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# **ASSESSMENT OF RURAL LIVELIHOOD IN KYAUKPADAUNG TOWNSHIP AS AFFECTED BY PACT MICROFINANCE PROGRAM**

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## ABSTRACT

This study was carried out to examine the socio-economic characteristics and livelihood of rural households, to investigate the effects of PACT microfinance program on participant households, to access the influencing factors of annual household income and major determining factors of participating in PACT microfinance program in Kyaukpadaung Township, Mandalay Region. In this study households were differentiated into participant and non-participant households in PACT microfinance program. The primary data were collected from 60 participant households and 129 non-participant households from six villages in October 2014. Comparison analysis, multiple regression model and probit regression model were used in the data analysis.

In both types of households, while farming was the major source of occupation, non-farm job became the secondary. In the study area, most households were still suffered from poverty and food poverty, in the meantime, migration rate was rather high in both households. In addition, participant households suffered from more health and social shock. Both households had applied borrowed money as coping strategy if they faced shock. Half of participant households had increase incomes, better food intake, more educational expense, improved housing condition, increased job opportunities and more participation in social activities by means of microfinance program. However some participant households faced repayment problems and were not satisfied with current interest rate. High proportion of credit utilization in home consumption was also a critical problem of indebtedness.

By means of the income function analysis, household income was positively related with age, family size, non-farm income and farming household. For microfinance program participation status, female headed households and small farmers were more interested in microfinance program. Household income was largely increased by farming and non-farm jobs. Rural households who had big family members earned significant income, however, they still relied on microfinance program. The sources of income did not influence the household income. Households with larger credit amount and more sources of credit were actively participating in the microfinance program.



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## LIST OF ABBREVIATIONS

ABS	Australian Bureau of Statistics
AMDA	Association of Medical Doctors of Asia
BWP	Beneficiary Welfare Program
CGAP	Consultative Group to Assist the Poor
CSO	Central Statistical Organization
DZMO	Dry Zone Microfinance Organization
HDI	Human Development Index
IHLCA	Integrated Household Living Conditions Assessment
LIFT	Livelihoods and Food Security Trust Fund
MADB	Myanmar Agriculture and Development Bank
MDG	Millennium Development Goal
MFI	Microfinance Institutions
MLE	Maximum Likelihood Estimation
MMK	Myanmar Kyat
MSE	Micro-Small Enterprise
NGOs	Non-government organizations
OLS	Ordinary Least Square
PACT	Partner Agencies Collaborating Together
PRA	Participatory Rural Appraisal
RRA	Rapid Rural Appraisal
SWOT	Strengths, Weaknesses, Opportunities and Threats
UNDP	United Nations Development Program
UNOPS	United Nations Office for Project Services



## CHAPTER I INTRODUCTION

### 1.1 Background of the Study

One major issue facing poor people in developing countries is their lack of access to credit through formal lenders and financial institutions, implied by their lack of physical collateral. This makes poor people particularly vulnerable to income shocks and has a negative impact on their entrepreneurial activities and investment rates. This may also hamper economic growth and development (Berggren 2012). Poverty reduction has been the main agenda of most developing countries. Microfinance has become a widely accepted and effective poverty-alleviation instrument for capital-deficient people in developing countries. It is a major developmental intervention for income generation and poverty alleviation (Panda 2009; Desilva & Denby 1992).

In a developing country context, credit is an important instrument for improving the welfare of the poor directly (consumption smoothing that reduces their vulnerability to short-term income shocks) as well as for enhancing their productive capacity through financing investment in human and physical capital (Khandker et al. 1995). As a measure of reducing poverty, most of the developing countries have adopted the system of empowering the individual. As a means of helping the individual, the Government, Non-Governmental Organizations (NGOs), Rural Banks and Commercial Banks have been giving these individuals some amount of help in the form of capital. This is to help the individual to start some income generating activities so as to save them from poverty.

Microfinance is the provision of financial services to low-income clients or solidarity lending groups including farmers, consumers, and the



self-employed, who traditionally lack access to banking and related services (Christen et al. 2004). More broadly, it is a movement whose object is a world in which as many poor and near-poor households, and farmers and possible have permanent access to an appropriate range of high quality financial services, including not just credit, but also savings, insurance, and fund transfers. Those who promote microfinance generally believe that such access will help poor people out of poverty.

Feder et al. (1990) stated that microfinance is basically design for poverty reduction and social empowerment with intention of providing credit to the poor, which in turn can be used for income generating activities such as investment in small business, investment in crops and animal production, expansion of farm enterprises or for the payment of children school fees among others.

In other words, microfinance program is designed to support informal sectors that often have low return and low market demand as well as poor women who are left out of the formal financial system. This is important because poor households often face difficulties in accessing credit from commercial banks and local moneylenders, due to lack of assets to use as collateral or large interest rate charge, credit market imperfections, credit rationing that might occur due to factors such as adverse selection, asymmetric information, or government policies.

Microfinance has a huge impact on the lives of millions of poor people. Numerous scholars and NGOs have been working to take microfinance within the reach of poor people, who are still not benefited by the conventional financial system. It was believed that microfinance is not important for all people but most groups can benefit from this idea. The scope of microfinance also involve the provision of financial services such



as deposits, loans, payment services, money transfer, and insurance to poor and low income households and farmers among others. These financial services are provided by three types of sources, they are;

- a. Formal institutions, such as rural banks and cooperatives
- b. Semi-formal institutions, such as non-governmental organizations (NGOs) and
- c. Informal sources such as money lenders and shopkeepers.

In Myanmar, despite recent economic growth at the national level, poverty remains one of the major challenges as majority of the poor populations live in the rural areas (UNDP 2012). Poverty is twice as high in rural areas, compared to urban areas with wide regional inequalities in human development and Millennium Development Goal (MDG) indicators. The headcount index of food poverty is generally higher in States than in Regions and higher in rural than in urban areas.

World Bank estimated that in 2012, 67% of total population live in rural areas and depend on agriculture for their livelihoods in Myanmar. The country is ranked 149 out of 168 countries on the Human Development Index (UNDP 2012). Based on 2011 UNDP's HDI about 47% of the country's population lives on less than \$1.25 per day (Takamatsu 2012). The national poverty rate is estimated to be 25%. Poverty incidence is higher in rural than in urban areas with rates of 29% and 15% respectively (Duflos et al. 2013).

Also, the main problem of poor people in Myanmar is the lack of enough money to purchase their basic needs. They cannot establish their own enterprises because they lack enough amount of money to invest in small-scale businesses. They have to borrow a certain amount of money even if they face emergency such as health care, physical accident and very poor



crop harvest. Also, they need money for paying education fees for their children.

Because of the multidimensional features of poverty, it is important to note that any poverty reduction strategy in Myanmar as elsewhere in other developing economies cannot be divorced from adequate provision of financial services to the poor at a minimum cost to enable them engage in productive activities. In this regard, microfinance is the form of financial development that has its primary aim to alleviate the poverty and also which is significant source of finance for poor, lower income people in Myanmar.

## **1.2 Microfinance in Myanmar**

As involved in the least developed countries, Myanmar is desperately needed to fight the poverty, and focus on the economic enhancement of the rural people is the priority of the Government policy as well. Microfinance is widely seen as a key development tool to promote financial inclusion and alleviate poverty in Myanmar. Although many developing countries have been experiencing various methodologies of microfinance projects and research outputs, Myanmar still remains behind of them.

There is great need to expand poor people's access to financial services in Myanmar. As per recent surveys (LIFT 2012 & IHLCA 2010), over 80% of potential clients are excluded from formal access to credit, deposit and other financial services such as insurances and remittances, and also it was found that the most common sources of loans come from relatives, friends, traders and moneylenders.

The most significant regulatory obstacle to the development of microfinance in Myanmar is that formal financial institutions are not allowed to provide uncollateralized credit. As a consequence, millions of small and micro-entrepreneurs have to rely on informal money lenders or pawnshops



for credit, with average reported monthly interest rates of around 20%. Farm-workers or labourers can also informally borrow from farm/land-owners for similar interest rates, without collateral (ACTED 2010). In November 2011, the government passed the new Microfinance Law, paving the way for expansion of microfinance services by allowing local and foreign investors to establish wholly privately owned microfinance institutions (MFIs) in country. According to the law on Financial Institutions of Myanmar, all credit has to be collateralized either with real estate or by a fixed deposit account.

To respond to the regulatory bottleneck and to foster economic growth, microfinance was first introduced to Myanmar in 1997 by UNDP's Human Development Initiative (HDI). As part of HDI, a number of microfinance initiatives were implemented through various international NGOs (INGOs) such as Grameen Trust, GRET and PACT in the Delta area (Ayeyarwady Region), the Dry Zone and Shan State. Later on, other INGOs also began providing microfinance services as part of their broader poverty alleviation intervention.

