Disaster Insurance for the Poor?

A review of microinsurance for natural disaster risks in developing countries

A ProVention/IIASA Study

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Acronyms

ADA	Appui au Développement Autonome
AIDMI	All India Disaster Mitigation Institute
CBO	Community-Based Organization
CGAP	The Consultative Group to Assist the Poor
CRED	Centre for Research on the Epidemiology of Disasters
CRMG	Commodity Risk Management Group, World Bank
CSD	Centre for Self-Help Development
EC$	Eastern Caribbean Dollar
GIIF	Global Index Insurance Facility
GSDMA	Gujarat State Disaster Management Authority
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HRHIP	Hurricane-Resistant Home Improvement Program
IAM	Insurance Association of Malawi
IIASA	International Institute for Applied Systems Analysis
ILO	International Labour Organization
KBS	Krishna Bhima Samruddi
MFI	Microfinance Institution
MRFC	Malawi Rural Finance Corporation
NASFAM	National Smallholder Farmers' Association of Malawi
NGO	Nongovernmental organization
NIC	National Insurance Company of India
NLC	Network Leasing Corporation
NRDF	National Research and Development Foundation
OAS	Organization of American States
OIBM	Opportunity International Bank of Malawi
SECO	Swiss Secretariat for Economic Affairs
SEWA	Self-Employed Women's Association
TCIP	Turkish Catastrophe Insurance Pool
UN/ISDR	United Nations International Strategy for Disaster Reduction
WINCROP	Windward Islands Crop Insurance
WWF	Working Women's Forum

1. Introduction

Following the United Nations International Year of Microcredit 2005, there is growing interest in microfinance solutions to help alleviate poverty in developing countries. Whereas using microcredit and, to a lesser extent, microinsurance to cover life and health risks is now widely established, the use of microinsurance to indemnify against losses caused by severe or catastrophic natural disaster is only just emerging. The aim of disaster microinsurance is to provide low-income households and businesses with easily accessible and affordable life and health insurance as well as insurance to cover the loss of small-scale assets, livestock, and crops in the event of a flood, typhoon, or other natural disaster. The viability of disaster insurance for poor households and businesses, however, remains tenuous, given that disaster losses can simultaneously affect whole communities and risk pools (so-called covariant risks). The disaster risk management community views microinsurance, if it proves viable, as part of a broader, integrated disaster risk management framework involving risk reduction, disaster preparedness, and risk transfer.

A limited number of schemes offering microinsurance cover against disaster risk already exist or are planned in developing countries. Experience of these schemes and the information available on them are too limited to allow a comprehensive evaluation; however, some insights into their potential benefits, limitations, and viability can be gained from recent experience. The ProVention Consortium is therefore collaborating with the International Institute of Applied Systems Analysis (IIASA) in a research initiative that aims to assess the benefits, limitations, and viability of microinsurance for disaster risk.

The ProVention Consortium is a global partnership of international organizations, governments, private-sector enterprises, nongovernmental organizations, and academia dedicated to reducing the risks and impacts of disasters in developing countries. Since the launch of ProVention, risk transfer and risk sharing, as part of a disaster-risk-management strategy, have been central themes on the ProVention agenda. ProVention's interest in risk financing is linked to its agenda to promote increased private-sector involvement and investment in disaster-risk management in developing countries (see also ProVention, 2004; ProVention, 2006). IIASA is a nongovernmental research institute that conducts conceptual, model-based, and applied scientific research on global change issues. Its Program on Risk and Vulnerability is investigating equitable and efficient ways of managing and reducing disaster risks. A key concern for ProVention and IIASA is whether and how the poor in developing countries can have access to affordable and viable risk-transfer mechanisms, such as disaster microinsurance.

This desk-top study reviews microinsurance schemes that provide cover for natural disaster risks in developing countries. It is not intended to be exhaustive—many schemes are in the planning stages and there is only limited, open-source information—but to give an overview of the potential and the challenges of microinsurance for the poor. The study opens with a discussion of the benefits and limitations of risk transfer and risk pooling. The different organizational and institutional forms that microinsurance can take are described in section 3. Section 4 presents the evidence available on the organization, scope, and operations of the disaster microinsurance programs reviewed. In section 5 the viability of catastrophe microinsurance is examined in terms of four criteria: its contribution to risk reduction, its financial robustness, its affordability, and governance. The paper concludes with a summary of the main findings with regard to the potential of catastrophe microinsurance to protect the poor against the consequences of natural disaster shocks and to the significant challenges in making this protection viable.

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2. Background: benefits and limitations of disaster microinsurance

As the international community places increasing emphasis on disaster prevention, there is growing interest in the potential of insurance as part of an effective *ex ante* risk-management strategy (Linnerooth-Bayer, Mechler and Pflug, 2005). Insurance does not reduce the immediate impacts of disaster, but by pooling risks in exchange for a premium payment it does provide indemnification against losses. People affected by a disaster benefit from the contributions of the many others who are not affected and thus receive compensation that is greater than their premium payments. Microinsurance is distinguished from other types of insurance by its provision of affordable cover to low-income clients. By providing timely financial assistance following extreme-event shocks, it reduces the long-term consequences of disasters.

Currently, only 1% and 3% of households and businesses in low- and middle-income countries, respectively, have insurance coverage against catastrophe risks, compared with 30% in high-income countries (Munich Re, 2005). Instead of insurance, the poor often rely on savings, depleting or mortgaging their land and assets, emergency loans from microcredit institutions, or money lenders. Alternatively, they rely on family support, which is not always forthcoming for catastrophes that affect people simultaneously throughout a region or country (referred to as covariant risks). Furthermore, the poor are often exposed to multiple shocks such as illness and natural hazards at the same time. Without savings or family support, disasters may lead to a "cycle of poverty," as victims take out high-interest loans or default on existing loans, sell assets and livestock, or engage in low-risk, low-yield farming to lessen their exposure to extreme events.

When all else fails, the poor rely on their governments and the ad hoc generosity of donors. In the past, these postdisaster sources of finance have been woefully inadequate in terms of assuring timely relief and reconstruction. For example, two years after the 2001 earthquake in Gujarat, India, assistance from a government reserve fund and international sources had reached only 20% of original commitments (World Bank, 2003). Perhaps more worrying, disaster assistance can discourage governments and individuals from taking advantage of the high returns of preventive action (Mechler, 2005).

2.1 Benefits of microinsurance

Microinsurance can break the "cycle of poverty" by providing low-income households, farmers, and businesses with access to postdisaster liquidity, thus securing their livelihoods and providing for reconstruction. As insured households and farms are more creditworthy, insurance can also promote investments in productive assets and higher- risk/higher-yield crops. Moreover, insurance can encourage investment in disaster prevention if insurers offer lower premiums to reward risk-reducing behavior. Thus, arguably, microinsurance can be seen as an effective risk-transfer mechanism and an integral part of an overall disaster risk management strategy.

Furthermore, an insurance contract is a more dignified means of coping with disaster than relying on the ad hoc generosity of donors after a disaster strikes. Such contractual arrangements could have reduced the despair of the 2004 tsunami victims, many of whom have expressed concerns about the dignity and cultural sensitivity of the relief supplies and the distribution process (Fritz Institute, 2005).

2.2 Limitations of microinsurance

The benefits of disaster insurance for the poor need to be weighed against its costs and limitations. Because of the high costs of insuring covariant disaster risks, without donor support individuals can pay substantially more than their expected losses over the long term. Improperly designed insurance contracts (that do not reward risk-reducing behavior) can also lead to "moral hazard," which means that individuals take fewer precautionary measures because they are insured. Moreover, in immature and unregulated markets, there is a high risk of insurer

insolvency and defaults on claims in the case of large or repeated catastrophes. Mayoux (2005) points out that there are also gender issues to consider. For example, women paying risk premiums to insure loans that benefit men may forfeit these premiums in the case of divorce.

While microinsurance is promoted as an efficient self-help strategy, one could ask whether the poor should bear the burden of natural disasters that are, in part, caused by the failure of governments to provide structural defenses, better land-use practices, and other risk-reduction measures (Cohen and Sebstad, 2003). Moreover, the role and influence of developed countries in climate change and the effects of climate change on weather-related disasters have raised this issue of responsibility and accountability at the international level.

The alternatives to microinsurance for many in the developing world, as mentioned above, include microcredit and savings, informal insurance, or arrangements that involve reciprocal exchange, such as kinship ties, community self-help, and remittances. Despite the limitations of these risk-sharing arrangements, Cohen and Sebstad (2003) claim that they work reasonably well for less severe and idiosyncratic shocks. Women in high-risk areas, for example, often engage in complex, yet innovative, ways of accessing postdisaster capital by joining informal insurance schemes, becoming clients of multiple microfinance institutions (MFIs), or maintaining reciprocal social relationships. These informal strategies, however, have limited scope for shocks that affect entire risk-sharing communities.

For and against postdisaster microcredit

Instead of insurance, financial services can include emergency credit following a disaster. Salvano Briceno (2005, p.2) from the United Nations International Strategy for Disaster Reduction (UN/ISDR) sees postdisaster credit as an effective tool for reducing the impact of disasters: "In Bangladesh, for instance, those who were already benefiting from microfinance were more able to recover from the 1998 floods…through postdisaster loans." Others view postdisaster credit as problematic. Jeanette Thompson (2005, p.6-7) from the Consultative Group to Assist the Poor (CGAP), cautions microfinance institutions against engaging in emergency microlending: "When clients lose property and productive assets, thus eroding their capacity to repay and absorb debt, a MFI's portfolio quality and liquidity position are put at risk. According to Richard Leftley (2005, p.8) from Opportunity International: "It is certainly unwise to issue credit to people that have just experienced a significant disaster, as the infrastructure may be so damaged that their clients are unable or unwilling to purchase from them…. The real benefit of MF [microfinance], however, is the provision of access to savings and insurance.'"

3. Microinsurance services and organization

Microfinance services, especially credit and savings, are increasingly providing affordable financial services to low-income and poor households and enterprises, thus improving their income stability and asset-building opportunities. In developing countries, financial services providers—banks, microfinance institutions, credit unions, and other institutions—serve around 500 million low-income clients (Thomas, 2005). According to the Asian Development Bank (2000), about 21% and 11% of the Grameen Bank and Bangladesh Rural Advancement Committee, respectively, managed to lift their families out of poverty within four years of participation.

