



Institute for Inclusive Finance and Development (InM)



Developing and Implementing Inclusive Insurance in Bangladesh

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Developing and Implementing Inclusive Insurance in Bangladesh

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Developing and Implementing Inclusive Insurance in Bangladesh

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Abbreviation and Acronyms

AAF	Ayesha Abed Foundation
ACCDC	All Ceylon Community Development Council
BADAS	Diabetic Association of Bangladesh
bHSP	BRAC Health Security Programme
BPL	Below-Poverty-Line
CBHI	Community Based Health Insurance
CBMCB	Community Based Medical College Bangladesh
CC	Community Clinics
CD	Communicable Diseases
DCH	Dhaka Community Hospital
DGHS	Directorate General of Health Services
DH	District Hospitals
DIISP	Developing Inclusive Insurance Sector Project
DPS	Deposit Pension Schemes
FCM	Formal Credit market
FWA	Family Welfare Assistants
HA	Health Assistants
HEU	Health Economics Unit
ICM	Informal Credit market
IIU	PKSF Inclusive Insurance Unit
InM	Institute for Inclusive Finance and Development
IRDA	Insurance Regulatory and Development Authority
JICA	Japan International Cooperation Agency
MCM	Microcredit market
MFI	Microfinance Institutions
MHI	Micro Health Insurance
MI	Micro Insurance
MoHFW	Ministry of Health and Family Welfare
NAG	New Asia Group
NCD	Non-Communicable Diseases
NHN	National Health Network
OOP	Out-of-Pocket
PDB	Power Development Board
PKSF	Palli Karma-Sahayak Foundation
PMI	Property microinsurance
PO	Partner Organisations
SBC	Sadharan Bima Corporation
SDC	Swiss Agency for Development and Cooperation
SME	Small and Medium Enterprise
SSS	Society for Social Services

UHC	Upazila Health Complexes
UIC	United Insurance Company
UIC	United Insurance Company
USC	Union Sub Centres
WTJ	Willingness to Join
WTP	Willingness to Pay

Executive Summary

1. Introduction

In Bangladesh, households recurrently face various types of adverse shocks that are broadly categorised into two types: idiosyncratic (such as, death or illness of household members) and covariate (e.g. damage of properties due to flood or other disasters). Traditionally, healthcare provided by public hospitals in Bangladesh is not adequate to assist the low-income people in managing their health risks. On the other hand, the poor cannot afford the healthcare provided by the private hospitals mainly due to high cost and other barriers. The poor households also have little access to formal insurance mechanisms so that they can cope with various shocks. As a result, the poor households are often forced to resort to informal coping mechanisms including borrowing from friends and moneylenders, selling productive assets such as livestock, cultivable land and selling other properties to meet the emergencies. The situation calls for the development of a poor-friendly inclusive microinsurance (MI) sector in Bangladesh to provide microinsurance products for the vulnerable people.

The core objective of this research is to identify and estimate important parameters for developing inclusive MI products, and design their implementation modalities by the proposed PKSF's "Risk Mitigation and Management Unit"¹. The study specifically focuses on two MI products: micro health insurance (MHI) and property microinsurance (PMI), which have been identified in consultation with PKSF.

2. Inclusive Insurance—A Review of Microinsurance Sector

A key requirement of an insurance contract, micro or otherwise, is that designated risks are protected in exchange of premium payments proportionate to the likelihood and cost of the risks involved. The term 'microinsurance' does not necessarily bear any connotation regarding the size of the risk carrier. Indeed, for effective risk-pooling it is ideal to have a large pool of clients. However, one also needs effective competition in the market in order for prices to be as low as possible and for innovations to evolve.

Micro health insurance

In Asia and Africa, progress in microinsurance coverage has been uneven across countries. For example, whereas South Africa (64.6 percent), Philippines (21.3 percent) and Thailand (14 percent) have recorded good progress, in India (9.2 percent), Bangladesh (6.2 percent), Malaysia (3.8 percent) and Pakistan (3.1 percent) microinsurance coverage has been low in 2012 (ICMIF

¹Previously known as "PKSF Inclusive Insurance Unit (IIU)".

2015). In particular, supportive insurance regulations have helped the development of microinsurance in India and Philippines. It may be mentioned that MHI schemes emerged in late 1980s in Africa and late 1990s in Asia to offer financial protection against catastrophic health expenditure (M Kimball 2013). Globally, there are four kinds of delivery channels for offering MHI services: (i) provider driven model, (ii) partner-agent model, (iii) full-service model, and (iv) community based model.

Worldwide, damage caused by climate change is growing at a fast rate. Available literature across different countries shows different features of property insurance. Increasing population density in disaster-prone areas e.g., coastal, hilly, earthquake prone areas and poor enforcement of building codes are deepening losses more adversely. Moreover, most homeowners have limited interest in shielding measures like insurance mechanism. Globally, different types of property microinsurance products exist such as: (i) products indemnifying policyholders for the value of the loss or damage, but the verification may be time consuming, costly, or even extremely difficult to ascertain; (ii) products providing a 'standard' payout once the loss or damage has been established, regardless of the value of the product; or (iii) products providing a payout linked to the performance of an index, such as a rainfall gauge (such index-based products are also common in crop insurance).

Micro health insurance (MHI): Key issues from review

In Bangladesh, two motivations worked behind the introduction of MHI: (i) provider driven initiatives for providing health care to the underprivileged at affordable costs (e.g. Gonoshasthaya Kendra (GK) and Dhaka Community Hospital); and (ii) MFIs driven initiatives for protecting the borrowers from income/productivity loss due to illness and huge burden of treatment costs (e.g. Grameen Kalyan and Sajida Foundation). Community based practices are limited in Bangladesh while the partner-agent based MHI has not been tried.

Innovative MHI initiatives: '*Niramoy*' MHI scheme was piloted jointly by the Institute for Inclusive Finance and Development (InM) and Green Delta Insurance Company Limited with some local MFIs and the Community Based Medical College Bangladesh (CBMCB) in Mymensingh. The benefit package, covering outpatient care (consultation and diagnostics), maternity and inpatient care with most common surgeries and medication, was the most comprehensive in Bangladesh. Despite innovations, enrolment was very low (about 1 percent of the target households) mainly due to negative perception of insurance and lack of awareness about insurance.

Other examples include ICDDR, B's Community Health Insurance (named *Amader Shasthya*) in Chakaria, Cox's Bazar; BRAC's 'BRAC bHSP; Palli Karma-Sahayak Foundation's (PKSF) pilot MI project 'Developing Inclusive Insurance Sector Project (DIISP)'; Ayesha Abed Foundation (AAF)'s 'Health-Security Scheme'; Ministry of Health and Family Welfare (MoHFW), Bangladesh's pilot programme, '*Shasthyo Surokhsha Karmasuchi*'.

Major Challenges

Whatever the delivery models and/or motives, MHI schemes in Bangladesh commonly face several challenges such as: (i) non-existent of independent MHI regulatory authority that would enable the recognition of MHI as an independent sector; (ii) complexities of designing MHI products appropriate for the low income market; (iii) lack of reliable health service providers and MHI providers to take the responsibility of providing health care; (iv) lack of skilled resources in MHI; and (v) more importantly, a limited and negative perception of insurance as a whole. For provider-based models, inadequate provider networks limit the extension of coverage.

The present review highlights several other issues:

- ***Unattractive products:*** Existing MHI products in the market are featured with various drawbacks like insufficient risk coverage, extremely high premium rates unrelated to any plausible model of mortality of the insured, lengthy process of claim settlement and, above all, high costs of intermediation. Such products therefore appear unattractive to the vulnerable people.
- ***Low demand for voluntary schemes:*** Voluntary schemes face low demand (i.e. low enrolment and low renewal) in Bangladesh as in many other countries. Although included in the government's health care financing strategy, so far there is no social health insurance scheme and the government employees are given an amount in cash each month to cover their health care needs.
- ***Lack of alignment of MHI with microfinance:*** MHI needs to have close alignment with microfinance. Bangladesh does not have success with prepaid health schemes.
- ***Voluntary health insurance:*** It has also not been popular in the formal sector. For example, the contribution of voluntary health insurance in total health financing is only 0.1 percent (BNHA4 1999-2012).
- ***Compulsory health insurance:*** There is no compulsory health insurance scheme in Bangladesh.
- ***Demand side factors in MHI market:*** Lack of confidence/trust on prepayment mode, lack of awareness about the benefit of prepayment scheme, lack of affordability to pay premium and giving more weight to present consumption plays important roles in low development of MHI.
- ***Supply side factors in MHI market:*** Low level of benefit, high co-payment charged, committing fraud, complex procedures of claim submission, delay in claim settlement and rejecting the claim are important factors in the supply side. Lack of trust as well as absence of insurance culture also contributes to underdevelopment of the insurance market.

Overall, the prospect of MHI is not considered to be bright under prevailing circumstances in Bangladesh.

Product Design Issues and Delivery Channels

MHI 'product development' has to be conceived as a continuous cycle and should include several steps to ensure both that the product is delivered effectively and that it meet the needs of the target client groups. For the purpose, several steps are important: (i) understanding demand and supply, (ii) inferring the willingness to join and to pay, (iii) developing prototype product and testing, (iv) selecting partners, product finalisation and process design, pilot testing and analysis, and (v) product rollout. Further, throughout the process, there should be interaction between consumers, providers and other institutions involved.

In addition to moral hazard and adverse selection, the reasons for failure of the insurance market in general, calls for consideration of several policies:

1. ***Insurance delivery mechanism:*** In Bangladesh, voluntary health insurance schemes are not practicable. Hence, compulsory insurance mechanism should be implemented for all members of a specific social group.
2. ***Convenient service delivery mechanism:*** In the hospitalisation context, there are two ways to serve the insured. First, they can seek healthcare from any hospital and submit the bill to the insurance provider for claim settlement and second, the service delivery modalities can be locally based as much as possible. The second option could be better. The first option would be more expensive as people may seek healthcare from private hospitals and the costs would vary across different institutions, which may exceed the benefit coverage capacity of the insurance package. In that case, selecting well-known and large hospitals as healthcare service provider would be more effective. Another benefit of the second option is that the insurance provider can negotiate the charges with the hospital.
3. ***Extent of coverage:*** Unless the pool of insured is large enough, effective risk-pooling cannot be accomplished rendering the programme cost-inefficient. Therefore, including all members of any social class under insurance coverage would be beneficial.
4. ***Government and non-government support:*** Government and non-government organisations have to understand the benefits of insurance and be willing to effectively act as players in the insurance market. For, example, if the MFIs serve insurance to its members, then MRA will have to play a crucial role.
5. ***Awareness campaign on insurance:*** Negative perception about insurance among people needs to be removed through conducting awareness campaigns by the government and non-government organisations.
6. ***Flexible payment system:*** Insurance providers have to understand the market demand and design their payment system accordingly. For instance, the payment of premium can be conducted at a time or in instalments.

7. ***'Product development' process:*** Product development has to be a continuous cycle and should comprise, among others, understanding demand and supply, inferring the WTP and to pay, initiating prototype product and testing, selecting partners, product finalisation and process design, pilot testing and analysis, and product rollout.
8. ***Effectiveness and affordability:*** Although the poor appear to spend a substantial amount of resources on medical expenses even on a routine basis, due to unfamiliarity of the concept and lack of trust/comprehension of the insurance contract, they are generally not willing to part with even a modest amount of money to sign up for insurance. If the respondents are given additional details of the insurance coverage and are assured of quality service, the willingness to pay (WTP) figures may approach realistic in terms of potential long-run costs of well-designed interventions. However, in the early stage of development, overhead costs of product design, implementation and monitoring of microinsurance services would typically require a subsidy, perhaps on an indefinite basis.
9. ***Voluntary nature:*** For the non-members of any group, micro health insurance can be voluntary, implying that they can join the insurance scheme if they want to. There should not be any barrier to entry; otherwise, they will remain excluded from the programme.
10. ***Viability:*** For micro health insurance to be financially viable, primary health services are important. In addition, nutritional services are quite necessary to avoid frequent disease and reduce costs to insurers as well as insureds.
11. ***Financial education:*** Microinsurance can be mandatory, or be bundled with other financial products like credit if voluntary microinsurance cannot be financially viable. However, in the experiences of other countries, clients tend to regard microinsurance premiums as just additional fees on credit and not to make claims afterwards. In order to avoid such a situation, due attention is needed on financial education on insurance and the simplification of claiming procedures.

2.3 Property microinsurance (PMI)

The major issue in PMI is to understand the need for a pre-payment based financing mechanism as a mainstream approach for disaster risk management and climate change adaptation. In particular, one needs to explore the need for a safeguard mechanism that will protect the rural low-income households from the loss of personal properties, especially housing infrastructures and productive equipment, caused by catastrophic events (e.g. floods and cyclones).

The present review suggests that:

- Disaster relief programmes are not adequate to mitigate the vulnerability of affected households and these programmes put a huge pressure on the government budget.

- As Bangladesh lacks enough resources to finance post-disaster rehabilitation interventions, such interventions are difficult to finance with available government resources.
- Other interventions such as post-disaster credit supports (e.g. loan rescheduling) are also not adequate as they are limited to microcredit members only. And post-disaster credit supports are less certain in terms of distribution and payoffs and could be delayed.
- The advantage of insurance mechanism is that it shifts financial resources from post-disaster payment system to a more efficient and more certain system.

Major challenges

In Bangladesh there is no private insurance market for property damages resulting from natural disasters. The Sadharan Bima Corporation (SBC), a government owned general insurance company, launched a weather index-based crop insurance programme for agricultural farm households in rural areas. Proshika, a leading MFI, has been offering a compulsory group based natural disaster insurance scheme since 1997. Under the contract, the MFI members have to deposit 2 percent of their savings in an insurance fund and the provider has to pay twice the amount of total savings in the insurance fund if the clients suffer from any loss due to natural disaster.

- *Demand side barriers of developing PMI:* Low level of income of the rural population; lack of understanding of financial services in general and the concept of insurance in particular; lack of trust on insurance providers; and the like.
- *Supply side barriers of developing PMI:* Challenges in offering PMI for catastrophic risks such as lack of title deeds for informal housing, high costs of handling claims and difficulties in managing fraud risks.

Therefore, implementing PMI against natural catastrophes is a challenging mission in Bangladesh. However, markets for weather index-based agricultural insurance schemes are emerging which are superior to other schemes for natural disasters. Suitability of such index-based schemes needs to be tested in designing safeguard mechanisms for property losses resulting from catastrophic shocks.

3. Research Issues and Methodology

For analysis, quantitative data have been collected through a well-designed household survey using multistage sampling procedures. For addressing all relevant features of health and property insurance, the household survey targeted remote locations which are more vulnerable to natural disasters. Considering the fact that people living in disaster prone areas greatly need MI services, six disaster-prone districts of the country are selected: Patuakhali, Satkhira, Sunamganj, Jamalpur, Kurigram and Cox's Bazar. The samples have been selected in several stages. In the second stage, two upazilas from each district are randomly selected. In the next stage, we

randomly selected two unions from each upazila. In the fourth stage, we selected two villages from each union randomly, thus yielding a total of 48 villages. In the final stage, 21 households are selected from each village using systematic random sampling technique. In total, we selected 1,008 households. The study incorporates a market demand assessment survey which includes a household survey, a WTP survey for prototype micro health and property insurance products and a village survey. A comprehensive description of the methodology of product development along with implementation and regulatory issues has been incorporated. The demand for the risk pooling mechanism has also been inferred through examining the 'willingness to join' (WTJ) for these two packages.

The extent of healthcare facilities, in terms of, in-patient capacity, availability of medical and other professionals, emergency services, in-house diagnostic testing, in-patient surgical and non-surgical services, and out-patient services, has also been analysed under the study. A total of 47 facilities are surveyed.

4. Micro Health Insurance: Operational Models

Demographic features and socioeconomic status: Basic characteristics of the sampled households are delineated prior to the in-depth analysis. In overwhelming majority (94 percent) of the cases, household head (42 percent) and his/her spouse (52 percent) are the main respondents. Most (94 percent) of the households are male-headed. The household head's average education level is 3.1 years and average age is about 45 years. The average household size is 5 and age-sex-adjusted household size is 3.8. More than one-third of the household members belong to less than 15-years age group and about half to reproductive age group.

About 22 percent of the household heads are engaged in self-employment in agriculture sector, 28 percent in wage earning and 32 percent in self-employment in non-agriculture sector. Nearly 22 percent households have at least one internal migrant and 3 percent have at least one international migrant in the household. About 54 percent households have access to arsenic free tube well water, 68 percent to electricity, and 78 percent to sanitary latrine. A household, on an average, have 41 decimal of land. About 93 percent respondents have heard about insurance. Nearly 51 percent households had some damage of assets like living house, homestead land, farmhouse, fishing farm, etc., and 13 percent households had some damage in productive equipment like irrigation equipment, cultivation equipment, harvesting equipment, fishing net etc. during the last 10 years. About 13 percent and 30 percent individuals have smoking and betel leaf chewing habits respectively.

Pattern of illness, health care seeking behaviour and out-of-pocket payments: The disadvantaged groups face diverse shocks where health is a dominant category. Self reported morbidity rate is quite high; 49 percent of sample individuals report self-reported morbidity over

the last three months. Around three-quarters of the patients seek healthcare from informal providers.

About 42 percent of the sick individuals had general cough, cold and fever. For further analysis, we have classified the diseases into communicable diseases (CDs), non-communicable diseases (NCDs), and injuries and accidents (I & A). About 51 percent of the self-reported ailments are CDs followed by NCDs (47 percent). About 41 percent of the sick persons were severely ill (bed ridden) and 30 percent had inability to perform regular activities during the time of illness while 22 percent were in ‘not much severe’ category.

The respondents are asked about the type of provider visited at their first contact and subsequent contacts. The results show that, irrespective of the geographical locations, almost all (over 97 percent) of the patients sought some kind of health care. About 87 percent of them visited only one healthcare provider, 10 percent visited two and 2 percent visited three providers. At the first contact, more than two-thirds (75 percent) of the patients visited informal providers (village doctors, pharmacy sales persons, etc.), whereas 68 percent of the patients who needed further treatments visited formal providers (government, private, NGO hospitals/clinics, etc.). This implies that primarily rural people seek healthcare from the informal providers and then switch to formal providers if the treatment from the first contact is not able to cure the diseases.

The respondents are asked whether any member of the households was admitted in hospitals during the past five years for any infirmity. About 46 percent of the respondents reported that they had at least one hospitalisation case during the past five years.

We extracted information on out-of-pocket (OOP) payments for each episode of illness over the last three months preceding the survey. We constructed OOP by adding costs of consultation, drug, diagnostic test, surgical operation, and hospital bed charges. The average OOP for each episode of illness is BDT 1,745, which varies moderately across geographical locations.

We asked the respondents regarding the main source of financing of OOP. The results show that regular income (59 percent), savings (29 percent) and borrowing (9 percent) are the major sources of financing of OOP for outpatient care in the first contact. The cost of drug per episode of illness is the leading factor of OOP payment (56 percent).

Willingness to join (WTJ): Introducing two prototype micro health insurance packages, we find that more than two-thirds (71 percent) of the respondents are WTJ Package A while less than one-third (28 percent) are willing to join Package B.²

²‘Package A’ is a one year long hospital cash benefit policy in which everybody in the household aged less than 70 years is eligible for inclusion and the benefit is limited to a maximum of 30 days (individually or jointly by the insured members) of hospitalisation with a daily cash benefit of BDT 400 and annual premium for a maximum of

Structure of health care facilities in the survey areas: The results depict that majority of surgical and non-surgical inpatient services are available in District Hospitals (DHs), but not in Upazila Health Complexes (UHCs). As per regulations, government hospitals are not allowed to receive any fee for the services from any authority. Thus, one needs to keep aside the idea of inclusion of government facilities in designing any health insurance mechanism. Thus, the possibility relies on private facilities. Private hospitals at both district and upazila levels are equipped mainly to conduct surgical procedures. The part-time and on call role of physicians of different level of government facilities is the main source of providers in the private facilities at both district and upazila levels. Despite this fragility, the willingness of being a provider of any health insurance scheme ensures feasibility.

The charge for surgical services in private facilities at the district level is almost double of the upazila level, whereas the charges are comparable for majority of the non-surgical inpatient services. However, the charge for any surgical service, especially at the district level is substantially higher than the average cost of an episode of hospitalisation as found from the household survey. At the same time, the willingness of the private hospitals to discount the charges to some extent is appreciable.

Micro health insurance product development

A number of steps are needed for developing any insurance product, such as conducting institutional assessment and market research; building partnership (if applicable); product designing; premium determination and making business plan; pilot testing; roll out; and continuous review (McCord 2011, Wrede and Phily 2009). Some basic principles need to comply for designing insurance products: the event must be random (i.e. occurs purely by chance); loss must be definite in terms of timing and amount; loss must be significant; rate of loss must be predictable; loss must not be catastrophic to the insurer; and premium rates must be affordable otherwise it will not be an accessible financial service for the beneficiaries (Wrede and Phily 2009).

MHI: Premium prediction

Like conventional insurance, the main objective in calculating premium for micro health insurance products is to derive rates that will sufficiently cover all costs and generate a ‘fair’ return for all partners involved. In general, premium rates should be set so that the actuarial present value of all premium collected over the duration of coverage will be sufficient to fund the expected present value of future claims and expenses incurred on the same block of business and still generate a ‘modest’ surplus.

five members of BDT 500. On the other hand, ‘Package B’ has similar features except that the daily cash benefit is BDT 300 and annual premium for a maximum of five members is BDT 375.

Risk premium is the likelihood of insurance claim times expected amount of insurance claim. In our case, risk premium for hospitalisation is the probability of hospitalisation times the average costs of each episode of hospitalisation. The risk premium estimates the claim amount by the insured.

We need historical data for appropriate prediction of the probability of hospitalisation. However, due to absence of such data in the Bangladesh context, **we have attempted to use some proxy measure to predict the probability of hospitalisation.** In the survey, we asked the hospitalisation status of the last three months and last five years preceding the survey. However, the former does not provide us the annual status of hospitalisation. Thus, we have preferred using this proxy information although there is some chance of recall bias.

We have attempted to predict the gross premium (Table 1) by summing the risk premium (i.e. expected loss, which is the multiplication of the hospitalisation rate and average cost of an episode of hospitalisation) and loading costs (which is assumed 25 percent of the risk premium where 15 percent is taken as administrative costs, 7.5 percent as safety margin and 2.5 percent as reinsurance factor). It may be mentioned here that up to 32.5 percent loading costs including agency remuneration is suggested in the guideline developed for determining premium of microinsurance by ILO (Wrede and Phily 2009). This is to note that we did not include any agency remuneration as we assume that not-for-profit organisations will play the main role in implementing micro health insurance products in Bangladesh. We did not include value added tax (VAT) component assuming that government will exempt VAT for this type of health protection scheme to be offered for serving the poor.

The average risk and gross premiums are BDT 386 and BDT 482 respectively. The predicted premiums (both risk and gross) vary across geographical regions. It is noticeable that the predicted average gross premium (BDT 482) for BDT 15,000 sum insured is close to the premium offered for Package A (BDT 500) of hospital cash benefit of maximum of BDT 12,000 (30 days x 400 per day) which is preferred by the majority of the respondents. This implies that the predicted premium is consistent with the amount of premium that the people want to pay for a sum insured of BDT 12,000.

Table 1: Predicted Premium for Health Insurance Package

Area	Total number of individuals including the death during last five years	Number of individuals needed hospitalised care during last five years	Average annual hospitalisation rate or probability of hospitalisation	Average costs of an episode of hospitalisation	Risk premium	Loading factors including administrative costs, safety margin and reinsurance	Gross premium
Patuakhali	778	73	0.02	23954	450	113	563
Satkhira	765	201	0.05	14547	764	191	955
Sunamganj	1021	87	0.02	9908	168	42	211
Jamalpur	792	38	0.01	30800	296	74	370
Kurigram	772	77	0.02	15379	306	77	383
Cox's Bazar	977	159	0.03	12243	398	99	497
Total	5105	635	0.02	15489	386	96	482

Source: Microinsurance Survey, InM 2017

Delivery mechanism and suggested operational models of micro health insurance

The main challenge of initiating a micro health insurance in any society is to find a suitable delivery channel. The available channels of offering micro health insurance are: partner-agent model, full services model, provider driven model and community based model.

- **Partner-agent model:** A partnership is formed between MFIs or cooperatives (the partner) and insurance company (the agent), and in some cases a third-party healthcare provider. The partner is responsible for the delivery and marketing of products to the clients, while the agent retains all responsibility for design and development. In this model, the partner needs to bear the risk of losing the clients of its microfinance schemes if the agent fails to keep its commitment successfully.
- **Full service model or MFIs initiated model:** The concerned MFI or cooperative remains in charge of everything; both the design and delivery of products to the clients, working with external healthcare providers to provide the services.
- **Provider-driven model:** The healthcare provider is responsible for all operations including delivery, design, and service.
- **Community-based/mutual model:** The policyholders or clients are in charge of managing and owning the operations, and working with external healthcare providers to offer services.

The example of partner-agent model in offering micro health insurance is almost absent in the global context. Provider driven model and MFIs initiated model are deeply embedded with both supply side and demand side limitations. Community based model did not flourish in Bangladesh. Some innovative efforts also did not click in Bangladesh due to both supply side and demand side limitations.

The literature shows that there is absolute failure of voluntary health insurance in the context of developing countries. Compulsory micro health insurance is not practical for MFI members in Bangladesh until making it mandatory by the regulator (MRA) for all licensed MFIs. This leads us to conclude that the scope of introducing micro health insurance scheme for specific perils (e.g., hospitalisation) is very limited in the short run. However, hospital cash benefit scheme, a basic scheme that is usually introduced for protecting the income of the household members during hospitalisation, is feasible. Our findings also show that there is enormous demand for these types of scheme. Some partner-organisations of PKSF have some experience of implementing such scheme under the DIISP project.

We suggest that the hospital cash benefit scheme may be introduced first. Successful operation of this scheme for few years may lead the beneficiaries to gain the confidence on the insurance mechanism. Then the scheme operators (e.g. MFIs/cooperatives) will gain the experience of operating the full-fledged health insurance scheme. The idea of introducing micro health insurance for specific perils may be put forward once the beneficiaries gain the confidence about insurance mechanism and the insurers are adequately experienced to run such insurance schemes.