Less than 10 percent of adults have access to a bank account in a population of 51 million people. Most people get loans and domestic remittances from informal sources. The Myanmar Agriculture Development Bank offers financial services to over 1.7 million farmers but does not operate commercially. Several international NGOs and donor projects (see Table 1.1) provide uncollateralized credit to the poor such as PACT, which has over 0.35 million clients thanks to major long term UNDP Microfinance project amounting to over US\$ 50 million since 1997 (Duflos 2012).

By January 2014, a total of 189 institutions were reported to have been licensed under the law, although many were cooperatives functioning



primarily in urban areas. It is estimated by Duflos et al. (2013) that 2.8 million clients were served by microfinance operations in 2012, with a total loan portfolio of US\$ 283 million. The key agencies operating in the rural microfinance sector are summarized in Table 1.1.

**Table 1.1 Institutional microfinance activities mapping in 2012**

Organization	Established year	Targeted population	Active borrower (No.)	Outstanding loan portfolio (000'MMK)
AMDA	2002	Beneficiaries of AMDA's NGO programs	1,510	55,109
GRET	1995	Poor people in rural area	6,155	840,041
PACT (UNDP projects)	1997	Poor people to facilitate the growth of their micro enterprises	365,410	52,701,000
PACT (non-UNDP)	2005		57,128	4,234,502
Save the Children	2002	Poor women in peri-urban area of Yangon	7,737	367,747
Total (Yadana Suboo microfinance)	1997	Poor and middle poor individuals wishing to start or expand microenterprises	1,197	165,077
World Vision	1998	Beneficiaries of other World vision programs	13,282	1,910,033
<b>Total</b>			<b>452,419</b>	<b>60,273,511</b>

Source: Microfinance in Myanmar Sector Assessment, 2013



The main objective was to progressively develop locally managed self-sustaining microfinance operation to provide the needs of the poor households. Three major goals of microfinance project in Myanmar are:

- To build financial capital in the form of credit and savings for the poor
- To develop and build financial institutions in the form of microfinance organizations.

- To advocate for the emergence of a broad based microfinance sector

As of January 2014, there are a total of 189 licensed microfinance institutions (MFIs) in Myanmar and these include:

- State-owned banks such as the Myanmar Agriculture and Development Bank (MADB)
- Governmental organizations such as Myanmar Small Loans Enterprise
- Political organizations such as the Union Solidarity Development Party
- Approximately 60 specialized agricultural development companies
- Cooperatives supervised by the Ministry of Cooperatives
- Financial cooperatives organized under the Union of Savings and Credit Federation
- Non-governmental Organizations such as PACT, GRET, World Vision, Save the Children, and Proximity UN organizations such as United Nation Development Program (UNDP)
- Multi-lateral entities such as the World Bank and the Consultative Group to Assist the Poor (CGAP)

In Myanmar, microfinance programs sponsored by local non-government organizations and international non-government organizations have created important influences on the economic and social lives of poor people. But the magnitude of its impact is different from those in other countries, reflecting specific situations in Myanmar. Many programs have



both positive and negative impacts on borrowers. Positive impacts on borrowers are empowerment of local people, increase in income, initiation of small business, provision of job opportunities, enhancement of vocational skills, and so on. The negative impacts are increase in work-loads for women, repayment and indebtedness. In some cases, microfinance forces the borrowers to waste time because of obligatory attendance to weekly meeting.

Among various States and Regions in Myanmar, it is said that the regions located in the Dry Zone remain under the poorer conditions in terms of economic performance and local peoples' living standards. Therefore, as many microfinance programs are implemented, it is critical to reveal the problems and issues related to microfinance programs in this region. However, in the time when the attention of the world has shifted towards Myanmar with increased number of foreign investment offer, it is important to understand whether previous intervention projects such as the INGO's microfinance programs have impact on the welfare of households in the country.

### **1.3 Problem Statement**

Lack of access to credit is generally seen as one of the main reasons why many people in developing countries remain poor. Usually, the poor have no access to loans from the banking system, because they cannot put up acceptable collateral and/or because the costs for banks of screening and monitoring the activities of the poor, and of enforcing their contracts, are too high to make lending to this group profitable. However, the poor in developing countries heaved a sigh of relief as they continually gained access to small loans with the help of so-called microfinance programmes. Microfinance is now being considered as one of the most important and an effective mechanism for poverty alleviation. As Myanmar is one of the less developed countries, many Microfinance programs were operated in



Myanmar since 1997 by UNDP Human Development Initiative project. So many INGOs and NGOs currently carry out MFI and its related activities in the Dry Zone with the title of poverty alleviation and community development.

Dry Zone is one of the poorest but most densely populated region of Myanmar. According to UNOPS (2005), average incomes are not sufficient to cover basic needs for food, clothing and shelter. Access to education and health services are likewise greatly restricted. Beyond this, employment and income opportunities are limited. Study area, Kyaukpadaung Township is included in dry zone area of Myanmar. Water is scarce, agricultural productivity is low and much of the natural environment is severely degraded. Therefore most of the population of the area is landless, and depend upon seasonal farm labor to survive. Therefore most households capture any types of job for their livelihood. So, their livelihood systems are different from each other. Based on these facts, it was decided that to study the socio-economic characteristic and livelihood of rural households of this area.

Formerly most of the villagers in the Dry Zone area depend on agricultural work for their livelihood. Majority of households depend mainly on crop income followed by non-farm income, off-farm income, salary and service income, migration income, and home business income. Nowadays, due to the impact of uncertain rainfall, their household income which related with agricultural field work is less significant and some household faced income shortage problem. Therefore each household which faced income shortage problem used various ways to solve this problem. Among them some households borrowed money from microfinance program and used it in various activities to solve this problem. And some villagers migrated to other places and countries to work as casual labours for their livelihoods. It is also required to discover the factors that influence the annual household income.

Majority of the households in this area were sited below the poverty line. Therefore Partner Agency Collaborating Together (PACT) Myanmar



which is one of the Dry Zone Microfinance Organization was implemented since 1997 in Kyaukpadaung Township aimed to enhance poverty alleviation in rural area of Myanmar. In the study area, at this time, 333 villages (98%) out of 339 villages were participated in microfinance program. Consequently, program implementation in the study area was about 17 years long. Therefore, it was enough time to investigate the impact of microfinance program on the livelihood of participant households.

In the study area, some households were participated in microfinance program and some are not. Each household had several reasons for that. According to pilot survey result 40 % of households within the village took the credit from microfinance program and the rests 60% of households did not take credit from microfinance program. It is also needed to identify the factors that affect participating and not participating in microfinance program. One thing that lack in microfinance institution in Myanmar was assessment of microfinance program on participant households and also needed to find out the opportunity and constraint of microfinance program on rural households. These are major reasons to do this study. Based on these problems the four main objectives were laid down as follow.

#### **1.4 Objectives of the Study**

The overall objective of the study is to assess the rural livelihood in Kyaukpadaung Township as affected by PACT microfinance program. Specific objectives are;

1. To study the socio-economic characteristics and livelihood of rural households in the selected area;
2. To analyze the effect of PACT microfinance program on participant households;
3. To assess the determinants of household annual income; and
4. To examine the influencing factors of participating and not participating in PACT microfinance program in the selected area.



## **CHAPTER II**

### **LITERATURE REVIEW**

#### **2.1 Definitions and Concepts of Microfinance**

Microfinance, according to Otero (1999), is “the provision of financial services to low-income poor and very poor self-employed people”. Colombet and Schreiner (2001) defined microfinance as “the attempt to improve access to small deposits and small loans for poor households neglected by banks”. Therefore, microfinance involves the provision of financial services such as savings, loans and insurance to poor people living in both urban and rural settings who are unable to obtain such services from the formal financial sector.

Microfinance refers to small scale financial services for both credits and deposits- that are provided to people who farm or fish or herd; operate small or micro enterprise where goods are produced, recycled, repaired, or traded; provide services; work for wages or commissions; gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; and to other individuals and local groups in developing countries in both rural and urban areas (Robinson 2001). Microfinance has also been defined as the means by which poor people convert small sums of money into large lump sums (Rutherford 1996).

Microfinance is a broad term that includes deposits, loans, payment services and insurance to the poor. In general, this concept is understood as providing poor families with small loans to help them to engage in productive activities or expand their tiny businesses (Josily 2006). Similarly, microfinance as defined by Asiana and Osei(2007), encompasses the provision of financial services and the management of small amounts of money through a range of products and a system of intermediary functions



that are targeted at low income clients through the provision of small loans and other facilities like savings, insurance, transfer services to poor low-income household and microenterprises.

One of the main components of microfinance is microcredit. Microcredit is also referred to as microfinance and micro lending which has demonstrated to be an effective tool in the ongoing struggle against poverty and enables those without access to lending institutions to borrow and start small business (ABS 2005). It is the extension of small loans to entrepreneurs, who are too poor to qualify for traditional bank loans. Especially in developing countries, microcredit enables very poor people to engage in self-employment projects that generate income, thus allowing them to improve the standard of living for themselves and their families. Microsaving is also a microfinance service that allows impoverished individuals to safeguard money and other valuables items and even earn interest. It allows a lump sum to be enjoyed in future in exchange for a series of savings made now (Ayertey 2008).

