

MICRO-INSURANCE FOR NATURAL DISASTERS CONCEPTS, PRESENT AND FUTURE OUTLOOK

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ABSTRACT :

Catastrophe risk transfer through insurance and reinsurance has been widely used in developed parts of the world for the past two decades in an orderly fashion. The scientific and technological basis for the quantification of risk over this time has made the available insurance/reinsurance products quite robust as well as universally adapted. Unfortunately, these products are mainly used in developed parts of the world due to the level of catastrophe risk and the premium structure. Thus, the modern knowledge of quantification and understanding of catastrophe risk has not been of great benefit to many in developing parts of the world.

It is well known that after each catastrophic event, it is the poor who are impacted the most. Due to extremely low level of risk (in monetary terms) of these poorer sections of any society, the insurance/reinsurance industry has not paid much attention to helping them. Thus, a typical rural farmer who may lose his "hut" and his means of generating income after a disaster is completely devastated since he and millions like him are not covered by any insurance. Catastrophe Micro-insurance as a concept and as a potential product is targeted for such people. It is estimated that almost a billion individuals who are at risk due to natural or man-made catastrophe events do not have any risk transfer mechanism. Because of the size of these potential aggregate losses from such poorer sections of the society, the governments (of developing countries) do not have the resources to help these people. Micro-insurance may be the means by which such market can be developed and helped.

This paper explores possible strategies for implementing sustainable micro-insurance schemes and provides an example of one such scheme being implemented in Sumatra, Indonesia.

KEYWORDS:

Micro-insurance, micro-credit, insurance for the poor

1. CATASTROPHE MICRO-INSURANCE

Globally, there are many pilot projects on micro-insurance mainly in the health and life sector with few in agricultural sector. There are hardly any operating catastrophe micro-insurance projects which incorporate entrepreneurship, micro-credit, training, micro-insurance and long term sustainability of the scheme. Many of these projects that have been tried are founded on the premise of post disaster assistance and not as a pre-disaster business proposition. The authors of this paper believe that all the stake holders should see their own personal incentive in being part of the micro-insurance scheme. Without that, it is hard to make the scheme financially viable and sustainable. As a result, we are developing a system for micro-insurance where it is not a charity but a business proposition for all those who participate in it. It is clear that the number of people who could benefit from a workable and sustainable scheme of micro-insurance is immense. The well known work of C. K. Prahalad, "The Fortune at the Bottom of the Pyramid – Eradicating Poverty Through Profits" is very

appropriate and compelling model for micro-insurance sector as a business proposition (See C.K. Prahalad, 2004)

Insurance is an indispensable financial service to all sectors of a society. It is unfortunate that those who need this service the most, the poor at the bottom of the economic pyramid and who are the most vulnerable due to catastrophic events, are the ones who have least access to this service. Over the last decade, there have been many opportunities where access to micro-credit has been possible. Even large financial organizations are getting into this “business”. However, there is relatively less assistance available to those who are affected by catastrophic events. Thus it is necessary to expand financial services for poorer sections of any society beyond granting micro-loans. In our opinion, micro-loan is a fantastic way to help “the bottom of the pyramid” reach self reliance and self sustaining. However, when a catastrophe occurs, they are set back even farther than where they started out before micro-loan. That is why we need to develop products specifically designed for this section of a society based on their needs and financial situation. This would secure protection as well as open new opportunities and awareness for business.

2. BUSINESS MODEL

The micro-insurance business model’s target customer is at the “bottom of the pyramid” mentioned above. This section of the society lives on about \$2 per day. These are the most vulnerable people after a catastrophic event. They do not know much about risk and risk transfer. The concept of insurance is not something they understand or use as a refuge from financial catastrophe. They do not have many fall back options (except government hand outs, which are most unreliable in terms of timely assistance), leading them to further fall towards extreme poverty. This encourages them to migrate to nearby regions or countries, further exacerbating the problem. So, to develop a risk transfer product for this section of the society, we need to first understand the attributes of that product. Catastrophe micro-insurance product should be: (See Craig Churchill, 2006)

