Innovating at the BoP: Delivering Microinsurance in Kalahandi, and Beyond

Sarthak Gaurav*, Ana Paola Gomez Acosta** and Luís Flores Ballesteros***

Abstract

Given the discussions around the issues of financial inclusion and the challenges in delivering an array of products, processes and solutions to attain multi-dimensional financial inclusion, this paper attempts at assessing the effectiveness of formal and informal risk-response mechanisms and analyzes the issues in provision of market based risk management solutions and microinsurance in backward rural communities and resource poor geographies. It analytically explores the landscape of risk management and hypothesizes about the products that can be channelled into effective delivery mechanisms for robust risk management solutions in similar contexts, at the BoP (Bottom of the Pyramid). Primary data from a survey conducted in Kalahandi district (Orissa, India) has been used to accentuate our understanding of different strands of the microinsurance story which is all set to take center stage at national and international development agenda. An attempt has been made at assessing the risk management strategy of people in such backward communities. Available secondary data have also been analyzed to substantiate our dissection of the issues in context and based on these results we propose the design of microinsurance and effective risk management solutions.

---

*Consultant at the Centre for Insurance and Risk Management, IFMR, Chennai, India;
Email-sarthak.gaurav@ifmr.ac.in

*Candidate to Masters in Public and Economic Policy, London School of Economics (LSE), UK;
Email-A.P.Gomez@lse.ac.uk

***Masters in City Planning/International Development, Massachusetts Institute of Technology (MIT), USA;
Email- lfloresb@MIT.EDU

Contents

1. Introduction

While financial markets are developing and globalizing like never before, large segments of the society remain excluded from formal financial systems and the mainstream financial markets. This is symptomic of an obvious market failure, and hence the heightened focus on the issues of 'Financial Inclusion'[1] world wide as well as the increasing need to overcome this exclusion by enabling the creation of more open, affordable, competitive and inclusive markets. Access to affordable financial services such as savings, credit, remittance and insurance is conducive to inclusive growth. Stand alone income generating schemes cannot contrive poverty alleviation over any feasible planning horizon. Effective risk management is indispensable in protecting the livelihood and the variable income stream among the poor. Limited access to affordable financial services by a majority of the population in rural and unorganized sector and the absence of effective safety-nets or sustainable social security systems impedes the development process. In the Indian context, with services and industrial sector driven growth, and an ailing agrarian scenario, the burden of financial exclusion will slowly but surely kill the economy, and hence the need for designing effective markets and inclusive financial systems.

Financial Inclusion has largely been confined to access to basic savings, credit and payment systems, as evident from the Microfinance story so far, which in turn has mostly been a Micro credit driven agenda. In the increased activity around the micro credit revolutions, both policy and policy makers have missed out on gauging the critical importance of risk management and 'credit plus' services in the developing world, plagued by a more acute syndrome- one of dismal 'Insurance Inclusion'. And the response to exclusion in this space has been in terms of an equally romantic parallel- '*Microinsurance*'.

Microinsurance is an important constituent of a broader overall poverty reduction strategy to address the risk-vulnerability paradox given the inherent link between livelihood risks and vulnerability to spells of transient poverty as well as forms of chronic poverty. Poverty and vulnerability connive to create a vicious downward spiral. Integrated Risk Management for the poor across all facades of exposure to adverse shocks is an effective tool to move closer toward attainment of the Millennium Development Goals (MDGs) as well.

[1] Financial Inclusion (FI) can be conceptualized in two ways: (i) Exclusion from payment systems, like not having access to bank account, and (ii) Exclusion from formal credit markets, with the excluded having access to informal and exploitative markets, as rampant in the hinterlands. FI can be measured by the percentage of adult population having bank accounts, which stood at around 59 % for India- 60 % for the urban sector and a meager 39 % for rural India in 2005, under the strict assumption of one-person-one-account. Looking at the exclusion from the perspective of exclusion from credit markets, number of loan accounts to adult population stood at around 14 % in 2005. The rural areas had coverage of 9.5 % as against 14 percent in urban areas. Significant regional variations are a norm.(Thorat,2007)

Poor households in developing countries live in high risk environments which force them to be exposed to several shocks and higher probability of eventuality of adverse shocks. The increase in poverty related to risks[2] does not depend only on the effects of the risk itself but also on the strategies that households adopt in order to cope with the risk. Inexistence of markets, lack of information and market failures induce households to adopt strategies that can reduce their ability for improving living standards and income. Households may, for instance, become more risk-averse by avoiding high risk but high-return projects[3] or increase income by sending children to work instead of sending them to school thereby limiting children's future return. Thus efficient strategies adopted by poor households would be those that satisfactorily prevent, mitigate or cope with the risk without undermining the household ability to increase its income. Efficient strategies should then end up in higher expected income and lower variance of income for households[4]. The adoption of efficient strategies is fundamental for households to reduce their vulnerability[5] and therefore to exit poverty or avert falling into spells of poverty.

Informal risk management strategies fail to protect the poor vulnerable households in covering all the losses around which there is an uncertainty about variations from expected outcomes (variations around expected value or average distribution of outcomes) or simply put the extent of the risk of the underlying events which are yet to occur. Regarding strategies there has been a relative consensus about the larger effectiveness of formal versus informal strategies for dealing with risk exposure. There are also trade offs around ex-post and ex-ante mechanisms as well as market based risk management vis-à-vis public schemes.

In Economics, the *bottom of the pyramid* is the largest, but poorest socio-economic group. This is the four billion people who live on less than $2 per day, typically in developing countries. The phrase "bottom of the pyramid" is used in particular by people developing new business models that deliberately target that demography, often using new technology. This field is also often referred to as the "Base of the Pyramid" or just the "BoP".[6] And one innovation that has clearly emerged as a powerful tool to invigorate the inert unfinished business in human development is *microinsurance*.

Microinsurance [7](MI) 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. Insurance plays as a risk-pooling or risk transfer function whereby the perils of few are financed by the non-perils of many.

---

[2]Risk is defined as any event that leads to either a reduction in asset holdings, caused household income to fall or resulted in a significant reduction in consumption Hoogeveen, J et al (2005)

[3] Holzmann and Jorgensen (2000)

[4] Ibid, p. 8

[5] Vulnerability is defined as "…the exposure to uninsured risk leading to a socially unacceptable level of well-being" Hoogeveen, J et al (2005)

[6] The more current usage refers to the 4 billion people living on less than $2 per day, as first defined in 1998 by Professors C.K. Prahalad and Stuart L. Hart. It was subsequently expanded upon by both Prahalad in 2004 in The Fortune at the Bottom of the Pyramid and by Hart in 2005 in Capitalism at the Crossroads

[7] "Protecting the Poor: A Microinsurance Compendium, Craig Churchill, ILO, Munich Re Foundation" (2006)

Insurance reduces vulnerability of households by replacing the uncertainty prospects of losses with the certainty of making small, regular payments. This risk pooling makes microinsurance more complex than savings, credit and other financial designs for the poor. Given the effectiveness of certain specific mechanism for particular risk events, microinsurance becomes effective only for some limited insurable events in the form of high consequence and high probability of occurrence like serious illness or crop failure where in it overcomes the problem partial coverage of losses. On the other hand, savings and credit which are more flexible than insurance fail to cover the losses in case of covariant and systemic shocks or even tail end events or low probability and high consequence events like earthquakes or tsunamis. In this context any disaster risk management effort should be seen from the same point of view, but with different risk transfer mechanisms and different roles of stakeholders as well. Another aspect in this discussion stems out of the risk aversion of most asset poor who fail to undertake some threshold risks that stymies their return profiles as well. So with micro credit and savings setting base for proliferation of micro enterprises, microinsurance could cover the risks that the individuals or groups undertake for certain economic activities and that would provide an enabling risk-return milieu. Thus at a heuristic plane, microinsurance can assumed both an offensive and defensive roles in tackling the moves of an elusive opponent named 'Risk'.

As proposed by Prahalad, we believe that businesses, governments, and donor agencies need to stop thinking of the poor as victims and instead start seeing them as resilient and creative entrepreneurs as well as value-demanding consumers. But our affiliation to this viewpoint does not stop us from listening to the critics of the idea of the markets serving the base of the pyramid in search of responsive consumers. Financial exclusion can arise out of simple institutional inability to generate independent and unique documentary proof of identity, prohibitive product pricing due to low ticket size and high transaction and administrative costs, which largely weed out marginal farmers, landless labourers, self employed, unorganized sector workers, migrants, socially excluded groups, minorities, the old, the infirm and women . Physical realities of remote, sparsely populated, difficult geographies with poor infrastructure, and a multitude of inherent demand side and supply side barriers, given informal and easily accessible substitutes also lead to a spiral of product and process deformities that accentuate financial exclusion.

Given this context, it becomes extremely pertinent to explore the ways and means of extending credit plus services to the excluded or otherwise, across difficult geographies (scalable and sustainable microinsurance products in such extreme geographies in our case), which will pave way for delivering solutions in cases less extreme. Our study in Kalahandi district of Orissa is a point in case.

2. Review of Literature

Given the multitude of risks faced by a rural household, conditional on variable income streams and thin asset structures, risk-pooling within a community could be achieved through formal insurance markets, or through a variety of informal risk transfer mechanisms. Self-insurance, mutual insurance and credit as income smoothing and the role of consumption smoothing[8] have been extensively discussed in rural risk management literature.

A study of ICRISAT[9] data for Indian villages suggested that for certain forms of assets, the 'buffer stock' mechanism holds, where in, households accumulate stocks in periods of relative affluence and deplete these reserves to finance consumption in difficult times (Rosenzweig and Wolpin, 1993).Their examination of the link between '*self-insurance and bullocks*' or the idea of informal risk hedging by '*exporting daughters and importing daughter-in-laws*' (Rosenzweig and Stark ,1989) are a few of the numerous informal risk management strategies in the repertoire of rural Indian households.

Fully efficient risk-pooling is rarely ever achieved and Pareto-efficient allocation of risk has strong implications for consumption patterns in a risk environment. Inter-temporal *consumption-smoothing* through saving and credit markets as a substitute for full-risk pooling have also connotations on the landscape of risk management in rural communities. For a risk averse household unable to achieve perfect consumption smoothing given ex-ante mechanisms, it has an incentive to devote resources in an effort to secure more stable and less risky income streams.

(Bardhan and Udry,1999) give a very catholic account of the implications of the existence of smoothly operating set of institutions that achieve a Pareto-efficient allocation of risk within a dynamic optimization framework, with a utility function that is additively separate over time. They show that marginal utility of any household is a monotonically increasing function of average village consumption. In a Pareto-efficient allocation, the transient changes in income are fully pooled at the community level. There is no incentive for risk diversification at the household level, as, after controlling for aggregate consumption, household consumption is not affected by household income shocks. The only risk faced by the household is the systemic or aggregate shocks faced by the community.

Idiosyncratic income shocks are completely insured within the community in a Pareto-efficient framework. This clearly reflects the fact that the relative importance of systemic and idiosyncratic income shocks within the community is critical. As substantiated by findings (Binswanger and Rosenzweig ,1993), within small regions,

[8] Morduch, Jonathan, 1995, 'Income Smoothing and Consumption Smoothing', *Journal of Economic Perspectives*, 9, 103-114.
[9] International Crops Research Institute for the Semi Arid Tropics

incomes of households engaged in rainfed agriculture are likely to have high covariance, thus making the risks correlated and rendering informal community risk pooling mechanisms ineffective and hence a break down of the *Perfect Insurance Model*[10].There are some fundamental contributions to empirical understanding of the testing of the Perfect Insurance Model, (Townsend, 1994) where in it major data constraints are highlighted and ways to circumvent them as well.

In line with the Second Welfare Theorem, Pareto-efficient allocation of risk can be supported by a competitive equilibrium with complete contingent markets(Bardhan and Udry, 1999), whose existence is questionable in practice. Any risk-pooling mechanism must overcome the information and enforceability constraints of insurance contracts. Moral Hazard and/or Adverse selection might plague the insurer as well.

Now, focusing on the demand for insurance or factors influencing decisions to participate in the insurance markets, both voluntary and involuntary forces play a role. Limits to perfect or near-perfect insurance markets in the form of informational constraints, enforcement, correlation structure of shocks, intertwine between credit and insurance and other physical realities are evident. As evident in basic microeconometrics of risk and vulnerability literature (Hoddinott and Quisumbing, 2003), non-asymmetric information models of household's willingness-to-pay (WTP) for an Insurance contract/product could be hypothesized to be (i) increasing in risk aversion, (ii) increasing in the expected payout (iii) increasing in the size of the insured risk, and (iv) decreasing in basis risk (increase in the correlation between the payout and the risk to be covered).

