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Operationalization of Risk Management Strategies and Tools in Agricultural Lending for Smallholder Farmers in Bangladesh

(Replication and Pilot Testing of Risk Management Strategies and Tools)

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Operationalization of Risk Management Strategies and Tools in Agricultural Lending for Smallholder Farmers in Bangladesh

(Replication and Pilot Testing of Risk Management Strategies and Tools)

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Preface

The utilization and application of approaches, strategies and practices towards development is always a challenge to individuals and organizations. In the fields of agriculture and finance, the strategies used to support the clientele and stakeholders are creating a trend of efficiency in implementation. These activities improve the working conditions of farmers, fishers, traders and even the officers of financial or lending institutions.

It is in this aspect that the proven strategies used and applied by Thailand's Bank for Agriculture and Agricultural Cooperatives (BAAC) are evaluated and replicated for adoption in Bangladesh condition considering the constraints and limitations they encounter in times of destruction and natural disasters. BAAC intention is to share the practices which helped Thai farmers, fishers and traders including their families who were stressed because of the effects of such disasters.

The replication and pilot testing of the BAAC strategies by Bangladesh financial institutions was made possible through the support of IFAD grant FinServAccess Project to assist Bangladesh understand and evaluate some risk mitigation and management strategies in agricultural lending. The process provided a step-by-step action to determine the different factors affecting Bangladesh farming and fishing communities which led to the enhancement in the formulation of appropriate products and services related to risks. At the same time, government and non-government organizations influencing roles support the improvement of operations in the field.

Given such conditions, the replication and pilot testing of strategies helps to reduce the negative impacts on the lives of farmers and fishers resulting to more secured production and profit. These activities are evolving in the process which make all keyplayers and stakeholders a fair share of learning for the good of all.

Acknowledgements

The conduct of this replication and pilot testing activity will not be successful without the strong technical and coordinative support of institutions and individuals. The replication team would like to express their gratitude to the following:

- The International Fund for Agricultural Development (IFAD) through APRACA for giving the opportunity to share Thailand's Bank for Agriculture and Agricultural Cooperatives (BAAC) three proven and effective risk management strategies supportive to agricultural lending for poor farmers;
- Dr. Marlowe U. Aquino, IFAD FinServAccess Project Manager for inviting the BAAC Team to conduct the assessment of risk management condition of Bangladesh and assisting the formulation of risk management activities and plans in Bangladesh and providing technical assistance especially in the packaging of the report;
- The Bangladesh Financial Institutions specifically the Bangladesh Bank, ASA, BRAC, PKSF and Microcredit Regulatory Authority for participating and learning the different risk management strategies;
- The management and staff of Bank for Agriculture and Agricultural Cooperatives for coordinating and providing assistance to the Bangladesh Team during their exposure study visits to farming communities and briefing on proven risk management strategies used in agricultural lending;
- The management and officers of BRAC for coordinating the field visits to conduct the assessment of poor rural communities;
- The farmers and Self-Help Groups interviewed and who participated in the focus group discussions; and
- The officers of the Bangladesh government and Financial Institutions who are the takers of these risk mitigation and management strategies for poor farmers/fishers and communities; may find these strategies worthy to be used and applied in improving the conditions of the stakeholders especially during and in times of natural disasters and calamities affecting agriculture and small business operations. Our gratitude and big thanks to all of you!

Executive Summary

Today's changing world results to the improvement and development of strategies. This is what is happening in the areas of agricultural development including finance as it support the operation in agriculture including livestock and fishery production management system.

Given the voluminous proven strategies utilized and applied by institutions and communities, strategies related to climate change is most preferred at this time. Through shared practices and experiences, these strategies are evaluated and further tested in relation to acceptability and applicability. This is the case of risk management strategies and tools in agricultural lending for poor rural people.

The proven strategies and tools used by the Bank for Agriculture and Agricultural Cooperatives (BAAC) of Thailand are subjected to replication and pilot testing under the IFAD-APRACA FinServAccess Project (FSAP) for Bangladesh financial condition. The activity is divided in two phases which BAAC led through research and demonstration. Phase 1 is an assessment of the risk management condition of Bangladesh vis-à-vis the poor rural people receptiveness to change while Phase 2 is an exposure study visit (ESV) of Bangladesh Financial Institutions to understand and learn BAAC's best strategies and practices on risk management in agricultural lending.

The objectives of the activity are: 1) to assess the condition of risk management for farmers, 2) to identify key issues of uncertainty as well as to determine the risk management framework in Bangladesh; and to introduced some risk management practices, strategies and tools used by BAAC to support their farmers/fishers which are ready for replication and testing under Bangladesh condition. The identified strategies were evaluated based on the resources and capability and readiness of the different rural finance and microfinance institutions.

In terms of agricultural lending in Bangladesh, the different risk factors are determined as confronted by the financial institutions and farmers. Based on the risk assessment framework, it identified personal risk and risk of health and death, as the basic risks that should be transferred immediately to insurance company.

Assessment results show that even though personal risk contains the low probability, a high impact of the borrowers' death can lead to default risk. It was further noted that several transferring risk strategies were implemented widely throughout Bangladesh. Some health and death risk mitigation schemes include loan insurance by ASA, and credit life insurance and livestock insurance by PKSF. These are the common practices which need to be enhanced and supported by government and non-government organizations including private sector which have better facilities of reaching out for improvement and strengthening activities for the poor.

The key identified risks in Bangladesh are: 1) Weather risk, 2) Market risk of uncertainties of agricultural production's price and agricultural input's price, 3) Infrastructure risk, risk related to changes in transportation, communication, or energy costs, and 4) Biological risk, including environmental related crop or livestock pests and widely-spread diseases which require attention of control and prevention

through improvement on risk management strategies. Accordingly, these risks should be reduced in order for the impacts of hazard faced by both MFIs and farmers are managed with most of risk mitigation schemes introduced and implemented by the government office and MFIs.

Compared to Thailand, the agricultural financial service sector is strongly supported by the Thai government organizations including financial support to farming and fishing communities and cooperatives by the Bank for Agriculture and Agricultural Cooperatives (BAAC). BAAC is one of the most important financial institutions in term of an agricultural bank for farmers in Thailand. BAAC introduced several risk management schemes that can reduce the risk encountered by client. Three important programs consist of 1) In-season Paddy Insurance Scheme, which aimed to help Thai farmers to manage and mitigate their risk encountered during natural disaster especially drought and flooding, 2) Agricultural Marketing Cooperatives (AMC), to assist the clients' farm products in negotiating with private local merchants on prices, delivery and payment procedures, and 3) Funeral Association, a mutual assistance among members and create guarantee for family of the deceased.

These BAAC programs were evaluated and demonstrated during the Phase 2 of the replication activity which guided the Bangladesh Team for further testing and evaluation in their respective institutions. An exit evaluation was done to plan for the next step for both countries particularly the provision of technical assistance. It should be noted that such BAAC risk management strategies when applied to Bangladesh condition, especially for the poor people, these must be well supported by the government, and cooperation with private sector in appropriate fields.

Acronyms

APRACA	Asia-Pacific Rural and Agricultural Credit Association
AMC	Agricultural Marketing Cooperatives
ASA	Association for Social Advancement
BAAC	Bank for Agriculture and Agricultural Cooperatives
BRAC	Bangladesh Rural Advancement Committee
CA	Capacity Assessment
CBSF	Capital Buildup Saving Fund
CIC	Crop Insurance Certificate program
COSO	Committee of Sponsoring Organization of the Tread way Commission
DIISP	Developing Inclusive Insurance Sector Project
DMF	Disaster Management Fund
DOI	Department of Insurance
ERM	Enterprise Risk Management
ESV	Exposure Study Visit
FA	Funeral Association
FAO	Food and Agriculture Organization of the United Nations
FSAP	FinServAccess Project of IFAD-APRACA
GIA	General Insurance Association
GSB	Government Saving Bank
IFAD	International Fund for Agricultural Development
JLG	Joint Liability Groups
MRA	Microcredit Regulatory Authority
MFI	Microfinance Institutions
NCPO	National Council for Peace and Order
PKSF	Palli Karma Sahayak Foundation
POs	Partner Organizations
RID	Royal Irrigation Department
SHG	Self-Help Groups
TABCO	Thai Agri-Business Company Limited
TMD	Thai Meteorological Department
WDR	World Development Report

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CHAPTER 1
Introduction

Nowadays, many countries around the world have faced the challenges of socio-economic and political recession, demographic change, technological modernization, natural calamity, legal and regulation change. These lead to the possibility of loss to assets, income and affecting people's well-being resulting to and turning into crises.

The process of risk management has risen and regarded as a strategic business tool. The solution is not to reject change or to avoid risk but to prepare for the opportunities and risks that change entails. This concept of risk management underlines the importance of looking forward in planning and preparation in a context of uncertainty.

According to The World Development Report (WDR) 2014, risk management can be regarded as a powerful instrument for development. Whether risks are systemic or idiosyncratic, imposed or taken on voluntarily, development can occur only by successfully confronting risk and pursuing opportunity. Many crises and losses are the result of mismanaged risks. Likewise, many opportunities are missed because preparation for risk is insufficient and necessary risks are not taken. It is therefore essential to shift from unplanned and ad hoc responses when crises occur to proactive, systematic, and integrated risk management.

1.1 Managing Risk in Agricultural Sector

Agricultural production is subjected to many uncertainties directly affecting farmer's welfare and wealth. In response to the potential impact of these unknown events, farmers normally implement diverse risk management strategies in the context of their production plans, cost reduction, buying insurance, etc.

Generally, agricultural related risks have different characteristics, and they can be classified in different ways. Furthermore, risk and their impact in agricultural production are widely researched and classified in several literatures as noted by the World Bank (2011) and other organizations. Several key risks faced by farmers are shown in the Table 1. From the context of unknown events resulting to the impacts on farmer well-being, farmers have to manage risk as part of the general management of the farming business.

1.2 The IFAD-APRACA FinServAccess Project

Replication and pilot testing of risk management strategies and tools in agricultural lending for poor rural people is one of the activities implemented under the IFAD-APRACA FinServAccess Project. The FSAP is implemented in four target countries, namely Bangladesh, Cambodia, Myanmar and Nepal over a period of three-year project cycle. For this activity, Bangladesh institutions' representatives were invited to participate and develop programs.

1.3 Methodology

The replication and pilot testing activity cum action research on risk management in agricultural lending was developed as a platform to exchange experiences and knowledge in risk management between Bangladesh and Thailand. Bangladesh as the receiving country will learn from the technical expertise of Thailand particularly the Bank for Agriculture and Agricultural Cooperatives (BAAC).

Table 1. Key Risks Faced by Farmers

Risk	Risk factors	Impact
1. Weather risks and natural disaster	Periodic deficit rainfall, excess rainfall, temperature variability, strong wind, flood, drought, cyclone and earthquake	Lower yields, loss of productive assets or income
2. Biological risks	Pest, disease, contamination	Lower yields, loss of income
3. Market risks	Low price of products, high price of input, change in demand of product	Loss of income
4. Labor and Health risks	Lack of labor, Illness or Injury, Death	Loss of income
5. Logistics and Infrastructure risks	Transportation, energy cost, irrigation	Loss of income
6. Management and Operational risks	Planning error and poor quality control	Lower yields, loss of income
7. Policy and political risks	Regulatory change, political upheaval, disruption of market	Loss of income

Source: World Bank (2011)

The objectives of the study are 1) to assess the condition of Bangladesh financial institution risk management strategies and tools in agricultural lending for poor rural people, 2) to identify issues and concerns on risk management in agricultural lending of Bangladesh microfinance institution (MFI) in implementing rural and agricultural finance, 3) to develop strategies in enhancing rural and agricultural finance by smallholder farmers, and 4) to determine effectiveness and efficiency of the best practice on risk management strategies and tools that will improve financial management and operation for poor rural farmers.

