

**UNIVERSITY OF ECONOMICS  
DEPARTMENT OF COMMERCE  
MASTER OF BANKING AND FINANCE**

**CREDIT ACCESSIBILITY AND FARM PERFORMANCE  
(A CASE STUDY IN MYAN AUNG TOWNSHIP, AYEYARWADY DIVISION)**

**THIDA OO**

**DECEMBER 2018**

## ACCEPTANCE

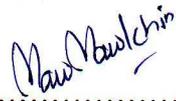
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## **ABSTRACT**

The study examined the relationship between agricultural credit and farm performance in Myan Aung Township, Ayeyarwady Division. Both of the primary and secondary data were used to analyze. There are 518 villages and 58 village tracts in Myan Aung Township . The random sample of 92 agricultural farmers was from 923 households of 6 village tracts which represents 10% of village tracts. Correlation and regression models are used to test whether the farm performance is affected by agricultural credit accessibility and also if there is any relationship between the two. For this study, the independent variables taken are agricultural credit accessibility of farmers and the farming characteristics of farmers: number of farmers in household and farming experience. The dependent variable is the farm performance (paddy yield per acre). There is a fairly positive correlation between all three independent variables (credit accessibility, farming experience, number of farmers in household) and farm performance (paddy yield per acre). According to the result of correlation, all three independent variables are significant at 1% level. The effect of farm experience is highest among variables on paddy yield per acres. For regression analysis, the independent variables (farm experience, number of farmers in households and credit accessibility) are positive and statistically significant with farm yield. Three variables have significantly explained 51% of the variance in paddy yield per acre. As a conclusion, agricultural credit should be provided to farmers sufficiently and timely manner.

## ACKNOWLEDGEMENTS

The credit for the completion of this work goes to the contributions made by some few selected individuals who devoted their time, means and intellectual abilities to make my MBF research project at the University of Economics a success.

Firstly, I would like to express my sincere gratitude to Prof. Dr. Tin Win, Rector of Yangon University of Economics, for his kind support and wisdom granted to MBF students.

I would like to express my sincere gratitude to Prof. Dr. Daw Soe Thu, Programme Director of MBF Programme for her valuable time, suggestion, motivation, patience as well as guidance to me for preparing this thesis. I would like to put across my warmest appreciation to my supervisor, Prof. Dr. Daw Tin Tin Htwe, Professor, Department of Commerce, who was very instrumental in the whole work. In spite of her tight schedule she was always available for me. Her suggestions and criticisms have helped me to learn a lot.

Moreover, I would like to thank our MBF Professors and all the lecturers as well as the University staffs who helped me directly and indirectly in completing my research project.

I am also thankful to all the respondents and village administrators of Myan Aung Township who gave their valuable time in filling the questionnaire and helped me finish my research.

Lastly, I want to express my utmost gratitude to Dr. Zaw Win Thein (my husband), with whom support my research in Myan Aung was effectively performed.

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## LIST OF ABBREVIATIONS

ADB	Agricultural Development Bank
ADS	Agricultural Development Strategy
AEZ	Agro-Ecological Zone
ANR	Agriculture and Natural Resource
APR	Annual Percentage Rate
ASEAN	Association of Southeast Asian Nations
BFI	Bank and Financial Institutions
CBM	Central Bank of Myanmar
CBs	Commercial Banks
CCS	Central Cooperative Society
CSO	Central Statistics Organization
DBSA	Development Bank of Southern Africa
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	Food and Agriculture Organization Corporate Statistical Database
FASDEP	Food and Agriculture Sector Development
FDI	Foreign Direct Investment
FRD	Financial Regulatory Department
FSA	Farm Service Agency
FSFL	Farm Storage Facility Loans
FY	Fiscal Year
GDP	Gross domestic product
GIZ	Gesellschaft für Internationale Zusammenarbeit
Ha	Hectares
HH	Household
IFC	International Finance Corporation
IT	Information Technology
LIFT	Livelihoods and Food Security Multi-Donor Trust Fund
MADB	Myanma Agricultural Development Bank
MEB	Myanma Economic Bank
MFI	Microfinance Institutions

MIFIDA	Microfinance Delta International
MIMU	Myanmar Information Management Unit
MMK	Myanmar Kyat
MOAI	Ministry of Agriculture and Irrigation
MOALI	Ministry of Agriculture, Livestock and Irrigation
MOF	Ministry of Finance
MOPF	Ministry of Planning and Finance
NGOs	Non-Government Organisations
NRB	Nepal Rastra Bank
PACS	Primary Agricultural Credit Societies
RRBs	Regional Rural Banks
SCPL	Seasonal Crop Production Loan
SMEs	Small And Medium Enterprises
TL	Term Loan
Tons	Metric ton
UN	United Nations
UNDP	United Nations Development Programme
USDA	U.S. Department of Agriculture
VFM	Vision Fund Myanmar
WB	World Bank
WVM	World Vision Myanmar

# **CHAPTER I**

## **INTRODUCTION**

The Agriculture sector is a high priority for the Government of Myanmar. The agricultural sector is estimated to contribute nearly 30% of GDP, while industry accounts for about 25% and services about 45% of GDP. As in other countries in the region, a significant proportion of industry and trade is also related directly or indirectly to the agriculture and natural resource (ANR) sector. The vision statement of the agriculture policy is that by 2030, Myanmar achieves inclusive, competitive, food and nutrition secure, climate change resilient, and sustainable agricultural system contributing to the socio-economic well-being of farmers and rural people and further development of the national economy. To pursue this vision the agriculture development strategy proposes a sequence of interventions that will pave the way to: commercial expansion of crops and livestock production, increased incomes for farmers and better access to international markets, ultimately contributing to the country's food security and economic development (MOALI, 2018-19 ~ 2022-23).

Agriculture provides employment opportunities for rural people on a large scale in underdeveloped and developing countries. Agriculture is the bedrock of Myanmar economy. Given Myanmar's rich natural-resource base, the agricultural sector has played a central role in the development of its modern societies. Out of 67.6 million hectares of land in Myanmar, 12.8 million hectares are cultivated land (EuroCharm Myanmar, 2018). Paddy dominates the agriculture sector, accounting for around 60 percent of the net sown area and around 80 percent of the total value of sector production (World Bank, 2016).

Agriculture has always been of great importance to the economic development of Myanmar. Productivity growth is also closely linked to the ability of farmers in Myanmar to compete in the new agricultural economy. While improved productivity is likely to allow greater participation in global markets, there is positive feedback from such participation on agricultural growth and productivity gains. The agriculture sector still faces many challenges, including access to technology, capital, and markets and land tenure issues. However, the Myanmar government is dedicating significant efforts towards developing a sustainable development plan with specific objectives of improving the export sector and the agricultural industry. The development of the

Agriculture Development Strategy plan is promising and signals the government's commitment to improve access to finance, trade facilitation and logistics, and trade information and promotion initiatives. Myanmar is richly endowed with natural resources, has a high land / labor ratio, and a growing domestic market; with correct policies and investments, the agriculture sector in Myanmar has a great potential to expand (EuroCharm Myanmar, 2018).

Agricultural land is currently under-capitalised and farmers have very limited access to credit except to borrow capital at high interest rates. Farmers in Myanmar are facing productivity challenges including insufficient supply of quality seeds, rise in fertilizer prices and lack of knowledge on soil nutrient management and slow pace of mechanization. At the end of 2012, the Myanmar Agriculture Development Bank (MADB) provided loans to 1.87 million clients, mostly smallholder farmers. MADB only provides loans to cover a fraction of production costs for up to 10 acres; the bank does not support medium or large holder farmers. In total, 88% of those loans are provided to small farmers engaged in paddy production and are only large enough to purchase inputs for the following cropping season; they are often insufficient for the purchase of farm tools and equipment. Farmers can take out 12-month loans of MMK 150,000 per acre for up to 10 acres if they are growing paddy and sugar cane. The government has also been providing low interest loans to farmers under cooperatives. Private microfinance institutions (MFIs) offer loans at low interest rates but they are limited by geographical reach and caps in loan size. Informal sources of credit, such as private money lenders, have become a major source of capital for many farmers. Money lenders usually charge a monthly interest rate of 10–20%. However, among three seasons of the Seasonal Loan, 90% of Monsoon and 100% of Pre-monsoon are for rice production. The highest loan coverage was in Ayeyarwady and Bago. Almost all farmers there reported having loans (97-98 percent of farmers), with an average loan amount of \$125/acre.

### **1.1. Rationale of the Study**

Credit is any form of deferred payment (Finlay, 2002). Agricultural credit or lending can be defined as giving out of credit (in cash and kind) to small scale farmers for the purpose of farming (Abbot & Makeham, 1979). Agricultural credit plays an important role in agricultural development. In fact, facilitation of access to credit can

raise amount of productive investment. A crucial resource needed in farming is access to funds. Credit can be invested in a household's future prosperity by purchasing assets such as plant machinery and farm inputs such as fertilizer and bullock ploughs. Credit has a crucial role for elimination of farmer's financial constraints to invest in farm activities, increasing productivity and improving technologies. Generally, credit accessibility is important for improvement of quality and quantity of farm products so, that it can increase farmer's income and avoid from rural migration. When credit is rationed, some borrowers cannot obtain the amount of credit they desire at the prevailing interest rate, nor can they secure more credit by offering to pay a higher interest rate. Ghorbani (1997) believes that because of high transaction costs and interest rate, efficiency of formal credit payment to farmers is low.

Access to credit benefits the economy in general by accelerating economic growth, intensifying competition, as well as boosting demand for labour (Feder et al., 1989). Agricultural credit in Myanmar is on rising trend during the recent years. It has reached MMK 940 million in January 2017 from MMK 336 million in July 2010. However, most of such credit has been disbursed in urban and rural areas only. Thus, there is a need to extend the formal financial intermediation services in the rural areas also. Credit from banks and financial institutions to agriculture sector has been disbursed mainly for financing the capital instruments like tractors, threshers, trailers, etc. The share of such credit for mini-irrigation services, fertilizer, pesticides and improved seeds has been very low. To increase the farmers' access to better inputs and mechanized farming methods and thereby raising farm productivity, more credit should be disbursed to purchase better inputs besides capital instruments (MOALI, 2018).

Myanmar's lands can be divided into three agro-ecological zones: the delta and coastal zone, the dry zone, and the hill regions. The delta and the coastal zone is the most densely populated, provides easy access to water, and predominantly engages in rice and fish production. Delta Zone includes three regions: Bago, Yangon, Ayeyarwady. Major crops of Delta zone are rice and pulses. Regarded as the rice bowl of Myanmar, Ayeyarwaddy region is the largest producer of rice among all the states and regions. Ayeyarwady Region consists of six districts including Hinthada District. Myan Aung Township, the study area of this thesis paper, is a township of Hinthada District in the Ayeyarwady Division. It is the second largest paddy production township in Hinthada District (MIMU, 2017).

## **1.2. Objectives of the Study**

The main objectives of the study are as follows:

- To identify the credit accessibility of farmers in Myan Aung Township
- To analyze the relationship between credit accessibility and farm performance in Myan Aung Township

## **1.3. Scope and Method of the Study**

This study is only focused on credit accessibility and farm performance of farmers. Target group is farmers who live in Myan Aung Township. Stratified random sampling techniques are used to select the respondents in the study area. Firstly 6 village tracts are selected out of 58 village tracts in Myan Aung Township. Secondly samples (92 respondents) are randomly taken as 10% of 923 households in these six village tracts.

Both primary and secondary data instruments are used. Primary data collections instruments used in this study are questionnaire, observation, and discussion with farmers. Structured and semi-structured interviews, focus group discussions, checklist and observations are deployed. Secondary data are taken from Myanmar Agricultural Development Bank (MADB), MFIs, Mya Sein Yaung, research journals, previous thesis papers, internet website and Text books. Correlation and Regression analysis are used to find out the relationship between agricultural credit accessibility and paddy productivity of farmers.

## **1.4. Organization of the Study**

This study includes five main chapters. Chapter (I) includes introduction, rationale of the study, objectives of the study, scope of the study, method of the study and organization of the study. Chapter (II) discusses theoretical background and it presents the definition and role of agricultural credit. Chapter (III) is the background study of agricultural credit in Myan Aung township of Myanmar agricultural sector. Chapter (IV) consists of the identification of the credit accessibility of Farmers in Myan Aung Township and the analysis of the relationship between credit accessibility and farm performance of farmers in Myan Aung Township. Chapter (V) consists of findings, suggestions and needs of further study.

## CHAPTER II

### THEORETICAL BACKGROUND

This chapter describes definition of credit, nature and importance of agricultural credit, the relationship between credit accessibility and farm performance, sources of agricultural finance, types of agricultural loans, previous studies and conceptual framework.