5. Developing Property Microinsurance (PMI)

Household property damages- Nature and causes: Bangladesh has a long history of natural disasters. Natural disasters such as flood, cyclone, river/coastal erosion, water logging, storm or tidal surge etc. are deemed to be the principal reasons behind much of property damage. Data from Bangladesh Disaster Related Statistics 2015 show that during the 2009-14 period, various types of natural disaster in Bangladesh caused a loss of BDT 184.25 billion. Among the various types of disaster, flood is the main source of loss contributing 23.3 percent of the damage, followed by coastal or river erosion (19.8 percent), cyclone (15.4percent) and water logging (8.7percent). The other categories, namely drought, tornado, storm or tidal surge, thunderstorm, landslides, salinity, hailstorm and other disasters together account for 32.3 percent of the property damages.

Similar to the health insurance product, despite being a disaster prone country, there is no private insurance market for property damages resulting from natural disasters in Bangladesh. For designing property microinsurance schemes, we classify household property into two principal categories—homestead property and productive property.

Incidence of property damage-Evidence from survey data: In this study, respondents are asked whether they have been affected by any shocks related to their homestead land or housing or not. The results show that more than 51 percent of the sample households have experienced at least one incident of homestead property damage over a ten-year period. Of the respondents who

have experienced at least one incident of homestead property damage, 34 percent have faced a single incident and 17 percent experienced more than one event of shock.

Direct economic loss of property: In order to design appropriate microinsurance products for property damage, it is important to estimate the direct loss (value of damaged property just before destruction or the expenses incurred for rebuilding of the properties) resulting from property damage. We have found that destruction of living house is the most frequent type of shock caused by natural disasters. For destruction of living house, the average value of damaged property is BDT 18,877 and average expenditure for rebuilding is BDT 21,502. However, there is variation in loss across districts.

Demand for property microinsurance: After a systematic review of the existing microinsurance schemes in Bangladesh, it is concluded that there is no insurance service in Bangladesh that directly falls under the category of property microinsurance. Therefore, it is difficult to assess the actual demand for this type of microinsurance product in the country. Nonetheless, we have assessed the WTJ the homestead and productive property insurance schemes of the respondents of our study living in different geographic areas. Results are quite revealing: around 92percent of the respondents are interested in joining homestead property insurance scheme and 68percent of the respondents are willing to join productive equipment insurance.

Developing inclusive property microinsurance schemes: Inclusivity in the context of property microinsurance imply that the product is appropriate for the low-income households located in remote areas of Bangladesh who are exposed to property damage caused by natural disasters. The development of proposed property microinsurance scheme requires to follow a standard procedure that involves setting up premium rate or pre-payment amount and sum insured (amount that will be paid in case of occurrence of the event), calculating the cost of offering the service, estimating the predicted demand for the product at a given rate of premium, developing business plan and pilot testing of the products.

In our analysis, we find that destruction of living house is the most prevalent type of property damage that occurs at a significant rate in all regions. As there is no existing formal safeguard mechanism against property damage, it would be ideal to start with a microinsurance that can serve the purpose of a large number of the target population.

Premium calculation: As in case of standard insurance schemes, the objective of setting up premium for property microinsurance scheme is to ensure that the rate is sufficient to cover the cost of offering the insurance and generate a 'fair' return for all the parties. The objective of this analysis is to estimate annual gross premium based on the data collected from the household survey and secondary literature. In order to determine the gross premium, we need to estimate the risk premium, likelihood of insurance claim times expected amount of insurance claim and loading cost that includes different forms of administrative costs. We calculate the gross

premium by summing the risk premium (i.e. expected loss, which is the value of the damaged property just before the event) and loading costs (which is assumed 20 percent of the risk premium where 10 percent is administrative cost, 7.5 percent is safety margin and 2.5 percent is reinsurance factor). As we are expecting that the property insurance scheme for low-income households will be offered by not-for-profit organisations, we have not included any agency remuneration. We also assume that the scheme will be exempt from VAT as the product will serve the low-income households at the time of natural catastrophes.

Table 2: Premium Calculation for Damage of Living House Microinsurance

District	Probability of event in one year	Value of the damaged property	Risk premium	Loading factors including administrative costs, safety margin and reinsurance	Gross premium
Patuakhali	0.085	28,104	2,392	478	2,871
Satkhira	0.049	14,878	735	147	882
Sunamganj	0.023	10,598	248	50	297
Jamalpur	0.014	15,530	213	43	255
Kurigram	0.029	12,725	364	73	436
Cox's Bazar	0.048	11,857	565	113	678
All Districts	0.041	18,877	780	156	936

Source: Microinsurance Survey, InM 2017

Table 2 shows the estimated gross premium (GP) for destruction of living house insurance stands at BDT 936, which is required for a scheme with a sum-insured of BDT 18,887 and a coverage period of one year. The question that arises from the above analysis is whether the estimated GP is appropriate in the microinsurance context. The actual demand for such product can only be tested through running the proposed microinsurance scheme in the field for at least a few years. Nonetheless, the estimated gross premium should be interpreted with care before making any policy decision. Firstly, the estimated premium rate is based on a sample of households from a set of geographically vulnerable zones of Bangladesh. Most of the sample locations are selected purposively with the learning that these areas are affected by severe natural disasters in recent times as well as more frequently. The benefit of this purposive selection is that we can measure the financial costs of property damage and nature of property related shocks due to natural disasters based on recent information. The above exercise shows just a simple illustration of the process of designing a microinsurance scheme for property damage. As our sample is concentrated over some of the highly climatically vulnerable zones of Bangladesh, the estimated gross premium is affected by probability and size of the damage in those areas. It is noticeable that there is a wide variation in premium rates across districts. The gross premium varies from as low as BDT 255 in Jamalpur district to as high as BDT 2,871 in Patuakhali. The gross premium rate is influenced by mainly two factors: probability of damage and value of damaged property. In case of Patuakhali, both of these factors are significantly higher leading to an unexpectedly high rate of premium per year. The crux of the discussion is that information collected from a

nationwide household survey covering a reasonably longer period can deliver a more reliable estimate of the gross premium and sum-insured.

Another associated issue is that the scheme need not be the same for all the regions of the country. The design of property microinsurance scheme can be different in terms of risks covered, period of coverage, sum-insured, gross premium and other terms and conditions. For example, under the Pilot Project on Weather Index Based Crop Insurance (WIBCI), which is currently being implemented by the Sadharan Bima Corporation (SBC) in three districts of Bangladesh—Rajshahi, Sirajganj and Noakhali--the schemes differ in some of the terms mentioned above. The project is still at the experimental stage, which is now implementing its 5th pilot programme on crop insurance. In general, each scheme covers only one to two months of weather risks for a particular cropping season, which can vary by geographic locations. Similarly, different weather risks are covered in different cropping seasons.

The issues discussed above deserve careful consideration in designing appropriate property microinsurance for different geographic locations of Bangladesh.

Institutional Arrangement

The proposed microinsurance scheme for property damage (destruction of living house) is designed to serve the low-income households of Bangladesh who are located in remote areas of Bangladesh and encounter significant financial loss due to destruction of living house caused by natural disasters. As the product is designed to serve the low-income households in the remote areas of Bangladesh, it is important to have providers who can offer the product in those areas in an affordable cost and deliver the required service at the time of crisis. As the microfinance institutions of Bangladesh have branches in remote areas of Bangladesh and have the experience of working with rural communities, they can effectively deliver the product at the doorstep of the target population.

Different institutional arrangements can be considered that can satisfy the above criteria. One option is that the Sadharan Bima Corporation (SBC), only state owned insurance company, in collaboration with MFIs can offer property insurance across different locations of Bangladesh. SBC with its countrywide network can effectively collaborate with the MFIs, who have better access to remote locations, to distribute microinsurance schemes among low-income households. This is an example of principle-agent model where SBC will serve as the principle and MFIs will act as agents.

Another possibility is that SBC can form a consortium with PKSF to offer microinsurance services for property damage caused by natural disasters. In that case, MFIs can operate as the distributing agents as partners of PKSF. The inclusion of PKSF in this setup can smoothen the collaboration between SBC and MFIs and can encourage speedy settlement of claims.

6. Regulatory issues:

Microinsurance sector is at its early stage of development in Bangladesh, in contrast to micro credit operation. The regulatory body should carefully consider a set of issues in formulating regulatory structure for the microinsurance sector. Commercial insurers lack both in capacity and willingness to offer microinsurance services to low-income households in Bangladesh, while a portion of MFIs, particularly the large ones, are offering various financial instruments that can be categorised as microinsurance. Though partner-agent model is often advocated as an effective delivery channel for microinsurance services, the mechanism is internally unstable if MFIs, in addition to their regular microcredit and savings activities, serve as an agent of commercial insurers. The problem is that the issue of claim settlement depends on the commercial insurers, who perform poorly in terms claim settlement.

Therefore, MFIs should not be restricted from offering microinsurance services. In order to increase the capacity of MFIs in microinsurance operation, one plausible framework is the creation of separate microinsurance organisation by a group of MFIs. Another plausible structure is to set up microinsurance units (involving PKSf along with its POs) under the provisions of the existing Insurance Act and leadership of IDRA.

7. Policy Recommendations:

In the case of introducing micro health insurance, we suggest that the hospital cash benefit scheme may be introduced first. Successful operation of this scheme for few years may lead the beneficiaries to gain the confidence on the insurance mechanism. Then the scheme operators (e.g. MFIs/cooperatives) will gain the experience of operating the full-fledged health insurance scheme.

In the case of introducing property micro insurance, we find that destruction of living house is the most prevalent type of property damage that occurs at a significant scale in all regions. As there is no existing formal safeguard mechanism against property damage, PKSf may collaborate with insurance companies to create mechanisms that can effectively serve as the insurer, where MFIs can operate as the distributing agents. Finally, it should be mentioned that the proposed microinsurance product should be tested through a pilot project on property microinsurance. Otherwise, it may not be possible to design an effective and efficient risk management instrument for reducing the risks of property damage.

Given the challenges of designing and implementing microinsurance in Bangladesh we recommend to initiate simple, but attractive microinsurance products for both health and property. To facilitate the above, the feasibility of introducing ‘Regulatory Sandbox’--an approach to test microinsurance models, products, and services within a specific set of regulatory conditions--can be explored for spurring innovations while managing regulatory risks and concerns.

Developing and Implementing Inclusive Insurance in Bangladesh

Chapter 1

Introduction

1.1 Background

Microinsurance is an instrument for protecting the low-income people against specific perils in exchange for regular premium payment proportionate to the likelihood and cost of the risks involved. The target population typically consists of persons ignored by mainstream commercial and social insurance schemes, as well as persons who have not previously had access to appropriate insurance products. Microinsurance, like regular insurance, may be offered for a wide variety of risks. These include both health risks (e.g. illness or injury) and property risks (damage or loss) covered under a wide variety of microinsurance products to address these risks, including crop insurance, livestock/cattle insurance, insurance for theft or fire, health insurance, property insurance, insurance for natural disasters and others.

Microinsurance is recognised as a useful tool in development. As many low-income people do not have access to adequate risk-management tools, they are vulnerable to fall back into poverty in times of hardship, for example, when the breadwinner of the family dies, or when high hospital costs force families to take out loans with high interest rates, or when a disaster strikes. Furthermore, microinsurance makes it possible for the poor people to take more risks. When farmers are insured against a bad harvest (resulting from drought), they are in a better position to grow crops which give high yields in good years, and bad yields in year of drought. Without the insurance, they will be inclined to do the opposite; since they have to safeguard a minimal level of income for themselves and their families, so that crops will be grown which are more drought resistant, but which have a much lower yield in good weather conditions.

Microinsurance (MI) is seen as a central way of providing social protection to the poor and vulnerable people especially in disaster prone areas. It is agreed that MI has the potential to emerge as one of the sustainable ways of helping the vulnerable groups in enhancing their capacity to withstand vulnerabilities and shocks, which is central to reducing poverty and increasing welfare. Basically, MI is a low-cost insurance mechanism that covers life, health, crops, livestock and property of the poor and vulnerable groups. As a matter of fact, MI is now emerging as a central component of climate change adaptation measures in disaster-prone countries like Bangladesh. Yet, while MI has seen success in many countries of the developing world, it has so far not been able to make significant inroads into the Bangladesh market. But this is changing, albeit slowly, and MI needs to be promoted aggressively to offer some form of social protection to the poor especially in disaster-prone areas of the country. While credit may be a good option in some situations, there are other options (such as MI) as well which need to be combined with credit and other interventions to get sustainable and more effective outcomes for poverty reduction.

In Bangladesh, households recurrently face various types of adverse shocks that can be broadly categorised into two types: idiosyncratic (such as, death or illness of household head) and covariate (e.g. damage of properties due to flood or other disasters). In principle, households can cope with these shocks well if they have access to formal insurance mechanisms. As formal insurance industry is still less developed in Bangladesh, poor households often resort to informal insurance mechanisms to cope with these shocks which include, for example, borrowing from friends and moneylenders, selling productive assets such as livestock, cultivable land and selling other properties. In such circumstances, often the poor households are forced to reduce their consumption, which threatens their food and nutrition security and constrains their ability to improve their social and economic welfare.

For moving out of poverty in a sustainable manner, the critical challenge for the poor is to acquire and accumulate productive assets that will create sustainable sources of raising household income and generate a virtuous cycle of increasing well-being of household members. Over the years, while government and non-government efforts have brought significant success in these efforts, major setbacks in the asset accumulation process are also observed especially due to unforeseen natural disasters and manmade shocks resulting in death and destruction of meagre accumulated assets of the poor households, often pushing them into deeper poverty.

As incidence of shocks is higher in disaster prone areas, households living in these areas are more vulnerable to poverty due to lack of formal insurance mechanisms. As a result, the disaster-affected poor households resort to coping mechanisms that, in most cases, create negative impacts on their survival strategies. Moreover, availability of even these informal coping mechanisms is inadequate and unreliable especially during times of natural disasters. Thus, a major constraining factor of the current efforts of sustainable poverty reduction and grassroots development is the absence of adequate formal institutional mechanisms of risk mitigation for the poor and low-income households.

It is also important to note that, unlike microcredit programmes that provide people with instant cash, MI requires the clients to pay for something they might never use. In order to overcome the problem, the MI providers are evolving different techniques in various countries e.g. policies being sold as add-ons to products and brands that people already use and trust (such as partnerships with mobile phone companies where phone companies trying to get people to stop using multiple sim-cards and stay loyal to one provider are offering life or health and disaster insurance as an incentive, people who buy credit for one month get a month's worth of insurance at no extra cost, and so on).

There are many other obstacles as well which stand in the way to realise the potential of MI as a widely used financial service especially for those who are vulnerable to natural disasters. For example, weather-based claims are tricky as MI providers dictate the levels of rainfall as a way of setting limits for claims while the affected farmers believe their crops have been damaged and expect compensation.

Traditionally, microfinance institutions (MFIs) in Bangladesh are accustomed to operating credit or debt life insurance, which is akin to a quasi-insurance service to protect the microcredit borrowers from indebtedness in case of borrower's or breadwinner's death.³ Although several major NGOs and MFIs have initiated microinsurance schemes covering health care, disability or death, it is yet to reach a threshold level to create any noticeable impact. Three major constraints are identified in the way of rapid expansion of MI. They are: (i) absence and/or inadequate nature of policy and regulatory framework to operate various microinsurance products in the field; (ii) limited institutional capacity of NGO-MFIs to operate sustainable MI products that meet the needs of poor households; and (iii) insufficient awareness and knowledge on MI related issues among the poor population. Based on the experience of existing pilot MI operations, the following major lessons can be summarised:

- I. Poor-friendly insurance services are useful; simple and affordable insurance services provide favourable protection from common individual and catastrophic shocks (e.g. death of breadwinners, illness in family, asset or property loss, natural disasters).
- II. Microinsurance is an important safety net for the poor; in particular, credit or debt linked insurance products (e.g. credit life, livestock) are effective in protecting the poor from indebtedness. For instance, Palli Karma-Sahayak Foundation (PKSF) is implementing a livestock insurance product through its selected partner organisations (POs) since 2010, where the farmers and cattle rearers who have taken credit from these MFIs are provided safety mechanisms through livestock MI against any loss due to death of their animals. Thus, the credit linked insurance product covers risks such as, sudden death of livestock due to diseases, high morbidity due to epidemic and natural calamities and uncertain death due to other rational reasons. Another example of credit linked insurance product

³In South Asia, India has made various microinsurance innovations including life, health, crop, livestock, and weather insurance by both formal insurance companies and community based organisations.

which is known as ‘*Nirapotta*’ (safety) and launched by one MFI (SAJIDA) under which the borrowers are provided social protection and security against any loss due to health costs, disaster loss and other financial risks.

- III. MFIs are in a unique position to address the risk mitigation needs of the poor.
- IV. For introducing microinsurance and building trust, it is useful to begin with easy-to-understand microinsurance products and introduce the complex ones in a gradual manner, and show the client value by settling claims quickly.
- V. Since health exigencies are most common, a good healthcare and insurance plan is needed to reduce vulnerability to health related shocks.
- VI. Livestock microinsurance bundled with quality veterinary services enhances viability.
- VII. Capacity development support to MFIs; and monitoring and supervision of microinsurance activities are critical to sustainability and improving insurance outreach.
- VIII. Awareness creation is better achieved through audio and visuals than with printed text.

In order to ensure inclusive development of a poor-friendly MI sector in Bangladesh and promote sustainable expansion of on-going and new MI programmes, PKSF plans to establish the “Risk Mitigation and Management Unit” under its core programme for implementing MI activities. The present research will carry out several supportive activities for making the Unit operational and suggest a work plan for the Unit.

1.2 Scope and Objectives

The core objective of this research is to identify and estimate important parameters for developing inclusive MI products, and design their implementation modalities by the proposed PKSF’s “Risk Mitigation and Management Unit”. This study will specifically focus on two MI products: *micro health insurance* and *property microinsurance*, which have been selected in consultation with PKSF. The study will conduct the following tasks to develop MI products for PKSF’s “Risk Mitigation and Management Unit”.

- (i) Identify parameters and address related issues for constructing morbidity tables and actuarial database for health insurance.
- (ii) Identify parameters and address related issues for constructing incidence and cost tables of property shocks and actuarial database for property insurance.
- (iii) Identify proxy parameters for construction of actuarial database.
- (iv) Review existing practice of reinsurance arrangements, and suggest approaches to reinsurance of MI risks.

1.3 Structure of the Report

The report is structured as follows. After the preface and overall objectives of the study, **section 2** describes the global and Bangladesh experience of health and property insurance. **Section 3** describes the methodology and analytical framework of the study. This section also sheds light on the data that has been used. **Section 4** presents the socioeconomic characteristics of target

population, parameters of mortality tables and proxy parameters and suggested new products for micro health insurance. **Section 5** describes incidence of property loss and suggested operational models and products for property microinsurance. **Section 6** describes issues in microinsurance regulations, suggested regulatory structures and discuss about reforms and re-insurance arrangements and operational models. Section 7 suggests a range of broad and specific policy recommendations.

Chapter 2

Inclusive Insurance--Review of Microinsurance Products

2.1 Conceptual Issues in Inclusive Insurance

Generally 'insurable' risks include loss of property, illness, and death. A key requirement of an insurance contract, micro or otherwise, is that designated risks are protected in exchange of premium payments proportionate to the likelihood and cost of the risks involved (Churchill 2006). The term 'microinsurance' does not necessarily bear any connotation regarding the size of the risk carrier. Indeed for effective risk-pooling it would be ideal to have a large pool of clients. However, one also needs effective competition in the market place in order for prices to be as low as possible and for innovations to evolve. The insurers range from multinational and domestic commercial insurers, to member owned mutual, NGOs or community based organisations or even informal groups. Traditionally, however, the majority of microinsurance providers in the world have been mutual institutions of one kind or another (Fischer and Qureshi 2006).

For better understanding the issue, under the study, literature review and secondary data analysis has been pursued as an on-going activity using different reports/documents of efforts of providing MI services to the poor/low income people by MFIs and insurance companies in Bangladesh. The study has also reviewed the experience of similar efforts in other countries. The study has also undertaken analysis of key secondary data from the existing programmes and other sources to understand the trends in MI coverage. This mostly covers the pilot and other MI programmes in the country.

2.2 Health and Property Microinsurance: Global Experiences

Generally, microinsurance is designed to address economic exclusion from resources, services, and/or social protection in cases of death, ill-health, or other adverse life-events. Microinsurance for health is designed to rectify spatial and economic exclusion from health services and cultural exclusion of women from health services especially among the marginalised groups. Health services and modern medicines are out of reach for many people globally; and in many countries, barriers to public-health facilities force the poor to pay for healthcare out-of-pocket, often sinking the poor further into poverty. Although a system of universal coverage may be ideal, there is a need for interim strategies to reduce out-of-pocket expenditure on health. Such strategies include mixes of community cooperative and enterprise-based micro health insurance and social health insurance-type coverage for specific groups. Micro health insurance is a nascent sector; and there is substantial diversity in the programmes being offered in different countries.

Property microinsurance products, on the other hand, cover loss of or damage to real property (such as a home or place of business) or personal property and assets from causes such as natural disasters or other adverse weather events. These include coverage in the aftermath of catastrophic events including floods and cyclones. In general, catastrophic risk in property microinsurance contracts is extremely costly and difficult to ascertain and is almost always supported by a reinsurance contract. Globally, different types of property microinsurance products may exist such as: (i) some products may indemnify policyholders for the value of the loss or damage, but the verification may be time consuming, costly, or even extremely difficult to ascertain; (ii) there may be other products which provide a 'standard' payout once the loss or damage has been established, regardless of the value of the product; or (iii) other products may provide a payout linked to the performance of an index, such as a rainfall gauge (such index-based products which are also common in crop insurance).

Micro health insurance

In Asia and Africa, progress in microinsurance coverage has been uneven across countries. For example, whereas South Africa (64.6 percent), Philippines (21.3 percent) and Thailand (14 percent) have recorded good progress, in India (9.2 percent), Bangladesh (6.2 percent), Malaysia (3.8 percent) and Pakistan (3.1 percent) microinsurance coverage has been low in 2012 (ICMIF 2015). Advantageous insurance regulations have helped development of microinsurance in India and the Philippines. India has a separate Microinsurance Regulation that was developed by the Insurance Regulatory and Development Authority (IRDA) in 2005 and revised in 2012. The Mutual Benefit Association of the Centre for Agriculture and Rural Development of Philippines (CARD MBA), a major MFI in Philippines, which in 2001 obtained a license to sell insurance from the Philippines regulator, has recently achieved a million members in its insurance programme (CARD 2009). While all major micro lenders in Bangladesh offer credit protection, these are essentially oriented to their own benefit than that of the borrowers. However, the largest 'life' company in Bangladesh, Delta Life, provides insurance product(s) targeted to the poor, while limited health coverage are provided by *Ganoshasthya Kendra*, *Grameen Kalyan*, *Sajida Foundation* and BRAC, among others.

Micro health insurance schemes emerged in the late 1980s in Africa and in the late 1990s in Asia to offer financial protection against catastrophic health expenditure (M Kimball 2013). In Asia, the features of micro health insurance vary in terms of institutional and organisational models. Formal micro health insurance products are mainly launched jointly with regulated commercial insurers (the approach is most common in India). The NGO-provided micro health insurance is prominent in Bangladesh, Pakistan and Cambodia, whereas cooperatives and community-based organisations (CBOs) represent a minor share in the supply in Asia (Mc Cord MJ. et. al. 2014).

The Indian example is of great interest in this context. The *Yeshasvini* health insurance, initiated in 2002 for rural farmers in Karnataka state in India, is a prominent example of provider based prepaid scheme in developing countries. *Yeshasvini* health insurance provides low probability

high-cost medical events only. The scheme allows pre-existing conditions and offers hospitalisation care with the ceiling of Rs. 200,000 per year and Rs. 100,000 per surgery. This is a cashless scheme where patients can seek treatment from any designated hospital (which may be public, private or charitable) by showing their *Yeshasvini* identity cards, an electronic card containing all the attributes of the individual. As a true public-private partnership, this scheme has built partnership with the state government, non-for-profit and private sectors where state government's Cooperation Department plays a vital role by mobilising members, collecting revenues and overseeing the activities. The farmer cooperative societies also play a crucial role by helping the government in identifying and enrolling members and explaining the programme's benefits to potential beneficiaries. A Third Party Administrator (TPA), an essential part of insurance operation, handles claims and preapprovals. Although the state government provides subsidies and administrative support, an autonomous trust (where government representatives are also members) governs the scheme independently from the government. Morduch and Karlan (2009) point out that, BASIX, an Indian MFI, has managed to build a large pool of insured allowing to contract high-quality doctors. An alternative would be to seek branch-level membership of NGOs who collectively decide on participation as a group. A similar process is currently being practised by the Community-Based Health Insurance (CBHI) model being promoted by the Microinsurance Academy (MIA) in Delhi. Another example of micro health insurance programme in India is *Aarogyasri*. It is a state owned programme targeting the poverty stricken groups. Beneficiaries can access several modern medical facilities and are guided through the health care system by patient advocates, hired to oversee each in network hospital.

In India, the regulatory directives require microinsurance to be sold only by registered insurers, who in turn are required to have mandatory products vetted by the regulator, IRDA (Insurance Regulatory and Development Authority), aimed at rural and social sectors in a phased manner over five years. While most commercial insurers operating in India at present, 23 life and 23 in the general category (typically joint ventures with international risk carriers), provide microinsurance products in collaboration with NGO-MFIs. The IRDA has approved 23 life products marketed by 14 insurers between 2006 and 2009.

In Philippines, CARD MBA is a formal mutual benefit association which started its operations in 1999, and is regulated by the Securities and Exchange Commission and has been licensed by the Insurance Commission of the Philippines. It promotes the welfare of the poor by offering insurance services such as (i) life (inclusive of enhanced accidental benefits as well as coverage for disability and dismemberment); (ii) hospitalisation costs following motor vehicle accidents; (iii) all loans insurance package (ALIP); and (iv) retirement savings fund. It actively involves its members in the direct management of the association. The ALIP programme, unlike other loan redemption programmes elsewhere, pays the total amount of loan of the dead member-borrower. Once death has been verified, CARD MBA pays the unpaid balance of the loan to the lending institution, and the paid up portion back to the dead borrower's beneficiary.