Insurance is an important service in every aspect of life. It therefore is not surprising that micro-insurance is also a component of microfinance. It is the provision of insurance to low-income households. Poor households are especially vulnerable to risk, both in the form of natural calamities as well as more regular occurrences of illness and accidents. Microfinance Institutions (MFIs) have played an active role in reducing or protecting against this vulnerability through providing credit for increasing income earning opportunities and through providing savings services to build up resources that can be drawn down in cases of emergencies (Ferka 2011).

In the literature, the terms microcredit and microfinance are often used interchangeably, but it is important to highlight the difference between them



because both terms are often confused. Ayertey (2008) stated that “microcredit refers to small loans, whereas microfinance is appropriate where NGOs and microfinance institutions (MFIs) supplement the loans with other financial services (savings, insurance, etc.)”. Therefore microcredit is a component of microfinance in that it involves providing credit to the poor but microfinance also involves additional non-credit financial services such as savings, insurance, pensions and payment services.

The microfinance as a product has several characteristics. The key characteristic of microfinance entails little amounts of loans which are given to individuals and groups to help them start some income generating activities. Little savings over time is also an integral aspect of microfinance as it serves as security for the poor households and also helps them accumulate substantial capital to overcome their capital constraints. The loan which are given out are also short- terms loan which is usually up to the term of one year. Payment schedules are usually on week basis. Instalments made up from both principal and interest, which amortized in course of time. Easy entrance to the microfinance intermediary saves the time and money of the client and permits the intermediary to have a better idea about the clients’ financial and social status. In terms of application the clients need not go through the cumbersome procedures which are required in the traditional commercial banks. There is also short processing periods between the completion of the application and the disbursement of the loan. No collateral is required contrary to formal banking practices. Instead of collateral, microfinance intermediaries use alternative methods, like, the assessments of clients’ repayment potential by running cash flow analyses, which is based on the stream of cash flows, generated by the activities for which loans are taken. The use of tapered interest rates decreasing interest rates over several



loan cycles as an incentive to repay on time. Large size loans are less costly to the MFI, so some lenders provide large size loans on relatively lower rates. The clients who pay on time become eligible for repeat loans with higher amounts (Ferka 2011).

## **2.2 Impact Assessment of Microfinance**

According to Debadutta (2009), impact assessment refers to the assessment of how financial products and services affected the lives of the poor. Impact assessment is the measurement of the income growth, asset growth and vulnerability reduction of the poor by the microfinance program. The indicators for impact assessment are not limited to economic development but extended to developmental growth like health, education, empowerment, gender, etc.

Impact assessment can be done through using qualitative as well as quantitative data collection tools. The qualitative tools are Participatory Rural Appraisal (PRA), Rapid Rural Appraisal (RRA), personal discussions, observations, etc. Quantitative impact assessment requires various mathematical, statistical and econometric models for analysis of data. In many microfinance programs, both qualitative and quantitative methods are jointly used for overall impact assessment.

An impact assessment (IA) is a study to identify changes that result from a program by employing methods to establish reasonable association between changes experienced and participation in the program. A simple paradigm for an impact assessment is: X causes Y or a program results in changes. In reality, however, other factors intervene to influence the impacts (e.g., age, education, gender, and role of enterprise income in the household, location of the enterprise). Also, Y may happen irrespective of X, so it is necessary to pay attention to attribution and rule out plausible rival reasons



about why the changes may have occurred. The level and nature of program participation should affect the impacts of the program, so this needs to be taken into account. Impact Assessment may link an institutional review of program components and procedures with client level data to determine what is working well and what can be improved (Barnes and Sebstad 2000).

The measurement of the impacts of microfinance projects is obviously fraught with a number of methodological problems. One such problem is the difficulty of estimating the counterfactual situation in order to compare with factual conditions of the target group. It is encouraging to note, however, that in recent years some progress has been made in developing methodologies that address this problem. In fact, impact assessment methodologies are being improved through the application of methods like “with” and “without” approach and pre-project baseline studies. The methods help not only in assessing the counterfactual situation but also in reducing errors associated with memory difficulties of respondents (Moser and Kalton 1971).

According to Gaile and Foster (1996), making a case that a particular microfinance program led to an observed or stated change can be done in several ways. Approaches can vary in their level of complexity. Complex approaches, for example, may involve econometric models that require rigorous assumptions about behaviors to obtain control mechanisms and parameter estimates. The use of this approach requires knowledge of production functions, utility, and other econometric concepts that may be unfamiliar and off-putting to many potential users of impact assessments.



### 2.3 Impact of Microfinance in Different Levels

According to Dunn (2002) and Cohen & Bourjorjee (2003), Impact Assessment (IA) for microfinance can be carried out at three different levels i.e. household level, individual level and enterprise level.

**Household Level:** The impact assessment programs should capture the changes in the household level due to microfinance program. The household economic positions like income, expenditure, asset position, livelihood portfolio, etc. may be changed over time due to the increasing access of households to microfinance products and services. The psycho-social changes can be experienced at the household level i.e. change in literacy, migration, gender equality, health, social status, etc. Some of the important changes are:

- increasing in the level of household income
- greater diversification in the sources of household income
- increasing in household asset, including improvements in housing
- increasing in major household appliances and transport vehicles
- increasing in microenterprise fixed assets
- increasing in expenditures on children's education
- increasing in expenditures on food, especially among the very poor and
- increasing in household's effectiveness in coping with problems

**Individual Level:** In general, effective microfinance programs bring a positive change in individual level. It develops managerial ability among the beneficiaries and increases status and position not only in the society but also in the house/family. The increase in capacity development due to microfinance programs leads to a change in individual income level, expenditure pattern, living condition, literacy position, awareness,



accessibility, equity and equality to the household and also in community assets, etc. Some of the important changes are:

- increasing in the client's control over resources and income within the household economic portfolio
- increasing self-esteem and respect from others
- increasing incidence of personal savings; and better position from which to deal with the future through more proactive behavior and
- increasing confidence level

**Enterprise Level:** Microfinance programs influence microenterprise operations i.e. change in profits, scale of operations, diversifications, etc.

- increasing in microenterprise revenue
- increasing in enterprise fixed assets, especially among repeat borrowers
- increasing in the paid and unpaid employment generated by the enterprise and
- Improving in the transactional relationships of the enterprise

## 2.4 Empirical Review of Previous Studies in Other Countries

Nanor (2008) analyzed the impact of microfinance on households in eastern region of Ghana. The impacts were measured by variables like household income, expenditure on food, expenditure on children education, and expenditure on non-food items. In this study the impact were measured by comparing the means of the treatment group (participants) with control group (non-participants). The results showed that there was statistically significant difference between the average household income of program households and non-program households. In the case of children education expenditure, participant households had greater mean expenditure than that of non-participant households. One of the most important aims of any



microfinance institution was to reduce poverty among the poor. When it comes to poverty reduction, one of the issues which stands tall is helping poor households get enough food to reduce malnutrition. The result of all the estimation for food expenditure showed that microcredit increases entitlement on food through increase in income of program households and these households can afford more to expend on food.

Income is one of the most important indicators to measure socio-economic status of the people. Ashraf et al.(2008), Barnes et al.(2001), Dupas and Robinson(2008), Nanor (2008) explored the impact of microcredit on household income. The available evidence from these studies suggested that micro-credit had both positive and negative impacts on the incomes of poor people, in one instance both increasing incomes and decreasing incomes.

Regarding household income, the one study that explored the impact of microcredit directly on household income, revealed inconsistent evidence, with clients' household income significantly higher than that of non-clients within two of the four districts examined, but significantly lowered in the other two (Nanor 2008).

Microfinance interventions had also been shown to have a positive impact on the education of clients' children. Littlefield, Morduch and Mesbahuddin (2003) stated that one of the first things that poor people do with new income from microenterprise activities was to invest in their children's education. Studies showed that children of microfinance clients were more likely to go to school and stayed longer in school than children of non-clients did. Again, in their study, client households were found to be investing more in education than non-client households.



Littlefield, Murdoch and Mesbahuddin (2003) also acknowledged the sparse specific evidence of the impact of microfinance on health but where studies had been conducted they conclude, “households of microfinance clients appear to have better nutrition, health practices and health education than comparable non-client households”.

Microfinance programmes were known to support poor individuals or households’ smooth consumption during an adverse shock. Access to credit may help them to avoid distress through sales of assets, and to replace productive assets destroyed in natural disasters (World Bank 2002). Moreover, provision of to meet unexpected demands for cash, without having to sell or pawn key income-generating assets or withdraw children from school. Voluntary savings may also lower the risk of savings; increase the absolute amounts saved, and enable lump sum expenditure that otherwise would not be possible (Barnes 1996). Financial services provided on a timely basis are a way for poor people to turn many small savings into large lump sums that enable them not only to protect against risks, but also to take advantage of investment opportunities when they present themselves (Rutherford 1995).

