

Disaster Insurance for the Poor?

A review of microinsurance for natural disaster risks in
developing countries

A ProVention/IIASA study

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1 INTRODUCTION

Following the UN year of microcredit in 2005, there is growing interest in microfinance solutions to help alleviate poverty in developing countries. Whereas microcredit and to a lesser extent microinsurance for life and health risks are now widely established, microinsurance to indemnify losses from severe and catastrophic natural disaster risks is only emerging. The intent of disaster microinsurance is to provide low-income households and businesses with easily accessible and affordable insurance for deaths, health expenses, 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 the nature of disaster losses, which can affect whole communities and risk pools at the same time (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, preparedness and risk transfer.

A limited number of schemes offering microinsurance for disaster risks exist or are planned in developing countries. Experience and available information are too limited for a comprehensive evaluation of these schemes, but some insights on 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) on a research initiative aimed at assessing the benefits, limitations and viability of microinsurance for disaster risks.

The ProVention Consortium is a global partnership of international organizations, governments, private sector enterprises, NGOs and academia dedicated to reducing the risks and impacts of disasters in developing countries. Since its launch, 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. IIASA is a non-governmental 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 for managing and reducing disaster risks. A key concern for ProVention and IIASA remains 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. The intent is not to be exhaustive – many schemes are in the planning stages– but to give an overview of the potential and challenges of microinsurance for the poor. We begin in the following section with background information and a discussion of the benefits and limitations of risk transfer and pooling. The different organizational and institutional forms that microinsurance can take are described in section 3. Section 4 presents available evidence on the organization, scope and operations of the reviewed disaster microinsurance programs. In section 5 the viability of catastrophe microinsurance is examined with regard to four criteria: its contribution to risk reduction, its financial robustness, its affordability and governance. The paper concludes by summarising the main findings with regard to the potential of catastrophe microinsurance to protect the poor against the consequences of natural disaster shocks, and the significant challenges in making this protection viable.

2 BACKGROUND: BENEFITS AND LIMITATIONS OF DISASTER MICROINSURANCE

As the international community places increasing emphasis on preventing disasters, there is growing interest in the potential of insurance as part of an effective *ex ante* risk management strategy (Linnerooth-Bayer et al., 2005). Insurance does not reduce immediate disaster impacts, but it provides indemnification against the losses by pooling risks in exchange for a premium payment. Persons affected by a disaster benefit from the contributions of the many others that are not affected, and thus they receive a contribution greater than their premium payment. 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 for 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 throughout a region or country at the same time (referred to as covariant risks). Furthermore, the poor are often exposed to multiple shocks such as illness and natural hazards at the same. 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 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 post-disaster sources of finance have been woefully inadequate to assure timely relief and reconstruction. For example, two years following 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 actions (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 post-disaster liquidity, thus securing their livelihoods and providing for reconstruction. Since 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 investments in disaster prevention if insurers offer lower premiums to reward risk-reducing behaviour. 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 also a more dignified means of coping with disasters than relying on the *ad hoc* generosity of donors after a disaster strikes. Contractual arrangements might 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 the 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 behaviour) 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 failures of governments in providing structural defenses, land-use practices and other risk-reduction measures (Cohen and Sebstad 2003). The role and influence of developed countries in climate change and its effects 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 their limitations, Cohen and Sebstad (2003) claim that these risk-sharing arrangements work reasonably well for less severe and idiosyncratic shocks. Women in high risk areas, for example, often engage in complex, yet innovative, ways to access post-disaster capital by joining informal insurance schemes, becoming clients of multiple MFIs, or maintaining reciprocal social relationships. These informal strategies, however, have limited scope for shocks that affect entire risk-sharing communities.

For and against post-disaster microcredit

Instead of insurance, financial services can include emergency credit following a disaster. Salvano Briceno from the UN/ISDR sees post-disaster 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 post-disaster loans“ (Briceno, 2005). Others view post-disaster credit as problematic. Jeanette Thompson (2005) from the CGAP cautions MFIs against engaging in emergency microlending: “When clients lose property and production 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) 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, however, is the provision of access to savings and insurance.” (Leftley, 2005).

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 (MFIs), 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 (CGAP) defines microinsurance as

...the protection of low-income people against specific perils in exchange for regular 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. (CGAP, 2003).

From a provider perspective, Brown and Churchill (2000) list the following conditions for insurability:

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

Microfinance services often include insurance for such risks as the death of a breadwinner or livestock, health 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 due to the following characteristics disaster insurance is distinct from other forms of insurance (Brown and Churchill, 2000):

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

Consequently, the implementation of microinsurance has proceeded from rather simple life insurance to health and property insurance. As shown on Figure 1, life insurance is the least problematic since 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 co-variant events. Disaster risks have rarely been explicitly considered as a niche for microinsurance because they impact large regions with multiple losses, and thus are both more uncertain and have higher potential losses than other types of insurance. As experience shows, covariant risks are not uninsurable, but need careful diversification and reinsurance.. For example, as shown in Figure 1, Brown and Churchill (2000) argue that insurance should be combined with flexible savings for providing a safety net for disasters.