Non-nominal fixed costs like the time cost of attending the marketing meeting, or cognitive costs associated with understanding the product might also inhibit demand and take up. Adverse selection and moral hazard are also deemed potential explanations for barriers (Rothschild and Stiglitz, 1976) and there are no polar empirical evidences of asymmetric information influencing insurance participation. Indivisibility of the insurance products also makes it difficult for poor households to purchase even a single policy as per certain theoretical predictions. Credit or financial constraints (shadow value of liquid assets) have also been examined by Townsend et al in explaining insurance purchase decisions.

[10]Ray (1998)

Familiarity with the Insurance provider, social networks and cognitive limitations have also been put forth in explaining the diffusion of new insurance products. The design of any contextual risk management solution revolves around the segmentation of the risk exposure at the micro, meso and macro levels conditioned upon the response to these risks which eventually dictate the outcomes. The level at which the risk manifests apart from the nature of the shocks as in idiosyncratic, correlated, covariant or systemic is also critical. The triad of risk, response and outcome becomes a compass that directs any risk management attempt which entails risk reduction, loss control, loss aversion, mitigation, transfer, aversion, coping and adaptation mechanisms.

Given this fundamental understanding of the theoretical and empirical tenets of rural insurance, its challenges and prospects, we go ahead to explore the potential of microinsurance in India and discuss the scope and findings of our study in the following sections.

3. Potential of MI in India

Microinsurance is a set of market based insurance products and processes designed to address both life and non-life risks faced by people at the bottom of the socio-economic pyramid (BoP). These products are priced keeping the issues of 'affordability' for the client and 'sustainability' in terms of financial viability and sustainable operations in mind. It is in a state of infancy in most developing countries. For the BoP population, there are both supply and demand side bottlenecks, resulting due to 'missing markets'. Microinsurance services for the rural poor aims at straddling the two seemingly contradictory bottom lines – the social and the financial.

Microinsurance as an instrument may not be immediately suitable for all categories of the rural poor-the ultra poor and those who do not have current productive potential, may require other complementary support. It is obviously beneficial for those with income streams and/or protective assets. Market based insurance may not be immediately applicable for all categories of the BoP population. In a nation where hardly 10 percent of the population has formal insurance coverage, it is not surprising that around 2 percent .i.e. around 5.2 million of the poor have access to insurance. This speaks volumes of the potential in the huge underserved segments of the population. India has 638,596 villages (as per Census 2001) and a total rural population of around 780 million - of which the adult population is 524 million - an enormous potential pool for microinsurance. Around 53 percent of India's population of 1.1 billion earns less than US$ 2 a day (PPP terms), of which one-third is estimated to earn less than US$ 1 a day.

Whether we look at microinsurance as a 'new market' opportunity for insurers to develop business models to serve the large underserved market or as a 'social security' tool to address the larger developmental needs of the vulnerable sections by reducing their risk exposure, the key in attaining equilibrium in the sector lies in striking a balance among the basic competing objectives of providing coverage to meet the needs of the target populace, optimizing costs for the insurer and optimizing the price for the clients to attain the twin objectives of 'affordability' and 'accessibility'.

There is also no evidence of an adequate match between the insurance products and the households' needs. The effectiveness of microinsurance is questioned due to the low penetration in rural India despite the huge potential. There are obvious issues in product and process design within the broader demand-supply match paradigm that constrain the scalability and sustainability of such a potent development strategy that is truly in line with Sen's Capability Approach[11].

4. Kalahandi District: A Profile

This study is focused on the analysis of the potential provision of microinsurance at the 'Bottom of the Pyramid' (BoP) segment in Kalahandi[12], one of the most backward districts of Orissa. The predominantly rural households are exposed to many risks mainly derived from weather and personal shocks. In the next sections, an in-depth diagnosis of the district is presented, followed by a description of the methodology used to assess the risk profile of the region that eventually determines the model of microinsurance delivery in Kalahandi and similar category of communities and geographies.

Kalahandi is the seventh largest district in Orissa with 4.7% of the land area and 3.6% of the population. The population is mostly rural (92.5%) with a larger. The percentage of the population who are scheduled tribes is 30%, although in some blocks it could rise to 80%. Kalahandi district is one of the KBK (Kalahandi-Bolangir-Koraput) districts of Orissa and has been prone to drought and problems of food security. It has drawn worldwide attention because of widespread poverty, under development, mass illiteracy, starvation deaths, recurring droughts and poor socio-economic attainment levels in other indicators. As shown on Table 1, the district possesses poor infrastructure; As per the Census 2001, only 56% of the villages in the district were electrified in contrast to 73% for the state. Literacy rate was also 20 percentage points below the state level and is even lower for women.

[11] Conceptual framework developed by Amartya Sen and Martha Nussbaum for evaluating social states in terms of human well-being (welfare). It emphasizes functional capabilities construed in terms of the substantive freedoms people have reason to value.

[12] See Appendix .1 for the Map of Kalahandi district

Table 1: Kalahandi vs. Orissa

Particulars	Orissa	Kalahandi	Percent
Area (sq.kms.)	1,55,707	7,920	4.68
Population	3,67,06,920	13,34,372	3.63
Male Population	1,86,12,340	6,67,126	3.58
Female Population	1,80,94,580	6,67,246	3.69
Sex Ratio	972	1,000	
Rural Population	3,12,10,602	12,34,095	3.95
Urban Population	54,96,318	1,00,277	1.82
Rural-Urban Ratio	85:15	92:8	
Population density	236	168	
Percentaje of schedule cast population	16.20%	17.01%	
Percentaje of schedule tribe population	22.21%	28.88%	
Households below the povety line	47.5%	62.7%	
Literacity rate	63.61	46.20*	
Percentaje of villages electrified in 1999	73.30%	56.96%	

* Male literacy rate is 63% and that of female is 22%.

Source : Census-2001. Series 22-Orissa, Directorate of Census. Presented in Rao, G. Misra, R. (2005)

The region is over dependant on rain fed agriculture. It is coupled with a high prevalence of unscientific traditional cultivation and cropping patterns which eventually results in low yield and commercially unviable productivity at frequent intervals. Food crops represent around 86 % of the total crops in the region. The production is made principally by small owners: 21% of the cultivable land is owned by 80% of the proprietors whereas 53% of the land is owned by 3.4% of the proprietors. Hence covariant shocks like adverse weather events affect a huge percentage of the population but at a deeper level. The 80% who have small quantity of land face higher probabilities of loosing a larger percentage of his/her investment than somebody who has 3.4% of the larger quantity of land.

Table 2: Work Force distribution and land utilization

*ha:hectare

Classification of workers	Number	Land utilization (ha)	ha	%
Cultivators	183984	geographical area	849328	100.0%
Agricultural labourers	174906	Net sown area	375852	44.3%
Artisans	5443	Forest	51001	6.0%
Household and cottage Ind	17826	Fallow land	11602	1.4%
Alied agro activities	4820	Land not available for cultivation	444176	52.3%
Other workers	36832			
Trade and commerce	14853			

Source: NABARD, (2006)

The gross irrigated area represents roughly 14% of the geographical area and 30.6% of the cultivable area. Substantial portion of the predominantly rain-fed cultivation is under high and medium category of land. Due to low coverage of assured irrigation, traditional cropping patterns are used which results in low production levels and the yield is exposed to severe fluctuations in the eventuality of adverse weather shocks. The year, 2002 was declared a drought year, the reasons of which are obvious from the falling crop yield across the major crops triggered by an exceptionally bad monsoon.

4.1. Banking and Finance[13]

The penetration of formal financial entities in Kalahandi district is low. There are 6 commercial banks with 36 branches operating in the district which have a solid financial base and scope to have a better performance. Regional Rural Bank (RRB) have 42 branches, Central Cooperative Bank has 11 branches and 70 affiliated Primary Agricultural Cooperatives (PACs) in the district.

4.1.1. SHG-Bank Linkage Programme in Kalahandi

The SHG-Bank Linkage Programme as a critical channel for linkages to microinsurance and imparting Risk Management philosophy among the vulnerable populations. The SHG-Bank linkage programme was launched in India in 1992. However, it started in Orissa a year later. Kalahandi district rolled out the SHG-Bank Linkage programme only in 1994-95 with 29 groups supported with Rs.0.30 lakh bank credit. The programme gathered momentum in the district only after 1997-98. However, the spread became prominent in the year 2001-02 when the year was declared as "year of women empowerment' and Mission Shakti[14] took active part in formation, supervising and linkage of SHGs.

5. The Study

Need assessment for insurance or risk management products that can be provided in Kalahandi district and the delivery channels suited for the demands a detailed knowledge of the risks that the population is exposed to. It is also useful to understand the risk hedging strategies, either formal or informal, that the households are already employing. It is critical to know what characteristics and product features the population values the most and to perceive the *landscape of risk management* in the region. The insurance products need to incorporate the same to the best possible extent.

[13] See Appendix .1 for the Key Banking Statistics- Economic Indicators of Credit Delivery System in Kalahandi

[14] A Social Revolution, project of chief minister Naveen Patnaik to achieve women empowerment, has now become a buzzword in rural Orissa, as members venture into income generation and social reforms, education and health awareness. Mission Shakti was launched on the occasion of International Women's Day on 8th March, 2001 by Hon'ble Chief Minister of Orissa The Mission aims at empowering women through formation and promotion of one lakh women's Self Help Groups over a period of 4 years - 2001-2005 and strengthening the already existing ones Though the state had set a target of 2 lakh SHGs under Mission Shakti by 2008, this will be surpassed, as 36,000 new SHGs are added each year..

5.1. Methodology

The methodology adopted in this research study comprised of three phases:

1. **Exploratory Phase**: In the first phase we identified the partners having sound understanding of the ground realities by way of their experience in working closely with the communities for long. We decided to work with two CBOs/ NGOs, 'Parivartan' [15]and 'Harsha Trust'[16], with experience in the region in managing SHGs and implementing other development projects in education and agriculture.

2. **Focus Group Discussions (FGDs)**: For a preliminary assessment of the risks and profiling of the communities in Kalahandi, two FGDs were conducted.

3. **Field Survey**: With our broad objectives in mind, a representative mini-survey was conducted. The details of the survey and the main results are discussed in the next sections.

5.2. The Survey

The questionnaire for the survey was designed based on the information received in the FGDs. It was subject to three pre-tests before the final survey instrument was designed based on the feedback of the pre-tests. It was more in line with a *market research* exercise with a people centric approach.

The survey instrument (Questionnaire) has three modules. The first module tries to assess the demographic and socio-economic profile of the household. In that sense, it captures distributions by social groups, occupational categories, land distribution and returns on size class holdings. It also elicits income and expenditure and assets such as land holdings, ownership of house and durable assets, livestock, modes of transport, financial assets and indebtedness.

The second module elicits the information required to build the households' risk profile in terms of risk exposure and risk management strategies. The questions are addressed to capture information on shocks and risks experienced by households in the district and their frequency in a maximum period of 5 years. Pre-coded questions were used to identify 17 weather-environmental, economic, personal and social/political shocks, and whether they are widespread or idiosyncratic.

[15] Partner in Bhawanipatna Block Hoddinott and Quisumbing (2003)

[16] Partner in Golamunda Block

In order to asses the economic impact households also reported whether those shocks triggered i) loss of productive assets; ii) loss of household income or both. To classify the shocks according to their intensity it was asked the financial pressure of the shock on a scale from1 to 4. Finally, with the aim of establishing the hedging mechanism used, households were asked for the strategies used (formal and informal) to be self-reported for the shock, to cope with the shock or adaptations to cope later in the eventuality of similar shocks.

The third module evaluates the awareness levels, access to financial services, insurance and willingness of households to purchase insurance services and tries to gauge certain product features which the clients in those geographies prefer. It presents a hypothetical health insurance product and elicits the preferred characteristics of the product and the features that are not preferred by the respondent. Finally it assesses the range of premia that the household would pay for the service apart from other product specific market information which goes into the demand side of the study.