Through this activity, the risk assessment framework according to Figure 1 provided by the committee of sponsoring organization of the tread way commission (COSO) was used as the theoretical basis in order to achieve the study objectives supported by the vast experiences of BAAC through actual cases and practice. The methods employed in obtaining pertinent and relevant data include 1) questionnaires on risk management in agricultural production, 2) focus group discussion facilitated through MFIs officers working on agricultural lending business and other related areas, and 3) consolidated, integration and analysis of secondary data and literatures from various sources.

The activity is divided into two phases: Phase 1 consists of activities primarily on the assessment of agricultural lending risk management in Bangladesh and Phase 2 is an exposure study visit on understanding the areas in risk management processes particularly on the strategies, tools, experiences and lessons learned by the Bank for Agriculture and Agricultural Cooperative's (BAAC) while working with the rural people and communities in Thailand.

Figure 1. Risk Assessment Framework

Source: COSO (2012)

The expected outputs are to provide operational framework, assessment reports to include description of the risk management in agricultural lending situation particularly the strategies and tools used for the poor rural people, and well-documented processes and activities in relation to the risk management strategies and tools best practice. Moreover, it improved financial knowledge exchange and sharing between key players and stakeholders.

CHAPTER 2

Assessment of the Bangladesh Risk Management Condition

Bangladesh is located on the north of India, with an area of approximately 147,000 square kilometers. The population is about 165 million people (year 2010), mostly Muslims (90 percent), the remaining is Hindus (9 percent) and other religions (1 percent) such as Buddhism, Chris. For the classification of the population by sex is approximately 51 percent male, 49 percent female. The population (63 percent) is engaged in agriculture and poverty. Agriculture production has suffered from floods regularly, due to the location on the Bay of Bengal, which is influenced by monsoon winds and cyclones in that area. (UNDP)

Figure 2. Map of Bangladesh

Source: www.google.com

Bangladesh economy draws its main strength from agriculture sector. The sector contributes about 20 percent to GDP and employs about 50 percent of the labor force. Crop agriculture in Bangladesh is however constrained by a number of challenges every year. Major challenges include 1) Loss of Arable Land, 2) Population Growth, 3) Climate Changes, 4) Inadequate Management Practices (Fertilizer, Water, and Pests and Diseases), 5) Lack of Quality Seeds, and 6) Inadequate Credit Support to Farmers, Unfair Price of Produces, and Insufficient Investment (Mondal, 2010).

In terms of financial system of Bangladesh, it comprised of 3 sectors: 1) Formal sector includes all regulated institutions like banks, non-banks, 2) Semi formal sector includes those institutions which are regulated otherwise but do not fall under the jurisdiction of Central Bank, and 3) Informal sector includes private intermediaries which are completely unregulated (www.bangladesh-bank.org). However, Financial institutions that play a role in supporting the agricultural sector and rural areas in

Bangladesh, especially MFIs, are inevitably faced with the risk of farmers that effect credit quality and ability to repay, both from external and internal factors such as natural disasters, subsistence daily of farmers. This report was to evaluate risks in the agricultural sector of Bangladesh, including approaches to manage risk which the MFIs under the project are used.

2.1 Risk Identification

In terms of agricultural lending, MFIs faced credit risk, the risk to earnings or capital due to borrowers' late and non-payment of loan obligations, when they provide loan for farmers. Credit risk encompasses both the loss of income resulting from the MFI's inability to collect anticipated interest earnings and the loss of principle resulting from loan defaults. In addition, the impact of default risk will decrease the MFIs financial performance. Moreover, while the MFIs face credit risk, farmers in Bangladesh faced several risk related to agricultural production process as follow.

2.1.1 Weather risk

Weather risk is the perceived result of unfavorable weather conditions caused by floods, drought, strong wind, cold and frost resulting to partial or complete damage of agriculture and fishery commodities including crops and livestock. The World Bank (2011) indicates two main types of weather risk considering that comprise of 1) Sudden or unforeseen event (for example heavy rain and flood) 2) Cumulative event that occur over an extended period (for example drought) From the Asia-Pacific Disaster Report (2010), Bangladesh leads the Top 10 countries in the Asia-Pacific region that is affected by disaster as follow; 5th ranked by number of disaster; 1st ranked by number of deaths from disaster; 3rd ranked by number of people affected by disaster; and 10th ranked by economic damage. The country is located in the humid tropics, with the Himalayas on the north and the funnel-shaped coast touching the Bay of Bengal on the south. Bangladesh's geographical location makes it one of the most vulnerable countries to climate change and natural calamities like cyclones, floods, drought, storm surge and heavy rainfall. Sixty percent of the worldwide deaths caused by cyclones in the last 20 years occurred in Bangladesh. Several major climate related hazard in Bangladesh such as flood, drought, Tropical storms and cyclones (UNDP, 2013).

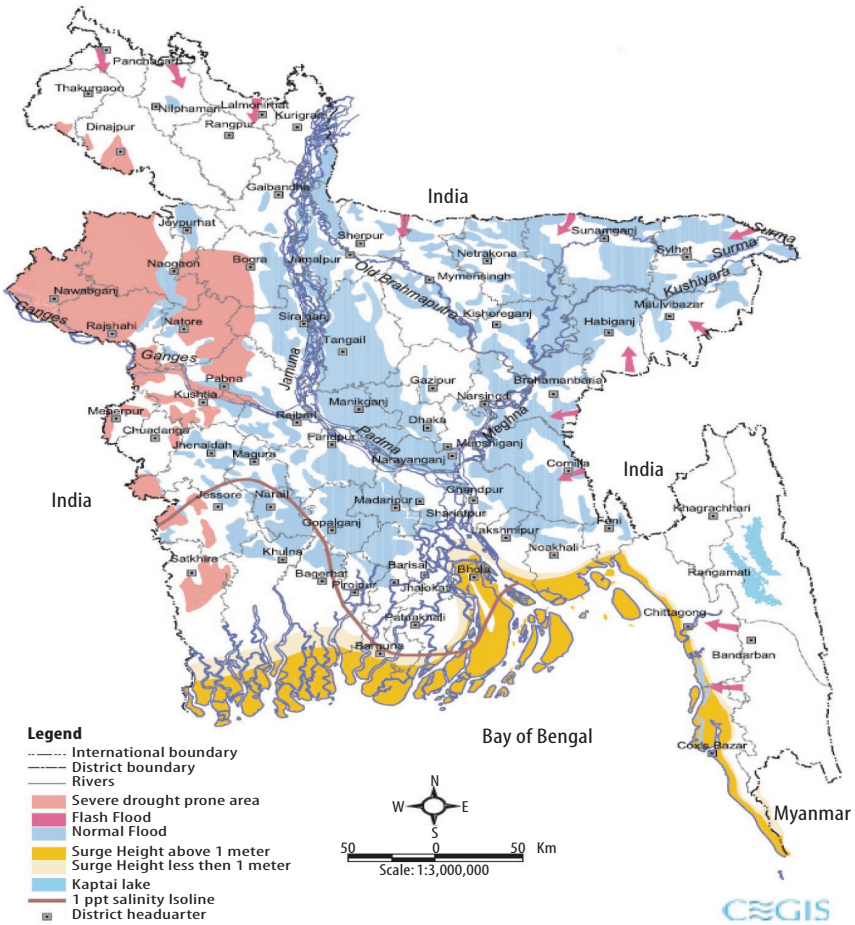
Overall, Bangladesh is a high disaster and weather-related risk country that the risks adversely affect the agricultural sector and livelihood. Several disasters affecting Bangladesh, hydro-metrological disasters, including climate related events especially cyclones, storms and flood are both high frequency and high impact.

Table 2. Major Disaster Losses in Bangladesh (1971-2006)

Disaster	Disaster types	Events	People killed	Total affected	Damage (000 USD)
Flood	Unspecified	31	44,847	177,076,392	4,024,100
	Flash flood	11	261	7,634,577	729,000
	General flood	41	7,074	132,446,412	7,285,300
	Storm surge	2	51	473,335	N/A
Drought	Drought	7	1,900,018	25,002,000	N/A
Storm	Unspecified	49	5,706	2,356,857	850,000
	Local storm	31	1,976	1,409,079	16,401
	Tropical cyclone	86	626,859	74,852,031	4,765,979

Source: EM-DAT (www.em-dat.net)

Figure 3. Areas Affected by Different Types of Climate-Related Disaster



Source: CEGIS (2009)

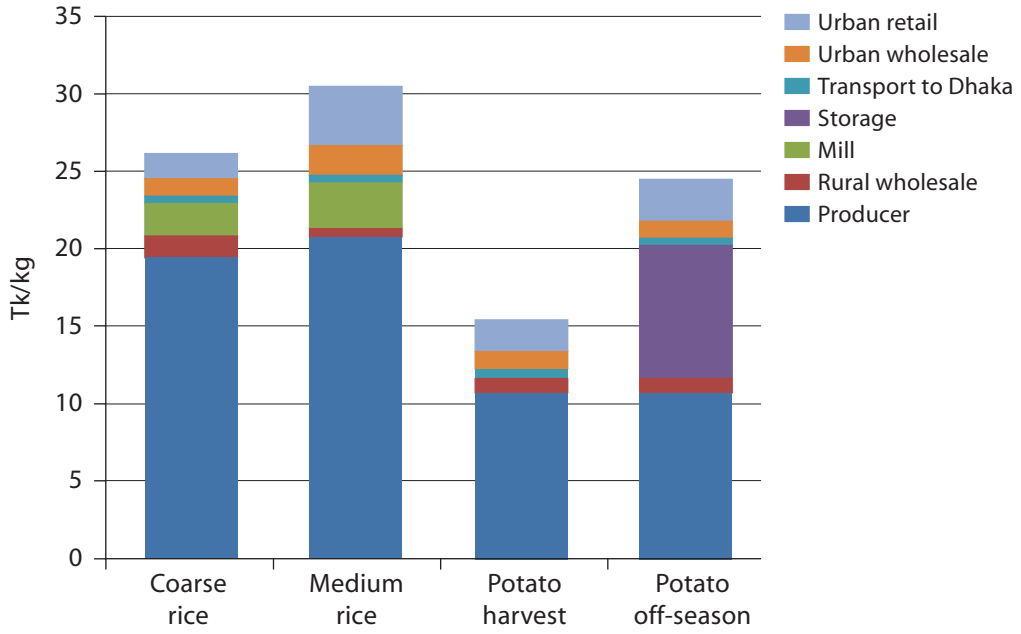
2.1.2 Market risk

Price or market risk refers to uncertainties of agricultural production's price or agricultural input's price. Market risk subjects to changes in supply or demand that impact domestic or international prices of inputs or outputs. The markets for agricultural inputs and outputs have a direct incidence on farming risk, particularly through prices.

