

What is microinsurance?

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2.1. Introduction

Latest estimates suggest that there are some 500 million microinsurance clients throughout the developing world. According to Craig Churchill, this could pass the one billion mark by the end of the decade (Microinsurance Network 2013). The reason for this large growth has been the increasing activity of governments, insurance companies, and providers worldwide broadening the geographic scope and range of insurance services available to low-income people.

About 70% of microinsurance schemes are operated in Asia. For historical reasons, schemes have been concentrated in India and West Africa. In West Africa, “mutuelles” (i.e., community-based microinsurance schemes) developed after some governments instituted user fees for health care services during structural adjustment programmes. In India, microinsurance schemes arose after implementing the obligations of insurers to rural and social sectors by the Indian Insurance Regulatory and Development Authority (IRDA) in 2002. But recently, microinsurance has expanded to all the developing countries and also to many affinity sections of developed nations.

A range of products cover a variety of risk including health, life/funeral, disability, agriculture (crop-based weather

index and livestock), property, credit life, and disaster (natural and man-made)¹. The prevalence of each type of product varies to some extent by geography and by available technology. According to local risks and cultural norms, for example, funeral coverage is widespread in South Africa. In terms of the technology and expertise available, for example, weather index coverage require data that is usually collected by meteorological equipment, and in some cases microinsurance projects include a component to install such equipment (e.g., Zambia, Malawi, etc.).

2.2. What is microinsurance?

The definition of microinsurance can be split into its two aspects: Firstly, what constitutes *insurance* and secondly, what is *micro* in microinsurance.

2.2.1. Definition of insurance

Insurance is a concept involving a contract under which an insurer shall pay specific pre-defined compensation when financial damages are caused by pre-defined cost-generating events, in exchange for up-front payments of a premium by the insured. In principle,

¹ There are also developments in the catastrophe landscape where numerous public private partnerships are in place for natural disaster protection. A catastrophe joint venture, “MICRO”, is underway in Haiti for earthquake cover and the Philippines has set up an earthquake insurance pool via the Asian Development Bank (ADB).

the premium should reflect the fair cost of the risk transferred from insured to insurer, and the calculation should be based on the frequency and severity. According to theory, insurance offers a trade-off between an unaffordable (or large) loss, which is uncertain, and an affordable loss, which is certain (the premium). This theorem dates back to Friedman and Savage (1948). The net effect of this trade-off is to “smooth” fluctuations in the income of the insured that are caused by exogenous changes, such as different “states of nature”² rather than by autonomous explanations, such as bad choices of consumption in a given set of supply and demand, or bad behaviour in risky situations. The assumption underlying this smoothing is that the insured gains utility from experiencing two years of average consumption rather than experiencing one year of starvation plus one year of excessive consumption. A common explanation for the utility gain is that excessive consumption does not increase happiness, or what economists call utility, as much as starvation lowers it (Gruber 2007, 317).

In most high-income countries, where the public at large could be required to cover the costs of large-scale uninsured events, governments often

require all persons to be insured, and such mandatory insurance is implemented through deductions either from income at source, or inseparably attached to the most common activities of daily life. Examples include: gainful employment with mandatory insurance covering several risks like health, unemployment, old-age pension, or workman’s compensation; owning or driving a car with mandatory third-party liability insurance; and financing of a house with credit life insurance of the borrower and earthquake insurance of the house. In low-income countries, where, on the one hand, governments rarely provide comprehensive disaster relief, and, on the other hand, are often unable to identify all the population or to apply universal tax collection or mandatory insurance to all, the decision to insure is mostly voluntary and individual. When affiliation to insurance is voluntary and individual, the theory suggests that people who estimate their risk exposure to be higher than average would be more likely to insure (*adverse selection*), whilst those estimating their risk exposure to be lower than average would be less likely to insure. The flip side of this phenomenon is when an insurance company agrees to insure only those individuals that it estimates to be exposed to the risk below average (“cherry picking” or “cream skimming”). Both these phenomena affect the insurance market negatively.