Microinsurance and insurability

The Consultative Group to Assist the Poor (2003, p.1) defines microinsurance as

"The protection of low-income people against specific perils in exchange for monetary payments (premiums) proportionate to the likelihood and cost of the risk involved. As with all insurance, *risk pooling* allows many individuals or groups to share the costs of a risky event. To serve poor people, microinsurance must respond to their priority needs for risk protection (depending on the market, they may seek health, car, or life insurance), be easy to understand, and affordable."

Other sources emphasize the specific delivery channels characteristically used in microinsurance for reaching the poor and those with a low income via MFIs, NGOs, and other organizations. Finally, group contracts are a common feature of microinsurance, as groups of at-risk individuals often share one insurance contract to reduce the costs of issuing contracts and processing premiums and claims (Brown and Churchill, 1999).

Ideally, from a microinsurance provider perspective, a number of conditions should hold in order to render the operation viable (Brown and Churchill, 2000).

- A large number of similar units exposed to the risk;
- Limited policy holder control over the insured event;
- Insurable interest;
- Losses are determinable and measurable;
- Losses should not be catastrophic;
- Chance of loss is calculable; and
- Premiums are economically affordable.

As will be discussed in this report, most of these conditions pose serious obstacles for micro disaster insurance.

Microfinance services often include insurance for such risks as the death of a breadwinner or livestock, healthcare expenses, funeral expenses, and property damage from theft/fire. These risks are mostly independent in the sense that they do not affect whole communities or risk pools at a time. Disasters also take the lives of people and livestock and cause damages to property and crops, but disaster insurance is distinct from other forms of insurance for the following reasons (Brown and Churchill, 2000):

1) Disaster risks are difficult to estimate;
2) Disasters can affect large portions of the population or risk pool at the same time;
3) Informal safety nets (family and friends) tend to break down during disasters; and
4) Disasters cause multiple losses simultaneously to life, health, and property (covariant risk).

Consequently, the implementation of microinsurance has proceeded from rather simple life insurance to health and property insurance. As shown in *Figure 1*, life insurance is the least problematic type of insurance, as the risks can be reliably estimated. Moreover, moral hazard is minimal and insurance fraud is limited. Health and property are more problematic to insure but raise fewer obstacles than mass covariant events. Disaster risks have rarely been explicitly considered as a niche for microinsurance because they impact large regions with multiple losses; they are thus more uncertain and have higher potential losses than other types of insurance. As experience shows, covariant risks, although not uninsurable, do need careful diversification and reinsurance. For example, as shown in *Figure 1*, Brown and Churchill (1999) argue that insurance could be combined with flexible savings to provide a safety net for disasters.

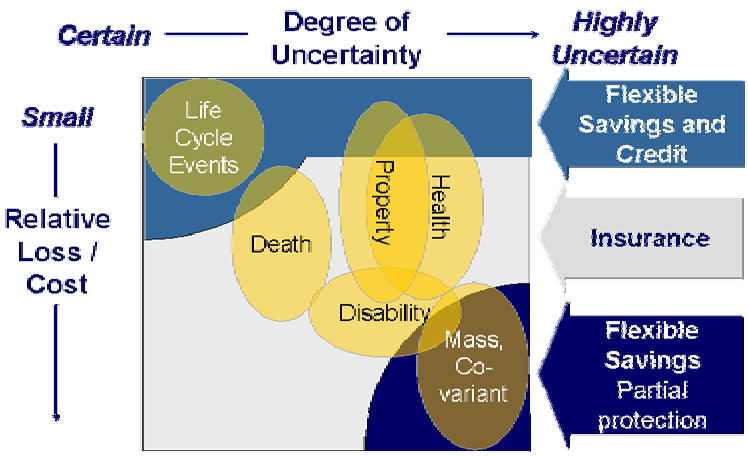


Figure 1: Insurance and types of risks.
Source: Brown and Churchill, 1999.

3.1 Forms of microinsurance: Traditional and index-based

Disaster microinsurance can cover sudden-onset events, such as earthquakes, floods, and cyclones, as well as slow-onset events, such as droughts. Traditionally, insurers have paid claims based on actual losses to households, businesses, and farmers. This requires extensive networks of claims adjusters who assess individual losses following an event. We refer to this as indemnity-based insurance.

Recently, index-based schemes for slow-onset events have emerged. Index-based insurance is distinguished from indemnity-based insurance in that it features contracts written against a physical trigger (parametric insurance), such as rainfall measured at a regional weather station. In the case of weather derivatives for crop risks, farmers collect insurance compensation if the index reaches a certain measure or "trigger," regardless of actual losses. These schemes may offer a viable alternative to traditional crop insurance, which has failed in many countries, mainly because of the high costs associated with settling claims on a case-by-case basis. A major factor bankrupting these programs has been natural disasters such as droughts (Brown et al., 2000). Based on recent experience in developed countries, the World Bank has provided the impetus and technical assistance for implementation of innovative index-based crop-insurance schemes, making use of MFIs to promote and distribute the product in developing countries.

Index-based crop-insurance contracts are sold in standard units by rural development banks, farm cooperatives, or microfinance organizations, and the "premium" varies from crop to crop. As payouts are not coupled with individual loss experience, farmers have an incentive to engage in loss-reduction measures, for example, by switching to a more robust crop variant. A physical trigger also means that claims are not always fully correlated with actual losses, but this "basis risk" may be offset by the reduction of moral hazard and the elimination of long and expensive claims settling. As the claim is a pre-fixed amount per unit of protection, transactions are greatly simplified. The major advantages of index-based insurance are therefore the reduction of moral hazard and of transaction costs. Index-based mechanisms are also more transparent, as they are based on a physical trigger and the payout is fixed in advance. The major downside of index insurance is the basis risk: if the trigger is insufficiently correlated with the losses experienced then no payout may occur, even if the losses are substantial (Manuamorn, 2005).

3.2 Delivery models

The delivery models used for providing microinsurance services are more diverse than for "regular" insurance that uses the full-service model. As identified by Cohen and McCord (2003), we distinguish four institutional models for providing microinsurance:

- *Full-service model:* Commercial or public insurers provide the full range of insurance services from the initial development of the product, through distribution, to absorbing the risk.
- *Partner–agent model*: Commercial or public insurers, together with microfinance institutions or nongovernmental and other organizations, collaboratively develop the product. The insurer absorbs the risk and the agent markets the product through its established distribution network. This lowers the cost of distribution and thus promotes affordability.
- *Community-based model*: Local communities, MFIs, NGOs, and/or cooperatives develop and distribute the product, manage the risk pool, and absorb the risk. As with insurance mutuals, there is no involvement on the part of commercial insurers.
- *Provider model:* Banks and other providers of microfinance can directly offer or require insurance contracts. These are usually coupled with credit, for example, to insure against the risk of default.

Importantly, and in contrast to the contractually defined services provided by insurance and microinsurance, disaster cover can and often is also be provided as a public good in the form of social protection. National or state governments often underwrite disaster risks (i.e., they compensate victims after a disaster) from their budget or from a designated catastrophe reserve fund. There are no premium payments on the part of the insured, as taxpayers absorb the costs.

4. Review of disaster microinsurance schemes

In this section, we review microinsurance schemes that offer cover for disaster risk in Bangladesh, India, Malawi. Nepal, Pakistan, and the four Caribbean countries Dominica, Grenada, St. Vincent, and St. Lucia. The discussion is based on available published material and expert correspondence; it is not considered to be a comprehensive review of all existing schemes.[1] Microinsurance programs are described in terms of their organizational structure, scope, and operations.

In this discussion, we distinguish two broad categories of disaster microinsurance offered as:

- An extension to microcredit and microsavings operations: As disaster risk poses a risk to the operations of an MFI or community-based organization (CBO), micro disaster insurance is introduced either bundled with the other services or on a voluntary basis.
- Stand-alone insurance programs designed to deal with disaster risks: These programs mostly have a specific disaster risk management focus in which insurance is embedded in.

An important distinction for both categories is whether insurance is required ("bundled") in conjunction with other microfinance services, for example, to secure a loan, or whether it is offered on a voluntary basis.

India features a large number of microinsurance programs, which can partly be explained by that country's favorable regulatory environment. Since 2000 the Indian regulatory authority has made it mandatory for formal insurance providers to service the low-income segment of society. Furthermore, there is a provision that regulated insurers must increase their shares of low-income clients over time (ADA, 2004). Insurers wishing to operate in India are fined for noncompliance and appear willing to incur a loss on their low-income microinsurance business in order to access the broader market. Much like in the United Kingdom, insurers have thus made insurance affordable for the poor communities with cross-subsidies from their other lines of business and wealthier clients. Recently, some Indian insurers have started to view the low-income market as a (potentially) profitable niche (Krishna, 2005a).

4.1 Extension of microcredit and microsavings programs

There are a number of MFI or CBO schemes that, originally, did not specifically offer cover for disaster losses, but were impacted either in their microcredit and savings operations or life, health and property business by disaster losses. After suffering substantial impacts (through, for instance, the 1988 floods in Bangladesh and the 2001 Gujarat earthquake) these schemes later explicitly included such risks and policies to protect their microcredit and microsavings operations.

Two types of scheme can be distinguished:

- Bundled microinsurance for MFI clients; and
- Microinsurance offered independently.

4.1.1 Bundled schemes

Four microinsurance schemes offered by MFIs were found that require the uptake of insurance as a condition for extending loans or savings arrangements to their clients: Proshika (Bangladesh), Swayamkrushi (India), Network Leasing Corporation (NLC) (Pakistan), and the National Smallholder Farmers' Association of Malawi (NASFAM) (*Table 1*).

[1] The review focuses on documentation in the English-speaking literature and does not include projects under development.