Bangladesh is an agro-based country where 17.3 percent of GDP comes from agriculture. Nevertheless, several literatures indicated that farmers do not get proper price for their products due to improper marketing system of agricultural products. According to Abdullah and Hossain (2013), Bangladesh's farmers always deprived of fair price for their products due to plenty of middleman like wholesalers, commission agents, storage operators, and retailers etc. While farmers are forced to sell their products at low prices, many intermediaries in the market take a major portion of the benefit. They also force the farmers to sell their products to them by tying up some conditions. The middleman or intermediaries in the agricultural market create artificial shortage in the supply and increase the price of the product. As shown in Figure 4, around 20 to 30 percent of agricultural products prices in Bangladesh were shared by intermediaries.

Productive farmers of Bangladesh mainly belong to small and marginal categories. These farmers do not have either Farmer's Association or Farmer's Co-operative to bargain for fair prices of their produces. They are thus forced to sell their produces at low prices to intermediaries. Since the farmers are often unable to meet procurement requirements (14 percent moisture content, absence of foreign materials in seeds, etc.) of the government, they cannot sell their produces at the price fixed by the government.

Figure 4. Price Structure of Rice and Potato (Dhaka, November 2009)



Source: Minten *et al.* (2010)

To overcome the unexpected interruptions by intermediaries in the market, an effective marketing system or structure is essential in Bangladesh to ensure the proper distribution of agricultural product from growers to consumers ensuring the fair price for both parties. Cooperative marketing system or community based marketing system can be an effective way to reduce the unexpected interruption of the intermediaries in the supply chain of farm products.

2.1.3 Biological Risk

Biological risk is the risks that is related to the natural environment of crop/livestock pests and wide-spread diseases, such as wheat rust, mad cow disease, and to the extent of contamination caused by poor sanitation.

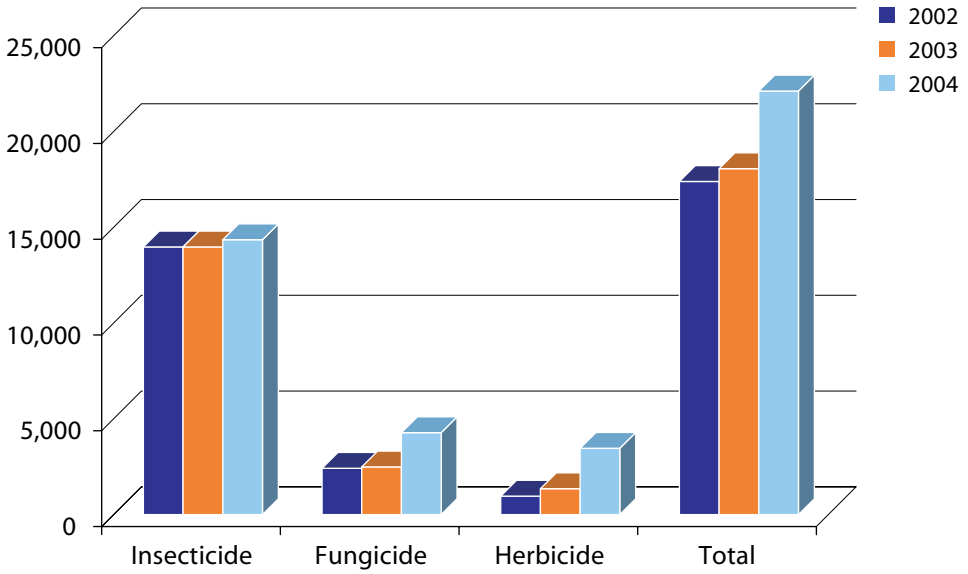
It is estimated that 4-14 percent of rice yield in Bangladesh is lost every year by different insect pests and diseases. But the technologies resistant to pests and diseases are still very limited (Mondal, 2010). The use of pesticides in Bangladesh is based on minimum curative applications with 70 percent in rice and the remaining 30 percent on tea, sugarcane, potato, mango, banana and vegetables. Consumptions of pesticides during the last three years are shown in the Figure 3 (FAO, 2005).

2.1.4 Health or Personal Risk

Health risks are those related to death and illness of the farmers which could inhibit repayment. Medical and hospital expenses caused by a major illness may be substantial. When the farm operator is incapacitated, income suffers from loss of labor and management in the business; if death results, a prime asset of the business are lost.

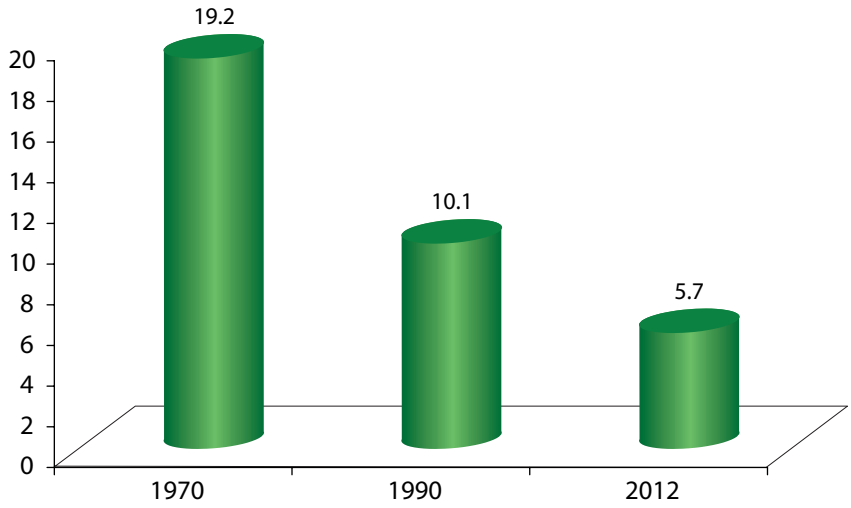
Figure 6 illustrates the decreasing of crude death rate of Bangladesh similar to people health risk that closes to the regional average as shown in Figure 7. Nevertheless, personal risks are still important in terms of risk identification due to the high impact.

Figure 5. Use of Pesticides in Bangladesh (2002-2004)



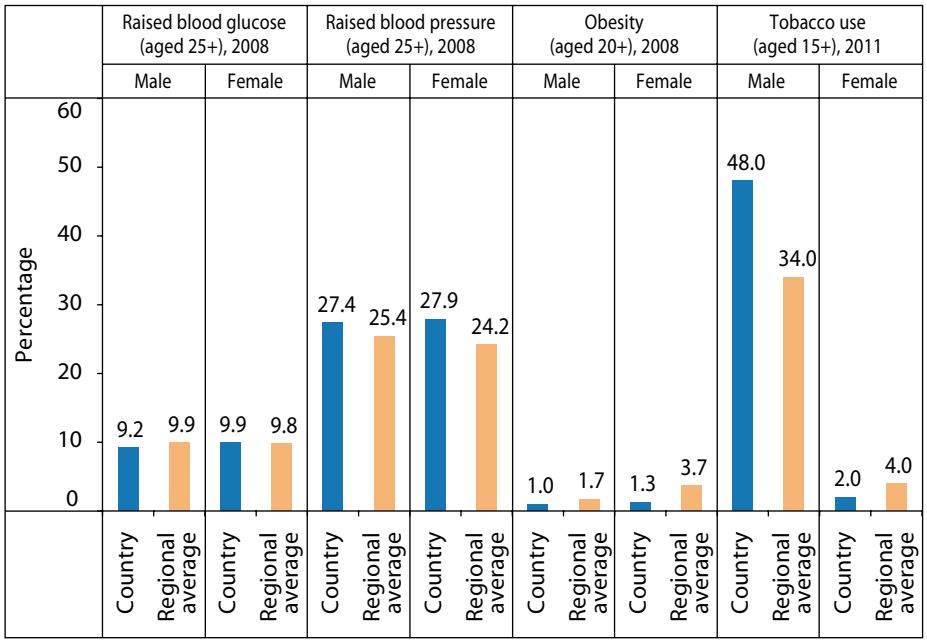
Source: FAO (2005)

Figure 6. Crude Death Rate of Bangladesh



Source: UNICEF (2014)

Figure 7. Bangladesh Health Risk Factor



Source: WHO (2014)

2.1.5 Logistic and Infrastructure Risk

Logistic and Infrastructure risk related to changes in transportation, communication, or energy costs. As for Bangladesh, a diverse network of roads and rail provide a multitude of options for moving goods around the country. These transportation forms are able to safely and efficiently deliver commodities around the country and onward to final distribution points. However, efficient transportation and product handling is an important factor in assuring good price.

Despite the adequacy of physical infrastructure of road the high volume of cars, trucks, and people's traffic movement slows down considerably. Some issues of rail transportation is still remain, such as irregularities in train timetables, the threat of floods, waterlogged tracks, missing rail links between major cities, poor technical capacity, and reduced speed.

2.2 Risk Assessment

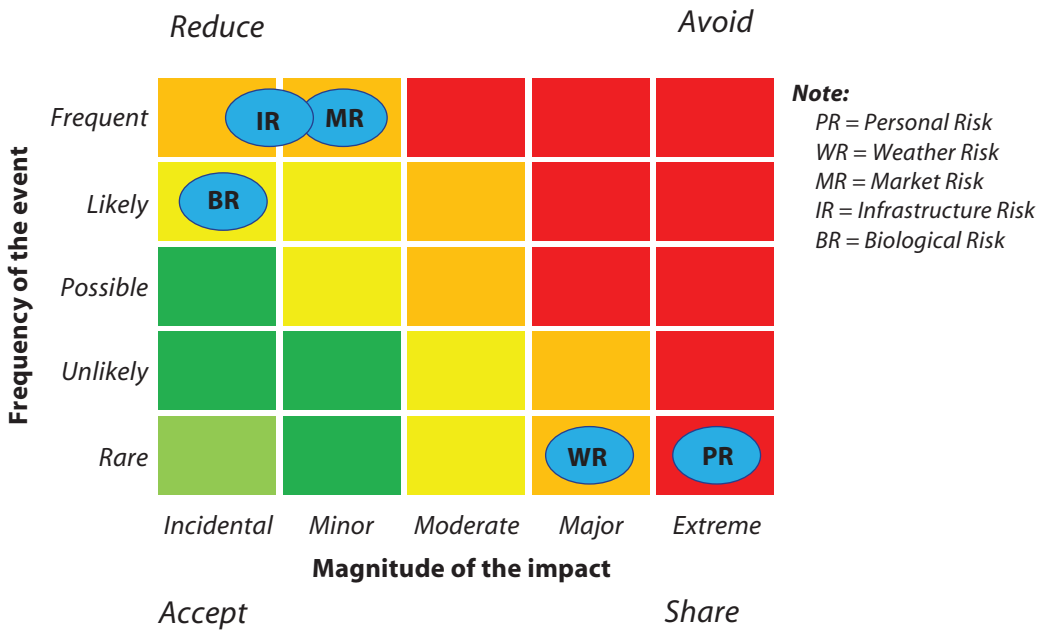
Another simple way to view the agriculture lending risk exposure is to create a risk map. These are usually two-dimensional representations of impact plotted against likelihood. The most common way to prioritize risks is by designating a risk level for each area of the graph such as very high, high, medium, or low, where the higher the combined impact and likelihood ratings, the higher the overall risk level.

