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CLIMATE CHANGE, DISASTERS AND ADAPTATION IN BANGLADESH: ROLE OF MICRO FINANCIAL SERVICES

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Abstract

Bangladesh is one of the most vulnerable countries to adversities of global climate change. There has been growing susceptibility due to different disasters in the country that includes cyclone, tornado, storm surge, erratic and intense rainfall, increased flood, drought and erosion, etc., which affect poor and vulnerable people the most. These people are also mostly excluded from the formal financial institutions but have access to microfinance. Reviewing the state of existing micro financial services, this paper argues that it can help significantly in managing climatic risks in Bangladesh. Even though the microfinance institutions have disaster plans and programmes, the financial services are yet to emerge fully climate-resilient. The paper finally suggests policy recommendations to make these services climatic and thus disaster resilient for supporting adaption and risk management of their millions of poor and vulnerable clients.

1. Introduction

Climate change has undoubtedly become one of the biggest threats to the low income groups of Bangladesh through its adverse effects in the form of various disasters. Even though the root causes of climate change have been generated outside its geographical territory, the adversities are spilled over the country.

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During the last decade the country has made significant progress in reducing poverty. From around 48.9 per cent in 2000 the incidence of moderate poverty came down to 31.5 per cent in 2010.[1] In addition, there have been many other significant progresses in economic and social indicators during this short period. Three major factors have contributed the most in deriving such impressive outcome: public expenditure in social sector including widespread social safety net programmes, large scale operation of microfinance institutions (MFIs) through rural financing, and emergence of a vibrant private for-profit sector that absorbed a big chunk of semi-skilled and unskilled labour force. However, the large majority of the rural poor and non-poor vulnerable population who are the clients of MFIs for micro financial services, and people living in climatic vulnerable areas like coastal, *char*, *haor* and flood prone areas remain under constant threat of natural disasters stemming from climate change, such as increased risk of cyclone, tornado, storm surge, erratic and intense rainfall, increased flood, drought, erosion, sedimentation of riverbeds, transformation of massive cultivable land from non-flood-prone to moderately or extremely flood-prone status, etc. Therefore, greater risks and imperatives are involved for the MFIs to address the emerging threats of climate change through devising new products and services towards their greater sustainability.

Given this backdrop, there is a need for understanding the role of micro financial services, *viz.* credit, savings and insurance in addressing challenges emanating from climate change. The objectives of this paper are mainly fourfold:

- Understand the linkage between climatic risk management and micro financial services.
- Discuss the microfinance products and delivery systems prevailing in Bangladesh.
- Comprehend the performance of microfinance products and services of microfinance institutions to address related problems in climate change vulnerable parts of the country.
- Derive policy lessons for devising strategy to make microfinance more climate-inclusive.

The paper has been organised as follows. After this brief prelude, Section 2 provides a discussion of the adversities due to climate change in Bangladesh. The different products offered by MFIs and their delivery mechanisms have been described in Section 3. Section 4 explains the dimensions and aspects of microfinance products and initiatives of Bangladeshi MFIs to address the adversities of climate change. In Section 5 some policy recommendations have

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[1] Bangladesh Bureau of Statistics, *Report of the Household Income and Expenditure Survey 2010*, Ministry of Planning, Dhaka, 2012.

been suggested to address the adversities emanating from climate change through financial innovations of MFIs. Finally, concluding remarks have been made.

2. Climate Change, Micro Financial Services and Risk Management

2.1 *Finance and Risk Management*

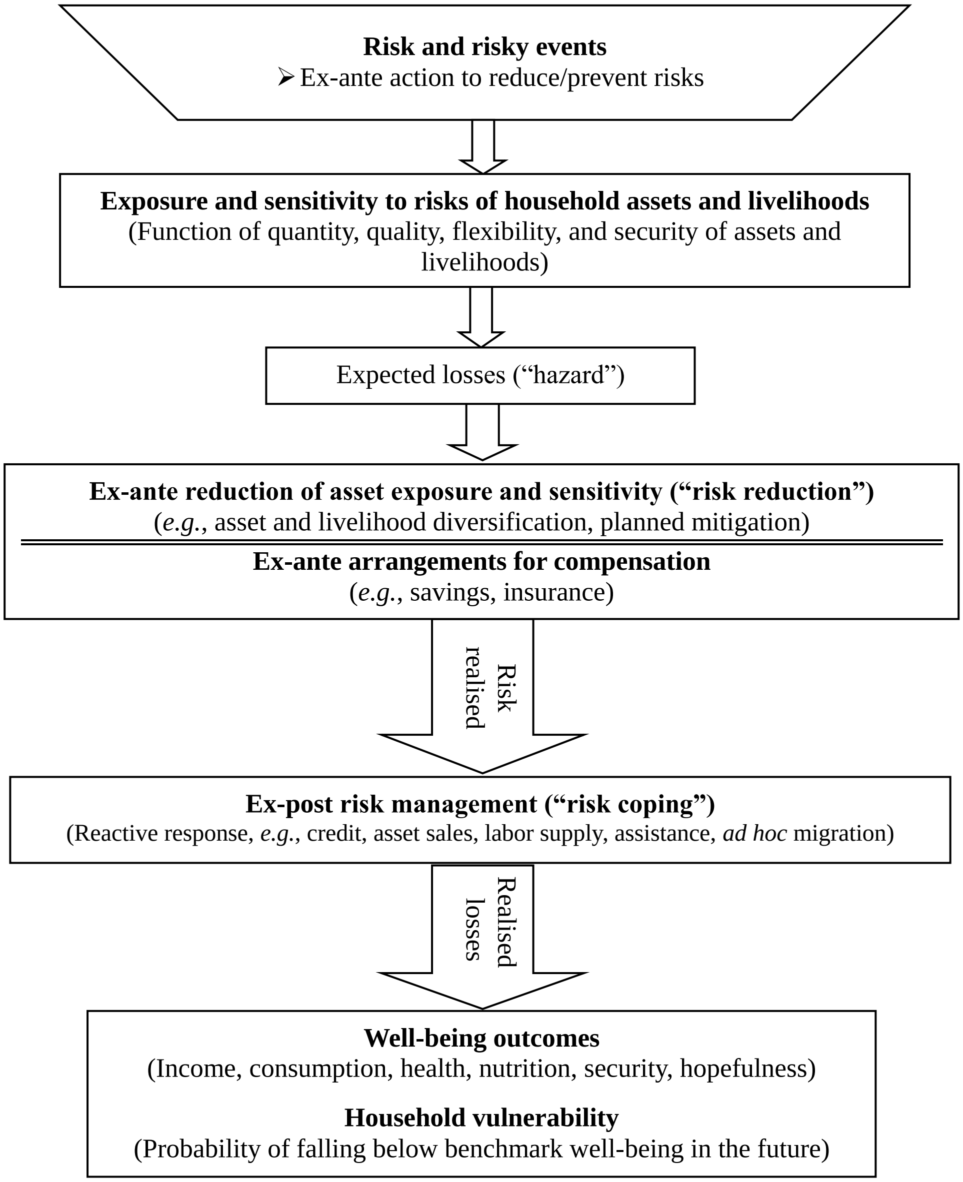
Access to financial products and services belongs to fundamental human right of economic affairs, and it is more vital to the poor for consumption smoothening and risk management. It is, however, realised by the poor much lower than its potential[2] for climatic risk management like manifold disasters. A significant part of low-income group of people remain excluded from the banking system, forced to use cash, borrow from informal sources of financing like *mahajans* (informal moneylenders), and are involved in informal money transfers which are notably less secure and flexible. The poor also witness multiple barriers in accessing financial services including large distance from service providers, inability to produce formal documents, and high tangible and intangible costs that prohibit them in accessing formal services. Thus, formal financial institutions tend to be less accessible to the poor who are more susceptible to climatic adversities.