- As inclusive as possible. Should include protection due to all natural catastrophes including draughts, floods, earthquakes, hurricanes/cyclones/typhoons, etc.
- Affordable premium structure.
- Easy to adapt and adopt. Should have simple premium structure, claim adjustment, benefits and rules (if any) and a simple trigger definition for claims.
- Able to take advantage of Group Insurance. Groupings such as Women’s Associations, Informal Savings Groups, Farmers Groups or Co-operatives or Village level governments.
- Able to access claim documentations. Controls and regulatory checks are needed but mechanisms have to be simple for the households to submit legitimate claims for timely payments and financial settlement.
- Able to overcome weariness of customers. “Upholding promises, fulfilling obligations, and creating a culture of risk transfer (insurance) amongst the poor should be one of the most fundamental objectives” (See Craig Churchill, 2006) of this product.
- Flexible. The product should be able to take advantage of cross subsidies from various sources for premium structure so that beneficiaries of this social protection program will find it attractive.
- Flexible enough so that it can be customized for various catastrophes and for various parts of the world. One size cannot fit all situations. Hence, the product should have different preferences embedded in each model as per the requirements of the group under consideration.

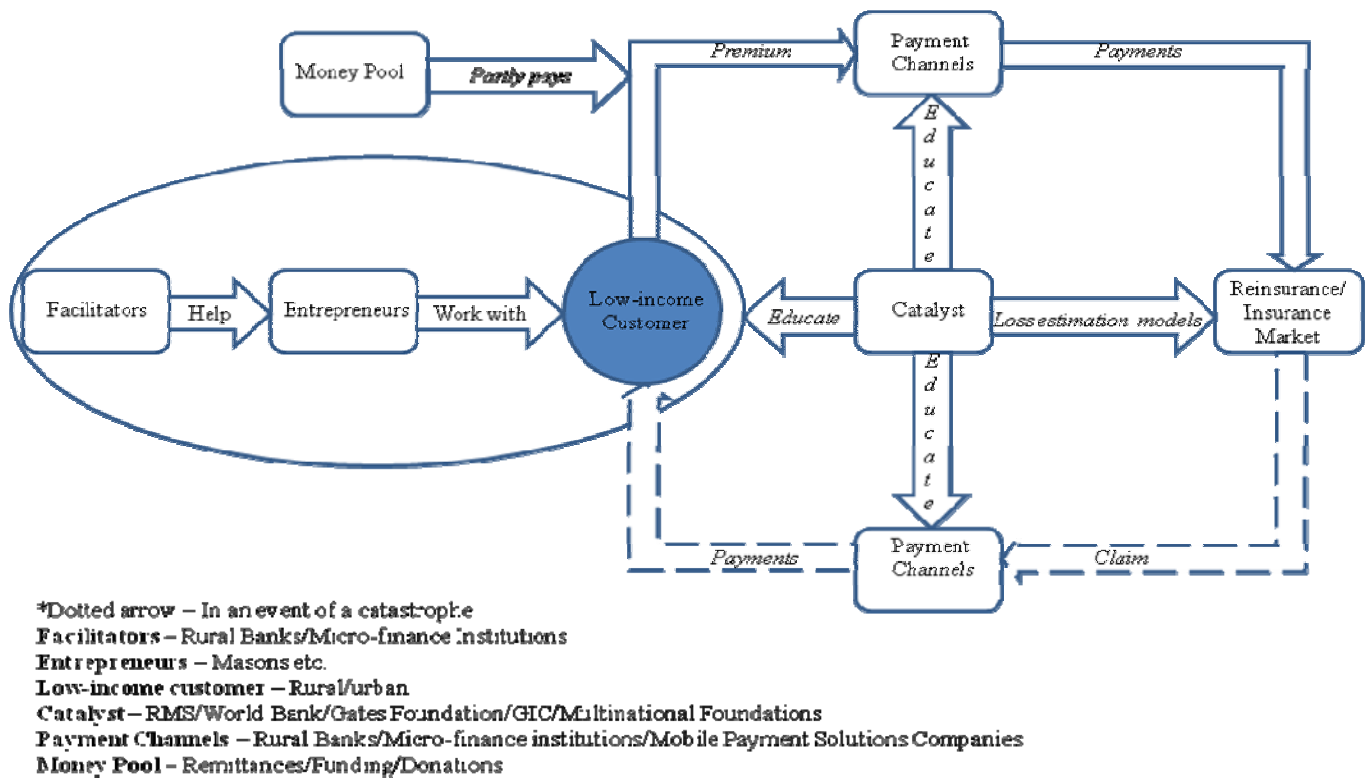


Figure1. Micro-Insurance Infrastructure

The above desirable attributes make it a real challenge to come up with the product, its delivery, its operation and its sustainability. The product requires some organization to take the leadership role – a role of a catalyst – to bring together many important members of the micro-insurance universe. It is not a simple problem of conventional P and C insurance where insured, insurance companies, reinsurance companies, brokers, and government regulators see eye to eye the value of the product and its benefits. The development and delivery of micro-insurance product requires a synergistic and collaborative participation of many players, some of them could be (see Figure 1):

- Micro-insurance product buyers.
- Catalysts and facilitators who can drive the
- whole infra-structure of this unique product to be used and sustained. This group may include organizations such as the World Bank, Charitable Foundations who are willing to participate in the micro-finance/micro-credit part of the system, micro-credit Banks, organizations such as RMS, Inc. who understand the technologies and the role of various players.
- Village level entrepreneurs who can make market the product and its implementation a central theme of their own business opportunities.
- Intermediaries such as rural banks, mobile payment
- solution providers, educators, NGOs, etc.
- Insurance/Reinsurance markets.
- Government regulators.
- Expatriates who remit funds from developed to developing countries to their families and friends.