In order to conduct risk assessment technique, the study collected the relevant data from various sources comprising 1) focus group discussions and interviews of key persons responsible on risk management from regulatory organizations and MFIs in Bangladesh, 2) interview of farmers about farm production, vulnerability and employed risk management strategies, and 3) collection, analysis and synthesis of secondary data and literature reviews. The main criteria in data collection focus on risk identification, probability, impact of the event, and risk responsiveness. Subsequently, the data obtained from the use of such information processed on risk metric, to display the level of risk in the agricultural credit providing in Bangladesh. It divided into 5 levels in each dimension, with guidelines that should be used to manage the risk; 1) accept or take, 2) share or transfer, 3) reduce or treat, and 4) avoid or terminate, shown in the Figure 8. (BAAC has adopted these approaches since year 2010)

As shown in Figure 8, risks factors are plotted on the risk map and ranked from highest to lowest in terms of risk level. These rankings are adjusted based on frequency of the event and magnitude of the impact.

Considering the risks in agricultural lending of MFIs; the risk map identified five important risks factors including agricultural lending risk universe. It determines appropriate assessors that combine interviews, and workshops to perform during the initial qualitative assessment of likelihood and impact. Risk interactions are further evaluated based on the highest risks eventually the assessments are refined. Risks are finally plotted on a heat map to perform the initial prioritization.

Figure 8. Risk Metric of Agricultural Lending in Bangladesh



It can be concluded that two risk factors plotted in the 'Very High' risk level designated as red in the below heat map means that these are considered designated "key" risks should be managed first due to all identified risks affecting people wealth, assets, or even life. Therefore, key risks should not only be managed, but also all other identified risks.

The research team headed by Dr. Suwit Poolsilp, Mr. Suthee Visitwarakorn (in green jackets), Mr. Alamgir Islam of BRAC and BRAC supported Women Self-Help Groups during the field visitation and FGD in Gazipur, Bangladesh. The photos were taken on July 2014.

2.3 Risk Response: Cases of Selected MFIs in Bangladesh

The results of the risk assessment process served as the primary input to risk responses whereby response options were examined (accept, reduce, share, or avoid), cost-benefit analyses performed, response strategy formulated, and risk response plans developed. At this stage, four main risk responses strategies were derived such as reduce, accept, share or avoid. Management selects appropriate actions to align risks with risk tolerance and risk appetite.

The risk responses chosen must be realistic, taking into account the costs of responding as well as the impact on risk. An organization's environment will affect its risk responses. Many MFIs in Bangladesh adopt diverse strategies to manage risk affecting loan portfolio and farmer's income and consumption. These strategies depend on the characteristics of risk they face, their attitude to risk and the risk management instruments and tools available. At the same time, it should be kept in mind that all agricultural policies affect farm households' risk environment and behavior.

2.3.1 Bangladesh Bank

Bangladesh Bank, the central bank, was established in Dhaka in 1972. Like any other central bank around the world, it functions in the orchestration of bank management and operation including the maintenance of the price stability through economic and monetary measures and regulating the banking sector.

As for Microfinance Institutions (MFIs) in Bangladesh, the poor people are engaging themselves in various income generating activities and around 30 million poor people are directly benefited from microcredit programs. Normally, microcredit programs in Bangladesh are implemented by various formal financial institutions such as state-owned commercial banks, specialized government organizations and Non-Government Organizations (NGOs). Although more than a thousand of institutions are operating microcredit programs, only ten large MFIs and Grameen Bank represent about 80 percent of total outstanding loan as well as about 87 percent of total saving.

Moreover, credit services of microfinance sector can be classified into six broad groups; namely: 1) general microcredit for small-scale self-employment based activities, 2) micro-enterprise loans, 3) loans for ultra-poor, 4) agricultural loans 5) seasonal loans, and 6) loans for disaster management. As of August 2014, 694 institutions have been given licenses by Microcredit Regulatory Authority (MRA) to operate Microcredit Programs. On the other hand, Grameen Bank is out of the jurisdiction of MRA as it is operated under a distinct legislation through the Grameen Bank Ordinance in 1983.

In terms of risk management, Bangladesh Bank plays an important role in providing the agricultural and rural credit policy and program in order to ensure rural poverty alleviation, food stability and availability through microfinance and increased fund flow in rural areas. The policy focused on the method of agricultural and rural credit disbursement as well as determination of credit limit for agricultural and rural credit program.

2.3.2 Microcredit Regulatory Authority (MRA)

The Microcredit Regulatory Authority (MRA) has been established under the "Microcredit Regulatory Authority Act of 2006" by the Government. The main objective is to ensure transparency and accountability in the activities of credit organizations in Bangladesh.

According to the vision of MRA, "to create a conducive and healthy environment in the microfinance sector which will ultimately contribute to eradicate poverty as well as foster sustainable development of the country", the main important roles are 1) to license of MFIs with explicit legal powers, 2) to supervise of MFIs so that they continue to comply with the licensing requirements, and 3) to enforce of sanctions in the event of any MFI failing to meet licensing and ongoing supervisory requirements.

Moreover, MRA's mission is summarized 1) to formulate as well as implementing the policies to ensure good governance and transparent financial systems of MFIs, 2) to conduct in-depth research on critical microfinance issues and provide policy inputs to the government consistent with the national strategy for poverty eradication, 3) to provide training of NGOs-MFIs and linking them with the broader financial market to facilitate sustainable resources and efficient management, 4) to assist the government to build up an inclusive financial market for economic development of the country, and 5) to identify the priority issues of microfinance sector for policy guidance and dissemination of information to attain the MRA's social responsibility.

Overall, the creation of MRA ensures an important role of promotion sustainable development of microfinance sector through making an empowering environment for NGO-MFIs as well as reduction of systematic risk from microfinance institutions in Bangladesh.

The focus group discussion conducted with the management staff of the Microcredit Regulatory Authority on 22 July 2014.

2.3.3 Bangladesh Rural Advancement Committee (BRAC)

BRAC, an international development organization, was established in Bangladesh in 1972. BRAC's mission not only empowers poor people and poverty communities through microcredit program, but also improves literacy, disease and social injustice. In addition, it aims to achieve large scale, positive changes through economic and social programs that enable people to realize their potential. The organization is 70-80 percent self-funded through a number of commercial enterprises that include a dairy and food project and a chain of retail handicraft stores.

In terms of agricultural lending risk management, BRAC not only manage credit risk from agricultural credit disbursement, but also help farmers to manage agricultural related risk through several programs. An example of BRAC agricultural risk management tool is used to support the disaster, environment and climate change program. The program's goal is to improve BRAC's potential of responding to the effects of natural disasters and climate change. Not only enhancing the capacity of BRAC to respond to natural calamity, but they also improve the people competency of preparedness and coping ability during the natural disaster through education in relation to climate change situation, providing predictive research and information transferring.

Some of the focus group discussions conducted with the local people during the Phase 1 activities in Gazipur, Bangladesh.

2.3.4 Palli Karma Sahayak Foundation (PKSF)

Palli Karma Sahayak Foundation (PKSF), a development organization, was established in 1990 by the Government of Bangladesh. The main objective of PKSF is poverty alleviation of Bangladesh peoples through increasing employment rate throughout the country as well as upholding their human dignity with the best utilization of available resources. Some major roles of PKSF is to provide financial assistance and institutional development support to appropriate organizations for implementing sustainable inclusive financial programs and to develop employment opportunities for the poor, small and marginal farmers through education, health, training and risk reduction service.

In terms of risk management, the poor suffer from losses of income due to natural hazards, personal situations, adverse market behavior, and various other reasons. PKSF has designed micro-insurance as a risk mitigation tool titled "Developing Inclusive Insurance Sector Project" (DIISP). The project has two aspects for reducing vulnerability and building protection against shocks through developing affordable insurance services.

The objectives of the project are 1) to protect the livelihoods of poor households, especially women, from risks such as accidents, illness, theft or natural disasters and 2) to secure their welfare and productive or nonproductive assets through the development of low-cost inclusive insurance services. Poor and low-income people who are the microcredit borrowers, associated with the selected 40 Partner Organizations (POs) of PKSF will get death insurance coverage for their lives and for their cattle against loans. The approaches of risk management include:

1) Credit Life Insurance, PKSF has launched Credit Life Insurance services under DIISP through Partner Organizations as a pilot project in 2013. Client loans are exempted in case of death of the borrower or spouse during the borrowing period due to the benefit of insurance policy. Hence, credit life insurance not only mitigates the risk of death or health of farmer, but also benefits PKSF and POs from default risk. A funeral benefit of BDT 5,000 against an additional premium payment is bundled with credit life insurance policy.
2) Livestock Insurance, PKSF has introduced actuarial based livestock insurance services as a risk mitigation product to insure the event of borrower's cattle died. Under "Beef Fattening Program", borrowers have to buy cattle those were insured under livestock insurance scheme as well as paying insurance premium. The borrowers will get benefit in case of cows had died.
3) Disaster management and climate change adaptation, PKSF has started a "Disaster Management Fund" (DMF) to provide poor families with quick financial assistance to cope

with and recover from both man-made and natural disasters. This fund is meant for disaster preparedness, response and rehabilitation. The activities of disaster risk reduction include the restoration of livelihoods, such as repairing houses, tube wells and latrines, providing urgent medical services, and procuring consumer items to meet emergency needs.

2.3.5 The Association for Social Advancement (ASA)

ASA, a non-governmental organization, was established in 1978 in Bangladesh. The founding framework of ASA was aimed at empowering rural people through microcredit financing. The institutional mission of ASA is to support and strengthen the economy at the bottom of the socio-economic pyramid by facilitating access to financial services for the poor, marginalized and disadvantaged. The objectives of ASA are to alleviate poverty and improve the quality of lives of the landless rural poor by providing them with access to financial service.

In terms of risk management, ASA provides many risk management tools are useful for farmers to mitigate and transfer risk. Several projects are identified/described below as follows:

1) Capital Buildup Saving Fund (CBSF), aims to provide security through assistance to the family to cope with risks on normal or accidental death of the member. Weekly deposit or monthly deposit is a specific term. When a borrower dies, his family is given twice the deposited amount as security. For withdrawal before its maturity, the borrower is given due interest benefit.
2) Loan Insurance, aims to cover the death risk of borrowers and spouse. On death, repayable loan outstanding is exempted and all deposited savings are refunded with interest. In case of a female borrower, it covers the death risk of borrower and spouse both, while for a male borrower it covers on death risk of the borrower.

2.4 Lesson Learned

From the risk assessment perspective, primary and secondary data of risk management strategies and tools were collected from several agricultural related institutions including regulators and MFIs in Bangladesh. It was found that agricultural production in Bangladesh face five key risks; namely: weather risk, market risk, biological risk, personal risk, and infrastructure risk. Similarly, most of MFIs also introduced risk management tools in order to mitigate those key identified risks affecting agriculture and its stakeholders. Although both regulators and MFIs play an important role of helping farmers to mitigate such risks, farmers however, still face residual risks which need yet to be mitigated.

The following section discusses the risk prioritized during the risk assessment process and analyzes the risk response activities of both farmers and MFIs in Bangladesh.

