

# 12

## VULNERABILITY REDUCTION EFFICACY OF FINANCIAL INCLUSION TO CLIMATE AND ECONOMIC CHANGES

Evidences, bottlenecks and way forward

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### Introduction

Financial instruments such as microfinance, insurance, cash transfers, and so on, have been introduced as a part of the development interventions to enable greater access to finances for individuals and businesses (World Bank, 2016). Of late, these instruments have also been advocated to be effective tools for addressing disaster risk reduction (DRR) and climate change adaptation (CCA) needs (Prabhakar *et al.*, 2014). With increasing risk reduction needs, there have been calls to evaluate these interventions in terms of their efficacy to address vulnerabilities – to climate change, disaster risks, environmental change and globalization – that communities face (Hammill *et al.*, 2008; Pantoja, 2002). With the growing emphasis on the financial inclusion for risk reduction, two questions become relevant in this respect: (a) to what extent are the financial instruments able to address the vulnerabilities of communities; and (b) to what extent are the agencies providing these financial services able to buffer themselves from the global change shocks? Both these questions are relevant and related to each other since there are strong feedback connections between the beneficiaries and the financial service providers as any negative impact of global change on communities will eventually impact the agencies that are offering these services, including governments and non-governmental agencies. Financial institutions that are not prepared for global change shocks may face serious consequences.

Keeping in view the importance of understanding the vulnerability reduction efficacy of financial inclusion interventions, this chapter presents a review of the published literature on financial inclusion experiences across the world to find the extent that financial inclusion has helped communities to buffer pressures from various global change processes, especially in reducing their vulnerability. While it is important to look into interventions by financial institutions to buffer themselves

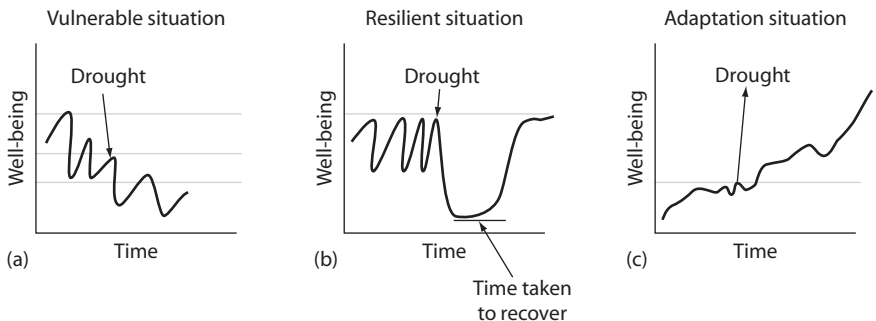
from the shocks of the global change processes and how those interventions affect the ultimate beneficiaries, this aspect has been excluded from this chapter for the reason of limited available experiences and evidence, and the topic itself deserves an elaborate analysis. However, wherever relevant, the relevant literature has been presented to a very limited extent.

## Financial inclusion and vulnerability reduction

What communities undergo after a climatic event such as a flood or drought is a result of the combination of sensitivity and adaptive capacity. Hence, adaptive capacity plays a vital role in buffering the shocks. Hence, financial instruments should be able to reduce the sensitivities and increase the capacities of communities, capacities that are within the communities and those that could be readily mobilized within a short span of time from outside. Since vulnerability can also arise from loss of resilience, the financial instruments should be able to increase the resilience of communities leading to vulnerability reduction. Hence, it is important to factor in indicators of resilience in vulnerability reduction assessments of financial instruments.

Graphs in Figure 12.1 illustrate the intended effect of financial inclusion on vulnerability reduction by showing the difference between a vulnerable situation, resilient situation and adaptation situation (Prabhakar, 2014). In a vulnerable situation, a recurrent drought could affect the well-being of a poor household or community taking them on the downward spiral of well-being, which we term as a vulnerable situation. In this situation, the community may not be able to return to its original well-being level (in Figure 12.1(a)). Any perturbation in the climate system would lead to a decline in overall well-being.

A resilient community will be able to bounce back from a climate disaster (Figure 12.1(b)) and the degree of resilience can determine the speed with which a household or community can return to the original well-being level. An occurrence of drought may only lead to a temporary decline in well-being in a resilient situation and the ability of communities to bounce back depends on the internal



**FIGURE 12.1** From vulnerable situation to resilient and adaptation situation (Prabhakar, 2014).

and external capacities that they can use to get back to normalcy. Providing access to finances immediately after disaster could help communities to recover quickly and fully, and instruments such as risk insurance can play an important role in this.

Figure 12.1(c) is typical of a household that has moved beyond resilience to being able to adapt fully to a new climate. Well-being does not change over the course of the time despite repeated droughts. The household is fully adapted to the drought, perhaps through the use of drought-resistant crops for farming or through an early warning system that would alert them that drought is coming so they can prepare for it. Vulnerable communities impacted by climate change will not be able to go back to their previous condition without external intervention. The objective of any financial inclusion intervention should be to move a household from a vulnerable situation to a resilient or even to an adaptation situation. Financial inclusion instruments that help communities build tangible assets and diversify livelihoods could move them from a resilient situation to an adaptation situation since households can smoothly fall back upon these additional capacities when and where needed. Microfinance measures that promote skill development and livelihood diversification could provide such adaptation benefits (Hammill *et al.*, 2008).

## Methodology

In this chapter, the effectiveness of financial inclusion on vulnerability reduction has been assessed through identifying a set of indicators identified from the literature review and stakeholder consultations. Identifying and quantifying vulnerability indicators have assumed an importance among various vulnerability assessment methodologies. The need for using indicators in vulnerability assessments is supported by scholars such as Vincent and Cull (Vincent and Cull, 2014) who stated that the indicators can best represent the complex underlying processes.