By contrast, micro financial services can support climate change adaptation through livelihood support and instruments to manage manifold risks.[3] Microfinance includes the delivery of credits, savings, insurance, and other financial products and services to low-income groups in order to enable them to engage in income generating activities, develop assets, and protect themselves against disasters and related risks. Thus, it is widely recognised to be one of the important instruments to fight poverty and manage risks of poor and vulnerable communities.

[2] R. Heltberg, P.B. Siegel and S.L. Jorgensen, "Addressing Human Vulnerability to Climate Change: Toward a 'No-Regrets' Approach", *Global Environmental Change*, Vol. 19, 2009, pp. 89-99.

[3] A. Hammill, R. Matthew, and E. McCarter, "Microfinance and Climate Change Adaptation", *IDS Bulletin*, Vol. 39, No. 4, 2008, pp. 113-122.

Figure 1: Risk-Vulnerability Chain[4]



Intuitively, micro financial services are related to climate change adaptation by virtue of its outreach to vulnerable populations through direct and indirect financial support, and services in order to develop asset bases and coping mechanisms over time through credit, savings, and importantly insurances. These

[4] R. Heltberg *et al.*, 2009, *op cit.*

services are not only products but also about sharing of knowledge and information to influence behaviours of the poor clients.[5]

Table 1: Priority Ranking of Climate Change Risks for Bangladesh[6]

Resource/Ranking	Certainty of Impact	Timing of Impact	Severity of Impact	Importance of Resource
Water Resources (Flooding)	Medium-high	High	High	High
Coastal Resources	High	Low	High	High
Human Health	Low-medium	Medium	Medium-high	High
Agriculture	Medium	Low-medium	Low-medium	High

2.2 *Role of Microcredit and Savings*

Microcredit is not designed directly to cope up with risk. It needs to be transformed into a product that can expand in the period of shocks. However, microcredit in the present state can create climate and disaster resilience indirectly through helping people generate and diversify their incomes and assets. Micro savings, which is a part of microcredit (both compulsory and voluntary), can complement this by giving their clients, who are poor and vulnerable people, access to secure and low-cost savings instruments. The ability to utilise savings during crisis periods can help the poor manage risks significantly.

Thus, MFIs can help the poor and most vulnerable people in adapting to climate change through enabling them in accumulating and managing the assets and capabilities needed to become less susceptible to shocks and addressing their adverse impacts. They can do it through increasing their income/asset and capabilities since the more assets and capabilities people have the less vulnerable they are.[7] However, some assets (*e.g.*, financial, physical, human, social and natural)[8] and capabilities may turn out to be better in promoting climate change adaptation than others. In other cases, optimal mix would be required for addressing vulnerabilities of the affected households and communities.

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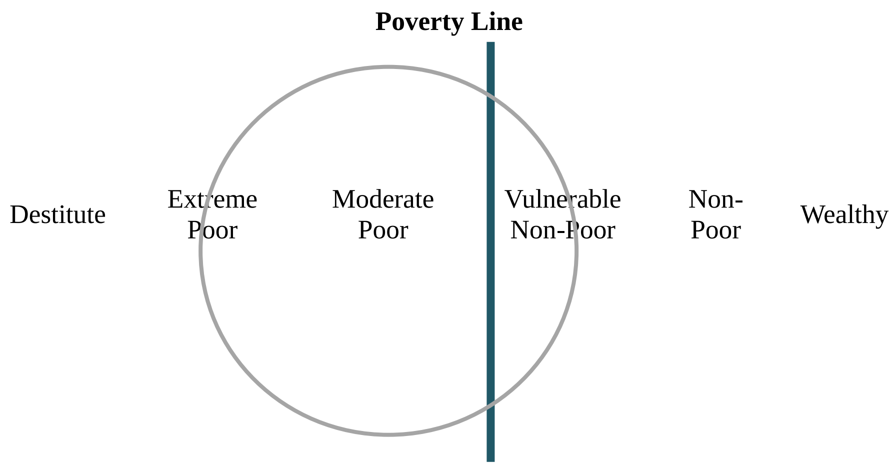
[5] A. Hammill *et al.*, 2008, *op cit*.