2.4.1 Risk prioritization

Based on the risk assessment framework used, the most important risk needs to be firstly managed. Accordingly, these are related and associated as personal risk, weather risk, market risk and infrastructure risk.

Firstly, personal risk is the basic risk that should be firstly managed because it contains high impact. Even though personal risk contains the low probability, however, a high impact of the borrowers' death can lead to default risk. In this case, it should conduct sharing risk strategies to the other parties such as purchasing life or health insurance.

Secondly, weather risk, market risk and infrastructure risk need different strategies of risk response. While market risk requires risk sharing strategies (such as crop insurance and weather index insurance) similar

to personal risk, market risk and infrastructure risk need risk reduction strategies by managing the likelihood of those risk factors. Some examples of risk reduction tools are cooperatives, products processing and logistics management.

Lastly, it was found out that very high frequency of pest and disease contains low impact. Nevertheless, it needs risk management because an accumulative loss leads to a significant effect. Normally, farmers manage risk of pest and diseases by using pesticide to control the loss in agricultural production.

2.4.2 Risk response activities in Bangladesh

Several risk mitigation schemes are implemented widely in order to reduce the impact of hazard faced by both MFIs and farmers. Most of them are transferring risk strategies such as loan insurance by ASA, and credit life insurance livestock insurance by PKSF. First of all, agriculture is associated with many types of risk that expose farmers, MFIs, and governments to potential losses. Several risk mitigation project are introduced by the governmental office, international organization, or MFIs. According to COSO risk management perspective, one of the key risk management is expanding the responsibility for managing risk to "risk owners". In addition, the concept of sustainable development is about long-term conditions for human well-being (Soubbotina T.P., 2004). Therefore, risk management activities should be initiated as farmer requirement in development of livelihood in the long run.

Moreover, formal approaches are often challenging to implement in developing countries and may not be suitable for managing extreme risk and disasters. The implementation of successful project in developed countries might not be successful in under develop or developing countries. Difference in culture and geographical factor may lead to failure of the project. Nevertheless, informal approaches are much more frequently found at the farmer level in Bangladesh. They include saving and to some extend community saving through self-help groups (SHG) or joint liability groups (JLG).

Lastly, many approaches can be employed to manage agriculture-related risk, for example, farmers employ risk management strategies that include crop and labor diversification, farmer self-help groups, and loans from moneylenders. However, some projects cannot be implemented by the farmers themselves such as market creation and information technology tools. Therefore, government can provide state sponsored lending, infrastructure (including roads electricity and supply water), education services, research and development.

The exit meeting of the Phase 1 activity with the officers of the Bangladesh finance institutions conducted at BRAC Center, Dhaka, Bangladesh on 24 July 2014.

CHAPTER 3

Understanding the Thailand BAAC Risk Management Strategies and Tools

The Phase 2 activity of the operationalization of risk management strategies and tools was done through an exposure study visit (ESV) of representatives from the Bangladesh financial institution representatives. The participants are from Bangladesh Bank, ASA, BRAC, PKSF and MRA. It was conducted from 17 to 20 November 2014 at the BAAC Headquarters in Bang Khen, Bangkok, Thailand.

It aimed to provide a comprehensive understanding and description of the different BAAC risk management strategies and tools employed in partnership with the different farmer cooperatives across the country. These are supported by actual cases and field visits to BAAC supported farmers.

During the ESV, the Thailand rural and agricultural development scenario was presented including the institutional profile of BAAC. It highlighted the different BAAC projects that instituted some innovations and interventions to reduce and mitigate the risks of clients. Three important strategies that were institutionalized and operated at the ground level through different BAAC local branches are the In-season Paddy Insurance Scheme, agricultural marketing cooperative and the funeral association.

BAAC Risk Management Program: Strategies and Tools

Thailand is an agricultural country, with more than half of its population of 65 million involved in agricultural sector, even though the GDP value is accounted for about 10 percent of the total GDP of the country. Thailand continues to maintain its position as the world's leading exporter of agricultural products such as rice, rubber, sugarcaned, cassava, maize, chicken and prawn. Thai agricultural expertise ranges from high-tech methods to practical small farm methodologies that require little investment. Most of Thai agricultural sector are in the rural area where the supporting come from many sources not only government agencies but also the private organizations.

In 1966, Bank for Agriculture and Agricultural Cooperatives (BAAC) was established by the government as a state enterprise and its objectives are to reduce the role of non-formal lending, enhance social and economic well-being of Thailand farming population. There are a number of innovative financial products in the form of loans for agricultural production, and deposit through its extensive network both individual farmers and farmer institutions. In term of rural financial market, BAAC has played important roles in term of providing loan for farmers and boosting rural economy. However, Thai farmers households continues to face major problems on occupational and stability in their lives, such as drought, flood, agricultural commodity prices, welfare of living, which are considered a major risk factors that will impact directly to the BAAC. Therefore, the strategy and the main tools used to manage those risks, composes of 3 approaches:

3.1 In-season Paddy Insurance Scheme

3.1.1 Background

Nowadays, worldwide climate have changed due to the global warming. The natural disasters happens and impacts both lives and assets of people throughout the world. Thailand like any country in the world, cannot avoid this effect especially on the agricultural sector. This could be attributed to several types of natural disasters such as drought, flooding and strong rains and storms which affect agricultural productivity.

BAAC reported that, in last 3 years ago, there are more than 800,000 household clients who suffered from the ill-effects of natural disasters which affected more than 10,000,000 rai. (6.25 rai = 1 hectare) with an estimated damage worth over THB 70,000 million baht (USD 2.18 million – USD 1 = THB 32), Over the years, the information system of natural disasters situation shows the BAAC clients who were extremely affected by the natural disasters as shown in Table 3. (BAAC, June 2014).

Table 3. BAAC's Clients Who Suffered by Natural Disasters (as of 30 June 2014)

Fiscal Year	Number of households	Agricultural area (rai)	Amount (million baht)
2014 (April 14 – June 14)	4,298	11,782	N/A
2013 (April 13 – March 14)	111,264	1,688,597	10,168
2012 (April 12 – March 13)	175,579	1,648,817	6,274
2011 (April 11 – March 12)	589,828	8,036,794	55,315

Source: BAAC

However, on 26 July 2007, the collaboration between BAAC and other agencies from government/ private sector such as the General Insurance Association (GIA), the Department of Insurance (DOI), the Thai Meteorological Department (TMD) and the Royal Irrigation Department (RID) held a ceremony in order to launch the Crop Insurance Certificate (CIC) program. The aim of this project was to find an agricultural related risk tool applicable and supportive to the condition of Thailand agriculture in helping Thai farmers to manage and mitigate their own risk during the occurrence of natural disaster. The program was pilot tested in Pakchong District, Nakhon Ratchasima Province where frequent droughts were prevalent, especially during the drought. Also, it was the first crop production protection program that was launched in Thailand and in the South East Asian countries. In addition, the Commodity Risk Management Group of the World Bank in terms of technical assistance supported this project. There were 962 rais of 32 farmers, which were insured by this project. The maximum compensation is approximate 1.32 million baht (BAAC, 2014).

Thai farmers are able to purchase the weather derivative index crop insurance scheme so as to mitigate risk especially weather related risk in particular, from flood and drought. Flood and drought were two natural disasters that affect Thai farmers' income stability. Feasibility study in year 2005 and piloted in 2006 showed that weather insurance can help Thai farmers reduce the exposure to weather-based risk in the context of self-activated agricultural immune system. As a result, during the agricultural production period in year 2007, Thai farmers can purchase retail agricultural insurance policies in order to manage and mitigate their risk from the uncertainty of rainfall leading their income more stable.

Previous to the weather-indexed crop insurance, the adverse weather conditions influence the crop production and impact on crop yields. In addition, Thai farmers have few choices to protect their crop production against the uncontrollable weather. They need to devise the system that can monitor the impact of the adverse weather conditions on crop production. This system can be composed from state-of-the-art 3-s technology such as Geographic Information System, Remote Sensing and Global Positioning System.

The crop insurance policy's price was calculated by using an average of standard costs of good practice for agricultural production undertaken. Thai farmers can be assured that they obtain the best yield as they expected with no worries when natural disaster occurred. Moreover, Thai farmers can focus on the maximize output of crop production which be the insured crop rather than diversify the weather risk through the cropping system. This is because they can mitigate the degree of risk in agricultural production by purchasing the crop insurance policy.

On 3 May 2011, the cabinet resolution related helping rice farmers stated that BAAC, collaboration with government and other agencies such as the Fiscal Policy Office, Department of Agricultural Extension, Thai General Insurance Association and Office of Insurance Commission launched the project that is called In-season Paddy Insurance Scheme for 2011 Crop Year. This project is for Thai Farmers who produce rice and must register with Department of Agricultural Extension. After that, there were the cabinet resolution related helping rice farmers like In-season Paddy Insurance Scheme in every year. Table 4 shows the performance of the In-season Paddy Insurance Scheme from 2011-2013 based on the facilitation and implementation roles of BAAC.

Table 4: The Performance of In-season Paddy Insurance Scheme (2011-2013)

Crop Year	Target (rai)	Rice farmers' rais		Total	
		BAAC's clients	Other	People	Rais
2011	8,279,100	561,835	497,297	55,228	1,059,131
2012	885,240	506,843	365,598	45,722	872,441
2013	1,565,700	120	–	7	120

Source: BAAC

3.1.2 In-season Paddy Insurance Scheme for 2014 Crop Year

Presently, the National Council for Peace and Order (NCPO) which acts as the government announced the economic roadmap, which the In-season Paddy Insurance Scheme is one of the strategies in the roadmap. On June 24, 2014, NCPO resolution stated that the In-season Paddy Insurance Scheme for 2014 Crop Year will operate within a budget of THB 494.90 million baht to be implemented nationwide targeting about 1.5 million rais.