#### 2.1. Definition of Agricultural Credit

Credit is defined as “the process of obtaining control over the use of money, goods and services in the present in the exchange for a promise to repay at a future date” (Adegeye and Dittoh, 1985). The concept of credit in agriculture has been known since the seventeenth century when peasants in China used credit in farm production to increase their cash income, and to improve their standard of living (Ming-te, 1994). Also, in Western countries, the German Landshafte was founded by Frederick the Great in 1769 and its principles were used by the Federal Farm Loan System of the United States.

Agricultural credit has been defined as the present and pro term transfers of purchasing power from a person who owns it to a person who wants it, allowing the latter the opportunity to command another person’s capital for agricultural purposes but with confidence in his willingness and ability to repay at a specified future date (Kuwornu et al., 2013). Agriculture finance refers to public or private funds in the form of equity, gift or loan for improving social welfare through expansion of agricultural sector (Shreiner and Yaron, 2001). It encompasses not only government funds but also funds of non-governmental organizations that use matching grants to attempt to encourage community and sector development, income equal opportunity and local empowerment. Public funds are subsidized funds and private funds regardless of their price, are not subsidized, unless a contribution is tax free or the market price is affected by an explicit or implicit state guarantee of the liabilities of a development finance institution (Shreniner and Yaron, 2001).

## **2.2. Importance of Agricultural Credit**

Credit plays an important role in agricultural development. It is an important instrument used in poverty alleviation, livelihood diversification and increasing the business skills of small farmers (DBSA 2005; Poliquit 2006). Agriculture is central to food security and economic growth in developing countries and provides the main source of livelihood for three out of four of the world's poor (Wheeler and Kay, 2010).

Rapid agricultural growth has been perceived as a key to achieving a country's developmental, social and economic goals. Availability of credit can be the leading edge of rural development. Farmers can further acquire farm machinery and equipment that can help increase acreage and buy and use important inputs such as improved seeds, weedicides, pesticides and fertilizer. Credit provision to the poor makes a lot of difference to the poor by raising their per capita income and consumption as well as household net worth, thereby increasing the probability that the beneficiaries lift themselves out of poverty (Khandker, 2002) and provide for their basic needs. Provision of credit to smallholders helps households and individuals to achieve food security and alleviate their poverty (IFPRI, 2002). It helps improve the standard of living of the poor through increasing food production, raising incomes and therefore permitting increased saving.

Agricultural output is low in developing countries due to small holdings, traditional methods of farming, poor irrigation facilities, low or misuse of modern farm technology etc (Zuberi, 1989). This results in small income and no saving or small saving. Therefore, it needs of time that credit agencies come up to help them in applying and undertaking the improved farm practices. Credit is an important instrument that enables farmers to acquire commands over the use of working capital, fixed capital and consumption goods (Siddiqi et al, 2004). Credit plays an important role in increasing agricultural productivity. Timely availability of credit enables farmers to purchase the required inputs and machinery for carrying out farm operations (Saboor et al, 2009). In fact, inadequate resources and technology in the agricultural sector accounts for the low productivity in the sector and this is due to the inability for farmers to access credit from the bank. Furthermore, the problem of insufficient credit facility in the agricultural sector has in the long run depressed the young people in the society to engage the main the sector. The Food and Agriculture Organization (FAO) argues that studies in Asia show that the poor achievement of the agricultural goals on the continent in terms of

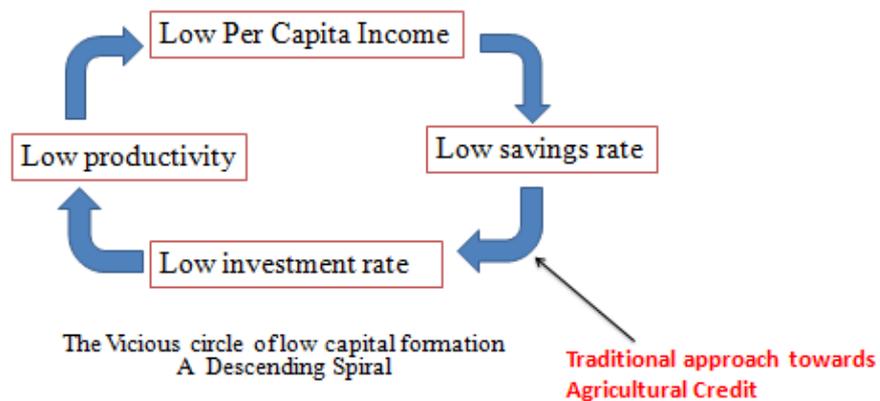
efficiency, sustainability and equity is due to the predominant practice of directing resources to men only (FAO,1993).

### 2.3. Relationship between Credit Accessibility and Farm Performance

Access to agricultural credit enables farmers acquire lands, inputs, both skilled and unskilled labor and access good markets for their produce which would ultimately result in an improved standard of living. In most developing countries, agricultural finance is considered an important factor for increased agricultural production and rural development because it enhances productivity and promotes standard of living by breaking the vicious cycle of poverty of small-scale farmers and fishers (Adebayo and Adeola, 2008).

According to Heidhues & Schrieder, (1999), the origin of the credit concept stems from the necessity to break the vicious circle of low capital formation, as presented in the Figure (2.1).

**Figure (2.1) Traditional Reason for Formal Agricultural Credit**



Source: Heidhues & Schrieder (1999)

Figure (2.1) shows that the formation of capital is influenced by per capita income, saving rate, investment rate and productivity. Per capita income or average income measures the average income earned per person in a given area (city, region, country, etc.) in a specified year. A low level in any of these factors will impact on capital formation and ultimately the standard of living of families. The role of credit programs is to break this vicious cycle of low capital formation, resulting in an increase in per capita income and thus an increase in saving rate, investment rate and

productivity (Heidhues & Schrieder, 1999) and eventually in the standard of living of families.

All farm credit loan requests are tailored to the specifics of farming operation and/or financial goals. Every loan request is evaluated based on five key credit factors with terms tailored to fit the farmers' needs, goals, and financial best interest, as well as the best interest of Farm Credit (Western Arkansas, 2016). There are five credit factors as follows:

- Character - Borrower(s) Reputation, Loan History, Credit Bureau scores.
- Capital - Borrower(s) financial position, before and after loan is made and borrower equity in the operation.
- Capacity - Borrower(s) ability to repay annual operating expenses, plus annual debt obligations over the specified term of the loan with a 15% margin in income above obligations for any adversity.
- Collateral - The quality and value of the security (livestock, equipment, real estate) pledged for the loan to offset the risk associated with the loan request.
- Conditions - The terms or conditions for loan approval; or Farm Credit's expectations of the borrower's performance during the term of the loan.

Credit also acts a catalyst for rural development by motivating latent potential or making underused capacities functional (Oladeebo and Oladeebo, 2008). Availability of credit can be the leading edge of rural development. Access to credit facilities increase incomes of farmers in the short run and enables farmers establish and expand their farms (Llanto, 1987; Yaron 1992; Okurat et al 2004). This implies that access to credit may not have a direct impact on productivity, but it could have a positive and significant indirect impact through its positive influence on agricultural technologies adoption, increased capital for farm investment, hired labor, and improved household welfare through improved health care and better nutrition. Credit can be employed to extend the total area under cultivation and invariably output. Farmers can further acquire farm machinery and equipment that can help increase acreage and buy and use important inputs such as improved seeds, weedicides, pesticides and fertilizer. Lack of access to finance is one main difficulty disturbing Myanmar's agricultural modernization system. In Myanmar like many other ASEAN

countries, insufficient access to credit has remained an essential distress to farmers and a key restriction to the transformation and diversification of their activities. Creditor loan able fund is regarded as more than just another resource such as land, labour and equipment, because it determines access to most of the resources required by farmers. The explanation is that the adoption of new technologies necessarily requires the use of some improved inputs which may be purchased.

Lack of credit is one of the key constraints in agricultural production. Internal factors limiting credit access are lack of or poor-quality farm assets, lack of ownership of assets for farmers, poor financial management, and risky nature of farming. External factors are high interest rates; high cost of service delivery to the sector, and perception of financial service providers about farming as being highly risky. Again, there is high interest rate on the loans, which discourages borrowing (FASDEP II, 2009). Access to credit in agricultural production is important.

Many of these farmers cannot farm on a largescale because they mostly use family labour for farming, so if the family size is small, farming on a large piece of land would be very difficult. The only other possibility would be to get paid labour for a larger farm which entails money to pay this extra labour. Banks and microfinance institutions always ask for collateral security before giving out loans, and these farmers have only their farmlands as collateral. Credit constraints operate in a variety of ways in Cameroon where undeveloped capital market forces farmers to rely on self-financing or borrowing from friends and relatives. Lack of access to long-term credit for micro, small and medium smallholder farmers forces them to rely on high-cost short term finance (Chenaa, 2018).

Access to credit in agricultural production is important. According to Carter and Weibe (1990), farmers need both ex-ante and ex-post access to capital. Ex-ante capital access is required in order to finance vital production costs such as labour and purchase inputs which needed to be paid ex-ante, that is, prior to the actual realization of production. On the other hands, access to capital after the realization of the production process, that is ex-post capital access, is of importance when there is no insurance as it's often the case in low income agrarian economies. Thus, in case of annual fluctuation in production, ex-post access to capital is highly essential for the stabilization of households' consumption from year to year. In addition, Feder et al. (1990) posit that credit allows farmers to satisfy the cash needs induced by the production cycle which characterize agriculture; land preparation, planting, cultivation, and harvesting are

typically done over a period of several months in which very little cash revenue is earned, while expenditure on materials, purchased inputs, and consumption need to be made in cash. Thus, access to credit may affect farm productivity because farmers facing binding capital constraints would tend to use lower levels of inputs in their production activities compared to those not constrained (Feder et al., 1989; Petrick, 2004).

## **2.4. Sources of Agricultural Finance**

Agricultural credit is available to farmers and other people working in the farming sector from various sources. The sources of agricultural finance can be classified into two main categories: Institutional and Non-institutional sources. Short- and medium-term agricultural credit requirements of farmers and others employed in the agricultural sector in India are usually met by the government, money lenders, and co-operative credit societies. Farmers with long-term loan requirements, such as a long-term agricultural loan or a loan for agricultural land purchase, can avail of loans from land development banks, the Indian government, and money lenders (Shah, 2008).

### **2.4.1. Institutional Sources**

The key goal of institutional credit is to enable farmers to increase their agricultural productivity and their income also. Institutional credit doesn't employ exploitative practices. Some of the main institutional sources of agricultural finance are listed below.

#### **a) Government**

The government is another valuable provider of agricultural finance in India. Agricultural finance available from the Government of India are called taccavi loans and these are usually disbursed during times of emergency, such as when floods or famine occur. Interest rates on these loans are also very low.

#### **b) Co-operative Credit Societies**

Co-operative credit societies are the best and cheapest sources of agriculture business loan in India. The active Primary Agricultural Credit Societies (PACS) in India

account for almost 86% of all Indian villages and makeup over 36% of the total rural populace in the country

c) **Regional Rural Banks**

Regional rural banks or RRBs have been providing direct loans to agricultural labour, small and marginal farmers, as well as rural artisans, among others since 1975 for productive purposes.

d) **Commercial Banks**

Commercial banks have played a marginal role in providing rural finance. After the nationalization of commercial banks in 1969, these banks began to provide both direct and indirect agricultural loans for short- and medium-term durations.

e) **Land Development Banks**

These provide both medium and long-term agricultural business loans against a collateral of land that acts as a security. The duration of the agricultural business loan is usually 5–20 years with a high loan quantum. To reduce the exploitation of farmers and enable their growth the government has made many initiatives, encouraging banks and NBFCs to offer the rural farmers agricultural business loans at competitive interest rates. However, an increase in the awareness and education about the benefits of institutional financing are important for effective acceptance of the institutional credit in rural areas.

#### **2.4.2. Non-institutional sources**

Non-institutional sources constitute around 40 percent of total credit available by farmers in India. The interest rate of the non-institutional agricultural loans is usually very high, although the land or other assets are kept as collateral in the secured loans. They include entities like relatives, landlords, traders, commission agents, and money lenders.

## **2.5. Types of Agricultural Loans**

Agriculture loans are commonly supplied by the Farm Service Agency (FSA) of the United States Department of Agriculture (USDA). The federal programs are often the most well-funded and easy to secure (USDA, 2012). There are five types of loans as follows:

### **Farm Storage Facilities Loans**

Farm Storage Facility Loans (FSFL) can help you afford the cost to build an on-farm storage facility for your crop and products. To qualify, the commodities you are storing must fall into the categories of: corn, oats, wheat, barley, rice, soybeans, peanuts, oilseeds, lentils, peas, hay, biomass, fruits, vegetables or grain. If you qualify, you can obtain up to \$500,000 in direct financing from the federal government.