Chen and Snodgrass (1999) carried out impact assessment study of SEWA Bank in India at three different levels i.e. at household level, at enterprise level and at individual level. Study revealed that participation in microenterprise services leads to an increase in the level of household income, improvement in housing, increase in microenterprise revenues, increase in self-esteem and self-confidence, etc.

Ansera (1996) reviewed various methods and techniques of collection, measuring and analysis of household income. Most methods for measuring



income were based on respondent recall of relevant data, and were typically subject to considerable inaccuracy and distortion due to recall errors. Some of the indirect or alternative methods used for measuring household economic status were wealth ranking technique, household assets and household expenditure, microenterprise income, etc.

Barnes et al. (2001) pointed out that participation in the microfinance programs results in clients' acquiring valued skills and knowledge. In a self-assessment, clients mentioned that acquiring savings skills and gaining business-related knowledge and skills were among the most important positive results of participation in their credit program.

Health and education are two key areas of non-financial impact of microfinance at a household level. Wright (2000) stated that from the little research that had been conducted on the impact of microfinance interventions on health and education, nutritional indicators seemed to improve where MFIs have been working.

Robinson (2001) studied 16 different MFIs from all over the world. His results showed that having access to microfinance services had led to an enhancement in the quality of life of clients, an increase in their self-confidence, and had helped them to diversify their livelihood security strategies and thereby increase their income.

Coleman (2001) analyzed a microfinance program in Northeast Thailand. He attributed the negative impact to the small size of the loans that were being too small for investment and so they were used for consumption and households turned to moneylenders to finance the repayments, leading to a vicious circle.



The impact of microcredit on household income was the main area of concern most donors and microfinance practitioners. Impact assessment of microfinance program on household income was done by various ways. Some researchers analysed the impact of microcredit on household income by means of econometric model. Ahmed et al. (2011) analysed influencing factors on household income in Panchagarh District in Bangladesh. The name of variables used for the study were age of respondent, status of marriage, level of education, total family member, number of earning members, occupation of respondent, monthly income of husband and monthly income of respondents. Among the independent variables, age of respondent, occupation of respondent and monthly income of husband were positively and significantly related with household income but marital status of respondent was significant negatively.

Nanor (2008) also examined influencing factors which are likely to impact on household income by means of multiple regressions in selected districts in eastern region of Ghana. Some variables which used in the study were age of respondent, status of marriage, shock in last six months, remittance money, household size, number of other household borrower and the number of household members who earn wage, remittance money from friends and relative elsewhere and total amount of credit taken. From this study it was found that household income was negatively and significantly related with age and marital status of respondent. However remittance and total amount of credit taken were negatively and significantly related with household income. This study not only examined influencing factors of microfinance program on household income but also estimated determinant factors, which influence microfinance market participation. Participation was determined by household characteristics and also by the institution which



selects clients according to a set of criteria. In this study 10 independent variables namely age, status of marriage, repayment ability, household income, total household expenditure, monthly profit, occupation of the person who took the credit, number of dependents, purpose for which credit was taken and distance from clients house to MFI were used. From this study it was found that household income, total household expenditure, repayment ability and occupation of the person who took the credit were positively and significantly related with participation in microfinance program.

## **2.5 Empirical Review of Previous Studies in Myanmar**

In Myanmar, although microfinance program operation was long time and wide spread in the country, the quantity of research which was evaluated by researcher was very little at present situation. Assessments of microfinance programs were done by some researcher by means of quantitative and qualitative methods such as descriptive analysis, econometric analysis and SWOT analysis etc. Some researches emphasized on Myanmar's microfinance sector were brief as followed.

San San Aye (2011) performed a research which analyzed the impact of PACT/Myanmar microfinance program on living condition of members in Ayadaw Township, Sagaing Region. In this study the improvement of PACT/Myanmar microfinance project, income, housing condition, purchasing house, food, clothing, health and children education condition were analyzed by descriptive method. All sample respondents were improved in income and they increased in productive employment. Women can make decision and they can participate actively in social and economic activities. Yazar Hein (2012) investigated income comparison of participant households with non-participant households in Pakokku Township, Magway Region. This study found that participant households had higher percent change in crop income and average annual household income than non-



participants had. Moreover, participant group had significantly involvement in training programs and they had increased awareness in climate change.

Nem Nei Lhing (2009) carried out influencing factors of taking loan on PACT microfinance program in Kyaukpadaung Township, Mandalay Region. It was found that marital status of respondents, gender, education level, number of crops grown, technology adoption and establishing new business were positively and strongly associated with taking loan. Family size, age of respondents and land holding size were highly significant variables but having negative impact on the program participation.

In Bogalay Township, Ayeyarwady Region “Assessment of Microfinance Groups in Myanmar” was done by Tun Tun Naing (2011). In this study socio-economic conditions of individual household members were examined by means of descriptive statistics (frequency, percentage). For qualitative analysis such as PRA, SWOT analysis and focus group discussion were applied in this study. It was obvious that their socio-economic conditions of member were increased compared to before joining the group. Although other members seemed to not improve their livelihoods, because they did not properly apply on loan utilization, spending more on consumption rather than investing in income generation. Key findings of this study indicated that microfinance service enable to the livelihood enhancement of the rural poor if they perform proper loan utilization.

According to previous studies, most of the impact assessment research in Myanmar used descriptive analysis. However, some researcher used econometric methods to explore the impact of microfinance program. In the previous studies, impact assessment of microfinance program on livelihood which jointly analysed influencing factors on income and major determinant factors to join in microfinance program has not investigated yet. It was major reason to conduct this research.



## **CHAPTER III RESEARCH METHODOLOGY**

### **3.1 Study Area**

#### **3.1.1 General description of the study area**

Rural poverty in Myanmar is largely a function of lack of resource endowments. According to the UNDP-supported household surveys in 2011, overall poverty was 26 percent in 2009, with significantly higher poverty concentration in rural areas (29 percent rural vs. 15 percent in urban areas). Dry Zone is one of the poorest but most densely populated regions of Myanmar. Most of the poorest live in the central dry zone (where soils are sandy, rainfall is low and population density is high). Nowadays, poverty alleviation together with livelihood security of rural people becomes the major issue in rural development. Microfinance is now practicing and applying in rural development as it is one of the most successful tools in poverty reduction and community development.

Kyaukpadaung Township is situated in dry zone area of Myanmar. Water is scarce, agricultural productivity is low and much of the natural environment is severely degraded in this region. Most of the rural households in this township are landless and small farmers. They depend on seasonal farm work for their livelihood. Beyond this, employment and income opportunities are limited. Access to education and health services are likewise greatly restricted. Therefore one semi-formal microfinance institution (PACT Myanmar microfinance institution) is implementing in this region from 1997 to up to now with the title of poverty alleviation and Human Development Initiative program. So, this program is nearly 17 years long in this region. Therefore, it was decided to select this region as a study



area to investigate the impact of microfinance on livelihood of rural households.

Kyaukpadaung Township is situated between North Latitudes from 20° 32' to 21° 5' and East Longitude from 95° to 95° 32' 46". Kyaukpadaung Township is located at 408 meter above sea level. The study area, Kyaukpadaung Township, is bordered by Meiktila Township on the east, Chauk and Nyaung Oo Townships on the west, Natmauk and Yenanchaung Township on the south, and Taungthar and Mahlaing Township on the north. There are 339 villages composing in 109 village tracts. The total population is about 291,434. In Kyaukpadaung, 95,826 hectares of the total land area are under cultivated land. Among them, 9,741 hectares, 85,915 hectares and 205 hectares are lowland, upland and alluvial soil respectively. The average annual rainfall is 28.07 inches. The daily average maximum temperature is 40°C and average minimum is 12°C. High temperature fluctuation was occurred in the study area. There are two irrigation sources, namely Kyetmaut and Pin Dams, mainly for monsoon and summer rice cultivation. The major economic activities in this study are agriculture and trade. Among 339 villages, totally 6 villages namely Kyauk Ta Gar, Kai, Taung Oo, Sin Tai Kan, Intaw Kyal and Ywar Lu were selected as the study areas (Appendix 1).

### **3.1.2 Description of sampled villages and sampled size**

Six sampled villages were selected from six village tracts according to the typology of rural households. According to pilot survey result, about 35% of total households within the village were participating in microfinance program. In this study, two types of sampled households namely participant and non-participant households were applied. Participant households were households who participate in the PACT (Partner Agencies



Collaborating Together) microfinance program. Non-participant households mean households who did not participate in the PACT microfinance program. Therefore, 60 participant households (32% of total sampled households) and 129 non-participant households (68% of total sampled households) were selected by purposive and simple random sampling methods, and interviewed as described in Table 3.1.