The YASIRU Mutual Provident Society of Sri Lanka is the microinsurance entity of the All Ceylon Community Development Council (ACCDC); an NGO dating back to 1993. The YASIRU takes an innovative approach to health protection for the rural poor. It signed an exclusive agreement with Interpolis RE Association, which is a part of the Dutch banking insurance group, Rabobank. This liaison allowed Yasiru to obtain technical assistance on a regular basis as well as access to reinsurance (for both life and health policies). The members of *Yasiru* are the policy holders and they, along with the nine partner organisations, are represented in the Board of Directors. The membership is open to all adults aged 18 to 65 years and covers children of the members aged between 90 days to 18 years. Additional dependents between 17 and 75 years may be covered if the household income is less than Sri Lankan Rupee 3,000 per month. However, a maximum of 3 persons aged 65-75 can be covered.

The insurance plan covers the following events with benefits according to the level of monthly premium paid by each family: accidental death of a member, accidental permanent disability of a member, natural death of a member, death of a member's dependent, member/dependent's hospitalisation for a maximum of 30 days, and traditional or similar treatment cost per day for a maximum of 15 days. It does not however have any agreement with designated hospitals to provide care; instead a flat daily benefit indemnity is paid in the event of hospitalisation (typically in public facilities). Yasiru's activities at the field level are carried out through its various partner organisations in small groups and community-based organisations. *Yasiru* also hires staff at all levels to distribute the insurance plan, to develop awareness activities to mobilise new clients, collect premiums, handle claims and provide assistance to the overall administration of the scheme. The Board of Directors of Yasiru manages and controls the scheme.

The above micro health insurance products from three different countries basically suggest different insurance models and delivery modalities. For instance, BASIX is an example of the partner-agent model in India, Card MBA is a community based organisation in the Philippines and YASIRU is carrying out its activities through various partner and community based organisations. In Bangladesh different insurance delivery modalities is also evident. These delivery modalities are discussed in relevant sections.

Property microinsurance

The loss or damage of personal properties can arise from various sources such as natural disasters, fire, theft or robbery. This study focuses on understanding the need for a pre-payment based financing mechanism as a mainstream approach for disaster risk management and climate change adaptation. In particular, this study explores the need for a safeguard mechanism that will protect the rural low-income households from the loss of personal properties, especially housing infrastructures and productive equipment, caused by catastrophic events (e.g. floods and cyclones).

Available literature from other countries shows different features of property insurance. Worldwide, damage caused by climate change is growing very fast. Various natural calamities like heavy rainfall, flood, earthquake, and cyclones are causing massive adverse change on human lives and socioeconomic status of the victims. Increasing population density in disaster-prone areas e.g., coastal, hilly, earthquake prone areas and poor enforcement of building codes are deepening losses more adversely. Homeowners have limited interest in shielding measures like insurance mechanism. Kunreuther (1996) proposes a disaster-management programme such as insurance together with properly imposed building codes to lessen potential damage. The author also suggests forming well-designed reinsurance treatment against catastrophic fatalities generated from mega-natural disasters.

Klein (2009) shows that catastrophe risks cause substantial instability in property insurance markets in the coastal areas. The study focuses on severe adverse effect of hurricane on the property insurance market of Florida and Louisiana in the US in 2004 and 2005. He suggests monitoring and enhancing the understanding of property insurance markets affected by catastrophe risk and developing economically-sound strategies to safeguard both insurers and property owners.

An empirical analysis by Zouet. al. (2003) examines the association between corporate risks and the decision to purchase property insurance and its financial extent. Evidence from the study illustrates that the decision to purchase property insurance is positively related to company size, systematic risks and insolvency risks. Additionally, the decision also varies according to geographical locations.

Jaffee et al. (2010) proposes the development of long term insurance with either fixed or variable premiums as an alternative to the standard annual property insurance policy. Because it is useful to many stakeholders to reduce insurers' administrative costs, search costs for providing stability to the consumers and incentivising property owners to invest in risk-reducing measures.

Given the vulnerability to climate change of Bangladesh and the subsequent adverse effects on poor people's property and housing, it is high time not only to develop policies and planning, but also build up and implement well structured, effective and sustainable property microinsurance.

2.3 Health and Property Microinsurance in Bangladesh

Micro health insurance in Bangladesh: Scope and practice

This part of the study focuses on the practice and scope of micro health insurance in Bangladesh employing both quantitative and qualitative data available from secondary sources. We have conducted a thorough review of all relevant documents (e.g., programme manuals, annual reports, leaflets, assessment reports, journal articles).

Micro health insurance (MHI) is an innovative health financing mechanism for increasing access and lessening financial burden of health care. The schemes often target the informal sector and the poor. Globally, there are mainly four kinds of delivery channel for offering micro health insurance: the provider driven model, the partner-agent model, the full-service model, and the community-based model. In Bangladesh, mainly two motivations worked behind the introduction of MHI: (i) health care providers driven initiatives for providing health care to the underprivileged at affordable costs; and (ii) MFIs driven initiatives for protecting the borrowers from income/productivity loss due to illness and huge burden of treatment costs. Community based practices are limited in Bangladesh while the partner-agent based MHI has never been tried.⁴ However, some innovative MHI models were initiated in Bangladesh.

Provider-driven model

Under provider-driven model health-service providers (i.e. hospitals, clinics, or groups of doctors) take all responsibilities including product designing, marketing, providing health and carrying the risk. *Gonoshasthaya Kendra* (GK) and Dhaka Community Hospital are examples of provider driven model in Bangladesh.

Gonoshasthaya Kendra offers a voluntary and social class based health insurance where premium and benefits vary across the six social classes (i.e., destitute and ultra poor, poor, lower middle class, middle class, upper middle class and rich) of the catchment populations (Islam, et. al., 2012). GK serves about 1.2 million individuals in its catchment areas. The insured are entitled to receive health care from GK owned health centres and hospitals. The co-payments for the services are progressive across the social class and the upper three tiers of the social class face large co-payment, which is above 70 percent for most of the services. The major challenges faced by GK are low enrolment of the rich and overall low renewal rate. Costs recovery is also low at 35 percent of the recurrent costs. Thus, the scheme is highly cross-subsidised by other entities of GK including a pharmaceutical company, a private medical college and a private university.

Dhaka Community Hospital (DCH) operates a scheme to serve the garments workers. Under this scheme, DCH provides a doctor and an assistant who visit once a week to an industry for a full day as long as patients are available; the employer manages the prescribed medicines for the patients; and pays to DCH an agreed amount per month for doctor's services. Although services on site are free, there are also very high co-payments (90 percent) for the inpatient care and referral services provided by DCH. Currently, about 8,000 workers are being served. The current cost recovery for this programme is reported to be 100 percent.

Of the two provider-driven schemes, one charges progressive premiums and co-payments and

⁴ At the beginning of private life insurance practices, a partner-agent based micro life insurance product was offered by Delta Life (a commercial private insurance company) in 1988. With the partnership of Grameen Bank, it offered *Grameen Bima* in rural areas and *Gono-Bima* in urban slum areas in the late 1980s till the 1990s.

faces difficulty in attracting the higher paying clients and is heavily subsidised, and the other only offers limited discount on hospital care, but breaks even.

The Diabetic Association of Bangladesh (BADAS) with the financial assistance of Swiss Agency for Development and Cooperation (SDC) and technical assistance of a Swiss Institute has been piloting a health insurance scheme for the garment workers since April 2014. The key players of the scheme are: Diabetic Association of Bangladesh (BADAS), National Health Network (NHN), New Asia Group (NAG), and United Insurance Company (UIC). The hospitals under NHN are the health care providers, NAG is the employer of the garments workers insured under the scheme and UIC is the risk carrier. Ideally, this is a proper model of health insurance as an insurance company is taking part in carrying the risk. However, the initiative was started by BADAS. Moreover, BADAS plays the main role in the piloting process. Thus, this also may be broadly treated as a provider driven model. This is a group health insurance scheme of 800 workers belonging to the lowest salary groups of seven garment factories of NAG. The scheme provides both inpatient and outpatient benefits to the insured individuals. The annual maximum coverage is BDT 15,000 and annual premium is BDT 487. The premium is paid by the employer.

MFI initiated schemes

A number of MFIs including Grameen Bank (through the *Grameen Kalyan*), *Sajida Foundation*, BRAC and Society for Social Services (SSS) initiated micro health insurance primarily in the late 1990s and early 2000s for protecting their borrowers from financial distress due to income/productivity loss and treatment costs. However, after few years of operation, most of these organisations did not continue the schemes presumably due to not achieving expected performance or financial costs. The *Grameen Kalyan* and *Sajida Foundation* are more prominent among the schemes currently offering micro health insurance in Bangladesh.

Sajida Foundation's *Nirapotta* is an example of MFI-initiated scheme. This scheme is mandatory for Sajida's microfinance and small and medium enterprise (SME) members and the premiums are paid at the time of loan receipt. The premium ranges from BDT 250 to BDT 1,050, depending on the amount and tenure of loan. There is an additional premium of BDT 100 for each supplementary loan. Sajida reimburses some cash benefit, which is up to BDT 4,000. Sajida also runs two hospitals. The insured in hospital catchment areas have the opportunity to seek health care from these hospitals. However, the coverage, given the price of health care in the market, is not adequate and hence the insured pays a large amount of the medical expenses. It is well recognised that 'reimbursement system' is not a form of prepayment as the insured first must pay. Cashless or low co-payments are preferred. Sajida has achieved break even in recent years (with part of operation subsidised by microfinance surplus).

Grameen Kalyan's health scheme is a MFI initiated voluntary scheme. The scheme is currently serving about 3 million individuals. The insured receive primary care from the health centres operated by Grameen Kalyan itself. There is also some hospitalisation benefit, which is BDT

2,000 (or USD 25) per household. There are also high co-payments, which are more than 50 percent. Low renewal rate and lack of continuum of care are the major challenges. There was 65-70 percent costs recovery in recent years. Nonetheless, the scheme has been expanded recently.

Innovative MHI initiatives

There are some innovations in MHI practices in Bangladesh. One of them was *Niramoy* micro health insurance scheme, which was piloted jointly by Institute of Microfinance (currently Institute for Inclusive Finance and Development) and Green Delta Insurance Company Limited with some local MFIs and the Community Based Medical College, Bangladesh (CBMCH) in Mymensingh. The benefit package, encompassing outpatient care (consultation and diagnostics), maternity and inpatient care with most common surgeries and medication, is the most comprehensive in Bangladesh.

Niramoy encompasses many more players, i.e. partners, than is standard namely, microfinance institutions (MFIs), the hospital, drug companies (probably the first of its kind), insurance company and, above all, the beneficiaries. In the overall design, each of these players takes on some risks. The benefit package is designed on the basis of local need. Over the 12-month period, a maximum of five outpatient visits are set for a household of four and five members, three visits for a household of two or three members, six visits for a household of six or seven members, seven for a household of eight or nine members and eight visits for a household of more than nine members. Each eligible household is entitled to receive one complete maternal care including four ANC visits, delivery (normal or Caesarean Section), two PNCs and neonatal care. In addition, each household is entitled to receive up to two episodes of inpatient care (surgical or non-surgical) available at CBMCH. However, if a household avails maternal care, the household would be entitled to receive only one additional hospitalisation benefit. Low co-payments are set on drugs and injectable drugs. Despite all the innovations, the enrolment was very low (about 1 percent of the target households) mainly due to negative perception of insurance and lack of awareness about insurance.⁵ After the first year of piloting Green Delta Insurance Company (GDIC) took over the charge. However, after a few months GDIC stopped its operation (Hamid 2015).

The ICDDR,B has been piloting a project on community health insurance (named *AmaderShasthya*) in Chakaria, a remote rural area in Cox's Bazaar district of Chittagong division, since 2012. The scheme runs two packages: indoor and outdoor. The premium for the outdoor package is set at BDT 500 per household per year, which entitles each household member to free consultation with paramedics, doctors, access to medicine, and diagnostic services at a discounted price (Hamid 2015).

⁵This misperception has been generally arisen due to committing frauds of some life insurance companies, unusual delay in claim settlement and requiring many documents to submit the claims.

BRAC, aiming at weighing the effectiveness of a pre-paid health-financing scheme with differential premiums, has started to operationalise an inclusive and innovative health-financing model in August 2014 entitled bHSP targeted to cover 5,000 urban households at Gazipur district. Different groups of households have differentiated annual premium: BDT 600, BDT 1,500, BDT 1,800 and BDT 2,400 respectively for the poor, low income, middle income and higher income households. This scheme provides both outpatient and surgical and non-surgical inpatient supports to the beneficiaries. All household-members are entitled to receive three outpatient consultations (with some discount on drugs and diagnostics) and two episodes of hospitalisation. The maximum annual benefit of a household for a surgical hospitalisation is BDT 5,000 and non-surgical hospitalisation is BDT 1,500 (Hamid 2015).

In 2010, PKSf launched a pilot MI project titled 'Developing Inclusive Insurance Sector Project (DIISP)'. Under the programme, a field level pilot testing of health insurance programme was implemented, where the insured person was entitled to receive hospital cash benefit if hospitalised for more than 24 hours. In that case, BDT 200 to BDT 400 per day is given as cash benefit for a maximum of 30 days, excluding the first day. Additionally, one experienced paramedic was appointed in each MFI branch to raise health awareness among the MFI members and their families and provide essential healthcare to the patients and, if required, they also referred patients to qualified doctors and hospitals. After successful implementation of this pilot programme, PKSf plans to build up "Risk Mitigation and Management Unit" with the aim of developing and implementing inclusive insurance products for the poor.

Ayesha Abed Foundation (AAF), a BRAC social enterprise, has taken a unique initiative of financial risk protection, which is an employer sponsored 'health-security scheme' in 637 sub-centres for contractual workers around 13 districts of Bangladesh. Each sub-centre employs 20 to 25 female workers (called Artisans) to work on small-scale handicraft production primarily involving stitching. The AAF supports more than 60,000 Artisans of which 85 percent are women from low-income communities. All listed household-members will receive monetary benefits for hospitalisation for two incidents each year while seeking treatment and/before starting the treatment/surgical procedures. If artisan or the listed family members use health care facilities using this scheme and they receive BDT 1,000 as initial payment for all cases (emergency, normal delivery, surgical or medical) while seeking care. Other two benefits are of BDT 6,000 and 10,000 for minor surgeries including Caesarean Section and major surgeries respectively before starting the surgical procedures. They receive a maximum of BDT 3,000 for nonsurgical treatments. Thirty five public and private facilities are selected in every district for providing health care (Hamid et al 2015).

As part of the government's implementation of the Health Care Financing Strategy, the Health Economics Unit (HEU) of the Ministry of Health and Family Welfare (MoHFW) is piloting *Shasthyo Surokhsha Karmasuchi*, a social health protection scheme designed for below-poverty-Line (BPL) population, in one upazila of Tangail district. As per the current design, the

government pays the full premium on behalf of BPL population. The BPL population also does not have to pay any co-payment at the point of service delivery. The scheme currently offers hospitalised benefits for 50 diseases, which include the following: free physician's consultation in UHCs; free drugs and diagnostic facilities in UHCs; and structured referral to the secondary level hospitals. Given the above discussion, summary of the existing micro health insurance products, their delivery mechanisms, target population, premium structure, benefit packages, major challenges and criticisms etc. are given in the following table.

Table 2.1: Summary of Prepaid Health Schemes in Bangladesh

Name of the scheme and/organisation	Delivery model	Name of insurance product	Target population	Enrolment criteria	Annual premium		Benefit package	Costs recovery	Health care providers	Population and geographical coverage	Major challenges and criticisms
					(BDT)*	(BDT)*	(BDT)*	(%)			
Dhaka Community Hospital (DCH)	Provider driven	Industrial Health Program	Garment workers	Compulsory, but free, for all workers in the selected garment factories	Lump sum payment by employers based on capitation method		(i) Preventive care (ii) Free consultation services (iii) Free medical check-up once a year (iv) 10% discount referral and/or inpatient care	100	DCH	About 8000 employees in 24 factories	Very high copayments for inpatient and referral services
Gonoshasthaya Kendra	Provider driven	Social Class Based Health Insurance	Destitute & Ultra poor	Voluntary	Individual (BDT)*	Family (BDT)*	(i) No charges for paramedic and GP services (ii) No charges for consultation of expert physicians				
					70	140					
			Poor	Voluntary	100	240	(i) No charges for paramedic and GP services (ii) No charges for consultation of expert physicians	35%	GK health centres and hospitals	Target population: 1.2 Million population in 10 districts No. of card holders: about 50,000	Low enrolment of the rich and overall low renewal rate

			Lower Middle class	Voluntary	200	550	(i) No charges for paramedic and GP services (ii) considerable discount on consultation of expert physicians			
			Middle class	Voluntary	500	1100	(i) No charges for paramedic and GP services (ii) Fair discount consultation of expert physicians			
			Upper middle class	Voluntary	900	2700	(i) No charges for paramedic and GP services (ii) Some discount on consultation of expert physicians			
			Rich	Voluntary	1200	3200	(i) No charges for paramedic and GP services (ii) Some discount on consultation of expert physicians			
BADAS	Provider driven	Outpatient and Inpatient	The lowest salary groups of some selected garment factories	Compulsory	487 per worker which is paid by the employer	Maximum annual 15000 per worker	Below breakeven	National Health Network	8000 workers of seven garment factories of New Asia Group	High claim rate and potential loss

Sajida Foundation	MFI initiated	<i>Nirapotta</i>	Sajida's microfinance borrowers and SME borrowers	Compulsory	250 - 1050 based on amount of loan	Reimbursement : 500-4000 per episode	Break even	Hospital of Sajida Foundation and any other hospitals	130,000 in 10 districts	Errors in claim settlement and delay in claim settlement for operating both microfinance and microinsurance with the same set of staff
Grameen Kalyan	MFI initiated	Basic primary care	Rural people	Voluntary	(i) 200 for Grameen microcredit member (ii) 300 for other	10-70% discount on various services Referral benefit: 2000 annually		Grameen Kalyan's own health centers	Card holders: 15,868	Low renewal and lack of continuum of care
AmaderShasthya (ICDDR,B)	Community based	Outpatient	Rural people	Voluntary	500 per household	Maximum annual 30,000 per household	-	Outpatient care by community run health centre with assistance of icddr,b; referral and inpatient by empanelled local hospitals	10,000	Low renewal rate
		Inpatient			1200 per household	Maximum annual 54000 per household				
DIISP	MFI initiated	Inpatient	Rural people	Voluntary	250	200 to 400 per day is given as cash benefit for a maximum of 30 days, excluding the first day	Generated surplus	Paramedic services by MFIs and inpatient care by empanelled hospitals	33,771 members of 40 MFIs	Low enrolment

<i>Niramoy</i> (Institute of Microfinance and Green Delta Insurance Company Ltd)	Joint initiative of MFIs and Insurance company with the assistance of some researchers	Outpatient , inpatient and maternity	Microfinance members	Voluntary	380 per individual	No charges excluding medicine and injectable. There is 20% copayment on medicine and injectable.	Loss incurred	Community Based Medical College Hospital, Mymensing	Target: 3000 households or 15000 people Card holders: 200 household or 1000 people	Low enrolment
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Source: Hamid (2016)

Property microinsurance: Bangladesh experiences

Formal financial safeguard mechanism for property losses resulting from natural catastrophes (such as property microinsurance) is still at an early stage of development. The main objective of this review is to document recent developments in property microinsurance market in low-income developing countries.

Bangladesh is a low-lying deltaic plain with the area of 147,570 square kilometres, located in South Asia between 20°34' to 26°38' north latitude and 88°01' to 92°41' east longitude at the north coast of the Bay of Bengal. Its unique physiographic and geographic location places itself as one of the most natural disaster prone areas of the world. Natural calamities like flood and cyclone (*tornado*) dismantle the life and wellbeing of the people of this densely populated country in a frequent manner. Because of its low elevation, one-third of the country is prone to tidal floods. In 2007, two successive floods affected around one million households and damaged around 85,000 houses and 1.2 million acres of crops. Recently, two major tropical cyclones, *Sidr* (in 2007) and *Aila* (in 2009), caused serious destruction of infrastructure in the affected areas. *Sidr* affected around 2.3 million households with approximate loss of USD 1.7 billion and *Aila* affected around 5 million households and caused infrastructure damages worth USD 60 million. Experts predict that frequency and severity of these types of natural catastrophes are likely to rise with future climate change events.

Evidence suggests that disaster relief programmes are not adequate to mitigate the vulnerability of affected households and put a huge pressure on the government budget. As low-income developing countries lack enough resources to finance post-disaster rehabilitation interventions, they often need to borrow from external sources to finance these climatic shocks. Other interventions such as post-disaster credit supports (e.g. loan rescheduling) are also not adequate as they are limited to microcredit members only. These post-disaster payment systems have their pitfalls; they are less certain in terms of distribution and as well as in terms of payoffs and could be delayed. The advantage of insurance mechanism is that it shifts financial resources from post-disaster payment system to a more efficient and more certain system (Bayer and Stigler 2015). The above facts suggest that there is a huge need for alternative risk management mechanisms to protect the livelihoods of vulnerable people in a country. Insurance-based mechanisms can play an important role in strengthening resilience to climate change.

Surminski and Oramas-Dorta (2014) provide a review of 27 flood-risk transfer schemes from the database of Compendium of Disaster Risk Transfer Initiatives in the Developing World that are operational or implemented as pilot projects in middle and lower-income countries. After a careful review, they find that there are very few property insurance schemes in developing countries. Instead, most of these schemes provide agricultural insurance for flood. Only 2 out of 27 schemes can be identified as property insurance for flood. The authors suggest that this is the reflection of the demand and supply side barriers in implementing property based flood insurance.

Akter et al (2011) explore the feasibility of flood insurance in Bangladesh from both demand and supply side perspectives. They observe that in Bangladesh there is no private insurance market for property damages resulting from natural disasters. Nonetheless, they test the demand for a hypothetical flood insurance scheme in selected locations, which were affected by the devastating flood of 2004. The authors find that slightly less than one-half of the respondents are interested to participate in the insurance scheme. Several factors influence the respondents to refrain from participation: low-income, lack of understanding of the concept of insurance and lack of trust on the insurers. From the supply side, administrative costs of the providers turn out to be an important factor for long-term sustainability of insurance programmes.

Sadharan Bima Corporation (SBC) of Bangladesh, a government owned general insurance company, launched a weather index-based crop insurance programme for agricultural farm households in rural areas under a pilot project funded by the Asian Development Bank (ADB). As of 2015, the programme has managed to enrol 5,000 farm households in rural areas. The strength of this index-based approach is that this approach is less susceptible to moral hazard and adverse selection problems. Because of its lower cost of distribution and claim-settlement, its overall transaction cost is lower than other agricultural insurance schemes. Because it does not require assessment of an individual farm, claims can be settled relatively rapidly.

Proshika, a leading MFI, has been offering a compulsory group based natural disaster insurance scheme since 1997. Under this contract, the MFI members have to deposit 2 percent of their savings in an insurance fund and the provider has to pay twice the amount of total savings in the insurance fund if the clients suffer from any loss due to natural disaster (Akter et al 2011).

Implementing property microinsurance against natural catastrophes in a developing country setup is a challenging mission. There are both demand and supply side barriers to development of property microinsurance schemes in developing countries. Demand side constraints include but are not limited to low level of income of the rural population; lack of understanding of financial services in general and the concept of insurance in particular; lack of trust on insurance providers; and the like. On the other hand, insurance providers face many challenges in offering property insurance for catastrophic risks such as lack of title deeds for informal housing, high costs of handling claims and difficulties in managing fraud risks (Llyods). On the other hand, markets for weather index-based agricultural insurance schemes are gradually growing in developing countries. Such index-based schemes are superior to other schemes for natural disasters. Suitability of such index-based schemes needs to be tested in designing safeguard mechanisms for property losses resulting from catastrophic shocks.

2.4 Product Design Issues and Delivery Channels

The available literature indicates that the current state of micro health insurance market in Bangladesh is less than satisfactory. The existing micro health insurance products in the market

are featured with various drawbacks like insufficient risk coverage, extremely high premium rates unrelated to any plausible model of mortality of the insured, lengthy process of claim settlement and, above all, high costs of intermediation. Such products therefore appear unattractive to the vulnerable people (Ahsan et al. 2013).

Whatever the delivery models and/or motives, prevailing schemes in Bangladesh commonly face the following challenges: (i) non-existent of independent micro health insurance regulatory authority that would enable the recognition of micro health insurance as an independent sector; (ii) complexities of designing micro health insurance products appropriate for the low income market; (iii) lack of reliable health service providers and thus micro health insurance providers need to take the responsibility of providing health care; (iv) lack of skilled resources in micro health insurance; and more importantly, (v) a limited and negative perception of insurance in the country as a whole. For the provider-based models, the limited provider networks limits extension of the coverage.

As in many other countries, voluntary schemes face low demand (i.e. low enrolment and low renewal) in Bangladesh. Evidence shows that enrolment figures are also low for many voluntary schemes worldwide (Matul et al. 2013). In terms of number of schemes, population coverage and growth of micro health insurance is very limited in Bangladesh. It should be noted that health insurance through private insurance schemes has a low coverage in Bangladesh. Although included in the government's health care financing strategy, so far there is no social health insurance scheme and the government employees are given an amount in cash each month to cover their health care needs. One should also note that worldwide micro health insurance has close alignment with microfinance. Although an unquestioned pioneer of microfinance, Bangladesh does not have success with prepaid health schemes. Voluntary health insurance has also not been popular in the formal sector. For example, the contribution of voluntary health insurance in total health financing is only 0.1 percent (BNHA4 1999-2012). There is no compulsory health insurance scheme as well.

Presumably, demand side factors such as lack of confidence/trust on prepayment mode, lack of awareness about the benefit of prepayment scheme, lack of affordability to pay premium and giving more weight to present consumption plays an important role for low development of the health insurance sector. Some supply side factors such as low level of benefit, high co-payment charged, committing fraud, complex procedures of claim submission, delay in claim settlement and rejecting the claim are equally responsible. Lack of trust as well as insurance culture may also be responsible for the underdevelopment of the insurance market as a whole in the country.