5.3. Risk Profile

The risk grid could be determined in the study by the following exercises:

- *Shocks Prioritization*-Frequency and correlation structure of shocks/ex-ante and ex-post strategies/Impact of Shocks and Perception of Loss/Insurance market demand study: A Hypothetical Micro Health Insurance Product
- *Risk Categorization*-High frequency risks are relatively harder to cover; low frequency risks are easier to insure but harder to sell. Shocks can be categorized as Idiosyncratic, Covariant Risks and Systemic shocks based on the correlation structure of the shock events. This eventually determines the insurability of the event as well

- *Risks by Frequency and Consequence (Severity of Impact)* -Risks in the context of their Response can be looked through this fundamental lens which divides the Risk Exposure space into four quadrants, each event being associated with a Frequency, Impact pair that determines the probability of eventuality and the corresponding consequence in terms of severity of impact or losses it can be expected or experienced to be carrying.

Table 3. Risk categorization by Frequency and Consequence

(High Frequency, High Impact)	(Low Frequency, High Impact)
(High Frequency, Low Impact)	(Low Frequency, Low Impact)

- *Risk perception and prioritization* for insurance by low income rural households is highly location specific. Prioritization differs widely by local agro-climatic conditions and the local economy.

For those with limited or no productive assets, labor is the primary income source. For such persons illness, or even small accidents, represents an on going threat to their income earning capacity but at the end it is their perception of these events as shocks which determines their relative response and the outcomes in terms of risk management. Life Cycle Risks, Gender Specific Risks, Market Risks arising out of Exchange Losses due to market fluctuations are critical.

A better understanding of the risks and their prioritization for insurance is a prerequisite for

(a) Facilitating the development of demand through appropriate information, education and communication customized for potential clients. It could also benefit marketing efforts;

(b) Designing appropriate supply responses through innovations in products, pricing and processes; and

(c) Modification of policies and regulations needed for the development of the sector.

5.4. The Sample

Sample Design: Cluster Sampling of Rural-Urban samples in the ratio of 9:1 representative of the mix of rural and urban population for the district.

1. Rural Sample
    - Some Non-accessible places
    - Random sampling of 17 villages.
    - Number of units surveyed per village obtained through a weighted average based on number of households.
    - Random sampling of households per village from the census list.
    - 450 households
2. Urban Sample
    - Villages considered urban (semi-urban) areas.
    - Random sampling of households' out of the census list.
    - 50 households

Sample Size[17]: 500

[17] Out of the 450 rural samples 20 questionnaires had to be rejected because of inconsistent and incomplete responses. So the analysis is based on a sample size of 480 and not 500.

5.5. Data Limitations

Availability of systematic data on all aspects of the study at district level was a constraint. There were also time and manpower constraints to collect detailed information of a larger sample from all the 13 blocks of the district. Therefore, the study was based on two sample blocks i.e. Golamunda block which portrays an average socio economic picture of rural Kalahandi and Bhawanipatna (District Headquarter), representative of the urban, semi-urban mix of the population.

There were difficulties in training the surveyors and implementing the survey across 17 inaccessible villages of Golamunda during the monsoon rains within a short span of time and that led to initial inconsistencies which were cleaned out. Self-reported values were checked for consistency to the best of our knowledge and the analysis assumed the validation.

Since the information is captured 'as on the date of survey' most of the variables turn out to be *stocks*, it becomes really difficult to capture *flows* in one shot surveys like this apart from some particular questions which try to gauge the change in a variable over time. *Risk Analytics* is mostly driven by loss experience distributions and flows which are difficult to derive in short spans like the ones we had for the completion of the survey.

5.6. Survey Findings

5.6.1. Demography and Socio-Economic Profile

Around 90 percent of the sampled households are in the rural sector and the remaining from the urban clusters. The same percentage of households are of the Agricultural household category, but a higher percentage, around 85.63 percent of the sampled households reported to have operated on any land in the last 365 days. This clearly is indicative of the fact that even peri-urban or urban households were involved in some agricultural activity some time of the year. Average household size of the sample is around six members with a standard deviation of around 3 members. The rural households have a higher average in terms of household size compared to the urban households as expected.

Around 53.33 percent of the respondents belonged to the Scheduled Tribes (ST) category, 7.29 percent were Scheduled Castes (SCs), 19.17 percent were from Other Backward Classes (OBCs) and the rest 20 percent were from other social groups.

Surprisingly around 32 percent of the households could be identified as BPL (Below Poverty Line) households based on their possession of the BPL card issued by the government. This is higher than the national average but much lower than the district average of around 60 percent of households being BPL households.

Mean Age of the respondents was 43 years, with 70 percent of the respondents being male and 30 percent females. Around 82 percent of the respondents were married, 7.5 percent never married, 6.46 percent widowed and 3.96 percent divorced.

5.6.2. Monthly Household Consumption Expenditure

Around 78.33 percent of the households fell into the monthly expenditure class of Rs.500-1000 which works out to be an annual expenditure bracket of Rs.6000-12000. Only 3.13 percent spent less than Rs.500 a month while 15.83 percent fell into the Rs.1001-5000 bracket, with a miniscule 2.71 per cent spending more than Rs.5000 a month. But, looking at the rural sample separately, a staggering 85.51 percent of households fell into the expenditure bracket of Rs.500-1000 compared to a meager 8 percent in the urban sample. The contrast becomes more prominent when it was found that 66 percent of urban households fell into the Rs.1001-5000 per month expenditure bracket with around 26 percent shelling out more than Rs.5000 a month.

Monthly household consumption expenditure by social group reveals that around 70 percent of the predominant social groups STs fell into the mean monthly expenditure class of Rs.500-1000 where as for SCs it was 89 percent, OBCs it was 86 percent and for others it was 90 per cent.

5.6.3. Education

21.25 percent of the respondents were illiterate, 24.17 percent attained literacy from non-formal education, 22.92 percent had below primary level education and 8.13 percent had primary education. 6.46 percent had middle school education. An abysmally low figure of 1.25 percent was registered for respondents having secondary education. Though 8.54 percent had higher secondary education, other vocational and higher education attainments were really low for the community and was in line with the prevailing socio-economic realities. The Urban educational profile is clearly stands out better than the Rural scenario.

5.6.4. Principal Economic Activity

In the rural sector, 95.12 percent of the households were engaged in self employed agriculture and only 4.88 percent were self-employed in non-agriculture. Around 93 percent of those self-employed in agriculture worked in their principal activity for 8 months, and hardly 5 percent found employment for all the 12 months of the last year in their principal activity. This is symptomic of the problems of migration and increasing casualization of labor in the absence of enough productive subsidiary activities or avenues of non-farm employment in the rural sector. Seasonal fluctuations and higher correlation of losses to adverse weather events is clearly a prominent livelihood risk precariously hanging over such asset poor populations

In the urban sector, the picture is completely different as 52 percent of the respondents households reported self-employment as the principal economic activity. 30 percent were salaried class or regular wage earners and 18 percent were casual laborers. As in the rural sector, a distribution of principal activity by number of months worked in the last year gives a good feel of the rural-urban contrasts.

The classification of the principal economic activities across rural-urban groups and their distribution over number of months they found employment in it for the last year is a good indicator of the livelihood risks exposure of the population as well as an indicator of the income or cash flows which clearly convey the consumption smoothing or income smoothing attempts in case of adverse livelihood shocks to the household.

- 83.54 percent of the respondents have property rights (for land holding and house ownership)
- 7.50 percent of the respondents reported having had transaction of their immovable assets in the last one year.
- 95.63 percent of the respondents absence of Irrigation facilities (major irrigation projects) in their locality
- 98.96 percent of the respondents reported not have benefited from NREGA or other public livelihood promotion schemes

5.6.5. Ownership of Assets

5.6.5.1. Land Holding

As elaborate in Appendix.2, Land Holding structure dimensions was studied by

- ownership of land in terms of acres of land owned by Up Land, Mid Land and Low land
- major crops grown in each category of land owned
- returns in terms of quintals[18] of produce per acre by land class and crop
- irrigation facility by land class

5.6.5.2. House Ownership

75.42 percent of the households were based out of Kutcha houses where as 20.42 were semi-pucca. Hardly 4 percent of the households resided out of Pucca houses. This is an indicator or low market valuation of their houses as well.

5.6.5.3. Livestock Ownership

Livestock ownership among the sampled households, symptomic of the poor animal husbandry activities as principal economic activity. Around 11 percent own non-descript cattle, 2 percent own cross-breeds. Buffaloes are reared by a meager 3 percent and 58 percent own bullocks. Sheep, goat, pigs are reared by very few (less than 10

[18] 1 Quintal = 100 kilograms

percent for each category) and chicken, hen, cock and ducks are owned by around 30 percent of the households.

5.6.5.4. Consumer Durables

Around 31 percent of the households own Radio while 25.6 percent own television sets. Possession of at least one fan or bulb was observed in 23.7 per cent of the households indicating low penetration of electricity consumption. Around 19.6 percent have pressure cookers and 10.2 percent keep jewelry as savings. In terms of modes of transport, around 77 percent of the households own at least one bicycle and carts (hand pulled and bullock driven) are possessed by around 21 percent of the households sampled. Around 7 percent own motorcycles and tractors and trailers combined are owned (mostly rented ones go in as owned in most of the cases) by around 8 per cent of the households.

5.6.5.5. Financial Assets

Poor financial inclusion among the communities we studied with very poor portfolio of formal financial assets of the households which are an outcome of the poor socio-economic conditions and issues of physical infrastructure on ground was evident. Around 15 percent of the households own government certificates (Indira Vikas Patra, Kisan Vikas Patra, and KCC). Post Office Deposits are held by an abysmal 7 percent of the sampled households. 16.25 percent have deposits with commercial banks. But SHG deposits outnumber in terms of popularity and stand at around 43 percent of the households. This corroborates our finding in terms of popularity of SHGs in Kalahandi. Around 6 percent have pension or provident fund subscriptions while only 6 percent hold cash in hand to the tune of at least Rs.500 per month.

5.6.6. Indebtedness

Table 4. below profiles indebtedness (at least Rs.300 in cash loans outstanding as on the date of survey or 'd.o.s') which should be looked at from the asset structure to have an idea of the debt-asset structure across the sample.

Table 4: Degree of Indebtedness

*SHG Loans were included in the Commercial Bank RRB source as well as Cooperative Bank/Society in case there was confusion about them as microfinance loans.

Source / Loan Outstanding?	Govt.	Co-op Bank/Society	Commercial Bank/RRB*	Non-Bank Financial Corporation (NBFC)	Financial Company (Chit Fund)	Total
Yes	6	98	92	21	2	220 (45.83%)
Total	6 (1.67%)	98(20.42%)	92 (12.17%)	21 (4.38%)	2 (0.42%)	480 (100%)

Only 45.83 percent of the sample households reported to have borrowed from formal institutional sources, with Cooperative bank./societies dominating the scene at 20.42 percent of the indebted and RRBs lagging behind at around 12 percent of the indebted households.

- ***Non-Institutional Loans***: 54.17 % of the sample households borrowed from non-institutional/informal sources like landlord, agricultural money lender, professional money lender, trader, relatives and friends, doctors, lawyers and other professional etc; at usurious rates of interest and the scene in Kalahandi is dominted by the Mahajan or Sahukar, the traditional moneylender who is the protagonist of any standard textbook rendition of the "Lender's Risk Hypothesis".

5.6.6.1. Purpose of Loan

Around 19 percent of the cohort took loan with the purpose of expenditure in farm business, around 18 percent for household consumption expenditure, around 7 percent for expenditure in non farm business and a miniscule 1 percent for other expenditures.

5.6.7. Insurance Awareness

The insurance awareness levels were found to be abysmal in the communities, as evident from the table below. Crop-Insurance seems to be the most popular scheme with about 42 percent of the households having heard of it. Health, Life and Property, Cattle Insurance awareness remained low. Around 27 % of the respondents reported to have bought voluntary insurance or know of any some one in the family to have subscribed to an insurance policy in the last 15 years

Table 5. Degree of Insurance Awareness

Insurance Type	**Percentage**
Health Insurance	9.38
Life/Disability Insurance	9.58
Property Insurance	6.46
Crop Insurance	42.08
Livestock/Cattle	0.63

N=480

5.6.7.1. Hypothetical Health Insurance Product

We designed this hypothetical Health Insurance product to gauge the pulse of the latent demand in the community and the findings are reported in the self explanatory tables below (See Appendix. 1 for the details of the hypothetical product)

Table 6: First Preference of Product Features

First Thing You like about the product?	Frequency	Percent
Coverage	45	9.38
Benefit (amount obtained/Pay out/Indemnity)	260	54.17
Claim processing	125	26.04
Provider	3	0.63
Proximity	1	0.21
Price (premium)	46	9.58

N=480

Expected benefits/payout was the most popular feature with 54.17 percent, followed by the premium(price), when asked in the next round as to the second feature which they liked (63 percent). Frequency of Premium payment was preferred as the second preference by around 12 percent.