Table 1: Characteristics of bundled schemes for insuring credit and savings

Name and/or provider (country, year of inception of disaster insurance)	Proshika (Bangladesh,1997)	Swayamkrushi with insurer ICICI (India, 1997)	NLC with State Insurance Company of Pakistan (Pakistan, 2000)	NASFAM with banks OIBM and MRFC, and IAM (Malawi, 2005)
Delivery model	Provider model, individual and group registration	Partner–agent, individual registration	Partner–agent, group-based	Partner–agent, group-based
Premium	2% of savings balance, annually	100 rupees per year	1.5% of insured assets	6–10% of insured assets
Cover	Life: minimum of twice the savings balance, depending on years of membership in savings scheme; loan outstanding will be recovered. Property: twice the amount of savings deposit	Life: 30,000 rupees in case of death Life/property: In case of death and/or property losses, write-off of loans taken out to finance working tools, and other productive equipment	Life: ownership of leased asset transferred to beneficiaries	Outstanding loan with bank paid by insurer
Clients	13,000,000 property 2,200,000 life (2002)	8,1000 (2002)	ca. 1,300 (2000)	ca. 900 (2005)
Reinsurance	No	Unclear, reinsurance possibly purchased by insurer	Unclear, reinsurance possibly purchased by insurer	Unclear, reinsurance possibly purchased by insurer
Assistance	No	No	No	World Bank with technical assistance, catalyzing function
Major event experienced?	Yes	No	No	No
Outlook	Vulnerable, but diversification through large client base	Small client base with defaults; clients with limited understanding of insurance	Small-scale, positive financial results	Should lead to higher yield–higher risk activities but no evidence yet; premiums substantial

Sources: ILO 2005a; ILO 2005c; Brown and Churchill 2000; Hess and Syroka, 2005a.

While some of these schemes offer benefits to clients, the main purpose of the insurance contract is to protect the MFI against loan and savings defaults. Typically, the loan will not have to be repaid (or only partly repaid) in the case of a predefined disaster loss, and the MFI collects this payment from the insurer. Alternatively, the savings account will be increased in the case of a disaster-related death. These schemes cover life and/or property risks.[2]

Proshika

Based in Bangladesh, Proshika is one of the largest NGOs and MFIs in the world with more than two million clients. It offers a savings scheme to rural and poor urban households. This scheme experienced wide-scale defaults in the massive 1988 floods that affected 73 million people, more

[2] Furthermore, there are a number of bundled life and health microinsurance schemes that do not explicitly mention, but also do not exclude, cover for natural disaster risks. These are not discussed here, as no information was found on disaster cover or how such schemes have dealt with disaster events.

than half the population of Bangladesh (CRED, 2006). [3] In 1991, as a response to the disaster, a natural-disaster-management program was established (Nagarajan, 1998), and since 1997 compulsory group-based insurance has been included. Under this program 2% of the savings balance is annually transferred to a fund that will pay twice the amount of the savings deposit in the case of property damage due to disasters, while savings stay intact. In the life policy component, a minimum of twice the savings balance will be paid out, depending on the number of years of membership of the savings scheme (the outstanding loan will be recovered). The scheme operates without reinsurance or donor support. With more than two million clients in 20,000 villages and 2,000 slums in 57 districts of the country, this insurance fund has wide geographic diversification. It covers 10% of the population of Bangladesh for property insurance and 25% for life insurance (Proshika, 2005; ILO, 2005a). According to Pantoja (2002) the scheme has been relatively effective in terms of claims settlements. Until 2004, 20.06 million (Bangladeshi) taka were paid from the compensation fund to the affected families of 4,448 deceased group members, and 20.29 million taka to 14,525 members for property losses due to cyclones, river erosion, or tornadoes.

Swayamkrushi

The savings and credit cooperative Swayamkrushi of Andhra Pradesh, India, has been providing microfinance to its women members engaged in informal sector employment since 1997. In 2001, in collaboration with insurer ICICI, it added a compulsory life and property insurance. For an annual premium of 100 rupees, cover is granted for accidental death (30,000 rupees), as well as the write-off of loans taken out to finance working tools and other productive equipment in the case of death and/or property losses. In 2002, 8,100 participants were registered. With a membership base considered small, defaults on contributions have put a strain on the system. Furthermore, understanding of insurance among clients is limited, as members have been pressuring to receive a return on the premium paid. The scheme operates without external assistance (ILO, 2005c).

NLC

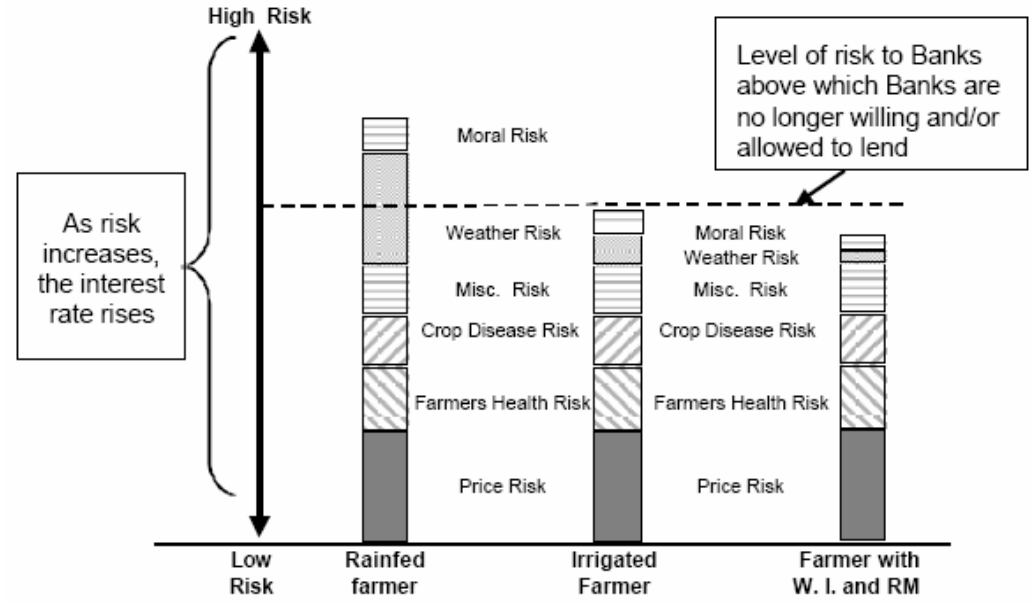
One MFI, the Network Leasing Corporation of Pakistan (NLC), in a partner–agent relationship with the State Insurance Company of Pakistan, requires insurance on assets leased to its clients. The premium amounts to 1.5% of the leased assets. The NLC benefits from this arrangement, as it is covered against the loss of assets due to natural hazards. Clients also benefit, as the policy beneficiaries retain the leased asset on the death of the policy holder. Although the business is rather small-scale, in the one-year period 1996–1997 claims were only 1/3 of premium revenue; however, this can change in a disastrous year. There is no information on whether reinsurance was bought (Brown and Churchill, 2000).

NASFAM index-based insurance

In Malawi a variant of index-based insurance was implemented in November 2005 coupling microlending with mandatory crop insurance. Rural lending, particularly to rainfed farmers, is generally considered very risky by banks because of the high systemic risk of loan default in the aftermath of droughts and other weather extremes (Hess and Syroka, 2005a). As *Figure 2* shows, banks may deny loans to rainfed farmers potentially affected by adverse weather. This compares with lending to irrigated farmers and to rainfed farmers who have implemented risk-management measures and/or weather insurance thereby successfully hedging a part of their risk.

In Malawi, a country with predominantly smallholder agriculture, the economy and livelihoods are severely affected by the risk of inadequate rainfall resulting in drought (and food insecurity), soil depletion, lack of credit, and limited access to agricultural inputs. In the past, the government responded to the recurrent drought-induced food crises by providing ad hoc disaster relief, but rural banks are reluctant to issue credit to heavily exposed farmers because of the high risk of defaulting (Hess and Syroka, 2005a).

[3] Vast areas of Bangladesh are exposed to disaster risks: normal flooding can affect about 25% of the land area, while extreme events can submerge more than 50% (FAO, 2005).



Legend: W.I. = Weather Insurance, RM = Risk Management
Source: CRMG, World Bank. "Commodity Price Risk Management for Producers, A Training Guide, modified

Figure 2: Systemic risks and rural lending.
Source: Hess, 2003.

In 2005 a packaged loan and index-based microinsurance product was offered by the Opportunity International Bank of Malawi (OIBM) and the Malawi Rural Finance Corporation (MRFC) to groups of groundnut farmers who were organized by the National Smallholder Farmers' Association of Malawi (NASFAM). Thereby, the farmer enters into a loan agreement with a higher interest rate that includes a weather insurance premium, which the bank pays to the insurer, the Insurance Association of Malawi (IAM). In the event of a severe drought (as measured by the rainfall index), the borrower pays a fraction of the loan due, while the rest is paid by the insurer directly to the bank. Thus, the farmer is less likely to default, which has a stabilizing effect on the bank's portfolio and risk profile. Without this assurance, banks rarely loan to high-risk, low-income farmers. The advantage for farmers is that they obtain the credit they need for investing in seeds and other inputs necessary for higher-yield crops. The World Bank together with Opportunity International was the catalyst in developing weather insurance products to secure credit for groundnut farmers.

According to Ulrich Hess (2005) of the World Bank:
"We want farmers to adopt high return technologies that allow them finally to make the leap and accumulate earnings over time. Systemic risk is THE factor impeding this and so far banks cannot handl e the risk AND the high transaction costs in rural areas. This Malawi transaction shows that there is a sustainable way to take the big rocks out of the way—drought risk—and clear the path to development!"

In November 2005 the first policies were sold: ca. 900 smallholders in Malawi bought weather insurance that allowed them to access an input loan package to purchase better groundnut seed. Insurance premiums were substantial, amounting to 6–10% of the insured values, depending on the location. An important component of the successful implementation was to hold training sessions for the field, insurance, and operations staff of the institutions involved. Without this, the insurance, banks, and small-farmer associations would not have taken on the risk of this drought-sensitive, improved seed package. Donor support was granted by Swiss development assistance via the Swiss Secretariat for Economic Affairs (SECO).[4] Recently, however, information has emerged that the certified groundnut seeds, supposedly of superior quality, had very low germination rates and new seeds had to be distributed to farmers. While not directly related to the insurance and loan construction, this could have a major effect on the viability of this scheme. More information will need to be collected to examine the scheme's viability.