We are currently designing a pilot project to be implemented in Gujarat, India. This region of India is prone to earthquakes, cyclones, sometimes to floods and to draughts. The pilot project design will be based on some of the considerations outlined above. Design of the pilot project will be made available widely to all the stake

holders and interested parties. This region of India has a long culture of micro-finance. The expatriate community of Gujarat is spread all over the world with major concentrations in South Africa, North America and UK. This expatriate community is generally very wealthy and historically has supported various social and economic programs in India in general and Gujarat in particular. After every major disaster, these communities of expatriates have sent millions of dollars for reconstruction and assistance to the affected populations of Gujarat. The pilot project has a plan to direct a very small percentage of the remittances sent by expatriates towards micro-insurance payments. The technical part of loss estimation for the products will be developed by RMS, Inc. In collaboration with Asian and Global insurance/reinsurance markets, the premium structure as well as the claim triggers will be designed. The payment channels will be designed using the current micro-finance institutions with rural offices. Mobile phone operators and local masons and entrepreneurs will be partnered to facilitate the implementation of the product at the rural level.

In the next section, we will provide an example of a pilot project that is currently being implemented in Sumatra, Indonesia with some of the attributes outlined above. The project is still in its early implementation phase. The catastrophe for which micro-insurance product is being designed is earthquakes. Currently, the local masons are being trained in Sumatra to retrofit existing reinforced concrete low-rise structures with brick infill walls. They will also be trained to build new structures of this variety.

3. SUSTAINABLE APPROACH OF SEISMIC RETROFITTING AND MICRO-INSURANCE SCHEME FOR LOW-RISE BUILDINGS IN WEST SUMATRA, INDONESIA.

This project is a three-phase approach towards a sustainable model of training local masons with skills related to seismic retrofitting, in-situ assessment of retrofitting methods, as well as acting as agents for marketing and promoting micro-insurance schemes related to low rise buildings in west Sumatra.

In its partnership with the Temasek Foundation, the Lien Institute For the Environment (LIFE) at the Nanyang Technological University (NTU) has undertaken a project in Lasi, West Sumatra related to seismic retrofitting. In this project, a polyclinic was selected to serve as a platform for the training of 10 master trainers and in turn 45 local masons in the seismic retrofitting of low-rise reinforced concrete buildings with brick infill walls. While some of the seismic retrofitting methods are based on existing strengthening principles, the bracing of the brick walls against early collapse was developed at LIFE of NTU.