Table 7: Second Preference of Product Features

Second Thing you Like about the product?	Frequency	Percent
Claim Processing	4	0.83
Provider	47	9.79
Proximity	69	14.38
Price (Premium)	302	62.92
Frequency of Premium Payment	57	11.88
Hard to Say	1	0.21

N=480

Willingness to pay (WTP) for the hypothetical product among the urban households stood much higher at 75.51 percent compared to the rural households' demand figure of 54.19 percent, as per our expectations.

- ***Number of family members the respondent wills to insure*:** 76.25 percent of the respondents expressed willingness to cover at least one person with 10.42 percent expressing their interest to cover at least two. Willingness to insure three or more members of the household registered extremely low affirmatives, as low as 1 to 2 percent of the households surveyed. This shows the apparent difficulty in understanding the concept of family floaters for communities where the average household size stood at around five members. This is nothing but natural in locations where the basic socio-economic attainment levels are really low as we have been portraying all through in this paper.

- ***Unwillingness to be insured*:** Interestingly around 83 percent of the respondents found it hard to say why they were not willing to be insured or purchase the product, while around 9 percent complained of having had *bad experience with Insurance*[19] in the past as the prime reason of their unwillingness. Only 0.21 percent said they do not need insurance, 0.42 said they do not trust the insurers and around 3 percent said fear of losing the premium to be the principal deterrents.

- ***Trigger Price/Premium*:** Rs.100 per annum[20] emerges the consensus rural premium and Rs.360 per annum in the urban case

Table 8: Rural Trigger Price/Premium

Trigger Price to Change Decision: If Premium is reduced to(Rs/annum), (from Rs. 30 per month)	**Frequency**	**Percent**
100	392	91.16
120	19	4.42
220	5	1.16
240	5	1.16
360	9	2.09

N=430

[19] Bad experience with Insurance is also a main reason why many MFIs who have a good presence in some geographies tend to stay away from Insurance given the poor claims management and ill pay out or product designs of the past which have made insurance a very unpopular and at times hated product or service (As corroborated by our field visits to some Indian MFIs during the course of the study)

[20] This was absolutely not surprising as even in the uber popular Janashree Bima Yojana (JBY) life insurance scheme floated by the Life Insurance Company of India (LIC) which is at times the synonym for Insurance in India; the highly subsidized scheme terminates in contribution of Rs.100 per month as premium and an equal proportion contributed by the state.

It was a revelation to know how within a distance of 50 km from the district radius, the *threshold premium* falls from around $10 per annum to around $3 dollars per annum.[21]

Table 9. Urban Trigger Price/ Premium

Urban Trigger Price (Rs/ annum)	Frequency	Percent
120	1	2.00
240	4	8.00
300	2	4.00
360	23	46.00
420	2	4.00
480	3	6.00
600	11	22.00
1200	4	8.00

N=50

- ***Recommending the Product:*** Around 67 percent of the respondents expressed their willingness to recommend the product to friends and relatives as a "Rather Yes" response while around 10 percent did it "Definitely Yes" way. Still around 23 percent found it "Hard to Say" and only 0.21 percent came out with a "Definitely No" response.

5.6.8. Prioritization of Risk Exposure

Prioritization of Risk Exposure becomes a critical element in understanding the approaches to social risk management and is a basic ingredient for *risk layering* and segmentation in devising efficient risk transfer mechanisms.

Weather Shock emerged as the most prominent risk the community is exposed to with around 90 percent having faced the adverse consequences of uncertain weather events, predominantly droughts[22] and the fact that they perceive of the losses arising out of the eventuality to such events, we can justify this categorization of risk exposure.

[21] 1 $ = 1 USD is assumed to be Rs.40 (INR)

[22] As discussed in the profiling of the district section, Kalahandi is a Drought Prone district and the 2002 Drought was one of the largest shocks that the respondents could register as loss inducing events.

Health Shock[23] turned out to be the second most important risk that the community has been facing as per the aggregate perception of the respondents. Around 64.53 percent have experienced some adverse health shock or the other in the near past as per the way we have defined the shock to be manifested in terms of losses experienced.

We have arrived at distributions of Frequency, Impact (Consequence), Perceived financial pressure of the shock and Risk sensitive strategy of the households to each of these prominent shocks (With categorization into nature of the shocks- idiosyncratic, covariant or systemic) and finally dissected the response to Health Shocks across Rural and Urban dimensions[24]. The predominance of informal strategies and the perception of the impact and financial losses associated with the shocks correspond to an increasing need for insurance and formal risk management given the inability of the communities to learn from their past mistakes, reflected in terms of non-adoption of new strategies nor formal adaptations. Given no change in the risk coefficients for these households, the advent of any adverse *shock event* would surely have serious ramifications on their vulnerability and make their life at the bottom of the pyramid more fatalistic, which is contrast to the *capability approach* framework we mentioned in the first section of this document. The distributions are again presented in self-explanatory tables for the initiated readers to discern the importance of working out such distributions which feedback into any product or process design that tries to address the risk management issues of such communities[25]

6. Providing Microinsurance to BoP: Excluded and Difficult Geographies

The provision of microinsurance depends not only on the adequate design of the products but also and perhaps more importantly, on the delivery channels that assure access to the market and on the risk structure that eventually determines its sustainability.

The delivery channels are perceived as one of the principal constraints for the development of microinsurance in such backward communities apart from the inherent socio-economic constraints. Even in some countries there is latent demand for microinsurance and the supply of microinsurance products exist but there are no matching models to connect them.

[23] At least Rs.500 incurred on hospitalization expenses in case of eventuality. Wage loss has not been factored into this simple definition.

[24] See Annex.2

[25] Description of distributions around Weather and Health Shock were also determined.

6.1. Distribution/Delivery Channels for MI in Poor Geographies

The provision of microinsurance in low income markets with inadequate financial and physical infrastructure depends not only on the adequate design of the products but also more importantly, on the delivery channel that assures access to the market. Reaching rural households for financial services as a move toward universal financial inclusion, including microinsurance, can be perceived of as a distribution challenge as well. Creation of a separate distribution channels would be cost heavy and hence not feasible for affordability and financial sustainability. Therefore, existing institutional structures need to be used effectively. Existing institutions include non-Governmental organizations (NGOs), self-help groups (SHGs), microfinance institutions (MFIs), post offices (POs)[26], commercial banks (CBs) with branches in rural areas, regional rural banks (RRBs), and primary agricultural cooperative societies (PACs etc.). Rural Financial Institutions (RFIs) are thus predominantly looked upon as the principal distribution channels in line with providing the *last mile connectivity* argument. Processes need to be simplified and modified to be made to suit each institutional structure.

Table 10. Possible Delivery Channels in India for Microinsurance

SHGs linked to Banks[27]	1,618,476
NGOs as development facilitators	200,000
NGOs involved in Microfinance	3,024
Rural and semi-urban commercial branches	33,368
Regional Rural Bank Branches	14,446
Private Fertilizer Dealers	192,000
Primary Agricultural Cooperative Societies (PACS)	105,735
Post Offices in Rural Areas	138,756

Source: NABARD, Annual Report 2006

The Insurer takes on the risk and designs the products like premium and benefits, the intricacies of the claims settlement and payment process[28]. The delivery channel, in contrast, does not bear any insurance related risk. It is the seller of the product and the link between the insurer and the client, i.e. it should provide services after the product is sold such as reception claims and act as the intermediary between the client and the insurer.

[26] Post Offices are a natural choice of delivering credit plus services in some product segments due to their credibility, spatial presence across the map, experience with small savings collection and other natural advantages compared to other channels. But capacity building and information technology initiatives in tune with customized product needs could only enable post-offices or the ubiquitous post-man to take over newer and more challenging roles in the financial inclusion story.

[27] We have already discussed at length the SHG-Bank Linkage Programme and this section will focus more on the other distribution/delivery channels

[28] McCord et al (2007) The landscape of Microinsurance in the World's 100 poorest countries

Given the profile of microinsurance clients, typically low income people are difficult to reach and are unaware of the existence of microinsurance, not any seller is suitable to be a microinsurance distributor. The distributor will be more effective if it is closer to the policy holders since it helps to widen the scope (outreach) and reduce the transaction costs (managerial and administrative costs)[29]. This substantiates the need for *catalytic infrastructure* and catalytic support to the sector in its early stages for higher spurts of innovation driven growth. It should be trusted by policy holders because it is the only way to defeat the preference of poor people in choosing informal coping strategies which are ineffective and invalid in absorbing the shocks. The existence of trust enables the distributor to reach the clients and transmit the message in the adequate language about what microinsurance is, what its benefits are and why it is important for people to buy it. Finally, the distributor should have in place a financial system that allows it to collect the premiums and send them to the insurer. However it is possible to act in collaboration with other partners in the regions (NGOs for instance) who can support the distributor with information systems and simple procedures. In the development of microinsurance many innovations in the delivery channels have taken place. However not all of them have been effective in the creation or scope of microinsurance.

The provision of microinsurance in backward communities and certain inaccessible geographies as in the parts of Kalahandi District characterized by limiting infrastructure, both physical and social, the challenges in delivering sustainable risk management solutions take on multiple dimensions. The selection of delivery channels in Kalahandi District is fundamental for the successful provision of microinsurance. The delivery channels should be selected according to the products that will be delivered and the target market. The delivery channels to reach households with health insurance are different to those required to reach farmers with weather insurance, for instance. For the first case, a micro-partner model or the self-help groups can be adequate whereas for the second, farmer cooperatives would be more appropriate. The next section presents a discourse on delivery channels that suit the needs of Kalahandi and similar communities discounting the fact that the products to be delivered have not been defined.

6.1.1. Microfinance Institutions (MFIs)

MFIs are close to the poor people and are trusted since they have been working in the field for years, and hence stand out as an ideal delivery channel. Transaction costs can be reduced since it is possible to integrate the premium payment with savings or loans payments. However, the integration of services may limit the creation of real demand or the understanding of people about the microinsurance service and its difference with micro credit that they are used to receive. In addition, problems come when the provision of the MFI service finishes since maintenance of the payment of the premium is also difficult apart from good post sales services to be rendered that eventually shapes the insurance experience for most of clients and could be a factor in influencing potential clients.

[29] UNDP, (2007), Building security for the poor Potential and prospects for microinsurance in India, Human development report, UNDP regional centre in Colombo.

The efficiency of the delivery channel is determined by characteristics like, how proximity to the potential end client, whether the delivery channel has earned a sufficient level of trust in the particular region, whether there is a financial system accessible for the movement of cash and whether MIS (Management Information System) is in place.

Microfinance Institutions (MFIs) are one of the most successful means of reaching out to the poor, with a collection of banking practices built around providing small loans and accepting miniscule savings deposits to low income households. It has proved as an effective means through which households can build up assets, smooth seasonal consumption needs, finance major expenditures, self-insure against major shocks and self-finance investments. However, the rural poor are plagued with a variety of risks which cause financial pressure to exceed their cash flow capacity resulting in the difficulty of repaying their loans. The vulnerability of the poor to bear a variety risks in terms of income and consumption shocks necessitated the demand for formal insurance mechanisms to cope with both idiosyncratic and covariant risks. MFIs have also recognized that insurance might be a means to offer their clients a menu of affordable social protection, risk prevention, coping mechanisms as well as mitigating credit risk. The most popular way of doing so has been by expanding the existing channels of microfinance delivery to incorporate insurance by integrating the premium payment with savings or loans payments which would help minimize transaction and administrative costs. And, potential clients are already organized in groups which are a prerequisite for group insurance. MFIs often invalidate the 'small change argument' where formal insurance markets are still underdeveloped[30].

The two main ways in which MFIs can deliver microinsurance is either through the *full service model* where all risks and any profit or loss arising out of the scheme is absorbed by the MFI itself and the *partner agent model* where formal insurers have sought partnerships with a MFI to act as their retailing agents. Again the microinsurance sector as such should also learn from the second generation micro credit scenario as in a few years hence, even this sector might face similar problems which are specific to scale and life cycle of the products or services.