The impact of micro health insurance is also not optimistic. Hamid et. al. (2011) find some positive, but insignificant, association between MHI and household income, and the probability of being above or below the poverty line. Werner (2009) provides an analysis on effectiveness of micro health insurance as the risk protection mechanism on the lives of the marginalised people. The study finds that the current micro health insurance mechanism in Bangladesh has increased

the access to and utilisation of basic health services among the poor but did not lessen the probability that essential health-related costs would be a catastrophic expense for their lives. These challenges and limitations along with limited coverage and high co-payments restrict the scaling up and replication of MHI schemes in Bangladesh.

Most experts argue that the microinsurance ‘product development’ process is a continuous cycle and should include the following steps to ensure both that the product is delivered effectively and that it meet the needs of the target client group: understanding demand and supply, inferring the willingness to join and to pay, developing prototype product and testing, selecting partner, product finalisation and process design, pilot testing and analysis, product rollout. Throughout the process, there should be interaction between consumers, providers and other institutions involved (McCord 2007).

2.5 Summary of Lessons from Literature Review

In addition to moral hazard and adverse selection, the reasons for failure of insurance market in general calls for consideration of several policies:

1. ***Insurance delivery mechanism:*** In Bangladesh, voluntary health insurance schemes are not practicable. Hence, compulsory insurance mechanism can be implemented for all members of a specific social group. For example, if Microcredit Regulatory Authority (MRA) makes it compulsory for all MFIs that they have to give insurance coverage to all borrower members, then it may be functional. While this is an efficient means of serving insurance, it has drawbacks as well if all MFIs do not start practicing it at the same time. Otherwise, if any MFI add the charge of insurance premium with other expenses of the members, the consolidated charge of the potential members will rise compared with other MFIs. In that case, if the borrowers do not understand the benefits of insurance and only compare the charges between the two MFIs, they will cancel their membership from the first MFI and shift to other MFIs who charges less. As a result, the first MFI will lose its clients. To overcome this problem, all MFIs have to implement the insurance mechanism at the same time for all clients. One such example is the loan insurance. Therefore, MHI would have to be compulsory in nature; once the social group in question approves the product and decides on joining the scheme, all members should be enrolled automatically. Other examples of social classes could be members of cooperatives, employees of any institution etc.
2. ***Service delivery mechanism:*** In the hospitalisation context, there are two ways to serve the insured. First, they can seek healthcare from any hospital and submit the bill to the insurance provider for claim settlement and second, the service delivery modalities can be locally based as much as possible. The local service delivery would imply that the insured would have access to local staff in the identification of hospital/clinic appropriate for the treatment and assistance while in hospital regarding any paper work and the like.

In addition, it would be ideal to have access to physical treatment facilities available in rural locations which must satisfy some pre-qualification criteria. The second option could be better. The first option would be more expensive as people may seek healthcare from private hospitals and the costs are different in different institutions, which may exceed the benefit coverage capacity of the insurance package. In that case, selecting well-known and large hospitals as healthcare service provider would be more effective. Another benefit of the second option is that the insurance provider can negotiate the charges with the hospital.

3. **Extent of coverage:** Unless the pool of insured is large enough, effective risk-pooling cannot be accomplished rendering the programme cost-inefficient. Therefore, including all members of any social class under insurance coverage would be beneficial.
4. **Government and non-government support:** Government and non-government organisations have to understand the benefits of insurance and be willing to effectively act as players in the insurance market. For, example, if the MFIs serve insurance to its members, then MRA will have to play a crucial role.
5. **Awareness campaign on insurance:** Negative perception about insurance among people needs to be removed through conducting awareness campaigns by the government and non-government organisations.
6. **Flexible payment system:** Insurance providers have to understand the market demand and design their payment system accordingly. For instance, the payment of premium can be conducted at a time or in instalments.
7. **'Product development' process:** Product development has to be a continuous cycle and should comprise, among others, understanding demand and supply, inferring the willingness to join and to pay, initiating prototype product and testing, selecting partners, product finalisation and process design, pilot testing and analysis, and product rollout.
8. **Effectiveness and affordability:** Although the poor appear to spend a substantial amount of resources on medical expenses even on a routine basis, due to unfamiliarity of the concept and lack of trust/comprehension of the insurance contract, they are generally not willing to part with even a modest amount of money to sign up for insurance. If the respondents are given additional details of the insurance coverage and are assured of quality service, the WTP figures may approach realistic in terms of potential long-run costs of well-designed interventions. However, in the early stage of development, overhead costs of product design, implementation and monitoring of microinsurance services would typically require a subsidy, perhaps on an indefinite basis.
9. **Voluntary nature:** For the non-members of any group, micro health insurance can be voluntary, implying that they can join the insurance scheme if they want to. There should not be any barrier to entry; otherwise, they will be excluded.
10. **Viability:** For micro health insurance to be financially viable, primary health services are important. In addition, nutritional services are quite necessary to avoid frequent disease and reduce costs to insurers as well as insureds.

11. **Financial education:** Microinsurance can be mandatory, or be bundled with other financial products like credit if voluntary microinsurance cannot be financially viable. However, in the experiences of other countries, clients tend to regard microinsurance premiums as just additional fees on credit and not to make claims afterwards. In order to avoid such a situation, we have to pay due attention on financial education on insurance and the simplification of claiming procedures.

Chapter 3

Research Issues and Methodology

3.1 Key Considerations for Research

The low-income people in Bangladesh are highly vulnerable to any shock related to health and property. Any health hazard affects the household economy in various ways: earning loss of the affected individuals, earning loss of the individuals engaged in taking care of the patients, and financing the costs of treatment. About 64 percent of total health expenditure is privately financed from out-of-pocket. Evidence shows that out-of-pocket payments account for impoverishment of about 4 percent rural household survey year (Hamid et al 2014). Damage of any property also affects the household economy severely. Introducing appropriate microinsurance for protecting the low-income people against these perils bears immense importance. This study, thus, concentrates to analyse the feasibility of introducing microinsurance for protecting the health and property risks of the people of hard to reach areas in Bangladesh.

3.2 Methodological Aspects

There is absolute lack of historical data required for designing health and property insurance in Bangladesh. We have used some proxy parameters obtained from existing national and international practices, literature and primary source. For collecting primary data we conducted a quantitative household survey, a health care facility survey, stakeholder consultations and focus group discussions.

Sampling design and techniques: Household survey

The quantitative data was collected through the household survey using multistage sampling procedures. For addressing all relevant features of health and property insurance, the household survey targeted remote locations which were more vulnerable to natural disasters. Considering the fact that people living in disaster prone areas greatly need MI services, six disaster-prone districts of the country were selected: Patuakhali, Satkhira, Sunamganj, Jamalpur, Kurigram and Cox's Bazar.

The samples were selected in several stages. In the second stage, two upazilas from each district were randomly selected. In the next stage, we randomly selected two unions from each upazila. In the fourth stage, we selected two villages from each union randomly, thus yielding a total of 48 villages. In the final stage, 21 households were selected from each village using systematic random sampling technique. The distribution of sample is shown in Tables 3.1 and 3.2.

This is to note that the sample size for household survey was determined using the Cochran's (1977) formula: $n_o = \frac{t^2 pq}{d^2}$. In the formula, n_o is the sample size, t is the abscissa of the distribution that cuts off an area α at the tails ($1-\alpha$ equals the desired confidence level), d is the desired level of precision, p is the estimated proportion of an attribute that is present in the population, and q is just equal to $1-p$. Assuming $p = q = 0.5$, $d = 0.03$, and $t = 1.96$, we selected a total of about 1,008 households.

Well-structured questionnaires were designed for both household and healthcare facility surveys to capture information on all relevant parameters (e.g. morbidity, health seeking behaviour, out of pocket payments, type of asset damage, value of damaged assets, etc.) need for the analysis. In addition to the household and healthcare facility surveys, village survey in the selected villages were conducted for capturing village and union level information (e.g. health and education institutions, major livelihoods of the people, education etc.).

For collecting quantitative data, eighteen enumerators (including six group coordinators) were appointed to conduct the household survey and four enumerators were appointed to conduct the healthcare facility survey. One highly experienced team coordinator was appointed to coordinate both surveys.

The training of the field staff was organised in the last week of November 2016. Pre-testing of the questionnaire was conducted before finalising the questionnaire. The survey was conducted during November and December 2017. Household head or his/her spouse was considered as the principle respondent.

Table 3.1: List of Selected Areas for Household Survey

Selected District	Location	Major Risks	Selected Upazila	Sample Size
Patuakhali	Coastal and remote	Cyclone and coastal wave	Bauphal, Kalapara	168
Satkhira	Coastal, boarder and remote	Cyclone and coastal wave	Shyamnagar, Tala	168
Sunamganj	Haor and remote	Flood	Tahirpur, Bishwamvarpur	168
Jamalpur	Remote	Flood	Sarishabari, Bakshiganj	168
Kurigram	Char and remote	Flood	Chilmari, Phulbari	168
Cox's Bazar	Coastal and remote	Cyclone and coastal wave	Moheshkhali, Teknaf	168

Source: Microinsurance Survey, InM 2017

Table 3.2: Sample Distribution of Household Survey

District	Household Survey				
	Households		Upazila	Union	Villages
	n	%			
Patuakhali	168	16.67	2	4	8
Satkhira	168	16.67	2	4	8
Sunamganj	168	16.67	2	4	8
Jamalpur	168	16.67	2	4	8
Kurigram	168	16.67	2	4	8
Cox's Bazar	168	16.67	2	4	8
Total	1,008	100	12	24	48

Source: Microinsurance Survey, InM 2017

Sampling design and techniques: Healthcare facility survey

We surveyed the status of healthcare facilities in selected twelve upazilas of six districts by using a well-designed questionnaire, where all relevant features of inpatient health services provided by government, private and NGO hospitals in the district and upazila levels were captured. Additionally, their WTJ any MI scheme as healthcare service providers was asked. A total of 47 inpatient care provider hospitals were surveyed from the selected districts (Patuakhali, Satkhira, Cox's Bazar, Sunamganj, Jamalpur and Kurigram) (Table 3.3). The detailed information on various issues of both surgical and non-surgical inpatient care including the number of beds/cabins, number of full phased doctors, nurses, and number of on call doctors/ surgeons were collected.

Table 3.3: Sample Distribution of Healthcare Facility Survey

Selected District	Location	Selected Upazila	Sample Size
Patuakhali	Coastal and remote	Bauphal, Kalapara	7
Satkhira	Coastal, boarder and remote	Shyamnagar, Tala	13
Cox's Bazar	Coastal and remote	Moheshkhali, Teknaf	5
Sunamganj	Haor and remote	Tahirpur, Bishwamvarpur	4
Jamalpur	Remote	Sarishabari, Bakshiganj	8
Kurigram	Char and remote	Chilmari, Phulbari	10
		Total	47

Source: Microinsurance Survey, InM 2017

In addition several case studies were conducted and other interaction meetings were organised with the household members and paramedics of MFIs during the survey. Two cases of HSB insurance are given in Annex C.

Field Data Collection



InM Household Survey 2017

3.3 Data Processing and Analysis

After successful completion of the household and healthcare facility surveys, the next task was the entry of all data for analysis using appropriate formats. The entry of the household data was completed by mid-January 2017. After the data entry, data cleaning process started and it was completed by end of February 2017.

Additionally, data entry of the health care facility survey was completed by mid of March 2017. The researchers then checked and ensured the consistency of the data and processed it for analysis.

3.4 Key Village Features Identified during Community Survey

During the survey, information about different aspects of village characteristics have been collected from villages spread over six districts of Bangladesh. This highlights the regional differences in different parts of Bangladesh and sheds light on community characteristics critical for designing MI products and delivery channels.

Basic characteristics of villages

All the villages have tin roof houses except those in Satkhira and Cox's Bazar. This implies improvement in living standards of rural population in terms housing types, and mud and thatched houses have been replaced by tin roof houses. In Satkhira and Cox's Bazar, most of the houses (50 percent and above) are made of mud and the rest of the houses are semi-buildings.

In terms of access to electricity, the situation in the villages is standard, except Sunamganj district. On an average, 35 percent households have access to electricity in the sample villages, whereas, in Sunamganj, only 6 percent households have electricity access. As access to electricity is very low in Sunamganj, the villagers (74 percent) are mainly dependent on solar

energy. On an average, almost all the villages have at least one primary school, though in Sunamganj, the situation is worse compared with other districts. Except Satkhira and Sunamganj, all the villages have MFI branches within the villages. However, the average distance of MFI branch from the village is 3.25 kilometre, therefore, the financial activities with the MFIs is quite smooth in those villages.

Table 3.4: Basic Characteristics of Villages

District	Household Type	Electricity Access (%)	Solar Access (%)	Avg. Number of Primary Schools	Avg. Number of MFIs within the Village	Avg. Distance of MFI from Village
Patuakhali	Tin house (100%)	29	36	1.5	4.9	3.19
Satkhira	House made of soil (50%) and semi-building (37%)	41	44	1.3	0.0	3.06
Sunamganj	Tin house (100%)	6	74	0.8	0.0	4.19
Jamalpur	Tin house (100%)	48	26	1.4	2.6	2.25
Kurigram	Tin house (100%)	42	19	1.1	4.0	2.75
Cox's Bazar	House made of soil (75%) and semi-building (25%)	45	7	1.1	2.5	4.06
All Districts	Mostly Tin house	35	34	1.19	2.67	3.25

Source: Microinsurance Survey, InM 2017

Major healthcare providing institutions

The study has identified several types of healthcare providing institutions in the survey villages. The average number of Upazila Health Complex, Union Health Complex and Community Clinic over the six districts are 0.44, 0.50 and 0.33 respectively. The number of private clinics is very few in the study villages. Informal healthcare providers, like, village quacks are present in almost all villages. The average number of pharmacy in the study villages is 1.72.

Table 3.5: Average Number of Healthcare Providing Institutions in Surveyed Districts

District	Upazila Health Complex	Union Health Complex	Community Clinic	Private Clinic	Village Quack	Pharmacy
Patuakhali	0	0.125	0.375	0.375	2.625	4.5
Satkhira	0	0.25	0.125	0	1.375	1.5
Sunamganj	1.125	1.125	0	0	0.5	0.5
Jamalpur	0.125	0.375	0.125	0.125	1.25	0.75
Kurigram	1	1	1	0	1.875	1.625
Cox's Bazar	0.375	0.125	0.375	0	1.625	1.5
Total	.4375	.5	.3333	.0833	1.54	1.72

Source: Microinsurance Survey, InM 2017

Frequency and adversity of various disasters in the study areas

Bangladesh is one of the most disaster-prone countries in the world. Natural disasters adversely affect the country's economy and deter its development. As the survey areas are mostly disaster prone, these areas mainly encounter various natural and manmade disasters. Additionally, as one of the main concerns of this study is to develop property microinsurance product, it is very important to understand the natural calamities of these study areas.

Some of the areas like Sunamganj and Jamalpur are located along the bank of rivers or in *haor* areas and are frequently affected by floods, which adversely affect the economic system of the locality. The *haor* basin in Bangladesh encompasses large areas of Sunamganj district where, road communication network, in terms of connectivity with the main land, is extremely poor. Similarly, Jamalpur is located in the flood prone area.

Another survey location, which is in Satkhira district, also has differences in terms of geographical variation. It is located in south-western part of Bangladesh and major hazards in the area are salinity intrusion, coastal flood, and cyclone. The area was hit by two consecutive cyclones, Sidr in 2007 and Aila in 2009. Due to cyclones, floods affected the lives of the inhabitants very adversely.

On the other hand, survey areas in Cox's-Bazar district have a somewhat different geographical variation and life-style. It is located in the south-eastern coast of Bangladesh along the north-eastern coast of Bay of Bengal. In the district, some study areas are mainly affected by storm and heavy rainfall.

On the other hand, Patuakhali is a coastal and somewhat remote area from the mainland. It is located in the south-western coastal region of Bangladesh. The communication system is very poor in these localities. Some parts of the study area are frequently affected by storm surges in the coastal locations.

Table 3.6: Frequency and Adversity of Major Disasters in the Survey Areas

District	Major Disasters
Patuakhali	Flood, Heavy Rainfall and Strom
Satkhira	Sidr (2007) and Ayla (2009)
Sunamganj	Flood, Heavy Rainfall and cold wave
Jamalpur	Flood and Drought
Kurigram	Flood and Heavy rainfall
Cox's Bazar	Strom and Heavy Rainfall

Source: Microinsurance Survey, InM 2017

Chapter 4

Micro Health Insurance: Operational Models

This chapter illustrates the following issues: socioeconomic characteristics of the sample population; financial behaviour of survey households, various health related outcomes including illness pattern and coping mechanism; health insurance product design issues; supply side aspects of health care; and delivery mechanisms and suggested operational models of micro health insurance.

4.1. Socioeconomic Characteristics of Sample Population

We successfully interviewed all 1,008 households as per the sampling design. Overwhelming majority (94 percent) of the cases household head (42 percent) and his/her spouse (52 percent) were the main respondents. In remaining cases, other members of the household (son, daughter, father or mother) were interviewed due to absence of household head and his/her spouse at the time of interview (Table 4.1). Most (about 94 percent) of the households are male-headed. The household head's average education level is 3.1 years and average age is about 45 years. The average household size is about 5 and age-sex-adjusted household size is 3.77.⁶ More than one-third of the household members belong to less than 15-year age group and about half to reproductive age group.

About 22percent of the household heads are engaged in self-employment in agriculture sector, about 28 percent in wage earning and about 32 percent in self-employment in non-agriculture sector. About 22 percent households have at least one internal migrant and about three percent have at least one international migrant. About 54 percent households have access to arsenic free tube well water, 68 percent to electricity, and about 78 percent to sanitary latrine. A household, on an average, have about 41 decimal of land. On an average, one needs to earn the bread of three members. Tin is used as wall and roof material respectively for 63 percent and 79 percent households where mud is the wall materials for about 94 percent households. About 59 percent of the households have membership in microfinance programmes (Table 4.1).

⁶ The weights used to construct age and sex adjusted household size are : 1.0 for males aged over 18 years, 0.9 for females aged over 18; 0.94 for males aged 13-18, 0.83 for females aged over 13-18; 0.67 and 0.52 for a children aged 7-12 and 4-6 respectively; 0.32 for toddlers aged 1-3; and 0.05 for infants. These weights are based on a South Indian dietary survey which was used by Townsend (1994).

Table 4.1: Characteristics of Sampled Households

Indicators	Magnitude
Category of respondents (%)	
• Household head	41.47
• Spouse	51.88
• Other members	6.65
Average Household size	4.93
Age-sex adjusted household size	3.77
Female headed household (%)	6.25
Age of household head (years)	44.52
Education of household head (years of schooling)	3.13
Highest educational level of the household	7
Household head is married (%)	93.55
Primary occupation of household head (%)	
• Wage earning	27.78
• Self-employment in agriculture sector	22.02
• Self-employment in non-agriculture sector	31.94
Average land size owned (decimal)	40.91
Households having at least one international migrant (%)	2.98
Households having at least one internal migrant (%)	22.02
Respondents heard about insurance (%)	93.06
Household had some damage in different assets damage during last 10 years (%)	50.89
Household had some damage in productive equipment during last 10 years (%)	13.39
Household have electricity access (%)	67.46
Household having access to arsenic free tube well water (%)	54.07
Access to sanitary latrine (slab toilet and concrete toilet) (%)	77.88
Use of soap after using toilet (%)	57.24
Use of tin as wall material (%)	63.0
Use of tin roof material (%)	79.27
Use of mud as floor material (%)	94.15
Average number of earning members	1.48
Ratio of earning member to household size	0.32
Proportion of households with microcredit membership	59%
Individuals having smoking habit (%)	12.78
Individuals having the betel leaf eating habit (%)	29.78
Age structure of the surveyed individuals (%)	
• <15 years	36.80
• 15-29 years	24.81
• 30-49 years	24.53
• 50-64 years	9.82
• >64 years	4.04

Source: Microinsurance, InM 2017

About 93 percent respondents have heard about insurance. Nearly 51 percent households had some damage of assets like living house, homestead land, farmhouse, fishing farm, etc., and about 13 percent households had some damage in productive equipment like irrigation equipment, cultivation equipment, harvesting equipment, fishing net etc. during the last 10 years. About 13 percent and 30 percent individuals have smoking and betel leaf chewing habits respectively (Table 4.1). Village doctors and salesmen of the pharmacy are the nearest health care providers for about 70 percent and 17 percent of the households respectively.

4.2 Financial Behaviour of Survey Households

We have classified the credit market into formal credit market (FCM), microcredit market (MCM) and informal credit market (ICM) for the purpose of the present analysis. Overlapping is identified with specification of access to multiple credit markets. Regardless of overlapping, most of the households have access to micro and informal credit. It does not necessarily imply that all of them have access to both the markets simultaneously.

Access to credit

The choice of credit market depends on several factors – transaction cost, interest rate, flexibility in contract, existence of wide range of loan products etc. One of the determinants is transaction cost of borrowing, which is a sum of interest and non-interest costs. As a rational individual, the borrower will always try to minimise his/her transaction cost. Existing literature suggests that in Bangladesh, average lending interest rate is highest in informal market among all markets, and lowest in the formal market. For microcredit market, it is higher than formal but lower than in informal market. Borrower's demand and need for loan is an important factor while making the choice. Around 57 percent take credit from any market, i.e., from banks, MFIs and cooperatives. Among them, only 3.5 percent of households have access to formal credit and around 54.9 percent have access to microcredit. Interestingly, informal credit is still dominant (74.6 percent) (Table 4.2). Formal market is restricted for the poor. Therefore, the poor households have access only to microcredit and informal credit markets.

Regardless of overlapping, most households (around 88 percent) have access to informal or microcredit markets in all study areas. It does not necessarily imply that all of them have access to both markets simultaneously, there may be overlapping. Informal borrowing is very popular in Patuakhali, Satkhira, Kurigram and Cox's Bazar. The shares of households borrowing from informal sources are 80 percent, 93 percent, 92 percent and 92 percent respectively in these four districts. Despite rapid expansion of MFI sector in the country, a significant number of the poor households are still dependent on informal borrowing.

Access to bank credit is nil in Sunamganj district and, in Jamalpur and Kurigram districts, very small percentages of households access credit from banks or co-operatives (2 percent). The figures show that, at the aggregate level, around 55 percent of the households have access to microcredit, suggesting that there is a scope of expanding the microcredit market as a high percentage of poor households (around 75 percent) take loans from informal credit market. The

highest expansion of microcredit market is in Sunamganj, Jamalpur and Kurigram (around 60 percent).

Table 4.2: Households Accessing Credit by District

Area	Access to Informal or Microcredit Market (%)	Access to Microcredit Market (%)	Access to Bank & Others (%)	Access to Informal Market (Cash Credit) (%)
Patuakhali	84.52	55.95	4.17	80.36
Satkhira	96.43	48.21	6.55	93.45
Sunamganj	83.93	62.5	0	54.17
Jamalpur	72.62	60.71	1.79	35.71
Kurigram	96.43	58.93	2.98	92.26
Cox's Bazar	94.64	42.86	5.36	91.67
Aggregate	88.1	54.86	3.47	74.6

Source: Microinsurance Survey, InM 2017

Compared to the formal markets, the terms and conditions of the informal credit market are more flexible. Given the strong social bond, households prefer to borrow from relatives and friends. However, it also depends on households' production capacity and transaction cost. Additionally, it is evident that dominating share of informal credit market originates from the need for non-economic loans like repairing the house after natural disaster, social ceremony, consumption, education and medical care (Hussain and Bayes 2009). On the other hand, they tend to borrow from institutional sources for using the loan in productive purposes such as agricultural and non-agricultural investments. Therefore, loan products are an important determinant of choice of access to different credit markets. Not all borrowing poor households can meet their demand by borrowing from either informal credit or microcredit markets. As both markets have some inherent restrictions like loan fund limit in informal credit market and loan size ceiling in microcredit market, borrowers may be partly credit-rationed in microcredit and informal credit markets. Given such probability of credit rationing, the terms and conditions would matter in accessing credit in different markets. However, the fact remains that informal credit market is still a major source of finance for the poor households.

Access to savings

Given the characteristics of the financial institutions, it is useful to know the access to savings of the households. From the study, it is seen that, among the institutions, poor households mostly save with MFIs. Around 56 percent of the households save with MFIs and only around 3 percent deposit in banks (Table 4.3). 13 percent households have deposit pension schemes (DPS) in banks. Most of the households (95 percent) have some sort of informal savings and the amount is around BDT 2,000.

Table 4.3: Households with Savings in Different Institutions

Types of Savings	Percentage of Household having Savings	Average Savings Amount (BDT)
Savings/ Fixed Deposit in MFIs	56	5,618
Savings/ Fixed Deposit in Banks	3	89,229
DPS	13	20,432
Life Insurance Premium	7	14,284
Lending to others	7	48,315
Deposit with other persons	1	43,554
Savings at informal cooperatives	2	3,183
Cash in hand	95	1,992
Ornaments, gold/silver	97	12,664

Source: Microinsurance Survey, InM 2017

Access to insurance

In Bangladesh, households recurrently face various types of adverse shocks that can be broadly categorised into two types: idiosyncratic (such as, death or illness of household head) and covariate (e.g. damage of properties due to flood or other disasters). In principle, households can cope with these shocks well if they have access to formal insurance mechanisms. Unfortunately, formal insurance industry is still less developed in Bangladesh; therefore, poor households often resort to informal insurance mechanisms to cope with these shocks.

In the present study, 8.4 percent of the households are observed to have life insurance coverage and 54.9 percent households are under loan insurance coverage provided by MFIs (Table 4.4). Life insurance coverage is highest in Satkhira district (around 19 percent) and lowest in Jamalpur district (around 2 percent).