### **Farm Operating Loans**

Operating loans assist farmers in day-to-day needs or expansion requirements. They come in both direct and indirect options. An indirect loan is provided by a private lender but may be guaranteed by the FSA. This makes the loan more affordable. A guaranteed, indirect loan may be issued in an amount as large as \$1,112,000, with a guarantee up to 95 percent. Direct loans may also be issued to credit worthy individuals who do not qualify for private loans due to other circumstances. These loans may be as large as \$300,000.

### **Farm Ownership Loans**

Like operating loans, ownership loans provided by the FSA come in both guaranteed and direct loan form. The limits are the same as those limits provided by the operating loan program. This money must go directly toward the purchase of land, livestock, crops or machinery needed to assist in acquiring ownership of a farm meant for commercial production. In addition to credit requirements, the farm owner must have experience in the farming industry to promise successful operation of the new business.

## **Fisheries Finance Program**

This program is designed for specific projects in fisheries that qualify under the direction of Congress. A qualified program is eligible for up to 80 percent financing through a direct loan program. This loan program is designed to refinance a private debt on a fishing vessel or to provide for maintenance and repairs on an existing vessel. Qualified projects do not include complete construction of a new fishing vessel or fishery, however. In order to qualify, the fishery must meet environmental and government regulations. The business owner must also be free of delinquent federal debt and be in good financial standing. This program is not designed to refinance a loan in delinquency or default.

## **Farm Labor Housing**

This program provides loans and grants through the US Department of Housing and Rural Development. The key goal of institutional credit is to enable farmers to increase their agricultural productivity and, as a consequence, their income. Institutional credit doesn't employ exploitative practices.

### **2.6. Previous Studies**

There are several studies regarding agricultural credit on farm productivity. This section presents a review of some related previous studies.

Kosgey (2013) analyzed about the factors determining agricultural credit of grain growers in Uasin-Gishu County, Kenya. The study found that farmers' age, education level, family size, household size, repayment period, period of loan received, and loan amount were highly important in influencing access to agricultural credit.

Similarly, Obiero (2013) analyzed how social economic factors affect farm yield in Siaya District, Siaya County in Kenya. This study found that there was a negative relationship between farmer's experience and farm yield and there was also a negative relationship between the farmer's education and the farm yield. However, this study showed that there was a positive and significant relationship between the farmers' income and the farm yield. This shows that enough investments in the farming sector would give better yields.

Shah (2008) didn't analyze economic factors affecting on farm yield but studied the impact of credit on farm productivity and income of the sample farmers in Chitral, Northern Pakistan. In this study, data were collected from both borrowers and non-borrowers from selected villages in the district of Chitral during the year 2007. The findings show positive relationship between agricultural credit and farm productivity. Similar relationship was found with income of the sample farmers. This relationship could be attributed to the timely availability and application of the required inputs due to obtaining of the loan from Zarai Taraqiati Bank Limited (ZTBL). However, complaint about the interest rate charged and the procedure for obtaining this credit were also recorded.

Similarly, Rahman (2014) analyzed about impact of agricultural credit on agricultural productivity in Pakistan. It is concluded that Household size, income of the household, education of the farmers, agricultural credit, short term and long-term loans have significant positive impact on agricultural yield per acre. The positive association between credit and agricultural productivity represents that credit enables the farmers to purchase superior quality or high yield variety seeds, fertilizers and pesticides and agricultural yield increases because of timely and adequate inputs.

## **2.7. Conceptual Framework**

The conceptual framework for the study is constructed by considering independent variables: credit accessibility and farming characteristics of farmers. These variables are assumed to determine the effects on farm performance.

As presented in previous section: Shah (2008) considered agricultural credit as independent variable and Farm productivity as dependent variable. The study found that a positive relationship between agricultural credit and farm productivity. Additionally, Rahman (2014) found that the positive association between credit and agricultural productivity and also showed that agricultural credit, short term and long-term loans have significant positive impact on agricultural yield per acre.

On the other hand, Obiero (2013) considered farmers' age, education level, family size, household size, repayment period and loan amount as independent variables and farm yield as dependent variable. The study found that there was a positive and significant relationship between the farmers' income and the farm yield.

Kosgey (2013) considered as farmers’ age, education level, family size, household size, loan coverage, period of loan received and loan amount as independent variables and agricultural credit as dependent variable. The study found that farmers’ age, education level, family size, household size, repayment period, period of loan received, and loan amount were highly important in influencing access to agricultural credit.

The conceptual framework for this proposed study is constructed as shown in figure (2.2). According to the figure, agricultural credit and farming characteristics of respondents are assumed as the influencing factors on farm performance. In order to improve farm performance, agricultural credit must be enough to cover the farming costs and need to be received timely. Therefore, to identify agricultural credit of farmers is used as independent variables. Moreover, the farming characteristics of farmers: number of farmers in the family and farming experience account to consider as independent variables. To evaluate the farm performance, the paddy yield per acre is used to measure in the study.

**Figure (2.2) Conceptual Framework of the Study**

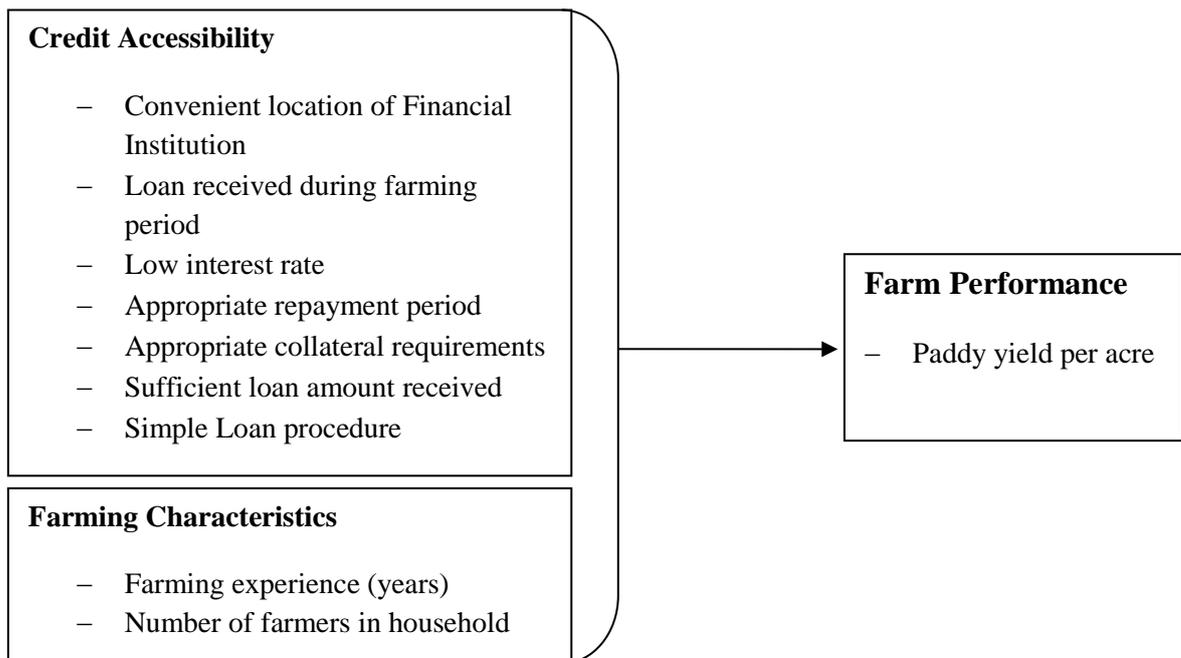


Figure (2.2) Own Compilation

## **CHAPTER III**

### **BACKGROUND STUDY OF AGRICULTURAL CREDIT IN MYAN AUNG TOWNSHIP**

This section gives details on background information of agricultural loan in Myan Aung Township. This chapter includes the Overview on Agricultural sector in Myanmar, Agricultural Credit in Myanmar, role of Myanma Agriculture Development Bank, Background Information of Myan Aung Township and Financial Institutions in Myan Aung Township.

#### **3.1. Overview on Agricultural Sector in Myanmar**

Myanmar is an agricultural country. Agriculture contributes 30 percent of national GDP and about 68 percent of rural population relies on crop husbandry and livestock for their livelihoods and incomes. The agriculture sector also accounts for about 25% of total exports by value. Beans and pulses are currently the largest agriculture export, returning \$1,152 million in 2015/16, with rice, livestock and fisheries, the other main agricultural export items, each generating between \$400-500 million. The production of paddy rice, estimated at 28.2 million metric tons (2016/17) continues to dominate Myanmar's agricultural production, being 45.7% of harvested area and 53.4% of production volume of major crops produced in Myanmar. While the national self-sufficiency rate is estimated at around 168%, Mandalay and Magway regions and Chin State report deficits, with self-sufficiency rates of 66%, 98%, and 69% respectively. Myanmar has an ethnically diverse population of about 51.7 million in a land area of 676,578 square kilometers with three main agro ecological zones: Delta, Central Dry Zone (CDZ) and the Hilly zone. (MOALI,2018).

Agriculture products mainly come from five regions: Ayeyarwady, Sagaing, Bago, Magway and Mandalay. About 70% of the cultivated land in Myanmar is found in these five regions. Agricultural Zones of Myanmar can be seen in Appendix 2. This map shows major crops by zones. In Zone III Delta Area, in the south, with a population of about 22 million, farmers are primarily engaged in rice production, particularly during the monsoon. In the Delta zone, there are 2 seasons: rainy season (Mid-May to Mid-Oct) and Dry season (Mid-Oct to Mid-May). The annual rainfall is from 2,200mm

to 28,000mm. Its main crops are rice and pulses. 60% of total rice production is produced in this zone. The highest loan coverage was in Ayeyarwady and Bago. Almost all farmers there reported having loans (97-98 percent of farmers), with an average loan amount of \$125/acre. The lowest proportion of farmers having loans was found in Shan State (less than 15 percent), where the loan amount averaged \$125/acre (World Bank, 2016). Regarded as the rice bowl of Myanmar, Ayeyarwaddy region is the largest producer of rice among all the states and regions. Its Area is 35964 km<sup>2</sup> and total population are 6,316,999, including rural: 5,546,391 (88%), urban: 770,608 (12%). Its administrative divisions are 6 districts, 26 townships, 252 wards, 1,913 village tracts, 12,194 villages. Total rice production in Myanmar: 32,682,000 Bushels. Among them, rice production of Ayeyarwaddy Region is (26% of Total) 8,643,000 bushels (Myanmar Information Management Unit, 2017).

Myanmar's agriculture is characterized by low productivity, inequality and high volatility. Despite its potential, the agriculture sector has suffered decades of insufficient investment in basic infrastructure such as rural roads, as well as from weak research, extension and finance support services. With 80% of farm holders having less than 10 acres, the ADS cannot ignore male and female smallholder farmers and, especially, female smallholder household members who perform most tasks in crop agriculture. Regional experience indicates that emphasis on male and female smallholders might not only bring benefits in terms of poverty reduction and reducing inequality, but also in terms of economic efficiency and growth.

In the case of rice intensification, whether for domestic consumption or export, have come from smallholder agriculture, rather than large scale plantations. Some of the most dynamic rice economies in the past 20 years (Vietnam, Cambodia, and China earlier) were all based on the development of the smallholder rice sector. Wherever smallholder production is efficient and competitive, and thus financially and economically viable, the urgent need to tackle rural poverty and raise rural incomes makes the promotion of smallholder agriculture a high priority. On the input side, it includes the supply of production inputs, particularly fertilizers and agro-chemicals, seeds, feed, irrigation equipment, power tillers, tractors, threshers, combine harvesters, and increased access to pluralistic sources of extension and finance (MOALI, Myanmar Agriculture Development Strategy And Investment Plan ,2018-19 ~ 2022-23).

MOALI has prepared an Agricultural Policy (2016) to guide implementation of the Second Five-Year Plan. The policy includes the following objectives:

1. to improve food security and safety and balance diet intake during the period of the second five-year plan;
2. to ensure farmers fully enjoy their rights and benefit from the emerging economic growth;
3. that small scale farmers, livestock keepers and fisher folks, gathered into groups or cooperatives (in which women's participation is mandated), modernize and improve the performance of the entire sector based on transferred knowledge;
4. that smallholder farmer's socio-economic status improves through a target program of investment in rural road construction, rural infrastructures development, land use management and small-scale production industry development;
5. to secure needed technology and financial assistance from local and external sources for further improvement of crop, livestock and fish production as well as cooperative development;
6. to enhance production of high-quality grain, meat and fish products for external markets;
7. to develop an efficient agro-based industry, including small scale industries, and associated vocational education;
8. to increase access to local and external investment for the agriculture sector; and
9. to actively ensure full participation of all stakeholders involved in poverty alleviation, agriculture sector development, and sustainable rural development programs

Given agriculture's important contribution to the economy, the modernization of the agriculture sector is a top priority in the economic and social development agenda of the Government of Myanmar. Looking forward, Myanmar's agricultural potential is enormous given the country's rich natural resources and favorable geographical location. Myanmar's diverse topography, climates, water resources, and eco-systems offer farmers and investors the opportunity to produce a wide range of cereals, pulses, horticultural products, fruits, livestock, and fish. Because of its strategic location between the two enormous regional markets of India and China, and an easy access to buoyant markets in the Association of Southeast Asian Nations (ASEAN), Myanmar's

agriculture sector is well positioned to grow, develop a dynamic agribusiness industry, and provide people with the opportunity to improve their living standards.