[4] From personal communication with H. Ibarra, World Bank (2005).

4.1.2 Schemes offered independently and voluntarily

Three microinsurance schemes in this review are offered independently to clients to protect them, as compared to protecting the finance institutions, against disaster risks. As summarized in *Table 2*, these programs are more strongly oriented toward their clients and aim for more comprehensive cover.

VimoSEWA

The Self-Employed Women's Association (SEWA) is registered as a trade union and has been active in India since 1982. It currently has more than 700,000 female members, who are predominantly poor and self-employed in the informal rural sector. Among other things, SEWA is providing microfinance products. Since 1992 the integrated insurance scheme VimoSEWA has been offering health, property, and life insurance with disaster-risk cover. The SEWA Bank scheme started with a mandatory policy combining or bundling microcredit with life insurance. This was quickly made voluntary because clients were discontent and showed a lack of understanding of insurance. Initially, the insurance was offered in collaboration with a public insurance company that heavily subsidized the operation; the system then switched to a mutual operation owned by its members.

The accumulated losses after the Gujarat earthquake of 2001 placed a great strain on the insurance scheme because payouts were more than one-hundred times those in normal years (3,400,000 rupees compared with 30,000 rupees), which prompted the development of a business plan in 2001 and the switch to the partner–agent model. The partner is currently the National Insurance Company of India (NIC). Various donors have extended significant technical as well as financial support to the VimoSEWA scheme, particularly for scaling up the operations. This support has taken the form of cover for administrative expenses, research, and endowment for investment (to be used in the future for paying administrative expenses).

Table 2: Characteristics of independent and voluntary microinsurance scheme with cover for disaster risks

Name and/or provider (country, year of inception of disaster insurance)	VimoSEWA, SEWA with National Insurance Company of India (NIC) (India, 1992)	Centre for Self-Help Development (CSD) (Nepal, 1996)	Working Women's Forum (WWF) with Indian insurer (India, 1983)
Delivery model	Partner–agent (individual registration)	Community-based (individual registration)	Partner–agent (group registration)
Premium	100-225 rupees	100 rupees (50 for first 15 months)	Unspecified percentage of microcredit
Cover	Life: 5,000–65,000 rupees Health: 2,000–6,000 rupees Property: 10,000–20,000 rupees	Property/Life: 5,000–6,500 rupees for death/housing collapse; 50% for death of husband	Property: 1,000 rupees
Clients	122,000 (2005)	5,000 (2005)	Ca. 8,000 (2002)
Reinsurance	Indian insurers are part of reinsurance arrangement; donor provides protection	No	Unclear, reinsurance possibly purchased by insurer
Assistance	Various donors	No	No
Major event experienced?	Gujarat earthquake of 2001 put substantial strain on scheme	No	No
Outlook	Large client base; reorganized after 2001 earthquake, heavily subsidized; commercial viability aspired for in 7 years	Scheme potentially vulnerable to larger event	Reduced vulnerability due to relatively wide geographic spread

Sources: Garand, 2005; ILO, 2005c.

Currently, approximately 122,000 policies have been purchased, predominantly in Gujarat, by home-based workers, producers, vendors, manual laborers, and agricultural workers. Two-thirds of the clients reside in rural areas. After the earthquake in 2001 and the floods in 2003–2004 the insured received payouts for the loss of equipment and huts. This enabled them to quickly restore their livelihoods and return to income-generating activities. Until 2002 (based on available data) 14 million rupees in claims were paid to more than 10,000 clients. Increased risk awareness after the Gujarat earthquake of 2001 prompted an increase in the client base from 29,000 to 90,000. The business plan foresaw 300,000 policies by 2008, which would assure commercial viability. However, the scheme is currently behind schedule and will probably require another seven years to achieve this goal.

As a consequence, the microinsurance operations remain in deficit and there are plans to decrease administration expenses to achieve operational viability. Over the last few years, without donor support, about 50% of expenses comprising claims and administrative costs could not have been covered (Garand, 2005). Originally, an objective of the business plan was to target higher-income clients in order to cross-subsidize the product for the poor. However, this proved unfeasible within the current approach. Generally, education is considered important, as potential clients appear to be more concerned about their day-to-day earnings than about the risks they are facing. VimoSEWA is promoting the concept of insurance via pamphlets, posters, street plays, short videos, and other media.

Centre for Self-Help Development (CSD)

Similarly to SEWA, Nepal's NGO, Centre for Self-Help Development, established in 1991, offers microcredit and microinsurance to its 15,000 female members under a community-based scheme. Disaster microinsurance has been offered voluntarily to the members and their husbands since 1996. The premium was initially set at 50 Nepalese rupees (NPR) for the entire first 15 months and later raised to 100 NPR. Coverage is provided to the extent of 5,000–6,500 NPR in the case of death for women and 50% of this amount for their husbands. Equal amounts are paid out for dwellings collapsing as a result of natural disasters. There is no external assistance, and no insurance institutions are involved. Currently, about 5,000 policies have been sold, one-third to the microcredit clients of the Centre (ILO, 2005b). No information has been found on claims paid and financial viability.

Working Women's Forum (WWF)

The community organization Working Women's Forum (WWF) was founded in 1978 with the purpose of empowering women in southern India. Currently, it has more than 570,000 members organized into neighborhood groups of 8 to 10 people. The WWF's main service is offering microcredit, and since 1983 it has also been offering health, life, accident, and property microinsurance to its microcredit clients. Disasters are insured in the property scheme, under which cover for 1,000 rupees is provided for damages due to natural disasters in exchange for an (undefined) percentage of the microcredit. While the client base is relatively small for a scheme that was implemented in 1983, it has a substantial geographic spread. Insurance is provided by an Indian insurer (ILO, 2005c). Although no direct external assistance is provided, under Indian regulatory requirements, the partner insurer may support the scheme through cross-subsidies from its other more profitable lines of business.

4.2 Stand-alone programs for disaster microinsurance

In this section we review microinsurance schemes that have been implemented to specifically provide financial protection for disaster impacts and that mostly have a specific disaster risk management focus. These include bundled schemes offered by the Gujarat State Disaster Management Authority (GSDMA) in India, the National Research and Development Foundation (NRDF) of St. Lucia, and a scheme offered jointly by the banana marketing organizations of Dominica, Grenada, St. Vincent, and St. Lucia. Three voluntary schemes (all of them in India) were found offered by the All India Disaster Mitigation Institute (AIDMI), Oxfam UK, and BASIX.

4.2.1 Bundled schemes

The three bundled schemes require insurance in conjunction with assistance for postdisaster reconstruction, a loan and assistance for predisaster retrofitting, and membership in a banana marketing organization (*Table 3*)

Gujarat State Disaster Management Authority (GSDMA)

The Gujarat State Disaster Management Authority, established in 2001 after the disastrous earthquake, was the main agency for the provision of government relief and reconstruction assistance. Out of concern for long-term disaster-risk-management planning and to ensure optimal use of donor funds for the reconstruction efforts, a compulsory group-based housing insurance scheme was established for those households that had been completely destroyed and rebuilt with government assistance.

For a mandatory payment of 360 rupees, deducted from the final installment of housing assistance, the policy provides protection for 10 years for 14 types of natural and human-induced disasters. The maximum cover is one million rupees. To spread risks GSDMA sought coinsurance from commercial insurers to the value of 55%. Each insurer covers about 40,000 houses, and a system was developed to share risks among the different risk zones and insurers (AIDMI, 2005).

Table 3: Characteristics of bundled microinsurance schemes designed specifically for disaster risks

Name and /or provider (country, year)	GSDMA (India, 2001)	HRHIP, NRDF with Caribbean subsidiary of UK insurer (St. Lucia, 1996)	WINCROP, banana marketing organizations of Dominica, Grenada, St. Vincent, and St. Lucia (1988)
Delivery model	Full-service model	Partner–agent model	Full-service model
Premium	360 rupees for 10 years	0.6–1.05% of home value	5% of sales
Cover	Property: 1 million rupees	Full coverage with 2% deductible	20% of loss of deliveries
Clients	215,000 (2005)	345 from 1996–2002	13,000 in 2004
Reinsurance	Via various insurers (55% of risk ceded)	Unclear, probably via UK insurer	International reinsurer
Assistance	Premium automatically deducted from last installment of donor-supported housing reconstruction loan	Yes, by charity NRDF and CARITAS	Carribean Development Bank for feasibility study; standby facility for quick claims settling by involved governments
Major event experienced	–	–	Yes
Outlook	Provides substantial protection in case of event; no incentives for risk reduction	Discontinued because of liquidation of broker, but efforts under way to revive scheme	Viability challenged as banana exports and profitability decreasing

Sources: AIDMI, 2005; OAS, 2003a, b; Benson and Clay, 2004; Tomlin et al. 2005.

GSDMA undertook promotional activities to raise client awareness and understanding about the contents of the insurance policy and how to file a claim. Five thousand posters on housing insurance were displayed at women's fairs, government offices, schools, and other public places. Some 50,000 pamphlets were also distributed to villagers through NGOs or government officers. Insurance was put on the agenda of various village meetings, with senior government officers

discussing the importance of the insurance information packages that were being distributed. According to a survey, the overall insurance knowledge of respondents both with and without this mandatory insurance, increased from 5% to 67%.

By offering a standard, nonvoluntary group policy, this scheme manages to reduce transaction costs substantially. The downsides are the failure of the standard insurance package to respond to individual requirements and the need to continually raise awareness. As there is only one payment every 10 years, there is no potential for providing incentives for risk reduction (AIDMI, 2005).

Hurricane-Resistant Home Improvement Program in St. Lucia (HRHIP)

In 1996 the St. Lucia charity, National Research and Development Foundation (NRDF), with assistance from USAID/OAS and CARITAS, established a home improvement program offering loans for affordable new or improved existing housing to low-income homeowners, while providing for physical and financial protection against natural disasters. Within this Hurricane-Resistant Home Improvement Program (HRHIP), minimum building standards were developed for reference by homeowners, and builders and local builders were trained in safer construction. The services of a trained building inspector were also offered to approve materials for use in retrofitting and to check whether minimum standards were being observed. Furthermore, a group insurance plan, underwritten by a Caribbean subsidiary of a United Kingdom–based insurance company, was established through a St. Lucia broker. The insurance plan covered major natural disasters such as windstorms, earthquake, floods and sea surge, and volcanic eruptions. Membership of the insurance scheme was mandatory for recipients of the home improvement loans. Full coverage with a deductible of 2% was specified in the policies. Premium rates ranged from 0.60% for concrete block homes to 1.05% for homes made of timber. The insurer trained NRDF project officers in property valuation and accepted these exposure estimates.