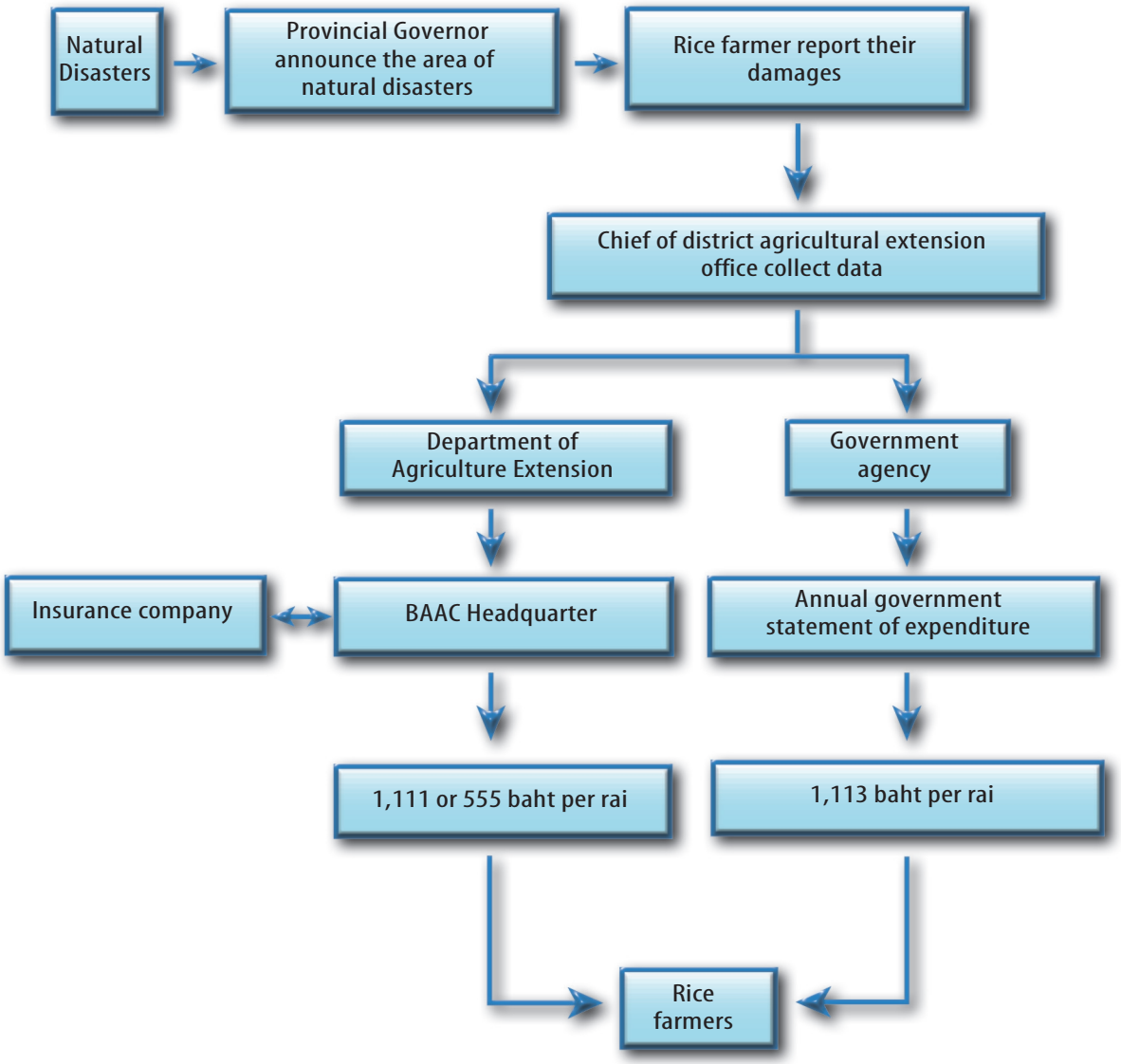
The policy covers 7 natural disasters such as flood, drought, storm, cold, hailstone, fire and pest affecting rural people. In particular, the rice farmers who purchased their own policy have been registered with Department of Agriculture Extension for 2013 crop year.

The total insurance premium ranges from 120 to 475 baht per rai depending on the risk area. The insured individual must pay insurance premium from 60 to 100 baht depending on the risk areas. At the same time, BAAC contributes 10 baht per rai of every risk area for BAAC clients particularly the rice farmers. Usually, the insured individual or farm can claim within 45 days from the date of planting. The insured claim can be obtained from insurers and government. The insured affected by flood, drought, windstorm, cold, hailstone and fire can claim THB 1,111 baht per rai while the insured affected by pest and disease infestation can claim THB 555 baht per rai. Also, the government contributes THB 1,113 baht per rai to the insured. Therefore, the maximum of money to be claimed is THB 2,224 baht per rai.

According to the insurance process in Figure 9, when the natural disasters occur, the area which is claimed must be announced by provincial governor. The next process is rice farmers report the extent of damage to chief of district agricultural extension office. After which, that chief of district agricultural extension office will collect, consolidate and integrate damage data caused by natural disasters from affected rice farmers. There are two channels the chief of district of the Agricultural Extension Office must do. First, the collected data by the Department of Agricultural Extension sends to BAAC. Upon receipt, BAAC will process the claim of the rice farmers' policy. Through this channel, the rice farmers can

obtain THB 1,111 baht per rai or THB 555 baht per rai depending on the type of natural disasters. The second channel is the chief of district of the Agricultural Extension Office will report these data to the government. The government allocates annual government statement of expenditure for this project including THB 1,113 baht per rai to be availed by affected rice farmers. Therefore, rice farmers will obtain either THB 1,668 baht per rai or THB 2,224 baht per rai from both insured policy claim and government.

Figure 9. In-season Paddy Insurance Process



As shown in Table 5, there are more than 800,000 rais guaranteed caused by the damage by purchasing policy approximately 55 percent of farm target. It could be noted that BAAC clients' farms are more than 500,000 rais and the rest is from other farmers.

Table 5. Performance of In-season Paddy Insurance Scheme

Crop Year	Target (rai)	Rice farmers' rais		Total	
		BAAC's clients	Other	People	Rais
2014	1,500,000	512,223	316,289	55,298	828,512

Source: BAAC (2014)

3.1.3 Survey of In-season Paddy Insurance Scheme

BAAC through its Policy and Strategy Department surveyed the In-season Paddy Insurance Scheme for Crop Year 2012. The survey shows that most of rice farmers (73 percent of total surveyed farmers) will participate in this project again in the next crop year because they obtained the sum insured and reduced their risk when the natural disasters happened. However, there were some rice farmers (27 percent of total surveyed farmers) who decided not to participate because their farms are not at the risk and they take a long time to obtain the sum insured.

On the other hand, the BAAC officers surveyed pointed that out that the project can mitigate the BAAC clients' risk. They agreed and think that this scheme support the condition of clients in time of natural disasters. However, the officers (83 percent) believed that the rate of sum insured is not appropriate and too low because they viewed that all types of natural disasters and impacts to people and farmers are the same.

Like the any other projects, the project encountered two main problems. These are the lack of awareness and promotional campaign for the farmers. This initiative was late resulting to a short notice in purchasing the insurance policy and the insured policy took a longer time to obtain the sum and BAAC cannot provide exact date of acquisition by the rice farmers.

Several recommendations were identified and suggested by the respondents in improving the project operation in the coming years. Some respondents (80 percent) recommended that BAAC officers should develop a system to check rice farmers data who purchased the policy and; the government should regularly update the rice farmers list affected by natural disasters in order synchronize the increasing number of affected areas which were not declared by the government as disaster affected areas. As a result, the rice farmers in disaster areas cannot avail of the insured sum.

On the other hand, BAAC already implemented some recommendations identified in 2012, such as BAAC coordinate insurers in order to find the best way to improve the process in paying the insured sum as fast as possible and BAAC developed the system to assist its officers to check the data of rice farmers and promote the project in various means like television, radio and newspaper after one year of implementation.

3.1.4 Lesson learned

Since 2011, the In-season Paddy Insurance Scheme implementation together with the BAAC experiences, it was found out that the principal advantage of this scheme is rice farmers can manage and mitigate the risk based on their activities and the impact caused by the natural disasters on farmer's productivity. All farmers including BAAC clients and not still have funds to be used for the next crop year even though they know that they will be affected by the coming of future natural disasters.

In addition, the sum insured reduce the opportunity of rice farmers to have a loan shark from lenders which constantly affecting the farmer his farming operation. Although, the sum insured may not be sufficient for the next crop year and the price of production factors may be higher than the present crop year still the rate of sum insured varies depending on the natural disasters.

3.2 Agricultural Marketing Cooperative (AMC)

3.2.1 Background

Since 1966, BAAC started its operation on cash credits only. The loan for farmers is sufficient for seasonal production expenses. These loans have low interest, fair terms and conditions compared with other local private moneylenders. Farmers use BAAC loans mainly, to purchase farm supplies like seeds and fertilizer from local merchants. It was noted that some merchants supply and sell low quality farm inputs with high prices to farmers.

In order to solve this problem, in 1980, BAAC set up the credit in kind system. The credit in kind system is a system which acts as intermediary in providing farm supplies to its farmer clients. The producers or dealers provide direct support to farm and farmer clients. Its benefit provides is the quality farm supplies at reasonable prices for nearly ten years and considered popular among the BAAC farmer clients. However, the system cannot manage all the problems of the farmers specifically on product marketing. It was noted that the private local merchants take advantage in this aspect leading the farmers to sell their produce at lower prices including the weighing in of products and unfair payment and product delivery.

In 1984, BAAC launched the Farm Products Collection Program to address farm product marketing related problems. The program encourages the farmers in negotiating with private local merchants on prices, delivery and payment procedures. The program is well supported by BAAC for its farmer clients.

Previously, BAAC credit officers support the client farmers in supplying farm inputs and the farm product collection. In the process, BAAC encouraged the farmers living in the same community to form themselves into farmers clubs. The farmers clubs provide assistance to members to develop their own collection scheme including the management of farm products before and after postharvest operations. At that time, these clubs were considered as informal groups with roughly around 50-60 families which is limits their bargaining power to control the prices.

After the famers clubs operated their respective business for a period of time, most client farmers realized that they should have their own formal organization to handle the activities of securing farm inputs, acquiring credit at reasonable terms, adapting new farming technologies and marketing farm produce. Through the collaboration between the Cooperative Promotion Department, the Cooperative Auditing Department, and BAAC, the client farmers decided to establish and form the Agricultural Marketing Cooperatives (AMC) in order to arrange supplies of farm inputs and farm product marketing. The AMCs are now supported and encouraged to operate strongly by BAAC.

In 1989, the first AMC in Thailand was set up in Chiang Mai Province. The BAAC client farmers learned several aspects through AMCs live marketing of farm produce and purchasing of farm inputs. Nowadays, some AMC are able to undertake bargaining and set up marketing conditions by themselves. The development of AMC encourage small-scale farmers to minimize their volatility of input and output prices. At the same time, small-scale farmers can increase bargaining power through their own organization.

3.2.2 Objective

The main objective of AMC is to operate with mutual assistance based on cooperative principles. Specifically, to protect the right of members and operate in order to receive equal benefits for all members. Through these objectives, the AMCs were established in order for BAAC's clients to have their own enterprise in doing marketing, practice their bargaining power in doing business with the traders and producers as well as the buyer of agricultural products, obtain equal and fair treatment in purchasing and sale of agricultural product; provision of opportunity to learn and experience the business, able to operate through proper market mechanism which is essential for manufacturers in the economy an important leadership role in marketing, and serves as a center for exchange of knowledge and information related to marketing needs in improving and developing products to meet the demands of customers.