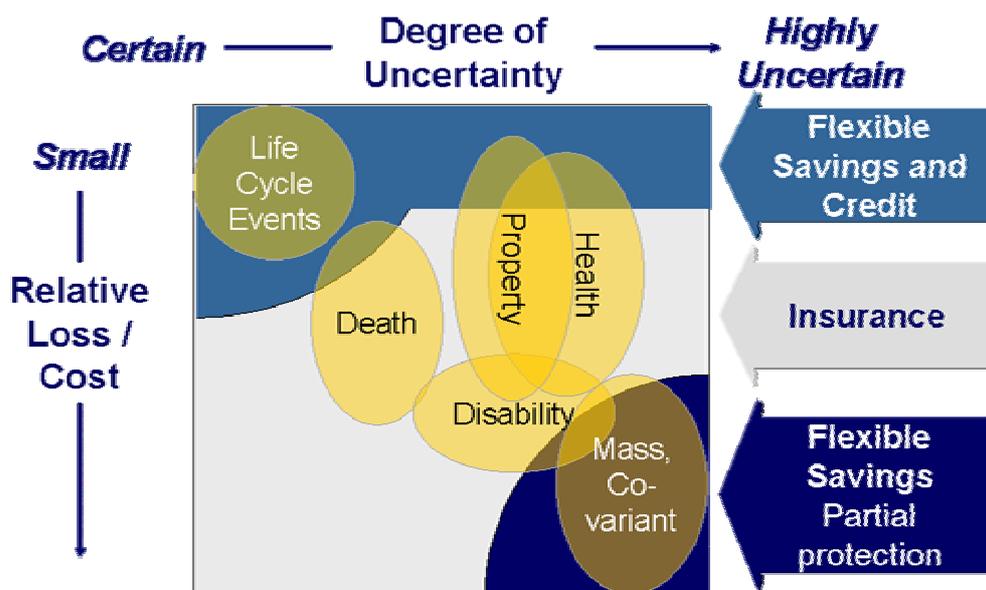


Fig. 1: Insurance and types of risks
Source: Brown and Churchill, 2000.

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 by contracts written against a physical trigger (parametric insurance) such as rainfall measured at a regional weather station. In the case of weather derivatives, farmers collect an insurance payment 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 due to the high costs associated with claims settling on a case-by-case basis. A major factor bankrupting these programs has been natural disasters such as droughts (Brown, Green and Lindquist, 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 for promoting and distributing 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. Since payouts are not coupled with individual loss experience, farmers have an incentive to engage in loss-reduction measures, for example, 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 elimination of long and expensive claims settling. Since 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 transaction costs. Index-based mechanisms are also more transparent since 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 despite substantial losses (Manuamorn, 2005).

3.2 Delivery models

As identified by Cohen and McCord (2003), we distinguish four institutional models for providing microinsurance

- *Partner-agent model*: Commercial or public insurers together with microfinance institutions (MFIs) or non-governmental organizations (NGOs) collaboratively develop the product. The insurer absorbs the risk, and the MFI/NGO 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. Similarly to insurance mutuals, there is no involvement on the part of commercial insurers.
- *Full service model*: Commercial or public insurers provide the full range of insurance services from development of the product, its distribution to absorbing the risk.
- *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 default risk.

Importantly, disaster cover can 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 a designated catastrophe reserve fund. There are no premium payments on the part of the insured since taxpayers absorb the costs.

4 REVIEW OF DISASTER MICROINSURANCE SCHEMES

In this section, we review microinsurance schemes that offer cover for disaster risk in India, Nepal, Bangladesh, Pakistan and Malawi. The discussion is based on available published material and expert correspondence, and is not considered to be a comprehensive review of all existing schemes.² Microinsurance programs are described in terms of their organizational structure, scope and operations.

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

- extension to microcredit and microsavings operations.
- stand-alone disaster insurance programs.

An important distinction for both categories is whether insurance is bundled with other micro financial services, for example, to secure a loan, or whether it is offered independently.

The large number of microinsurance programs in India can be explained in part by its conducive regulatory environment. Since 2000, the Indian regulatory authority has made

² The review focuses on documentation in the English-speaking literature and does not include projects under development, such as the index-based insurance in Ethiopia (“hunger insurance”) and in Peru.

it mandatory for formal insurance providers to service the low-income segment of society. Furthermore, there is a provision that regulated insurers increase their shares of low income clients over time (ADA, 2004). Insurers wishing to operate in India confront fines for non-compliance, and appear willing to incur a loss on their low-income microinsurance business in order to access the broader market. Much like in the U.K., insurers have thus made insurance affordable to the poor communities with cross subsidies from their other lines of business and wealthier clients. Recently, some Indian insurers are viewing the low-income market as a (potentially) profitable niche (Krishna, 2005a).