Between 1996 and November 2002, 345 loans were disbursed within this program, with an average loan size of EC$11,000 (approximately US$4,100 in 2002). The majority of these loans (68%) were either for extensions to existing structures or for new structures. The remainder of the loans were for repairs and renovations, purchase, or relocation of homes. No claim was reported by the scheme, as no major event with substantial losses hit the country. The program was discontinued in 2002 when the insurance broker went into liquidation; it was revealed that the insurance premiums had not been passed on to the insurer, causing the contracts to lapse. Efforts are currently under way to revive the insurance scheme (OAS, 2003a; OAS, 2003b).

WINCROP

In 1988 the WINCROP (Windward Islands Crop Insurance) program was established by the banana marketing organizations of Dominica, Grenada, St. Vincent, and St. Lucia. This program was based on earlier attempts to establish disaster insurance and on a feasibility study conducted by the Caribbean Development Bank. The program offers insurance against windstorms affecting banana crops for 13,000 growers in the four countries, of which the vast majority are smallholders cultivating areas between 0.5 and 5 hectar. For a premium payment of 5% of sales, cover amounting to 20% of deliveries is provided. The scheme is mandatory for members of the marketing organizations in Dominica, Grenada, and St. Vincent and voluntary in St. Lucia. Limited by its geography, WINCROP has to reinsure a large part of its portfolio (85%) internationally, but its good reputation means that it is able to negotiate reinsurance premiums and conditions on the international market. By statute, WINCROP is required to settle claims within 38 days of the storm date. For this purpose, governments of the countries involved have created a standby facility of US$7.5 million to be used as bridge financing until reinsurance proceeds become available. From inception in 1988 until 2004, claims amounting to a total of US$75 million for losses in 267 events in the four participating countries had been settled. Although the payout is limited, the quick access to cash is reported to have helped farmers get back on their feet relatively quickly. However, there are important challenges to the viability of the scheme. Despite its rapid disbursement, growers consider benefits to be relatively low and premiums high, and some growers have argued against compulsory membership of WINCROP. Raising premiums and thus cover is not seen as a viable option, as exports and profitability of banana crops have been declining. Widening the pool, for example to include other crops, has been discouraged by

legislative constraints and the high reinsurance rates quoted for such a multicrop pool. Government subsidies have been demanded but not implemented. In the absence of subsidies, client have been procrastinating premium payments and premium arrears of US$3.4 million have built up—equivalent to 200% of annual premium income in 2004 (WINCROP, 2004). Moreover, growers in St. Lucia, where membership is voluntary, have opted out of the scheme, and 30% of growers there are currently without insurance by WINCROP (Benson et al., 2001; Benson and Clay, 2004; Tomlin et al. 2005).

4.2.2 Voluntary schemes

Recently, three voluntary microinsurance schemes were initiated in India. Two cover loss of life and losses to property caused by natural disasters (AIDMI, Andhra Pradesh Disaster Preparedness Program) and the other, a voluntary index-based scheme, offers cover for crop damage.

AIDMI

Since 2004 the NGO, All India Disaster Mitigation Institute (AIDMI), has been offering a disaster insurance program – Afat Vimo – covering households and microbusinesses in the state of Gujarat. AIDMI has a long standing relationship with a wide network of low-income communities affected by crises such as earthquakes, cyclones, and riots. Supported by postdisaster and postconflict interest-free loans from donors, Afat Vimo's main purpose is to protect the property and livelihoods of its clients with the help of the Livelihood Relief Fund (LRF). In the future, it plans to include a micromitigation component to reduce risks (Aysan, 2005).

Clients are mostly men and women running microenterprises. They are reached through the volunteers of the LRF who have earned their trust over time. The volunteers, for example, assist in filling out insurance applications and service claims. The scheme was developed on the basis of a demand survey given to small businesses affected by earthquakes and riots in the past. This survey revealed a low level of insurance knowledge among the potential client base, a general mistrust of insurers, reluctance to pay for uncertain benefits in the future, and the belief that claims might not be settled properly (Aysan, 2005). Based on household interviews, the decisive factor for insurance uptake is the long-standing relationship that AIDMI has with the communities—all participants in the microinsurance scheme have received support from the LRF in the past. AIMDI is working on these issues by demonstrating prior payouts and highlighting successes.

Table 4: Details of voluntary disaster insurance schemes

Name, provider (country, year)	AIDMI with Oriental Insurance Company and Life Insurance Corporation of India (India, 2004)	Andhra Pradesh Disaster Preparedness Program, Oxfam with Oriental Insurance Company (India, 2004)	BASIX/KBS with insurer ICICI (India, 2003)
Delivery model	Partner–agent (group-based)	Partner–agent (group-based)	Partner–agent (individual registration)
Premium	59 rupees (property [house and contents], stock-in-trade, and personal accident and death for income-earning family member) 74 rupees (group life insurance)	100-200 rupees	255–900 rupees; 3% of insured value
Cover	Life: 20,000 rupees Property: 75,000 rupees	Life: 12,500–25,000 rupees for partial disablement and death	8,000–30,000 rupees
Clients	2,000 (2005)	1,000 (2005)	Ca. 7,700

Reinsurance	Unclear, maybe reinsurance purchased by insurer	Unclear, maybe reinsurance purchased by insurer	Technical assistance in startup phase
Assistance	Various donors	Oxfam sponsored 50% of premiums in first year	International reinsurance
Major event experienced?	No	No	Smaller events with payouts
Outlook	Upscaling, link to micromitigation foreseen	Upscaling phase	Quick upscaling, large demand, premiums substantial

Sources: Aysan, 2005; Krishna, 2005a; Hess, 2003.

An annual premium of 133 rupees covers damages to property (house and contents), stock-in-trade, and personal accident or death of income-earning family members. Cover is provided against 13 major types of disasters, such as earthquake, flood, and fire. The total sum insured is 95,000 rupees (*Table 4*). In the survey, 70% considered a premium of 100 to 200 rupees affordable (Aysan, 2005). Interest in insurance on the part of clients was reported to be directly related to how low the premiums are and how well targeted the insurance is to their needs. In this standard product, premiums are uniform and not risk-based; thus, there is no option to decrease premium by taking risk-reduction measures.

The scheme is receiving funding for technical assistance from the ProVention Consortium. Insurance is provided to the scheme by the public insurers, Oriental Insurance Company and Life Insurance Corporation of India. There was close collaboration between the insurers and AIDMI in product design, setting of premiums, and type of cover. Because of the pro-poor regulatory requirements, premiums are kept low and affordable. This was affirmed by the survey conducted before the start of the scheme. It is not clear how premiums are calculated and whether reinsurance is purchased specifically for this scheme by the insurers. Currently, some 2,000 households and microbusinesses are covered. In a recent review by Aysan (2005), it was estimated that 650 policies have been purchased in the city of Bhuj, which was most affected by the 2001 earthquake. Considering that nonlife coverage extends to the house and contents, it is estimated that about 12% of the poor in Bhuj are covered.[5]

AIDMI

"These [low-income] businesses are marginalized by the mainstream NGO and government relief. Compensation has hardly reached them. As a result, they have no right to relief as victims, no right to economic recovery as active economic agents, and no right to the city of Bhuj as citizens […] The poor among victims were asked to tell if they needed insurance protection, and to what extent. The result of that survey was Afat Vimo (Disaster Insurance). Now, the victims have rightful claim over compensation for future losses" (Sadhu and Pandya, 2005, p.5).

In terms of income, the client community seems to be fairly homogenous, with an average annual income of 24,000–30,000 rupees (approximately US$ 520–650). Thus, the insurance premium amounts to approximately 0.5% of annual income, which seems low compared with an average rate of 9% for life and nonlife combined for industrialized countries (Swiss Re, 2004). However, it should be borne in mind that in Bhuj (where average income is 50 times lower than in developed countries) households are closer to subsistence levels and all available income needs to be used to cover the basic necessities of life. To date, no major event has affected the scheme and only three claims for independent events for loss of life, house contents, and personal accident have been reported and quickly settled. A remaining key challenge of the scheme is the upscaling to viable numbers.

[5] Some 33% of policy holders are small vendors, 29% laborers, 2% small businesspeople, and 14% home-based workers.

Andhra Pradesh Disaster Preparedness Program

In the coastal Andhra Pradesh region, microinsurance services have been provided since 2004 as part of the Disaster Preparedness Program that also offers housing, health awareness, drinking water, and sanitation, as well as capacity building for communities, government, civil society, and media organizations. The international NGO, Oxfam UK, provides technical and financial support for this program. The insurance partner is the Oriental Insurance Company.

H. Krishna, Oxfam

"We did find it extremely difficult to convince the insurance companies to do business with us. Insurance companies were not interested because it involved a lot of man days and paper work to provide insurance for hundreds of families for a premium which was not high. Such a premium they can extract from 2 or 3 corporate employees in one hour of convincing. To solve this problem, we have trained the task force members (village disaster management volunteers) in doing the job of an insurance agent. We provided initial funding, which communities repaid in monthly installments. This repayment remains with the local disaster preparedness fund managed by the community. Our volunteers have also been assisting the communities in the claims process. Getting an insurance claim is something that the communities have never imagined.

The insurance companies earlier thought that it's not lucrative to insure a group of poor families. The success of our model set them thinking. These days these companies are proactively approaching NGOs and CBOs to do insurance for the poor. This development shows that the model can be sustainable without the support of donors. However, it still requires a push and facilitation to help the communities in order to keep the momentum alive" (Krishna, 2005b).