2 A finite set of alternatives that might occur, of which only one actually occurs, e.g., real world outcomes like health vs. sickness, abundant harvest vs. bad harvest, normal rainfall vs. drought, etc.

Moreover, in many low-income countries, the three basic conditions for the creation of an insurance market are absent: solvent demand, relevant supply, and reliable governance ensuring that contracts will be enforced. Due to these factors, regular commercial insurance, as is common in industrial countries, is difficult to establish in low-income countries. Therefore, other approaches are needed.

2.2.2. Defining the micro in microinsurance

There are different approaches about how the term micro in microinsurance can be understood.³ Firstly, micro can be understood as a characteristic of the financial situation of the clientele, i.e., an insurance targeted at low-income (and financially marginalised) people in developing countries. Secondly, micro can be understood as characteristic of the product, i.e., an insurance offering limited benefits for small premiums. Thirdly, micro can be understood as characteristic of the process by which the schemes are created and administered. All three ways of interpreting the term micro lead to different definitions of microinsurance and to different answers about what microinsurance is.⁴

³ For comparison and further explanation, see Churchill and McCord (2012, 9-10) who use a similar (although not fully identical) description of ways of defining microinsurance.

⁴ For further distinctions, compare also Ingram and McCord (2011).

*Approaches to defining
micro differ*

2.2.2.1. Micro as characteristic of the target group

Churchill (2006, 12-13) defines microinsurance as follows:

Microinsurance is the protection of low-income people against specific perils in exchange for regular premium payments proportionate to the likelihood and cost of the risk involved. This definition is essentially the same as one might use for regular insurance except for the clearly prescribed target market: low-income people. However, as is demonstrated in this chapter and throughout this book, those three words make a big difference. How poor do people have to be for their insurance protection to be considered micro? The answer varies by country, but generally microinsurance is for persons ignored by mainstream commercial and social insurance schemes, persons who have not had access to appropriate products. Of particular interest is the provision of cover to persons working in the

informal economy who do not have access to commercial insurance nor social protection benefits provided by employers directly, or by the government through employers.

Churchill's definition clearly draws upon the financial situation of the clientele (low-income people). So does the definition of the insurance industry in the Philippines when it defines microinsurance as

providing the poor access to a basket of insurance products, support and services in pursuit of poverty reduction and to provide holistic insurance protection to the stakeholders of the microfinance industry (Martinez 2012).

Although targeting low-income people is usually considered a core characteristic of microinsurance, in practice, this feature raises operational problems. Measuring the household's income (and defining it as low) is not only complex, but also costly and, moreover, not required per se for establishing a microinsurance scheme, particularly if the scheme is not subsidised (Dror 2014).

2.2.2.2. Micro as characteristic of the product

Since microinsurance products and related services are aimed at meeting the risk protection needs for the

low-income and financially-excluded sector, affordability of the premium payments is a paramount consideration for defining microinsurance. The resulting approved microinsurance products are the solution that meets the needs of the target group. Hence the micro in microinsurance can also be understood as characteristic of the product, i.e., of the premiums and the benefits.

India was the first country to seriously define microinsurance products within its regulatory framework, referring to microinsurance as insurance offerings with claim payments less than Rs 50,000 (IRDA 2005). Although targeted towards low-income (and informal sector) people in India, this definition referenced the product offering, not the targeted sector. Based on small premiums and proportionately small benefits, microinsurance products have emerged in India with low-cost premiums that are underwritten in advance. This approach references regulatory microinsurance definitions as they are expressed in terms of regulatory frameworks or charters. These types of frameworks are growing in number across developing countries.