**Table 3.1 Description of sampled villages and sampled size**

Village name	Sampled households (Number)		
	Non-participant	Participant	Total
Kyauk Ta Gar	27 (81.81)	6 (18.19)	33 (100)
Kai	21 (70.00)	9 (30.00)	30 (100)
Taung Oo	20 (64.51)	11 (35.49)	31 (100)
Sin Tai Kan	17 (56.67)	13 (43.33)	30 (100)
Intaw Kyal	24 (72.72)	9 (27.28)	33 (100)
Ywar Lu	20 (62.50)	12 (37.50)	32 (100)
<b>Total</b>	<b>129 (68.25)</b>	<b>60 (31.75)</b>	<b>189 (100)</b>

Note: Figures in the parentheses represent percentage.

In Kyauk Ta Gar village, among 33 total sampled households, 6 households (18% of sampled households) were participant households and 27 households (82% of sampled households) were non-participant. In Kai village, through 30 total sampled households, 9 households (30% of sampled households) were participant households and 21 households (70% of sampled households) were non-participant households. From Taung Oo village, 31 total households were interviewed with 11 participant households (35% of sampled households) and 20 non-participant households (65% of sampled households). About 30 households were selected from Sin Tai Kan



village which include 13 participant households and 17 non-participant households. Nearly 32 total sampled households were selected from Intaw Kyal village by means of 9 participant households (27% of sampled households) and 24 non-participant households (73% of sampled households). In Ywar Lu village, 32 total sampled households, with 12 participant households (38% of sampled households) and 20 non-participant households (62% of sampled households) were selected.

### **3.2 Data Collection and Sampling Method**

To achieve the research objectives, both primary and secondary data were collected in this study. Both qualitative and quantitative data were used in the study. In this study purposive and simple random sampling methods were used to select households. The primary data was taken from selected respondents through personal interview in Kyaukpadaung Township, Dry Zone Area of Myanmar and secondary data were gathered from several books, published and official records of Ministry of Finance & Revenue, Central Statistical Organization (CSO), PACT Microfinance program and other related publications.

The household questionnaire contained questions on demographic and socioeconomic characteristics of households such as age, household size, gender, their assets, income, expenditure and health aspect etc. For independent variables, age, gender, marital status, household size, education level, number of student, land holding size, income from international migration, number of family members engaged in income generating activities, amount of non-farm income, number of income source, and livestock rearing were explored in the analysis.



### **3.3 Data Analysis Methods**

To analyze the data, Microsoft Excel for descriptive analysis and Statistical Package for Social Science (SPSS) version 16 software were used for multiple regression and Probit regression analysis.

#### **3.3.1 Descriptive analysis**

To know the socio-economic characteristics and livelihood of the rural households in the study area, the comparison analysis was applied. Comparison analysis was carried out between households using microfinance services and households not using the services. The comparisons were taken place on outcome variables such as: household head demographic characteristic, household assets and household livelihood characteristics.

#### **3.3.2 Multiple regression analysis**

Regression analysis is one of the most commonly used tools in econometric work. The general purpose of multiple regression analysis is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable.

Applications of regression analysis exist in almost every field such as economics, political science, sociology, psychology, education, etc. The common aspect of the applications is that the dependent variable is a quantitative measure of some condition or behaviour. Throughout, it is concerned with multiple linear regression models, that is, models linear in the parameters, which may or may not be linear in the variables. However, the k-variable multiple linear regression models is specified as follows (Gujarati2003): the dependent variable is assumed to be a linear function of one or more independent variables plus an error introduced to account for all other factors: In this study, a multiple regression model was used to explore the influencing factors on the dependent variables such as annual household income (Table 3.2).



**Table 3.2 Descriptions of the independent variables specified in the multiple regression model**

Independent variable	Type of measure	Expected sign
Household head's age	Year	+/-
Household head's education	Year	+
Family member	Number/hh	+
Number of income source	Number/hh	+
Amount of non-farm income	MMK/hh/year	+
Household head gender	Dummy ( Female = 1, male = 0)	-
Type of household	Dummy (Farm household = other = 0)	+
PACT participant household	Dummy (Participant household = 1, other 0)	+

Note: hh = household

### Households' Income Model

$$\ln Y_i = \beta_0 + \beta_1 \ln X_{1i} + \beta_2 \ln X_{2i} + \beta_3 \ln X_{3i} + \beta_4 \ln X_{4i} + \beta_5 \ln X_{5i} + b_1 D_{1i} + b_2 D_{2i} + b_3 D_{3i} + e_{ij}$$

$Y_i$  = Amount of annual income of the household in 2013 year (MMK/hh/year)

### Independent Variables:

$X_1$  = Household head's age (Year)

$X_2$  = Household head's education (Year)

$X_3$  = Family member (Number/hh)

$X_4$  = Number of income source (Number/hh)

$X_5$  = Amount of non- farm income in 2013 year (MMK/hh/year)

$D_1$  = Dummy for household head gender (Female = 1, male = 0)

$D_2$  = Dummy for farm household (Farm household = 1, other = 0)

$D_3$  = Dummy for PACT participant household (Participant household = 1, other = 0)

$e_{ij}$  = disturbance term

$\beta_0$  = constant

$\beta_i, b_j$  = estimated coefficient; (i= 1,2,3...n; j= 1,2,3...n)

Ln = Natural logarithm



### 3.3.3 Probit regression analysis

Probit analysis is a type of regression used to analyze binomial response variables. There are several statistical problems where the regressing was dummy to estimate the regression model with OLS. Classical Linear Methods are inappropriate for dichotomous choices since they can lead to heteroscedasticity variances. Maximum Likelihood Estimation (MLE) can solve this problem, although heteroscedasticity in MLE is also a potentially serious problem leading to inconsistent estimators (Greene 2000). Wooldridge (2000) suggested that MLE requires more general estimation while heteroscedasticity is observed. However, such models are not often used in practice, since logit and probit models with flexible functional forms in the independent variables tend to work well.

In this study, the empirical analysis of the determinants or influencing factors on participating in PACT microfinance program in the area of Kyaukpadaung Township was carried out by using probit regression model. The list of some selected variables for probit regression model was given in Table (3.3) which gives a description of the variables, and the expected signs for each of the estimated coefficients.

**Table 3.3 Description of the independent variables specified in the probit regression model**

Independent variables	Type of measure	Expected sign
Household head's age	Year	-
Household head's schooling	Year	-
Income earning family	Number/hh	+
Land holding size	Hectare	-
Amount of credit	MMK /hh/ year	-
Number of credit source	Number/hh	-
Average children schooling	Year	+
Gender of household head	Dummy ( Female = 1, male = 0)	+
Household with regular health care	Dummy (Having regular health care =1, other = 0)	-

Note: hh=household



This table is followed by a description of the 9 factors- household head gender, household head age, household head education, income earning family member, land holding size, total credit amount, number of credit source, average children schooling year and regular health care household. In a probit model, the endogenous variable is a dummy or categorical variable with 1 representing household is participating in PACT microfinance program and 0 if the household is not participating in PACT microfinance program. Expressing differently and expanding the probit equation, we can state:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + b_1 D_{1i} + b_2 D_{2i} + e_{ij}$$

Where;

**Dependent Variable:**

1 = if household is participating in PACT microfinance program

0 = if household is not participating in PACT microfinance program

**Independent Variables:**

$X_1$  = Household head's age (Year)

$X_2$  = Household head's schooling year (Year)

$X_3$  = Income earning family member (Number/hh)

$X_4$  = Land holding size (ha/hh)

$X_5$  = Amount of credit in 2013 (MMK/hh/year)

$X_6$  = Number of credit source (Number/hh)

$X_7$  = Average children schooling year (Year)

$D_1$  = Dummy for household head gender (Female = 1, male = 0)

$D_2$  = Dummy for regular health care household (Having regular health care = 1, no = 0)

$e_{ij}$  = disturbance term

$\beta_0$  = constant

$\beta_i, b_j$  = estimated coefficient; (i= 1,2,3...n; j= 1,2,3...n)

$\ln$  = Natural logarithm

## **CHAPTER IV**

### **INTRODUCTORY OF PACT MYANMAR MICROFINANCE PROGRAM**

Partner Agencies Collaborating Together (PACT) was founded in 1971 and established itself as a nonprofit corporation registered in Washington D.C. PACT's program reach has greatly expanded. Currently have offices in more than 20 countries in Asia, and Africa. Impact areas include livelihoods, natural resource management, and health.

In 1997, PACT as implementing partner of United Nations Office for Project Services (UNOPS), started introducing the Microcredit Project "Sustainable Livelihoods through Microcredit for the Poor" (MYA/96/005) in the dry zone, comprised of three townships namely, Kyaukpadaung, Magway and Chaung U. The project has been extended to other seven townships namely, Ayadaw, Myaung, Nyaung U, Taungthar, Chauk, Yaynanchaung and Taungdwingi, under the project title "Sustainable Livelihoods through Microfinance for the Poor" (MYA/99/005). PACT has been granted to continue providing microfinance services in Pakokku since 2005.

#### **4.1 Goal and Objectives**

The project's goal is to uplift the living standard of the poor through implementation of the microfinance program along with a creation of sustainable institution.