Different life insurance policies are offered that include natural disaster risks. Insurance coverage is extended to vulnerable families. Coverage is available to groups of women in the 10–75 age group (comprising 250 members) for floods, landslides, rockslides, earthquakes, cyclones, and other natural disasters. The premium ranges between 100 and 150 rupees (Krishna, 2005a). Coverage under this scheme is currently extended to more than 1,000 vulnerable families. Oxfam paid 50% of the premiums in the first years. Since 2002 more than 80 insurance claims have been reported and settled, including damages to property caused by natural events.

BASIX and DHAN projects

For frequent and slow-onset weather events, such as droughts, a number of innovative disaster-microinsurance pilot projects assisted by NGOs, MFIs, or community-based organizations are in the implementation stage. In 2003 the first index-based weather scheme in a developing country was launched by the rural microfinance organization BASIX and marketed by the rural bank Krishna Bhima Samruddi (KBS). The scheme is insured by the Indian insurer ICICI Lombard, which transfers part of its risk to an international reinsurer. The commodity risk management group (CRMG) of the World Bank contributed technical assistance for setting up the scheme.

The BASIX pilot project offers voluntary cover for groundnut and castor farmers in the Mahbugnar district of Andhra Pradesh for the major growing season (*Table 5*). In 2003–2004, 154 groundnut and 76 castor policies were sold. Eligibility is limited to farmers with crop loans issued by KBS. A payout is triggered if cumulative rainfall during the Khariff (major monsoon) falls below the historical average for the last 30 years, as measured by the district collectorate. Although rainfall during the 2005 season was normal, farmers received a payout because of a delay in rainfall that affected sowing time. Claims were quickly serviced within 15 days of the end of the policy period, which contrasts with the 12–18 months for the national crop insurance scheme with its conventional loss inspection and settling (Hess and Syroka, 2005b). A number of projects have replicated these efforts in India. The National Agriculture Insurance Company of India has recently offered index-based crop insurance as a full service provider aiming to cover 200,000 farmers in 2005 for 13 crops in 10 states. The DHAN foundation is currently working with ICICI Lombard in a partner–agent relationship to offer this product. Significant efforts have been made to offer a transparent product customized to each location, crop, and community (Kande, 2005). *Table 5* documents the development of the BASIX weather-index scheme and others operating since 2003.

Since the inception of these schemes, clients have valued the quick payouts compared with traditional crop insurance. On the other hand, basis risk has caused problems. In the DHAN scheme, a rain gauge failed to trigger a drought episode during the 2005 season, causing significant yield losses (Kande, 2005). Efforts are under way to improve the product, and it remains to be seen how trigger failures will affect future insurance uptake.

There is optimism, for example, on the part of the World Food Programme and World Bank, that index-based microinsurance products, like BASIX and DHAN, can be important instruments for reducing the poverty of smallholder farmers. If farmers can be sure that timely and guaranteed assistance will be available in times of extreme covariant shock, such as drought, they may be encouraged to engage in more profitable income strategies. For example, by avoiding the financial risks incurred by droughts and other crop disasters, farmers can increase their creditworthiness and thus obtain the loans necessary to purchase better seeds or fertilizer (World Food Programme, 2005).

Table 5: Development of BASIX and DHAN index-based weather insurance in India (in brackets: combined estimates for index-based crop-insurance schemes in India)

	2003	2004	2005
Provider	Insurer: ICICI Lombard Agents: MFI BASIX, KBS	1. Insurer ICICI Lombard with agents BASIX and KBS, and DHAN foundation 2. Insurer National Agriculture Insurance Company of India (NAIC) as full service provider	
Clients	230 in one district (India: 1730)	640 in 3 districts (India: 20,000)	7685 in 6 states (India: 250,000)
Crops	Groundnut, castor	Groundnut, castor, cotton	Livelihood protection through agroclimatic, area-specific contracts covering all crops
Involvement of farmers	Contracts sold in village meetings	New contracts designed with farmer feedback	New contracts designed with farmer feedback
Insurance/reinsurance	Indian insurer	Indian insurer and international reinsurance	Indian insurer and international reinsurance
Weather stations	1 at district level	5 local rain gauges	Automated rainfall-measuring stations

Source: Based on Hess and Syroka, 2005b.

World Food Programme

"Because of the extreme and covariant nature of the risks they face, and in the absence of risk-management instruments such as crop insurance, risk-averse smallholder farmers naturally seek to minimize their exposure … by opting for lower-value (lower-risk) and therefore lower-return crops, using little or no fertilizer and over-diversifying their income sources. These risk-management choices also keep farmers from taking advantage of profitable opportunities; they are a fundamental cause of continued poverty" (World Food Programme, 2005, p.5).

In a recent survey evaluating the impacts of the BASIX microinsurance pilot project,[6] no changes in farming practice were reported, although higher-risk, higher-yield methods of farming were anticipated as a result of financial protection. However, the pilot schemes are still at an early stage, and farmers appear to be experimenting with the product. There has been an unanticipated high uptake of this insurance for both the 2004 and 2005 Khariff seasons and, as

[6] The World Bank's Commodity Risk Management Group (CRMG) and Development Economics Research Group (DECRG) partnering with the International Crop Research Institute conducted a baseline survey sampling from two districts characterized by low and uncertain rainfall, low levels of irrigation, and shallow and infertile soils. The sample included 1,052 farming households, 267 buyers, 186 nonbuyers that attended the marketing meeting, and 299 nonattendees in the sampled villages. In addition, 300 farming households were interviewed in control villages (Gine, 2005).

shown in *Figure 3*, the survey responses have attributed this primarily to the financial security offered by the insurance. The second most important reason why people bought weather insurance in 2005 was that they had witnessed substantial and generous claims being paid out in the previous season, when there had been a drought. Such motivation for purchasing insurance could be problematic, as disaster insurance does not work if substantial claims occur every year. Moreover, in conjunction with the basis risk, individual trigger failures may pose a serious risk to viability and upscaling.

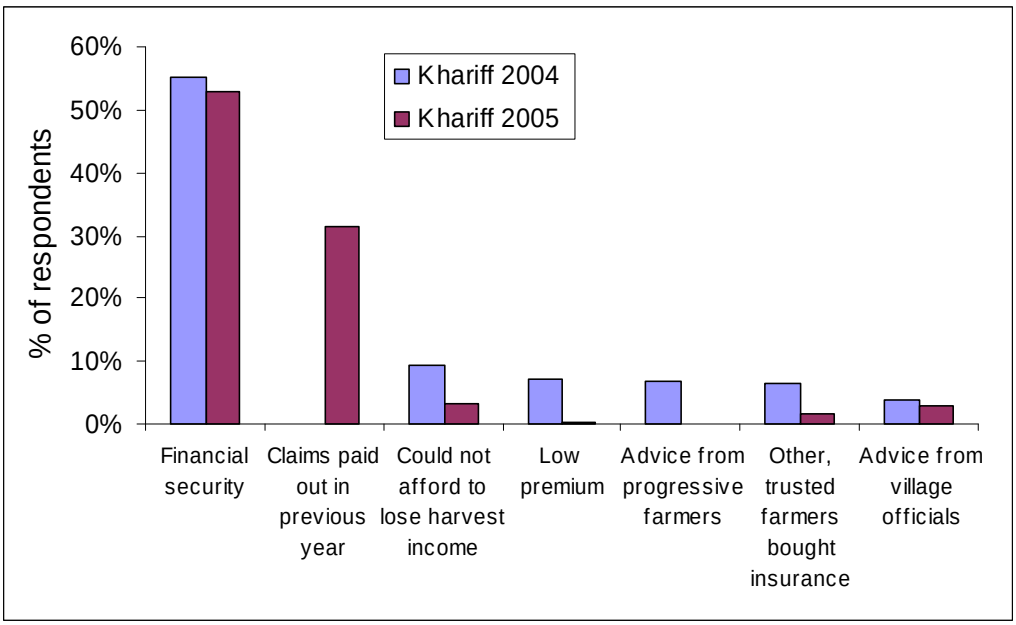


Figure 3: Reasons for buying weather-index insurance in India
Source: Gine, 2005.

5. The viability of reviewed disaster schemes: a synthesis

In “Invest to Prevent Disaster Risk,” a Viewpoint prepared for World Disaster Reduction Day 2005, ProVention and IIASA (2005) identified four interlinked criteria that ensure the viability of microinsurance and thus its potential to contribute to the management of natural disaster risks. These criteria include the contribution of microinsurance to risk reduction, the financial robustness of the schemes, their affordability, and their governance. Despite the short operating experience of disaster microinsurance schemes, this review yields important, albeit limited, evidence on these viability criteria. This evidence is discussed below and summarized in *Table 6.*

5.1 Contribution to risk reduction

A major consideration for the disaster risk management community and associated sponsors is whether and how microinsurance schemes contribute to disaster risk reduction. First, does insurance genuinely reduce the long-term risks of disasters to the poor by reducing their vulnerability? Second, does it promote preventive measures and thus contribute to minimizing immediate disaster losses?

Experience of disaster microinsurance is mixed with respect to its contribution to reducing long-term losses and the vulnerability of the poor. Insurers have reliably and quickly settled claims, but there is little information as to how these payments may have mitigated postdisaster poverty. According to the information available, the premium-to-cover ratio indicates that substantial compensation will be provided postdisaster (for example in the GSDMA case) or that compensation was forthcoming quickly (for example, WINCROP). Furthermore, microinsurance can be coupled with the promotion of credit to the poor so that they can aspire to activities with higher returns. However, to date, there is no clear evidence regarding the relationship between

microinsurance and shifts to higher-risk/higher-yield activities. Monitoring the benefits of index-based insurance by providing postdisaster security, as well as promoting higher-yield crops, continues (Gine, 2005).