4.1 Extension of microcredit and microsavings programs

A number of schemes not specifically designed to deal with disaster losses exist as protection and extension to microcredit and microsavings operations. Two types can be distinguished:

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

4.1.1 Bundled schemes

Four microinsurance schemes are offered by MFIs which require the uptake of insurance as a condition for extending loans or savings arrangements to their clients: Proshika, Swayamkrushi, NLC and NASFAM (Table 1). While these schemes offer benefits to the 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 pre-defined 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.³

Proshika

Based in Bangladesh, *Proshika* is one of the largest NGOs and MFIs in the world with more than 2 million clients. It offers a savings scheme to rural and urban poor households. This scheme experienced widescale defaults in the massive 1988 floods that affected 73 million people, more than half the population of Bangladesh (CRED, 2005). As a response to the disaster, in 1991 a natural disaster management program was established (Nagarajan, 1998), and since 1997 compulsory group based insurance is included. Under this program 2% of the savings balance is annually transferred to a fund, which will pay twice the amount of the savings deposit in the case of property damages 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 years of membership in the savings scheme (the outstanding loan will be recovered) (ILO, 2005a). The scheme operates without reinsurance or donor support. With more than two million clients in 20,000 villages and 2000 slums in 57 districts of the country, this insurance fund has wide geographic diversification. It covers 10% of the whole population of Bangladesh for the property insurance and 25% for life insurance. Still, large areas of the country can be affected by disasters: normal flooding can affect about 25% of the land area whereas extreme events can submerge more than 50% of Bangladesh (FAO, 2005).

³ Furthermore, there is a number of stand-alone bundled micro life and health insurance schemes that do not explicitly mention, but also not exclude cover for natural disaster risks. These are not discussed here, as no information was found on disaster cover or how they have dealt with disaster events.

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

Provider (country, year)	Proshika (Bangladesh, 1997)	Swayamkrushi with insurer ICICI (India, 1997)	NLC with State Insurance Company of Pakistan (Pakistan, 2000)	Union NASFAM with Banks OIBM and MRFC and Insurance Association of Malawi (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	100Rs 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 Rs in case of death Life/property: In case of death and/or property losses, write-off of loans taken out to finance working tools, equipment and other productive equipment	Life: ownership of leased asset transferred to beneficiaries	Payout triggered by rainfall failure
Clients	13,000,000 property 2,200,000 life (2002)	8,1000 (2002)	1,308 (2000)	986 (2005)
Reinsurance	No	Unclear, maybe reinsurance purchased by insurer	Unclear, maybe reinsurance purchased by insurer	Unclear, maybe reinsurance purchased by insurer
External 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, no evidence yet, premiums substantial

Sources: ILO 2002a, ILO 2005c, Brown and Churchill 2000, Hess and Syroka, 2005.

According to Pantoja (2005) the scheme has been relatively effective in terms of claims settlement. Until 2004, 20.06 million 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 tornados.

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 for accidental death (30,000 Rupees), as well as the write-off of loans taken out to finance working tools,

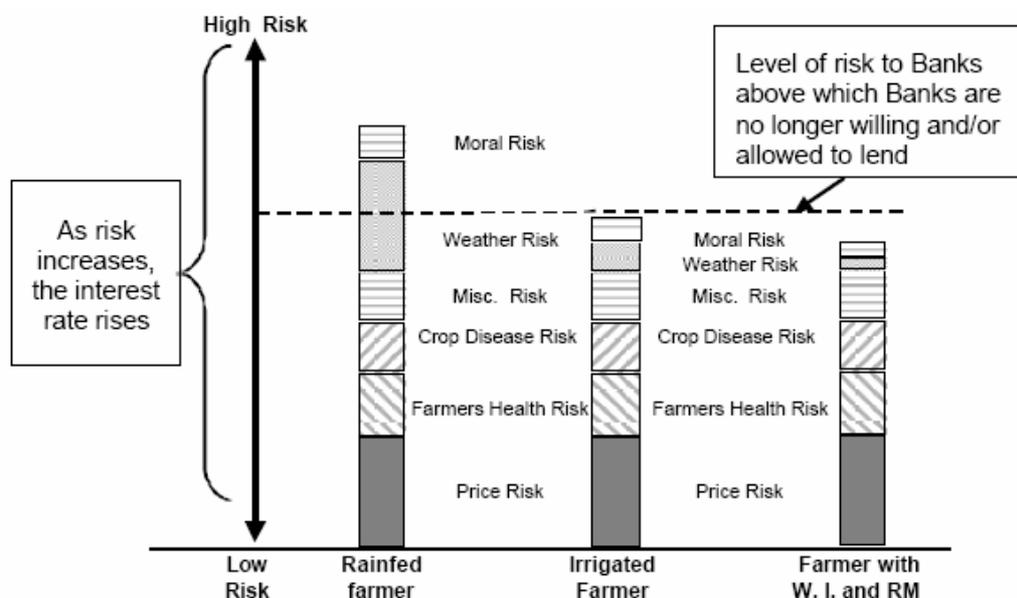
equipment and other productive equipment in the case of death and/or property losses is granted. In 2002, 8,100 participants were registered. With a membership base considered small, defaults of contributions have occurred posing some strain on the system. Furthermore, understanding of insurance among clients is limited, as members have been pressuring to receive a return on the premium paid. The scheme operates without external assistance.