The project objectives are

- (1) To provide credit and related services for the poor that enables them to set up their own microenterprises and increase their income contributing towards uplifting their living standard
- (2) To create a sustainable microfinance institution that is self-reliant and self-managed by the members themselves



PACT is committed to provide microfinance services to the disadvantage groups that include;

1. Female-headed households
2. Landless laborers and
3. Subsistence farmers.

#### **4.2 Mission**

PACT enables systematic solutions that allow those who are poor and marginalized to earn a dignified living, be healthy and take part in the benefits that nature provides.

PACT accomplishes this by strengthening local capacity, forging effective governance systems, and transforming markets into a force for development.

#### **4.3 Vision**

PACT envisions world where those who are poor and marginalized exercise their voice, build their own solutions, and take ownership over their future.

#### **4.4 Types of Services**

PACT/Myanmar Microfinance Project provides financial and non-financial services that needed for the poor to come out of poverty cycle. It offers credit without collateral as financial service. The beneficiaries or members in the project have freedom of use of credit for whatever microenterprise which will improve their income. As for non-financial services, project takes the responsibility in building institution that oversees to provide credit and related services continuously even after the project life is over. Again project keeps keen interest in building the capacity of the beneficiaries by providing necessary training, encouraging taking part in



project activities, and overtime the beneficiaries could manage the institution by themselves.

All microfinance members enrolled in the Beneficiary Welfare Program that assists when facing disasters, such as loss of life and loss of properties due to natural disaster. Member's contribution is 1% of the amount disbursed and project contributes 1% of the gross income of the branch. The program stays as a safety net for its members when encounter hardships and disasters. Maximum 100,000 MMK of cash assistance is provided to the bereaved family when a member passes away and loan outstanding is settled by the Beneficiary Welfare Program (BWP) fund. In the case of loss of properties due to natural disasters, 50,000 MMK cash assistance could be provided and loan written off could be benefitted depends upon the level of severity.

#### **4.5 Project Inputs to the Clients**

Before starting the projects, PACT conducts assessment of the client potential in the area with well-trained staffs. Firstly, PACT organized the mass meeting with the villagers and elaborated about the microfinance service what they are going for, and at the same time PRA tool was applied for wealth ranking, seasonal calendar and women timeline as per project procedures. Next, group forming process was done in the second mass meeting with villagers facilitated by the project staffs, and then saving mobilization was conducted among the group members before releasing loans. When implementing the group lending model, PACT organizes villagers into five-member group in order to provide financial service to various micro-business sectors, from marginal farming to small trade activities.



Finally, saving and credits related works were starting after conducting training to the clients, including saving concept, accounting and procedure aspect of micro-financing service.

#### **4.6 Types of Loan**

Generally, the project releases loan for the clients was limited from 30,000 MMK to 700,000 MMK. Loan repayment was done with 25 times of instalment for a year. Several types of loan were categorized for the borrowers who become a client of PACT microfinance project. They are listed as below:

**General Loan:** General loan was released for the clients who were not related with the government work, who were doing their daily income generation and livestock and so on.

**Micro-Small Enterprise Loan (MSE):** MSE was released for the clients who were capable of proving their business status on doing micro-small enterprise.

**Education Loan:** Education loan was not released in the first inception of the clients and loan can be taken in the second inception after the clearance of reimbursement. Interest rate of education loan was the same amount with other types of loan but repayment has to be done within 6 months.

**Loan for Health:** Loan for Health was released with amount of 30,000 to 50,000 MMK and lesser than other type of loans. However, the procedure of repayment was not different from other types of loan.

**Agriculture Loan:** Agriculture Loan was released for the farmers who can prove with farming land. It was released with 50,000 MMK per acre and limited from at most 5 acres of loan for the borrowers. Repayment and interest rate was different from other type of loans. Interest rate of



3% was collected bi-weekly to finish within 6 months and capital repayment was to return by the end of paddy reaping. For agriculture crops, the client have to proposal with detail plan of what kind of crop will be planting, and repayment was to be done within 6 months before overdue of loan.

#### **4.7 Saving**

The saving was collected by the project staffs and kept in the saving swift box of the office, which was controlled by two units of cashiers and programme accountant. Then, all the clients' saving was kept in the Bank after a careful arrangement of it. By the end of the year, the project released a new saving card to the clients with their saving amounts plus interest rate of 20%. This way built up the clients' sense of ownership in the long run. If the clients want to continue or stop for their saving of a year, the project makes flexible to them but a new saving in the next inception is to be restarted.

#### **4.8 Repayment System**

After 2009, the project addressed a new methodology of repayment system that makes to ease the clients' burden of loans and the project staffs' transportation cost, collecting instalment and saving bi-weekly instead of the old methodology as weekly did. Generally, except Agriculture loan and Educational loan, all type of repayment for loans has to be done with 25 times including instalment of saving and interest rate of 1.67% within a year. Clients shall receive payment bill from the carbon part in every time of the money collectors come.

## CHAPTER V RESULTS AND DISCUSSION

### 5.1 Comparison of Socioeconomic Characteristics and Livelihood of Participant and Non- participant Households

This chapter provides the empirical research findings including socioeconomic characteristics and livelihood of participant and non- participant households.

#### 5.1.1 Microfinance participation status by household head's gender

Among the total sampled households (189), most of the households 170 (89.95%) were male headed and the rest 19 (10.05%) were female headed households. In participant households, 13.33% were female headed and 86.67% was male headed as shown in Table 5.1. In non-participant households, 8.52% and 91.48% were female and male headed households respectively. Therefore the ratio of female headed households was higher in participant households than that in non-participant households.

**Table 5.1 Gender difference on microfinance participation**

Type of household head	Number of households		
	Non-participant (N =129)	Participant (N=60)	Total sampled (N=189)
Female headed household	11 (8.52)	8 (13.33)	19 (10.05)
Male headed household	118 (91.48)	52 (86.67)	170 (89.95)
Total	129 (100)	60 (100)	189 (100)

Note: Figures in the parentheses represent percentage.

#### 5.1.2 Socioeconomic characteristics of the sampled households

The socioeconomic characteristics of participant and non- participant households such as household head's age, household head's schooling year,



number of family members, number of income earning family member, number of student and average children schooling years were examined. The average participant household head's age was 49.45 years which ranged from 24 to 70 years and that of non-participant was 53.7 years which ranged from 23 to 90 years. Thus the head of participant households was younger than the head of non-participant households. Average schooling years of participant household head was 6.60 and that of non-participant was 6.24. Therefore participant household head's education was higher than non-participant households. High education leads to better decision making and leadership position in the society.

Average family members of participant households were 5.71 and that of non-participant households were 5.10 (Table 5.2). In case of income earning family members, average members were 3.64 (1 to 7) in participant households and 3.18 (1 to 7) in non-participant households. The average numbers of students were 1.71 in participant households and 1.61 in non-participant households. Children schooling year had 5.51 years in participant and 4.55 years in non-participant households.



**Table 5.2 Socio-economic characteristics of participant and non-participant households**

Items	Unit	Non-participant households (N=129)			Participant households (N=60)		
		Mean	SD	Range	Mean	SD	Range
Household head's age	Year	53.70	13.49	23 - 90	49.45	9.35	24 - 70
Household head's schooling year	Year	6.24	2.20	0 - 11	6.60	2.24	3 - 11
Number of family member	Number	5.10	1.87	2 - 10	5.71	1.83	2 - 10
Income earning family member	Number	3.18	1.51	1 - 7	3.64	1.34	1 - 7
Number of student	Number	1.61	0.67	1 - 3	1.71	0.93	1 - 5
Average children schooling year	Year	4.55	4.45	1-14	5.51	3.83	1-13

### 5.1.3 Major occupation of the household heads

Some household head were engaged in two occupations, primary and secondary. Primary occupation is the major earning of the household head and secondary occupation is the additional income for surplus. For primary occupation, farming was the most dominant occupation for both households (58.34% of participants and 61.24% of non-participants households). In both types of household, non-farm labor occupation was involved by 35% of participant households and 20.93% of non-participant households as the second important occupation. The third important income generating activity for both types of household was farm labor working by 1.66% of participant



and 2.33% of non-participant households.

With regard to the secondary occupation, 33.33% of participant households and 27.90% of non-participant households had secondary occupation. In the study area, 18.33% of participant household heads and 17.06% of non-participant household heads were non-farm labor which was the leading secondary occupation. The second largest occupation was off-farm labor alone by 15% of participant households and 8.52% of non-participant households. The finding showed that household heads who secondary occupation were more participated in microfinance program than those who had not secondary occupation (Table 5.3).

**Table 5.3 Major occupation of the sampled household heads**

Occupation	Primary occupation		Secondary occupation	
	Non-Participant households (N=129)	Participant households (N=60)	Non-Participant households (N=129)	Participant households (N =60)
Farmer	79 (61.24)	35 (58.34)	-	-
Non-farm labor	27 (20.93)	21 (35.00)	22(17.06)	11(18.33)
Farm labor	3 (2.33)	1 (1.66)	-	-
Off – farm labor	-	-	11 (8.52)	9 (15.00)
Broker	3 (2.33)	-	3 (2.32)	-
Government staff	-	1 (1.66)	-	-
Dependent	17 (13.17)	2 (3.34)	-	-
<b>Total</b>	<b>129 (100)</b>	<b>60 (100)</b>	<b>36 (27.90)</b>	<b>20 (33.33)</b>

Note: Figures in the parentheses represent percentage.