However, in resource poor geographies like Kalahandi, even though MFIs seem as an ideal delivery channel on paper, it may not be soon the ground. There are very few active MFIs on ground and the SBLP is the significant micro credit route. Very poor people do not want to purchase insurance because they do not consider the expense to be worthwhile given their limited financial resources. It has also been a common complaint that the claims' processing period is too long a period given their financial constraint. Poor households often view liquid savings and emergency loans considerably more flexible than insurance because they can ameliorate the effects of numerous economic stresses. It's commonly viewed that for example, a life insurance policy will not help someone if their house burns down or if their cattle were stolen. To maximize the risk-

[30] 'A formal insurer will have to handle a lot of 'small change' premiums, collect them one by one, and given the cost of record keeping and staff salaries, this would shoot up the transaction costs of operation. Moreover, since the rural poor is typically out of the formal banking network (say, even without a rudimentary savings bank account) and lacks basic financial literacy, large insurance firms would shy away from such markets.

managing value to low-income households, MFIs need to consider offering emergency loans and liquid savings accounts, as well as insurance. For example, Activists for Social Alternatives (ASA) in Tamil Nadu provides voluntary savings and emergency loans that can assist members to manage risks. Most MFIs[31] prefer to offer life insurance although the real demand remains to be health care because life insurance is easier to design, operate and the fund generation is relatively good. It has become an important tool for risk management aiming to safeguard or reduce the likelihood of credit defaults by addressing certain high economic costs to credit groups rather than a means to ensure prevent income depletion of the poor borrower.

In many cases, MFIs also lack the technical knowledge about insurance products, actuarial information in setting premiums and are faced with burdensome regulatory environment coupled with a lack of reinsurance facilities. In Kalahandi, it was found that the mere integration of insurance services along with MFIs core functions limits the creation of real demand for microinsurance, the understanding between microinsurance services and micro- credit. The mandatory provision of insurance along with credit creates problems when the provision of the MFI service finishes especially when there is a lack of understanding of the benefits of microinsurance. Thus before implementing insurance schemes in low income markets there is a need to ascertain the real demand for insurance and also creating a pool of insurance literates. Culture also plays an important role as in Zambia, where some consider life insurance a taboo because it suggested that they were preparing for their death

In regions which lack formal life insurance services due to the lack of infrastructure and the risk profile of its clientele, informal arrangements like burial societies which are commonly found among the fishing communities of Cochin, India are more effective in insurance delivery. Members of the fishing community contribute a small sum per week against a guarantee of fixed payout in event of a member's death. Payouts are limited in the sense that it covers the immediate cost of funeral services

To significantly scale up the low-income market's access to insurance, there is a strong case for 'smart subsidy' by donors or the Government to spurn microinsurance off the ground in regions where the incentive for the private sector is weak due to large informal economies and weak financial institutions. Donors especially are adept to address both public and private sector market failures. For example, the Grameen Bank in Bangladesh relied on subsidised resources for years to finance products for the poorest of the poor. The intelligent use of subsidies can serve as catalyst to spark interest among the private sector, promote infrastructure and build the capacity of the local community. Donors funding could cover only operating losses in the first few years when the client base is small and premiums do not yet fully cover costs whereas certain costs, such as claims costs, need to rarely be covered by donors as clients should face the true costs of well-managed insurance from the beginning. Donors could broker in alliances with the private sector in a manner that the project is deemed sustainable even when the funding terminates.

[31] In almost all MFIs though, the concept of Insurance being linked to their credit outstanding emanated from the concept of *credit life insurance* and *funeral insurance schemes (mostly African MFIs)*

6.1.2. Co-operatives

These institutions are closer to the policyholders and usually have financial systems for the collection of premiums. In countries with well developed co-operatives this delivery channel can prove to be successful. However, the scope could be determined by the attitude of the cooperative's manager towards insurance and its coverage could be limited to the members of the co-operatives. As with MFIs, the insurance may be linked to a broader array of financial products which reduce the creation of real demand. A case of limited demand is Columna in Guatemala where voluntary purchases only account for 10-20% of the total demand of microinsurance[32]. However, in Colombia, where co-operatives constitute a broad network, co-operatives have proved to be an appropriate delivery channel.

In Kalahandi, however, this channel does not show much potential as there is no deeply developed co-operative structure that can guarantee the reach to the poorest in the region. Besides the results of the cooperatives in the last years has not been positive, which could suggest that people are trusting other kind of intermediaries, which is a negative aspect for this possible delivery channel.

6.1.3. Retailers

The great advantage of this delivery channel is the closeness of the distributor to the policy holder and the typical wide outreach. This channel could be used to provide either insurance related to the product that the retailer is selling or unrelated to the product[33]. When the insurance policy is bundled with the product (for example electrical equipment bundled to the insurance policy for the item bought) then there is not high need of training. However, if the product is bundled to the product sold and unrelated to the product, people may ignore what they are buying and its benefits which demands need for training by the retailer. With over 3.6 million rural retail outlets in India, one dominant marketing strategy would be channeling information to meet the 'unmet demand' in the clusters of 'informed demand' segments of rural markets. The '*marcom'- marketing communication* framework is an interesting outreach framework in rural markets that can be applied to the BoP segments. [34]. The reality in Kalahandi is that retailers can be found only in the district headquarters and in relatively larger villages. The scope would be limited to urban and densely populated areas which would not be an appropriate channel for rural and scattered populace.

[32] Herrera, C., Miranda, B. (2004) "COLUMNA, Guatemala" CGAP Working Group on Microinsurance Good and Bad Practices *Case Study No. 5*, December 2004

[33] IFFCO-TOKIO General Insurance Company's 'Sankat Haran Policy', launched in 2001 is a point in case. It is a personal accident insurance cover being offered to farmers on every 25kg purchase of fertilizer of specified brand/product. The sum insured ranges from Rs.4000 per bag to a cover up to maximum 25 bags a year. The Insurer pays the premium. The coverage has exceeded 25 million farmers and claims settlement beyond Rs.23 crores.

[34] 'Outreaching India 70%' (2005) by Gautam Chatterjea highlights demonstrative experiences and interesting strategies for rural marketing and communications to address the outreach issue in the hinterlands.

6.1.4. Business Correspondents (BC)

With the objective of ensuring greater financial inclusion and increasing the outreach of the banking sector, it has been decided in public interest to enable banks to use the services of Non-Governmental Organizations/ Self Help Groups (NGOs/ SHGs), Micro Finance Institutions (MFIs) and other Civil Society Organizations (CSOs) as intermediaries in providing financial and banking services through the use of Business Facilitator and Correspondent models. Under the “Business Facilitator” (BF) model, banks may use intermediaries, such as, NGOs/ Farmers' Clubs, cooperatives, community based organizations, IT enabled rural outlets of corporate entities, Post Offices, insurance agents, well functioning Panchayats, Village Knowledge Centers, Agri Clinics/ Agri Business Centers etc, depending on the comfort level of the bank, for providing facilitation services.

Under the "Business Correspondent" (BC) Model, NGOs/ MFIs set up under Societies/ Trust Acts, Societies registered under Mutually Aided Cooperative Societies Acts or the Cooperative Societies Acts of States, section 25 companies, registered NBFCs not accepting public deposits and Post Offices may act as BCs.

In addition to activities undertaken in the BF Model, the scope of activities to be undertaken by the Business Correspondents will include
(i) disbursal of small value credit, (ii) recovery of principal / collection of interest (iii) collection of small value deposits (iv) **sale of micro insurance/ mutual fund products/ pension products/ other third party products** and (v) receipt and delivery of small value remittances/ other payment instruments.

The activities to be undertaken by the Business Correspondents would be within the normal course of the bank's banking business, but conducted through the entities indicated above at places other than the bank premises. Accordingly, in furtherance of the objective of increasing the outreach of the banks for micro-finance, in public interest, Correspondents, banks should ensure that the scheme formulated and implemented is in strict compliance with the objectives and parameters laid down by RBI.

Banks may pay reasonable commission/ fee to the BFs/BCs, the rate and quantum of which may be reviewed periodically. The agreement with the BFs/BCs should specifically prohibit them from charging any fee to the customers directly for services rendered by them on behalf of the bank.

As the engagement of intermediaries as BFs/ BCs involves significant reputational, legal and operational risks, due consideration should be given by banks to those risks. They should also endeavor to adopt technology-based solutions for managing the risk, besides increasing the outreach in a cost effective manner.

Compliance with KYC (Know Your Customer) norms will continue to be the responsibility of banks. With appropriate Grievance Redressal mechanisms in place and with an efficient awareness programmes around the operational issues involved, these innovative models can serve as an effective delivery channel for microinsurance in difficult geographies.

6.1.5. Information Technology and Kiosks

The recent technologies for connectivity and transaction devices increase the possibility of successful and new delivery channels that reduce costs, giving major scope for developing the agent-base. The model based on internet connectivity has the advantage to reduce fraud since the agent needs to update the client's data and register the payment immediately. It also reduces transaction costs since the client need not commute to other villages in order to buy the policy.

Low telecommunication density is a constraint in these areas, but telephone booths are increasingly being used as social focal points where villagers get together to exchange information, news and share ideas across age, socio- economic status and ethnic groups.[35] Potential of Mobile Payment Services/Systems to become acceptable in the market as a mode of payment are also being analyzed widely (Karanouskos and Fokus, 2004).

ITC's e-Choupal Initiative[36]: The endemic constraints that shackle the Indian agricultural sector– namely, fragmented farms, weak infrastructure, numerous intermediaries or middle-men, excessive dependence on the monsoon, variations between different agro-climatic zones, etc. These pose their own challenges to improving productivity of land and quality of crops. These result in inconsistent quality and uncompetitive prices. ITC's answer to these problems is the e-Choupal initiative; the single-largest information technology-based intervention by a corporate entity in rural India which aims at 'transforming the Indian farmer into a progressive knowledge-seeking netizen'. Enriching the farmer with knowledge; elevating him to a new order of empowerment. e-Choupal delivers real-time information and customized knowledge to improve the farmer's decision-making ability, thereby better alignment of farm output to market demands, securing better quality, productivity and improved price discovery. The model helps aggregate demand in the nature of a virtual producers' co-operative. The e-Choupal initiative also creates a direct marketing channel, eliminating wasteful intermediation and multiple handling, thus reducing transaction costs and making logistics efficient. Over the next decade, the e-Choupal network will cover over 100,000 villages, representing one-sixth of rural India, and create more than 10 million e-farmers.

---

[35] The most important innovations in use of IT infrastructure can be seen in the field of micro health insurance initiatives which are becoming ever more popular and competition in the sector is fuelling the use of technology to cut the edges as insurers keep an eye on the top line and not just the bottom line.

[36] Indian Tobacco Company (ITC's) portal on rural development philosophy portrays the aggressive expansion plans of the e-Choupal and related interventions that are transforming rural India.

This and similar digital transformation initiatives could well become an efficient multiple point of service whereby insurance services can be facilitated in remote locations as well. Hence, the development of similar initiatives in Kalahandi district would become an adequate policy in order to have a high scope delivery channel in remote rural areas. However, as mentioned above, the infrastructure still can play a deterrent role for these kinds of initiatives, since the lack of roads or electricity facilities may increase the costs of installation of the kiosks and then deter the investment apart from a host of other socio-economic and geographic realities.

7. Regulation

The microinsurance industry is in a similar state of development as micro-credit was a decade ago. The regulation of insurance has an underlying final objective of protecting the consumers. With that aim, the regulator should guarantee universal access and should promote or oversee for the quality of the products and the sustainability of the providers according to the governance norms[37]. The dual role of the regulator as a protector and a promoter implies that new roles and characteristics need to be developed. The regulator needs to know in detail, the characteristics of the market of microinsurance, the risks that poor people are exposed to and the difficulties in providing services to this niche market. It also must be aware of the difference between insurance and microinsurance particularly those related to the different distributional channels and products.

7.1. Key issues addressed by the MI Regulations[38]

7.1.1. Easing Distribution Challenges for Inclusion

- *A wider and more inclusive definition of microinsurance agents*
- *Allowing the same company to provide life and non-life cover*
- *Permitting composite products*
- *Revising commission structure upward*
- *Fixing upper and lower coverage limits.*

7.1.2. Reducing Procedural Bottlenecks

- *Permitting premiums to be collected and remitted by microinsurance intermediaries and agents to insurance companies.*
- *Allowing agents to distribute policy documents to clients and Reduced Transaction Costs*
- *Contracts in vernacular languages.*
- *Lowering the required training period for agents*

[37] Mor, N; Ananth, B. (2006), "Inclusive financial systems: Some design principles and the case Study of ICICI Bank" Institute for Financial management and research, Centre for development Finance, Working papers Series, August.
[38] This section draws from the UNDP, HDRU's 'Building Security for the Poor'-Potential and Prospects for Microinsurance in India' framework. The MI Regulations in India were issued by IRDA in 2005.

