and we do not wish to discuss this literature in detail here. Instead the reader is referred to the UNU-WIDER study on *Institutional Change and Economic Development* (Chang 2007). However, a few aspects from this book are worth stressing as far as the role of institutions in vulnerability is concerned. A number of chapters in Part II showed that covariate risks—for instance in relation to natural hazards and macroeconomic shocks—are high in developing countries, particularly in small-island developing states. Here, the requirement for risk reduction would necessitate appropriate policies and institutions to help these countries cope with the effects of both “structural” vulnerability and state fragility. In essence, such countries must put policies and institutions in place that strengthen their economic resilience. In the case of many developing economies, increasing economic diversification has been recommended as a strategy to reduce the risks from adverse external shocks (structural vulnerability). Furthermore, as was argued in Chapter 10, macroeconomic policies in these countries should aim not only at price stability but also at output and employment stabilization. The preconditions are however that countries build and strengthen appropriate labour market, financial and governance institutions.

Finally, the approach summarized in Figure 11.2 needs to be complemented by the finding in a number of chapters that household coping strategies need to be better understood. For instance, adverse forms of coping can exacerbate household poverty and vulnerability and can push households into chronic poverty. In the Zimbabwean case discussed in Chapter 5, adverse coping included children dropping out of school, soil degradation as a result of desperate but unsustainable farming methods, cutting down on healthcare and engaging in criminal activities. Also, although migration is a favoured coping strategy in developing countries—in the face of droughts or conflict for example—Chapter 6 in this book has shown that such a coping strategy is in itself not without risks. It is also important to bear in mind the call in Chapter 9 for a “gendered” approach to vulnerability. Women often comprise a disproportionate share of the poor, and women’s traditional roles as caregivers and their often more extensive social networks make them important agents in the identification and mitigation of risks and in post-disaster assistance. The overall implication is that strategies and policies to deal with vulnerability should be careful not to introduce or cause new sources of vulnerability.
4 Concluding remarks

The chapters in this book have shown that great progress has been made in recent years in understanding and expanding the notion of vulnerability, and that these advances have important implications for the reduction of poverty. They have also shown that much remains to be done, in terms of refining, measuring and applying the notion of vulnerability, but also in tackling vulnerability through strengthening household resilience, building appropriate bulwarks against risk and creating and maintaining quality institutions. It is hoped that this book will stimulate further research and discourse on these aspects.

Note

1. De Léon (2006) contains an excellent summary of the development of the concept of vulnerability outside the field of economics, from the work of Chambers (1989), which focuses on sustainable livelihoods of households, to the work sponsored by the Department of Economic and Social Affairs of the United Nations, which focuses on the vulnerability of small-island states, and the work of the United Nations University's Institute for Environmental and Human Security.

References

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he development of the concept of vulnerability (Chambers, 1989), which is the work sponsored by the Depart- in the UNV-WIDER Studies in Development Economics. Oxford: Oxford University Press.