From the earlier research carried out by authors that included literature reviews and stakeholder consultations, the following indicators have been chosen to evaluate the financial inclusion interventions (Prabhakar, 2015; Prabhakar *et al.*, 2014, 2015). Since these studies identified several indicators, and including all of them for assessing the financial inclusion is beyond the scope of this chapter, a limited subset of indicators are chosen based on their relevance for financial inclusion (Table 12.1).

For identifying and assessing the cases of financial inclusion, this chapter uses two approaches: (a) a qualitative assessment of financial instruments such as microfinance and cash transfer programmes based on the review of published literature; and b) stakeholder consultations using the multi-criteria analysis methodology for assessing the effectiveness of risk insurance interventions carried out in Bangladesh and Japan.

- (a) *Literature review.* The review includes peer-reviewed journal papers, research reports and project reports. While it would be appropriate to include only the evidences from the field, owing to limited literature only literature from the on-field activities (e.g. project reports), research-based on on-field activities (e.g. journal papers and research reports) and conceptual papers (papers

**TABLE 12.1** Indicator set for assessing the financial inclusion interventions

<i>Climate change vulnerability indicators</i>	<i>Economic change vulnerability indicators</i>
Share of resistant crops	Change in access to credit
Percentage irrigated area	Change in subsidies
Physical infrastructure	Change in market access
Livelihood diversification	Business continuity
% living in hazard prone area	Financial stability
% reduction in crop yield	

*Source:* based on Prabhakar (2015); Prabhakar *et al.* (2014).

that opine how financial inclusion should work) were reviewed. The reason for including the conceptual papers has been that these papers shape the thinking on the ground, indicating the probable direction the financial inclusion is taking and hence is important to be included in this review. An effort was made to ensure that the indicators identified do not overlap with each other in a significant manner. The introduction of financial inclusion programmes can have impacts at micro or local level, meso and macro levels. However, due to factors that tend to muddle and mask the impacts as one moves from micro to macro level and due to lack of appropriate methodologies to isolate the impact of financial inclusion programmes from other larger developmental initiatives that are ubiquitous and often include large budgets than the financial inclusion programmes, effort was made to focus the evaluation at the micro level although evidence from the macro level was also cited wherever possible.

- (b) *Multi-criteria analysis.* The Analytical Hierarchy Process (AHP) technique, which is one of the multi-criteria analysis techniques, was employed for assessing the vulnerability reduction effectiveness of risk insurance. The stakeholder consultations were carried out in Japan and Bangladesh, comprising experts representing environmental sciences, social development, agriculture, rural development, government agencies, such as rural development, and local NGOs. The consultation workshops included a brief introduction about the purpose of the workshop, i.e. conducting the multi-criteria decision making exercise and taking the participants through the analytical hierarchy process of defining the objective of risk reduction intervention, identifying effectiveness indicators and criteria for assessing the effectiveness and identifying the interventions to be assessed, pair-wise comparisons and analysis of the results using the SuperDecisions Software (Creative Decisions Foundation, 2015).

## Results

The following kinds of financial inclusion instruments are popularly found in the literature: savings, credit including microfinance, insurance, and payments including mobile money transfers, which have become popular in Africa and Asia

(Donovan, 2012). In general, there is growing evidence that financial inclusion has developmental impacts such as self-employment, development of businesses and the impact is reflected in terms of an increase in household consumption and overall well-being (Cull *et al.*, 2012). However, the evidence for vulnerability reduction is rather sparse and not clearly discernible. Developmental impacts leading to vulnerability reduction, vulnerability to both economic and climate change, has always been a point of contention (Bankoff *et al.* 2004; Oliver, 1985; Toya and Skidmore, 2007) and there is some evidence for developmental activities contributing to vulnerabilities instead of reducing them (Stephenson and DuFrane, 2002). Hence, it is important to note that mere development doesn't mean vulnerability reduction but rather there is a need to characterize programmes that do not contribute to vulnerability but rather reduces it in a significant manner. In the next section, the evidence in the published literature is considered with regard to vulnerability reduction from financial inclusion instruments such as microfinance, risk insurance and cash transfer programmes.

### **Effectiveness of microfinance interventions**

Microfinance is one of the most ubiquitous, yet continuously growing in coverage, social and financial inclusion programmes in the world. Microfinance – including prominently microcredit – as a financial inclusion tool is on the rise in most developing countries and there is growing evidence of its efficacy on the ground (Bauchet *et al.*, 2011; Cull *et al.*, 2014). Most of this evidence appears to be strong in the shorter-term household welfare indicators such as household consumption and incomes, and there is relatively weaker evidence in the long-term welfare indicators such as education (Cull *et al.*, 2014). There is also strong evidence for increased borrowing under certain circumstance such as a high proportion of the poor and vulnerable within the savings groups and increased investment in already existing businesses leading to expansion of businesses (Table 12.2). However, there is very poor or no evidence for the impact of microfinance on other developmental indicators, including empowerment of women in decision making, poverty reduction, household consumption and other well-being indicators.

### **Effectiveness of risk insurance interventions**

The effectiveness of insurance received a significant focus for the reason that insurance has been promoted both by the DRR and CCA communities as a tool to address risks. Risk insurance has been advocated as one of the important measures to address issues of DRR and CCA (Kreft, 2013; Warner *et al.*, 2009), and these assumed benefits provided by insurance to the reduction of climatic and non-climatic risks have attracted CCA and DRR practitioners to consider it as an important risk management tool. Despite the efforts by various stakeholders, the communities whose livelihoods are most vulnerable to climatic vagaries have often not been reached by insurance. Several bottlenecks remain unaddressed, such as the