NLC

The MFI *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. Premium amounts to 1.5% of the leased assets. The NLC benefits from this arrangement since it is covered against the loss of assets due to natural hazards. Clients also benefit since the policies’ beneficiaries retain the leased asset in case of death of the policyholder. Although 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.

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 due to a high systemic risk of loan default in the aftermath of droughts and other extremes in weather (Hess and Syroka, 2005). 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 with implemented risk management measures and/or weather insurance that have successfully hedged a part of their risk



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

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

In Malawi, a country with predominantly smallholder agriculture, the economy and livelihoods are severely affected by rainfall risk resulting in drought (and food insecurity), soil depletion, lack of credit, and limited access to agricultural inputs. In the past, the government has 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 due to the high default risk.

In 2005, a packaged loan and index-based microinsurance product was offered by Opportunity International Bank of Malawi (OIBM) and Malawi Rural Finance Corporation (MRFC) to groups of groundnut farmers organized by the National Smallholder Farmers (NASFAM). Accordingly, the farmer enters into a loan agreement with a higher interest rate that includes the weather insurance premium, which the bank pays to the insurer, the Insurance Association of Malawi. In the event of a severe drought (as measured by the rainfall index), the borrower pays a fraction of the loan due, 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. Thus the advantage for the farmers is that they obtain needed credit to invest in the seeds and other inputs necessary for higher-yield crops. The World Bank together with Opportunity International (OI) played the catalyst in developing weather insurance products to secure credit for groundnut farmers.

Ulrich Hess, 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 handle 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! (Hess, 2005)

In November 2005 the first policies were sold: 982 small farmers in Malawi bought weather insurance that allowed them to access an input loan package for better groundnut seed. Insurance premiums were substantial: Dependent on location they amounted to 6-10% of the insured values. An important component of the successful implementation was to hold training sessions for the field, insurance and operations staff of the involved institutions. 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 SECO.⁴ Recently however some information 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 substantial effect on the viability of this scheme. More information will need to be collected to examine the scheme's viability.

4.1.2 Schemes offered independently

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

⁴ Personal communication with H. Ibarra, World Bank.

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

Provider (country, year)	VimoSEWA 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)
Provider model	Partner agent (individual registration)	Community-based (individual registration)	Partner agent (group registration)
Premium	100-225 Rs	100 (50 for first 15 months) NPR	Unspecified percentage of microcredit
Cover	Life: 5-65,000 Rs Health: 2-6,000 Rs Property: 10-20,000 Rs	Property/Life: 5,000-6,500 for death/housing collapse; 50% for death of husband	Property: 1,000 Rs
Clients end of	122,000 (2005)	5,000 (2005)	8,088 (2002)
Reinsurance	Indian insurers are part of reinsurance arrangement; donor provides protection	No	Unclear, reinsurance possibly purchased by insurer
External 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	Relatively wide geographic spread

Sources: Garand, 2005; ILO, 2005c.

VimoSewa

The *Self-employed Women's Association* (SEWA) is registered as a trade union and 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 others, SEWA is providing microfinance products. Since 1992 the integrated insurance scheme VimoSEWA offers insurance for health, property and life with cover for disaster risks. The SEWA Bank scheme started by mandatorily combining or bundling microcredit with life insurance providing risk coverage. 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 after which the system switched to a member-owned mutual operation.

Accumulated losses after the Gujarat earthquake of 2001 posed substantial strain on the insurance scheme because payouts were more than 100 times those in normal years (3,400,000 compared to 30,000 Rs), 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 and particularly for scaling up the operations. This support has taken the form of cover for administrative expenses, research and endowment for investment (in the future to be used for paying administrative expenses).

Currently, approximately 122,000 policies predominantly in Gujarat have been purchased by home-based workers, producers, vendors, manual labourers and agricultural workers. Two thirds of the clients reside in rural areas. After the earthquakes in 2001 and the floods in 2003-04 insureds 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 in 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, currently the scheme is behind schedule and probably will 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 reach viability of operations. 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 infeasible within the current approach. Generally, education is considered important since (as in developed countries) 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 means.

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 all of the first 15 months and later raised to 100 NPR. Coverage is provided to the extent of 5,000 to 6,500 NPR in the case of death for women and 50% of this amount for their husbands. Equal amounts are paid out for housing collapses due to natural disasters. There is no external assistance and no insurance institutions involved. Currently about 5,000 policies have been sold, a 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 neighbourhood groups of 8 to 10 persons. The WWF's major service is offering microcredit, and since 1983 it also offers microinsurance for health, life, accident and property to its microcredit clients. Disasters are insured in the property scheme, under which cover for 1,000 Rs is provided for damages due to natural disasters in exchange for a (undefined) percentage of the microcredit. While the client base is relatively small for a scheme that was implemented in 1983, there is substantial geographic spread. Insurance is provided by an Indian insurer. Although no external assistance is directly provided, under the Indian regulatory requirements the partner insurer may be supporting the scheme through cross subsidies from its other more profitable lines of business.