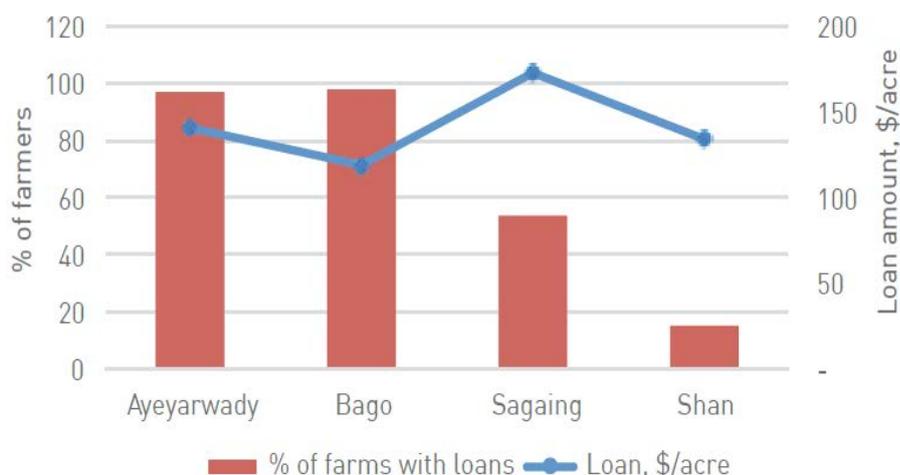
### **3.2. Agricultural Credit in Myanmar**

The main institution providing finance to the rural sector had been the Myanmar Agricultural Development Bank (MADB). MADB is a state-owned bank, not commercial bank; it is a financial institution that provides subsidized credit to farmers. The bulk of MADB lending consists of seasonal loans to paddy farmers that meet about 50% of production costs. Many the farming and rural population rely on microfinance institutions (MFI) and the informal sector - traders, shopkeepers and money lenders for their credit needs usually at very high rates of interest (MOALI, 2018).

The Myanmar Economic Bank (MEB) and the Cooperative Bank (CB) provide loans to small businesses and traders, who in turn might lend to farmers. While the businesses and traders benefit from relatively affordable credit from MEB or CB, their lending rates to farmers are much higher. While part of the interest rate differential can be explained by the acute shortage of capital in the rural economy, the lack of collateral and high risk of default, and the high administrative costs, the high lending rates to farmers are a disincentive to investment. Equally, such high rates are a serious disincentive to productive investment and make it difficult or impossible for low income rural inhabitants to break out of their poverty. A rapid expansion in rural credit, both short-term seasonal credits, as well as more medium-to-long-term credit will be needed if agriculture is to grow rapidly. While the MADB has an extensive branch network that covers over 60% of the county's townships (GIZ 2016), this type of public institutional banking is fraught with risk and its expansion is not a recommended rural financial services strategy. Enabling other banks, including private banks, to expand into the rural sector will be necessary to meet the rising credit need. While financial sector reforms, including the removal of interest rate caps, would accelerate this process by making such lending more profitable, private banks also have the opportunity to use digital financial services to reduce the cost and risks of serving a clientele that consists of many relatively small farmers. At the same time, private banks can help the sector more generally by increasing credit supply to agribusiness companies and suppliers (MOALI, 2018).

Percentage of borrowing farmers and loan amount per acre by region can be seen in figure (3.1).

**Figure (3.1) % of Borrowing Farmers and Loan Amount per Acre**

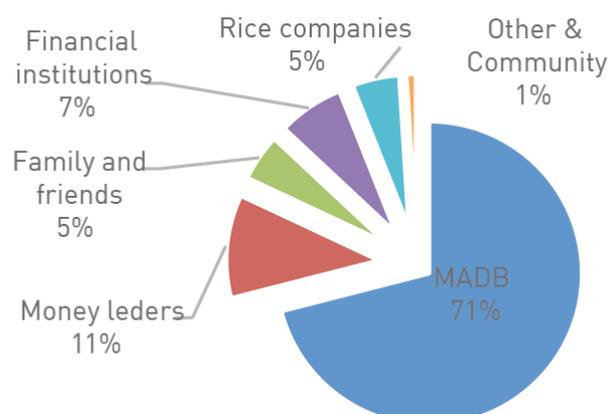


Source: MOALI, 2018

Figure (3.1) show that the highest loan coverage was in Ayeyarwady and Bago. Almost all farmers there reported having loans (97-98 percent of farmers), with an average loan amount of \$125/acre. In Sagaing, 54 percent of farmers had loans, with an average amount of \$172/acre. The lowest proportion of farmers having loans was found in Shan State (less than 15 percent), where the loan amount averaged \$125/acre. It could be that many farmers in Shan State have contract farming arrangements with Chinese traders, where inputs are provided in advance, with payments made by outputs after the harvest. This reduces the need to obtain loans.

For the monsoon season, the main source of loan was the Myanmar Agricultural Development Bank (MADB). About 71 percent of farmers received MADB loans (Figure 3.2). Money lenders constituted the second major source of capital, with 11 percent of farmers accessing funds from them. Other important sources were other financial institutions, family and friends, and rice companies.

**Figure (3.2) Sources of Agricultural loans for Farmers**



Source: MOALI (2018)

In Myanmar, farmers in general do not have the access to long-term capital, preventing investments in agricultural machinery and other productive assets at least for the large farms, for whom owning machinery can make economic sense (World Bank and LIFT,2014). The use of mechanized services and inputs depends on access to working capital, among several other factors. For farms with small land areas buying expensive agricultural machines is often unprofitable, and what they need is the access to short term working capital to purchase mechanized services. In Myanmar, it is a common practice among farmers to get agricultural loans. In the survey, about two out of three farmers had ongoing loans in 2013. About 67 percent of these farms had one loan, about 30 percent had two different loans, and 3 percent had three loans (World Bank, 2016). Average monthly interest rates by a variety of sources is summarized in Table (3.1).

**Table (3.1) Monthly Interest Rates by Sources of Finance**

Source of Loan	Average monthly interest, %
Money Lenders	5.40
Family and friends	4.13
Others	2.59
Microfinance Institutions	2.42
Rice Trading Companies	1.11
MADB	0.80
<b>Total</b>	<b>1.60</b>

Source: MOALI (2018)

Table (3.1) shows that MADB loan interest rate is the lowest and interest rate of money lender is the highest.

### **3.3. Financial Institutions in Myanmar**

This section describes the role of MADB, Cooperatives and MFIs in Myanmar.

#### **3.3.1. Role of Myanma Agriculture Development Bank**

Among the government institutions supporting the agriculture sector, the Myanma Agriculture Development Bank (MADB) plays an important role. MADB was established in June 1953 by the Government of Myanmar to support the development of agriculture, livestock, and rural enterprises in Myanmar. MADB is currently the largest financial institution serving the rural areas and financing agriculture activities. At the end of 2012, MADB served 1.87 million customers, mostly farmers, and had a network of 206 branches (which accounted for 23 percent of all banks' branches in Myanmar). Since its creation, MADB has played an important economic and social role by providing loans to a large segment of low-income households engaged in agricultural activities (MADB Annual Reports, 2017).

MADB's loan portfolio is heavily concentrated on a single type of client (farmers) and one commodity (rice). MADB finances only up to 10 acres per farmer. Most farmers financed by MADB are engaged in subsistence agriculture and use rudimentary cultivation techniques that prevent them from reaching high yields for their crops. MADB does not finance large farmers engaged in commercial agriculture or other agribusiness firms. Loans are the main financial product offered by MADB to its clients.

#### **Type of Loans, Loan Disbursement Period and Loan Collection Period of MADB**

MADB offers two types of loans to its customers nationwide: the seasonal crop production loan and the term loan, which account for 98 percent and 2 percent of total outstanding loans in 2012, respectively. Interest rate of the institutional finance (8%/year) is lower than that of the private money lenders. The crop is not limited to rice, but including maize, pulses and beans, oil crops, cotton jute, mustard, sugarcane and etc. However, among three seasons of the Seasonal Loan, 90% of Monsoon and 100% of Pre-monsoon are for rice production. For the monsoon season, the main source

of loan was the Myanmar Agricultural Development Bank (MADB). About 71 percent of farmers received MADB loans. Money lenders constituted the second major source of capital, with 11 percent of farmers accessing funds from them. Most of the loans, about 65 percent, were for six months. This is in line with MADB's lending policy. A small number of loans, 10 percent, were for five months, and another 10 percent for seven to eight months. Very few loans lasted more than one year (World Bank, 2016).

Lending operations are the core activity of MADB, but nevertheless the offered product range is limited. The only type of loan effectively being offered today is the seasonal crop production loan. This loan is designed to finance working capital needs and production costs of farmers at the start of the agricultural season. Depending on the timing, there are three types of seasonal loan: the pre-monsoon loan, the monsoon loan and the winter loan. The seasonal loans have a maturity of maximum 12 months, with full repayment (bullet) due in the harvesting period.

There are currently eight types of crops that can be finished through seasonal loans: paddy, groundnut, sesame, cotton, maize, beans, mustard and sugarcane, but that vast majority of the seasonal loans relate to paddy (ca. 94% of the 2016/2017 loan budget for seasonal loans was reserved for paddy). The crop being financed that also determines the government on an annual basis determines the amounts of financing that can be obtained as loan quota per crop type. Financing of other crops or other agricultural activities is currently not allowed according to MADB policies which are issued by the government, even though the MADB law and rules do allow for a much broader scope of activities to support the agricultural sector.

Loan maturity is up to one year and full repayment is expected at harvest time. The loan amount varies according to the number of acres owned or leased by the farmer and the intended crop. It can be seen in table (3.2) for all loan types.

**Table (3.2) Type of Loans, Loan Disbursement Period and Loan Collection Period**

<b>Type of loan</b>	<b>Loan disbursement period</b>	<b>Ultimate repayment date</b>	<b>Loan Duration</b>
<b>Seasonal Loans (less than 1 year)</b>			
– <b>Monsoon loan</b>	1 <sup>st</sup> May–30 <sup>th</sup> Sept	Apr 15 <sup>th</sup> (next year)	6-12 months
– <b>Winter loan</b>	1 <sup>st</sup> Oct –31 <sup>st</sup> Dec	Jun 30 <sup>th</sup> (next year)	6-9 months
– <b>Premonsoon loan</b>	1 <sup>st</sup> Jan– 31 <sup>st</sup> March	Feb 28 <sup>th</sup> (next year)	12 months
<b>Term Loans</b>			
– <b>Short-term loan</b>			1-3 years
○ Solar salt production	Oct–December	August next year	
○ Sugarcane plantation	Jan–February	February next year	
○ Tea processing	April–June	March next year	
○ Coffee plantation	----	-----	
○ Citronella grass	June–July	May next year	
– <b>Farm machinery loan</b>	Anytime	3-year loan	3 years
– <b>Special project loan</b>	Anytime	Not available	more than 3 years

Source: MADB

In addition to seasonal loans, MADB also used to offer short- and medium-term development loans in the past. The short-term loans (1 to 3 years) could be provided to finance sugarcane and coffee plantations, salt production and tea processing, while medium term loans (> 3 years) were intended to finance farm machinery. In addition to these short- and medium-term loans special projects loans were offered to fund particular development projects (sugarcane, rubber). Due to a lack of funding sources, term loans are however no longer actively being offered since the financial year 2013/2014, with exception for a special project loan towards the Industrial Agriculture Development Department for sugarcane production (MMK 3 billion in 2016/17) and limited short term loans for tea production (MMK 603 million in 2016/17). With

financial and technical support from JICA (c.a. USD 134 million), MADB will re-start offering term development loans in 2017-2020.

### **MADB's Loan Portfolio**

MADB's loan portfolio has grown significantly in recent years and especially in the last year, growth in the seasonal loan portfolio was remarkable (+64%). The vast majority of this growth was however driven by an increase in the loan quota for paddy from MMK per acre in 2016/2017 to MMK 150,000 per acre in 2016/2017.