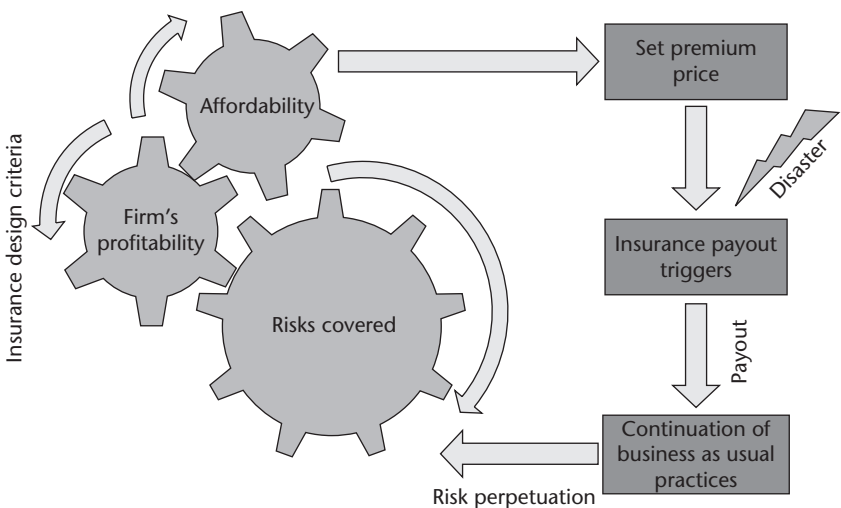
**TABLE 12.2** Available evidence for the efficacy of financial inclusion

Type of intervention	Randomized control trial	Impact of financial inclusion		Reference
		Increased	Decreased	
Savings and borrowings, Uganda	Yes	<ul style="list-style-type: none"> <li>• Borrowing finances</li> <li>• Savings increased</li> </ul>		<p>Savings increased only when members with high propensity to save are included.</p> <p>Borrowings increased only among those with less propensity to save and are poor and vulnerable.</p> <p>Burlando and Canidio (2014)</p>
Microcredit programme, India	Yes	<ul style="list-style-type: none"> <li>• Borrowing has increased among the microcredit groups</li> <li>• Investments in existing businesses have increased</li> <li>• Profits of pre-existing businesses have increased owing to better financial management</li> <li>• Business expansion was observed owing to increased investments</li> </ul>		<p>Significant effects on 12 of the 37 outcomes, for example borrowing, investments in businesses and expansion in businesses as evaluated by the team</p> <p>Banerjee <i>et al.</i> (2015)</p>
			<ul style="list-style-type: none"> <li>• Consumption of food</li> <li>• Better health owing to greater access to health services</li> <li>• Education improved owing to continuous schooling</li> <li>• Women's empowerment through their involvement in</li> <li>• Change in poverty level</li> <li>• Business profits increase owing to reduced expenses and higher sales</li> </ul>	

Microcredit programme, Mexico	Yes	<ul style="list-style-type: none"> <li>• Borrowing increased</li> <li>• Investments in existing businesses increased</li> <li>• Business expansion was observed</li> <li>• Trust among the community members increased</li> <li>• Female participation in financial decision making increased</li> </ul>	<ul style="list-style-type: none"> <li>• Fire sales of assets such as houses and livestock decreased</li> <li>• Depression among family members decreased owing to better financial condition</li> </ul>	<ul style="list-style-type: none"> <li>• Micro-entrepreneurship among the project beneficiaries</li> <li>• Net income of the beneficiaries</li> <li>• Labour supply to the businesses</li> <li>• Expenditures at household level</li> <li>• Social status of family members in the society</li> </ul>	Angelucci (2015)
Seasonally adjusted microcredit, Bangladesh	Yes	<ul style="list-style-type: none"> <li>• Food consumption during lean season increased due to drop in unemployment</li> </ul>		<ul style="list-style-type: none"> <li>• No evidence for better repayment despite the flexible repayment schedules</li> <li>• Number of defaulters was not different from control group</li> <li>• Food consumption (during intervention) during the Monga season was not affected</li> </ul>	Shonchoy and Kurosaki (2014)

high cost of insurance relative to ability to pay, poor overall progress on risk mitigation, lack of awareness among the communities, lack of an enabling policy environment, and so on (Prabhakar *et al.*, 2014). From a deeper perspective, there is a lack of robust evidence as to what CCA and DRR benefits accrue from risk insurance and how they compare with other risk management opportunities that exist or can be developed as an alternative to risk insurance. There is a lack of clear assessment and recognition of insurance benefits and costs in terms of DRR, CCA and SD in existing research (Prabhakar *et al.*, 2014). Specifically, there is no evidence to suggest that the current form of insurance provides long-term risk reduction. On the contrary, the ways the insurance programmes are designed and implemented today do not provide the full potential benefits that risk insurance offers.

With regard to promoting the risk insurance to address losses and damages, there is only a certain limit to which insurance can help in addressing loss and damage and hence it cannot be treated as a silver bullet. Figure 12.2 shows the elements in insurance design and implementation that pose limitations leading to a cycle of risk perpetuation rather than risk reduction (Prabhakar *et al.*, 2014). The insurance is considered effective for insurance companies if the insurance contractual obligations are delivered, i.e. insurance payout determined and delivered based on a set of standards and procedures. However, the effectiveness definition of insurance of in-the-field vulnerability reduction goes beyond this and it looks at how the insurance is able to inculcate long-term risk reduction through behavioural changes in the insured for taking up best risk management practices. Agriculture insurance in particular is often implemented with limited resources, lower efficiency and often with limited reach. First and foremost, today’s risk insurance products targeting the