4.2 Stand-alone programs

In this section we review three microinsurance schemes that have recently been implemented by actors outside of the MFI field to specifically provide financial protection for disaster impacts within a risk management framework. These include one mandatory scheme offered by the Gujarat State Disaster Management Authority (GSDMA) and three voluntary schemes offered by the All India Disaster Mitigation Institute (AIDMI), the Andhra Pradesh Disaster Preparedness Program, as well as the index-based BASIX pilot project.

4.2.1 Mandatory scheme

Gujarat State Disaster Management Authority (GSDMA)

The Gujarat State Disaster Management Authority (GSDMA), established in 2001 after the disastrous earthquake, was the main agency for providing 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 instalment of housing assistance, the policy provides protection for ten years for 14 types of natural and man-made disasters. The maximum cover is one million Rupees. To spread risks GSDMA sought co-insurance from commercial insurers to the extent of 55%. Each insurer covers about forty thousand houses for which a system for sharing risks between different risk zones was developed (AIDMI, 2005).

Table 3: Characteristics of GSDMA mandatory microinsurance scheme

Provider (country, year)	GSDMA (India, 2001)
Provider model	Full service model
Premium	360 Rs for ten years
Cover	Property: 1 million Rs
Clients	215,000 (2005)
Reinsurance	Via various insurers (55% ceded)
External assistance	Premium automatically deducted from last instalment for housing reconstruction for which donor money was an important source
Major event experienced	-
Outlook	Provides substantial protection in case of event, no incentives for risk reduction

Sources: AIDMI, 2005.

GSDMA undertook promotional activities to raise client awareness and understanding on 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. Fifty thousand pamphlets were 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 distributed insurance information packages. According to a survey, respondents with a general knowledge about insurance (by those with and without this mandatory insurance) increased from 5% to 67%.

By offering a standard, non-voluntary 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. Because there is only one payment every 10 years, there is no potential for providing incentives for risk reduction (AIDMI, 2005).

4.2.2 Voluntary schemes

Recently two voluntary microinsurance schemes covering loss to life and property caused by natural disasters and one voluntary index-based scheme offering cover for crop damage have been initiated in India.

AIDMI

Since 2004, the NGO *All India Disaster Mitigation Institute* (AIDMI) has been offering the disaster insurance program *Afat Vimo* covering households and micro-businesses in the state of Gujarat. AIDMI has a long standing relationship with and wide network serving low-income communities affected by crises such as earthquakes, cyclones and riots. Supported by post-disaster and post-conflict interest free loans from donors, *Afat Vimo's* main purpose is to protect 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 for reducing risks (Aysan, 2005).

Table 4: Details of voluntary disaster insurance schemes

Provider (country, year)	AIDMI with Oriental Insurance Company and Life Insurance Corporation of India (India, 2004)	Oxfam with Oriental Insurance Company (India, 2004)
Provider model	Partner-agent (group-based)	Partner-agent (group-based)
Premium	59 Rs (property (house and content), stock in trade, and personal accident and death for income earning family member) 74 RS (group life insurance)	100-200RS
Cover	Life: 20,000 Property: 75,000	Life: 12,500 - 25,000 for partial disablement and death
Clients	2000 (2005)	1,000 (2005)
Reinsurance	Unclear, maybe reinsurance purchased by insurer	Unclear, maybe reinsurance purchased by insurer
External assistance	Various donors	Oxfam sponsors 50% of premiums
Major event experienced	No	No
Outlook	Upscaling, link to micromitigation foreseen	Upscaling phase

Sources: Aysan, 2005; Krishna, 2005a

Clients are mostly men and women that run microenterprises. They are reached through the volunteers of the LRF who have built 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 that had been 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 may 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.

An annual premium of 133 Rupees covers damages to property (house and content), stock in trade, and personal accident and 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 by clients was reported to be dependent on low premiums and targeting to 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, determination of premiums and cover. Due to 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 micro-businesses 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 non-life coverage extends to the house and contents, it is estimated that about 12% of the poor in Bhuj are covered.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 520-650 USD). Thus the insurance premium amounts to approximately 0.5% of annual income, which seems low compared to an average rate of 9% for life and nonlife combined for industrialized countries (Swiss Re, 2004). However, it should be kept in mind that in Bhuj (where average income is 50 times lower than in developed countries) households are closer to the subsistence levels and there is need to use all the available income for covering 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 key challenge with the scheme remains the upscaling to viable numbers.

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 city of Bhuj as citizens. The poor among victims were asked to tell if they needed insurance protection, and to which extent. The result of that survey was Afat Vimo (Disaster Insurance). Now, the victims have rightful claim over compensation for future losses.

Source: Sadhu and Pandya, 2005.