The International Association of Insurance Supervisors (IAIS) and Microinsurance Network combine aspects of the target group and the regulations associated with the product in their

definition of microinsurance (IAIS and Microinsurance Network 2007, 10):

Microinsurance is insurance that is accessed by low-income population, provided by a variety of different entities, but run in accordance with generally accepted insurance practices (which should include the Insurance Core Principles). Importantly this means that the risk insured under a microinsurance policy is managed based on insurance principles and funded by premiums. The microinsurance activity itself should therefore fall within the purview of the relevant domestic insurance regulator/ supervisor or any other competent body under the national laws of any jurisdiction.

2.2.2.3. *Micro as characteristic of the process*

The micro in microinsurance may also relate to the process of designing, introducing, and administering the insurance schemes. In their paper first introducing the term “microinsurance”, Dror and Jacquier (1999) characterise it as voluntary, group-based, self-help insurance. Consequently, the micro in this definition relates to the locus of decisions. With this definition, the main feature of microinsurance is that the schemes are governed directly to some degree by the insured members,

who are somewhat involved in operating the insurance locally.

Stated differently, if an entire country could be described as the *macro* level of society, and a province or district would be *meso*, then the group, village, or neighbourhood would be the micro level. This does not mean that microinsurance units (MIUs) cannot have a large outreach. Consequently, micro does not imply that it cannot be replicated to very large numbers, but it does imply the application of the principle of subsidiarity.⁵

At their inception, MIUs are typically launched, designed, implemented, and administered by and for groups of people without “access to the resources and financial techniques of commercial insurance” (Vaté and Dror 2002, 126), yet they have access to the target population, and can adapt the insurance business process to prevailing, often intricate, informal methods of risk management and financial intermediation. According to this description, successful microinsurance programmes are structured and managed in several fundamentally different ways

5 Subsidiarity is an organising principle whereby matters ought to be handled by the smallest, lowest, or least centralised competent authority. Subsidiarity conveys the idea that a central authority should have a subsidiary function, performing only those tasks which cannot be performed effectively at a more immediate or local level. Subsidiarity is, ideally or in principle, one of the features of federalism, where it asserts the rights of the parts over the whole. The concept is applicable in the fields of government, political science, management, military, and, metaphorically, in the context of microinsurance as well.

from commercial insurance offerings, or from social insurance schemes organised by the government in some countries.

Main requirements for MIUs, as understood in this sense, are that they are simple, affordable, and located close to its members.

Dror (2014, 420) builds upon these characteristics whilst taking into account characteristics of the target group and the product when defining health microinsurance as

insurance contextualized to the WTP [willingness to pay], needs and priorities of people in the informal sector who are excluded from other forms of [...] insurance. The schemes are voluntary, with premiums suited to people with low incomes. Although [...] microinsurance is independent of the size of the insurer, the scope of the risk covered, and the delivery channel, it is essential that the scheme is designed to benefit the insured. For practical intents and purposes, this definition implies a central role for the community in at least the design of the scheme, and possibly its operation and governance.

Although originally established for health microinsurance, this definition

can be easily adapted to other fields of microinsurance.

It may be tempting to argue that microinsurance organisations can achieve better renewal rates than commercial insurers because they are driven by demand, not profit, and are based on the needs of the community. In fairness, the evidence for this is, for the time being, still not sufficiently conclusive in low-income countries. However, with extremely low penetration of for-profit commercial insurance, the prospect of delivering microinsurance as a low-cost and low-value product seems even less promising.

2.2.2.4. What micro is not

Regardless of the definition used, experts agree that micro does not refer to the size of a scheme's membership or the total value of premiums amassed or assets insured. Larger microinsurers, including India's Yeshasvini, have millions of clients and collect millions of dollars in premium payments annually (Yeshasvini 2011).

2.2.2.5. Common characteristics of microinsurance definitions

Although the described definitions are very different in their basic approach to microinsurance, they have important characteristics in common. As Dror (2014) describes, the most common

features of microinsurance definitions include:

- Microinsurance is insurance and applies principles of risk pooling
- Microinsurance is suited for people on low incomes
- Microinsurance targets people in the informal sector
- Microinsurance is independent of the class of risk (life, health, crop, livestock, assets, etc.)