[6] S. Agrawala, T. Ota, A. U. Ahmed, J. Smith and M. van Aalst, *Development and Climate Change in Bangladesh: Focus on Coastal Flooding and the Sundarbans*, OECD Environment Directorate, Paris, 2003.

[7] F. Ellis, "The Determinants of Rural Livelihood Diversification in Developing Countries", *Journal of Agricultural Economics*, Vol. 51, No. 2, 2000, pp. 289-302.

[8] I. Scoones, "Sustainable Rural Livelihoods: A Framework for Analysis", *IDS Working Paper 72*, IDS, Brighton, 1998.

Figure 2: Clients of Micro Financial Services[9]



Thus, microfinance services can enhance the livelihood asset base through direct (enterprises and activities) and indirect (education and training) income effects, and non-financial effects (*e.g.*, stronger social networks and increased confidence).[10] Through these effects, different micro financial services can help risk management of the clients in the risk-vulnerability chain (Figure 1) as follows:

- Microcredit helps in developing and diversifying asset base of poor and vulnerable household who are susceptible to climatic risks. Credits are also disbursed for directly non-productive purposes, such as emergency, home improvement and education, which may also contribute to reducing vulnerability during and after disasters.
- Micro insurance schemes enable the poor people to cover specific risks and hazards, such as injury, death, natural hazards, etc. in exchange of regular premium payments which tend to be in easier terms.[11]
- Micro savings, compulsory and voluntary, are small balance deposits for the safe storage of money of poor clients, allowing them to access lump sums to meet both predictable and unpredictable expenses before, during and after disasters.

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[9] M. Cohen, "The Impact of Microfinance", *CGAP Donor Brief 13*, CGAP, Washington, DC, 2003.
[10] S. Galab, B. Fenn, N. Jones, D. S. Raju, I. Wilson and M.G. Reddy, "Livelihood Diversification in Rural Andhra Pradesh: Household Asset Portfolios and Implications for Poverty Reduction", *Working Paper 34*, Young Lives, Oxford, 2006.
[11] C. Churchill (ed), *Protecting the Poor: A Microinsurance Compendium*, International Labour Organisation, Geneva, 2006.

In these ways, the microfinance-driven accumulated livelihood assets can support individuals and households to take measures towards reducing vulnerability and risks, *i.e.*, helping both *ex ante* risk management and *ex post* coping. *Ex ante* risk management can be done through forward planning to minimise and spread risk through, for example, accumulating assets, diversifying income sources, reinforcing reciprocity agreements, etc. On the other hand, *ex post* coping can be done by maintaining consumption during and after a crisis, for example, by searching for new credit/income, selling assets, reducing consumption, etc. [12]

2.3 *Role of Micro Insurance*

Micro insurance is a direct instrument of disaster risk management as suggested in the recent literature. Formal insurance is institutionally superior to informal measures, *e.g.*, low-risk low-return strategies. Micro insurance products aims at increasing outreach and coverage of formal insurance across population who belongs to lower income and vulnerable cohort, remains in the remotest part of a country like *char*, *haor* and hilly parts in Bangladesh, and therefore, could not otherwise be covered by traditional insurance companies. Common micro insurance products include health, life, livestock, asset and index-based, such as flood and rainfall insurance. MFIs have so far demonstrated significant interest offering insurance as a way to insure their outstanding loans.[13] Bundled disaster insurance schemes have three significant benefits:

a. It enables the insurer to diversify risks by adding other risks to the portfolio uncorrelated across clients.
b. It reduces adverse selection if clients are indulged to buy insurance, including those who are facing low disaster risks.
c. It lessens transaction costs if offered jointly with other products rather than sold separately. [14]

Despite these tangible benefits, it reduces the affordability of its poor clients because of increased purchasing costs. Compulsory insurance schemes that are bundled with micro-credit or savings schemes may become a barrier to low-income households to access credit facilities as such schemes increase the costs of borrowing or reduce the returns from savings that in turn result in usual aversion of compulsory insurance programmes by insurance holders.[15]

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[12] F. Ellis, 2000, *op cit*.
[13] H. Alderman and T. Haque, “Insurance Against Covariate Shocks: The Role of Index-Based Insurance in Social Protection in Low-Income Countries of Africa”, *Africa Human Development Series Working Paper No. 95*, World Bank, Washington, DC, 2007.
[14] A. Hammill *et al.*, 2008, *op cit*.
[15] S. Akter, R. Brouwer, P. J. H. van Beukering, L. French, E. Silver, S. Choudhury and S. S. Aziz, “Exploring the Feasibility of Private Micro Flood Insurance Provision in Bangladesh”, *Disasters*, Vol. 35, No. 2, 2011, pp. 287-307.

Micro insurance is also often viewed and referred to as an important and effective mechanism to cope up with natural hazard risks.[16] Accordingly, natural hazard risk insurance programmes have been introduced in many developing countries in order to help the poor address the increased climatic disaster risks.[17] However, studies reveal that the voluntary participation in these insurance schemes has been much lower than expected. For example, less than five per cent of the eligible farmers in a drought-prone area in India subscribed cheap rainfall insurance. The offered insurance scheme could not attract the target group of farmers because the insurance was bought by those who hardly required it.[18] In the micro insurance studies, low purchase rate of weather-related micro insurance products is often called 'puzzle in need of an explanation.'[19]

By contrast, availability and access to pre-disaster microcredit have been found to be an important motivating factor of increasing take-up rate of micro insurance products.[20] Such relationship is substantiated on the basis of affordability, *i.e.*, access to pre-disaster microcredit increases affordability of insurance of the borrowers by enhancing their household income or by relaxing shortage of liquidity.