Table 4.4: Percentage of Households with Insurance Coverage

District	% of HHs under Life Insurance Programme	% of HHs under Loan Insurance (MFI) Programme
Patuakhali	4.76	55.95
Satkhira	19.05	48.21
Sunamganj	11.31	62.5
Jamalpur	2.38	60.71
Kurigram	6.55	58.93
Cox's Bazar	6.55	42.86
Aggregate	8.43	54.86

Source: Microinsurance Survey, InM 2017

4.3 Health-Related Outcomes: Nature of Morbidity and Coping Mechanisms

We have illustrated here various health related outcomes of the sample population, such as self-reported illness profile, healthcare seeking behaviour, out-of-pocket payments for health care, and coping mechanism.

Self-reported illness profile

The respondents were asked whether any member in the household had any illness episode for the last three months preceding the interview. About 49 percent of the individuals had some sort of self-reported morbidity during the last three months preceding the interview (Table 4.5).⁷ There are large variations in self-reported morbidity across geographical regions. The morbidity is highest in Satkhira (about 80 percent) followed by Cox's Bazar (about 53 percent). Patuakhali has the lowest morbidity (about 35 percent). Sunamganj and Kurigram have similar morbidity (about 42 percent) where this is a bit higher in Jamalpur (about 44 percent).

About 42 percent of the sick individuals had general cough, cold and fever (Table 4.5). The other major self-reported ailments were gastrointestinal disorder, diarrhoea, typhoid, weakness, backache, stomach pain, body pain, jaundice, blood pressure, fracture etc. There are quite variation in self-reported disease symptoms across the regions.

Table 4.5: Self-Reported Illness Profile

Self-reported illnesses	Patuakhali % (n)	Shatkira % (n)	Sunamganj % (n)	Jamalpur % (n)	Kurigram % (n)	Cox's Bazar % (n)	Total
Individuals having any illness episode	35.43 (265)	79.54 (595)	42.26 (426)	44.36 (342)	42.72 (317)	52.57 (501)	49.22 (2446)
Distribution of illness episodes by different symptoms							
Fever, cough & cold	47.91	38.83	45.77	40.93	41.64	39.13	41.74
Gastrointestinal disorder	0.38	2.02	4.93	3.51	2.84	5.19	3.31
Diarrhoea	4.15	2.18	2.58	0.58	4.73	6.39	3.43
Typhoid	3.02	1.51	1.17	2.34	1.26	1.8	1.76
Weakness	2.26	1.51	4.46	2.34	0.95	0.6	1.96
Backache	5.66	4.2	1.64	3.22	4.1	5.39	4.01
Body pain	2.26	5.03	7.97	8.77	4.74	8.59	6.46
Stomach pain	3.02	4.03	3.76	3.8	4.1	6.99	4.46
Jaundice	0	0	0	0.88	0.63	2.2	0.65
Blood pressure	4.53	3.19	2.82	2.05	2.52	1	2.58
Fracture	0.38	1.34	0.7	0.58	0.63	1	0.86
Dysentery	0	0.67	3.05	0.29	2.52	0.4	1.14
Skin diseases	1.89	0.5	1.17	2.63	0.63	0.8	1.14
Eye diseases	3.02	2.52	0.94	0.29	0.95	0.8	1.43
Pneumonia	0	1.01	0.47	0	1.26	2.79	1.06
Heart disease	2.26	3.19	0.47	0.58	0	0.8	1.35
Breathing problem	3.02	3.03	1.41	1.75	3.15	1	2.17
Diabetes	3.77	1.01	0.23	0.58	2.21	1.2	1.31
Others	12.42	24.21	16.35	24.78	21.17	14	19.18
Total	100	100	100	100	100	100	100

Source: Microinsurance Survey, InM 2017

As given in Table 4.6, we have classified, for further analysis, the diseases into communicable diseases (CDs), non-communicable diseases (NCDs), and injuries and accidents (I & A). The

⁷ Almost all households had an illness episode during the last three months preceding the survey. The average duration of illness was about 11 days and absenteeism from work due to illness, on an average, was about 7 days.

diseases which are infectious and can be transmitted in various ways including physical contact, contaminated food, body fluids, objects, airborne inhalation etc. were considered as CDs while the diseases which are not infectious and cannot be transmitted were considered as NCDs. CDs are the dominant category of illness. About 51 percent of the self-reported ailments were CDs followed by NCDs (47 percent). Ahsan et al (2011) finds similar results. There is very little difference in the incidence of CDs and NCDs between different geographic locations.

Table 4.6: Self-Reported Ailments by Illness Categories

Area	CDs (n) %	NCDs (n) %	I & A (n) %
Patuakhali	(142) 53.99	(118) 44.87	(3) 1.14
Shatkhira	(278) 47.44	(294) 50.17	(14) 2.39
Sunamganj	(241) 57.52	(174) 41.53	(4) 0.95
Jamalpur	(176) 51.76	(157) 46.18	(7) 2.06
Kurigram	(165) 52.72	(142) 45.37	(6) 1.92
Cox's Bazar	(239) 48.09	(248) 49.90	(10) 2.01
Total	1241 51.32	(1133) 46.86	(44) 1.82

Source: Microinsurance Survey, InM 2017

The respondents were asked a structured question to report the severity of illness using the following option: bed ridden inability to stand properly, inability to sit properly, inability to walk properly, inability to do regular activities, and not much illness. About 41 percent of the sick persons were severely ill (bed ridden) and about 30 percent had inability to perform regular activities during the time of illness while about 22 percent were 'not much severe' in the category.

Healthcare seeking behaviour

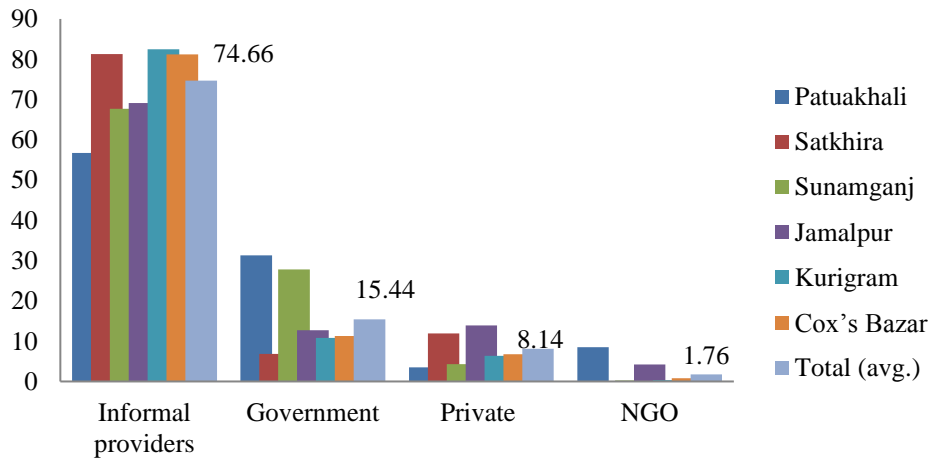
The respondents were asked about the type of provider visited at their first contact and the subsequent contacts. The results show that, irrespective of the geographical locations, almost all (over 97 percent) of the patients sought some kind of health care. About 87 percent of them visited only one healthcare provider, about 10 percent visited two and only 2 percent visited three providers.

At the first contact more than two-thirds (75 percent) of the patients visited informal providers (village doctors, pharmacy sales persons, etc.) whereas 68 percent of the patients who needed further treatments visited formal providers (government, private, NGO hospitals/clinics, etc.). This implies that primarily rural people seek healthcare from the informal providers and then switched to formal providers if the treatment from the first contact is not able to cure the

diseases. It is seen that 33 percent of the patients did not get recovery even after visiting the last contact. Proximity (26 percent) and low-cost treatment (21 percent) are the major reasons for the choosing the informal providers at the first contact whereas not getting well from the treatment of the earlier provider and the reputation of the second provider (19 percent) are the major reasons (49 percent) for choosing the second contact.

The use of formal healthcare is about 25 percent (15.4 percent, 8.1 percent and 1.8 percent respectively for government, private and NGO providers) at the first contact (Figure 1). The use of informal health care is quite high in the coastal areas (Patuakhali, Satkhira and Cox’s Bazar) and the *char* area (Kurigram) compared with *haor* (Sunamganj) and border (Jamalpur) areas.

Figure 4.1: Utilisation of Different Types of Healthcare by Individuals (%)



The respondents were asked whether any member of the households was admitted in hospitals during the past five years for any infirmity. About 46 percent of the respondents reported that they had at least one hospitalisation case during the past five years (Table 4.7). Satkhira had exceptionally higher hospitalisation rate (85 percent) while Jamalpur had lowest hospitalisation rate (20 percent). The respondents were also asked whether any member of the households was admitted in hospitals during the past three months preceding the survey. At the first contact, 3 percent of the individuals were admitted in hospital, average number of days needed to stay in hospital was 6 and average distance needed to travel was 5.7kilometers. At the second contact, 19 percent of the individuals were admitted in hospital, average number of days needed to stay in the hospital was 7 and average distance needed to travel was 26.8kilometers. This implies that patients who had to seek healthcare from more than one provider had to travel higher distances and mostly required in-patient care services. This is obvious, as the hospitals are usually located in urban areas and individuals of this study live in remote rural areas.

Table 4.7: Incidence of Hospitalisation during Last Five Years

	Household (n)	Household (%)	Individual (n)
Patuakhali (n=168)	68	40.48	73
Satkhira (n=168)	143	85.12	201
Sunamganj (n=168)	60	35.71	87
Jamalpur (n=168)	33	19.64	38
Kurigram (n=168)	65	38.69	77
Cox's Bazar (n=168)	93	55.36	159
Total (n=1008)	462	45.83	635

Source: Microinsurance Survey, InM 2017

Out-of-pocket payments (in BDT)

We extracted information on out-of-pocket (OOP) payments for each episode of illness over the last three months preceding the survey. We constructed OOP by adding costs of consultation, drug, diagnostic test, surgical operation, and hospital bed charges. The average OOP for each episode of illness is BDT 1745, which varies moderately across the geographical locations (Table 4.8). Cost of drug is the leading factor of OOP (about 56 percent) and lab, operation and hospital costs together constitute 18 percent. Ahsan et al. (2011) finds that drug accounts for about 60 percent of OOP. If we consider OOP for the first contact then the cost of medicine becomes higher (65 percent). The average cost of an episode of hospitalisation is about BDT 15,000, which varies moderately across the geographical regions with a minimum of BDT 9,900 in Sunamganj and a maximum of BDT 30,800 in Jamalpur (Table 4.9).

Table 4.8: Out-of-Pocket Payment (in BDT) for Each Episode of Illness

Areas	Medicine costs (in BDT)		Lab, operation & hospital cost (in BDT)		Transport & other cost (in BDT)		Package cost (in BDT)		Total cost (in BDT)	
	Average costs	% of total cost	Average costs	% of total cost	Average costs	% of total cost	Average costs	% of total cost	Average costs	% of total cost
Patuakhali	1244	51.46	815	33.73	358	15%	0	0.00	2417	100
Satkhira	1068	61.17	393	22.50	176	10%	108	6.18	1745	100
Sunamganj	831	69.88	156	13.11	96	8%	106	8.89	1189	100
Jamalpur	826	41.38	334	16.73	124	6%	712	35.68	1996	100
Kurigram	997	70.69	177	12.52	175	12%	62	4.38	1411	100
Cox's Bazar	975	51.21	193	10.12	312	16%	423	22.24	1903	100
Total	983	56.35	320	18.34	203	12%	239	13.70	1745	100

Source: Microinsurance Survey, InM 2017

Table 4.9: Cost (in BDT) of Treatment at Hospital

	Medicine Cost (in BDT)	Diagnostic, Operation & Hospital Cost (in BDT)	Transport & other cost (in BDT)	Total cost (in BDT)
Patuakhali (n= 73)	66%	21%	13%	23954
Satkhira (n= 201)	35%	53%	13%	14547
Sunamganj (n= 87)	67%	25%	8%	9908
Jamalpur (n= 38)	37%	47%	16%	30800
Kurigram (n= 77)	51%	38%	11%	15379
Cox's Bazar (n= 159)	74%	16%	10%	12243
Total (n= 635)	49%	39%	12%	15489

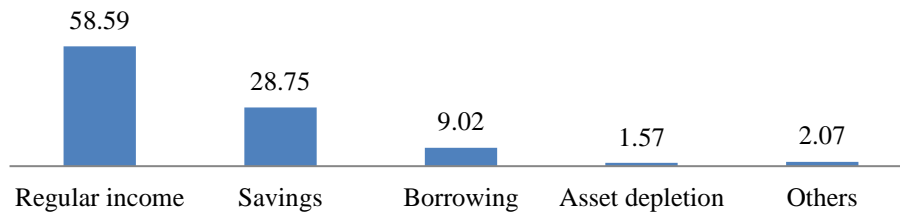
Source: Microinsurance Survey, InM 2017

Sources of financing

We asked the respondents regarding the main source of financing of OOP. The results show that regular income (about 59 percent), savings (about 29 percent) and borrowing (9percent) are the major sources of financing of OOP for outpatient care at the first contact. Loans (21 percent) along with current income (44 percent) and saving (23 percent) are the major sources of financing of OOP at the second contact. For hospitalisation, 24 percent used regular income, 20 percent used savings, 35 percent depended on loans, 11 percent depleted assets and 9 percent depended on aid/assistance.

The high costs of hospitalisation and the use of expensive sources for coping the hospitalisation costs by majority of the households imply that providing protection for hospitalised care through health insurance is important.

Figure 4.2: Sources of Financing OPP during First Contact (%)



4.4 Literacy or Knowledge about Insurance Products

As MFIs offer loan insurance product bundled with microcredit products, currently majority of the borrowers of microcredit market are under loan insurance coverage. In the survey area, around 55 percent households have access to loan insurance whereas, only 8 percent of households have access to life insurance. Therefore, portion of households with no access to

formal insurance is significantly high with 92 percent. The lack of access to insurance services could be attributed to low level of awareness.

Among the surveyed households, respondents were asked about different types of insurance. But it is apparent that people are aware of only life insurance (over 86 percent) and loan insurance (around 72 percent). Around 5 percent of the households know about health insurance. Very few households know about other types of insurance products, like crop, accident, business insurance etc. Another crucial finding is that, even though people are aware of insurance services, they may not be willing to use it. One of the reasons is that many households cannot afford to pay for the insurance premium while others do not think that insurance is needed or they simply cannot access it due to lack of institutions.

The government can play an important role in increasing awareness and encouraging private-sector initiatives. However, it is the financial institutions that can play a vital role in distribution of information by making all necessary information available and accessible to excluded consumers. Under the present study, various insurance products are intensely explained to the respondents prior to conducting the demand for health and property insurance assessment.

Table 4.10: Percentage of Households Knowing about Insurance Products

Type of insurance	Patuakhali	Satkhira	Sunamganj	Jamalpur	Kurigram	Cox's Bazar	Total
Life Insurance	67	98.21	98.21	75.6	86.9	85.12	85.12
Accident (disability) Insurance	1	2.38	0	3.57	0.6	6.55	2.38
Health Insurance	1	6.55	1.79	7.14	4.17	8.33	4.76
Property Insurance	1	1.19	0.6	1.19	1.79	1.79	1.29
Crop Insurance	1	0	0	0.6	0.6	1.79	0.6
Business Insurance	5	1.79	4.76	0.6	0	8.93	3.47
Loan Insurance	61	83.93	71.43	82.14	74.4	55.95	71.43
Livestock Insurance	0	0.6	0	1.19	2.98	0.6	0.89
Poultry Insurance	0	0.6	1.79	0.6	1.19	0	0.69
Fish Farm Insurance	0	0.6	1.19	0.6	0.6	0	0.5

Source: Microinsurance Survey, InM 2017

4.4 Micro Health Insurance Product Development

Several steps are necessary for developing health insurance products, such as, demand assessment (assessing that any initiative is response to real risk management needs); premium prediction; finding the distribution channels; determining the nature of insured parties (compulsory or voluntary enrolment); determination of the perils that insurance contract cover; analysis of the insurance, administrative models and loss assessment procedures, together with determination of associated costs; identifying possible complementary role for the government. In any given situation, the results of investigating these issues will determine whether insurance

is the most efficient and effective mechanism to manage a particular area of risk. Here, we have provided analysis on some of the issues based on the household survey data.

Demand for health insurance

We used WTP method for understanding the demand for health insurance. For eliciting WTP, we made some modifications of the hospital cash benefit package offered by DIISP project of PKSF for protecting the earning loss of the poor due to hospitalisation. The packages offered for eliciting WTP are:

Package A: A one year long hospital cash benefit policy in which everybody in the household aged less than 70 years is eligible for inclusion. The benefit of the insured household is limited to a maximum of 30 days (individually or jointly by the insured members in the household) except the first day (first 24 hours) of hospitalisation. The daily cash benefit is BDT 400 and annual premium for a maximum of five members is BDT 500. Additional BDT 100 is needed for inclusion of any additional member.

Package B: A one-year long hospital cash benefit policy in which everybody in the household aged less than 70 years is eligible for inclusion. The benefit of the insured household is limited to a maximum of 30 days (individually or jointly by the insured members in the household) except the first day (first 24 hours) of hospitalisation. The daily cash benefit is BDT 300 and annual premium for a maximum of five members is BDT 375. Additional BDT 75 is needed for inclusion of any additional member.

Before offering any package we provided a detailed idea about health insurance and how it works to each respondent. Then, we asked the respondent whether he/she had understood what was explained. We continued the interview with them who provided affirmative answer. For negative responses, the materials were explained further until getting an affirmative response. After explaining all the criteria and norms (e.g. eligibility for inclusion and receiving benefit, benefit limit, premium is payable one time and non-returnable) of health insurance, we described the packages as depicted above to the respondent at the same time. Afterwards, we sought the response whether she/he had understood the packages. For any negative response, the two packages were explained again until receiving affirmative response. Finally, we asked to express their WTJ between the packages.

The results given in Table 4.11 show that more than two-thirds (71 percent) of the respondents are willing to join Package A while less than one-third (about 28 percent) are willing to join Package B. There are quite large variations in WTJ Package A across the geographical regions. The lowest WTJ Package A is in Kurigram (about 50 percent) and the highest is in Cox's Bazar (about 90 percent). In general, the coastal areas have higher WTJ (about 90 percent in Cox's Bazar and 88 percent in Satkhira, and 70 percent in Patuakhali) compared to *char* (50 percent) and *haor* (60 percent) areas. It is noticeable that people have motivation to pay higher premium

for receiving higher benefit. It is also noticeable that overwhelming majority (98 percent) of the people is willing to buy any of the two hospital cash benefit packages offered. The results depicted above give an indication that there is huge demand for insurance for hospitalisation care in the rural areas.

Table 4.11: WTJ Hospital Cash Benefit Package

District	Geographic Characteristics	Package A %(n)	Package B %(n)	Overall WTJ (Package A and Package B) %	Not WTJ (any package) %(n)
		71.43 (120)	27.38 (46)		1.19 (2)
Patuakhali	Coastal	88.1	10.71	98.81	1.19
Satkhira	Coastal	(148)	(18)	98.81	(2)
Sunamganj	<i>Haor</i>	58.93 (99)	41.07 (69)	100	0 (0)
Jamalpur	Remote	67.26 (113)	31.55 (53)	98.81	1.19 (2)
Kurigram	<i>Char</i>	50.6 (85)	47.62 (80)	98.22	1.79 (3)
Cox's Bazar	Coastal	90.48 (152)	7.14 (12)	97.62	2.38 (4)
Total		71.13 (717)	27.58 (278)	98.71	1.29 (13)

Source: Microinsurance Survey, InM 2017

Premium prediction

A number of steps are needed for developing any insurance product, such as conducting institutional assessment and market research; building partnership (if applicable); product designing; premium determination and making business plan; pilot testing; roll out; and continuous review (McCord 2011, Wrede and Phily 2009). Some basic principles need to comply for designing insurance products: the event must be random (i.e. occurs purely by chance); loss must be definite in terms of timing and amount; loss must be significant; rate of loss must be predictable; loss must not be catastrophic to the insurer, and premium rates must be affordable otherwise it will not be an accessible financial service for the beneficiaries (Wrede and Phily 2009).

The following issues needs to be taken into account while calculating premium for health insurance: level of risk; insurance mode; insurance coverage, technical result (bonus); and allowance and discount. Further, premium should be not too high and not too low. Too high premium results low take-up value and adverse selection; and too low premium results poor financial outcome and low chance to adjust the price in the short run.

Like conventional insurance, the main objective in calculating premium for micro health insurance products is to derive rates that will sufficiently cover all costs and generate a 'fair' return for all partners involved. In the absence of permanent subsidies, even not-for-profit programmes must produce a surplus to finance future growth and build up contingency reserves for unexpected claims fluctuations not covered by reinsurance. In general, premium rates should

be set so that the actuarial present value of all premium collected over the duration of coverage will be sufficient to fund the expected present value of future claims and expenses incurred on the same block of business and still generate a ‘modest’ surplus.

Thus, our aim is to derive the annual gross premium, which consists of net premium and loading costs. Net premium includes risk premium (or expected cost of claims) and security margin or safety loading. The purpose of the security loading is to increase the chances of having sufficient net premium to cover claims in most of the future period. A second margin may also be added to compensate for the uncertainty of the assumptions made in the risk premium calculation. The loading cost includes administrative costs (start up and development costs, operating costs, safety margin, reinsurance costs, tax, profit margin/surplus). Risk premium is the likelihood of insurance claim times expected amount of insurance claim. In our case, risk premium for hospitalisation is the probability of hospitalisation times the average costs of each episode of hospitalisation. The risk premium estimates the claim amount by the insured.

We need historical data for appropriate prediction of the probability of hospitalisation. However, due to absence of such data in Bangladesh context, we have attempted to use some proxy measure to predict the probability of hospitalisation. In the survey, we asked the hospitalisation status of the last three months and last five years preceding the survey. However, the former does not provide us the annual status of hospitalisation. Thus, we have preferred using the information obtained from the later although there is some chance of recall bias.

We have attempted to predict the gross premium (Table 4.12) by summing the risk premium (i.e. expected loss, which is the multiplication of the hospitalisation rate and average cost of an episode of hospitalisation) and loading costs (which is assumed 25percent of the risk premium where 15 percent is taken as administrative costs, 7.5 percent as safety margin and 2.5 percent as reinsurance factor).⁸

It may be mentioned here that up to 32.5 percent loading costs including agency remuneration is suggested in the guideline developed for determining premium of microinsurance by ILO (Wrede and Phily 2009). This is to note that we did not include any agency remuneration as we assume that not-for-profit organisations will play the main role in implementing micro health insurance products in Bangladesh. We did not include value added tax (VAT) component assuming that government will exempt VAT for this type of health protection scheme to be offered for serving the poor.

The average risk and gross premium predicted in Table 4.12 is BDT 386 and BDT 482 respectively. The predicted premiums (both risk and gross) vary across geographical regions. It is noticeable that the predicted average gross premium (BDT 482) for about BDT 15,000 sum

⁸ The gross premium is calculated as follows: Gross premium = {Risk premium = [likelihood of insurance claim (i.e., hospitalisation rate in our case)] times [expected amount of insurance claim (i.e., average cost of an episode of hospitalisation in our case)] + Loading cost (i.e., 25% of Risk Premium)}

insured is close to the premium offered for Package A (BDT 500) of hospital cash benefit of maximum of BDT 12,000 (30 days x 400 per day) which is preferred by the majority of the respondents. This implies that the predicted premium is consistent with the amount of premium that the people want to pay for a sum insured is BDT 12,000.

Table 4.12: Predicted Premium for HI Package

Area	Total number of individuals including the death during last five years	Number of individuals needed hospitalised care during last five years	Average annual hospitalisation rate or probability of hospitalisation	Average costs of an episode of hospitalisation	Risk premium	Loading factors including administrative costs, safety margin and reinsurance	Gross premium
Patuakhali	778	73	0.02	23954	450	113	563
Satkhira	765	201	0.05	14547	764	191	955
Sunamganj	1021	87	0.02	9908	168	42	211
Jamalpur	792	38	0.01	30800	296	74	370
Kurigram	772	77	0.02	15379	306	77	383
Cox's Bazar	977	159	0.03	12243	398	99	497
Total	5105	635	0.02	15489	386	96	482

Source: Microinsurance Survey, InM 2017

4.5 Availability of Health Care Services

As depicted earlier, there is a huge demand for health insurance and the predicted premium also goes with the amount of premium they want to pay for a given sum insured. Now we concentrate to explore the adequacy of eligible facilities for providing health care, especially hospitalised care. We have conducted a health care facility survey in all the districts (Patuakhali, Satkhira, Sunamganj, Jamalpur, Kurigram and Cox's Bazar) where household survey was conducted. We selected 12 upazilas from six districts taking randomly two from each district. Among the public facilities, district hospitals and upazila health complexes from each selected upazila were surveyed from each district. We also surveyed well-known private or NGO hospitals providing inpatient care in each selected district and upazila.

The survey mainly focused on upazila and district level health care facilities. As the union level government facilities (i.e. union sub centres USCs, and Community Clinics CCs) only provide outpatient consultation and distribute drugs subject to availability. Typically the position of doctors at these facilities are either vacant or the posted doctors are absent (e.g. on lien to a higher-level facility). Community Clinics by default are run by the lower tier health and family planning workers, e.g. Health Assistants (HAs) and Family Welfare Assistants (FWAs). In several cases, it is found that the sub-centres remain closed (during working hours) due to shortage of manpower and/or drug non-availability. Sometimes there is also no visible infrastructure.

A total of 47 facilities were surveyed in the six districts. Of these, 27 are at the district level including five district hospitals (DHs), 21 private and one NGO hospital.⁹ Similarly, there are 20 hospitals at the upazila level of which 12 are upazila health complexes (UHCs) and eight private hospitals (Table 4.13).