3.2.3 Creation of the AMCs

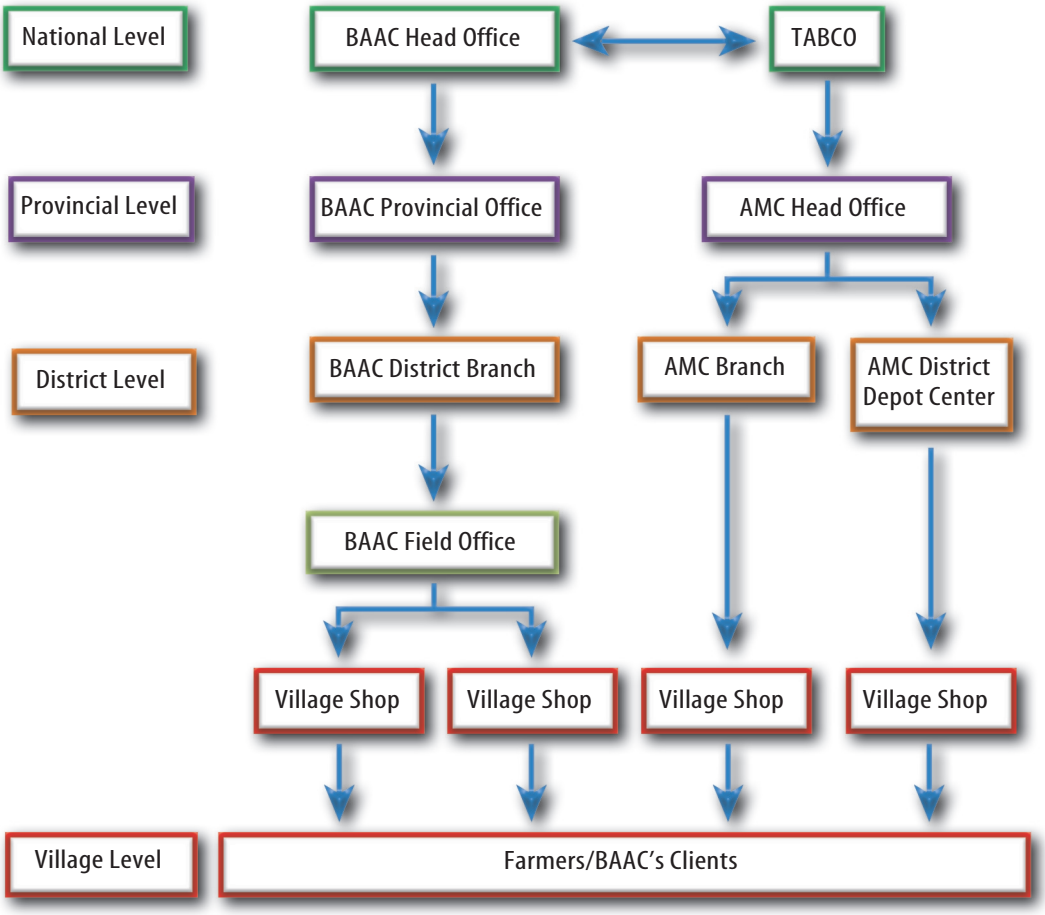
BAAC's clients established and enhanced Agricultural Marketing Cooperatives under the Cooperatives Act A.D. 1968 in every province in the country. The AMC operates in every aspect of business except for the provision of loan services. This is so because this is provided by BAAC. In each province the AMC can set up its own branches in every district and or offices in villages through retail shops located strategically at convenient places for its members.

It is important that AMC are established as a strong organization because in its entire operation with the strong support of BAAC, it established the organization for all AMCs in the country. The organization is called the Thai Agri-Business Company Limited or TABCO. The mission of TABCO is to provide essential services and doing business of AMCs like purchase of agricultural inputs including agricultural services and consumer goods, identify potential markets in exporting agricultural products of AMCs produce, provide technical assistance and recommendation solutions in improving the operation of all AMCs in the country. The TABCO operations are based on the cooperative principles of selling and buying together for the benefit of its member through the principle of participation and transparency. The profit of operation is allocated to each member.

3.2.4 AMC Organization and Profile

Generally, the structure of AMC in every province consists two main parts. The first part is the board of AMC whose responsibility is setting the policies. The Board of AMC is composed of representatives elected from every district in the province. The number of representatives must not be more than 15 individuals. The second part is the staffs of AMC who implement the policies. The head of staffs is the manager responsible in implementing the policies as well as managing the performance of AMC. The staffs' structure of AMC varies from one province to the other depending on its core business. Figure 10 shows the typical AMC management structure found in every province.

Figure 10. The AMC Management Structure



In addition, BAAC has several main roles in enhancing the performance of AMCs. The main roles of BAAC are:

1) To support financially for doing AMCs' business.
2) To educate about business management to AMCs' staff
3) To inspect and assess their condition in order to discover any shortcoming and prevent the effect that may occur.
4) To be a consultant to solve the problems and improve the performance.

As shown in Table 6, the registered farmers who are members of AMCs are increasing while the business value of AMCs fluctuated depending on three core businesses such as buying, selling and service provision. In addition, there are several factors affecting the performance of AMCs core businesses domestic and international. These are weather, market price and government policy.

Table 6. Performance of AMCs (2011-2013)

Fiscal Year	Member (Persons)	Business Value (Thousand baht)	Profit/Loss (Thousand baht)
2011	3,690,047	28,308,053	230,648
2012	3,749,171	24,978,321	174,082
2013	3,781,188	25,751,436	205,370

Source: BAAC

Moreover, in terms of agricultural product market, supported by BAAC, Talaad Thai is the biggest central agricultural market in Thailand which BAAC acts as a shareholder of the market. The idea of Talaad Thai was to create a central market where producers and buyers could interact with each other and set reasonable prices for goods. It was establish in 1977, Talaad Thai Market serves as a collection and distributor of agricultural products locally and internationally. It has an area of 450 rai, 3,500 traders, divided into 20 individual markets related to products, which could over 12,000 metric tons of product traded daily. (www.talaadthai.com)

Source: www.talaadthai.com

3.2.5 Lesson learned

According to the cooperative principles and experience, the AMCs could maximizes advantage of benefits for its members. The members of AMCs can acquire good quality farm supplies and sale of agricultural product at reasonable prices. Aside from the income derived from the cooperatives' businesses, members receive dividends if the performance of the AMC is profitable. The rate of dividend depends on the dividend policy of each AMC.

There are several determinants affecting members' income. The first determinant is the market. If the supply of agricultural products exceed demands and AMCs cannot find the new market, the market prices of agricultural product decrease which affect productivity and profitability.

The second determinant affecting members' income is information to make better business decision. If for any reason AMCs' members cannot acquire appropriate information for quality farm supplies and sale of agricultural product at reasonable prices then this affects the overall operation of the farmers as well as the AMCs.

The last determinant is the ability and experience of the AMC staff to negation. If knowledge and experience are insufficient particularly on business management this affects the best price for agricultural products.

3.3 Funeral Association

3.3.1 Background

In rural Thailand, there is an old traditional practice deeply rooted in the village communities. This old tradition is called the funeral society. The main principle of the funeral society lies in pooling the resources of the community to cover funeral cost of its members. In its original form, membership of this society is anyone in the village who has aged over one month. The contribution is provided as a fixed amount when there has a death in the village.

Based on the principle of traditional funeral society, BAAC started to promote funeral association among its borrowers. The pilot project was launched in Nan Province in 1981 which was widely spread throughout the BAAC branch network after its successful pilot. There are three main objectives of funeral association. These are 1) to provide mutual assistance among members, 2) to ensure a guarantee for family of the deceased; and 3) to provide lasting assistance to the deceased and his/her family.

Since 1992, BAAC promoted the funeral association among depositors. There are three types of funeral association which is promoted and supported by BAAC, namely: funeral association of borrowers, funeral association of depositors, and joint funeral association of borrowers and depositors.

BAAC promoted the funeral associations in every district or one district one funeral association. The operation of funeral association must operate under the Funeral Associations Act of 1974. Each funeral association, which is promoted and supported by BAAC are independent. These funeral associations are self-help organization of the clients. BAAC supports them by providing office spaces at the BAAC branch office.

Moreover, BAAC also provides technical assistance in managing including specific accounting software development. In order to ensure operation, BAAC monitors the funeral associations under the Deposit Department and reports to BAAC to improve and suggest effective and efficient ways in managing the funeral association. For financial services, the members of funeral association can use the payment services of BAAC through the branch office.

BAAC and members of the funeral association have mutual benefits. The utilization of the compensation is dependent on the member's family decision. Legally, it does not allow BAAC to claim the benefit from compensation. The member's family responsibility is to follow-up the payment obligations with BAAC.

3.3.2 Management and Profile

The Management Committee makes all decisions affecting the organization. The main roles of the funeral association committee are to provide policy and rules that comply with the Funeral Association

Act of 1974. Every year, about seven to thirty persons from the total members are elected to serve as members of the management committee.

The BAAC client members must be within 18-60 years of age as well as no serious health problem at the application date. They must pay an application fee (depending on the kind of funeral association) and advanced funeral cost of estimated death persons. According to the Funeral Act of 1974, advanced funeral cost is about THB 20 baht per death persons for the funeral association with less than 10,000 members. Membership in the BAAC client's funeral association is not compulsory. However, many people consider the membership of funeral association very important because they can insure the obligation of debt repayment and the utilization of compensation amount to the beneficiary.

When a borrower dies, the beneficiary receives the compensation which was used for funeral cost or debt settlement. A number of member multiplied by fixed amount for funeral cost for a death person, is the compensation amount. Normally, BAAC also gets benefit from funeral association in term of loan recovery. Moreover, BAAC does not have a legal claim on the proceeds; most members however are willing to fulfill their obligations towards the bank.

There are 549 overall funeral associations in 2013, which are supported and promoted by BAAC. They are classified into three groups that are 1) borrowers' funeral association 2) depositors' funeral association and 3) borrowers and depositors' funeral association. According to the Funeral Association Act 1974, the sizes classified as Big (more than 10,000 members), Medium (from 5,001-10,000 members), Small (from 2,501-5,000 members) and Very small (less than 2,500 members). Table 7 shows the funeral association supported by BAAC.

Table 7. Funeral Association Supported by BAAC

Funeral Association	2012	2013
Remaining	**546**	**549**
Borrowers	342	343
Depositors	99	98
Borrowers and Depositors	105	108
Sizing	**546**	**549**
Big	307	310
Medium	172	166
Small	54	56

Source: BAAC's Deposit Department

Based on Table 8, the net of members of the funeral associations increased to 115,841 members. This comprises 276,640 new members, 108,922 death members and 51,877 retired members. The retired members and death members increased from 7,655 and 4,799 members or 7.57 percent and 10.19 percent, respectively while the new members decreased to 7,655 members compared to 2013. Moreover, the death ratio increased from 1,482 in 2012 to 1,586 in 2013.

The remaining members; the members of borrowers and depositors funeral associations increased to 35,516 members or 3.14 percent more than the borrower funeral associations' members and the depositor funeral associations' members increased to 73,445 and 6,880 or 1.45 percent and 1.08 percent, respectively. Therefore, the funeral associations' members in 2013 from the 6,947,314 members with an increase of 115,841 members or 1.70 percent compared with 6,831,743 members in 2012.

Table 8. Member of Funeral Association Supported by BAAC

Member	2012	2013	Different	
			Amount	Percent
Remaining members	**6,831,473**	**6,947,314**	**115,841**	**1.70**
Borrowers	5,061,302	5,134,747	73,445	1.45
Depositors	639,088	645,968	6,880	1.08
Borrowers and Depositors	1,131,083	1,166,599	35,516	3.14
New member	300,321	276,640	(23,681)	(7.89)
Death member	101,257	108,922	7,665	7.57
Retired member	47,078	51,877	4,799	10.19
Net	151,986	115,841	(36,145)	(23.78)
Death Ratio	1.482	1.568	0.086	5.78

Source: BAAC's Deposit Department

3.3.3 BAAC supporting to the funeral association

One of the strategies instituted by BAAC in its products and services for its clients is the funeral association. The association is set-up alongside in every branch of BAAC which is provided with capability building activities. These trainings are conducted for board of directors, staff of funeral associations and BAAC officers to improve operation and management.