While the complementary nature of pre-disaster microcredit and weather related micro insurance is readily understood, the role of post-disaster microcredit in influencing micro insurance demand is not clear. Post-disaster microcredit is often referred to as an implicit insurance against natural hazards. Therefore, post-disaster microcredit and micro insurance are treated as substitutes subject to the fact that they independently serve as instruments for mitigating disaster losses.[21] A study in the rural floodplains of Bangladesh reveals that post-disaster microcredit has a positive relationship with the decision to participate in insurance programme and a negative relationship with willingness to pay premium for flood-insurance. This may be due to the fact that households who

[16] W. J. W. Botzen and J. C. J. M. van den Bergh, "Insurance against Climate Change and Flooding in the Netherlands: Present, Future and Comparison with Other Countries", *Risk Analysis*, Vol. 28, No. 2, 2008, pp. 413-426.
[17] R. Mechler, J. Linnerooth-Bayer and D. Peppiatt, "Disaster insurance for the Poor? A Review of Microinsurance for Natural Disaster Risks in Developing Countries", ProVention/IIASA, Geneva, 2006.
[18] X. Gine, R. Townsend and J. Vickery, "Patterns of Rainfall Insurance Participations in Rural India", *World Bank Economic Review*, Vol. 22, No. 3, 2008, pp. 539-566.
[19] S. A. Cole, X. Gine, J. Tobacman, P. Topalova, R. Townsend and J. Vickery, "Barriers to Household Risk Management: Evidence from India", *Harvard Business School Finance Working Paper No. 09-116*, 2009; and D. Karlan and J. Morduch, "Access to finance", in: *Handbook of Development Economics*, Elsevier, 2009.
[20] X. Gine *et al.*, 2008, *op cit*.; S.A. Cole *et al.*, 2009, *op cit*.
[21] R. Brouwer, S. Akter, L. Brander and E. Haque, "Economic Valuation of Flood Risk Exposure and Reduction in a Severely Flood Prone Developing Country", *Environment and Development Economics*, Vol. 14, No. 3, 2009, pp. 397-417.

accessed post-disaster microcredit to cope with natural disaster induced losses in the past were willing to invest in flood-insurance as an alternative disaster coping measure.[22]

3. Micro Financial Services in Bangladesh: Products and Delivery Systems[23]

3.1 *Structure of MFIs*

Bangladesh is not only the pioneer but also has the largest microfinance industry of the world. There are five types of MFIs according to their size and membership. These are: very large, large, medium, small and very small or micro institutions. Amongst them, there are three very large MFIs, *viz.*, ASA, BRAC and Grameen Bank, which dominate the microfinance sector, each having more than 7 million members. They have attained significant expansion through new clients in the same or new geographical areas by enhancing management efficiency, standardised management practices, products and policies, and mobilising financial resources. The three combined has 8,547 branches, 19.16 million borrowers and loan outstanding of Tk.125,876 million. They have successfully established wide branch networks all over the country except in a few remote *char*, *haor* and coastal areas.

Beside these three most influential MFIs, there are some large ones with memberships varying between 50,000 to one million. All of them are partners of Palli Karma-Sahayak Foundation (PKSF) except BURO Bangladesh. Apart from very large and large ones, there are many medium-sized MFIs whose membership vary from 5,000 to 50,000 and operate through 3 to 30 branches. These institutions tend to be local or regional, and are financed mostly by PKSF.

The fourth group of MFIs is small with respect to the number of members. The cut-off point for receiving license from the Microcredit Regulatory Authority (MRA) is 1,000 memberships and Tk. 4 million in outstanding loans, which results in the emergence of many small MFIs. The accurate number of such MFIs is, however, not yet known.

Finally, there are many small or micro MFIs (smaller NGOs) operating locally and in remote parts of the country with very limited resources for loan disbursement, using mostly savings, which do not qualify for license. Activities financed by these MFIs can be classified into four major groups:

i. *Agriculture*: crops, livestock and fisheries
ii. *Processing and industries*: food processing and cottage industries

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[22] S. Akter and N. Fatema, "The Role of Microcredit and Microinsurance in Coping with Natural Hazard Risks", presented at the seminar titled *Economics of Adaptation to Climate Change in Developing Countries*, Institute of International Economic Policy, George Washington University, Washington, DC, 18-19 May 2011.

[23] This section draws on D.A.H. Alamgir, *State of Microfinance in Bangladesh*, Report prepared for Institute of Microfinance, Dhaka, 2009.

iii. *Trade and transport*: small business and transport; and
iv. *Social sector*: health, education and housing

3.2 *Credit Products*

3.2.1 Modalities

Three different lending systems of MFIs are in place in Bangladesh: Grameen-type group-based system, self-help group, and individual lending system. The Grameen model, pioneered by Grameen Bank, has been the most practised mode of providing lending services by the MFIs. In this system, poor women and men are organised in groups or *samities* who meet once in a week to deposit small amount of savings to build their own capital. MFIs normally provide one-year loan, which a borrower repays in equal weekly installments with interest. A borrower is normally qualified to receive another loan of higher amount within the overall loan ceiling, which is revised upward over time once she/he repays one loan. However, the group-based system has been termed as ‘rigid’ or ‘inflexible’ as weekly repetitive installment does not match with poor people’s financial requirements.

Apart from the most dominant Grameen model, the self-help group system is being practised by some national and international NGOs even though it has not appeared to be as successful as Grameen model. In this system the promoter or the NGO organises self-help groups to facilitate savings mobilisation from within poor women/men. The participating members can borrow from their own savings funds when needed. There have been some efforts from several NGOs and donor-funded projects to develop alternative systems but none could stand as a viable alternative to Grameen model.