Moreover, in most understandings, coverage is always contributory, i.e., never fully subsidised, and, as will be described in detail below, microinsurance can be delivered by different channels, including community-based schemes, insurance companies, or service providers (Dror 2014).

2.3. Business models for microinsurance

To date, there exist at least four operating business models to deliver microinsurance.⁶

Partner-agent model. Whilst in this model the insurance company, i.e., the *partner*, takes responsibility for designing, pricing, and underwriting of products as well as for the scheme's solvency in the long-term. An intermediary, i.e., the *agent*, takes over certain local

tasks like distribution and marketing, premium collection, and product servicing. These responsibilities are delegated to the agent by the partner, i.e., by the insurance company. In rural settings where it is usually costly and time-intensive to assess potential customers, the role of the agent is often taken over by non-governmental organisations (NGOs) or microfinance institutions (MFIs), which, on one hand, are already in contact with the population and, on the other hand, might have identified a need for microinsurance and are thus willing to cooperate. Acting not only as agents of the insurance agency, but also as counsel of the population, they can help in designing suitable products and pressuring the providers for reasonable prices and services.

Provider-driven model. In this model, the policyholders pay premiums directly to the service provider, which, for example, in health microinsurance

There are different ways to deliver microinsurance

⁶ Compare for this and the following explanations Dror 2014, amongst others.

may be a hospital or certain physicians. They are, in turn, allowed to use the services of this provider according to the conditions that have been agreed upon in the insurance policy for free or with a copayment.

Charitable insurance model. In this model, an external charitable organisation is supplementing the scheme financially and, moreover, takes over basically all responsibilities of the “insurer”. By subsidising the scheme, its long-term sustainability is granted, at least as long as the charitable organisation is supporting this.

Mutual/cooperative insurance model. In this model, the community of members is responsible for all aspects of the scheme, hence taking over the role of the insurer mutually. Herewith, the insured are at the same time the insurer. By this, the needs of the members can better be mirrored in the benefit package. Often, mutual societies are not only cooperating in the field of insurance, but also in other fields of interest, functioning as broader mutual-interest organisations.

In reality, microinsurance schemes are often built as combinations of these models and can also change over time. For example, Yeshasvini Trust in India was originally founded by health-care providers. It was provider-driven, but is currently receiving subsidies and,

thus, is also run as a charitable insurance model, having features of both models (Dror 2014).

2.4. Why is microinsurance important?

Microinsurance is potentially an important new risk management tool for low-income people in developing countries for several reasons. Vulnerability inordinately affects poor people and reinforces or exacerbates their poverty. Regarding susceptibility to risk, for example, poor people

- typically live and work under more crowded, unsanitary, stressful, or unsafe conditions
- suffer from higher rates of malnutrition (which make them more susceptible to illness and injury)
- lack the education necessary to make informed preventative or reactive choices (or the money to implement those choices), and
- frequently hold beliefs (for instance, in the importance of dowries or ostracising widows) that aggravate their situations when risks (like the death of the breadwinner of a household) actually materialise

When these risks materialise, low-income people are, furthermore, frequently less able to cope. Regular solutions (like medical care) are, for example, often inaccessible

(particularly given the general shortage of facilities in rural areas), unaffordable (considering the costs of treatment, transportation, bribes, medicines, waiting, aftercare, and missed work), or of terrible quality (with provider absenteeism, poor staff training, corruption, patient abuse, and chronic shortages of equipment, supplies and medicine endemic in health-care facilities which predominantly serve low-income clients in developing countries). Social safety nets (like national health insurance schemes) are — due to narrow tax bases, corruption, inefficiency, and other government priorities like indebtedness — commonly weak or non-existent. Moreover, the low-income people's plentiful and creative array of informal risk mitigation techniques is often insufficient, particularly when risks covary or repeatedly occur over a short period.