#### 5.1.4 Dependency ratio of the sampled households

The economic dependency ratio compares the number of economically inactive and active household members between the ages of 15-59. ‘Economically active’ is defined as being engaged in an economic activity, including family worker. It can be said that, the higher the ratio value, the higher the ‘economic burden’ on the household. The economic dependency ratio is measured by dividing the number of non-working members (children under 5 years of age, children who are studying at school and university, house-wife who are not working, and elder persons who cannot work) by the total family size.

Table 5.4 showed the dependency ratio of the study area. Participant households and non-participant households had the average dependency ratio of 34.22 and 36.98 % which meant about one third of the total family member was dependent. High dependency ratios (above 60%) were found in 5% of participant households and about 10.07 % of the non-participant households.

**Table 5.4 Dependency ratio of the sampled households**

Dependency ratio	Unit	Non-participant households (N=129)	Participant households (N=60)
0 - 20%	Number	30 (23.26)	14 (23.33)
21 - 40%	Number	40 (31.00)	27 (45.00)
41 - 60%	Number	46 (35.67)	16 (26.67)
Above 60%	Number	13 (10.07)	3 (5.00)
Average ratio	%	36.98	34.22

Note: Figures in the parentheses represent percentage.



### 5.1.5 Housing condition of the sampled households

Table 5.5 presented the housing condition of the respondents, which was one of the remarkable features of their assets. Improvement of housing condition was one of the major priorities of the rural people when their economic status was increased.

**Table 5.5 Type of housing material of the sampled households**

Type of housing material	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
<b>Wall and floor</b>		
Bamboo + wood	96 (74.42)	43 (71.67)
Brick knocking type (concrete)	23 (17.83)	14 (23.33)
Wood	10 (7.75)	3 (5.00)
<b>Roof</b>		
Corrugated iron	122 (94.57)	58 (96.67)
Toddy leaf	5 (3.87)	2 (3.33)
Thatch	2 (1.55)	-

Note: Figures in the parentheses represent percentage.

In the study area, three kinds of housing materials and three types of roofing were used. The most common type of housing was the house with bamboo wall and corrugated iron sheet roof in both non-participant households and participant households. By means of housing material, 71.67% of participant households and 74.42% of non-participant households owned bamboo wall with wood floor type. Moreover brick knocking (concrete) type housing was possessed by 23.33% of participant households



and 17.83% of non-participant households. In the study area, more than 90% each of the participant households and non-participant households used corrugated iron sheet for roofing.

### **5.1.6 Accessibility to water and sanitation of the selected area**

In the study area, there were six kinds of water source for drinking water and domestic use (Table 5.6). Among them, tube well, stream water, pond and shallow well were the major sources for drinking water and household use in the study area. About 53.33% and 40% of participant households and 44.96% and 39.53% of non-participant household depended on tube well which was the main source for drinking water and domestic use in the study area. The second largest water sources for drinking water and domestic use were tube well with pond in participant households and in non-participant households was stream water.

Sanitary fly-proof latrine was utilized in the study area. Although 91.67% of participant households and 91.47% of non-participant households used fly-proof latrine, the rest 8.33% of participant households and 8.53% of non-participant households did not have latrine.



**Table 5.6 Accessibility to water and sanitation of the sampled households**

Accessibility	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
<b>Drinking water</b>		
Tube well	58 (44.96)	32 (53.33)
Stream water	27 (20.93)	6 (10.00)
Tube well+pond	18 (13.95)	8 (13.33)
Shallow well	18 (13.95)	7 (11.67)
Rain water	3 (2.32)	2 (3.33)
Pond	5 (3.87)	5 (8.33)
<b>Water for domestic use</b>		
Tube well	51 (39.53)	24 (40.00)
Tube well+pond	19 (14.73)	9 (15.00)
Stream water	27 (20.93)	6 (10.00)
Shallow well	19 (14.72)	6 (10.00)
Rain water	1 (0.77)	2 (3.33)
Pond	11 (8.52)	13 (21.67)
<b>Fly-proof latrine</b>	<b>118 (91.47)</b>	<b>55 (91.67)</b>

Notes: Figures in the parentheses represent percentage.

### 5.1.7 Household asset possession of the sampled households

Household communication asset owned by non-participant and participant households were revealed in Table 5.7. Communication assets are important for the people to get the information in terms of social, economic, politic and weather. Communication assets such as radio, TV and mobile phone possession of participant households were 51.67%, 28.33% and



43.33% respectively. In non-participant households, 65.11%, 38.76% and 55.04% of sampled households owned radio, TV and mobile phone respectively. Therefore the possession of communication assets by non-participant households was higher than participant households.

**Table 5.7 Possession of communication assets by the sampled households**

Items	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
Radio	84 (65.11)	31 (51.67)
TV	50 (38.76)	17 (28.33)
Mobile Phone	71 (55.04)	26 (43.33)

Note: Figures in the parentheses represent percentage.

Table 5.8 explained transportation asset ownership of the respondents. Many of those who own motor cycle were convenience of going around and also helped their family to employ. Bicycle is also useful for the student to go to school. In both households, the possession of motorcycles was the same by 51.67% in participant households and 51.94% in non-participant household respectively. About 26.67% of participant households and 20.93% of non-participant households used bicycles for transportation. In addition only each one (0.77%) of non-participant households had small truck and passenger trucks for transportation.



**Table 5.8 Possession of transportation assets by the sampled households**

Items	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
Motorcycles	67 (51.94)	31 (51.67)
Bicycles	27 (20.93)	16 (26.67)
Small truck	1 (0.77)	-
Passenger - truck	1 (0.77)	-

Note: Figures in the parentheses represent percentage.

In terms of farm asset, ox-driven cart, plough, harrow, hand tractor and water pump were owned by 44.18%, 55.81%, 55.81%, 4.65% and 7.75% of non-participant households (Table 5.9). On the other hand, the participant households owned ox-driven cart (33.33%), plough (38.33%), harrow (38.33%) and water pump (3.33%). In the study area, possession of farm assets such as plough, harrow and hand tractor by non-participant households were higher than that of participant households.

**Table 5.9 Farm asset ownership of the sampled households**

Items	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
Ox-driven cart	57 (44.18)	20 (33.33)
Plough	72 (55.81)	23 (38.33)
Harrow	72 (55.81)	23 (38.33)
Hand tractor	6 (4.65)	-
Water pump	10 (7.75)	2 (3.33)

Note: Figures in the parentheses represent percentage.



### 5.1.8 Livestock asset ownership of the sampled households

Livestock rearing was one of the livelihood activities for rural households in the study area. Draught cattle were raised for the purpose of land preparation. However pig, goat, chicken and sheep were kept for additional income. Chicken were raised for home consumption and extra income. The percentages of participant and non-participant households who owned livestock were shown in Table 5.10.

**Table 5.10 Frequency and percentage of the sampled households who raised livestock**

Type of livestock	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
Draught cattle	77 (59.69)	30 (50.00)
Pig	32 (24.80)	19 (31.66)
Chicken	46 (35.65)	20 (33.33)
Goat	4 (3.10)	1 (1.67)
Sheep	1 (0.77)	

Note: Figures in the parentheses represent percentage.

In this study, 50% of participant households and 59.69% of the non-participant households owned draught cattle. In the study area, microfinance program was set off small-scale livestock keeping among participant households. Therefore, in participant households, 31.66% and 1.67% of households raised pig and goat for additional income. Pig and goat were also raised by 24.80 % and 3.10% for their extra income in non-participant households. The percentages of households who raised chicken were 33.33%



and 35.65% in participant and non-participant households respectively. However chicken flu disease was more and more severe in the study area. It can be said that livestock assets possessions of non-participant households except pig were higher than participant households.

### **5.1.9 Land ownership status of the sampled households**

Agriculture land holding size of the sampled households in the study area was described in Table (5.11). As an agrarian society, agricultural land is an important household asset for the livelihood production. In the study area, 60% of participant households and 70.54% of non-participant households were farm households. About 40% of participant household and 29.46% of non-participant household were landless. So, landless households were actively involved in the microfinance program. In sampled villages, 36.66% of participant household and 31% of non-participant household possessed less than 2.02 hectares of cultivated land which was the largest group in the selected area. About 11.67% of participant households and 21.71% of non-participant households were the medium farm households. The other 11.67% of participants and 17.83% of non-participants households were the large farm households. Therefore, participant households were mostly small farm households.