By contrast, individual lending system aims to offer flexible and demand-driven services to each borrower of the MFIs. The individual lending system includes savings and credit service to each individual according to the demand of that individual client. The flexibility is introduced in the form of amount and frequency of deposit of savings, loan size and duration of loan, repayment and frequency of installments, etc.

3.2.2 *General Loan Products*

The mainstream loan product or microcredit for the moderately poor people, the product introduced by Grameen Bank, has become most common or routine loan product in the market. All MFIs offer this almost on same terms and conditions: one year loan, weekly repayment, interest rate may vary between 20 to 30 per cent per annum. But the loan ceiling may vary among MFIs. However, the model remains the same, with loan for one year, weekly installments and primarily targeting women. The sector is dominated by three MFIs, *viz*. Grameen

Bank, ASA and BRAC. These organisations are expected to continue to expand, creating further concentration in an already highly concentrated market. Despite this, many small and medium MFIs are still trying to expand their outreach, introducing new and different types of savings and credit products.

Table 2: Loan Products of ASA[24]

Product	Target Groups	Group Size	Group Meeting	Repayment	Insurance Coverage	Duration of Loan	Interest rate
Loan (women)	Poor women having less than 0.5 acre land and Tk.5,000 monthly income	15-30	Weekly	Weekly	Yes	43 weeks	14.4% (flat)
Small Loan (men)	Husband or adult male from women's families	Individual loan	No meeting	Monthly	Yes (not Mandatory)	5-10 months	14.4% (flat)
Small business loan	Men (shop owners, traders) and successful women Small Loan borrowers ('graduate' borrowers)	10-15	Weekly	Weekly	Yes	12 months	14.4% (flat)
Small entrepreneur loan (SEL)	Micro-entrepreneurs [normally for production-type enterprise]	Individual loan	No meeting	Monthly	No	Max 24 months	14.45% (flat)
Hardcore Poor (HCP)	Poorest people in remote and poverty stricken areas	5-20	No meeting	Weekly	Yes	3-12 months	14.4% (flat)

3.2.3 *Microenterprise Loan Programme*

Microenterprise loan has become another distinctive product being served by the MFIs. This is due to several factors:

- demand from better performing ('graduating') borrowers for larger loans compared to loans normally given under 'mainstream microcredit';
- demand from small enterprises throughout the country, which are not the members of microcredit groups but willing to take loans for running or expanding businesses;
- small enterprises that do not qualify for receiving loans from commercial banks but need capital for running a larger business;
- MFIs are also actively seeking to expand portfolio (and income) by serving this group;

[24] D.A.H. Alamgir, 2009, *op.cit*.

- microenterprises create wage employment for poor people in addition to self-employment for the owners

3.2.4 *Programmes for the Ultra-poor*

MFIs had long been accused of social exclusion in reaching the extreme poor. Rahman and Razzaque provided the evidence of significant exclusion of ultra-poor by ASA, BRAC, etc. in their operating areas.[25] Subsequently, some programmes have been introduced by bigger MFIs like BRAC and ASA to target the ultra-poor that include asset transfer and allowance, enterprise development training and credit.

Table 3: Targeting by BRAC[26]

Poverty Group	Components	Definitions of Target Groups	Product details
Extreme Poor	Challenging the Frontiers of Poverty Reduction: Targeting Ultra Poor (CFPR-TUP)	▪ Depends upon female domestic work and begging ▪ Owns less than 10 decimals of land ▪ No adult active male member in the household ▪ No productive asset in the household	▪ Asset transfer and subsistence allowance ▪ Enterprise development training ▪ Social development training ▪ Essential Health Care Service ▪ No loans provided. After two years under CFPR, members can access Income Generating Vulnerable Group Development (IGVGD) loan products
	CFPR- Other Targeted Ultra Poor (OTUP)	▪ Households owning no more than 30 decimals of land ▪ Women who are divorced, separated or have disabled husband, aged between 18-49	▪ Livelihood training input support ▪ Social development training ▪ Starting loan size: Approx. USD 20 ▪ Interest rate: 15% (flat) ▪ Repayment: 46 weekly installments within one year (national holidays and festivals excluded)
Moderately poor	Daridro Bimochon (DABI)	Owns up to one acre of land including homestead, sells manual labour for living	▪ Loan size: Taka 3,000-30,000 ▪ Interest rate: 15% (flat) ▪ Repayment: 46 weekly installments within one year
	Unnati	Owns more than one acre of land and involved in farm and	▪ Loan size: Taka 15,000-50,000 ▪ Interest rate: 15% (flat)

[25] A. Rahman and A. Razzaque, "On Reaching the Hardcore Poor: Some Evidence on Social Exclusion in NGO Programmes", *Bangladesh Development Studies*, Vol. 27, No. 1, 2000, pp. 1-35.

[26] D.A.H. Alamgir, 2009, *op cit*.

Poverty Group	Components	Definitions of Target Groups	Product details
		nonfarm enterprises	▪ Repayment: Monthly installments within 12-18 months
Vulnerable non-poor	Progati and Women Entrepreneurship Development Program (WEDP)	▪ BRAC and non-BRAC Micro-entrepreneurs to develop and finance own business ▪ Both men and women clients borrowers	▪ Loan size: Taka 50,000-500,000 ▪ Interest rate: 15% (flat) ▪ Repayment: Monthly installments within 12-24 months

3.3 *Savings*

The MFIs in Bangladesh have the following methods of providing savings services to their clients and others:

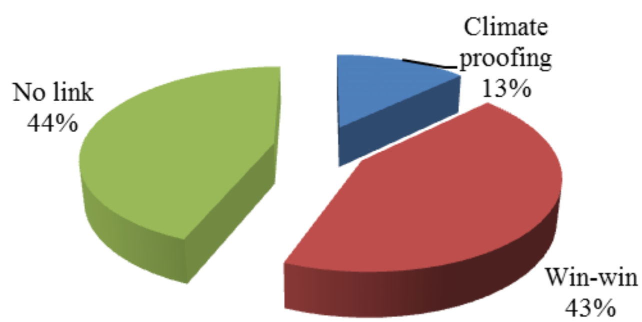
- *Essential weekly savings with or without withdrawal facilities*: All the microcredit programmes collect mandatory weekly savings as the prerequisite for microcredit provisions. However, various flexible measures have been introduced, which are practised in terms of accessing savings deposited by the members. For instance, BURO Bangladesh allows full withdrawal of savings at any time irrespective of size of loan outstanding. Smaller NGOs have chosen a variation of the above, where they allow access either after a certain period or above or below a certain amount of money deposited by individuals.
- *Additional savings account*: BRAC allows opening up savings bank account where members may transact according to their needs.
- *Time deposit:* An amount of money kept for a fixed time for higher interest by bigger MFIs such as ASA and Grameen Bank.
- *Small regular savings to get a lump-sum after a fixed period*: This type of savings has been most successfully introduced by Grameen Bank.
- *Savings from general public*: Only Grameen Bank can and has legally offered this service.

All small MFIs have mandatory savings and also some of them offer additional voluntary savings. However, in general the savings services have not yet developed to the fuller extent to provide all of the clients of MFIs gorgeous savings services. There are some provisions of using savings during the periods like disasters, but there is a need for developing comprehensive facilities so that non-members can also be attracted through their packages.

4. Microfinance and Climate Change Adversities: Bangladesh’s Experience

MFIs in Bangladesh have undergone modifications and have introduced some instruments to address disasters, which are mostly in the forms of adversities emanating from global climate change. These instruments cover their products related to credit, savings and insurance. A study analyses 226 programmes sponsored by major 22 MFIs, and categorises the programmes into “no-link”, “win-win” and “climate proofing”. “No-link” programmes (44 per cent) were found to have no direct connection with climate change adaptation; these are income generating and business developing in nature. “Win-win” programmes (43 per cent) would contribute to climate change adaptation. On the other hand, “climate proofing” programmes (13 per cent) need to be fine-tuned to better manage the climate change risks and to facilitate adaptation (Figure 3).

Figure 3: Links of Microfinance Programmes in Bangladesh with Climate Change Adaptation[27]



4.1 *Credit*

Borrowers have been found to regard credit highly as an instrument for reducing vulnerability since it allows them to adopt risk-mitigating strategies, during and after disasters. A study reveals that even during and after the devastating flood in 1998, the MFI clients continued to repay loans so that credit sources remained open for them in case the situations were to get even worse. It is also found that in some cases, clients did not intend to draw down their savings after the flood that would reduce the size of their loans.[28]

Most MFIs in Bangladesh allow their members to reschedule installments during flood or other major disasters. Based on field data during the major flood of 2004, it was found that the rescheduling of loans reduces borrowing from

[27] S. Agrawala and M. Carraro, “Assessing the Role of Microfinance in Fostering Adaptation to Climate Change”, *OECD Environment Working Papers 15*, OECD Environment Directorate, Paris, 2010.
[28] H. Zaman, “Assessing the Impact of Microcredit on Poverty and Vulnerability in Bangladesh”, *Policy Research Working Paper 2145*, World Bank, Washington, DC, 1999.

moneylenders and works as a safety net to prevent the borrower from falling further into poverty trap.[29]

Grameen Bank has introduced a system for its borrowers to renegotiate their loan contracts whenever they face repayment problems, which came as a mechanism to address the repayment problem after the major flood of 1998. It was the outcome against large-scale repayment problems after flood of 1998 due to the rigidity and conditionality built into the system. After disasters the bank allows an exit option for borrowers under which a borrower can renegotiate his/her contract to extend the repayment period and lower the installment amount if s/he faces problems in repayment.[30]

4.2 *Savings*

MFIs have been switching from mandatory to voluntary savings aiming at establishing greater control to borrowers over management of their savings. For example, Grameen Bank has introduced several contractual savings schemes which have become very popular amongst borrowers, which helped expansion of this service outreach promptly.[31] Other MFIs also have introduced similar savings products, which proved to be successful during the major floods of 2004 because of added flexibility and effectiveness of personal savings.[32] Before the onset of the flood season, Grameen Bank urged the borrowers to put extra money in their personal savings accounts and subsequently asked them to protect their in-kind savings in livestock and poultry before flood. Then borrowers used their savings to resist the flood, and the bank used the large internal savings to address the adversities of flood.[33]

BURO Bangladesh has introduced contractual term savings that require its clients to make regular savings deposits for a certain period in exchange of the guarantee that they will be able to withdraw a large proportion (*e.g.*, three-quarters) of the accumulated balance without penalty during a disaster.[34] This

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[29] M. Shoji, "Evaluation of Flexible Repayment System in Microfinance: A Case Study from a Natural Disaster in Bangladesh", *COE Discussion Paper F-series*, *COE-DP F-190*, University of Tokyo, Tokyo, July 2007; M. Shoji, "Does Contingent Repayment in Microfinance Help the Poor during Natural Disasters?", *COE Discussion Paper F-series*, *COE-DP F-223*, University of Tokyo, Tokyo, March, 2008.

[30] A. Dowla and D. Barua, *The Poor Always Pay Back: The Grameen II Story*, Kumarinan Press, Bloomfield, Connecticut, 2006.

[31] *Ibid*.

[32] R. Meyer, "The Demand for Flexible Microfinance Products: Lessons from Bangladesh", *Journal of International Development*, Vol. 14, No. 3, 2002, pp. 351-368.

[33] A. Dowla and D. Barua, 2006, *op cit*.