These informal arrangements, which are classified into self-insurance and shared insurance, bear examination because of their prevalence within poor communities (Morduch 2003). Of these, self-insurance is the most widespread and significant form of informal risk mitigation. It consists of ex-ante and ex-post approaches, which are implemented before and after the hazards in question occur. The predominant ex-ante approach is savings. Because appropriate savings facilities

and products are typically unavailable in low-income areas, however — and because monetary savings are vulnerable to inflation — asset build-up and drawn-down are particularly popular means of self-insuring. However, low and volatile incomes (and threats to the accumulated assets themselves) make it difficult to amass large enough sums to adequately militate against shocks. Other ex-ante strategies include calculated, and often conservative, employment, production, and social-familial strategies, such as

- diversifying occupations and crops
- working for less, but under more secure arrangements (such as “tied labour”) using less effective, but cheaper combinations of production inputs (such as less high-cost fertilisers and more low-cost labour)
- migrating to places with uncorrelated income patterns, and
- tactically selecting marriage partners, fostering children, and cultivating friends

Whilst lowering uncertainty, many of these approaches lead to inefficient outcomes through which people sacrifice more profitable, but riskier activities and the adaptation of potentially valuable new technologies to achieve some degree of income with certainty and “limit exposure only to... shocks that can be handled with the means available” (Morduch 1995, 104). For

example, Walker and Ryan estimate that households sacrifice up to 25% of their average income to reduce exposure to shocks in certain parts of India (1990, 1997).

In contrast, ex-post approaches include borrowing (though constraints often exist on the availability and cost of credit), changing consumption patterns (for example, eating less or withdrawing children from school) and adjusting labour supply (working longer hours or employing children). Because these strategies are implemented reactively by households under duress, they typically have less favorable terms and prove more exacting on family finances.

Shared insurance, on the other hand, includes reciprocal loan- and gift-giving practices and participation in rotating savings and credit associations (ROSCAs), through which a group's members regularly contribute equal sums of money and sequentially receive the proceeds. Shared insurance schemes are typically organised amongst families, neighbours, or other groups of people with the ties necessary to identify and curb moral hazard amongst participants. Information asymmetries and enforcement problems may exist even amongst close-knit people (Morduch 1999, 189). Moreover, the financial capacity of intra-family lending within poor

families is in any case limited. Therefore, borrowing with interest from professional lenders and liquidating saving are more important coping mechanisms than shared insurance approaches (Morduch 1999, 189; Binnendijk et al. 2012).

Whilst these risk mitigation instruments collectively enable real and significant consumption-smoothing, they do not provide complete coverage — and ironically prove costly for households in terms of everything from foregone profits to intensified gender problems, since very often women bear the brunt of strategies like migration, fostering, and strategically-arranged marriages. Besides bridging the gap, microinsurance schemes can be created to complement or crowd out the best and worst of these approaches whilst enabling low-income people to pursue more profitable income-generating activities and more gratifying personal relationships.

Supportive regulation, technology, and risk management help microinsurance growth



2.5. Challenges to microinsurance

The success of the microinsurance sector is based on the three guiding principles of outreach, sustainability, and proving benefits for all. In order to achieve these milestones and to increase the penetration, a combination of regulation, technology, and risk management is required.

When there is market and demand identified, distribution diversity is one of the key factors to success. In South America, microinsurance has successfully increased penetration, as well as enlarged into the middle class, by using a variety of retail distribution channels across Columbia, Mexico, Peru, Guatemala, Bolivia, and especially Brasil. Across Asia, retail distribution has not been facilitated to a similar degree. However, this seems to be changing as new approaches are developing. These include, for example a dengue fever insurance sold in supermarkets in Indonesia, various microinsurance products in 7/11 stores in Thailand, and multi-level marketing schemes in the Philippines, just to name a few. Cooperative selling of insurance is a large portion of the distribution market for microinsurance and well illustrated in the microtakaful

sector, which distributes Islamic Shariah-compliant insurance to the low-income sectors in the Islamic regions of Asia, Africa, and the Middle East, encompassing a charitable component by Shariah law.