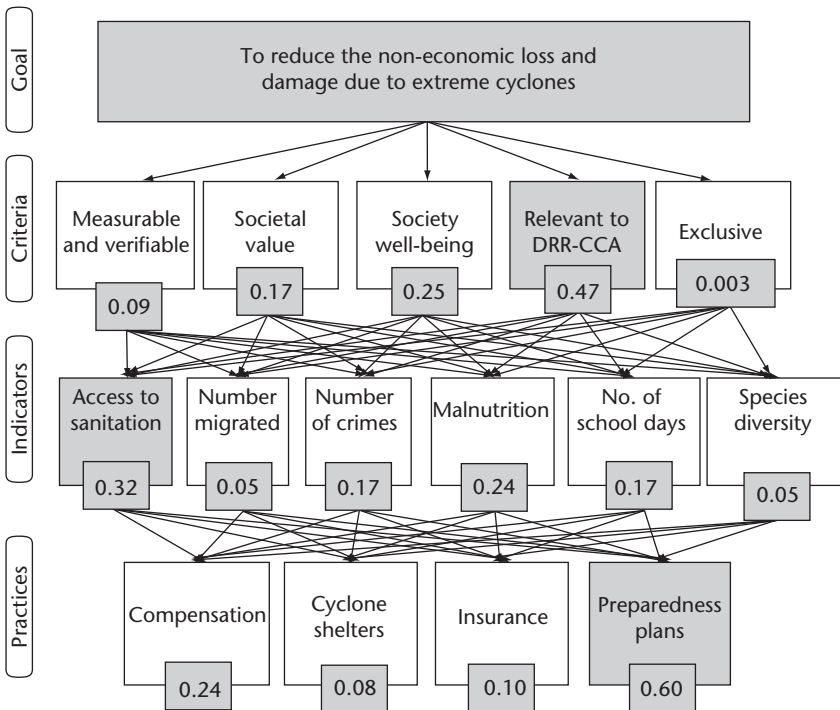
**FIGURE 12.2** Traditional definition of effective insurance employed by insurance companies (Prabhakar *et al.*, 2014).



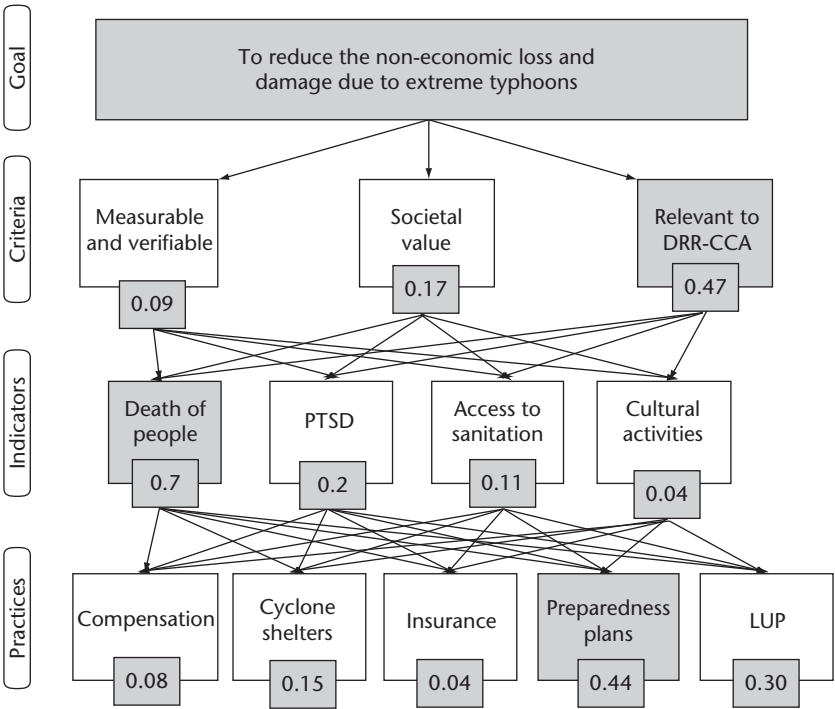
agriculture sector do not convey the proper risk price signal and suffer from moral hazards and adverse selection issues. Insurance payouts have not led to investments in risk mitigation options and the lack of sufficient incentives has rather led to continuing business as usual.

Insurance contracts have traditionally been designed largely to address economic losses. However, the non-economic losses and damages that could account for as much as 50 per cent or more of the total damages of a natural disaster, especially in the case of developing countries, are often not covered by the insurance products. There has been some advancement in measuring the non-economic losses and damages, including post-traumatic stress disorders, loss of social capital, ecosystem health and services and loss of cultural heritage, and insurance product designs must take advantage of these advancements and start addressing non-economic L&D. Only then can the insurance industry contribute to holistic risk reduction.

Analysis of various adaptation options for their potential to address non-economic loss and damage was carried out using the Analytic Hierarchy Process (AHP) in Bangladesh and Japan (Figures 12.3 and 12.4) (Prabhakar *et al.*, 2015). The results presented in Figures 12.3 and 12.4 show the hierarchical nature of decision criteria, effectiveness indicators and risk reduction interventions including risk insurance



**FIGURE 12.3** Relative position of risk insurance among various options tested for their efficacy to address non-economic loss and damage in Bangladesh.



**FIGURE 12.4** Relative position of risk insurance among various options tested for their efficacy to address non-economic loss and damage in Japan (Prabhakar *et al.*, 2015).

from top to bottom. The numbers in the boxes indicate normalized priorities and the higher the number the higher the priority given to an element in a cluster (e.g. criteria, indicators and practices in Figures 12.3 and 12.4 are clusters). The results indicate that risk insurance has the least potential (as indicated by the lowest normalized priority value of 0.1 for an insurance alternative in Bangladesh) to address any of the potential issues associated with non-economic losses and damages in Bangladesh and Japan. It is interesting to see that insurance has not been shown to have potential irrespective of the economic status of the country in question, which raises questions on the extent this tool can be promoted as a solution and caution is required in seeing it as the silver bullet it has been promoted to be, both in DRR and CCA.