⁵ 33% of policy-holders are small vendors, 29% labourers, 2% small businesspersons and 14% homebased workers.

Andhra Pradesh Disaster Preparedness Program

In the coastal Andhra Pradesh region, microinsurance services are 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 of communities, government, civil society and media organisations. The international NGO, Oxfam UK, provides financial support for this program. The insurance partner is the Oriental Insurance Company. 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 age group of 10-75 years and with a minimum size of 250 members for risks of floods, landslide, rockslide, earthquakes, cyclone and other natural calamities. The premium ranges between 100 to 150 Rupees (Krishna, 2005). Coverage under this scheme is extended currently to more than 1000 vulnerable families. Oxfam pays 50% of the premium. Since 2002, more than 80 insurance claims have been reported and settled, including damages to property from natural events.

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 shoot 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 on monthly instalments. This repayment remains with local disaster preparedness fund managed by the community. Our volunteers have also been assisting the communities in the claims process. Getting insurance claim is some thing 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 in to thinking. These days these companies are proactively approaching NGOs and CBOs to do the insurance for the poor. This development shows that the model can sustain 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)

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 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 Mahbubnagar district of Andhra Pradesh for the major growing season. 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 falls below the historical average over the last 30 years as measured by the district collectorate. Although rainfall during the 2005 season was normal, farmers received a payout due to a delay in rainfall that had effects on 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 conventional loss inspection and settling (Hess and Syroka, 2005).

Table 5: Details of BASIX scheme

Provider (country, year)	Basix/KBS with insurer ICICI (India, 2003)
Provider model	Partner-agent (individual registration)
Premium	255-900 Rs; 3% of insured value
Cover Property	8,000-30,000 Rs
Clients end of 2005	7685
External assistance	Technical assistance in start-up phase
Reinsurance	International reinsurance
Major event experienced	-
Outlook	Quick upscaling, substantial demand, premiums substantial

Source: Hess, 2003

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 6 documents the development of the BASIX weather-index scheme, and others operating since 2003.

Since their inception, clients have valued the quick payouts compared to the traditional crop insurance. On the other hand, basis risk has been an issue. 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 underway to improve the product, and it remains to be seen how trigger failures will affect future insurance uptake.

Table 6: 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 Agent: MFI BASIX, KBS	Insurer: ICICI Lombard Agents: 1. BASIX/KBS 2. DHAN foundation Insurer: NAIC (full service provider)	
Coverage	230 in one district (India: 1730)	640 in 3 districts (India: 20,000)	7685 in 6 states (India: 150,000)
Crops	Groundnut, Castor	Groundnut, Castor, cotton	Livelihood protection through agro-climatic 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, 2005.

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 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).

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 not 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).

In a recent survey evaluating the impacts of the BASIX microinsurance pilot project,⁶ changes in farming practice – as anticipated to occur due to increased financial protection allowing higher-risk higher-yield methods of farming- were not reported. However, the pilots are still in an early stage, and farmers appear to be experimenting with the product. There has been an unanticipated high take-up of this insurance for both 2004 and 2005 Khariff (major monsoon) seasons, and as shown in Figure 3 the survey responses attributed this primarily to the financial security the insurance offers.

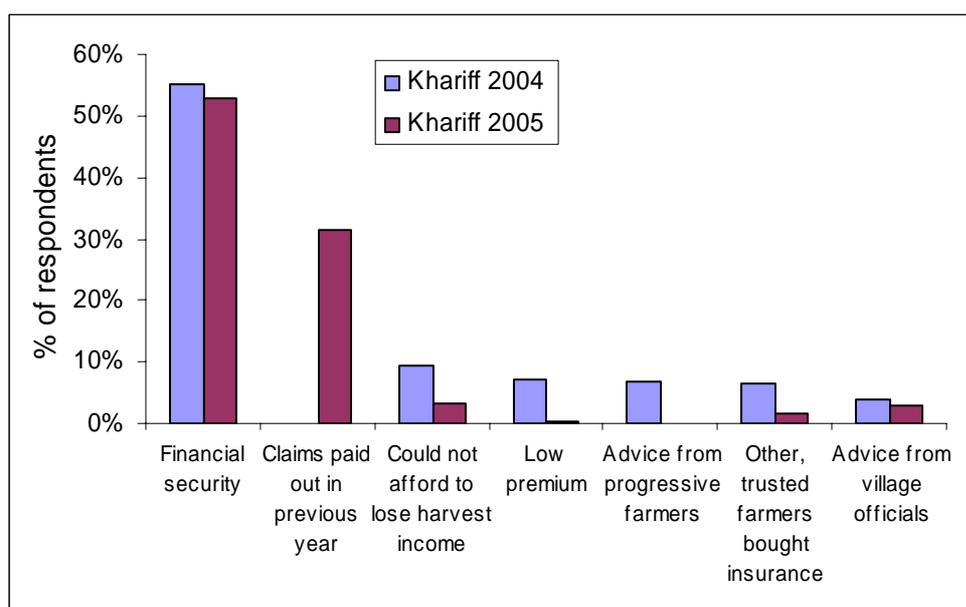


Fig. 3: Reasons for Buying Weather Index Insurance in India
Source: Gine, 2005

The second-most important factor for buying weather insurance in 2005 was the observation that substantial and generous claims had been paid out in the prior season, which had experienced a drought. This motivation for purchasing insurance could be

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 non-attendees in the sampled villages. In addition, 300 farming households were interviewed in control villages (Gine, 2005).

problematic since insurance normally pays claims only infrequently. Also, in conjunction with the basis risk individual trigger failures may pose a serious risk to viability and upscaling.