It can be argued that one of the reasons the penetration of microinsurance over the past decade has not been as fast as many hoped, is that many of the assets in the sector are deemed intangible, non-liquid assets embedded in projects and internal processes, and are, therefore, invisible to boards of large corporations and government organisations. These assets are employee skills, information technology infrastructure, corporate culture, and innovative ideas, and can be viewed in the future as the new intellectual property and patents of the organisation. Measuring the value of these intangible assets is an accounting function and moves the asset value to the balance sheet, and, therefore, to the attention of stakeholders, where the availability of financial support depends. As the intangibles are an important part of a new business, this increases the chance of new ideas becoming reality. Models that only value physical assets are less able to take advantage of new markets (Dror 2012).

Expanding the discussion of the importance of embedded intangible assets may be out of scope in this book, but the way projects are viewed in terms of value creation from the base of the pyramid will have a correlation with impact assessments of the sector. These assets are the distillate of decades and centuries of social and fiscal investment by developed societies.

2.5.1. Regulation

Microinsurance is a commercially viable market with 2.6 billion people living in the range between Int\$1.25 and Int\$4 per day⁷, giving rise to a US\$33 billion market. Coupled with that is the government and aid-supported microinsurance market with 1.4 billion people on less than Int\$1.25 per day⁷, giving rise to a US\$7 billion market (Swiss Re 2010, 9). The principles of good governance apply to microinsurance the same way as other sectors. Regulation is required and will have an impact on how insurance is sold, bought, and distributed at base of the pyramid. A balance needs to be sought, as too little or too much regulation can negatively impact the sector. The ability of governments to move from constitution to charter to commercial implementation and to create adequate legal frameworks will greatly facilitate the prac-

tice of microinsurance. Recent success in this area has been seen in the Philippines as they published a charter based on their constitution.

2.5.2. Technology

Technology is the key, because without it there is no outreach to rural areas and no capability to adequately analyse, on a macroeconomic and risk management basis, the sustainability and profitability of the schemes designed to help the base of the pyramid. It is these automated techniques that will allow the value creation of assets to appear on balance sheets and raise attention to the right stakeholders in public and private partnerships required to educate and finance the microinsurance sector. These would be simple procedures allowed by regulation. Good data is vital to successful impact measurement at all levels. The microinsurance sector needs to leverage the advent of the global cloud computing networks and the security of data offered within them. The rise of Internet and mobile technology is a game changer.

2.5.3. Risk management

Regulation and technology capabilities dovetail with the importance of risk management and risk transfer in the microinsurance sector. Insurance is the risk industry and risk transfer is a trodden path that has enabled the

⁷ An international dollar has the same purchasing power as a U.S. dollar has in the United States. The Int\$ is adjusted over time by reference to gross national income and exchange rates of local currencies to US\$.

industry to survive in over 300 years of trading. Reinsurance is one of the risk transfer mechanisms used in the industry and is vital to the microinsurance sector as a capital base can be offered to primary insurers or, indeed, direct to communities to handle their risk transfer affairs. Evaluating and measuring the assets identified will greatly assist the flow of capital from reinsurance and capital markets (alternate risk transfer) to microinsurance projects. A very important aspect is to show that the internal processes that handle claims have a tangible value for impact assessments.

Regulation needs to allow for lower capitalisation as an entry point for the microinsurance sector and allow the additional premium assets to be included in an impact assessment for the computation of solvency on microinsurance schemes. This is especially important as more complex health, weather index, and innovative climate change (linked to food shortage) products are introduced in the market place. There is a need to measure the key indicators around the solvency ratio and the expense ratio, which is the cost of distribution and the cost per transaction. This, in turn, generates a set of official performance standards established by regulatory authorities for effective delivery of microinsurance and impact analysis.