### Effectiveness of cash transfers

Conditional cash transfer (CCT) programmes have become an important public policy tool for poverty reduction (Adato and Hoddinott, 2007) and as an important safety net strategy in number of countries with poor financial resources and public safety net programmes. The CCT programmes typically involve transfer of a certain

amount of cash to selected families that choose to participate in the programme upon satisfying criteria such as visits to clinics, child school attendance, and attendance in awareness sessions on related matters (World Bank, 2015b). Some significant CCTs initiatives in Asia include those being implemented in India (Government of India, 2015), China (Mo *et al.*, 2012), Bangladesh (World Bank, 2014), Vietnam (Long, 2011), Pakistan (Independent Evaluation Group, 2011) and Philippines (Department of Social Welfare and Development, 2015). The government of India has introduced a financial inclusion programme 'Pradhan Mantri Jan-Dhan Yojana', which aims to open bank accounts to the ultra-poor who otherwise are not able to open bank accounts in the formal financial sector. The programme provides twin benefits to the financial sector and the poor as it will bring the untapped savings into the formal financial flows of the country and will enable the poor to access to instant credit facility and insurance coverage (Ministry of Finance, 2016). The programme will enable smooth implementation of many other developmental programmes aimed at vulnerability reduction including Prime Minister's Employment Generation Programme (PMEGP) where wage payments can be directly made to the bank accounts of the beneficiaries.

While there is sufficient experience of implementing CCTs in Asia and South American countries, regions such as West Asia and North Africa are lagging behind with the CCT implemented by the Department for International Development in Egypt serving an important example for this region (DFID, 2010). Another form of cash transfer programme includes 'unconditional cash transfer' policies implemented by many countries that suffer from 'resource curse' (Moss, 2011) which also appears to have received significant acceptance. From the understanding of the CCTs, it can be deduced that these programmes demand substantial attention both by the implementing agencies and beneficiaries and require elaborate institutional arrangements and capacity for these programmes to succeed.

Cash transfer programmes have attracted sufficient attention among the monitoring and evaluation community for their growing popularity among the governments, as a result of which there is emerging evidence for the social impacts of cash transfer programmes (Table 12.3) (DFID and UK AID, 2011; Gentilini, 2014; World Bank, 2015a). One of the criticisms of cash transfer programmes has been that they will promote dependence, and the uptake of developmental programmes will diminish soon after they are withdrawn, which could affect the sustainability and long-term impact of the developmental programme (Slater, 2009). Evidence suggests that the conditional cash transfers have not promoted such dependency or vice spending (World Bank, 2015a), while the unconditional transfers had signified the need to educate and target the support programmes (DFID and UK AID, 2011). There is good evidence for vulnerability reduction when cash transfer programmes are combined with climate change and DRR programmes such as water harvesting related public works in Ethiopia (Table 12.3), and in Vietnam where the post-disaster recovery was found to be faster when unconditional cash transfers were introduced (Viet Nam Red Cross, 2012). Available evidence suggests that the effectiveness of these programmes depends on

**TABLE 12.3** Effectiveness of some of the major cash transfer programmes

<i>Intervention</i>	<i>Impact of financial inclusion</i>		<i>Reference</i>
	<i>Increased</i>	<i>Decreased</i>	
Pantawid Pamilya, Philippines	<ul style="list-style-type: none"> <li>• Child school enrolment</li> <li>• Child health</li> </ul>	<ul style="list-style-type: none"> <li>• Dependency</li> </ul>	Chaudhury <i>et al.</i> (2013)
Productive Safety Nets Programme, Ethiopia	<ul style="list-style-type: none"> <li>• Food security</li> <li>• Education</li> <li>• Farming</li> <li>• Livestock</li> <li>• Wage negotiation</li> <li>• Dependency</li> </ul>	<ul style="list-style-type: none"> <li>• Selling of productive assets during stress periods</li> <li>• Vulnerability to disasters and climate change</li> </ul>	DFID and UK AID (2011)
Minimum Living Standards Scheme, China	<ul style="list-style-type: none"> <li>• Income to poor</li> </ul>	<ul style="list-style-type: none"> <li>• Poverty gap</li> </ul>	Golan <i>et al.</i> (2015)
Bolsa Família, Brazil	<ul style="list-style-type: none"> <li>• School enrolment</li> <li>• Vaccination</li> <li>• Social</li> <li>• Entrepreneurship</li> <li>• Women empowerment</li> </ul>	<ul style="list-style-type: none"> <li>• Social inequality</li> <li>• Poverty</li> </ul>	DFID and UK AID (2011)

proper targeting and improper targeting and coverage could drastically affect even the obvious benefits these programmes can provide (Golan *et al.*, 2015). In addition, CCTs are also found to provide significant social and gender benefits that could have a positive impact on social and economic vulnerabilities that communities face (Soares and Silva, 2010).

## **Discussion and conclusions**

It is evident from the results of the review presented that there is a greater need for addressing some issues in obtaining clear evidence for vulnerability reduction from financial inclusion programmes. In this section, an effort has been made to summarize the conclusions from the review presented in the previous section.

### ***Evidence for vulnerability reduction***

The available literature provides some evidence for the impact of financial inclusion on a range of developmental indicators (Table 12.1). It is notable here that there are not many studies that studied the impact of financial inclusion programmes on the vulnerability reduction in terms of global economic change and climate change. While some of the indicators for which evidence exists, can have a direct impact on the vulnerability reduction, the relevance of other indicators towards vulnerability reduction is either non-existent or distant. The indicators that have direct relevance to vulnerability reduction are fire sale of assets, durable asset creation and poverty, which often have less robust evidence among the studies presented. On the economic front, there appears to be no significant evidence for income smoothing, which is another important indicator for vulnerability reduction (Baez *et al.*, 2012). In fact, microcredit programmes are sometimes designed to match the repayment schedules with those of income cycles of communities (Shonchoy and Kurosaki, 2014; Weber *et al.*, 2014). What is even more important to observe is lack of significant and robust evidence for the impact of some of the financial inclusion tools on the social outcomes, including women empowerment, which are important for vulnerability reduction (Banerjee *et al.*, 2015).