**Table (3.3): Evolution MADB Credit Portfolio**

In million kyat	<b>March 2015</b>	<b>March 2016</b>	<b>March 2017</b>
Seasonal Loans	564,139	632,935	1,040,318
Short Term Loans	696	47	42
Loans to Rural Savers	168	73	4
Overdraft	3000	3000	3000
Special Loans	41	0	0
<b>TOTAL</b>	<b>568,044</b>	<b>636,054</b>	<b>1,043,364</b>

Source: MADB Annual Report, 2017

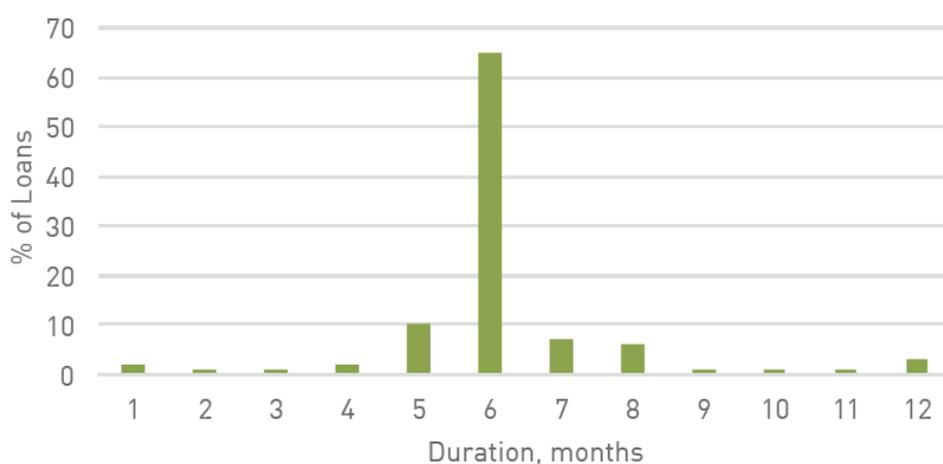
Almost the entire loan portfolio of MADB is made-up of seasonal loans (99.7%). The small remainder relates to: (i) a MMK 3 billion special project loan towards the Nawaday sugarcane plant (Industrial Agriculture Development Department); (ii) MMK 73 million loans to people in rural areas (this is a run-off portfolio as no such new loans were issued in recent years); and (iii) MMK 47 million outstanding short-term loans for sugarcane production (this is also a run-off portfolio and only relates to overdue loans still outstanding). A limited amount of short-term loans for tea production is still being disbursed each year as well (MMK 615 million in 2015/16; MMK 603 million in 2016/2017), but these are typically repaid by the financial year-end.

Within the seasonal loans, the monsoon loan is by far the most important product (ca. 86% of 2016/2017 seasonal loans budget), followed by the winter loan portfolio remains heavily concentrated on paddy (94% of the 2016/2017 seasonal loans budget), despite some efforts of MADB to diversify to other crops.

Annual loan portfolio consists of a large amount of small loans for the purpose of providing working capital for farmers. The loan amount per farmer is determined based on sized of land and the loan quota per crop that are determined by the

government each year. For the 2016/2017 financial year the following loan rates were applicable: MMK 150,000/acre for paddy, MMK 100,000/acre for sugarcane and MMK 20,000/acre for all other eligible crops. For the financial year 2017/2018 the loan quota for other crops will be increased from MMK 20,000 per acre to MMK 50,000 per acre. The number of acres a farmer can get financing for is furthermore capped at 10 acres per farmer. This implies that currently the maximum loan amount is capped at only MMK 1.5 million (ca. EUR 930) per farmer.

**Figure (3.3) Duration of Loan (months) around Myanmar**



Source: MOALI (2018)

According to the survey of MOALI (2018), most of the loans, about 65 percent, were for six months (Figure 3.3). This is in line with MADB’s lending policy. A small number of loans (10 percent) were for five months, and another 10 percent for seven to eight months. Very few loans lasted more than one year.

### **Loan Amount borrowed by MADB**

MADB offers the seasonal crop production loan and the term loan. Seasonal loan are divided into three categories: monsoon, winter and pre-monsoon loans with the first being the most important type of loan for MADB. Monsoon loan is the greatest loan amount in all type of seasonal loan. These are shown in Table (3.4), (3.5) and (3.6).

**Table (3.4) Monsoon Loan provided by MADB**

<b>Year</b>	<b>Number of Farmers</b>	<b>Acre</b>	<b>Loan Amount (MMKs in billion)</b>
<b>2012-2013</b>	1,599,121	10,334,576	426
<b>2013-2014</b>	1,842,463	11,147,372	934
<b>2014-2015</b>	1,944,393	11,405,630	957
<b>2015-2016</b>	1,845,225	10,791,836	916
<b>2016-2017</b>	1,922,284	11,167,778	1401

Source: MADB

According to Table (3.4), the amount of monsoon loan at 2016-2017 increases more than 3 times higher than those of loans at 2012 to 2013.

**Table (3.5) Winter Loan provided by MADB**

<b>Year</b>	<b>Number of Farmers</b>	<b>Acre</b>	<b>Loan Amount (MMKs in billion)</b>
<b>2012-2013</b>	662,475	4,004,669	127
<b>2013-2014</b>	777,553	4,581,537	205
<b>2014-2015</b>	702,851	4,132,637	178
<b>2015-2016</b>	614,795	3,586,770	157
<b>2016-2017</b>	589,975	1,109,232	213

Source: MADB

Table (3.5) shows that the amount of winter loan at 2016 to 2017 increases nearly 2 times higher than those of loans at 2012 to 2013.

**Table (3.6) Pre-Monsoon Loan provided by MADB**

<b>Year</b>	<b>Number of Farmers</b>	<b>Acre</b>	<b>Loan Amount (MMKs in billion)</b>
<b>2012-2013</b>	14342	51676	4.1
<b>2013-2014</b>	48553	198552	19.8
<b>2014-2015</b>	70174	325497	32.4
<b>2015-2016</b>	38495	179934	18
<b>2016-2017</b>	29902	132112	16.3

Source: MADB

Table (3.6) shows that the amount of pre-monsoon loan at 2016-2017 increases 4 times higher than those of loan at 2012-2013.

In recent years, the Government of Myanmar has aimed at supporting smallholder farmers by providing loans through MADB at subsidized interest rates. MADB Loan Interest rates are shown in

**Table (3.7) MADB Loan Interest Rates**

<b>Period</b>	<b>Loan Interest Rate (%)</b>
April – December 1998	21
January- March 1999	18
April 1999- March 2000	17
April 2000- March 2006	15
April 2006- August 2011	17
September- December 2011	15
January- March 2012	13
April 2012- March 2014	8.5
April 2014- March 2016	5
April 2016 - Today	8

Source: MADB

As shown in Table (3.7), in 2012 the lending interest rate dramatically dropped from 13.0 to 8.5 percent. In addition, the lending interest rate is dropped from 8.5 to 5 percent in 2014. In 2016, the lending interest rate is suddenly increased to 8 percent until present.

### **3.3.2. Cooperatives**

Cooperative activities were introduced in Myanmar at the beginning of the 20th century. Cooperatives focus primarily on deposit mobilization and microloans in urban areas. Supervised by the Ministry of Cooperatives, the entire cooperative sector comprises of one apex, 20 unions, 461 federations, and 10,751 primary societies. The Central Cooperative Society (CCS) is the apex in the sector. Under a newly received microfinance license, CCS also operates 46 MFIs of its own that function as village banks, covering seven states and regions. With a total staff of 40 at the seven branches, CCS provides seed money to the MFIs—4.5 million MMKs initially and an additional

4.5 million MMKs at the third month. The 46 MFIs, located in townships, have a total staff of 252. The loans provided by the MFIs range from 45,000 MMKs to 120,000 MMKs, with a compulsory saving equivalent of 2.5 percent of the loan size. The interest rate for loans is 2.5 percent per month flat (roughly 60 percent APR) and 1.25 percent for savings. Voluntary savings are no less than 1,000MMKs. According to CCS, the MFIs have 98–99 percent repayment rates because the loans typically have a 60-day tenure and repayments are collected every day. As of May 2012, CCS reported total capital of 152.65 million MMKs, 32,851 total members, total savings of 340 million MMKs, and total loan outstanding of 1.1 billion MMKs.

CCS appears to have a reasonable governance structure in place, with its General Assembly being the ultimate authority; its Board of Directors comprises 35 members, including five full-time directors. Cooperatives focus primarily on deposit mobilization and microloans in urban areas. Supervised by the Ministry of Cooperatives, the entire cooperative sector as of March 2012 was comprised of one apex, 20 unions, 461 federations, and 10,751 primary societies. The Central Cooperative Society (CCS) is the apex in this sector. CCS recently received a microfinance license. It also operates 46 MFIs that function as village banks in seven states and regions. As of May 2012, CCS reported total capital of 152.65 million MMKs, total membership of 32,851, total savings of 340 million MMKs, and total loans outstanding of 1.1 billion MMKs.

CCS appears to have a reasonable governance structure in place: its General Assembly is the ultimate authority, and its Board of Directors comprises 35 members, including five full-time directors. Financial cooperatives are organized under the Union of Savings and Credit Federation (tertiary level society), which, as of March 2012, had 41 savings and credit federations (secondary level societies) and 1,625 primary level societies. The Union does not have a microfinance license. It lends to the primary societies at a flat 2 percent interest rate per month. It also launched its own lending to individuals in June 2012. As a whole, the Union reported savings of 24.2 billion MMKs and outstanding loans of 16.5 billion MMKs, with a total membership of 476,632 (IFC, 2013).

### **3.3.3. Microfinance**

Microfinance has a particularly important role to play in meeting the needs of poorer, more vulnerable groups, including women, and in supporting non-farm economic activities. Since the late 1990s, there have been several successful externally

funded microcredit/microfinance projects in Myanmar, based on the *Grameen* model. There are also several government and non-government organizations involved in microcredit (IFC, 2013).

Developing sustainable microfinance models, however, can be a difficult and controversial area, as demonstrated most recently in India and China. Microfinance Institution (MFI) interest rates needed to ensure sustainability are often high, and, while rarely a problem for cash-strapped borrowers for whom access to finance is more important than its cost, such rates can be seen as politically unacceptable and there is no single blue-print for MFI development. Basic conditions for effective MFI development include a sound MFI law, including National bank oversight of MFI management, effective commercial relations between private banks and MFIs and long-term donor and government commitment to support the emergence of a private MFI sector.

Microfinance in Myanmar is mainly designed as a means to alleviate poverty. The beginnings of the country's microfinance date back to the mid-1990s when international NGOs (e.g. PACT, GRET, World Vision), most of them with support from the United Nations Development Programme (UNDP), started offering microfinance services. However, a legal framework for microfinance operations was only developed in 2011. The Microfinance Law of November 2011 underlines the poverty alleviation aspect of microfinance. Furthermore, while capping the maximum loan amount at MMK 5 million and discouraging "luxury" consumer finance through MFIs, the regulator also encourages lending in rural areas: "50% of portfolio outstanding and outreach should be in rural areas".

The Ministry of Planning and Finance regulates and supervises the microfinance industry through its Financial Regulatory Department (FRD). As of March 2016, 168 MFIs, namely NGOs, INGOs, local and international companies as well as joint ventures, operated under the regulation and supervision of the FRD. MFIs can be deposit-taking or non-deposit taking. About two-thirds of MFIs is deposit taking (110 out of 168 MFIs). Among these MFIs are some important regional microfinance providers, such as Acleda (Cambodia), ASA (Bangladesh), Basix (India), BRAC (Bangladesh), CARD (the Philippines) and LOLC (Sri Lanka). As of February 2016, the Myanmar microfinance sector had served 1.6 million borrowers; total assets amounted to approximately MMK 352 billion and the total outstanding loan portfolio to MMK 256 billion. Total micro savings amounted to MMK 68 billion. In February

2016, the FRD transferred the 77 cooperative MFIs, initially under the joint regulation and supervision of the MOPF and the Ministry of Cooperatives<sup>84</sup>, to become subject to the regulation and supervision of the Ministry of Cooperatives only.

Interest rates of MFIs are compulsory micro-savings interest rate (minimum 15% p.a.), voluntary micro-savings interest rate (minimum 10% p.a.) and microloan interest rate (maximum 30% p.a.). Microfinance products are maximum loan size: MMK 5 million, maximum compulsory deposit size: 5% of a client's loan size, maximum voluntary deposit size: 12% of solvency ratio, micro leasing: allowed, reportedly offered by one international MFI (IFC, 2013).

### **3.4. Background Information of Myan Aung Township**

This section describes the background information of Myan Aung Township such as geographic and demographic conditions of Myan Aung Township. Geographic and demographic factors of Myan Aung Township are delineated by the number of population, occupation and education status according to Township profile report of Myanmar Information Management Unit (MIMU, 2017).

#### **3.4.1. Geographic Condition of Myan Aung Township**

Myan Aung is a town in the Ayeyarwady Region of south-west Burma. It is the seat of the Myan Aung Township in the Hinthada District in the Ayeyarwady Division. It is located between 18° x 17' and 18°x52'N latitude and 95°x18' and 95°x 46'N longitude. It is 28 miles long from the North to the South and 47 miles wide from the East to the West. The total area of Myan Aung Township is 599.314 Sq. Miles. There are 11 quarters in the city and 58 village tracts, 517 villages in the Myan Aung Township. It is bounded by Ingapu Township in the East and KyanKhin Township in the North. The location of Myan Aung Township can be seen in Appendix (3). Geographic condition of Myan Aung Township is presented with topography and climate situation of the region. In previous, it had suffered natural disasters, especially 14 storms (MIMU, 2017).