The next stage of this process leads to the stochastic — or actuarial — measurement of microinsurance, using Dynamic Financial Analysis, or measuring risk mathematically using probability theory, which needs good historical data to achieve (Piesse, in preparation). This process will align the intangible assets to the company strategy and align to the regulator strategy. A key alignment here is that of literacy, health care, financial inclusion, and risk transfer, thereby liquefying the intangible assets and appearing on a balance sheet. This includes risk from non-cost effective information technology projects whose costs prohibit microinsurance schemes and prevents them from going into production. However, impact models and good data are not sufficient in isolation. There is a need for independent risk quantification that is capable of bringing stakeholders together for sustainable risk transfer solutions based on the increase in natural disasters and climate change that mostly affect newly penetrated microinsurance bases. This is an important correlation of catastrophe risk with market, credit, underwriting, macroeconomic, and insurance risk combined in one holistic risk analysis. The development of effective catastrophe microinsurance needs reinsurers, catastrophe modelers, insurers, governments (public private partnerships), regulators, World Bank/United Nations/ADB,

and development rural banks to step up to form alliances to protect people from natural disasters and other mega risks. There is no such thing as micromodeling, and microinsurance is subject to the same scenario simulation as other insurances. Pioneer work has been done in two pilot locations in India by the Micro Insurance Academy (MIA) in collaboration with the Asia Risk Center (ARC), an affiliate of Risk Management Solutions (RMS), the world's leading risk modeling company, on crops risk assessment and quantification of climate change contributions. A climate-vulnerability mapping program, based on an extensive household survey and weather data, has been established (Sharma and Jangle 2012; Sharma 2012).

In summary, sustainability of microinsurance, or the ability to create long lasting renewable products in the sector that leads to benefits for all, is achievable by a confluence of regulation, technology and impact analysis, and the various methods of risk management that lead to that impact analysis. We must look at the holistic picture and not risks in isolation. Right now, microinsurance and its differing models make it a younger cousin of the larger insurance industry. As microinsurance grows and more people become included, microinsurance and its differing models will become the status quo.

2.6. Conclusion

This chapter has illustrated three ways of how to approach microinsurance: one focuses on the target group, another on the product, and the third one on the processes. All approaches involve the potential input of reinsurance capacity and the approach taken will have a different impact on the assessment process. There is a big difference for policyholders paying a fixed premium set by the industry in contrast to willingness to pay, which is the community approach. Whatever the approach, the guiding principles of outreach and sustainability remain the same, as access needs to be gained to remote areas and the programmes that are created must be renewable over time to make sure sustainable access to insurance coverage is received. These guiding principles, along with technology, good product design, and flexibility are required for microinsurance schemes to fit their community.

In order to assess the impact of catastrophe, market, credit, insurance, underwriting, and operational risk on microinsurance projects and communities, scenario analyses are required with a definite shift in the direction of dynamic financial analysis, where the whole process is managed mathematically through actuarial models. This process requires good historical data,

such as claims history and weather pattern data from weather stations, and measurable indices. In weather-based indices, the impact of basis risk needs to be understood to make sure that the right claims are paid to the right claimants.

Barriers to penetration are the lack of available capital pointed at microinsurance projects and the governmental support on education. We identified that this required a set of committed and willing stakeholders who have a business interest in the project creating a tangible asset of the project and move it to the corporate balance sheet for recognition. This step should assist in providing adequate risk transfer facilities to the microinsurance schemes.

Natural catastrophes and non-correlated risks are major threats to the success of microinsurance, as it is the policyholders of these schemes that are most exposed to these risks. Reinsurance catastrophe pools established via public private partnerships would mitigate this threat.

Finally, there is infrastructure and political will. Without that will and balanced regulation, microinsurance will not live up to its full potential.