### ***Not all programmes are equal***

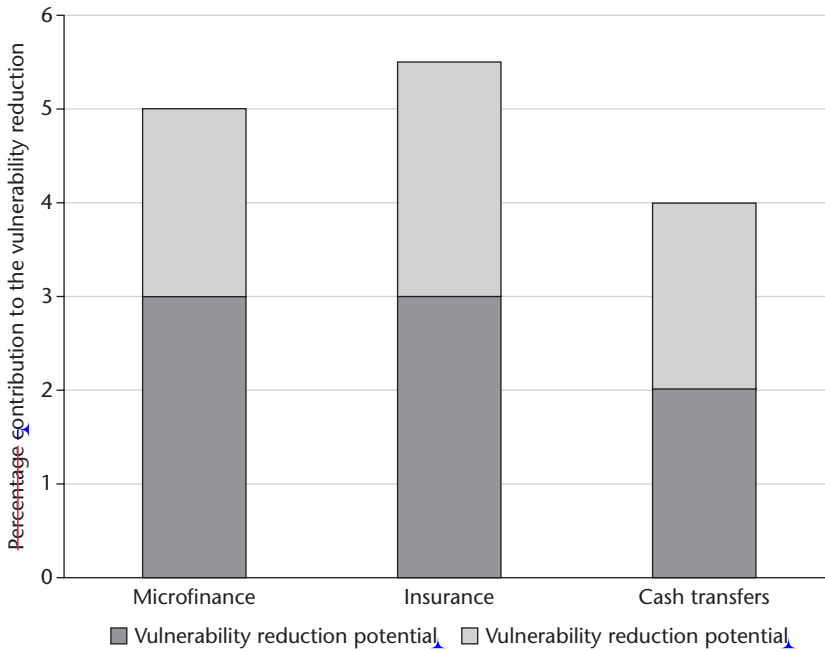
Financial inclusion programmes include a range of interventions and there are no systematic comparative evaluations of the financial inclusion programmes on the vulnerability reduction. However, in general, it can be concluded that their effectiveness is not the same in buffering against the economic and climate change pressures (Table 12.4). Based on the author's evaluation of the existing literature and the strength of the evidence, it can be concluded that both the microfinance and insurance exhibited equal effectiveness for vulnerability reduction to economic changes while insurance has a high potential for reducing climate change vulnerability (Figure 12.5).

**TABLE 12.4** Vulnerability indicators and the strength of evidence from the literature

<i>Indicators</i>	<i>Potential instruments</i>	<i>Strength of evidence*</i>	<i>Reference</i>
Share of resistant crops	Crop insurance	Moderate	Viola <i>et al.</i> (2014)
Percentage irrigated area	Cash transfers	Low	LIFT (2015)
Physical infrastructure	Cash transfers, microfinance	None	
Livelihood diversification	Microfinance	Moderate	Shimelles and Islam (2009)
% living in hazard prone area	None	None	
% reduction in crop yield	Crop insurance	Moderate	Viola <i>et al.</i> (2014)
Change in access to credit	Insurance, microfinance	High	Angelucci <i>et al.</i> (2015); Banerjee <i>et al.</i> (2015); Burlando and Canidio (2014)
Less reliance on subsidies	None	None	
Market access	Insurance	Low	Viola <i>et al.</i> (2014)
Business continuity	Microfinance, insurance	High	Angelucci <i>et al.</i> (2015); Banerjee <i>et al.</i> (2015); Viola <i>et al.</i> (2014)
Financial stability	Insurance, microfinance	Moderate	Angelucci <i>et al.</i> (2015); Banerjee <i>et al.</i> (2015); Viola <i>et al.</i> (2014)

*Note*

\* Strength of evidence evaluated on the scale of none, low, moderate, and high; it is the author's judgement based on the evaluation of the reference cited in the table.



**FIGURE 12.5** Vulnerability reduction potential of three major financial inclusion programmes.

Sources: author's own assessments based on the evidence presented in this chapter.

The efficacy of financial inclusion programmes also differs depending on the manner in which the programmes are designed. For example, insurance programmes will have a high climate change vulnerability reduction potential when they are combined with other activities, such as capacity building of farmers on improved agronomic practices and attachment to conditions such as better management practices as opposed to insurance alone. Other factors include whether the insurance was heavily subsidized or the subscriber has good knowledge of the actual costs of the risks.

### **Randomized control trials**

While there are a growing number of studies coming from the randomized control trials, these trials are still far from perfect for drawing conclusive evidence. The issues include fewer long-term studies with post-intervention impact assessments and relatively large attrition rates of survey respondents in the long-term programmes (Angelucci *et al.*, 2015). In addition to these issues, there are very few programmes and studies during which certain natural disasters may have happened, which could have helped in assessing the impact of a natural disaster on the participants and control group. While this is not a limitation of the RCTs themselves,

it shows the lack of a large number of studies that could increase the probability of intersecting with a natural calamity. The only evidence that could be obtained from Bangladesh covering the seasonal nature of poverty and hunger (*monga*) did not provide sufficient evidence for the vulnerability reduction impacts of microfinance (Shonchoy and Kurosaki, 2014).

### ***Appropriate design of instruments***

It has been observed that most financial inclusion programmes, including micro-credit, are targeted at the poorest who do not have access to formal institutional finances and hence they are highly targeted to a particular section of the group. However, the evidence suggests that even among the poor there are discernible differences among those who are willing to invest and expand businesses and those who are not so skilful in expanding their businesses. While expanding the business itself may not have a direct impact on the overall vulnerability reduction, considering its spillover effects – including the improvement of the local economy and additional job creation leading to poverty reduction in the long-run – it is desired that the financial instruments be combined with the business skill creation.

In addition, it is also important that the financial inclusion programmes provide certain services additional to finances, including advising borrowers on investment decisions that include where to invest and what investments will have greater impact on income and consumption smoothing, which could mean investing in non-farm activities that can have an income generation potential throughout the year as opposed to the seasonal nature of the agriculture income.