Table 6: Synthesis of analyzed microinsurance schemes providing cover for disaster risks

Type of scheme	Contribution to risk reduction	Financial robustness	Affordability	Government, client, and donor participation
Schemes offered as extension and protection to microcredit and microsavings operations				
Bundled with credit and/or savings (Proshika, Swayamkrushi, NLC, NASFAM)	Contributes to reducing financial burdens	Relatively stable, to a large extent protecting MFI/NGO operations	Mandatory if farmer or household takes credit or engages in savings arrangement	Less donor involvement necessary; insurance component not transparent to clients
Offered voluntarily (VimoSEWA, CSD, WWF)	Some with disaster-management plan	Vulnerable, some with business model	Unclear, little uptake compared to microclient base	Better catering to clients needs; longer-term donor involvement support necessary
Schemes specifically designed to deal with disaster risks as part of a risk management framework				
Bundled (GSDMA, HRHIP, WINCROP)	Integral element of risk management or retrofitting plan (GSDMA, HRHIP); no incentive, as cover provided for 10 years (GSDMA)	Robust because of large diversification (GSDMA), not robust and diversified (WINCROP)	Mandatory in conjunction with other services such as loan provision*	Promotional efforts needed to explain insurance policy after implementation (GSDMA)
Voluntary schemes (AIDMI, Oxfam)	Integral element of risk-management framework, but no incentives for risk reduction, as premiums do not account for reduced risks	Pilot phase; increasing interest by insurers reported	Premiums low to some extent because of compulsory pro-poor regulation, but also efforts by providers to develop affordable cover, premiums sponsored in Oxfam case (50%) in first year	Demand surveys; use of community links
Voluntary scheme: Index-based crop-insurance (BASIX)	Quick payouts reported; incentive for risk inherent in index-based schemes (schemes too recent to provide evidence)	Upscaling phase; increasing interest by insurers	Premiums low to some extent because of compulsory pro-poor regulation, but also efforts by providers to develop affordable cover	Product development with clients

*WINCROP is not mandatory in St. Lucia

The contribution of disaster microinsurance to reducing disaster losses is less positive, with the exception of the HRHIP in St. Lucia, where the physical protection (retrofitting of homes against windstorms) and financial protection via insurance were explicitly combined. There is also a link to risk reduction in the Oxfam, AIDMI, and GSMDA cases, where microinsurance is integrated as one management option within a broader natural disaster-risk-management framework. While the linkages between physical and financial risk management in these schemes are rather soft (for example, via training and promotional activities), integration provides greater potential for more explicitly coupling microinsurance to risk reduction in the future. However, none of the schemes reviewed, most of which are subsidized, fully equate premiums to risks, and no scheme offers reduced premiums based on preventive measures. Nor do the disaster-insurance schemes

reviewed collect any extra premiums for a risk-mitigation fund. Rewarding preventive behavior, which is also uncommon for disaster insurance in developed countries, would be especially difficult considering how small-scale the policies are and the additional administrative costs involved. The index-based insurance systems are, by design, more conducive to risk reduction, as claims do not relate to losses; however, there is little documentary evidence of this, and it remains to be seen whether these instruments can lead to the reduction of vulnerability and risk via their inbuilt incentives.

In examining and supporting microinsurance for natural disasters, it is therefore important to ask:

- **Is microinsurance integrated within a broader disaster-risk-management framework?**
- **Do these schemes offer effective incentives for disaster prevention?**
- **If schemes are tied to public or donor support, can there be contingent requirements for risk-reduction measures?**

5.2 Financial robustness

Disaster insurers face the possibility of very large losses and even insolvency for high- impact events that affect whole communities or regions. Some critics thus warn specifically against covering covariant risks and suggest excluding them from insurance policies altogether (e.g., Brown et al., 2000). If insurers with limited capital reserves choose to indemnify against covariant risks, they must guard against insolvency by diversifying their portfolios geographically and/or transferring their risks to the global financial markets through reinsurance:

> It is imperative that the microinsurance scheme has access to reinsurance to absorb losses and ensure financial sustainability. Thus, insurance schemes (particular small or localised ones) need to establish linkages to insurance companies either nationally or internationally, to protect themselves from catastrophic losses (CGAP, 2003).

With a few important exceptions, the recent index-based weather schemes in India and Malawi and WINXROP in the Caribbean, the schemes reviewed appear to involve little reinsurance, confirming Nabath's (2005) general observation that most microinsurers (not only disaster insurers) have been unsuccessful in finding a reinsurer, and "at best, have partnered with a formal insurance company which has taken over the role of reinsurer and, at worst, have set up a joint reinsurance scheme with other microinsurers." If the insurance partner has sufficient reinsurance or means to diversify the often small microinsurance portfolios, however, the partner–agent model is on a sound footing, but there is little public information regarding the financial capacity of the partner insurers. Diversification provides additional protection, and most schemes are "upscaling" or broadening their geographic scope. The index-based schemes in India, as a notable example, have more than 250,000 clients after only three years of operation. Yet, many microinsurers remain concentrated in areas with highly correlated risks.

As a positive observation, most disaster microinsurers are operating as partner–agents; and combining the expertise of insurance companies with MFIs/NGOs is considered to be the most financially sustainable organizational model. It is notable that VimoSEWA began operations by taking a full-provider approach, but after encountering serious financial problems switched to the partner–agent model. The community-based Centre for Self-Help Development scheme has no formal reinsurance and may be at serious risk in the event of a large disaster. Similarly, the Proshika insurance fund has no reinsurance protection; however, it does have far wider participation and diversification and is thus in a better situation to deal with large correlated losses. Providing for large losses is not the only factor limiting the financial robustness of disaster-insurance schemes. The statistical basis for estimating disaster risks can be problematic because of the lack of historical data, especially for rare catastrophes. Formal insurance for disasters is also plagued by "adverse selection," which means that those most at risk tend to join the pool (and the insurer has less information on the risks than the clients). Finally, it should be borne in mind that the transaction costs for small insurers—estimating risks, distribution, assessing claims, and so forth—can be quite substantial.

Insurers can increase their financial robustness with advanced statistical modeling of the risks, as well as by reducing adverse selection and moral hazard. The weather disaster scheme in Malawi, for example, not only eliminates moral hazard and adverse selection but is based on a long history of statistical records kept by rain stations in the selected region (Hess and Syroka, 2005a). Adverse selection plagues all voluntary, nonindexed schemes, but is eliminated through bundled insurance.

The international donor community can play an important role in ensuring the financial robustness of developing country insurance providers. By providing technical assistance and financial support to help make these instruments affordable to the poor, both the donors and the recipients stand to gain, especially if the instruments can be designed to encourage preventive measures. Predisaster assistance would leverage limited disaster aid budgets, free recipient countries from the vagaries of postdisaster assistance, increase funds for disaster recovery, and (possibly) provide incentives for risk reduction (Linnerooth-Bayer, Mechler and Pflug, 2005). As evidence mounts that climate change may be contributing to losses in developing countries from weather extremes, there is also interest in supporting microinsurance as part of an adaptation program (Linnerooth-Bayer, et al., 2003).

At a broader level, a global innovation for index-based insurance is currently being prepared by the World Bank and European Commission. A Global Index Insurance Facility (GIIF) will have three functions: 1) supporting the technical assistance and infrastructure that are needed to develop index-based insurance; 2) aggregating and pooling risk from different developing countries to allow for improved pricing and risk transfer into the global reinsurance and capital markets; and 3) cofinancing certain insurance products on a bilateral basis from donor to developing country (World Bank, 2005).

Related to the financial robustness, the key issues to consider when devising and supporting disaster microinsurance are:

- **Which provider model is used?**
- **Is there access to reinsurance or sufficient diversification within the portfolio?**
- **Have the risks been reliably modeled?**
- **Is there a longer-term plan to reach commercial viability, or is continued donor support foreseen?**

5.3 Affordability

At the heart of microinsurance is the provision of services to those not reached by regular commercial insurance. Thus, it is imperative to ask how premiums can be made affordable to low-income households and businesses. Major cost factors in the insurance industry involve payment of claims (about 55% of premium income) and transaction and capital/reinsurance costs (about 45% of premium income) (Abels and Bullens, 2005). As necessary as reinsurance is for provider viability, it adds a “load” to the actuarial value of the contract. Commercial catastrophe insurance premiums, while fluctuating widely, are often higher than the “actuarially fair” value. This means that, by insuring, individuals in developing countries may pay substantially more than their expected losses over the long term.

Indeed, as shown in this review, premiums can be substantial. In Malawi, farmers pay from 6-10% of their insured crop values; in India, farmers in the BASIX scheme pay up to 3%. The growing uptake of voluntary microinsurance contracts demonstrates their affordability, although the “very poor” still lie outside most microfinance systems. In view of the costs of risk transfer, a major dilemma is to offer premiums that can be paid by the very poor in high-risk areas. This review has revealed a number of strategies for reducing the costs of disaster insurance, as discussed below:

- Transaction costs can be lowered, for example, by offering simple products to client groups; relying on community pressure for timely payments; enlisting the services of nonprofit organizations that do not charge high commissions; and streamlining administrative costs (e.g., by integrating them into existing systems). In many of the cases reviewed (e.g., AIDMI),

NGOs and MFIs provide low-cost administrative assistance to existing systems by, among other services, distributing the product and assessing claims. The index-based insurance systems now operative throughout India and in Malawi are particularly promising, as they substantially reduce the expense of claims handling and also simplify the risk assessment.

§ The national government and/or international donor community can provide capital reserves or reinsurance. For example, the World Bank is supporting the Turkish Catastrophe Insurance Pool (TCIP) by providing some reinsurance in the form of a contingent credit. This was not the case in the programs reviewed, but the GIIF proposal for an insurance facility would make this possible.

§ The national government and/or international donor community can directly subsidize disaster claim settlements or premiums for the poor. Along with cross-subsidies, donor assistance keeps the premiums in Bhuj at about 0.5% of annual income (the cost of a box of matches per day). But even this low rate may not be affordable to the very poor. Only in the case of disaster insurance offered in the Andhra Pradesh region are premiums directly subsidized by Oxfam, which paid 50% of the premium in the first year for about 1,000 clients.

It is significant that the index-based crop insurance schemes in India, with cover extending to about 250,000 clients, are not directly subsidized. These schemes are offered only to farmers taking loans that will increase their productivity; thus, there may be a bias toward more affluent rural farmers. Nor is the microlending scheme in Malawi, where insurance covers the risk of loan default, directly subsidized. In this case, premiums are kept low because the insurance payment will only cover the default risk of the loan and does not protect the farmers' livelihoods in the case of drought.