Table 4.13: Distribution of Surveyed Health Care Facilities

Ownership	District	Upazila	Union	Total
Government	5	12	0	17
Private	21	8	0	29
NGO	1	0	0	1
Total	27	20	0	47

Source: Microinsurance Survey, InM 2017

Structure of Healthcare facilities:

All 47 facilities have brick built structures. Water is provided through supply lines in two district hospitals, two upazila government hospitals and six private hospitals. The rest of the facilities have their own tube well or pump. Either the Power Development Board (PDB) or Palli Bidyut Samity supplies electricity and load shedding is a common feature. District level facilities are more privileged having an average of 22 hours of electricity connection in a day. However, the figure drops for facilities at upazilas to 18 to 19 hours per day. Almost all facilities at district and upazila levels have own generators and most of them are in active condition. However, 20 percent of the generators in the district hospitals are inactive either due to lack of proper maintenance or scarcity of fuel. In comparison, all private hospital generators are properly maintained and found to be in working conditions. IT connectivity and communication facilities still lag behind in the survey areas. Only seven facilities report that they have IT support and use electronic method for preserving the patients' data. Rest of the facilities record data manually and preserve the same for varying lengths of time. In case of transport facilities, all hospitals at both district and upazila levels possess ambulances, but only 50 percent of these are found to be in working condition.

The government facilities at both district and upazila levels have more in-patient beds than their private counterparts. There are on an average 165 beds at DHs and 44 beds at UHCs. These beds are arbitrarily allotted to different wards. Private facilities on an average possess 27 beds at the district level and only 17 at the upazila level (Table 4.14).

Most facilities surveyed allow for dedicated male and female 'wards'. In the DHs, it is found that on an average more beds are allotted to male wards (40) than the female wards (33). A similar picture prevails at the UHCs (18 in the male wards 12 in female wards). In upazila level private hospitals, an average of 5.80 beds are found in female wards vis-à-vis 5.17 in male

⁹ We could not survey the district hospital in Jamalpur due to some unavoidable reasons.

wards. In the district private/NGO hospitals, the male and female wards appear to have equal number of beds (around 5 beds). Not all the facilities provisioned for dedicated female wards; though these would typically have a ‘maternal’ ward or ‘female and child’ ward, descriptive of the actual nature of many female wards. One district hospital and four UHCs have a ‘female and child’ ward whereas four UHCs have a ‘maternal’ ward. On the other hand, nine district level private hospitals have ‘maternal’ wards.

A post-operative ward is also found in four district hospitals, which clearly shows that surgery is not performed in all of them. Whereas sixteen private hospitals at district level reported that they have post-operative ward and number of beds are on an average 3.13.

Most of the private hospitals, eight at the district and six at the upazila level reported that they have single cabin facilities. Nineteen private hospitals in district are found to have multiple-bed cabins. Only three government facilities at district and four at upazila reported to have the same feature. Only two district government hospitals and one private hospital at the upazila level report that they possess an ICU facility (Table 4.14).

It is evident from the above findings that the government facilities are endowed with more beds than the private ones and their allotment is more in accordance with the number and type of patients they treat. In contrast, private facilities appear to be more concerned with the relatively affluent patients while focussing mainly on the lucrative surgical market. Cabin is hallmark for these facilities and almost all of these maintain cabins for the patients.

Table 4.14: Average Number of Functional Beds

Name of wards	District hospital (5)	District private/NGO hospital (22)	Upazila health complex (12)	Upazila private hospital (8)
	Mean (n)	Mean (n)	Mean (n)	Mean (n)
Male ward	40.6 (5)	5.47 (16)	17.50 (12)	5.17 (6)
Female ward (General)	33.5 (4)	4.37 (16)	11.63 (8)	5.80 (5)
Female ward (Maternal)	24 (4)	5.33 (9)	5.75 (4)	2.33 (3)
Female ward (Both)	25 (1)	5 (2)	16.67 (3)	12 (1)
Child ward	44 (4)	6.33 (3)	8.50 (4)	0 (0)
Female & child ward	22 (1)	14.50 (2)	17.50 (4)	5 (5)
Post-operative ward	6 (4)	3.13 (16)	2.50 (4)	1 (1)
Infectious disease ward	5 (2)	0 (0)	3 (1)	0 (0)
Cabin (single bed)	6 (1)	8.88 (8)	2.75 (4)	2.67 (6)
Cabin (multiple bed)	17.33 (3)	10.11 (19)	2.50 (4)	4 (3)
ICU/CCU	5 (2)	0 (0)	0 (0)	1 (1)
Others	17 (4)	1.33 (3)	3.80 (5)	0 (0)
Average beds per facility	165.20 (5)	27.14 (22)	44.42 (12)	16.75 (8)
Total functioning beds	826	597	533	134

Source: Microinsurance Survey, InM 2017

Medical professionals:

The number of physicians employed the nature of their employment and areas of specialisation have been elucidated in this healthcare facility survey. The districts selected for the survey are more or less remote and provide fewer amenities to the doctors. So the government facilities are in serious dearth of physicians and many posts remain vacant. The total number of physicians in private hospitals in district (350) and upazila level (56) is higher in comparison to the number of beds the private facilities possess and the number of patients they treat. There are 120 physicians in the five DHs and 99 in 12 UHCs (Table 4.15).

Private hospitals engage more physicians with higher qualifications than do the public hospitals. A total of 350 physicians practice in private facilities at the district level of which 93 have MBBS degree and the rest have higher degrees. At the upazila level, the number of higher degree holders is 30 versus 26 MBBS. On the contrary, the DHs have almost equalled number of MBBS

and higher qualified physicians, whereas, UHs are mostly comprised of fresh MBBS graduates. Despite the creation of new consultant posts, the number of higher degree holders is only 14 in number in 12 in UHCs (Table 4.15).

Table 4.15: Distribution of Physicians by Qualification

Educational qualification	District Govt.	District Private	Upazila Govt.	Upazila Private	Total
MBBS	77	93	85	26	281
BDS	0	1	0	0	1
FCPS	22	83	10	22	137
FRCS	1	10	1	2	14
MD	5	11	0	1	17
MS	4	19	1	0	24
Diploma	0	3	2	0	5
MRCP	9	57	0	1	67
Others	2	73	0	4	79
Total	120	350	99	56	625
Doctor- Bed Ratio	1:6.88	1:1.71	1:5.38	1:2.39	1:3.34

Source: Microinsurance Survey, InM 2017

All the doctors in government facilities, both at district and upazila levels, are full time employees. However, in private facilities only about 19 percent doctors are full time employees. Majority of physicians of the government hospitals work in the private facilities either as part-time or on-call basis. On-call doctors are more in upazila level private hospitals (62.5 percent) than the district level private facilities (50.14 percent). On the other hand, part time doctors are more prevalent at the district level (30.48 percent) than the upazila level (19.64 percent) facilities.

Again, many doctors come from the nearby bigger and prosperous divisional towns during the weekend and serve as part-timers. These doctors are posted in mainly medical college hospitals and are specialised in any particular area of medical science. Therefore, the private hospitals employ less number of full time doctors as they take the liberty to engage the doctors of government facilities on a part time or on call basis.

The survey also sought to delineate a picture of the current situation of specialised treatment in the survey area. For the purpose, the specialty of the doctors employed in facilities is analysed (Table 4.16). Overall, about 26 percent are specialised in medicine, about 17 percent in general surgery and 16 percent in surgery. The analysis shows that a large portion of doctors (about 47percent) in UHCs has specialisation in medicine, where as in DHs, 29 percent specialised in medicine. In private hospitals, the figure is as low as 21 percent in district level and 18 percent in upazila level.

About 21 percent doctors of the private facilities in district are gynaecologists, whereas the figure is almost 23 percent for upazila level private hospitals. In DHs, about 8.33 percent doctors are specialised in gynaecology, which is 7.14 percent in UHCs.

About 18.23 percent of doctors are surgeons in the district level and 33.93 percent in the upazila level private hospitals, whereas the figure is 12.5 and 6.12 percent respectively for DHs and UHCs. The higher number of surgeons and gynaecologists in the private facilities indicates that these facilities mainly provide surgical, gynaecological and obstetrical operative procedures. For the reason, the number of anaesthesiologists is also high in number.

Table 4.16: Distribution of Doctors by Specialisation

Specialty	DHs	District Private /NGO	UHCs	Upazila Private	Total
	% (n)	% (n)	% (n)	% (n)	% (n)
General surgery	12.5 (15)	18.23 (64)	6.12 (6)	33.93 (19)	16.64 (104)
Gynecology	8.33 (10)	21.08 (74)	7.14 (7)	23.21 (13)	16.64 (104)
Medicine	29.17 (35)	21.08 (74)	46.94 (46)	17.86 (10)	26.4 (165)
Heart/ Cardiology	5.83 (7)	3.99 (14)	0 (0)	0 (0)	3.36 (21)
Eye	2.5 (3)	1.71 (6)	0 (0)	0 (0)	1.44 (9)
Dental	3.33 (4)	1.14 (4)	6.12 (6)	0 (0)	2.24 (14)
ENT	1.67 (2)	3.99 (14)	0 (0)	0 (0)	2.56 (16)
Orthopaedic	4.17 (5)	5.13 (18)	3.06 (3)	8.93 (8.93)	4.96 (4.96)
Anthologist	5 (6)	6.84 (24)	1.02 (1)	8.93 (5)	5.76 (36)
Urology	0 (0)	2.85 (10)	2.04 (2)	0 (0)	1.92 (12)
Medical Officer	15 (18)	0 (0)	8.16 (8)	5.36 (3)	4.64 (29)
Others	12.5 (15)	13.96 (49)	19.39 (19)	1.79 (1)	13.44 (84)
Total	100 (120)	100 (351)	100 (98)	100 (56)	100 (625)

Source: Microinsurance Survey, InM 2017

Other professionals

The study findings also show that a number of other professionals, e.g. , nurses (matron, senior staff nurse, staff nurse and assistant nurse), technicians (X-ray, ECG, ultra-sonography and laboratory), compounders, ward boys, receptionists, IT support staffs, office assistants, guards, cooks, drivers, OT assistants, cashier, store keepers and pharmacists are also employed by the

hospitals. The government facilities employ professionals of various categories in accordance with the regulations of the Directorate General of Health Services (DGHS), whereas the private facilities employ professionals on an essential need basis and in minimum numbers.

If we look at the number of nurses employed in the health facilities, we see that Matrons, a specific designation for the head nurse, are mostly seen in the government facilities. Similarly, the average number of nurses of all tiers employed is higher in government hospitals. Though the government facilities are far bigger in terms of number of beds than the private ones, those facilities relatively have fewer nurses than required. Many posts remain vacant.

The educational level of nurses is also explored. A majority of the nurses (59 out of 94) claimed to have completed diploma courses in both type of facilities. Otherwise, trained nurses are found more in the private hospitals than in the district level. Very few nurses (only 1 out of total 94) completed BSc in nursing (Table 4.17).

Table 4.17: Distribution of Nurses by Qualification

Educational Qualification	DHs	District Private hospitals	UHCs	Upazila Private hospitals	Total
SSC	2	7	2	6	17
HSC	1	14	1	1	17
Diploma	10	27	12	10	59
BSc	0	1	0	0	1
Total	13	49	15	17	94
Doctor-Nurse ratio	2:1	2:1	2:1	2:1	2:1

Source: Microinsurance Survey, InM 2017

The other distinctive group of supplementary staff is the technicians. The maximum number of technicians is found to belong to laboratory staffs. The hospitals contain X-ray, ECG and Ultrasonography technicians who comprise about 5.26 percent, 3.95 percent and 3.13 percent of the total support staffs respectively of those facilities.

Ward boys are another indispensable staffs. They are found more in the private facilities (6.48 percent in district and 9.46 in upazila). In the government facilities, they are also employed in relatively large numbers (3.85 percent DHs and 8.33 percent in UHCs).

The other professionals like OT assistants, office assistants, pharmacists etc. also comprise a significant portion of the support staffs. They may be employed in various designations and in various capacities (Table not shown).

Emergency services

All government health facilities at all levels under the purview of health facility survey reported that emergency services are available at their respective hospitals. On the other hand, five of the eight upazila private hospitals reported that they treat medical emergencies.

Although all government facilities provide emergency services to the public, most even at the district level fail to cater to some of the emergency conditions. This phenomenon occurs due to the dearth of specialist of certain diseases e.g. absence of an orthopaedic surgeon hinders the availability of treatment for fractures of different kinds. The basic emergency management are provided by the emergency medical officers and then if necessary the patients are referred to the nearest higher tier facility, mainly to the medical college hospitals. The government hospitals appear to provide an admirable range of services. In many ways, these facilities are the last resort especially for the poor patients. They usually provide basic treatment and then refer the patients for further treatment to the district level facilities. The private facilities in the upazila level also behave in a similar manner although relative scarcity limits their ability to offer the range of services significantly relative to the government hospitals.

In-patient surgical services

In this section, we look at the surgical services provided by the facilities under the purview of this study. The mostly performed surgeries can be categorised as gynaecological and obstetric in nature followed by general surgeries. More specific surgeries are done in a sporadic manner based on the local availability of specialist surgeons.

The most performed surgeries in both the government and private facilities are Caesarean section and MRD&C. Whether these huge numbers of Caesarean sections as indicated are done upon patients' interest or recommended by physicians seeking higher income is a phenomenon that can be subject of further research. On average, the district hospitals perform 53 Caesarean sections a month. Private facilities in district level perform 49 Caesarean deliveries a month while the upazila private facilities carry out on an average of 20 such deliveries. Menstruation regulation is done more in the government district hospitals (19), than in private district facilities (16). Other gynaecological surgeries like hysterectomy are also performed in the private hospitals in districts (Table not shown). It has been observed that the private facilities employ a formidable number of gynaecologists and they appear to thrive on the Caesarean sections they perform.

Appendices are the most performed general surgery for all types of facilities concerned. Almost equal rate of this surgery is performed in the government and private hospitals (6 vs. 6) at district but in the upazila level this surgery is performed more in private than government facilities (10 vs. 5)(Table not shown).

Other standard surgeries like GI perforation, intestinal obstruction, Cholecystec to my (gall stone) and hernia are also performed regularly in both government and private facilities. The district level hospitals are endowed with more surgeons and the surgeries are performed in greater numbers and almost in all facilities. On the contrary, these surgeries are performed only in a few UHCs and private facilities in upazila level. The main reason for this can be correlated

with the number of surgeons posted in the UHCs is far less satisfactory as well as in the patients' demand for such services.

Apart from the gynaecological and 'general' surgeries only few other surgeries are performed in the facilities examined under the study. Among these, fractures may be mentioned. In district hospitals, a large number of patients suffering from cuts, wounds and fractures are admitted. This fact can be verified by the staggering figure of fractures (50) and cuts and wounds (119) cases attended by the district hospital per month. Upazila health complexes also provide some treatment in this regard. They also attend more cuts and wounds cases (17) every month than any other category (Table not shown). The private facilities in districts usually attend to the orthopaedic cases based on the availability of the orthopaedic surgeons.

Again the dismal picture of health care in terms of surgical treatments stands out especially at the upazila level. The main reason behind the unavailability of many surgeries except Caesarean sections in the upazila level is the dearth of specialist doctors. So the patients have to go to the district hospitals for the treatment. If the specialised treatment is not rendered by the district level hospitals, then one has to travel to the nearby district where there is a medical college. This is one factor responsible for increased healthcare expenditure for the poor patients.

In government facilities, both in districts and upazilas, no fees officially charged for the services rendered by surgeons, assistants or anaesthetists. So the patients need to buy only the drugs from outside if there is no supply of drugs in the facilities, as of course the bed charge. So the charges depicted here for the surgeries performed in the government facilities consist of only the cost of drugs. On the other hand, the costs for the surgeries performed in the private facilities comprise of charges for professionals, drug costs and the charges for the type of facilities. For caesarean section, private hospitals at district level charges almost double of the upazila level (BDT 15,642 vs. BDT 7,362). Similar scenario persists for general surgeries (Table 4.18)

Table 4.18: Total Charges (in BDT) for Different Surgical Services

Surgery	DHs	District Pvt/NGO	UHCs	Upazila Private
	(5)	(22)	(12)	(8)
	Mean	Mean	Mean	Mean
	(n)	(n)	(n)	(n)
C-section	667 (3)	15643 (21)	-	7362 (4)
Hysterectomy	-	16214 (14)	-	7866 (3)
GI perforation	1300 (1)	16400 (4)	-	13500 (1)
Intestinal obstruction	733 (3)	17216 (6)	-	-
Appendicectomy	1366 (3)	15428 (14)	2500 (1)	6237 (4)
Gall stones	1100 (2)	17838 (13)	2000 (1)	6650 (3)
Hernia repair	700 (4)	11149 (14)	-	6666 (3)

Fracture	2750 (2)	26666 (9)	176 (3)	11900 (1)
Burn	1666 (3)	46750 (2)	173 (3)	7150 (1)
Cancer	2000 (1)	-	-	-
Cuts & wounds	1066 (3)	18000 (4)	682 (5)	14900 (2)

Source: Microinsurance Survey, InM 2017

In-patient non-surgical services

In this section, we concentrate on non-surgical cases, i.e. diseases which do not necessarily require any surgical intervention. For facilitation of the presentation and description, the diseases are classified according to the nature and which systems of the body these are affecting, e.g. infectious diseases, respiratory illnesses, gynaecological diseases, gastrointestinal diseases, paediatric diseases, major non-communicable diseases and ‘other’ diseases. In general, government facilities treat more non-surgical inpatient cases than the private ones in district and in upazila whereas, as seen earlier, private facilities conduct more surgical procedures.

Diarrhoea, malaria, COPD, and hepatitis treatment costs about BDT 6,483, BDT 3,100, BDT 10,737 and BDT 1,150 respectively in the district level private facilities. These services are almost absent in the upazila level private facilities. The Asthma, peptic ulcer and acute appendicitis treatment costs are almost the same in the district and upazila level private facilities (BDT 5,889 vs. BDT 6,300; BDT 8,500 vs. BDT 9,825; and BDT 12,930 vs. BDT 13,050 respectively). Treatment cost of heart diseases is quite higher in district level private facilities (BDT 26,200) compared to upazila private facilities (BDT 22,751). For some diseases the treatment cost is higher in upazila level private facilities compared to the district level. The upazila level private facilities charge BDT 16,800 and BDT 13,050 respectively for liver diseases and acute appendicitis whereas district level private facilities charge respectively BDT 3,400 and BDT 7,311.

Willingness to offer discount for micro health insurance

The management of the private facilities under the survey were asked whether they would be interested to be a provider if a micro health insurance scheme is initiated. On principle, all of them agreed which may be interpreted as a positive sign for introducing micro health insurance in the country.

We also asked whether they would be able to give a discount on the present charge of services under different heads. At the district level, private hospitals agree to give a mean discount of 23.61 percent on overall costs. Highest mean discount is offered on the diagnostic fees (29%) followed by consultation fees (28%), bed charge (27%), hospital admission fees (25%) and operation charge (24%). Lowest discount is offered on drug costs (8%). At the upazila level, on an average 9 percent discount was offered on overall charge of the services.

Key message from supply side of health care

The results illustrated above depict that majority of surgical and non-surgical inpatient services are available in District Hospitals (DHs), but not in Upazila Health Complexes (UHCs). As per statute, the government hospitals are not allowed to receive any money for the services from any authority. One needs to keep aside the idea of inclusion of government facilities in any health insurance mechanism. Thus, the hope relies on the private facilities. Private hospitals in both district and upazila levels are equipped mainly to conduct surgical procedures. The part-time and on call role of physicians of different level of government facilities is the main source of providers in the private facilities in both district and upazila levels. Despite this fragility, the willingness of being a provider of any health insurance scheme raises some hope.

The charge for surgical services in private facilities in district level is almost double of the upazila level, whereas the charges are comparable for majority of the non-surgical inpatient services. However, the charge for any surgical service, especially in the district level is substantially higher than the average cost of an episode of hospitalisation as found from the household survey. Willingness of the private hospitals to discount the charges to some extent is appreciable.

4.6 Delivery Mechanism and Operational Model

The main challenge of initiating a micro health insurance in any society is to find a suitable delivery channel. The available channels of offering micro health insurance are: partner-agent model, full services model, provider driven model and community based model.

- ***Partner-agent model:*** A partnership is formed between MFIs or cooperatives (the partner) scheme and insurance company (the agent), and in some cases a third-party healthcare provider. The partner is responsible for the delivery and marketing of products to the clients, while the agent retains all responsibility for design and development. In this model, the partner needs to bear the risk of losing the clients of its microfinance schemes if the agent fails to keep its commitment.
- ***Full service model or MFIs initiated model:*** MFI or cooperative is in charge of everything; both the design and delivery of products to the clients, working with external healthcare providers to provide the services.
- ***Provider-driven model:*** The healthcare provider is responsible for all operations, delivery, design, and service.
- ***Community-based/mutual model:*** The policyholders or clients are in charge, managing and owning the operations, and working with external healthcare providers to offer services.

The example of partner–agent model in offering micro health insurance is almost absent in the global context. As illustrated in Chapter 2 provider driven model and MFIs initiated model are deeply embedded with both supply side and demand side limitations. Community based model

did not flourish in Bangladesh. Some innovative efforts also did not click in Bangladesh due to both supply side and demand side limitations.

The literature shows that there is absolute failure of voluntary health insurance in the developing country context. Compulsory micro health insurance is not practical for MFI members in Bangladesh until making it mandatory by the regulator (MRA) for all the scheduled MFIs. This leads us to conclude that the scope of introducing micro health insurance scheme for specific perils (e.g., hospitalisation) is very limited in the short run. However, hospital cash benefit scheme, a basic scheme that is usually introduced for protecting the income of the household members during hospitalisation, is feasible. Our findings also show that there is enormous demand for this type of scheme. Some partner-organisations of PKSF have some experience of implementing such scheme under DIISP project.

We suggest for introducing hospital cash benefit scheme first. Successful operation of this scheme for few years may lead the beneficiaries to gain the confidence on insurance mechanism. The scheme operators (e.g., MFIs/cooperatives) may gain the experience of operating health insurance scheme. The idea of introducing micro health insurance for specific perils may be put forward once the beneficiaries gain the confidence about insurance mechanism and the insurers are adequately experienced to run such insurance scheme.

Chapter 5

Developing Property Microinsurance

5.1 Household Property Damages: Nature and Causes

An understanding of the property shocks to low-income households that can be covered by a formal financing mechanism is important to develop an appropriate safeguard mechanism to compensate for the loss of property. Property damage may be caused by human activities or natural disasters. Bangladesh recurrently encounters different types of natural disasters, which result in loss and damage of property. Because of its geographical location and distinctive topography, Bangladesh is highly vulnerable to natural disasters. The major factor that increases the frequency and intensity of natural disaster is the global climate change. This section aims to reflect on the nature and causes of property damage in low income countries as a consequence of natural disasters.

For designing property microinsurance schemes, we classify household property into two principal categories—homestead property and productive property. Homestead property includes living house, homestead land, cowshed, shop, kitchen room, warehouse etc. occupied by the household members. Productive property, on the other hand, is described as property that is producing or has the power to produce goods and services that have monetary or exchange value (i.e. fertile) or property that yields favourable or effective results.

Bangladesh has a long history of natural disasters. Multiplicity of rivers, coastal erosion and land subsidence along with geographical location and adverse climatic condition expose Bangladesh to extreme levels of disaster and vulnerability. Natural disasters such as flood, cyclone, river/coastal erosion, water logging, storm or tidal surge etc. are deemed to be the principal culprits behind much of property damage. Data from *Bangladesh Disaster Related Statistics 2015* show that during the 2009-14 periods, various types of natural disaster in Bangladesh caused a loss of BDT 184.25 billion. Among the various types of disaster, flood is the main source of loss contributing 23.3 percent of the damage, followed by coastal or river erosion (19.76 percent), cyclone (15.41 percent) and water logging (8.72 percent). The other categories, namely drought, tornado, storm or tidal surge, thunderstorm, landslides, salinity, hailstorm and other disasters together account for 32.30 percent of the property damages.

Under the broad categories of household and productive property, the damaged property can be further classified into crops, livestock, poultry, fishery, land, houses, homestead and forestry. Statistics indicate that 36.20 percent of the damage caused by natural disasters is to be found in case of crops. Damage to land comprises of 26.72 percent, followed by 17.19 percent damage in cases of houses--the constituents of which are residence, kitchen, cowshed etc. The major factor in the case of damage to the house category can be found to be cyclone whereas in case of crops

the perpetrator is flood. The remaining categories that is to say livestock, poultry, fishery, homestead and forestry combined constitute 19.89 percent of the total damage.

The nature and causes of property damage in Bangladesh can largely be attributed to the disaster-proneness of the country. Moreover, the destitution and economic hardship faced by the people and the institutions impede the disaster risk management and reduction capacity and the resilience of the people, thereby increasing the level of vulnerability. Good governance along with proper implementation of sustainable development policies can mitigate the extent of damage to property to the extent possible given that positive climate change policies are followed by Bangladesh and the rest of the world.

5.2 Incidence of Property Damage: Evidence from Survey Data

In this study, respondents are asked whether they have been affected by any shocks related to their homestead land or housing or not. Table 5.1 shows the distribution of households in terms of their experience of homestead property shocks over the last ten years of the survey.

Table 5.1: Exposure to Disaster Related Homestead Property Shocks

Event	Patuakhali	Satkhira	Sunamganj	Jamalpur	Kurigram	Cox's Bazar	Total
	13	63	97	140	103	78	494
No event	7.74	37.5	58.08	83.33	61.31	46.43	49.06
	93	48	45	25	48	84	343
One event	55.36	28.57	26.95	14.88	28.57	50	34.06
	62	57	25	3	17	6	170
More than one event	36.9	33.93	14.97	1.79	10.12	3.57	16.88
	168	168	167	168	168	168	1,007
Total	100	100	100	100	100	100	100

Source: Microinsurance Survey, InM 2017

The results show that more than 51 percent of the sample households have experienced at least one incident of homestead property damage over a ten-year period. Of the respondents who have experienced at least one incident of homestead property damage, 34 percent have faced a single incident and 17 percent experienced more than one event of shock.

Table 5.2: Exposure to Disaster Related Productive Property Shocks

Event	Patuakhali	Satkhira	Sunamganj	Jamalpur	Kurigram	Cox's Bazar	Total
No event	71 42.26	163 97.02	159 94.64	163 97.02	162 96.43	138 82.14	856 84.92
One event	54 32.14	4 2.38	5 2.98	4 2.38	5 2.98	28 16.67	100 9.92
More than one event	43 25.6	1 0.6	4 2.38	1 0.6	1 0.6	2 1.19	52 5.16
Total	168 100	168 100	168 100	168 100	168 100	168 100	1,008 100

Source: Microinsurance Survey, InM 2017

Among the various shocks, destruction of living house occurred in 55 percent of cases, which stands as the most frequent shock caused by natural disasters. Apart from this, destruction of kitchen room occurred in 18 percent of cases and destruction of homestead land happened in 7 percent cases (Table 5.3). It is important to note that destruction of living house is much higher in cyclone prone areas such as Cox's Bazar (87 percent) and Patuakhali (80 percent). On the other hand, in the flood-prone areas like Jamalpur, Sunamganj and Satkhira demolition of homestead land occurred more frequently compared with other areas and it is about 16 percent in Satkhira and 16 percent in Sunamganj and 21 percent in Jamalpur.