### ***Building capacities***

To be able to use the opportunity in a better way, skills such as business acumen, ability to take effective financial investment decisions and being able to run a profitable business go hand-in-hand in effectively harnessing the basic developmental benefits offered by the financial instruments such as microfinance, credit and payment transfers. In addition, skills including livelihood diversification, and better technical skills within the existing livelihood occupation should also be considered.

### ***Targeting***

In addition to the overall developmental impact of financial inclusion instruments on the population in general, there is a need to understand which section of communities these interventions help better since the emerging evidence suggests that only those who are entrepreneurial and have the ability to invest in gainful ventures are able to get greater benefit from these interventions (Bauchet *et al.*, 2011). Hence, there is a possibility that the most of these instruments are not necessarily leading to a positive vulnerability reduction to all those participating in these schemes equally.



## Enabling environment

The enabling environment here means the policy and institutional environment that local, state and national governments and other agencies could provide to ensure the financial inclusion programmes reach those who need them the most, and that they put in place support systems such as proper fail-safe measures for financial institutions offering these services to be risk aware and be able to take decisions considering the risks that these institutions might face in the wake of emerging global economic, environmental and climate changes. The enabling environment also pertains to the policies, guidelines and laws requiring financial institutions to follow good business and management practices, to refrain from taking risky business decisions that could not only put the institutions at risk but also the beneficiaries that are dependent upon them. The capacity development needs of communities could get immense benefit from government policies and guidelines.

## References

- Adato, M., and Hoddinott, J. (2007). *Conditional Cash Transfer Programs: A 'Magic Bullet' for Reducing Poverty? 2020 Vision Briefs*. Washington, DC, USA: International Food Policy Research Institute (IFPRI).
- Angelucci, M., Karlan, D. and Zinman, J. (2015). Microcredit impacts: Evidence from a Randomized Microcredit Program Placement Experiment by Compartamos Banco. *American Economic Journal: Applied Economics*, 7(1), 151–182. <http://doi.org/10.1257/app.20130537>.
- Baez, J. E., Kronick, D. and Mason, a. D. (2012). Rural households in a changing climate. *The World Bank Research Observer*, 28(2), 267–289. <http://doi.org/10.1093/wbro/lks008>.
- Banerjee, A., Duflo, E., Glennerster, R. and Kinnan, C. (2015). The miracle of micro-finance? Evidence from a randomized evaluation. *American Economic Journal: Applied Economics*, 7(1), 22–53. <http://doi.org/10.1257/app.20130533>.
- Bankoff, G., Frerks, G. and Hilhorst, D. (2004). Mapping vulnerability: Disasters, development, and people. *Development*, 22(3), 236. <http://doi.org/10.4324/9781849771924>.
- Bauchet, J., Marshall, C., Starita, L., Thomas, J. and Yalouris, A. (2011). *Latest Findings from Randomized Evaluations of Microfinance*. October. Washington, DC: CGAP.
- Burlando, A., and Canidio, A. (2014). Financial inclusion of vulnerable households through savings and borrowing groups: Theory and experimental evidence from Uganda. *The Review of Income and Wealth*, 60(1), 36–78.
- Chaudhury, N., Friedman, J. and Onishi, J. (2013). *Philippines Conditional Cash Transfer Program Impact Evaluation 2012*. Manila, Philippines: The World Bank.
- Creative Decisions Foundation (2015). *SuperDecisions*. Pittsburgh: Creative Decisions Foundation. Retrieved from [www.superdecisions.com/](http://www.superdecisions.com/).
- Cull, R., Demirgüç-Kunt, A. and Lyman, T. (2012). Financial inclusion and stability. *CGAP Brief*, May (2008), 1–4.
- Cull, R., Ehrbeck, T. and Holle, N. (2014). *Financial Inclusion and Development: Recent Impact Evidence*. Washington, DC, USA. Retrieved from [www.cgap.org/sites/default/files/FocusNote-Financial-Inclusion-and-Development-April-2014.pdf](http://www.cgap.org/sites/default/files/FocusNote-Financial-Inclusion-and-Development-April-2014.pdf).
- Department of Social Welfare and Development (2015). Pantawid Pamilyang Pilipino Program. Retrieved 10 March 2016, from <http://pantawid.dswd.gov.ph/>.