Myan Aung Township is within the region of tropical climate. There are two seasons, the rainy season and summer. The rainy season is from June to September and Summer is from October to May. In 2017, average temperature is 27.8°C and average

annual rainfall is 52.5 inches (133.35 centimeters). In 2017, the annual rainy day is 86 days in Myan Aung Township.

### 3.4.2. Demographic Background of Myan Aung Township

Population of Myan Aung Township is increased by 1.08% from 2016 to 2017. In 2017, its population was 225,692 people consisting of 107,099 males and 118,593 females. In Urban area, total population is 22,543 people (10%). 203,149 (90%) residents located in rural area. There are 264 schools in total consisting of 9 high schools, 19 middle schools and 236 schools in Myan Aung Township. There are 59,668 households in total. Main occupations are mostly farmers, private employees and public employee. Total public employees were 3420 people. 57202 people (44%) involve in the agricultural sector. Myan Aung Township is the second largest paddy producer in Hinthada District. Its main cultivated crop is Paddy, Mung bean of which the total areas is lowland (paddy land; le): 119543 acre (75% of total agricultural land acre in Myan Aung) and paddy productivity is 711,990 bushels (2016-2017).

There are good transportations to Myan Aung Township. On average, economic situation of the surveyed villages is fair. Beside agricultural business, they do other business such as Rice and bean wholesale business and Gravel business. Main commodities of the area are Rice, Mung Bean and Gravel. Grade of rice is good namely Sinn Thu Kha, Ayer Minn and Eal Ma Hta. Ownership of cultivated land is minimum one acre to maximum 12 acres and on average 5 acres. Paddy yields are 40 bushels as minimum to 90 bushels as maximum and on average 75 bushels. There are both of rainy paddy and summer paddy. Other crops are Mung Bean and Maize (MIMU, 2017). From 2015 to 2018, paddy cultivated acres and average paddy yield per acre of Myan Aung Township can be seen in Table (3.8).

**Table (3.8) Paddy Cultivated Acres and Average Paddy Yield Per Acre of Myan Aung Township**

<b>Year</b>	<b>Paddy Cultivated Acres Total</b>	<b>Average paddy yield per acre (Bushels)</b>
<b>2014-15</b>	127684	76
<b>2015-16</b>	127412	75
<b>2016-17</b>	127194	75
<b>2017-18</b>	126529	75

Source: MADB (2018)

### 3.5. Financial Institutions in Myan Aung Township

There are one State-owned bank (MADB) and four private banks in Myan Aung Township. Four private banks are Kanbawza Bank, Ayeyarwady Bank, Co-operative Bank and Myanmar Oriental Bank. Other financial Institution is Cooperative Associations, Ministry of Agriculture, Livestock and Irrigation and Department of Rural Development, Mya Sein Yaung, Vision Fund Myanmar MFI, Myanmar Delta International Co.Ltd and private money lenders.

#### 3.5.1. Myanmar Agricultural Development Bank (MADB)

In Myan Aung Township, MADB started on September, 1987. MADB offers seasonal crop loan and the term loan to farmers. Farmers have borrowed two type of Seasonal loan: Monsoon loan and winter loan. Total Loan Acre in Myan Aung Township is 150,000 Acres. This is the most loan Acres in HinThaDa District. According to Table (3.9), all seasonal loan increased annually from 2015 to 2018 Monsoon seasonal loan acre is increased by 2.7% from 2016 to 2018 and Winter seasonal loan acre is increased by 1.3 % from 2015 to 2018.

**Table (3.9) Seasonal Loan Conditions in Myan Aung Township**

Year	Monsoon Loan			Winter Loan		
	Number of farmers	Acres	Amount (MMKs Million)	Number of farmers	Acres	Amount (MMKs Million)
<b>2015-2016</b>	17971	99770	9977	16221	90452	2476.56
<b>2016-2017</b>	18246	101965	15294.75	15793	89557	2661.63
<b>2017-2018</b>	18321	102495	15374.25	16211	91616	5115.70

Source: MADB in Myan Aung Township (2018)

#### 3.5.2. Rural Development Department

Livestock and Irrigation and Rural Development Department under Ministry of Agriculture has operated Mya Sein Yaung Project in Myan Aung Township since 2014-2015. Mya SeinYaung lends loan service to rural areas. According to the application of the organization, only organization members have to take loan by Mya Sein Yaung.

The interest rate is from 6% to 13% per annual (Branches of Livestock and Irrigation and Rural Development Department in Myan Aung Township, 2018).

### **3.5.3. Cooperative Associations**

In Myan Aung Township, the Cooperatives lend loan with the government grant. It refers from Central Bank to Central Cooperative. Cooperatives have three programs including agriculture, promote of agrarian and provide seeds. Loan amount differs depending on saving amount and time of membership. There are 328 cooperatives in Myan Aung Township. Interest rate is 15%. Financial cooperatives collect the loan payments daily and the loan duration is 6 months (Cooperative Association in Myan Aung Township, 2018).

### **3.5.4. Microfinance Institutions**

There are two microfinance institutions in Myan Aung Township. They are Vision Fund Myanmar MFI and Microfinance Delta International Co.,Ltd.

Vision Fund Myanmar (VFM) has been offering microfinance and other financial services to poor people in Myanmar since 1998. Vision Fund Myanmar (VFM) is a Christian socially-focused microfinance institution (MFI) registered as a limited liability company under the Microfinance Law passed in November 2011 by the Myanmar Government. VFM is also an affiliate of the global Vision Fund International network of over 30 MFIs, including seven in Asia, all affiliated with World Vision (WV). VFM began operations in the country in 1997, as an economic/micro-enterprise development programme of World Vision Myanmar (WVM), to provide financial services to communities. It is the second largest microfinance provider in Myanmar. VFM has 51 branches around the country, with the headquarters in Yangon. Through their work, they help small business owners create or develop small businesses with affordable credit. Vision Fund Myanmar lends small sums of money to people who do not have a measurable credit history, assets to secure the loans, or access to mainstream financial providers. Loans provide funds that enable borrowers to set up and grow their small businesses. Solidarity group loans are commerce loan, agriculture loan, education loan, child well-being loan, emergency loan, casual (day) labour loan and migrant factory worker loan. Individual loans are commerce loan, agriculture loan, small loan/

express loan, small scale agriculture technologies loan, refinancing loan and credit line loan. Its interest rate is 30% per annum.

Microfinance Delta International Co.,Ltd (MIFIDA) only started Microfinance operations in Myanmar in late 1990s with the UNPD Human Development Initiative Program however the microfinance business law which legalizes and regulates the existing microfinance operations was enacted only in November 2011. Licenses have been conferred to the majority of the MFIs by the end of October 2014. In Ayeyarwady Region, there are 4 branches: Ingapu Branch, Myan Aung Branch, Kyan Khin Branch and Hinthada Branch. Myan Aung Branch’s address is U Shein Street, 4 Ward, Myan Aung, Hinthada District. Its social goal is to increase the financial services for vulnerable or excluded target groups and creating benefits for them. Its products are general loan: one-year duration, extra loan: six months after general loans and one year duration and micro enterprise loan. Social loans include health care loans, education loans, life improvement loans. Its interest rate is 30% per annum.

The interest rates and loan duration from a variety of financial institutions in Myan Aung Township are summarized in Table (3.10)

**Table (3.10) Summary of Interest rates and Loan duration in Myan Aung Township**

<b>Financial Institutions</b>	<b>Average Interest Rate per annum</b>	<b>Average Loan Duration</b>
MADB	8%	Six month – one year
Rural Development Bank	13%	Six month – one year
Co-operatives	15%	Six months
MFIs	30%	Six month – one year

Source: Survey Data (2018)

Table (3.10) show that almost of the loans in Myan Aung township are short term loans (less than one year). Among them, MADB loan interest is the lowest rate.

## CHAPTER IV

### ANALYSIS OF CREDIT ACCESSIBILITY AND FARM PERFORMANCE

This chapter presents credit accessibility and farm performance of farmers in Myan Aung Township. This analysis is based on empirical data collected from six group of villages in Myan Aung Township. There are five main parts in this chapter. They are survey design, background characteristics of respondents, credit accessibility of farmers and farm performance.

#### 4.1. Research Design

This study is conducted with the objective to analyse credit accessibility and farm performance in Myan Aung Township. There are (58) village tracts in Myan Aung Township. Major businesses of these villages are cultivation of paddy in monsoon and plantation of Mung beans in winter season. Stratified random sampling techniques are used to select the respondents in the study area. Firstly 6 village tracts (namely Kyat Thonn Khinn, Nyaung Myit Swal, Myo Ma Tal Gyi Kone, Myit Kyoe, La Har Pauk and Sal Ywar village tracts) are selected as 10% of 58 village tracts in Myan Aung Township. Secondly samples (92 respondents) are randomly taken as 10% of 923 households in these six village tracts. The distribution of total and sample households is given in Table (4.1).

$$n_i = (N_i / N) * n$$

Where

- $n_i$  is the sample in  $i^{\text{th}}$  village,
- $N_i$  is the population of beneficiary households in  $i^{\text{th}}$  village,
- $n$  is sample size and
- $N$  is the total population of borrowers in all sample villages.

**Table (4.1) Sample Size of Selected Village Tracts**

<b>Village tracts</b>	<b>Number of Borrowing Household</b>	<b>Sample Size of Household</b>
Kyat Thonn Khinn	148	15
Nyaung Myit Swal	179	18
Myo Ma Tal Gyi Kone	187	19
Myit Kyoe	132	13
La Har Pauk	173	17
Sal Ywar	104	10
<b>Total</b>	<b>923</b>	<b>92</b>

Source: Survey data (2018)

## **4.2. Background Characteristics of Respondents**

The first section in this study analyses the background characteristics of the respondent farmers. The characteristics of respondents are divided into three: demographic characteristics, socio-economic characteristics and farming characteristics.

### **4.2.1. Demographic Characteristics of Respondents**

Demographic characteristics of respondents are firstly analyzed. They are gender, age, education level, and household size. The following shows in Table (4.2).

According to Table (4.2), gender ratio of respondents is 80:20. The age distribution of farmers is from 56 to 65 years as one-third of total respondents and over 27% are the age level of 46 to 55 years. Their major working age is between 46 and 65 (57% in combination of both), this may affect their yield and productivity of their output and crops due to their age.

**Table (4.2) Demographic Characteristics of Respondents**

	<b>Number of Respondents</b>	<b>Percent</b>
<b>Gender</b>		
Male	74	80.4
Female	18	19.6
<b>Age (Year)</b>		
26-35	10	10.9
36-45	19	20.7
46-55	25	27.2
56-65	28	30.4
66-75	10	10.9
<b>Education Level</b>		
Primary	11	12
Middle	70	76
High	9	9.7
Graduate	2	2.3
<b>Household Size</b>		
2-5	82	89.1
6-10	10	10.9
Total	92	100

Source: Survey data (2018)

Regarding the education, all the respondents are literate, of which most of the farmers (over 76%) are with middle education level and 12% are with primary education level. There are 2 graduate education level in respondents.

For household size, 89 percent of the household size of the farmers is 2 to 5 family members and 10% of farmers have 6 to 10 family members.

#### **4.2.2. Socio-economic Characteristics of Respondents**

Socio-economic characteristics are annual household income, main source of earning and type of properties (such as living ownership and business ownership).

### **Annual Household Income and**

Farmer's annual household income is between from 1,500,000 to 6,000,000 MMKs. Main sources of earning of respondents are classified into Farming and crop, Livestock, Small scale business and Other. Table (4.3) shows the annual household income of the respondents.

**Table (4.3) Annual Household Income**

<b>Lakh (MMKs)</b>	<b>Number of Respondents</b>	<b>Percent</b>
<15	26	28.3
15-25	45	48.9
26-35	10	10.9
36-45	6	6.5
45-55	2	2.2
>55	3	3.3
Total	92	100

Source: Survey data (2018)

According to Table (4.3), annual household income of farmers is from 1,500,000 to 2,500,000 MMKs as nearly half of total respondents. Annual household income of borrowing farmers from 4,500,000 and 5,500,000 MMKs are the smallest percent of 2%. On reviewing this data, highest income earners are only 35% of respondents but when analyze it in detail, their high income is not from their farming but come from their younger family member such as sons and/or daughters are working in other major capital cities, such as Yangon or even in overseas countries.

### **Main Source of Earning**

Main sources of earning of respondents are classified into Farming and crop, Livestock, Small scale business and Other. Table (4.4) shows the main sources of earning of respondents.