- Knowledge and Administration

  At present, there were 2,630 trainees from funeral association nationwide and BAAC officers who participated in training programs under the Funeral Association Act of 2002 on ministerial regulations and other related laws including accounting and financing.

  Usually, BAAC organized the workshop for the management and managers of the associations. The objective of workshop is to apply the knowledge gained to administer the association and build up relationship between BAAC and funeral association. The expected output is usually evaluated by the Policy and Strategy Department on the trainees application of the knowledge gained on relationship enhancement, acceptance on provided assistance and compliance of the association on the innovations and interventions with respect and honor.

- Technology

  The provision of technologies is another aspect which BAAC do for the association. BAAC developed the accounting software on cremation program including performance reporting via the intranet in order to facilitate the work and closely monitor the operation of funeral association.

- Consultancy

  BAAC officers both in headquarter and branches collaborate in providing consultations with funeral associations' staff to solve problems encountered and strengthen the funeral association. The objective is to optimize operational efficiency and effectiveness for funeral associations' members.

- Monitoring

  In order to monitor the operation of funeral associations, the Operation Internal Audit Department of BAAC set up the examiner's network system of funeral association. The objective of this system is to continue control and review funeral associations' operation in order to operate with transparency, fraud prevention and mitigate the impact to members and BAAC. The trainees are the BAAC officers directly working with the associations. For this year, there were 24 officers/trainees who were selected from the knowledge source of BAAC to undergo the training.

3.3.4 Lesson learned

According to the principle of traditional funeral society and experiences regarding funeral association, it was found out that the principal advantage of funeral association is avail of the sum after the member's death for the beavered family. Family can use the money in any way without conditions as stipulated in the Funeral Association Act of 1974 out restrictions.

One of the pitfalls of the funeral association is to it to be abolished is there will be no new members joining.

CHAPTER 4
Application and Conclusion

4.1 Application and Implication

After visiting on Phase 2 activities, the summarization of Bangladesh group discussion on Bangladesh MFIs can replicate three risk management strategies and tools of the BAAC, consists of 1) Crop Insurance, 2) Agricultural Market Cooperatives and 3) Funeral Association, are;

4.1.1 Crop Insurance

The main objective of In-season Paddy Insurance is to help farmers hedging risk of drought through insurance process. However, it needs the collaboration among financial institution and other agencies from both government and private sector e.g. insurance company, Meteorological Department. In addition, the crop insurance policy's price was calculated by using an average of standard costs of good practice for agricultural production undertaken, it required sufficient statistical data. Before promote this project in Bangladesh, it must be studied (pro and cons) and reviewed to address, including agricultural insurance policies of government. Also, financial institutions and other parties must support in terms of technical assistance and acknowledgement people about crop insurance process.

4.1.2 Agricultural Market Cooperatives

From the BAAC lesson learned of AMC, key important success factors consist of 1) operation according to the principle of cooperatives 2) corporate governance 3) performance of the cooperatives such as profitability and dividend and 4) the roles and ability to operate by the member, committee, and the employees.

The two main businesses of AMC are providing agricultural input e.g. fertilizer, seed, pesticide etc. with lower price to farmers as well as marketing agricultural product by gathering and stocking process. Therefore, to set up pilot-AMC in Bangladesh, the MFI, cooperated with each rural community, should select head of client group play another role of AMC network that connect between AMC and farmers in term of input and output products requirement. MFI provides the loan to farmers through purchasing agricultural input products of AMC. For marketing service, government sector, private sector and MFI must support real good practice of marketing management, in terms of warehouse, contract farming, etc., and provide soft loan to arrange marketing channels.

4.1.3 Funeral Association (FA)

FA is an important strategy for lending service business because it benefits both credit providers and the borrowers. While borrower farmers can get the benefit to cover their loan and to protect their guarantee, FA also help financial institutions reduces default risk. Although FA based on Buddhist practice that rural people can help their neighbor to cover funeral cost, but it is a simple concept that can apply uses for all regions, on the principle of supporting each other.

For pilot-FA in Bangladesh, the three parties; comprise of 1) government sector, 2) rural community, and 3) MFI, must strictly take action on its duty and function, because of FA should be compliance with a specific regulation due to their business related to financial service and social welfare. As for supporting process, the FA runs their business through rural people committee and few employees. The knowledge of financial management and accounting also required as well as hardware and software

computer can be customized used. While the government can control FA through the law, financial institution can supervise FA by acknowledge of management, financial management and accounting.

4.2 Conclusion

Replication and pilot testing of risk management strategies and tools in agricultural lending for poor rural people is under the IFAD-APRACA FinServAccess Project. The objectives of the study are to assess the condition of risk management for farmers, to identify key issues of uncertainty as well as to discuss of risk management conceptual framework in Bangladesh. In addition, it introduced some risk management technique and tools available in Thailand.

In terms of agricultural lending in Bangladesh, different risk factors were faced by both financial institution and farmers. While many MFIs faced credit risk, the risk of principle from a borrower's failure to meet contractual obligation, during the process of loan disbursement, farmers in Bangladesh on the other hand faced several risk related to agricultural production. Five key agricultural related risks are Weather risk, Personal risk, Market risk, Infrastructure risk and Biological risk. From the risk assessment framework, it considers personal risk, risk of health and death, as the basic risk that should be firstly transferred to the insurance company. Another four key identified risks consist of Weather risk, Market risk, Infrastructure risk and Biological risk. In Bangladesh, most of risk mitigation schemes were introduced by the governmental office and MFIs. The challenges behind this are the implement of the project may not suitable or meet the farmer's requirement.

As for risk management for agricultural financial lending in Thailand, BAAC proposed many risk management strategies to reduce the default risk. The three interesting tools are

1) In-season Paddy Insurance Scheme aimed to help Thai farmers to manage and mitigate their risk which occurred from natural disaster especially drought with the collaboration between BAAC and other agencies from government and private sector. Thai farmers, therefore, are able to purchase the natural disaster insurance scheme so as to mitigate risk especially weather related risk in particular, from flood and drought. However, it difficult to implement this risks management strategy because of the requirement of collaboration from several parties such as government, financial institution, insurance company and farmers.
2) Agricultural Marketing Cooperatives, it objective is to help clients establish their own organization that support the group in term of input and agricultural product marketing. Actually, AMCs operate according to the cooperatives principle. BAAC supporting can motivate their client to establish AMCs as among members benefit organization. AMCs can support their clients to establish the organization and acknowledge their clients of cooperatives management.
3) Funeral Association, the main objective is to mutual assistance among members and create guarantee for family of the deceased. FA is a simple concept that should be applied implementation. MFI can support in term of knowledge of accounting financial management, as well as operational office.

However, when these strategies are applied in Bangladesh, especially for the poor people, it must be supported by the government, and cooperation with private sector in each relative field.

4.3 Recommendation

Apart from the strategies of risk management of agricultural lending business for farmers in the rural area, the following are some recommendation tools of risk reduction for MFIs and farmers:

1) MFIs should provide the Early Warning System (EWS) and Advisory Information System to support the farmers. So that they can use these tools making the decision and managing risk.
2) MFIs should develop the IT application to create the business network through mobile phone. The purpose of using the IT application comprise of lending for farmers, sharing information between MFIs and farmers or among the group of farmers.
3) MFIs should develop the innovative product with the objective of risk reduction such as micro-insurance or agricultural future market.
4) It should provide the knowledge of financial literacy for retail farmers and small enterprises in the rural area. For example, the knowledge of household accounting that indicates the sources of all income and all expense of the farmer's household.

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Appendix

Appendix 1: Program of Phase 1 Activities

Activity Title: Replication and Pilot Testing of Risk Management Strategies and Tools in Agricultural Lending for Smallholder Farmers, Traders and Entrepreneurs

Date: 21-24 July 2014

Venue: Dhaka, Bangladesh

Date/Time	Activity	Venue
20 July 2014	Arrival from Bangkok	BRAC Centre Inn, Dhaka, Bangladesh
21 July 2014 09:00 a.m. – 03:30 p.m.	Operational Meeting with Bangladesh Participants	Meeting Room-1 (3rd Floor) BRAC Centre Inn, BRAC Centre, 75 Mohakhali, Dhaka, Bangladesh
22 July 2014 10:00 a.m. – 10:45 a.m. 12:00 p.m. – 12:45 p.m. 02:00 p.m. – 02:40 p.m. 03:00 p.m. – 03:30 p.m.	**Institutional Visit** • Bangladesh Bank – Risk Management Department • MRA • MFI 1 (PKSF) • MFI 2 (ASA)	Motijheel, Mogbazar, Agargaon, Shyamoli
23 July 2014 10:00 a.m. – 01:00 p.m.	**Field Visit** • MFI 3 (BRAC) and Client	Sripur, Gazipur
24 July 2014 09:30 a.m. – 03:30 p.m.	Exit Meeting, Discussion and Presentation of Assessment and Finalization of the Replication/Pilot Testing Implementation Plan	Meeting Room-1 (3rd Floor) BRAC Centre Inn, BRAC Centre, 75 Mohakhali, Dhaka, Bangladesh
25 July 2014 Departure 01:35 p.m.	Departure for Bangkok	Hazrat Shahjalal International Airport Dhaka

Appendix 2: Program of Phase 2 Activities

Activity Title: Replication and Pilot Testing of Risk Management Strategies and Tools in Agricultural Lending for Smallholder Farmers, Traders and Entrepreneurs

Date: 17-20 November 2014

Venue: Bangkok and Chonburi, Thailand

Date/Time	Activity	Venue
16 November 2014	Arrival from Dhaka to Bangkok	Montien Hotel, Bangkok
17 November 2014 09:00 a.m. – 12:00 noon 01:30 p.m.	**Orientation and Briefing** **APRACA and BAAC** • IFAD-APRACA FinServAccess Project By Dr. Marlowe U. Aquino Project Manager • Presentation of Risk Management Program of BAAC By Dr. Suwit Poolsilp Senior Vice President, BAAC • BAAC – Knowledge Resource Center and Museum Visit **CULTURAL STUDY TOUR**	BAAC Headquarters, Bang Khen Grand Palace, Wat Phra Si Rattana Satsadaram
18 November 2014 07:30 a.m. – 10:00 a.m. 01:30 p.m. 04:00 p.m.	Depart for Chonburi **Field visit to BAAC – supported project** Agricultural Marketing Cooperative (AMC) **Field visit to BAAC – Supported Project** Farmer Processing Group Depart for Pattaya	 Ban-Beng District Chonburi Amari – Nova Platinum Hotel Pattaya
19 November 2014 08:00 a.m. – 12:00 noon 12:00 noon 01:30 p.m. 03:30 p.m.	Depart for Farmer Market Outlets **BAAC Supported Farmer clients** **Field visit to BAAC – supported project** Funeral Cooperatives Depart for Bangkok	 Farmers Floating Market Pattaya area Montien Hotel Bangkok
20 November 2014 08:00 a.m. – 10:00 a.m. 01:30 p.m.	Depart for Market Visit **Field visit to BAAC – supported project** Market visit (Talaad Thai Wholesale Market) **Wrap-up meeting and integration of lessons learned** **Closing Program**	 Khlong Luang, Pathum Thani BAAC Headquarters Bang Khen
21 November 2014	Depart Bangkok to Dhaka	Suwanabhumi Airport

Appendix 3: Lists of Participants

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