8. Catalyzing Markets for MI in Kalahandi, and Beyond

8.1. Demand Side Issues

Drawing from the discussion so far, the interconnected themes can be reiterated for any specific context of microinsurance provision to be a successful attempt. Kalahandi or for that matter similar geographies are no exceptions.

- Even though there is need and a latent demand for microinsurance, as evident from the findings of the field survey, it often not translated into effective demand; products available tend to be supply driven or compulsorily tied to credit or some other product or scheme. This way the efficiency-effectiveness trade off sneaks into risk transfer schemes

- Products need to be tailor made to the clients needs or existing products needs to be customized based on need assessment studies that gauge the latent demand apart from things like what works and what does not in that specific location. Standardized product designs do not respond to the needs of poor clients which in turn are a function of the location itself
- Pricing of insurance products for low income populations is a critical issue; premiums alone may not be adequate to provide full risk cover. There might be variation across groups or sub-groups in terms of threshold premia above which the willingness to pay of the client does not translate into his decision to purchase the product, given his/her ability to pay

- Better outreach to low income population in such geographies is a serious challenge; financial viability is apparently linked to availability of soft funds for initial market penetration in spite of possible distribution channels as identified in earlier sections.

- Procedural innovations are critical in overcoming operational bottlenecks, reducing costs and obtaining and retaining clients while improving viability and quality of service

8.2. Supply side Issues

As evident from the findings of the field survey, for Kalahandi or any other geography with such low levels of insurance awareness, it becomes extremely challenging to circumvent the demand side issues and find distribution channels which can deliver specific tailor made products given the socio-economic realities adverse to a market for microinsurance. Apart from that there is low awareness about insurance not just among the BoP population, but also among the facilitators.

- Incentive incompatibility is also a concern - If insurers feel that benefits of incurring costs of market development could go to competitors, it hampers the probability of frequent innovations at the BoP.
- The ticket size argument also comes with high volumes pulling down average costs and probability of lower adverse selection in a large pool as per the law of large numbers.
- In the absence a strong legal and economic infrastructure if insurance is in a state of infancy, for geographies like Kalahandi, it is yet to be born. The issue of missing markets needs to be addressed.

8.2.1. Issues in Product Design

Basic market development activities such as identifying local needs and promoting products that address the significant gap are cost heavy and unless these catalytic infrastructure is set up at such early stages, the market for microinsurance in such geographies might turn out be too old to be born in due course.

Absence of historical data on the BoP population (Absence of claims history and loss distributions does not permit actuarially sound pricing and the ambiguity loading still remains factored in prominently thus raising the costs to the insurer and hence price to the insured). The findings from the primary data analysis give a clinical risk profiling and categorization but it is symptomic of the difficulties in coming out with value based loss distributions and claims experiences are a dream (rather a nightmare, on a lighter note) at this stage of market development.

8.2.2. Issues in Pricing MI Products

.

Willingness to Pay (WTP) and perceived high price of microinsurance products is something we have clearly demonstrated by way of the divergence between the rural and urban trigger or threshold prices for the hypothetical microinsurance product. This creates further dilemma in pricing, which has already been actuarially handicapped due to data limitations as discussed in the previous section.

Insurers need to provide satisfactory services at competitive prices to cater to the BoP market. In most cases the products are not actuarially sound due to lack of relevant data leading to a mismatch of WTP (Willingness to Pay), ATP (Ability to pay) and the supply variations across client groups and products also pose formidable challenges.

Currently, the break even premium for a simple health insurance product for a family for four, assured a sum of INR10, 000 is estimated at INR350-400, while the break even premium for other products such as crop or livestock insurance is much higher, in the range of INR750-1,500 per unit. Clearly, this is beyond a poor family's capacity to pay as evident from our findings.

Expenditure toward insurance premiums as a percentage of total annual household income for relatively well-off families in urban areas around 8-10 percent. A low income household may not pay out and maintain such percentages over the years, more so for products considered sub-standard, at least in the early stages. And the case becomes worse in the case of Kalahandi and similar geographies with annual incomes much below national average brackets and at this stage where markets need to be created, rather than assumed to be exist.

8.2.3. Issues in Distribution

In this paper, we have examined possible distribution channels in the context of designing products which could be tunneled through them. Distribution strategies should identify appropriate channels by geography and product, and where required, new channels should be developed.

- Insurance companies find the cost of distribution in rural areas more expensive because of poor connectivity and the absence of a physical presence.
- Access to client information is a challenge; this resulted in far greater concerns regarding adverse selection and moral hazard39
- If the focus is on 'getting the business' rather than servicing client needs, it can affect credibility. Commission on sales would be a great incentive for rural insurance agents, with little capital investment
- Underutilization of existing Distribution Channels is a reality not only in Kalahandi but also at larger levels of aggregation
- Procedural Innovations in the form of Process Innovations, Hassle free and fast Claims Settlement, Renewals and transparency are critical to the success of MI in such communities. These at times outweigh product innovations. Processes are the wheels that drive the Products and delivery channels are the roads that lead to the destination in terms of risk management objectives.

[39] Two of the most studied words in the theory of insurance and risk management- off shoots of the larger Information Asymmetry problem

8.3. Road Ahead

Micro-insurance is poised for a take-off in India given the current heightened interest from different stakeholders, combined with the concrete impetus provided by the Regulator. But when it comes to guiding the markets from subsistence to commercial to sustainability phases of development, a concerted effort from all the stakeholder needs to be in place. The need for such critical involvement and investment becomes ever so critical in the context of difficult or excluded geographies as in Kalahandi, and beyond. Complimentary catalytic support would enable all the stakeholders to play a more pro-active role. Development of the microinsurance sector needs a longer term perspective that combines responsiveness to client priorities with market development and financial viability, replacing the current preoccupation with immediate profits and mere outreach expansion to meet the regulatory obligations.

8.4. Research Ideas

This section is an initiation into the proposed research ideas that we are attempting at exploring in the near future based on our further work on these and related themes. They are mostly at a rudimentary stage before substantial value additions formalize in due course

8.4.1. Framework 1

Any innovation should be considered but with special attention to the context. A successful method in a place can be a failure in other due to different factors.

- Identifying a critical set of well defined parameters that drive the diffusion of new risk management products in the community/geography

- Based on such a 'Risk Vector Space' we need to create stable matrices for risk comparison where in by an illustrative matrix, we are exploring the possibility of designing generic solutions that can be scaled up or replicated for applications under certain conditional realities elsewhere is something we are keen to explore from engineering risk management solutions for the poor by way of innovations at the BoP. Such a hypothetical matrix is depicted below:

In identifying the main parameters that enable us to create a DECISION MAKING TOOL in terms of a matrix of indicators, that can substantiate scalability and replication of microinsurance products in places under similar conditions, the idea could be well visualized in terms of the matrix below which trace the significant parameters and based on these coefficients we can generalize on the challenges, potential and the gaps that need to be explored to deliver sustainable microinsurance products and processes.

Fig. The Proposed Matrix Framework – Primitive version[40]

Country/Community / Parameter/Index	X_1	X_2	X_3
(1)Population Density	X_{11}	X_{21}	X_{31}
(2)Percentage of Rural Population	…	…	…
(3)Location Risk Vector (Major Systemic Shocks)	.	.	.
(4)Rural Occupational Vector (Principal and Subsidiary Activities)	.	.	.
(5)Income Per Capita	.	.	.
(6)Percentage of BPL Households/Population	.	.	.
(7)Density of State of Highways	.	.	.
(8) Density of Bank Branches			
(9)Distance from the Headquarter	.	.	.
(10)Population to Hospital Beds Ratio	.	.	.
(11)Percentage of Net Sown Area Irrigated	.	.	.
(12)Average Household Size	.	.	.
(13)Sex Ratio	.	.	.
(14)IMR (Infant Mortality Rate)	.	.	.
(15)Literacy Rate	.	.	.
(16)Female Literacy Rate	.	.	.
(17)Local Presence of Insurer (1=yes, 0=no)	.	.	.
(18)Insurance Penetration[41]	.	.	.
(19)Insurance Density[42]	X_{191}	X_{192}	X_{193}
(20) Financial Inclusion	X_{201}	X_{202}	X_{203}

[40] A study in Mexico and Colombia are contemplated to initiate comparative analysis for parallel studies in India. Based on the findings, the proposed framework can be refined further and be made more substantive in terms of its contribution to the field of social risk management.

[41] Insurance Penetration is Gross Insurance Premium as a percent of Gross Domestic Products (GDP)/State Domestic Product (SDP) or DDP (District Domestic Product) if available. It is used as an indication of the level of risk awareness in the population and significance of insurance in the economy

[42] Insurance Density is calculated as Per Capita Insurance Premium. It measures the progress of the insurance industry and is used as an indicator of the industry's maturity in an economy.

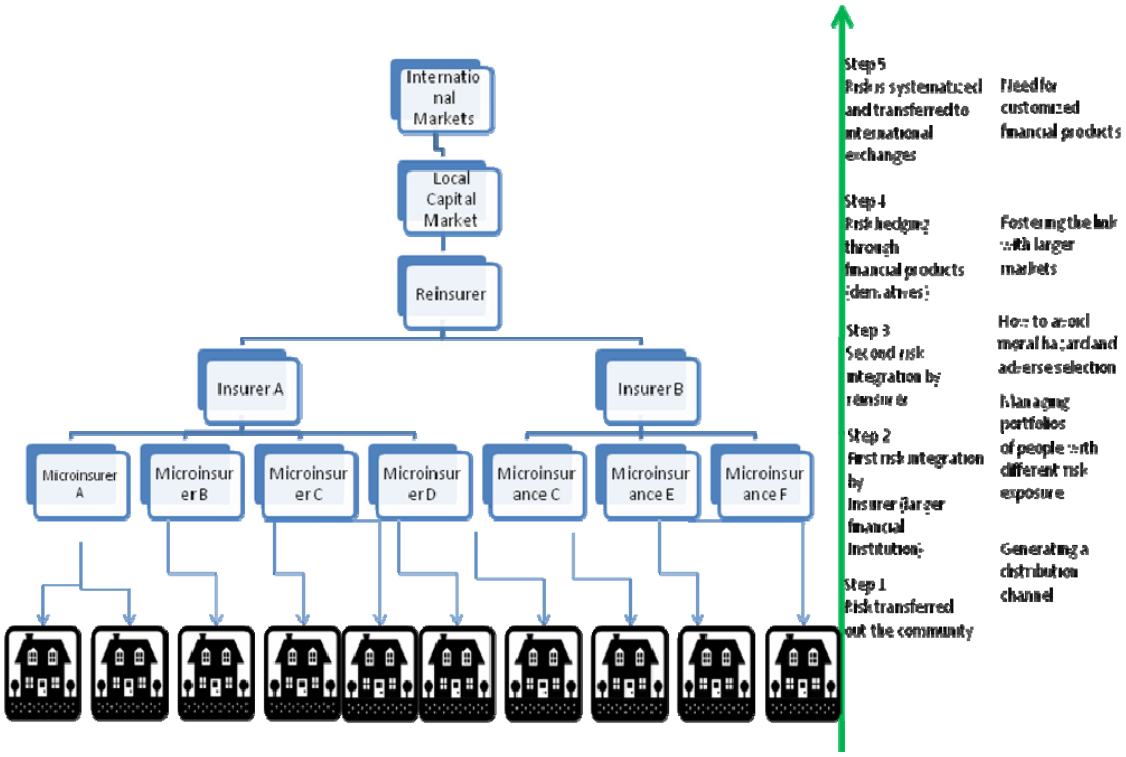
8.4.2. Framework 2 – Formalizing Risk Management

The research carried out in the state of Orissa was an outstanding opportunity to experience some of the challenges that insurance provision faces in backward communities, such as Kalahandi. In these environments (Stoppa and Ulrich, 2003; Hess, Kaspar and Stoppa, 2002), not only do they possess the socioeconomic features such as, lack of social security, infrastructure, low levels of literacy, unavailability of the traditional distribution channels, but also their geographical situation hampers the adoption of their inhabitants to any type of financial services. A thorough analysis of communities that have successfully adopted formal risk management mechanisms would be a comprehensive endeavor toward the development of the microinsurance market in India. Furthermore, understanding these issues becomes a crucial step in the evaluation of these types of microinsurance programs given that the adoption of risk management practices is endogenous.