**Table (4.4) Main Source of Earning**

	<b>Number of Respondents</b>	<b>Percent</b>
Farming and crop	62	67.4
Livestock	9	9.7
Small Scale Business	15	16.3
Others	6	6.5
Total	92	100

Source: Survey data (2018)

Regarding to the main source of earning, almost all of the respondents that farming and crop is their major source of income priority with 67% of the total respondents. The second most is small scale business which represents 16.3%. The third major source of income is from livestock. Therefore, main source of income for farmers in Myan Aung township is Farming and crop.

### **Type of Properties**

Types of properties are classified living properties ownership and farming properties ownership. Living ownership include home, cycle/bicycle, TV/Phone and Generator/Solar. These show in table (4.5).

**Table (4.5) Types of Properties Owned**

<b>Ownership</b>	<b>Number of Respondents</b>	<b>Percent</b>
<b>Living Properties</b>		
Home	92	100
Cycles/ Bicycles	92	100
TV/Phone	92	100
Generator/Solar	32	34.8
<b>Farming Properties</b>		
Farmland	92	100
Tractor	29	31.5
Cows	43	46.7
Trolley	6	6.5
Water Pump	43	46.7

Source: Survey data (2018)

According to Table (4.5), all farmer respondents have a home, motorcycles/bicycle and TV/phone. Only 35% of farmers have generator/solar.

Regarding Farm properties, all farmers have their own farmland. Farmers own cows and water pump as 47% of respondents. But one-third of farmers own tractors as nearly 32%.

#### 4.2.3. Farming Characteristics of Respondents

Farming Characteristics are their farm size, number of farmer in household and year of farming experience.

**Table (4.6) Farming Characteristics of Respondents**

	<b>Number of Respondents</b>	<b>Percent</b>
<b>Farm Acre</b>		
<5	60	65.2
5-10	22	23.9
11-15	5	5.4
21-25	1	1.1
>25	4	4.3
<b>Number of Farmer</b>		
1	34	37
2	28	30.4
3	10	10.9
4	12	13.0
5	7	7.6
6	1	1.1
<b>Farm Experience (Year)</b>		
<5	4	4.3
5-15	21	22.8
16-25	28	30.4
26-35	21	22.8
36-45	11	12.0
>45	7	7.6
Total	92	100

Source: Survey data (2018)

Regarding to Farm ownership, almost of farmer respondents (65%) own the smallest ownership acres less than 5 acres. 24% of respondent sown 5 to 10 paddy acres. The smallest ownership acres of farmers are 1 acre and the largest is 30 acres. They are described in Table (4.6).

According to Table (4.6), 37% of respondents is one farmer in household and one third of respondents is 2 farmers in household. 4 farmers in household is nearly 11%.

Regarding to the farm experience, one-third of respondent's farm experience is within the year of 16 to 25. Farm experience greater than 45 years is 7% of respondents and farming experience less than 5 years is the smallest percent (4%) of respondents.

### **4.3. Credit Accessibility of Respondents**

This section identifies the finding from survey on credit accessibility of farmers. This section includes sources of finance, year of connection with bank, period of loan received from MADB, amount of loan borrowed, amount of loan borrowed, Loan coverage percent and constraints for procurement of agricultural Credit.

#### **Sources of Finance**

In the study area, farmers may borrow various finance institutions. These are MADB, Cooperatives, MFIs and friend and relatives. The situation is showed in Table (4.7).

**Table (4.7) Sources of Finance**

<b>Sources of Finance</b>	<b>Number of Respondents</b>	<b>Percent</b>
MADB	92	100
Cooperatives/MFI	63	68.5
Others	54	58.7

Source: Survey data (2018)

According to Table (4.7), all borrowers borrowed from MADB. Moreover, over 68% of respondents borrowed from Co-operatives and MFIs: Vision Fund Myanmar MFI and Delta MFI. Over 58% of farmers borrowed from Others. Most of farmers rely on MADB but the farmers are not enough with MADB Loan amount.

## Sources of Credit Information

Sources of Credit Information include Newspaper and leaflet, Village Administrator, Friends and Credit Organisation. Table (4.8) shows the sources of credit information.

**Table (4.8) Sources of Credit Information**

	<b>Number of Respondents</b>	<b>Percent</b>
Newspaper and leaflet	4	4.3
Village Administrator	34	37.0
Friends	37	40.2
Credit Organisation	17	18.5
Total	92	100

Source: Survey data (2018)

Regarding to information source, 40% of respondent receive loan information from friends. 37% of respondent receive loan information from village administrator.

## Amount of Loan Borrowed from MADB

In Myan Aung Township, as described in Chapter III, there are four financial institutions. Most farmers borrowed from MADB and in addition some of farmers also borrowed from loan by other organizations. MADB bank lends the seasonal loan at the minimum amount is 150,000 and the maximum amount is 1,500,000 for ten acres. The amount is divided into four groups. The loan amount is depending on cultivated acres. Table (4.9) shows amount of loan received from MADB.

**Table (4.9) Amount of loan received from MADB**

<b>Paddy Cultivated Acres</b>	<b>Loan Amount (MMKs)</b>	<b>Number</b>	<b>Percent</b>
1-3	150,000- 450,000	29	31.5
4-6	600,000- 900,000	35	38.0
7-9	1050,000-1350,000	12	13.1
>9	1500,000	16	17.4
	Total	92	100

Source: Survey data (2018)

Table (4.9) shows that farmers cultivated 4 to 6 paddy acres is 38% of respondent. One third of farmers cultivated 1 to 3 acres as 31% of respondents. Cultivated Acre 7-9 acres is the smallest percent as nearly 13% of respondents.

According to the survey data, 38% of farmers from 4 to 6 cultivated acres borrows 600,000 to 900,000 MMKs. One-third of farmers from 1 to 3 acres borrow 150,000 to 450,000 MMKs which amount is the second highest percent. At least, 7 to 9 paddy cultivated acres is 13%. MADB loan interest rate is 8% per year.

### **Period of Loan Received and Sufficient MADB loan availability**

This section identifies the Period of Loan Received and Sufficient MADB loan availability. Credit accessibility refers to the ease or difficulty of acquiring credit by borrowers. This analysis of farmer respondents answered period of loan received from MADB. These answers are farming the period and after farming and whether MADB loan is enough or not enough. They are described the following Table (4.10).

**Table (4.10) Period of MADB Loan Received and Sufficient MADB loan availability**

	<b>Number of Respondents</b>	<b>Percent</b>
<b>Period of MADB Loan Received</b>		
Farming Period	18	17.5
After Farming	84	82.5
<b>Sufficient MADB loan availability</b>		
Enough	11	12
Not enough	81	88
Total	92	100

Source: Survey data (2018)

According to Table (4.10), in this situation, most of respondent replied that after farming as more than 83% of respondents. Only nearly 17% of respondent answered that farming period of loan received from MADB.

According to the result, 88 of respondents do not get adequate loan amount with low interest rates from formal lenders. Only 12% received enough loan amount for their farming.

### **Amount of Loan Received from Other Organization**

This section identifies the finding from survey on credit accessibility of farmers which was measured in terms of the demand and supply of credit at given interest rates. Interest rates from formal lenders such as MADB, Co-operative Associations and MFI are much lower compare with informal lenders.

The other organizations include Cooperatives, Vision Fund Myanmar, Myanmar Delta Microfinance and friend and relatives. The smallest amount is MMKs 50,000 and the highest amount is MMKs 600,000. Table (4.11) shows amount of loan received from other organizations.

**Table (4.11) Amount of Loan Received from Other Organization**

<b>Loan Amount (MMKs)</b>	<b>Number of Respondents</b>	<b>Percent</b>
<50,000	6	7.4
50,000-150,000	23	28.5
160,000-250,000	32	39.5
260,000-360,000	14	17.3
360,000-450,000	4	4.9
>450,000	2	2.4
<b>Total</b>	<b>81</b>	<b>100</b>

Source: Survey data (2018)

According to the survey research, average lending amount from other organisations is 250,000 MMKs. There are only 2.4% of respondents borrowed more than 450,000 MMKs.

### **Constraints for Agricultural Loan**

Loan borrower farmers need to save at least 10,000 MMKs in his saving account as a member of MADB bank. There may have constraints for borrowing the agricultural loan. They are interest rate, documentation required, waiting time, etc. In this survey, accessibility of loan condition of the farmers are identified in terms of their ease of getting loan and waiting time.

Credit accessibility refers to the ease or difficulty of acquiring credit by borrowers. Respondents answered how ease or difficulty of acquiring credit for their farming. They are described the following Table (4.12).

**Table (4.12) Constraints for Agricultural Loan**

	<b>Number of Respondents</b>	<b>Percent</b>
<b>Difficulty of Credit</b>		
Easy	69	75
Difficult	23	25
<b>Waiting Time for Credit</b>		
14 days	5	5.4
1 month	48	52.2
2 months	39	42.4
Total	92	100

Source: Survey data (2018)

According to Table (4.12), more than 75% of the respondents have experienced as it's easy to credit. Only 25% of the respondents who have taken agricultural credit responded that it is difficult to obtain such credit. As regards the waiting time, half of farmer respondents answered that it takes 1 month whereas 42% respondents 2 months.

### **Credit Accessibility of Formal and Informal Financial Institutions**

This section presents the convenient location, timeliness for farming, low interest rate, repayment period, required collateral, sufficiency in farming and simple credit procedure. Respondents' opinions are asked with Likert Scale questions for credit accessibility of Formal and Informal financial institutions

Descriptive statistics are used to summarize data in a meaningful in this study. The mean or average is probably that most commonly used method of describing central tendency. Table (4.13) shows the factors of credit accessibility.

**Table (4.13) Credit Accessibility of Farmers**

<b>No.</b>	<b>Description</b>	<b>Mean</b>
1.	Convenient location of Financial Institution	4.20
2.	Loan received during farming period	3.21
3.	Low interest rate	4.60
4.	Appropriate repayment period	3.84
5.	Appropriate collateral requirements	3.10
6.	Enough loan amount received	2.50
7.	Simple Loan procedure	4.70
	<b>Overall Mean</b>	<b>3.74</b>

Source: Survey data (2018)

According to table (4.13), the credit procedure is very simple to apply the agricultural credit with the mean score of 4.70. According to the mean value 3.84, only farm ownership certificate is required to submit in applying the credit. Mean value 3.10 show that repayment period is not much convenient because all respondents are mainly reliable on harvest time to get income. The farmers received the credit with relatively low interest rate by the mean score of 4.60. Waiting time to get credit is not the main problem as the result of mean score 4.2. Credit is not enough for farming by the mean score of 2.50.

#### **4.4. Farm Performance of Farmers**

Farm performance of farmers contains paddy yield per acre, relationship between independent variables and paddy yield per acre and regression on paddy yield per acre.

##### **4.4.1. Paddy Yield per Acre**

Paddy yield per acre of respondents are within the range between 40 to 90 bushels. This section analyses paddy yield per acre. It shows in Table (4.14).

**Table (4.14) Paddy Yield per Acre of Respondents**

<b>Paddy yield per Acre (Bushels)</b>	<b>Number of Respondents</b>	<b>Percent</b>
40-50	14	15.2
51-60	20	21.7
61-70	23	25.0
71-80	33	35.9
>80	2	2.2
<b>Total</b>	<b>92</b>	<b>100</b>

Source: Survey data (2018)

Table (4.14) examines average paddy yield per acre. Nearly 36% of respondents produce 71 to 80 bushels per acre. One fourth of farmers produce 61 to 70 bushels per acre as 25% of respondents. At least, only 2% of respondents produce greater than 80 bushels per acre. As the research survey, majority of farmers produce 75 bushels per acre.

#### **4.4.2. Relationship between Credit Accessibility and Paddy yield**

This section shows the relationship between independent variables such as credit accessibility, farming experience, number of farmers in household and dependent variable: paddy yield per acre. Table (4.15) shows that the correlation between Independent variables and Paddy yield of respondents in Myan Aung Township.

**Table (4.15) Correlation between Independent variables and Paddy yield**

<b>Independent variables</b>	<b>Pearson Correlation</b>	<b>Sig. (2-tailed)</b>
Credit Accessibility	.593**	.000
Farming Experience (Year)	.572**	.000
Number of farmers in household	.616**	.000

\*\* Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS result (2018)

According to Table (4.15), it shows that, there is fairly positive correlation between credit accessibility and paddy yield per acre of farmers. It indicates that more

credit accessibility may be more paddy yield. The result shows that credit accessibility is significant at 1% level.

For Farm experience, it shows that, there is fairly positive correlation between farm experience and paddy yield per acre of farmers. It indicates that more farm experience may be more paddy yield. The result shows that farm experience is significant at 1% level.

Regarding to Number of farmers in household, there is fairly positive correlation between number of farmers in household and paddy yield per acre of farmers. It indicates that more number of farmers in household may be more paddy yield. The result shows that number of farmers in household is significant at 1% level.

#### 4.4.3. Regression Analysis of Credit Accessibility on Paddy Yield Per Acre

In this study, regression analysis is applied in order to analyze the effects on paddy yield per acre. The dependent variables (paddy yield per acre) are explained by three independent variables (credit accessibility, farm experience and number of farmers in household).