Table 5.3: Percentage of Households Affected by Homestead Asset Shocks over Last Ten Years

Type of damaged asset	Patuakhali		Shatkhirra		Sunamganj		Jamalpur		Kurigram		Cox's Bazar		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Living house destroyed	207	79.62	84	45.65	41	40.2	23	69.7	62	65.26	86	88.66	503	65.24
Homestead land destroyed	1	0.38	29	15.76	16	15.69	7	21.21	2	2.11	0	0	55	7.13
Cowshed destroyed	2	0.77	17	9.24	5	4.9	0	0	6	6.32	0	0	30	3.89
Shop destroyed	2	0.77	1	0.54	0	0	0	0	0	0	1	1.03	4	0.52
Kitchen room destroyed	13	5	48	26.09	40	39.22	3	9.09	22	23.16	10	10.31	136	17.64
Warehouse/godown destroyed	0	0	0	0	0	0	0	0	1	1.05	0	0	1	0.13
Others	35	13.46	5	2.72	0	0	0	0	2	2.11	0	0	42	5.45
Total	260	100	184	100	102	100	33	100	95	100	97	100	771	100

Source: Microinsurance Survey, InM 2017

The study has also focused on different types of shocks which adversely affected the household's productive assets. However, the response has been limited because, as the households are from the disaster prone and poverty stricken areas, their ownership of productive assets is negligible. Only 230 households among 1,008 reported any kind of damage.

Table 5.4: Percentage of Household Affected by Productive Asset Shocks over Last Ten Years

Type of damaged asset	Patuakhali		Shatkhira		Sunamganj		Jamalpur		Kurigram		Cox's Bazar		Total	
	n	%	n	%	n	%	n	%	n	%	N	%	n	%
Irrigation machine destroyed	6	3.85	3	37.5	2	10	3	42.86	1	14.29	2	6.25	17	7.39
Rice husking/sugarcane threshing machine destroyed	1	0.64	0	0	0	0	0	0	1	14.29	0	0	2	0.87
Big fishing net used in sea destroyed	1	0.64	0	0	0	0	0	0	0	0	0	0	1	0.43
Big fishing net used in river destroyed	1	0.64	1	12.5	0	0	0	0	2	28.57	6	18.75	10	4.35
Big fishing net used in pond destroyed	0	0	0	0	0	0	0	0	0	0	1	3.13	1	0.43
Boat/fishing boat/motorised boat/trawler destroyed	2	1.28	3	37.5	16	80	1	14.29	2	28.57	5	15.63	29	12.61
Nasimon/korimon destroyed	0	0	1	12.5	2	10	0	0	0	0	0	0	3	1.3
Autorickshaw/ CNG destroyed	0	0	0	0	0	0	0	0	1	14.29	1	3.13	2	0.87
Dry fish shed destroyed	0	0	0	0	0	0	0	0	0	0	1	3.13	1	0.43
Salt enclosure destroyed	0	0	0	0	0	0	0	0	0	0	1	3.13	1	0.43
Livestock death related big loss	6	3.85	0	0	0	0	2	28.57	0	0	12	37.5	20	8.7
Others	139	89.1	0	0	0	0	1	14.29	0	0	3	9.38	143	62.17
Total	156	100	8	100	20	100	7	100	7	100	32	100	230	100

Source: Microinsurance Survey, InM 2017

Direct economic loss of property

In order to design appropriate microinsurance products for property damage, it is important to estimate the direct loss resulting from property damage. Financial loss of property damage can be viewed from two sides. The first one is the value of damaged property just before destruction and the second one is the expenses incurred for rebuilding of the properties. As the direct economic loss varies by types of properties that are damaged, we report the results by categorising the properties. In the preceding analysis, we have found that destruction of living house is the most frequent type of shock caused by natural disasters. In Table 5.5, we show the estimates of direct economic loss caused by natural disasters for major property shocks. Among the three main types of property damage, destruction of living house caused the highest amount of direct monetary loss on average both in terms of value of damaged property and rebuilding expenses. For destruction of living house, the average value of damaged property is BDT 18,877 and average expenditure for rebuilding is BDT 21,502. However, there is variation in loss across districts.

Table 5.5: Direct Cost of Property Damage

District	Living house destroyed		Homestead land destroyed		Kitchen room destroyed	
	Value of the damaged property	Rebuilding expenses	Value of the damaged property	Rebuilding expenses	Value of the damaged property	Rebuilding expenses
Patuakhali	28,104	27,113	200,000	350,000	4,330	6,750
Satkhira	14,878	12,983	6,179	4,428	2,221	10,778
Sunamganj	10,598	30,232	8,313	9,188	1,643	3,185
Jamalpur	15,530	23,074	28,857	48,000	4,000	3,000
Kurigram	12,725	13,373	30,000	0	2,347	1,620
Cox's Bazar	11,857	18,709			4,450	7,250
All districts	18,877	21,502	14,076	17,480	2,415	6,514

Source: Microinsurance Survey, InM 2017

5.3 Demand for Property Microinsurance

Willingness to join (WTJ)

In Chapter 2, after a systematic review of the existing microinsurance schemes in Bangladesh, it has been concluded that there is no insurance service in Bangladesh that directly falls under the category of property microinsurance. Therefore, it is difficult to assess the actual demand for this type of microinsurance product in the country. Nonetheless, in order to get an understanding of the potential demand for a formal safeguard mechanism against property damage caused by natural disasters and the factors that influence WTJ decision for such schemes, we offered two hypothetical products to the respondents of this survey. The first safeguard scheme is designed to protect the households against damage to various types of housing infrastructures including dwelling house, homestead land, cattle house, shop-house, factory-house, and farmhouse. The second product is offered to explore the interest of the respondents for purchasing insurance services for the loss or damage to productive equipment such as irrigation equipment, power tiller or tractor, rice husking machine, large fishing net and other similar household implements.

WTJ by geographic location

We have assessed the WTJ the homestead and productive property insurance schemes of the respondents of our study living in different geographic areas. Results are quite revealing; around 92.16 percent of the respondents are interested in joining *homestead property insurance* scheme and 67.63 percent of the respondents are willing to join productive equipment insurance. The large difference in WTJ between homestead property insurance and productive equipment insurance can be explained by the fact that the latter scheme is not applicable to the households that do not have any productive equipment. In order to investigate whether there is any geographic variation in WTJ these two products, we have measured the ratio by districts. For the homestead property scheme except in Cox's Bazar, above 90 percent of the households in all districts have shown their interest in joining *homestead property insurance*. However, geographic variation in WTJ is more apparent for productive equipment insurance. Sunamganj stands out as a clear exception, where only 21.43 percent of the respondents are willing to join

this insurance scheme. One potential reason behind the low interest to join could be that inhabitants of this location are very poor and they have little productive assets. In contrast, in Kurigram district, 90 percent of the respondents are willing to join productive property insurance scheme.

Figure 5.1: WTJ property insurance by geographic areas

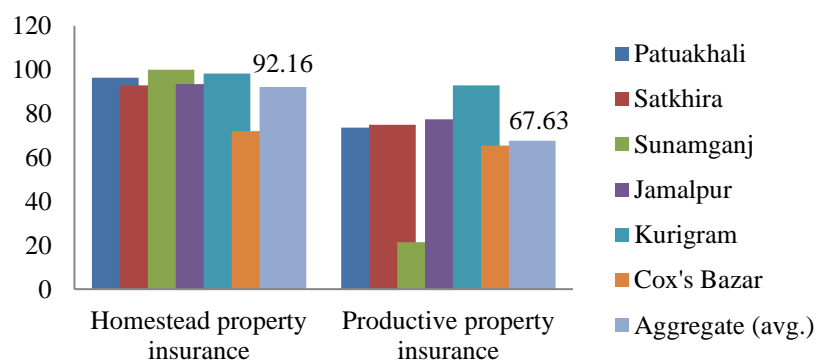


Table 5.6: Willing to Receive Homestead and Productive Property Insurance

District	Location	Homestead property insurance		Productive property insurance	
		Freq.	%	Freq.	%
Patuakhali	Coastal and remote	162	96.43	123	73.65
	Coastal, boarder and remote	156	92.86	126	75
Satkhira	remote	168	100	36	21.43
Sunamganj	Haor and remote	157	93.45	130	77.38
Jamalpur	Remote	165	98.21	156	92.86
Kurigram	Char and remote	121	72.02	110	65.48
Cox's Bazar	Coastal and remote				
Total (168*6=1008)		929	92.16	681	67.63

Source: Microinsurance Survey, InM 2017

WTJ and household specific factors

Table 5.7 shows the WTJ the two property insurance schemes by gender of the household heads. After separating out the male and female-headed households, we see that WTJ is slightly greater for the former in both the cases. Out of 945 male-headed households, 92.6 percent are willing to take the homestead insurance scheme, whereas out of 63 female headed households 85.71 percent are willing to join the scheme.

Table 5.7: WTJ by Gender of Household Head

	Male Headed HH (n=945)		Female Headed HH (n=63)		Aggregate (n=1008)	
Yes	875	92.6	54	85.7	929	92.2
No	70	7.4	9	14.3	79	7.8
Total	945	100.00	63	100.00	1008	100.00
Yes	653	69.1	28	44	681	68
No	292	30.9	35	56	327	32
Total	945	100.0	63	100	1008	100

Source: Microinsurance Survey, InM 2017

Table 5.8 shows the WTJ by highest level of educational qualification observed among the members of the households. The table suggests that educational attainment is an important determinant of WTJ. There is a rising trend in WTJ with respect to higher educational qualification of the household members.

Table 5.8: WTJ by Maximum Education of Household Member

Insurance Type	Decision	class>=5-				Total
		class>=0-5	<10	class>=10-<12	class>=12	
Homestead Property	Yes (n)	176	527	106	120	929
	%	84.6	93.3	95.5	96.8	92.2
	No (n)	32	38	5	4	79
	%	15.4	6.7	4.5	3.2	7.8
	Total (n)	208	565	111	124	1,008
	%	100	100	100	100	100
Productive Equipment	Yes (n)	108	395	84	94	681
	%	51.9	69.9	75.7	75.8	67.6
	No (n)	100	170	27	30	327
	%	48.1	30.1	24.3	24.2	32.4
	Total (n)	208	565	111	124	1,008
	%	100	100	100	100	100

Source: Microinsurance Survey, InM 2017

Product Design and Delivery Channels

Designing any microinsurance scheme should follow a structured procedure. In the beginning of this procedure, it is important to define the risks faced by the target population that will be covered by the particular financing mechanism. In the present context, the proposed property microinsurance scheme aims to protect the low-income households living in remote areas of Bangladesh (i.e. target population) against the direct economic loss related to property damage (i.e. risk) caused by natural disasters. The second step involves determining the probability of occurrence of such events along with the estimates of financial loss in a given period, in this case, one year. This kind of statistics can be collected from the statistical record over a long time. In the absence of such historical data on the frequency and amount of loss, data collected through household surveys can be used to develop the proxy parameters. In this study, we have conducted a household survey covering the area where our target households are located. Though this is a cross section survey, it documents the occurrence and consequences of such events over a long period. Since this is a pre-payment based financial product, it is important to know the demand for such kinds of product in the target population. The survey includes a set of questions to understand the WTJ the property insurance scheme. However, as there is no existing property microinsurance scheme, the offered products do not mention any particular rate of premium. Nonetheless, the WTJ analysis reflects the necessity of such insurance scheme in the target locations.

The third step involves determination of delivery channel for the insurance scheme. That is, what will be the institutional setup for the proposed property insurance scheme. Questions like who will serve as the insurer for the property insurance scheme designed for the low-income households, who will serve as the agent or distributor of the products need to be settled at this stage. In addition, to this, a loss assessment procedure needs to be set up to estimate the loss of insured households in the aftermath of the events. After determining the delivery channel and loss assessment procedure, it is possible to calculate the administrative cost of insurance. Since the government plays a very important role in case of natural disasters, it is important to understand how the property insurance scheme can complement the existing post disaster services offered by the government. Finally, it should be ensured that the offered property insurance scheme is the most efficient and effective way reducing the financial loss related to property damage caused by natural disasters.

The proposed property microinsurance scheme should satisfy some standard criteria of insurance service: the event occurs by chance or randomly, the loss must be quantifiable and the period of insurance coverage is defined, the loss must be significant and predictable, the premium is affordable to target population and the loss is not catastrophic to insurer (Wrede and Phily 2009).

5.5 Developing Inclusive Property Microinsurance Schemes

Inclusivity in the context of property microinsurance imply that the product is appropriate for the low-income households located in remote areas in Bangladesh who are exposed to property damage caused by natural disasters. That is, the scheme should reduce the financial loss of property damage significantly and the premium is affordable to low-income households. If the premium rate is too high for the low-income households, it would become unaffordable to low-income households. Inclusivity also implies the product is offered in all areas of Bangladesh, which are vulnerable to natural disaster related property damage.

In addition to the inclusivity criterion, the development of proposed property microinsurance scheme requires to follow a standard procedure that involves setting up premium rate or pre-payment amount and sum insured (the amount that will be paid in case of occurrence of the event), calculating the cost of offering the service, estimating the predicted demand for the product at a given rate of premium, developing business plan and pilot testing of the products.

In the preceding analysis, we found that destruction of living house is the most prevalent type of property damage that occurs at a significant rate in all regions. As there is no existing formal safeguard mechanism against property damage, it would be ideal to start with a microinsurance that can serve the purpose of a large number of the target population. As the event involves a significant financial loss to households in all regions covered in the study, it satisfies the criteria of becoming an insurable event mentioned above. In Table 5.9, we show the frequency and percentage of the event occurrence by district.

Table 5.9: Exposure to Disaster related Destruction of Living House

Event	Patuakhali	Satkhira	Sunamganj	Jalalpur	Kurigram	Cox's Bazar	Total
	25	85	128	145	120	88	591
No event	14.88	50.6	76.65	86.31	71.43	52.38	58.69
	99	82	37	23	37	75	353
One event	58.93	48.81	22.16	13.69	22.02	44.64	35.05
More than one event	44	1	2	0	11	5	63
	26.19	0.6	1.2	0	6.55	2.98	6.26
	168	168	167	168	168	168	1,007
Total	100	100	100	100	100	100	100

Source: Microinsurance Survey, InM 2017

Premium calculation: As in the case of standard insurance schemes, the objective of setting up premium for property microinsurance scheme is to ensure that the rate is sufficient to cover the cost of offering the insurance and generate a “fair” return for all the parties. The objective of this analysis is to estimate annual gross premium for a property microinsurance scheme for destruction of living house based on the data collected from the household survey and secondary

literature. In order to determine the gross premium, we need to estimate the risk premium and loading cost that includes different forms of administrative costs.

$$\text{Gross Premium} = \text{Risk Premium (probability of event} \times \text{expected insurance claim)} + \text{Loading Cost}$$

We calculate the gross premium by summing the risk premium (i.e. probability of the event times expected insurance claim) and loading cost. We assume that expected insurance claim is the value of the damaged property just before the event and loading costs is simply assumed to be 20 percent of the risk premium where 10 percent is administrative cost, 7.5 percent is safety margin and 2.5 percent is reinsurance factor. As we are expecting that the property insurance scheme for low-income households will be offered by not-for-profit organisations, we have not included any agency remuneration. We also assume that the scheme will be exempt from VAT as the product will serve the low-income households at the time of natural catastrophes.

Table 5.10: Premium Calculation for Damage of Living House Microinsurance

District	Probability of event in one year	Value of the damaged property	Risk premium	Loading factors including administrative costs, safety margin and reinsurance	Gross premium
Patuakhali	0.085	28,104	2,392	478	2,871
Satkira	0.049	14,878	735	147	882
Sunamganj	0.023	10,598	248	50	297
Jamalpur	0.014	15,530	213	43	255
Kurigram	0.029	12,725	364	73	436
Cox's Bazar	0.048	11,857	565	113	678
All Districts	0.041	18,877	780	156	936

Source: Microinsurance Survey, InM 2017

Table 5.10 shows the calculated premium rates for proposed property insurance for all areas together and by districts. The estimated gross premium (GP) for destruction of living house insurance stood at BDT 936, which is required for a scheme with a sum-insured of BDT 18,887 and a coverage period of one year. The question that arises from the above analysis is whether the estimated GP is appropriate in the microinsurance context. The actual demand for such product can only be tested through running the proposed microinsurance scheme in the field for at least a few years. Nonetheless, the estimated gross premium should be interpreted with caution before making any policy decision. Firstly, the estimated premium rate is based on a sample of households from a set of geographically vulnerable zones of Bangladesh. Most of the sample locations are selected purposively with the knowledge that these areas are affected by severe natural disasters recurrently in recent times. The benefit of this purposive selection is that we can measure the financial costs of property damage and nature of property related shocks due to natural disasters based on recent information. The above exercise shows just a simple illustration of the process of designing a microinsurance scheme for property damage. As our sample is concentrated within some of the highly climatically vulnerable zones of Bangladesh, the

estimated gross premium is affected by probability and size of the damage in those areas. It is noticeable that there is a wide variation in premium rates across districts. The gross premium varies from as low as BDT 255 in Jamalpur district to as high as BDT 2,871 in Patuakhali. The gross premium rate is influenced by mainly two factors: probability of damage and value of damaged property. In case of Patuakhali, both of these factors are significantly higher leading to an unexpectedly high rate of premium per year. The crux of the discussion is that a nationwide household survey covering a longer period can deliver a more reliable estimate of gross premium and sum-insured.

Another associated issue is that the scheme need not be same for all the regions of the country. The design of property microinsurance scheme can be different in terms of risks covered, period of coverage, sum-insured, gross premium and other terms and conditions. For example, under the Pilot Project on Weather Index Based Crop Insurance (WIBCI), which is currently being implemented by SBC in three major districts of Bangladesh –Rajshahi, Sirajganj and Noakhali-- the scheme differs in some of the terms mentioned above. The project is still at the experimental stage, which is now implementing its 5th pilot programme on crop insurance. In general, each scheme covers only one to two months of weather risks for a particular cropping season, which can vary by geographic locations. Similarly, different weather risks are covered in different cropping seasons.

The issues discussed above deserve careful consideration in designing appropriate property microinsurance for different geographic locations of Bangladesh.

Institutional Arrangement

The proposed microinsurance scheme for property damage (destruction of living house) is designed to serve the low-income households of Bangladesh who are located in remote areas of Bangladesh and encounter significant financial loss due to destruction of living house caused by natural disasters. As the product is designed to serve the low-income households in the remote areas of Bangladesh, it is important to have providers who can offer the product in those areas at an affordable cost and deliver the required service at the time of crisis. As the microfinance institutions of Bangladesh have branches in remote areas of Bangladesh and have the experience of working with rural communities, they can effectively deliver the product at the doorstep of the target population.

Different institutional arrangements can be considered that can satisfy the above criteria. One option is that the Sadharan Bima Corporation (SBC), only state owned insurance company, in collaboration with MFIs can offer property insurance across different locations of Bangladesh. The SBC with its countrywide network can effectively collaborate with the MFIs, who have better access to remote locations, to distribute microinsurance schemes among low-income households. This is an example of principle-agent model where SBC will serve as the principle and MFIs will as agents.

Another possibility is that SBC can form a consortium with PKSF to offer microinsurance services for property damage caused by natural disasters. In that case, MFIs can operate as the distributing agents as partners of PKSF. Inclusion of PKSF in this setup can smoothen the collaboration between SBC and MFIs and can encourage speedy settlement of claims.

5.6 Summary of Findings

Property microinsurance can serve as one of the key components of disaster risk management strategy of Bangladesh. This chapter develops a microinsurance scheme based on the findings of the household survey and evidence from the secondary literature. The household survey documents the main types of property risks resulting from natural catastrophes in geographically vulnerable zones of Bangladesh. It is documented that destruction of living house is the main type of property damage in Bangladesh both in terms of probability of occurrence and direct financial loss of destruction. The willingness to join analysis shows that households are very much in need of post disaster financial services that will reduce their loss of property destruction. Based on the evidence cited above, a microinsurance service is proposed to insure the households against damage of living house caused by natural disasters. Given that this is the principal form natural disaster related property shock in Bangladesh and there is no property microinsurance scheme for the low-income households, it is the most viable form of financial instrument that can reduce the risks of vulnerability to poverty emanating from natural disasters. Finally, it should be mentioned that the proposed microinsurance product should be tested through a pilot project on property microinsurance. In the piloting stage such schemes can be offered at a subsidised price as in the case of pilot project on WIBCI with support from the government and donors. Otherwise, it may not be possible to design an effective and efficient risk management instrument for reducing the risks of property damage.

Chapter 6

Regulatory Framework and Re-insurance Provisions

6.1 Issues in Microinsurance Regulations

Micro health insurance and property microinsurance are still in their emerging stages of development in Bangladesh. In this situation, one might think that the issues of regulation are too early at this stage to settle. However, the relationship between stages of development of the sector and existence of regulation need not run from the former to the latter. In India, regulation actually acted as a stimulant for the growth of the microinsurance industry. Therefore, the discussion on regulatory directives for the microinsurance sector is important for the development of the sector.

The objectives of the insurance regulator are defined in broad terms—apart from ensuring solvency of the insurers and safeguarding the interest of individual policyholders, making the service accessible at an affordable cost is now included in the set of key objectives of the regulatory regime. The latter objective is particularly relevant in the microinsurance context, which is, in general, targeted towards low-income households, who are often excluded from formal risk management devices such as general insurance. In Bangladesh, insurance services offered by commercial insurance companies have failed to address the needs and affordability of low-income households who are severely vulnerable to various types of catastrophes such as health shocks and natural disasters (Ahsan et al 2013). Therefore, the key issue for the regulatory regime is to address the needs of the low-income populations and create a regulatory environment that facilitates the creation of innovative insurance services for the low-income and vulnerable households of the country.

The focus of this chapter is to highlight the key components of a regulatory environment that are crucial for the development of microinsurance market in Bangladesh. The key objective of the analysis presented in the chapter is to delve into issues that need careful consideration for setting up an enabling regulatory environment for the microinsurance sector.

As we discussed in Chapter 2, the existing practice of microinsurance in Bangladesh concentrates mainly to MFI based initiative (e.g., Sajida Foundation, Grameen Kalyan). The MFIs also need to take the responsibility for the microinsurance products that we have suggested in Chapter 4 and Chapter 5. Some innovative pilot schemes may show some promise. The regulatory issue has been discussed taking into consideration of all these factors.

6.2 Regulatory Structures and Suggested Reforms

i. Promote microinsurance for developing inclusive financial system

Microinsurance is one of the key financial services for financial inclusion. From the perspective of financial inclusion, the term microinsurance is more appropriate than the term insurance. As the former directly targets the low-income households and is more efficient in terms of accessibility and claim settlement. Evidence shows that formal insurers are reluctant to serve the need of the low income or poor households. Regulatory regime can foster the growth of microinsurance sector by encouraging and providing incentives for the insurers to serve the vulnerable groups of population. One of the key reasons why insurers are reluctant to serve the low-income market is the cost of offering the service. Regulatory mechanism can work towards reducing the cost of offering the service for the insurers or implementing organisations.

ii. Current regulatory structure

In order to understand the current regulatory framework of microinsurance in Bangladesh, the study team conducted a discussion meeting with high officials of Microcredit Regulatory Authority (MRA) on 07 August 2017. Another supply side discussion meeting was held with MFIs and other stakeholder on 15 May 2017.¹⁰ Several important issues have been discussed during the consultation meetings.

The regulatory issue of microcredit as well as microinsurance did not arise before 2006, although microcredit and microinsurance were initiated in early 1980s and 1990s respectively. In 2006, MFIs came under regulation, first time, upon enactment of MRA Act 2006. The Act allows MFIs to offer microinsurance. MRA Act 2006, Clause 24 (2) says that “microcredit institutions can offer different types of insurance services and other social development oriented loan facilities for the loan recipients and members of their families”. MRA Rules 2010, based on MRA Act 2006, also mentions about microinsurance in the definition of ‘microcredit activities’. However, without any detailing, MRA Rules 2010, Clause 16 (2) just mentions, as quoted below, about the inclusion of insurance services along with credit and saving services: “microcredit activities mean the continuous activities related to the microcredit and deposit services for the clients under the supervision of the microcredit organisation, and the insurance services will also including” (MRA Rules 2010, 16(2)). Clause 8(1) of Insurance Act 2010 says that no person can do insurance business without obtaining the registration certificate from Insurance Development and Regulatory Authority (IDRA). This is worth noting that IDRA was formed under the provision on Insurance Development and Regulatory Authority Act 2010 on 26 January 2011 giving the responsibility to control the institutions relating to insurance and re-insurance industry to encourage the development of insurance industry. The mandates of IDRA are: providing registration and certificate of insurer, re-insurer, mediator and renewal, amendment, and removal withheld or cancellation of such registration. Inspection, inquiry and investigation of insurance

¹⁰The findings are given in Annex D.

institutions, developing new policies, controlling the fund and investment, maintenance of solvency margin and determining the proposed premium rate, giving advantage to insurer, settlement of dispute or claim and providing the procedure for preparing actuarial reports are the major responsibility of IDRA.