5 THE VIABILITY OF REVIEWED DISASTER SCHEMES: A SYNTHESIS

In the Viewpoint "Invest to Prevent Disaster Risk" for the occasion of 2005 World Disaster Reduction Day, ProVention and IIASA (2005) identify four interlinked criteria for ensuring 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 7.

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. Firstly, does insurance genuinely reduce the long-term risks of disasters to the poor by reducing their vulnerability? Secondly, does it promote preventive measures and thus contribute to minimising immediate disaster losses?

Experience with 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 on how these payments have mitigated post-disaster poverty. According to available information, ratios of premium to cover indicate that substantial compensation is provided post-disaster (for example in the GSDMA case). Furthermore, microinsurance can be coupled with the promotion of credit to the poor so they can aspire to higher-return activities. However, to date there is no clear evidence on the relationship between microinsurance and shifts to higher-risk/higher yield activities. Monitoring the benefits of index-based insurance by providing post-disaster security, as well as promoting higher yield crops, is ongoing (Gine, 2005).

The contribution of disaster microinsurance to reducing disaster losses is less positive. There are few direct links to preventive actions. None of the reviewed schemes, most of which are subsidized, equate the premiums fully with the risks, and no scheme offers reduced premiums based on preventive measures. Nor do the reviewed disaster insurance schemes collect extra premium for a risk-mitigation fund. Rewarding preventive behaviour, which is also not common for disaster insurance in developed countries, would be especially difficult considering the small-scale policies and additional administrative costs. The index-based insurance systems by design are more conducive to risk reduction since claims do not relate to losses; however little evidence has yet been documented and it remains to be seen whether these instruments can lead to the reduction of vulnerability and risk via their inbuilt incentives.

Table 7: Synthesis of analyzed microinsurance schemes providing cover for disaster risks

Type of schemes	Contribution to risk reduction	Financial robustness	Affordability	Governance, client and donor participation
Schemes offered as extension and protection to microcredit and microsavings operations				
Bundled insurance for credit and/or savings (Proshika, Swayamkrushi, NLC, NASFAM)	Contributes to reducing the financial burdens	Relatively stable, to large extent protecting MFI/NGO operations	Mandatory if farmer or household takes credit or engages in savings arrangement	Less donor support necessary, insurance component not transparent for clients
Voluntary insurance (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 support necessary
Schemes specifically designed to deal with disaster risks				
Mandatory and government-supplied (GSDMA)	Element of risk management plan, no incentive as cover provided for 10 years	Robust due to large diversification	Mandatory	Promotional efforts for explaining insurance policy after installment
Voluntary schemes (AIDMI, Oxfam)	Integral element of risk management framework, but no incentives for risk reduction as premiums do not account for risk reduced	Pilot phase, increasing interest by insurers reported	Premiums low to some extent due to compulsory pro-poor regulation, but substantial for index-based insurance, premiums sponsored in OXFAM case (50%),	Demand surveys, usage of community links
Index-based crop-insurance (BASIX)	Quick payouts reported, incentive for risk inherent in index-based schemes (schemes too recent for empirical evidence)	Upscaling phase, increasing interest by insurers	Premiums low to some extent due to compulsory pro-poor regulation	Product development with clients

The most direct link to risk reduction is found 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), due to such integration there is potential for more explicitly coupling microinsurance to risk reduction in the future.

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 they 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 in the design of insurance policies (e.g., Brown et al., 2000). If insurers with limited capital reserves choose to indemnify 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, namely the recent index-based weather schemes in India and Malawi, the reviewed schemes appear to have little reinsurance, confirming Nabath's (2005) general observation that most microinsurers (not only disaster) 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, however, the partner-agent model is on sound footing, but there is little public information on 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 150,000 clients after only 3 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, which by 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 is unprotected by reinsurance; however, it has 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 due to 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 kept 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 modelling of the risks, as well as 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, 2005). Adverse selection plagues all voluntary, non-indexed schemes, but is eliminated through bundled insurance. Only the *Proshika* insurance

system in Bangladesh requires mandatory insurance to those taking advantage of its savings scheme.

The international donor community can play an important role in the financial robustness of developing country insurance providers. By providing technical assistance and financial support for making 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. Pre-disaster assistance would leverage limited disaster aid budgets, free recipient countries the vagaries of post-disaster assistance, increase funds for disaster recovery and (possibly) provide incentives for risk reduction (Linnerooth-Bayer, et al. 2005). As evidence mounts that climate change may be contributing to developing country losses from weather extremes, there is also interest in supporting microinsurance as part of an adaptation program (Linnerooth-Bayer, et al., 2003). 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 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 bi-lateral basis from donor to developing country.