A sustainable project related to seismic retrofitting and an integrated micro-insurance scheme for low-rise buildings can be described in three phases. While Phase 1 would be the development of retrofitting methods, Phase 2 would be the training of local masons in the implementation of the retrofitting methods. For a sustainable scheme, there should be a Phase 3 which encourages the trained masons to enter into a service business as well as brings forth a tangible outcome encouraging home owners to undertake retrofitting. This would be in the form of reduced risk of losses reflected in the reduced premiums of a micro-insurance scheme that is to be explored for implementation.

The first two Phases are technologically driven for the development of retrofitting methods and training of trainers. Phase 3 which would bridge the last mile – implementation of a sustainable service business of the trained masons and a micro-insurance scheme which rewards risk-reducing behavior of home owners - is described below.

3.1. Scaling and Sustainability

The implementation of the model strengthening program in the Lasi polyclinic has to be followed up with a massive scaling strategy to significantly reduce vulnerability of populations residing in earthquake prone regions of Sumatra in particular. Critical to the efforts for supporting people's efforts for self-reliance in dealing with future catastrophes due to earthquakes is the introduction of micro-insurance as an integral component of the program. The main objective is to use such a product to mitigate the impact of economic losses due to future

earthquake events. Such a micro-insurance scheme for Sumatra could also include health and life insurance. Thus, in combination with risk reduction due to strengthening of existing structures, micro insurance scheme could really help in the recovery of the individual and regional economic impacts.

The strengthening of buildings and houses could be financed by the community with the understanding that their increased resilience would lower the chances of collapse or heavy damage of their residences and hence save their lives and property. By pooling risk, the community would reduce overall risk in exchange for a modest premium. This premium could be paid partially by those who are insured and partially by either government or by expatriates as explained in the previous section. Timely financial support following catastrophes enables communities to cope with disasters and empowers individuals to recover from economic ruin.

In this pilot project, it is our expectation that the scheme being implemented will promote and encourage disaster mitigation measures amongst the community members, with insurers offering incentives in terms of lower premium structure. Thus, the scheme being developed and implemented will also provide a source of income to masons properly trained and experienced in seismic strengthening technologies. These entrepreneurs, with the assistance from catalysts such as educators, NGOs and local universities could also double up as agents for certifying whether a particular building is adequately strengthened.

An affordable delivery model for this scheme would be a challenge. It will have to be a public-private-people partnership following a partner-agent model. In this model, insurers, together with micro-finance institutions, NGOs, entrepreneurs at the local level, delivery facilitators, etc. will have to collaborate. Figure 1 describes the participation of stakeholders as part of the total infrastructure needed for implementing the micro-insurance scheme. Realizing that regional difference will put different stakeholders as the cornerstone for the success of this scheme, it seems that the skilled masons on this pilot project can serve as agents for marketing micro-insurance policies. As such for this case, the career/business development that they undertake could be the foundation underpinning the sustainability of the three phases of this project.

3.2 Project Benefits

The sustainability of the program would depend on forging creative alliances between all the stakeholders. Proactive involvement of governments in a regulatory role would reduce the fiscal burden of their coffers after the catastrophe. Successful replication of such a scheme could produce greater opportunities for insurance/reinsurance markets. This again goes back to our earlier statement about working with the bottom of the pyramid and still making money. Finally, a scheme such as the one being implemented could help local economies through entrepreneurship of masons and builders as well as the construction sector.

4. CONCLUDING REMARKS

Providing risk transfer and risk management strategies for the bottom of the pyramid has been neglected by the P & C industry around the world. This is not due to lack of concern but due to complexities involved in delivering a sustainable and profitable business model. This paper has outlined our ideas and attempts to create such a model. The concepts will be further tested and refined through implementation and experimentation with two pilot projects; one in Sumatra, Indonesia and one in Gujarat, India. These two projects will involve complex synergistic involvement of many 'players' and stakeholders. In recent years, we have seen many multinational organizations, foundations and NGOs work in this field to find a working solution. It is obvious that whatever that solution may be, it will have to be a "business" and not a "charitable" endeavor for its survivability and sustainability.

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