The statement that communities with higher level of economic development are more likely to adopt formal risk management strategies comes out easily; however, the assessment gets more complicated with the existence of communities with not only comparable levels of development and risk exposure, but also with similar demographic features. One of the hypotheses is that the communities with higher levels of organization (e.g. existence of farmers' cooperatives) are more likely to adopt formal risk management strategies.

In the risk management space for vulnerable communities, the layering of risk and risk segmentation, and hence the risk transfer mechanisms need to be researched extensively and policy decisions should be guided more by causality and less by correlations. Developments in this sphere are important to inform policy making in the space of disaster risk management and catastrophe financing domains. The learnings in this sphere will inform developments in the space of risk finance, climate change risk management and the overall social risk management agenda in times ahead.

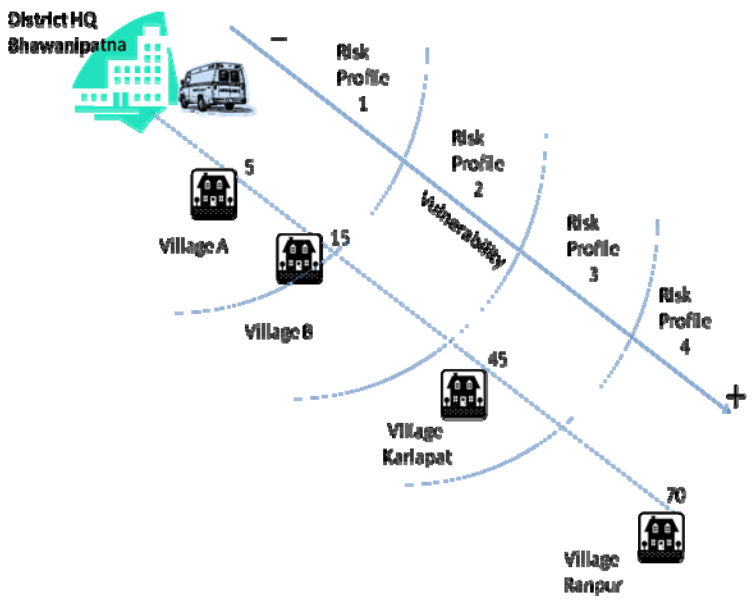
The future of microinsurance does not depend as much on the delivery channels availability (this condition will be fulfilled eventually) as much on the generation of efficient networks for risk transfer. This means that one of the main tasks in the sector is to create links between the local organizations selling the products, the insurer and the capital markets. If these networks are furnished, the market will become financially sustainable as the demand increases, as illustrated in the figure below.



The market for microinsurance- Structure

Apparently, recurrence in shocks also seems to play an important role in the adoption, but sporadic events also influence market distortions. A member of Harsha Trust, one of our partner organization in Kalahandi, described the case of farmers in Golamunda block that normally buy crop insurance (traditional form provided by the government) after suffering from a drought year. If the next year, the rainfall is adequate, they stop demanding policies (see the graph below for a hypothetical case of demand for crop insurance versus rainfall level.)

While the lower the level of economic development, the higher the need of formal risk management mechanisms. However, the big paradox in backward communities is that perhaps microinsurance is an inefficient option. Considering the endeavor of starting up a program of life insurance provision in the village of Ranpur (70 kilometers from Bhawanipatna, the Kalahandi District Headquarters), inhabited by tribal groups and which is practically isolated of any health facility. Even if a private/public agency comes out with an innovative solution to overcome the problems of distributing and getting an affordable policy price, the big issue is how to manage/cope the risk of a portfolio comprised by people highly exposed to different threats (many of them particular of their geographical context) that have brought them into one of the highest rates of mortality in the country.



Lack of infrastructure and vulnerability (non-actual risk profile figures)

Therefore, a physical intervention to surmount the lack of services could be more effective as a risk management strategy. A Look at The World Economic Pyramid (exhibit below), based on Individual annual income estimates of 2005 USD in Purchasing Power Parity reveals the magnanimity of the issue that has been iterated all through the study. Most market based solutions, products and companies focus on the *mature markets*- home to around 0.5 billion (>$20000 tier) and the *emerging markets*- housing around 2 billion ($3260-$20000 tier), while the huge market of 4 billion people living on less than $3260 a year, the *survival market* goes largely untapped. This bottom tier, BoP segment is the *'majority market'* where the real challenge of delivering sustainable products lies and it is our endeavor to understand and reach out to these large untapped market segment and intervene by way of more effective policies, products, services and solutions.

Exhibit 1: **The World Economic Pyramid**

Annual Per Capita Income*	Tiers	Population in Millions
More Than $20,000	1	75–100
$1,500–$20,000	2 & 3	1,500–1,750
Less Than $1,500	4	4,000

* Based on purchasing power parity in U.S.$
Source: U.N. World Development Reports

A basic thought on the microinsurance market and some of the elements that could be considered important in its development is illustrated below, which would feedback in the microinsurance matrix development as depicted in the last section.

	Subsidy Level	Break-even Level	Commercial Level
Demand			
Economic and Social Resources	Lack of infrastructure	Availability of basic infrastructure (electricity, water and sanitation)	Availability of basic infrastructure and good accessibility to urban mix- used areas
Level of organization	Tribal, basic associations (e.g. SHG)	Farming associations/ cooperatives	Legally constituted organizations, MFIs with
Demographics	Basic level of organization	Existence of local organizations	Local organizations and influence of external institutions
Accessibility to Financial Services	Financial illiteracy	Exposure to financial services	Formal financial structure and access to local capital markets
Supply			
Source of the Capital	Public	Public-Private Partnership	Private
Organization	Local government representative	NGO/SHG Institution	Insurer

.

9. Conclusion

In Kalahandi, both demand side and supply side bottlenecks exist in extending insurance products and formal risk management services to the rural poor, leading to the creation of a case for the *missing market*. There is a discernible mismatch between the standard products and services available in the market and what can be of use to the target population. Rural households need dependable, useful, transparent and affordable solutions to effectively deal with risks and shocks they face. For the scalability and sustainability of such solutions, commercial viability needs to be attained. This is perhaps a prerequisite for the feasibility of such solutions to be engineered by way of a *market based risk management framework.*

On the supply side, the standard products offered are mostly designed for the relatively better off and which are gender insensitive at times as well. Insurers have limited understanding of the needs and priorities of the rural poor.

Another challenge that we have been focusing on for sometime is finding effective delivery mechanisms for better and higher outreach. Rural households are more dispersed, scattered and have a lower population density than metros and other urban areas. Road infrastructure linking rural areas and other physical infrastructure tends to be poor as demonstrated in the case of Kalahandi district. This raises the transaction costs and administration costs. And if we remember basics of pricing an insurance product, this definitely raises the premium added to the fact that the information asymmetry around ambiguity loadings still unreduced. *Inclusive insurance to be viable is surely expected to be a 'low ticket' business, requiring volumes as has been in the case of inclusive credit*.

The risk profiling of the sampled communities, if assumed to be representative of state of affairs in Kalahandi and similar rural communities, on the demand side, the poor have predominantly not sought formal insurance. The rural poor face very specific and varied risks and shocks, and have a proclivity to depend upon less formal mechanisms and mostly inefficient and ineffective as discussed earlier. Insurance is absolutely not well understood and the knowledge of its potential as a risk management tool is not widely prevalent. Pricing of existing insurance products has been prohibitive given the absence of relevant data and other operational bottlenecks that fail to reduce costs. On an average, available products have been unsuitable. Complicated procedural hassles and bad experiences have also contributed to a lack of effective demand, in spite of need and demonstrated latent demand as highlighted by this path-breaking study.

We need to identify the bottlenecks that constrain the development of inclusive insurance services. The host of poverty reduction programmes though preponderant have systematically been ineffective in addressing critical risks of the rural poor as the address risk incidentally, if at all. The way the rules of the market based risk management game is set, it ends up excluding those who need it the most.

Now, for the tale we have telling for sometime, to be brought to its logical conclusion, it needs to be emphatically pronounced that when it comes to delivering

effective risk management solutions and microinsurance products for Kalahandi and similar challenging geographies, we have to right away accept the complexities arising out of a demand-supply mismatch, the missing markets, the socio-economic realities and the issues that revolve around product conceptualization to market development; there is an urgent need to be backed by concerted efforts at the micro, meso and macro levels and constantly engineer innovative solutions that are truly scalable and sustainable to the core.

At the end of the day, Innovating at the Bottom of the Pyramid is as beautiful an art and as methodological or rational a science it could be imagined. There are obvious big time lessons to be learnt from this first of its kind study in Kalahandi and when it comes to delivering microinsurance at places that go beyond, we can always find comfort in these words of Frost:

"…But I have promises to keep,
And miles to go before I sleep,
And miles to go before I sleep."[43]

[43] *"Miles to Go Before I Sleep" by Robert Frost*

10. References

"Agroasemex". 2007. http://www.agroasamex.org.mx

Bardhan, P. and Udry, C. 1999. "Development Microeconomics", Oxford University Press, Oxford.

HDR Unit, UNDP Regional Centre in Colombo, Serving Asia and Pacific.2007. "Building Security for the Poor-Potential and Prospects for Microinsurance in India" Colombo.

Cawley, J. and Philipson, T. 1999. "An Empirical Examination of Information Barriers to Trade in Insurance", American Economic Review, Vol. 89 No.4, pp. 827-846.

Chatterjea, G. 2005. "Outreaching India 70%-rural marketing and communication", Rupa & Co., New Delhi

Churchill, C. 2006. "Protecting the Poor: A Microinsurance Compendium", ILO Publications and Munich Re Foundation, Germany.

Doherty, N.A. 2000. "Integrated Risk Management: Techniques and Strategies for Reducing Risk", McGraw-Hill, New York.

"Environmental Finance" .2007. http://www.environmental-finance.com/

Hazell, P., Pomareda, C. and Valdés, A. (Ed.).1986. "Crop Insurance for Agricultural Development: Issues and Experience", The Johns Hopkins University Press, Baltimore.

Hess, U., Richter, K. and Stoppa, A. (Ed.). 2002. "Climate Risk and the Weather Market", Weather Risk Management for Agriculture and Agri-Business in Developing Countries, Risk Books, London.

Hoddinott, J. and Quisumbing, A. 2003. "Methods for Microeconometric Risk and Vulnerability Assessments", Social Protection Unit Human Development Network, The World Bank, Washington D.C.

Holzmann, R. and Jorgensen, S. 2000. "Social Risk Management: A New Conceptual Framework for Social Protection, and Beyond", The World Bank, Washington D.C.

Hoogeveen, J, et al, 2005 "A Guide to the Analysis of Risk, Vulnerability and Vulnerable Groups", The World Bank, Washington D.C.

Hull, J. 1997. "Options, Futures and Other Derivatives", Third Edition, Prentice Hall, NJ.

International Association of Insurance Supervisors-CGAP.2007. "Issues in regulation and supervision of microinsurance", Issues Paper, June 2007.

Karanouskos, S. and Fokus, F. 2004. 'IEEE Communication Society Tutorials', Mobile Payment: A Journey through Existing Procedures and Standardization Initiatives, Vol.6 No.4, pp.44-66

Larson, D., Varangis, P. and Yabuki, N.1998. "Commodity Risk Management and Development", World Bank Policy Research Paper No.1963, The World Bank Development Research Group, Rural Development, The World Bank, Washington D.C.

McDaniels, T and Small, J. M. 2004. "Risk Analysis and Society", Cambridge University Press, Cambridge, UK.

Mor, N. and Ananth, B.2006. "Inclusive financial systems: Some design principles and the case Study of ICICI Bank", Working papers Series, Institute for Financial management and research, Centre for development Finance, Chennai, India.

Morduch, J., 1995. 'Income Smoothing and Consumption Smoothing', Journal of Economic Perspectives, Vol 9, pp.103-114.