[34] A. Dowla, "Climate Change and Microfinance", Paper presented in the *Second European Research Conference on Microfinance*, Groningen, The Netherlands, 16-18 June 2011.

type of arrangement can help the clients of other MFIs self-insure and pursue riskier and potentially more profitable livelihood activities. However, this may involve more risk-taking activities through pursuing enterprise or income-generating activities in trade, production or services, which would build a household's asset base if it turns out to be profitable.[35]

4.3 *Insurance*

Besides extending micro-credit and savings, many MFIs in Bangladesh have collaborated with insurance companies in extending another financial service at affordably low rates of premium, which include

(i) micro-insurance to the poor,

(ii) offering modest-sized covers such as credit life insurance ('debt dies with debtor'),

(iii) health and accident insurance (for sicknesses and injuries requiring hospitalisation, etc.), and

(iv) property insurance (usually for livestock bought with MFI loans)

Typically, the MFIs act as partner agents of the insurance companies through collecting the micro-insurance premiums for them. Latest available information reveals that ten insurance companies through partnering with 61 MFIs have been offering a range of micro-insurance products in 81 schemes. The cumulative premium collection has been over Tk.11.2 billion from about 4.5 million clients.[36]

Some MFIs provide insurance independently or linked to loans and savings.[37] Even though insurance does not address losses from adverse events from individual as well as covariate shocks emanating from climate change, it lessens the adverse financial impacts of these events by allowing the vulnerable borrowers from the adversities of disasters through paying money to protect them against a small probability of large loss.

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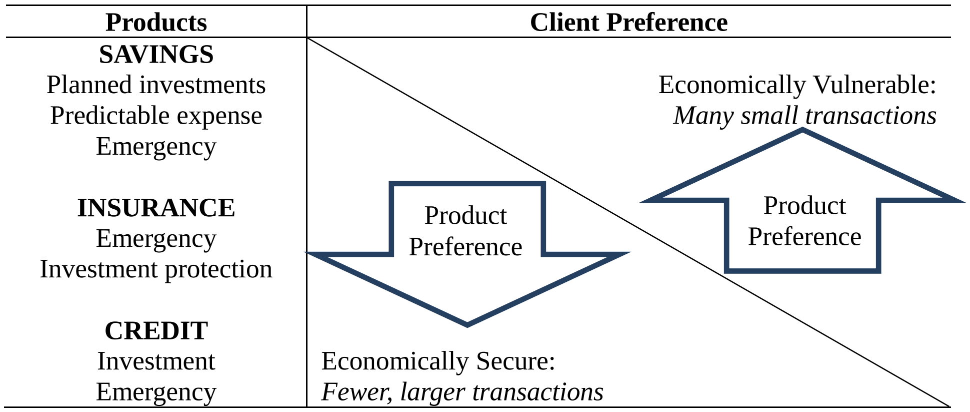
[35] A. Hammill *et. al.*, 2008, *op cit*.

[36] Bangladesh Bank, "Policy Initiatives of Bangladesh Bank: Three Years of Change", *Briefing Note*, Dhaka, 30 April 2012.

[37] S. Enarsson, K. Wiren and G. Almeyd, "Saving- and Credit-Linked Insurance", in C. Churchill (ed.), 2006, *op cit*.

Figure 4: Microfinance Product Purposes and Client Preferences[38]



MFIs also offer micro-insurance products along with other financial services, such as microcredit or savings schemes. Proshika has been offering compulsory group-based insurance since 1997. Clients have to deposit 2 per cent of their savings in an insurance fund from which double the amount of the accumulated savings is returned to in the events of any loss of the clients due to natural disasters.[39]

4.4 *Disaster Plans*

MFIs have undertaken disaster plans from their experiences during floods, cyclones and tidal surges which are events in Bangladesh as the outcomes of climate change. For example, PKSF requires all its partner organisations to contribute 1 per cent of interest income in a Disaster Management Fund. It then provides additional funds to partner organisations to cope up with disasters.
Grameen Bank's disaster plan has three phases:

- *First*, it prepares borrowers in July at the beginning of flood season. Bank staffs remind borrowers to store nonperishable food items and to immunise livestock at weekly meetings.
- *Second*, during the flood period, the Bank staffs visit borrowers at home or in shelters, distribute water purification tablets and oral rehydration solution, and even deliver their savings as safety measures for their clients. In addition, local branch managers are authorised to declare their centres as 'disaster centres' that include the suspension of repayments.

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[38] H. Allen, "Finance Begins with Savings, not Loans", in T. Dichter and M. Harper (eds.), *What's Wrong with Microfinance?* Practical Action Publishing, Warwickshire, 2007.
[39] S. Akter *et al.*, 2011, *op cit.*

The Bank staffs also provide at-cost emergency food aid that must be repaid after the flood.

- *Third*, in the post-flood period, the plan is aimed to ensure that borrowers can return to normalcy at the earliest. The Bank makes cash transfers using geographical targeting of the worst hit areas and uses local knowledge and branch managers to trigger these transfers. The Bank disburses money from the central disaster fund. The head office also sends money to the worst affected areas from the Bank's Rehabilitation Fund endowed with the imputed tax and undistributed dividends. The Bank reschedules loans and offers new loans to resume business and rebuild houses damaged by disasters.[40]

Other MFIs also have similar plans for which they can now deal with disasters more effectively. For example, after devastating cyclone *Sidr*, which severely affected the southern part of Bangladesh, MFIs were in the area very shortly (within few hours) to use their branch network so as to address the damages of the cyclone.

4.5 *Microfinance and Climate Change Affected Areas: A Case from Paikgachha, Khulna*[41]

There are six major MFIs operating their microfinance programmes at Paikgachha: ASA, BRAC, Sabalamby Unnayan Samity (SUS), Uttaran, Prodipan and BURO Bangladesh. Uttaran provides credit to the ultra-poor and those who are landless, even though there is a common bias against reaching the extreme poor.

Fishing, trading, cattle raring and vegetable cultivation, small farming and share cropping are the main occupations in which credit is being disbursed. Majority of the borrowers use their credit to buy fishing net, rickshaw van and to do small trading. Most of these borrowing households have multiplicity of loans — an average three loans from different sources. That is, they take loan from one MFI and pay the installment of other MFIs.