**Table (4.16) ANOVA of Independent Variable and Paddy Yield per Acre**

<b>Model</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig</b>
1 Regression	6302.802	3	2100.934	33.008	.000 <sup>b</sup>
Residual	5601.056	88	63.648		
Total	11903.859	91			

Source: SPSS result (2018)

Analysis of variance is used to test the significance of the regression model as pertains to differences in means of the dependent and independent variables as shown on Table (4.16) above. The value of F is 33.008 and significant at 1% ( $p=0.000<0.01$ ). Thus, the regression model is statistically significant with paddy yield per acre.

Table (4.17) describes regression results among dependent variable (paddy yield per acre) and independent variables (credit accessibility, farm experience and number of farmers in household). These results show that credit accessibility, farm experience and number of farmers in household are significant at 1% level.

**Table (4.17) Regression Results for Paddy Yield Per Acre**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	39.446	3.390		11.637	.000
Credit Accessibility	3.360	1.179	.284	2.849	.005
Number of farmers in household	2.273	0.885	.264	2.569	.012
Farm experience (years)	0.412	0.99	.344	4.156	.000
n=92, R= .728*, R <sup>2</sup> =.529, Adjusted R <sup>2</sup> =.513, F=33.008(p value=0.000)					

Source: SPSS result (2018)

Table (4.17) shows that the value of standardized coefficient for farm experience (.344) is the highest among variables. It can be said the effect of farm experience is the greatest among on paddy yield per acre. The value of adjusted R<sup>2</sup> is .513 that reveals 51% of total variation in paddy yield per acre are explained by three factors; credit accessibility, farm experience and number of farmers in household.

These results suggest that three variables have significantly explained 51% of the variance in paddy yield per acre. The regression coefficient of farm experience is 0.412 at 1% significance level. The regression coefficient of number of farmers in household is 2.273 at 5% significance level. The regression coefficient of credit accessibility is 3.36 at 1% significance level.

## CHAPTER V

### CONCLUSION

This chapter describes conclusion of the study area of agricultural credit and farm performance among farmers. This chapter includes findings, recommendations and needs for further research of the study.

#### 5.1. Findings

Myanmar is agriculture-based country. Agriculture plays an important role in reducing poverty in Myanmar. The country's agricultural sector accounts for 38% of national GDP and 23% of exports in fiscal year 2016-2017. Therefore, agricultural loan has always been an important factor in improving agricultural productivity and strengthening the rural economy. To achieve the MADB's agricultural objectives to operational guidelines are adequate supply of the credit to the client, to provide credit timely, to seek full recovery of loans, to enable farmers for investment through saving, to help to become debt-free farmers and to make bank self-replying.

According to study, on the background characteristics of respondents, the gender ratio of respondents is 80:20 (Male : Female). Most of farmers fall within the age level 56 to 65 years old. Their major working age is between 46 and 65 (57% in combination of both), this may affect their yield and productivity of their output and crops due to their age. All the respondents are literate, of which most of the farmers (over 76%) are with middle education level. The household size of the respondents is from 2 to 5 members. Average numbers of farmer are 2 farmers. Range of farming experience is from 16 to 25 years and their main source of earning is farming and crop. Their living standard is above average level possessing owned home, motorcycle/bicycle and all of the farmers owned farmland. The cultivated acre is 12 acres maximum and 1 acre minimum. Average paddy yield per acre is round about 75 bushels per acre.

Regarding with credit accessibility, all borrower farmers saving deposit at MADB. 92% of main source of farmer's finance is from MADB. The amount of loan given by MADB depends on the cultivate acre that the borrower farmer has. Most of the farmers receive loan information from friends and village administrator. Over one third of farmers from 4 to 6 cultivated acres borrows 600,000 to 900,000 MMKs. 81%

of farmers answered not enough loan amount from financial organization. 83% of respondents replied that loan received after farming from MADB. Most of the loan borrower farmers replied that it is easy to get loan. Most of the farmers replied that it took about 1 month to get a loan. Average lending amount from other organisation is 250,000 MMKs. The overall mean of convenient location, timeliness for farming, low interest rate, repayment period, required collateral, sufficiency in farming and simple credit procedure is 3.74.

According to correlation, there is fairly positive linear relationship between independent variables (credit accessibility, farm experience, number of farmers in household) and dependent variable: paddy yield per acre. The result shows that all of three independents variables are significant at 1% level.

According to multiple regression analysis, credit accessibility, number of farmers in household and farm experience are statistically significant with paddy yield per acre. The effect of farm experience is highest among variables on paddy yield per acres. 51% of total variation in paddy yield per acre are explained by three factors; credit accessibility, farm experience and number of farmers in household. The regression coefficient of farm experience is 0.412 at 1% significance level. The regression coefficient of number of farmers in household is 2.273 at 5% significance level. The regression coefficient of credit accessibility is 3.36 at 1% significance level. These results suggest that three variables have significantly explained 51% of the variance in paddy yield per acre.

## **5.2. Recommendations**

In the selected study area of survey, farmers do not difficult to get loan, but it needs to wait about one month to get loan and most of the loans are received after their farming. Therefore, those farmers may need to find other sources of finance to start farming and replace them after receipt of MADB loan. Currently agricultural yield depends mainly on credit accessibility, number of farmers in household and farm experience, most farmers should use properly adequate quality seeds, reliable fertilizer and pesticides, etc. to enhance their yield per acre. Most of the farmers are working at their old age, and due to their low education level, they are not able to use modern agricultural farming methods. A few farmers find it difficult to get loan from some

organization. MADB should provide seasonal loan to farmer in time before their farming activities.

MADB does not provide enough loan for farmers. The full amount of loans needed by the farmers for paddy plantation should be provided as much as possible based on MADB's agricultural objectives and its working capital also. In agricultural finance, the cooperative of private banks is also required. Therefore, agricultural sector should get supports from both public and private sector organization to get enough loan for farmers. Nowadays, Myanmar agriculture sector needs the knowledge and infrastructure especially in the rural areas. Farmers need to know modern farming technique and information on the global supply and demand conditions. The government should instruct modern agricultural techniques, support modern agricultural machine to rural farmers. The government should encourage participation and provide incentives for farmers to save and recycle the funds.

Agriculture should be treated as a priority sector. Small and medium size farmers should be treated as a special group and direct income support should be given to them. Efforts should be done for value enhancement of agro products. The government should emphasize upon agricultural oriented research and education and also upon land reforms. Misuse and diversion of land for non-agricultural activities should be stopped.

### **5.3. Needs for Further Research**

This study only focused on credit accessibility and farm performance in Myan Aung Township. The study area covers Myan Aung Township only. Thus, the result for the study may not reflect the overall situation in Myanmar. Only paddy crops have been taken in to consideration. This research cannot be specifically explored farmer's loan usage for farming. Prices of paddy product and their benefits are lacking in this study. It is due to time constraints to conduct more area in survey as well as to collect more randomly selected farmers. Therefore, if further study can be conducted on more sample size and whole Myanmar areas.

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## APPENDIX 1

### Questionnaire for Farmers to Agricultural Credit Accessibility and Farm Performance in Myan Aung Township

Interviewer-----

Date of interview-----

Village Name-----

#### A. Respondent Profile

1. Name of Respondent-----  
(Gender----- Age-----Education----- Occupation-----)
2. Name of Household Head-----  
(Gender----- Age-----Education----- Occupation-----)
3. Total Number of Household----- Number of workers-----Number of  
Dependent-----
4. Job condition of the family member  
Number of farmers ----- Number of government staff-----  
Number of shopkeepers----- Number of general worker-----
5. (a) Farm Tenurial Status (only one describe tick)  
(1) Owner (2) Share Tenant (3) Lease Holder (4) Other (please specify-----)  
  
(b) How many years in Farming? -----

#### B. Income Condition

1. Main source of earning for living (only describe one tick)  
  
(1) Farming (2) Small Shop (3) Government Employee  
  
(4) Private Employee (5) Other (Please specify-----)
2. Average annual household income ----- MMKs
3. Please proportion of the farming income  
  
Farm income ratio ( ) Non-Farm income ratio ( )  
  
(1) Crop ( )

(2) Livestock ( )

(3) Farm labor ( )

Non-Farm

-Income from other agricultural activities

(1) Rice/Groundnut milling ( )

(2) Rental/ labor for pre/post-harvest facilities ( )

(3) Other (please specify-----) ( )

-Income from non-agricultural activities

(1) Small business ( )

(2) Government Employee ( )

(3) Private Employee ( )

(4) Remittances from abroad ( )

(5) Other (please specify-----) ( )

### C. Property of Ownership

#### 1. Ownership in home

No.	Item	Have you own the property? 1=yes;2=no	Type	Quantity	Value (Market Price)
1	Living Home				
2	Motorcar				
3	Motorcycle				
4	Bicycle				
5	Water Pump				
6	TV				
7	Trolley				
8	Other				

Type: House (1) Brick-noggin (2) Bamboo (3) Wooden (4) Other (please specify-----)

2. Ownership of Farming and Other Business

No.	Item	Have you own the property? 1=yes;2=no	Type	Quantity	Value (Market Price)
1	Farmland				
2	Cows				
3	Bullock Cart				
4	Ploughing Machine				
5	Other Agricultural Machine/ Tools				
6	Water Pump				
7	Trolley				
8	Mill				
9	Shop				
10	Others				

**D. Farm Condition**

1. Farm Condition

Group of village name	Owned land( acre)	Cultivated land( acre)

2. Yield per acre this year

No	Season	Type of Paddy/ crop	Cultivate acre	Yield per acre	Total Yield (in unit)	Selling Price Per unit
1	Rainy					

2	Winter					
3	Summer					

No	Season	Other Crop	Cultivate acre	Yield per acre	Total Yield (in unit)	Selling Price Per unit	Remark
1	Rainy						
2	Winter						
3	Summer						

3. Farming input used for cultivation (per acre)

No.	Item	Unit used per acre	Quantity	Price per unit	Remark
1					
2					
3					
4					
5					

4. Number of labor working in the farm (per acre)

No.	Types of farm work	Number of farm workers	Numbers of Days	Wages per Day	Remark
1					
2					

3					
4					
5					

**E. Farmer's connect with Bank**

1. Do you have saving account in MADB? (Yes=1, No=2)-----
2. Period of content with MADB (Year/ Month) -----

**For Loan Borrowing Farmers**

**F. I. Loan Condition**

1. Where do you borrow from loan?
  - (a) MADB (b) Cooperation (c) Microfinance (c) friend and relative
  - (c) other (-----)
2. Where do you know loan from information?
  - (a) Village administer (b) friend and relative (c) other (-----)

**II. Source of Loan from MADB**

If you borrowed or yes,

- 1.Frequency of borrowing
- 2.Amount loan ----- (MMKs)
- 3.Extent of sufficiency (%) -----
- 4.Type of loan (short/long) -----
- 5.Interest rate -----
- 6.Do you give collateral? (Yes=1, No=2) -----
- 7.Type of collateral -----
- 8.Tenure of loan (Year/ Month) -----
- 9.Repayment (Installment/lump sum) -----
10. Period of loan received
  - (1) Before farming (2) farming the period (3) After farming
11. Main use of loan

For agriculture percent ( ) For machinery percent ( )

No.	Item	Rank
1	Seed	
2	Pesticides	
3	Fertilizers	
4	Labor	
5	Farm machinery	
6	Water-pump machine	
7	Other	

### G. Submission for Loan Application of MADB

(1) Do you take that borrow of loan is difficult? (Yes=1, No=2) -----

(2) Waiting time to get loan (day/month) -----

(3) Do you get timing of loan? (Yes=1, No=0) -----

(4) Distance of MADB (Km/mile) -----

(5) Travelling period -----

(6) Cost of travelling to MADB-----

### H. Loan from other Sources

(1) Do you borrow loan other financial institution? (Yes=1, No=0) -----

(2) Frequency of Borrowing -----

(3) Amount loan ----- (MMKs)

(4) Extent of sufficiency (%) -----

(5) Type of loan -----

(6) Interest rate -----

(7) Do you give collateral? (Yes=1, No=2) -----

(8) Type of collateral -----

(9) Tenure of loan (Year/ Month) -----

(10) Repayment (Installment/lump sum) -----

**Credit accessibility**

No.	Description	Strongly disagreed	Disagreed	Average	Agreed	Strongly Agreed
1.	I believe that location of Financial Institution is convenient					
2.	I believe that Loan is received during farming period					
3.	I believe that interest rate is low					
4.	I believe that repayment period is appropriate					
5.	I believe that collateral requirements are appropriate					
6.	I believe that loan amount received is enough					
7.	I believe that loan procedure is simple					

## APPENDIX 2

### Agricultural Zones of Myanmar



Source: EuroCharm Myanmar (2018)