References

- Binnendijk E., R. Koren, and D. M. Dror. 2012.** Hardship financing of healthcare among rural poor in Orissa, India. *BMC Health Services Research* 2012: 23-36. doi:10.1186/1472-6963-12-23
- Churchill, C., ed. 2006.** *Protecting the Poor: A Microinsurance Compendium*. Geneva: International Labour Office.
- Churchill, C. and M. J. McCord. 2012.** Current trends in microinsurance. In: *Protecting the poor: A microinsurance compendium*. Vol. II, ed. C. Churchill and M. Matul, 8-39. Geneva: International Labour Organization.
- Dror, D. M. 2012.** Investing in embedded intangibles to enhance solvent demand at the base of the pyramid. Presentation held at the Global Risk Forum (GRF) One Health Summit, Davos, Switzerland. February.
- Dror, D. M. 2014.** Health microinsurance programs in developing countries. In: *Encyclopedia of health economics*. Vol 1, ed. A. J. Culyer, 412-421. San Diego: Elsevier.
- Dror, D. M. and C. Jacquier. 1999.** Microinsurance: Extending health insurance to the excluded. *International Social Security Review*. Geneva, ISSA, 52(1): 71-97. <http://ssrn.com/abstract=180448>
- Friedman, M. and L. J. Savage. 1948.** Utility Analysis of Choices Involving Risk. *Journal of Political Economy* 56(4): 279-304.
- Gruber, J. 2007.** *Public Finance and Public Policy*. 2nd ed. New York: Worth Publishers.
- Ingram, M. and M. J. McCord. 2011.** Defining "Microinsurance": Thoughts for a journey towards a common understanding. MicroInsurance Centre discussion paper presented at Microinsurance Network member meeting, Königstein. June.

Insurance Regulatory and Development Authority (IRDA). 2002. Obligations of insurers to rural or social sectors. Regulations, Reference number 3218_GI_2002_ENG. <http://www.irda.gov.in>

Insurance Regulatory and Development Authority (IRDA). 2005. Insurance regulatory and development authority micro-insurance regulations. http://www.irdaindia.org/regulations/IRDA-Mirco-Ins_reg-2005.pdf

International Association of Insurance Supervisors (IAIS) and Microinsurance Network. 2007. Issues in regulation and supervision of microinsurance. Issues Paper. <http://www.iaisweb.org>

Martinez, W. H. 2012. Role of the state and regulation in promoting microinsurance - The Philippine experience. Presentation held in Ho Chi Minh City, Vietnam. July.

Microinsurance Network. 2013. Microinsurance. 1 billion covered by 2020. Press Release, January 30.

Morduch, J. 1995. Income smoothing and consumption smoothing. *Journal of Economic Perspectives* 9(3): 103-114.

Morduch, J. 1999. Between the market and state: Can Informal insurance patch the safety net? *World Bank Research Observer* 14(2) (August): 187-207.

Morduch, J. 2003. Consumption smoothing across space: Testing theories of risk-sharing in the ICRISAT study region of south India. In: *Insurance against poverty*, ed. S. Dercon, 38-56. New York: Oxford University Press.

Piesse, D. In preparation: Dynamic financial analysis for microinsurance.

Sharma, B. 2012. Assessing vulnerability to climate change using GIS. *Geospatial World Weekly*. 31 December.

Sharma, B. and N. Jangle. 2012. Assessment of vulnerability to climate risks in Ahmednagar (Maharashtra) and Vaishali (Bihar) using GIS techniques. Proceedings of 13th ESRI India User Conference.

Swiss Re. 2010. Microinsurance—risk protection for 4 billion people. *Sigma* 6. http://media.swissre.com/documents/sigma6_2010_en.pdf

Vaté, M. and D. M. Dror. 2002. To insure or not to insure? Reflections on the limits of insurability. In: *Social reinsurance: A new approach to sustainable community health financing*, ed. D. M. Dror and A. S. Preker, 125-152. Washington, D.C.: World Bank.

Walker, T. S. and J. G. Ryan. 1990. *Village and household economies in India's semi-arid tropics*. Baltimore, MD: Johns Hopkins University Press.

Yeshasvini Trust. 2011. Achievement since inception of the scheme. <http://yeshasvini.kar.nic.in/achieve.htm>