MFIs also perform humanitarian activities such as distributing emergency food support not only for their beneficiaries, but also to others after any natural calamity. After any disaster, especially devastating ones like cyclone *Aila*, most of the MFIs postpone their weekly installment-collection for few weeks. For example, after cyclone *Aila*, Uattran provided financial aid to start small businesses among the severely affected beneficiaries, and also provided material

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[40] A. Dowla and D. Barua, 2006, *op cit*.

[41] Draws on G.A. Parvin, "Role of Microfinance Institutions to Enhance Food Security in the Climate Change Context: Gender based analysis of rural poor community of Bangladesh", *Technical Progress Report No. 1*, prepared for Pathikrit, Satkhira, 2012.

support, food and drinking water. SUS provided low-interest business loan, housing loan and in some cases housing materials. BRAC supported the poor farmers with zero-interest loan under Agricultural Credit Program to encourage farmers to produce alternative climate adaptive crops such as beans, corns and sunflower to adapt to climate change as they require very low amount of water.

Recently most of MFIs are trying to incorporate climate change and disaster preparedness awareness among their staff with short training courses for the benefit of employees and beneficiaries. Most training, however, focuses on disaster preparedness and early warning system, and not climate change adaptation. They however, have no programmes to address climate change impacts and adaptation issues directly. But most MFI officials recognise different impacts of climate change that include increase of food price, debts, and food insecurity that have affected their beneficiaries, especially after cyclone *Aila*.

After cyclone *Aila*, most of the households received loans to start economic activities and to build houses. A major portion of this money was used to buy basic needs like foods, clothes, beds, and utensils. Since the housing loan was large compared to their income, it increased their debt burden. Most of MFIs' beneficiaries spend about three-quarters of their weekly income to pay back loans of different MFIs.

5. Policy Recommendations

Based on the above discussion, the following broad-based recommendations can be suggested for introducing new microfinance products and improving the existing ones towards better taking into account the climate change adaptation in Bangladesh through better risk management and coping:

- *Introducing cheaper and convenient products*: MFIs should design cheaper insurance products for poor people who are more vulnerable to climatic risks due to residing at remote (*e.g.*, *char* and *haor*, and hilly areas) and coastal areas. Number of MFIs operating in those areas is lesser than those of other non-remote areas. Increasing the number of MFIs in these areas will make micro financial services more available to people living there.
- *Flexible repayment*: Due to additional stresses caused by climate change on the livelihoods of the poor and vulnerable communities, the clients may not be capable of repaying loan always in time. The agro-based poor households living in the remotest and coastal part of Bangladesh find it extremely difficult to pay weekly/monthly installments as they usually do not have many income sources rather than highly seasonal occupations. They usually get their income by the end of a crop season after selling their crops in the market. Thus if provision of seasonal, semi-annual or yearly installments is devised then it would ease their trouble to a great extent to manage climatic risks.

- *Crop insurance*: Agro-based poor households suffer a great deal whenever their seasonal crops are harmed because of some forms of natural disaster. In such cases, on one hand they cannot pay their debts and on the other hand, they find it extremely difficult to get new loans, especially from formal and quasi-formal sources. Hence, crop insurance services can be of great help to these households. Crop insurance products by MFIs may meet these demands and contribute in creating newer and larger client base especially in remote and coastal areas.
- *Matching services with client needs*: Micro financial services can be most effectively developed and provided for vulnerability reduction when these services reflect poverty, livelihood characteristics and vulnerability to disasters. The poor turn out to be more interested in the financial products and services that protect their productive assets and reduce livelihoods risks. Therefore, savings and insurance-related services may be the most accessible and appropriate for the poorest and most vulnerable individuals and households before, during and after disaster. It must be kept in mind that even though most of the microfinance products and services are useful for emergencies and planned investments, the ultra-poor prefer low-risk savings-based services with many small transactions.
- *Climate-orientation*: There might be a conflict between short-term MFI-funded income generation activities and responses required to improve resilience to the adversities of climate change. In that case, MFIs should adopt climate lens in their financial activities through avoiding increased vulnerability to climate change in the long run.[42]
- *Greening the MFIs*: Due to lack of awareness and inadequate legal instruments, many poor people are directly dependent on ecosystem for livelihoods and wellbeing and degrading environment. It causes increased disaster risks and hazards like landslides, floods and storm surges. In order to timely repay loans, they may undertake income-generating or enterprise activities that deplete and degrade natural resources. In that case, greening the MFIs is required with service conditions that will provide incentives for sustainable resource stewardship. Thus, there is a need for finding the optimum trade-off between short-term loan repayment schedules and longer-term sustainable natural resource management. In other words, MFIs should realise a 'triple bottom line' constituting economic, social and environmental returns in vulnerability reduction and climate change adaptation.[43]

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[42] S. Agrawala and M. Carraro, 2010, *op.cit*.
[43] A. Hammill *et.al.* 2008, *op.cit.*

6. Concluding Remarks

This paper discusses the range of microfinance services delivered by various MFIs to meet wide scale of necessities, which mainly covers savings, insurance and credit products for investment and its protection, predictable expenses, and meeting emergency expenses due to individual and covariate shocks. It also describes the performance of MFIs to address the adversities of climate change that have been taking place in Bangladesh. The paper reveals that there are indeed many revisions and introduction of new products in terms of savings, lending, insurance and disaster plans, which can act as instruments of the MFIs to address the adverse effects of climate change. However, the scale, intensity and frequency of disasters are likely to increase significantly in the coming days, which might have multifaceted impacts on the current and future clients of MFIs. Therefore, there is a need for comprehensive understanding of the dynamic effects of climate change in Bangladesh and the imperatives of microfinance industry for its greater sustainability.