§ Alternatively, external support can come in the form of technical/organizational assistance, for example, for conducting feasibility studies, providing access to data, carrying out risk assessments, designing products, and facilitating public–private partnerships. Indeed, many international donors are opposed to direct subsidies because of the disincentives they impose and because they may be unreliable in the long term. They advocate instead technical support in the startup phases. This support has been forthcoming from sponsoring institutions, such as the World Bank, the ProVention Consortium, the Caribbean Development Bank and Oxfam, for a large number of the schemes reviewed. As a case in point, the VimoSEWA project in Gujarat has been receiving support to cover administrative expenses, research, and investment from the *Deutsche Gesellschaft für Technische Zusammenarbeit* (GTZ), the Ford Foundation, the Consultative Group to Assist the Poor (CGAP), the International Labour Organization (ILO), and the Canadian Cooperative Association. Without this support, the scheme would be operating at a significant deficit.

§ The premiums paid by the poor can be reduced through cross-subsidies in the insurance system, as successfully demonstrated by the Indian pro-poor regulatory requirement for formal insurers to take on an increasing quota of low-income clients. This requirement has resulted in significant cross-subsidies within the insurance sector. There is concern that servicing the nonprofitable lower-income segments of society may result in badly designed and marketed products, but insurers appear to be enthusiastic about expanding operations, particularly with the promising case of Oxfam in Andhra Pradesh and the index-based schemes in India and Malawi.

It should be emphasized that "affordable" insurance is a necessary, but insufficient, condition for its purchase by the poor. Households and businesses should also weigh the benefits and costs of insurance in comparison with other investments, like schooling or prevention of risks. The benefits of disaster insurance are substantial, but low-income households and farms must weigh the benefits against their other urgent needs.

Regarding the affordability of microinsurance, it is important to evaluate the following:

- **Are premiums indeed affordable to the clients or are subsidies necessary?**
- **Apart from direct subsidy of premiums, are there other means of decreasing the costs to the client (e.g., through technical support during the startup phase or regulated cross-subsidization)?**
- **Can subsidies (direct or indirect) be phased out over time?**

5.4 Governance

The financial robustness, affordability, and risk-reduction capacity of disaster-insurance schemes are closely linked to how systems are governed. Good governance in this context means the legitimacy and credibility of social institutions and procedures responsible for the development, implementation, and regulation of the insurance system. Social institutions, in turn, include governmental bodies, NGOs, private market entities, international financial and donor institutions, and public organizations (e.g., cooperatives, community-based organizations, and self-help groups).

One of the most important factors leading to the viability of disaster insurance is the trust of the stakeholders in the system: trust that claims will be paid in a timely manner, that insurers will remain solvent, that the government will assure credible regulation, that there will be sufficient oversight and a reliable legal basis (which will also protect the rights of women). Many studies show that trust can be enhanced by stakeholder participation in the design and implementation of insurance systems and products (Linnerooth Bayer and Vari, 2005). In several of the disaster-insurance schemes reviewed, potential clients were involved early on in demand surveys, product development, and/or product modification. It is important for the insurance product to be developed together with the stakeholders; but according to Ellis Wohlner (2005) microinsurers should also include public organizations as integral partners in providing services to the policy holders. Aysan (2005) attributes the early success of the Indian AIDMI project to the role of active civil society structures acting as an intermediary between the clients and the insurance companies. Importantly, the close cooperation with the public of the All India Disaster Mitigation Institute (AIDMI), as the NGO partner, has contributed to building the credibility of insurance: “The established, trusting relationships of DMI with low-income clients due to its earlier work in the communities seem to have played a crucial role for microinsurance to be added as an ancillary service through its existing structures and human resources at limited cost” (Aysan, 2005).

Not surprisingly, recent payouts, especially in the case of Indian weather derivatives, appear to have increased trust in the insurance product. Trust can be lost quickly if insurers cannot pay claims. In the BASIX and DHAN schemes, advertising the high payouts has been a marketing strategy that might fail in the case of extended disaster-free periods. VimoSEWA is promoting insurance, and possibly increasing awareness and trust, via pamphlets, posters, street plays, short videos, and other means.

In addition to bottom-up stakeholder procedures, top-down regulations are essential for good governance. The pro-poor requirements in India, for example, appear to be essential for making most schemes in this country possible. According to Dirk Reinhard (2005) of Munich Re, a “very important concern is the necessity for adequate consumer protection regulations, especially for illiterate populations. It should be kept in mind that in some cases humanitarian concerns and commercial concerns are at cross purposes.” For this and other reasons, donor participation—by assuring financial robustness and oversight— can be important for the good governance of the system. In general, experience shows the importance of combining market entrepreneurship with strong regulation and the bottom-up participation of public groups to establish credible and trusted systems that provide disaster microinsurance to the poor.

It is therefore important to ask:

- **Have the relevant stakeholders been involved in the design of the scheme?**
- **How are the accumulated insurance funds regulated, and by whom?**

- **What institutions oversee the operations of the insurers?**
- **If international financial institutions or donors are involved, what role do they play in ensuring good governance?**

6. Conclusions: potential and challenges of pro-poor disaster microinsurance

This review not only demonstrates the potential of disaster microinsurance programs as a means of protecting the poor against the consequences of natural disaster shocks but also reveals significant challenges regarding making this protection viable. Microinsurance programs, which are already providing postdisaster liquidity to poor households, are thus helping to secure livelihoods and facilitate disaster recovery and reconstruction. Moreover, index-based schemes have demonstrated their value in improving the creditworthiness of farmers. Promoters claim (although there is too little experience for actual confirmation) that indexed insurance will contribute to breaking the disaster-induced poverty cycle by enabling productive investment. Yet, the long-term viability of these programs in the face of large, covariant losses and the overarching need to reduce the immediate human and economic toll of disasters is still to be determined. Reducing disaster-related poverty through microinsurance presents formidable challenges to local, national, and international communities.

A major challenge is assuring the financial sustainability of microinsurance providers, while at the same time providing affordable premiums to poor and high-risk communities. Many support subsidies to meet this challenge; yet many also caution against shifting responsibility away from national or international solidarity for the poor; others warn against the negative incentives promoted by subsidies and favor limiting support to starting up microinsurance operations. ***One of the most salient observations of this review is the different roles played by national and international solidarity in supporting microinsurance schemes.*** India is playing a leading role with its pro-poor insurance regulation that provides predisaster solidarity through a cross-subsidized insurance system. At the international scale, the World Bank is exercising global solidarity through its financial and technical support, mainly for starting up risk-transfer systems for low-income households, farms, and governments. At the same time, many microinsurance programs are providing clients with the opportunity to purchase protection in the absence of subsidies, and private insurers are optimistic that they can market affordable products.

If microinsurance is to become a welfare-enhancing instrument, an equally challenging prerequisite is its propensity to reduce the unacceptably high human and economic impacts of disasters on the poor. While some schemes embed insurance within a disaster- risk-management framework***, this review has revealed a lack of direct links and incentives on the part of current microinsurance programs to reduce the direct losses from disasters.*** This finding is not unique to developing country insurance, but it flags a more general concern about linking risk financing to risk reduction. Skeptics rightly warn that insurance may conversely present disincentives to taking proactive risk-reduction measures. Index-based schemes offer a possible exception, insofar as a physical trigger minimizes such moral hazard. Nonetheless, the challenge of linking insurance to prevention underlines the importance of integrating microinsurance into risk-management programs that combine regulatory and citizen oversight to assure incentives and effective regulations.

Microinsurance is only viable to the extent that private insurers remain solvent following large-scale or sequential disaster events or that they choose to enter these high-risk markets. If insurers with limited capital reserves choose to indemnify large covariant and recurring risks, they must guard against insolvency by diversifying their portfolios geographically, limiting exposure and/or transferring their risks to the global reinsurance and financial markets. ***This review shows that there is little transparency and few commonalities in the financial backup arrangements of private market providers.*** While some promote the absolute necessity of purchasing reinsurance, others consider this costly investment unnecessary because of the smaller size of microinsurance portfolios. As many programs are in the startup phase and/or have

not experienced major disasters, further research is needed to track the performance of existing schemes.

A related challenge is to create partnerships and institutional frameworks that contribute to credible and trusted microinsurance systems. Safety nets for high-risk poor communities cannot be put into place without public–private alliances, as no one partner can operate without the assistance of the others: highly exposed and fiscally unstable developing country governments cannot fully absorb the risks; informal community solidarity and family systems are overtaxed by large covariant losses; and private insurers cannot offer low-cost policies, given the need for expensive reinsurance and large uncertainties in the projected loss estimates. ***One of the findings of this review is the existence of creative alliances among NGO/community groups, microfinance organizations, government regulators, entrepreneurs, and international financial and donor institutions in pioneering microinsurance programs.*** Of special interest is an emerging new role for donors in supporting these schemes. The Global Index Insurance Facility, which is already eliciting contributions from donor institutions, may be a milestone in shifting donor focus from reaction to risk pooling. Coupling the GIIF and other initiatives with disaster loss prevention will require "up-front" capital, but the outlays may be small compared to the international humanitarian assistance and development finance that are currently channeled into postdisaster relief, recovery, and reconstruction.

Next steps

For disaster microinsurance to serve as a wide-scale safety net for the poor, the current pilot and fledgling programs will need to be "scaled up" to cover the large number of low-income households and farms facing risks from natural disasters. The potential is huge, but there is insufficient experience with current programs to judge their future viability. The research community can contribute by collecting evidence and eliciting lessons from operating experiences. The challenge of disaster microinsurance as a pro-poor instrument, and the many unanswered research issues, will be the focus of continued ProVention–IIASA collaboration.

There is little awareness or understanding of the merits and challenges of microinsurance on the part of the disaster-risk-management community. One option for bridging this gap and promoting concerted action is to institute an international task force on risk transfer and its potential for developing countries. As discussed at the Bangkok ProVention meeting "Incentives for Reducing Risk" (ProVention, 2006), such a task force would include disaster-risk-management specialists, microinsurance and risk-transfer experts, the research community, and representatives from civil society, governments, and bilateral and multilateral donor institutions. A concerted effort among these groups could contribute to better assessing the potential and scope for microinsurance and other risk-transfer mechanisms for poor households, businesses, and governments in highly exposed developing countries.

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