- DFID (2010). Conditional Cash Transfers pilot scheme in rural Egypt – Case study. Retrieved 9 March 2016, from [www.gov.uk/government/case-studies/dfid-research-conditional-cash-transfers-pilot-scheme-in-rural-egypt](http://www.gov.uk/government/case-studies/dfid-research-conditional-cash-transfers-pilot-scheme-in-rural-egypt).
- DFID and UK AID (2011). *DFID Cash Transfers Evidence Paper* (Evidence Paper No. 2011). London, UK: Policy Division Papers.
- Donovan, K. (2012). Mobile money for financial inclusion. In *Maximizing Mobile* (p. 221). Washington, DC: The World Bank.
- Gentilini, U. (2014). *Our Daily Bread: What Is the Evidence on Comparing Cash versus Food Transfers?* Washington, DC, USA.
- Golan, J., Sicular, T., and Umaphathi, N. (2015). *Unconditional Cash Transfers in China: An Analysis of the Rural Minimum Living Standard Guarantee Program*. Washington, DC: World Bank. Retrieved from [www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/07/21/090224b083014ece/1\\_0/R/Rendered/PDF/Unconditional00rd0guarantee0program.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/07/21/090224b083014ece/1_0/R/Rendered/PDF/Unconditional00rd0guarantee0program.pdf).
- Government of India. (2015). Direct benefit transfer. Retrieved 10 March 2016, from [http://finmin.nic.in/dbt/dbt\\_index.asp](http://finmin.nic.in/dbt/dbt_index.asp).
- Hammill, A., Matthew, R. and McCarter, E. (2008). Microfinance and climate change adaptation. *IDS Bulletin*, 39(4), 113–122.
- Independent Evaluation Group (2011). *Do Conditional Cash Transfers Lead to Medium-Term Impacts? Evidence from a school stipend program in Pakistan*. Washington, DC: Independent Evaluation Group.
- Kreft, S. (2013). Getting loss and damage right in Warsaw. Retrieved 26 February 2016, from [www.lossanddamage.net/4942](http://www.lossanddamage.net/4942).
- LIFT (2015). *LIFT Financial Inclusion Strategy*. Yangon.
- Long, G. T. (2011). Expanding cash transfer program to tackle old-age poverty in Viet Nam: An ex-ante evaluation. In P. K. Sothea Oum, Giang Thanh Long and Vathana Sann (Eds), *Impact of Conditional Cash Transfers on Growth, Income Distribution and Poverty in Selected ASEAN Countries* (pp. 1–24).
- Ministry of Finance (2016). Pradhan Mantri Jan-Dhan Yojana. Retrieved 9 March 2016, from [www.pmnjdy.gov.in/scheme](http://www.pmnjdy.gov.in/scheme).
- Mo, D., Zhang, L., Yi, H., Luo, R., Rozelle, S. and Brinton, C. (2012). School dropouts and conditional cash transfers: Evidence from a randomized controlled trial in rural China's junior high schools. *Journal of Development Studies*, 49, 190–207.
- Moss, T. (2011). *Oil to Cash: Fighting the Resource Curse through Cash Transfers*. Washington, DC, USA.
- Oliver, P. (1985). Disasters and development. *Habitat International*, 9, 117–119.
- Pantoja, E. (2002). *Microfinance and Disaster Risk Management Experiences and Lessons Learned*. Washington, DC, USA. Retrieved from [www.gdrc.org/icm/disasters/micro-finance\\_drm.pdf](http://www.gdrc.org/icm/disasters/micro-finance_drm.pdf).
- Prabhakar, S. V. R. K. (2014). *Adaptation Decision Making Frameworks and Tools: Multi-criteria Decision Making Tools for Prioritizing Adaptation Actions at Community Level*. Hayama, Japan: IGES.
- Prabhakar, S. V. R. K. (2015). *Methodology and Guidelines for Vulnerability and Capacity Assessment of Natural Resource-based Communities for Climate Change Adaptation*. Mumbai.
- Prabhakar, S. V. R. K., Pereira, J. J., Pulhin, J. M., Rao, G. S., Scheyvens, H. and Cummins, J. (2014). *Effectiveness of Insurance for Disaster Risk Reduction and Climate Change Adaptation: Challenges and Opportunities*. Hayama, Japan: IGES.
- Prabhakar, S. V. R. K., Ketaki, K., Aibek, H., Chiba, Y. and Nakata, M. (2015). Loss and damage associated with climate change: What and why, stakeholder perspectives, and a way forward. In IGES (Ed.), *The Paris Climate Agreement and Beyond: Linking Short-term Climate Actions to Long-term Goals* (pp. 105–128). Hayama, Japan: IGES.

- Shimelles, T., and Islam, K. M. Z. (2009). *Rural Financial Services and Effects of Microfinance on Agricultural Productivity and on Poverty*. Helsinki.
- Shonchoy, A. S., and Kurosaki, T. (2014). *Impact of Seasonality-adjusted Flexible Microcredit on Repayment and Food Consumption*. Chiba, Japan.
- Slater, R. (2009). *Cash Transfers: Graduation and Growth*. London, UK.
- Soares, F. V., and Silva, E. (2010). *Conditional Cash Transfer Programmes and Gender Vulnerabilities in Latin America: Case Studies from Brazil, Chile and Colombia*. London, UK.
- Stephenson, R. S., and DuFrane, C. (2002). Disasters and development: part I. Relationships between disasters and development. *Prehospital & Disaster Medicine*, 17(2), 110–116.
- Toya, H., and Skidmore, M. (2007). Economic development and the impacts of natural disasters. *Economics Letters*, 94(1), 20–25. <http://doi.org/10.1016/j.econlet.2006.06.020>.
- Viet Nam Red Cross (2012). *Viet Nam: Cash Transfer Programming in Emergencies*. Hanoi, Vietnam: Viet Nam Red Cross.
- Vincent, K. and Cull, T. (2014). Using indicators to assess climate change vulnerabilities: Are there lessons to learn for emerging loss and damage debates? *Geography Compass*, 8(1), 1–12. <http://doi.org/10.1111/gec3.12105>.
- Viola, G., Kelli, D., Michael, S. and James, R. (2014). Examining adverse selection in organic crop insurance: Where do we go from here? In *Crop Insurance and the 2014 Farm Bill Symposium* (p. 150). Louisville: Agricultural & Applied Economics Association.
- Warner, K., Ranger, N., Surminski, S., Arnold, M., Linnerooth-Bayer, J., Michel-Kerjan, E., ... Herweijer, C. (2009). *Adaptation to Climate Change: Linking Disaster Risk Reduction and Insurance*. Geneva, Switzerland.
- Weber, R., Mußhoff, O. and Petrick, M. (2014). *How Flexible Repayment Schedules Affect Credit Risk in Agricultural Microfinance*. Göttingen.
- World Bank (2014). *Bangladesh – Shombhob Conditional Cash Transfer Project : indigenous peoples plan*. Dhaka, Bangladesh: World Bank.
- World Bank (2015a). *The State of Social Safety Nets 2015*. Washington, DC: World Bank.
- World Bank (2015b). Morocco: Conditional Cash Transfers and Education. Retrieved March 9, 2016, from <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/MENAEXT/0,,contentMDK:22705763~pagePK:146736~piPK:226340~theSitePK:256299,00.html>.
- World Bank (2016). Financial inclusion overview. Retrieved 14 December 2016, from [www.worldbank.org/en/topic/financialinclusion/overview](http://www.worldbank.org/en/topic/financialinclusion/overview).