Peck, R. and Pearce, D. 2005. "Managing Risks and Designing Products for Agricultural Microfinance: Features of an Emerging Mode", CGAP, London.
NABARD, "Potential Linked Credit Plan 2005-06: Kalahandi",.2006.Orissa Regional office, Bhubaneswar, India.
Rao, G. Misra, R. (2005), "Industrialization in Kalahandi District`- A case study", Orissa Review, March 2005
Ray, D.1998. "'Development Economics', Insurance, pp.591-620, Oxford University Press, Oxford
Rosenzweig, M.R. and Binswanger, H.1993."Wealth, Weather Risk and the Composition and Profitability of Agricultural Investments," Economic Journal, Vol. 103, pp.56-78
Rosenzweig, M.R. and Wolpin, K.I. 1993. "Credit Market Constraints, Consumption Smoothing, and the Accumulation of Durable Production Assets in Low-Income Countries: Investment in Bullocks in India", Journal of Political Economy, Vol. 101, pp.223-244.
Rosenzweig, M.R and Stark, O. 1989. "Consumption Smoothing, Migration and Marriage: Evidence from Rural India", Journal of Political Economy, Vol. 97, pp.905-926.
Roth J., and Athreye, V. 2005. "TATA-AIG Life Insurance Company Ltd. India" CGAP Working Group on Microinsurance Good and Bad Practices Case Study No. 14 – September 2005, CGAP, London.
Roth, J., McCord, M.J and Liber, D.2007. "The Landscape of Microinsurance in the World's 100 Poorest Countries", The Microinsurance Center, LLC, http://www.MicroInsuranceCentre.org
Rothschild, M and Stiglitz, J. 1976, "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information", Quarterly Journal of Economics, Vol. 90, pp.630-49.
Skees, J., Varangis, P., Larson, D. and Siegel, P. 2002. "Can Financial Markets be Tapped to Help Poor People Cope with Weather Risks?", Policy Research Working Paper 2812, The World Bank Development Research Group, Rural Development, UNU/WIDER, Washington D.C.
Srinivasan, G. and Arunachalam, R.2002. "Indian Microinsurance", International Labor Organization (ILO)
Stoppa, A. and Hess, U. 2003. "Design and Use of Weather Derivatives in Agricultural Policies", International Conference, Agricultural Policy Reform and the WTO: Where Are We Heading? Italy.
"Panorama del Sector Rural en México 2002".Subsecretaría de Desarrollo Rural.2002.SAGARPA, Mexico.
Thorat, Usha.2007. "Financial Inclusion-The Indian Experience", Speech by the Deputy Governor, Reserve Bank of India at the HMT-DFID Financial Inclusion Conference. 2007. Whitehall Place, London, UK.
Townsend, R. 1994. "Risk and Insurance in Village India", Econometrica, Vol. 62 No. 3, pp. 539-591.

11. Appendix

List of Tables

11.1. Appendix. 1

11.1.1. Map of Kalahandi District

11.1.2. Key Banking Statistics-Economic Indicators of Credit Delivery System in Kalahandi

Particulars	Cooperatives		RRB	Commercial Banks	Total
	ST	LT			
No. of Banks	1	2	1	6	10
Rural	8	2	39	28	77
Semi-Urban	2	-	2	4	8
Urban	1	-	1	4	6
Total	11	2	42	36	91
No. of Staff per branch/society	12	20	4	6	NA
No. of loan a/c	33657	NA	4068	NA	NA
No. of loan a/c per branch/society	NA	NA	1403	NA	-
Average population per branch	121306	667186	31031	37066	14663
Average no. of villages covered per branch/society	182	1092	52	57	23
Total Deposit (Rs. Lakh) as on 31.03.04	1820	34	8789	22759	33402

Average deposit per branch (Rs. Lakh)	130	34	209	632	367
% Growth in deposits					
2004 over 2003	2.7	100	5.34	3.42	4.99
2003 over 2002	1.56	-	10.85	11.47	11.00
Total Loans O/S as on 31.03.04 (Rs Lakh)	2318	284	6063	18288	26953
% increase in O/S					
2004 over 2003	11.17	-20	14.22	25.34	18.76
2003 over 2002	7.36	-2.26	13.37	36.87	33.90

Loans O/S per a/c	NA	NA	0.64	NA	NA
Loans O/S per branch	231.80	284	144.35	508	296
ST/MT/LT loans per ha.	Rs.5000	-	-	-	-
% of agricultural advances to total advances	79	100	43	38	43
C.D Ratio	127	-	69	81	69
Recovery %					
As on 30.06.2004	49	31	65	38.66	60
As on. 30.06.2003	31.9	35.65	63	52	50
As on. 30.06.2002	23.8	20	65	40	34
% of Overdues to loan O/S	18.29	-	23.20	NA	NA
% net NPAs to Total Assets	40	NA	23.20	NA	NA

Source: NABARD (2006)

11.1.3. Focused Group Discussion (FGD) Schedule:

(Schedule)General Set of Questions for Both villages:

1. What are the main activities of the villagers?
2. What are the main problems faced by the villagers?
3. What are the different shocks you are exposed to- Weather, Health, Life, Market, Property and others?
4. Are there any Government or non-governmental interventions/projects in your community? Are you satisfied with them- why or why not?
5. How do you manage these shocks- do you prepare for these shocks beforehand or do you just cope with it?
6. What are the impacts of those shocks?
7. What are the various things you do in case the event happens?
8. In your opinion what do you think are the three biggest problems if when solved immediately, you think you will have a good life?
9. Do you know about Insurance and its benefits? Why/Why not?
10. We would like to take awareness programs on finance and other aspects related to risk management? Would you be interested in participating in them?

11.1.4. Hypothetical Insurance Product

SURVEYOR READS: I would like to talk to you about health insurance. Choosing to buy health insurance is a way to protect members of one's family from financial shocks related to the health care costs created by an accident or sudden (not prolonged) illness of any of those family members. For each of the family members you would like to insure you pay a fixed fee every month or once a year. If the policy holder gets ill or has an accident, a claim is made and the policyholder receives in a timely manner a cash benefit payment sufficient to cover selected or all health care costs.

I will read you a concept of a new health insurance product, and then I would like to ask for your opinion about it.
Coverage: This is the risk-management product that covers health care costs of the policyholder, including all expenses related to emergency service (incl. transportation) and all expenses related to emergency hospitalization (including therapeutic and surgical cases).
Benefit: includes amount of money to cover fully official (according to the government list) and informal costs. Money is given in cash to the policyholder (or other family member) by an insurance agent at the hospital.
Claim processing: within 3 days all the benefits are transferred to the client (in cash).
Provider: The service is provided by one of the biggest Indian private insurance companies.
Proximity: The service is available in the nearest town.
Price: Rs.30 per month
Frequency of premium payment: payments can be done on a monthly basis or up-front

11.2. Appendix. 2

Table 1.Land holding (Up land)

Area owned (in acres)	**Freq.**	**Percent**
0	116	24.17
.3	8	1.67
.5	3	0.63
1	174	36.25
1.5	7	1.46
2	94	19.58
3	29	6.04
4	15	3.13
5	6	1.25
7	16	3.33
13	12	2.50

Table 2.Land Holding (Medium Land)

Area owned (in Acres)	Freq.	Percent
0	62	12.92
0.5	17	3.54
1	82	17.08
1.3	3	0.63
1.5	7	1.46
2	195	40.63
3	58	12.08
5	32	6.67
7	19	3.96
15	5	1.04

Table 3.Land Holding (Low Land)

Area Owned (in acres)	Freq.	Percent
0	284	59.17
0.5	12	2.50
0.6	16	3.33
1	37	7.71
2	64	13.33
3	34	7.08
4	1	0.21
5	12	2.50
7	12	2.50
10	5	1.04
12	3	0.63

Table 4.Return on Land (Quintals/Acre)

Land Type	Frequency	Mean Return	Std. Dev.
Upland	480	5.8968	10.046
Midland	479	12.336	12.461
Lowland	480	6.8708	11.207

Table 5. Frequency of Weather Shocks

At least once in the time period	Percentage of Sample
Last 12 months	10.83
Last 1-5 years	85.63
Beyond 5 years	81.04

Table 6. Impact of Weather Shocks

Impact of Shock	Frequency	Percent
Loss of Productive Assets	33	6.88
Loss of Household Income	35	7.29
Both Income and Asset Loss	399	83.13
Cannot Say	13	2.71

Table 7. Financial Pressure of Weather Shock

Financial Pressure of Shock	Frequency	Percent
Very Low	9	1.88
Neither Low	22	4.58
Neither Low nor High	34	7.08
High	415	86.46

Table 8. Nature of Weather Shock (Idiosyncratic or Covariant)

Nature of Shock	Frequency	Percent
Only affected the Respondent's household	26	5.42
Only affected some households in the village	43	8.96
Affected all households in the village	1	0.21
Affected surveyed village as well as others nearby	410	85.42

Table 9. Ex-ante strategies for Weather Shock

Strategy	Frequency	Percent
Migration to other regions	7	1.46
Children/Other family members went to work (Anticipatory Distress Sale of Labor) along with reduction of Consumption Expenditure	420	87.50
Diversification of production/Economic Activity	5	1.04
Precautionary Savings	44	9.17
Changing production/economic activity	3	0.63
Sale of Livestock	1	0.21

Table 10. Ex-Post (Coping) Strategies (Weather)

Strategy	Frequency	Percent
Migration to other regions	5	1.04
Children/Other family members went to work (Realized Distress Sale of Labor) along with reduction of Consumption Expenditure	438	91.25
Asked for informal cash loan	14	2.92
Dissaving	16	3.33
Pawned goods/ mortgaged assets	2	0.42
Help from Friends and Neighbours	2	0.42
Government Aid/Compensation	1	0.21
Help from NGOs	2	0.42

Table 11. New Strategy (Weather Shock)

New strategy/ Adaptations	Frequency	Percent
Precautionary Savings/Contingent funds	27	5.63
Acquired Life Insurance	14	2.92
Acquired Health Insurance	17	3.54
Acquired Weather/Crop Insurance	5	1.04
Did not adopt any new strategy	417	86.88

Table 12 Frequency of Health Shock (Rural)

At least once in the time period	Percentage
Last 12 months	79.23
Last 1-5 years	3.47
Beyond 5 years	8.85

N=260

Table 13 .Impact of Health Shock (Rural)

Impact of Shock	Frequency	Percent
Hard to Say	250	96.15
Both Income (wage loss due to the shock) and Asset Loss	10	3.85

N=260

Table 14.Financial Pressure of Health Shock (Rural)

Financial Pressure	Frequency	Percent
Hard to Say	250	96.15
High	10	3.85

N=260

Table.15. Nature of Health Shock (Rural) Idiosyncratic or Covariant Shock

Nature of Shock	Frequency	Percent
Hard to Say	250	96.15
Affected all households in the village as well as nearby (epidemic/systemic)	10	3.85

N=260

Table16. Ex-ante strategy-Health (Rural)

Strategy	Frequency	Percent
Hard to Say	250	96.15
Children or others family members went to work along with deliberate reduction in consumption expenditure	10	3.85

N=260

Table 17. New Strategy-Health (Rural)

New Strategy	Frequency	Percent
Hard to Say	250	96.15
Acquired Insurance	5	1.92
No new strategies	5	1.92
Total	260	100.00

Table 18.Frequency of Health Shocks (Urban)

At least once in the time period	Percentage
Last 12 months	90
Last 1-5 years	8
Beyond 5 years	4

N=50

Table 19. Impact of Health Shock (Urban)

Impact	Percent
Loss of Asset	66.00
Loss of Income	28.00
Both Income and Asset Loss	6.00

N=50

Table 20. Financial Pressure of Health Shock (Urban)

Financial Pressure	Percent
Very Low	18.00
Rather Low	44.00
Neither high nor low	26.00
High	12.00

N=50

Table 21. Nature of Health Shock (Urban)

Nature of Shock	Percent
Affected only the respondent's household (Idiosyncratic)	52.00
Affected some households in the community	44.00
Affected all households in the community	2.00
Affected all communities nearby areas as well	2.00

N=50

Table 22. Ex-ante strategy- Health (Urban)

Strategy	**Percent**
Migration to other regions	4.00
Children/Other family members went to work (Anticipatory Distress Sale of Labor) along with reduction of Consumption Expenditure	62.00
Diversification of production/Economic Activity	10.00
Precautionary Savings	16.00
Changing production/economic activity	6.00
Sale of Livestock	2.00

N=50

Table 23 Ex-post (Coping) Strategy- Health (Urban)

Strategy	**Percent**
Children/Other family members went to work (Realized Distress Sale of Labor) along with reduction of Consumption Expenditure	26.00
Asked for informal cash loan	28.00
Dissaving	32.00
Pawned goods/ mortgaged assets	4.00
Help from Friends and Neighbours	4.00
Government Aid/Compensation	2.00
Help from NGOs	4.00

N=50

Table 24.New Strategy –Health (Urban)

New strategy	Percent
Precautionary Savings/Contingent funds	44.00
Acquired Life Insurance	10.00
Acquired Health Insurance	2.00
Did not adopt any strategy	44.00

N=50