The National Insurance Policy 2014, developed based on Insurance Act 2010, makes further clarification regarding the regulatory issue of microinsurance. According to this policy, MFIs are not allowed to do any insurance business without making a partnership with any registered insurance company under IDRA. In other words, if any MFI or NGO wants to protect its clients by any insurance, it needs to have a contract with a registered insurance company under IDRA. This, in fact, refers to the partner-agent relationship where MFIs will be treated as the agents of the registered insurance companies. India has similar process of microinsurance regulations. As per the Insurance Regulatory and Development Authority of India (Microinsurance) Regulations, 2015 an insurance company has the option of appointing microinsurance agent to any of the sectors: micro enterprises or small enterprises or medium enterprises.

iii. Delivery channels

There is some potential advantage and disadvantage of partner-agent practice of microinsurance where MFI works as agent. The agent (MFI) can protect its clients by shifting the risks to the insurance company and can earn some revenue through providing services, such as marketing, enrolment, claim recording and claim processing. On the other hand, the agents may experience some risk (i.e., borrowers may opt out) if insurance company fails to provide the stipulated benefits in a timely manner. The current insurance culture in Bangladesh enhances the potentiality of stirring the latter one. If that happens partner-agent model of microinsurance will not develop, at least, in the near future.

As mentioned in Chapter 2, there is no example of partner-agent practice in Bangladesh. It is also hard to predict whether it will be developed in the near future. There are also no decisions regarding the fate of existing microinsurance practice (e.g. MFI initiated schemes). A senior official of MRA reports that MRA would raise this issue in the ‘Regulatory Forum’ meeting. Note that ‘Regulatory Forum’ is an informal organisation of all regulators including Bangladesh Bank, IDRA, MRA, and Security and Exchange Commission. He added that ‘there is a possibility of passing an Act for providing formal shape to ‘Regulatory Forum’ for dissolving different conflicting issues quickly’.

6.3 Regulation of Pilot Interventions

In order to foster innovation in the microinsurance sector of Bangladesh, the regulatory regime needs to be accommodative to new approaches and models of microinsurance. Piloting new approaches allows the policyholders to learn about the costs and benefits of the insurance scheme and the insurer to learn about the profitability and sustainability of the scheme. Since microinsurance, in general, is still at an early stage of development, insurers and donor

organisations are likely to be interested in testing new models of microinsurance, which may not conform to existing regulatory policies. The regulatory regime can be relaxed for piloting those products that have the potential for meeting the need of low-income community.

The insurance regulatory authority has facilitated the piloting of weather index based crop insurance programme in Bangladesh by granting regulatory exemptions. The piloting of the scheme has been done by the state owned Sadharan Bima Corporation with financial support from ADB. In the health insurance context, another recent pilot intervention facilitated by current regulatory regime is *Niramoy* Micro Health Insurance Programme which was piloted in Mymensingh district through a private general insurance company in collaboration with a local medical college hospital and three MFIs.

Such pilot interventions allow the insurer to learn about many important aspects of the model including challenges of marketing, distribution channels, premium collection and claim settlement procedure and demand for weather index based crop insurance. The insurer can redesign the scheme based on the lessons from the learning phase.

6.4 Re-insurance Provisions

Reinsurance is an important tool of risk management for the insurance providers. Under Insurance Act 2010 and National Insurance Policy 2014 state-owned Sadaran Bima Corporation provides re-insurance services. The insurance companies can also purchase re-insurance services from abroad. As a plan of expanding the domestic capacity of re-insurance, National Insurance Policy 2014 puts emphasis on establishing a separate reinsurance body. In the current provision of the law, reinsurance is merely linked with microinsurance if the potentiality of partner-agent model grows. As stipulated earlier, there is little possibility of developing partner-agent model in the near future in Bangladesh.

Though it is prudent for the insurers to use reinsurance service, such device is particularly crucial for the microinsurers who lack adequate reserves and whose portfolios are not diversified (Churchill and Garand 2006). The authors report that some of the large microinsurance providers (e.g. AIG Uganda) do not buy reinsurance for policies that are small and cover large number of clients across diverse geographic locations.

The above observation suggests that covering a large geographic location and diversified environment could be an important risk management strategy for the microinsurers. In Bangladesh, MFIs operate all over the country and have access to diversified geographic locations. Therefore, they enjoy a superior position in terms of management of risks emanating from microinsurance services. If a MFI is large (e.g. BRAC, Grameen) and runs the business across different geographic locations, they will be able to manage the risk of microinsurance without reinsurance device.

6.5 Recommendations

The regulatory policies for the microinsurance sector should be based on the understanding of the importance of financial inclusion for eliminating poverty from the society. Based on the review of the present scenario of microinsurance sector and regulatory environment, we need to consider a set of key issues in formulating regulatory policies. Firstly, unlike microcredit programmes, microinsurance coverage is very insignificant in Bangladesh compared with other developing countries. Secondly, microinsurance services offered by commercial insurance companies have failed to address the need of low-income households, in general. In addition, they are generally averse to offering micro health insurance and property microinsurance services to low-income households of the country. Thirdly, in contrast to commercial insurance companies, microfinance institutions, particularly large ones, include some financial safeguard mechanisms in their portfolio that can be broadly categorised as microinsurance services. Fourthly, microfinance institutions have access to rural areas where they have developed a strong relationship of trust with low-income households in Bangladesh. Last but not the least, though partner-agent model seems to be an efficient mechanism for accessing the low-income households in rural areas, there is a clear conflict of interest between partner (commercial insurer) and agent (MFI) when it comes to the question of settling the claim.

Based on the above, we suggest a set of adjustments to present regulatory framework for creating an enabling regulatory environment for the microinsurance sector.

1. The first issue in formulating regulatory framework is to encourage low-cost distribution channels and innovative partnerships. Microfinance institutions with strong financial portfolio and with diversified geographic coverage should not be restricted to offer microinsurance services or similar financial services that address the need of low-income households in areas where they have access with fully functional branches. Different institutional set up can be considered for the microinsurance sector.

MFI should be allowed to serve their clients with financial devices that can protect them (the members) from financial loss of different types of risks (e.g. health shock, death of livestock, property loss due to flood). Restricting the MFIs from providing these financial services in absence of similar services offered by commercial insurers will reduce the welfare of the society. The problem with traditional insurers is that they perform very poorly when the issue of claim settlement arises.

If the question of separating the microcredit activities from the microinsurance operation arises, then multiple MFIs can come together to create one or more entities for providing microinsurance service.

PKSF can create a separate organisation for providing microinsurance services either independently or in collaboration with a commercial insurer (e.g. SBC). PKSF can also

initiate forming a microinsurance company with its partner organisations. Note that PKSf has already gained experience of microinsurance operation through its DIISP project. PKSf has also a plan to establish a full-fledged unit for building in-house capacity of actuarial review of different insurance products/documents, actuarial data capturing and other issues of insurance development and operations. The proposed name of the unit is: Risk Mitigation and Management Unit (RMMU). This unit will work for both risk mitigation and risk management. The unit is informally working and some staff have been deputed to look after it. One of the Deputy Managing Directors of PKSK plays the supervisory role and a team of three members headed by a General Manager operates the Unit. Currently the Unit is progressing towards inception of livestock insurance. The Unit is working for its institutionalisation and further development.

2. Regulatory body should ensure that financial services offered to low-income households as risk shifting devices or microinsurance satisfy the key characteristics that define microinsurance. In particular, these products should not be engulfed with conditionality clauses to an extent that restricts the low-income households to take benefit from the product at the time of need.
3. As there is a lack of understanding of insurance services among low-income households, the regulatory body should identify and offer programmes to enhance financial literacy, including understanding how the community benefits from some (but not all) members receiving compensation for their financial losses.
4. There should be proper surveillance mechanism in place to ensure that providing institutions have the capacity to offer services promised during enrolling the clients.
5. The regulatory authority should assure quality of claims and claim payment procedures including a defined complaint mechanism.
6. The regulatory body should be flexible in capital requirements for providing microinsurance services.
7. The regulatory authority should assist the microinsurance providers in accessing reinsurance services and other risk transfer solutions. The environment should also consider that MFIs with large number of clients and operating across diversified geographic locations might not need reinsurance.
8. The regulatory body should take prompt action against financial irregularities and corruption.

Chapter 7

Conclusions and Way Forward

This study attempts to identify and estimate important parameters, given the lack of appropriate and affordable instruments for protecting the poor households from various often faced shocks, for developing two microinsurance (MI) products identified in consultation with PKSF: micro health insurance (MHI) and property microinsurance (PMI). The analysis has been put forward keeping in view the following challenges: (i) complexities of designing appropriate microinsurance for the low-income market; (ii) lack of penetration of insurance companies in the low income market, (iii) absence of reliable health service providers; (iv) negative perception regarding insurance; and (v) obscurity in regulatory issues. We have analysed the need for and the demand of MHI and PMI, as well as the feasibility of introducing desired products for each type of MI. We have suggested one MI product (for each category) which are implementable in the current context of rural Bangladesh. We have also discussed the regulatory issues of microinsurance. The data used in the study are obtained from a survey of 1,008 households in 48 villages of six disaster-prone districts of the country (Patuakhali, Satkhira, Sunamganj, Jamalpur, Kurigram and Cox's Bazar). The study also uses data from a health care facility survey conducted on 47 facilities of the six districts.

7.1 Summary of Major Findings

Findings related to health shocks: The results of the household survey show that 49 percent of sample individuals report self-reported morbidity over the last three months. About 42 percent of the sick individuals had general cough, cold and fever. About 51 percent of the self-reported ailments are CDs followed by NCDs (47 percent). Overwhelming majority (97 percent) of the patients sought some kind of health care irrespective of geographical locations; and majority (87 percent) of them visited only one healthcare provider. At the first contact, more than two-thirds (75 percent) of the patients visited informal providers (village doctors, pharmacy sales persons, etc.), whereas 68 percent of the patients who needed further treatments visited formal providers (government, private, NGO hospitals/clinics, etc.). This implies that primarily rural people seek healthcare from the informal providers and then switch to formal providers if the treatment from the first contact is not able to cure the diseases. The results also show that about 46 percent of the respondents reported that they had at least one hospitalisation case during the past five years. The average OOP for each episode of illness over a period of three months is found as BDT 1,745, which varies moderately across geographical locations. Regular income (59 percent), savings (29 percent) and borrowing (9 percent) are the major sources of financing of OOP for outpatient care in the first contact. Drug accounts for 56 percent of OOP outlays. It is also seen that two-thirds (71 percent) of the respondents are willing to join the package containing higher benefit and

higher premium while less than one-third (28 percent) are willing to join the package containing lower benefit and lower premium.

The results of health facility survey depict that majority of surgical and non-surgical inpatient services are available in District Hospitals (DHs), but not in Upazila Health Complexes (UHCs). As per regulations, government hospitals are not allowed to receive any fee for the services from any authority. Thus, in the current context, one needs to keep aside the idea of inclusion of government facilities in designing any health insurance mechanism. Private hospitals at both district and upazila levels are equipped mainly to conduct surgical procedures. The part-time and on call role of physicians of different level of government facilities is the main source of providers in the private facilities at both district and upazila levels. Despite this fragility, the willingness of being a provider to any health insurance scheme raises some hope. The willingness of the private hospitals to discount the charges to some extent also shows some promise.

Findings related to property shocks: The results of the household survey show that nearly 51 percent households had some damage of assets like living house, homestead land, farmhouse, fishing farm, etc., and 13 percent households had some damage in productive equipment like irrigation equipment, cultivation equipment, harvesting equipment, fishing net etc. during the last 10 years. It is seen that destruction of living house is the most frequent type of shock caused by natural disasters. For destruction of living house, the average value of damaged property is BDT 18,877 and average expenditure for rebuilding is BDT 21,502. Due to absence of any insurance product covering the asset risk in the low-income market, we have assessed merely the WTJ the homestead and productive property insurance schemes. Results are quite revealing: around 92percent of the respondents are interested in joining homestead property insurance scheme and 68percent of the respondents are willing to join productive equipment insurance.

7.2 Recommendations for Micro Health Insurance

The main challenge of designing a suitable MHI product is the lack of historical data on morbidity. Any MHI product design based on proxy data is not likely to be precise and may not be implementable. The main challenge of initiating a micro health insurance in any society is to find a suitable delivery channel. The available channels of offering micro health insurance are: partner-agent model, full services model, provider driven model and community based model. The example of partner-agent model in offering micro health insurance is absolutely absent in Bangladesh. Provider driven model and MFIs initiated model are deeply embedded with both supply side and demand side limitations. Community based model did not flourish in Bangladesh. Some innovative efforts also did not click in Bangladesh due to both supply side and demand side limitations.

The literature shows that there is absolute failure of voluntary health insurance in the context of developing countries. Compulsory micro health insurance is not practical for MFI members in Bangladesh until making it mandatory by the regulator for all licensed MFIs. This leads us to conclude that the scope of introducing micro health insurance for specific perils (e.g., hospitalisation) is very limited in the short run. However, hospital cash benefit scheme, a basic scheme that is usually introduced for protecting the income of the household members during hospitalisation, is feasible. Our findings also show that there is enormous demand for these types of scheme. Some partner-organisations of PKSf have some experience of implementing such scheme under the DIISP Project.

We suggest that the hospital cash benefit scheme may be introduced first. Successful operation of this scheme for few years may lead the beneficiaries to gain the confidence on the insurance mechanism. Then the scheme operators (e.g. MFIs/cooperatives) will gain the experience of operating the full-fledged health insurance scheme. The idea of introducing micro health insurance for specific perils may be put forward once the beneficiaries gain the confidence about insurance mechanism and the insurers are adequately experienced to run such insurance schemes.

7.3 Recommendations for Property Microinsurance

In our analysis, we find that destruction of living house is the most prevalent type of property damage that occurs at a significant scale in all regions. As there is no existing formal safeguard mechanism against property damage, it would be ideal to start with a microinsurance that can serve the purpose of a large number of the target population. As the proposed microinsurance scheme for property damage product is designed to serve the low-income households in the remote areas of Bangladesh, it is important to have a provider who can offer the product in those areas at an affordable cost and deliver the required service at the time of crisis. As the microfinance institutions of Bangladesh have branches in remote areas of Bangladesh and have the experience of working with rural communities, they can effectively deliver the product at the door-step of the target population. In that case, PKSf can work out arrangements with insurance companies to create mechanisms that can effectively serve as the insurer of the scheme, where MFIs can operate as the distributing agents. Finally, it should be mentioned that the proposed microinsurance product should be tested through a pilot project on property microinsurance. Otherwise, it may not be possible to design an effective and efficient risk management instrument for reducing the risks of property damage.

7.4 Regulatory Issues

Key learning from the analysis of regulatory framework for microinsurance sector is that microinsurance sector is at its early stage of development in Bangladesh, in contrast to microcredit operation. Compared with other developing countries (e.g. India), Bangladesh is

lagging behind both in terms scale of operation and innovation in product design and distribution channels. Therefore, the regulatory structure needs to be flexible enough to promote growth of microinsurance services in Bangladesh. The regulatory body should carefully consider a set of issues in formulating regulatory structure for the microinsurance sector. Commercial insurers lack both in capacity and willingness to offer microinsurance services to low-income households in Bangladesh, while a portion of MFIs, particularly the large ones, are offering various financial instruments that can be categorised as microinsurance. In addition, only MFIs in Bangladesh have access to rural low-income households. Though partner-agent model is often advocated as an effective delivery channel for microinsurance services, the mechanism is internally unstable if MFIs, in addition to their regular microcredit and savings activities, serve as an agent of commercial insurers. The problem is that the issue of claim settlement depends on the commercial insurers, who perform poorly in terms claim settlement.

Therefore, MFIs should not be restricted from offering microinsurance services. In order to increase the capacity of MFIs in microinsurance operation, several institutional framework can be considered. One plausible framework is the creation of separate microinsurance organisation by a group of MFIs. Another plausible structure is that PKSF may work with insurance companies to establish workable mechanisms under the Insurance Act to operate microinsurance along with its partner organisations. The overall objective of the proposed regulatory framework will be to create an environment for the development of microinsurance sector that can effectively serve the needs of the low-income households in Bangladesh to reduce vulnerability to poverty and disasters.

7.5 Concluding Remarks

Given the challenges of designing and implementing microinsurance in Bangladesh we recommend to initiate simple, but attractive microinsurance products for both health and property. To facilitate the above, the feasibility of introducing ‘Regulatory Sandbox’--an approach to test microinsurance models, products, and services within a specific set of regulatory conditions--can be explored for spurring innovations while managing regulatory risks and concerns. The introduction of Regulatory Sandbox can be a useful mechanism to support the evolution of innovative microinsurance products/services and business models without disturbing the market. The Sandbox will also be useful to test new and alternative microinsurance products and services, including health and property microinsurance. The Sandbox approach will allow providers to test microinsurance products in a controlled environment using application-based environments through regular interactions. Further, the Sandbox approach would allow providers to test products/services in live environments. The regulators would also be able to analyse the impact, safety, and robustness of the business models, services, or products to devise effective microinsurance policies in Bangladesh.

Annex A

Field Distribution				
District	District wise Upazila	Upazila wise Union	Union wise Village	
Patuakhali	Bauphal	Kanchipara	Dariabad	
			Bazar Khola	
	Kalapara	Kalisuri		Dhala Para
				Kalisuri
		Chakamaiya		Betmour
				Chounga Pasha
Latachapli		Musalliabad		
		Maitbhanga		
Satkhira	Shyamnagar	Kaikhali	Shailakhali	
				Jadoppur
		Kashimari	Ghola	
	Tala	Sarulia		Achharyan Proelopo
				Chowgachha
		Tentulia	Shan Kdaha	
Sunamganj	Tahirpur	DakshinBaradal	Chowgachha	
				Shan Kdaha
		Uttar Sreepur	Tentulia	
	Bishwamvarpur	Fatehpur		Terchhi
				Rasulpur
		Sholukabad	Thkergaon	
Jamalpur	Sarishabari	Pingna	Noyabad	
				Teligaon
		Pogaldigha	Bahadurpur	
	Bakshiganj	Bakshiganj		Roypur
				JinarPur
		Dhanua	Rampur	
Kurigram	Chilmari	Ashtamir Char	Padmapur	
				Raspal
		Thanahat	Ramchandrakhali	
	Phulbari	Kashipur		Gobindapatal
				Majh Para
		Noadanga	Bakshiganj Bazar	
Cox's Bazar	Moheshkhali	Bara Moheshkhali	Samnath Para	
				Palashtala
		Saflapur	Haji Para	
	Teknaf	Whykong		Datiar Char
				Kismat Banu Khamargram
		Sabrang	Adhikarirgram	
		Jangirtari		
		Refujeetari		
		Baghmara		
		Kanda Para		
		Sugriapara		
		Sipahi Para		
		Mithachhari		
		Jaidaghona		
		Keruntali		
		Katakhali		
		Chanduli Para		
		Lafarghona		

Annex B

Sl. No.	Indicators	Parameters covered
Demand side indicators		
Socioeconomic characteristics		
1	General Information	Detailed information about the geographical location of the household (e.g., district, upazila, union, village), name of the respondent, housing condition, water and sanitation facilities, distance of the households from basic facilities (e.g., distance from hospital).
2	Household roster	A list of all members of the household including their age and gender
3	Education	Information about level of education for each member of the household
4	Occupation and employment	Occupation and employment situation for each member of the household.
5	Income	This will gather information about each earning member of the household as well as income from other sources (remittances, government benefits etc).
6	Assets	Ownership of assets in terms of cash savings, other productive and non-productive assets of the household
7	Consumption expenditure	Expenditure data will be collected under two broad heads: food and non-food. Expenses for non-food consumption will be collected under different sub-heads including costs of maintenance of residence, health, education, transport, communication, entertainment, etc.
8.	Housing condition	Entitlements, types of house, electricity, hygiene, sanitation, water source, etc.
Information about mortality and morbidity		
9.	Incidence of death in the household	Information about occurrence of death over the last few years. Information about each deceased person (e.g. age, occupation, gender) and reasons for death will be gathered. The information will be used for constructing proxy mortality tables and of probability of death.
10	Incidence of illness in the household	Illness profile for each household member containing information about incidence of disease related shocks. The information will be used for constructing proxy morbidity table.
Access to formal financial services		
11.	Access to credit	Information about availability of credit from banks and MFIs. Information about their present level of indebtedness and credit worthiness.
12.	Access to savings	Access to formal saving instruments
13.	Knowledge and perception about insurance	Whether heard about insurance, if yes source of information; What is the perception about insurance (positive/negative); If negative perception, why?
14.	Access to insurance	Information about present level of access to formal insurance services (e.g., life, livestock, health, property)
15.	WTJ for health insurance	Preparing a basic health insurance package and asking about WTJ.
16.	WTJ property insurance	Preparing a basic property insurance package and asking about WTJ.
17.	WTP for health insurance	Asking about WTP for basic micro health insurance.
18.	WTP property insurance	Asking about WTP for basic property microinsurance.

Community survey and health provider survey

1	Community survey	Basic infrastructure in the community (e.g., education institutions, social clubs, number of NGOs functioning, number of health centres, type of health centres, formal (e.g. MBBS) doctors practicing or not, number of informal providers, number of pharmaceutical shops)
2	Health provider survey	Assessing whether the existing health facilities in nearby areas are capable of providing services for the insured and asking the health providers whether they are willing to provide services for the insured.
3	Consulting with NGOs and insurance companies	Prepare a checklist for getting information from NGOs and insurance companies regarding type of health (and life) and assets insurance (if any) they are offering for the rural people.

Annex C

The HSB insurance

Case 1

Md. Masum Billah (not his real name) is a grocery shopkeeper of Shamnagar, Satkhira with a monthly earning of about BDT 6,000. He lives in his father-in-law's house with his wife and two kids. He has purchased the "hospital cash benefit (HCB) insurance" (under DIISP project) from Nowabenki Gonomukhi Foundation (NGF, one local MFI) by paying BDT 250 as premium per year in 2014. His wife was pregnant and had to go through caesarean operation. His wife had to stay for five days in the hospital. During the pregnancy time, his wife got general health checkups from the health camp of DIISP project. He also received BDT 800 as cash benefit against his wife's two days stay in the hospital. The other members of his family also got general healthcare services for diseases like fever, allergy, diarrhoea etc. from the paramedics of the MFI.

Along with the primary healthcare services, they also get various health awareness building suggestions from the paramedics; and now they are more conscious on health related issues. They have built sanitary latrine, washes hands with soap before eating food and after using the toilet, uses dustbin for waste disposal and keeps the home and surrounding clean. Illness is now less frequent in the family.

When one of his family members had diarrhoea, the quack doctor mistreated the patient, which costed BDT 300. But the disease was totally cured by taking medicine according to paramedic's advice and the price of the medicine was only BDT 35. He is very satisfied with the services received from the general health camp and willing to buy the health-card in future as well. He observes that there is no good pharmacy and diagnostic centre nearby. For any test, he has to go to the union headquarter. He maintains that it would be very useful for the villagers if a pharmacy and diagnostic centre is established nearby.

Case 2

AnowarHossain (not his real name) is a 45 years old tea-stall owner, living in Shamnagar in Satkhira district. He has five members in his family and his monthly income is about BDT. 6,000. His brother is another income earner of the family and earns BDT 5,000 as a day labour in a nearby brickfield. But their earnings together is not adequate for the family as the family members frequently suffer from various diseases. For meeting the treatment costs, he was forced to mortgage 50 decimal of his family land in exchange of BDT 30,000, which still remains unpaid. In the absence of any formal healthcare provider, the family had to depend on village quacks, which was both expensive and mostly ineffective. One day, he came to know about 'hospital cash benefit (HCB) insurance', under DIISP project of Nowabenki Gonomukhi Foundation (NGF). He purchased the package by paying BDT 250 as premium (per year) for five members of his family. He is satisfied with the services he receives from the paramedics and MBBS doctors from health camps. He also gets medicine at a cost less than the charges by the quacks. He has been renewing his health insurance card over the last three years. In 2016, he had to go through a hernia surgery. The paramedic of the insurance programme referred him to the MBBS doctor and he was totally cured from the problem after operation. He also received BDT 1,600 as cash benefit against his four days of stay in the hospital. He expressed his satisfaction with the health insurance and interest in new microinsurance packages.

Annex D

Findings from the Consultation Meetings: As planned, a supply side consultation meeting with MFIs and other stakeholders was held on 15 May 2017. This supply side meeting tried to bring out the problems and prospects of various initiatives and mode of services of insurance products offered by the MFIs. Participants at the meeting drew the attention that Bangladesh would not be able to achieve present financial inclusion without the contribution of microfinance sector. They emphasised that MFIs are playing a vital role to reach the excluded poor people and ensuring their financial inclusion. NGOs are working at the remote places where government and other formal financial organisations cannot reach. During this process, MFIs are offering credit insurance, health insurance, livestock insurance and many more. Several challenges and policy recommendations have been identified during the discussion with MFIs.

1. MFIs are offering credit insurance which is a risk management product that microfinance institutions offer to cover the borrower's financial loss in the event of a specific causality. It is linked with the microcredit product. This insurance waves client's loan balance in case of death. This coverage protects both the borrower and nominee from debt and often provides some funeral benefits for the family while also protecting the microfinance institution against loss of an outstanding loan balance. At present, the insurance is not mandatory for the clients and in many cases the clients are not willing to have these services as they have to pay premiums which make their cost for loan higher. On the other hand MRA does not encourage the MFIs to provide insurance services. Participants from the MFIs suggested addressing these issues while making policy recommendations and ensuring proper and positive guidelines for the MFIs regarding insurances.
2. Financing healthcare is very challenging. As premium for poor needs to be low, but if, the number of coverage area/ people is low, providing insurance service will not be feasible.
3. Supply side interest to provide insurance to the poor is still low, as there are high risks involved in case of any appalling or catastrophic incidence. To overcome this problem, if such a vulnerable situation takes place, the government or any authorised financial organisation has to deal with the loss.
4. If insurance can be offered with the microcredit product as a package product, this may be operational. But some of the participants mentioned that it will adversely affect the credit service. As people are not very aware of insurance mechanism, they may claim the additional amount they have given as premium, which will affect the overall activities of the institution. Therefore, effective awareness programmes needs to be conducted among the probable clients before launching any insurance product.

5. If the regulative authority makes insurance compulsory for all members of MFIs, it should be voluntary for the non-members as well; otherwise, they will be excluded from the benefit.
6. As the concept of property insurance is very new to MFIs and the product is yet to be tested at the field level, MFIs show low interest towards property microinsurance products.

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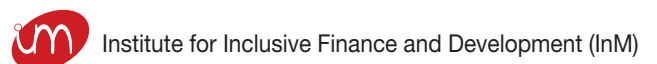
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