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

- **Which provider model is used (the partner-agent model being the preferred one in practice and literature)?**
- **Is there access to reinsurance or sufficient diversification within the portfolio?**
- **Have the risks been reliably modelled?**
- **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 that are not reached by regular commercial insurance. Thus, it is imperative to ask how premiums are made affordable to low-income households and businesses. Major cost factors in the insurance industry are 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 can 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 non-profit organizations that do not charge high commissions; and stream-lining administrative costs (e.g., by integrating them into already existing systems). In many of the reviewed cases, e.g., AIDMI, NGOs and MFIs provide low-cost administrative assistance to the 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 since they substantially reduce the expenses 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 reviewed programs, 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). 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 pays 50% of the premium for currently about 1000 households.

It is significant that the index-based crop insurance schemes in India, with cover extending to about 150,000 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 towards 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' livelihood in the case of drought.

- Alternatively, external support can come in the form of technical/organizational assistance, for example, in 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 start-up phases. This support has been forthcoming for all the reviewed schemes (with the exception of Proshika and the Centre for Self-Help Development) by sponsoring institutions, such as the World Bank, the ProVention Consortium and OXFAM. As a case in point, the VimoSEWA project in Gujarat receives support to cover administrative expenses, research and investment from the GTZ, the Ford Foundation, CGAP, ILO and the Canadian Cooperative Association. Without this support, the scheme would be operating at a significant deficit.
- Premium to 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 non-profitable lower-income segments of society may result in badly designed and marketed products, but insurers appear to be enthusiastic in expanding operations, particularly with the promising case of Oxfam in Andhra Pradesh and the index-based schemes in India and Malawi.

It should be emphasised that “affordable” insurance is a necessary, but not a sufficient, condition for its purchase by the poor. In addition, households and businesses should 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 with their other urgent needs.

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

- **Are premia indeed affordable to the clients or are subsidies a necessity?**
- **Apart from direct premium subsidization, are there other means for decreasing the costs to the client, e.g. through technical support during the start-up phase or regulated cross-subsidisation?**
- **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 with how the systems are governed. Good governance refers to 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, public organisations (e.g., co-operatives, community-based organisations and self-help groups).

One of the most important factors leading to the viability of disaster insurance is trust of stakeholders in the system: that claims are 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 (also governing the rights of women). Many studies show that trust can be enhanced with stakeholder participation in the design and implementation of insurance systems and products (Linnerooth, and Vari, 2005). In several of the reviewed disaster insurance schemes, the potential clients were involved early on in demand surveys, product development and/or product modification.

It is not only important that the insurance product is developed together with the stakeholders, but according to Ellis Wohlner (2005) microinsurers should include public organisations as integral partners in providing services to the policyholders. Aysan (2005) attributes the early success of the Indian AIDMI project to the role of active civil society structures, which are acting as an intermediary between the clients and the insurance companies. Importantly the close cooperation of the All India Disaster Mitigation Institute (DMI), as the NGO partner, with the public 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 increase trust in the insurance product. Trust can be quickly lost if insurers cannot pay claims. In the AIDMI scheme, advertising the high payouts has been a marketing strategy, which 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 can be important for the good governance of the system by assuring financial robustness and oversight.

In general, experience shows the importance of combining market entrepreneurship with strong regulation and bottom-up participation of public groups for establishing 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 of disaster microinsurance programs demonstrates their potential to protect the poor against the consequences of natural disaster shocks, and also reveals significant challenges in making this protection viable. Microinsurance programs are already providing post-disaster liquidity to poor households, and 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, and promoters claim (although there is too little experience for confirmation) that in so doing 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 and at the same time providing affordable premiums to poor and high-risk communities. Many support subsidies to meet this challenge and caution against shifting responsibility

from national or international solidarity to the poor, while others warn against the negative incentives promoted by subsidies and favour limiting support to starting up microinsurance operations. ***One of the most salient observations of this review is the different roles national and international solidarity play in supporting microinsurance schemes.*** India is playing a leading role with its pro-poor insurance regulation that provides pre-disaster 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 products to clients, who can 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 present 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 with risk reduction. Sceptics 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 with 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 little transparency or 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 due to the smaller size of microinsurance portfolios. Since many programs are in the start-up phase and/or have not experienced major disasters, further research is needed to track the performance of existing schemes.

A related challenge is creating 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 since 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 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 international humanitarian assistance and development finance currently channelled into post-disaster relief, recovery and reconstruction.

Next steps

For disaster microinsurance to serve as a widescale 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 experience. 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 constitute an international task force on risk transfer and its potential for developing countries. As discussed at the Bangkok Provention meeting ‘*Incentives for Reducing Risk*’ (February, 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 bi-and multilateral donor institutions. A concerted effort among these groups could contribute to 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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