**Table 5.11 Land ownership status of the sampled households**

Household category	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
<b>Landless</b>	<b>38 (29.46)</b>	<b>24 (40.00)</b>
<b>Farm households</b>	<b>91 (70.54)</b>	<b>36 (60.00)</b>
- Small ( $\leq 2.02$ ha)	40 (31.00)	22 (36.66)
- Medium (2.03 to 4.04 ha)	28 (21.71)	7 (11.67)
- Large (above 4.04 ha)	23 (17.83)	7 (11.67)

Note: Figures in the parentheses represent percentage.

#### 5.1.10 Labor migration status of the study area

In the study area, some household members migrated to other places and countries for their livelihoods as described in Table 5.12. There were two types of labor migration in the study villages such as internal (domestic) and international migration. In the study area, about 58.33% of participant households and 47.29% of non-participant households had labor migration. For international migration, major migrated places were Malaysia, Singapore and Thailand. Among the participant migrated household, 91.43% was internal and 8.57% was international. In non-participant household, 88.52% of migrated household was internal and international migration was 11.48% of migrated households. Therefore internal labor migration situation of participant households was higher than that of non-participant households. This showed that participant households more depended on migration income (remittance income) than non-participant households depend for their livelihood.



**Table 5.12 Labor migration status of the sampled households**

Migration status	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
<b>Non-migration</b>	<b>68 (52.71)</b>	<b>25(41.67)</b>
<b>Migration</b>	<b>61 (47.29)</b>	<b>35 (58.33)</b>
- Internal (domestic)	54 (88.52)	32 (91.43)
- International	7 (11.48)	3 (8.57)

Note: Figures in the parentheses represent percentage.

### 5.1.11 Types and composition of income of sampled households

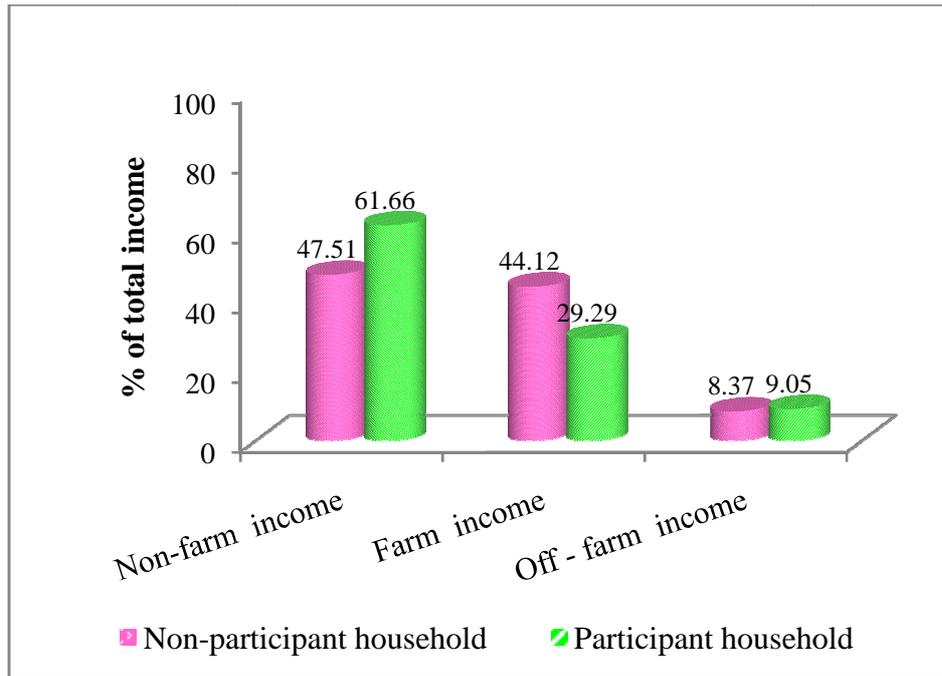
Household income is defined as the sum of the income of the household members such as wage/salary receipts including the imputed value of in-kind payment, non-agricultural self-employment earning (gross revenue minus total paid costs) and remittance. In the farm households, the households' income means some of the total income of marketed crops and other incomes (wage, salary, livestock income, remittance, etc.). The household income of the landless households is sum of the income received from all sources.

Income types of sampled households in the study area were shown in Figure 5.1. In the study village, there were three types of income namely farm income, off-farm income and non-farm income.

The participant households earned income from three main sources. The participant households received 61.66% of total income from non-farm work, 29.29% from farming work and the rest 9.05% from off-farm work. Non-participant households also had three types of income. Non-participant households received 47.51% of total income from non-farm work which was

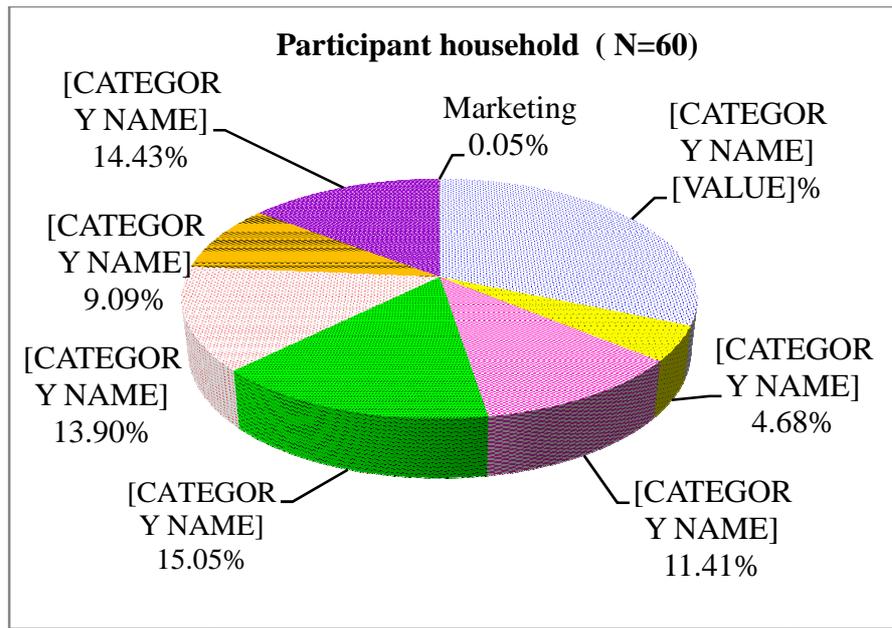


the largest income source. The other income types for non-participant households were farm income (44.12%) and off-farm income (8.37%). According to the research finding, both households depended more on non-farm income than farm income and off-farm income for their livelihood.

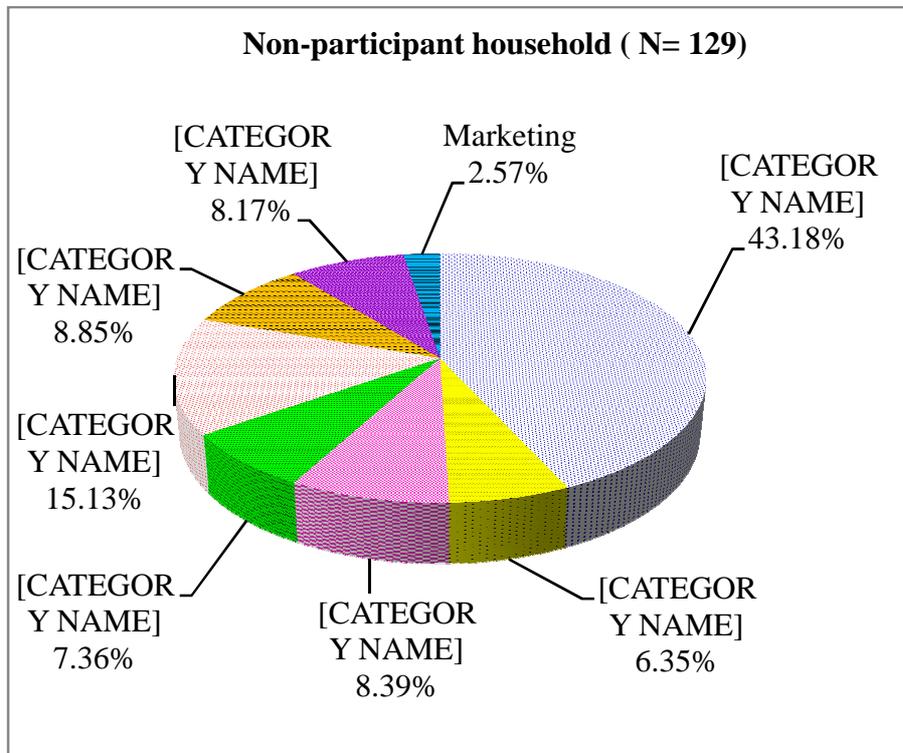


**Figure 5.1 Income types of non-participant and participant households**

The composition of participant and non-participant households' income was shown in Figure 5.2 and 5.3. By means of income composition, crop income dominates the income of both households in the study area. For participant household, crop income, income from non-farm labor, income from home business and remittance income led in the income composition by 31.39%, 15.05%, 14.43% and 13.90% respectively. In non-participant household, crop income (43.18%) and remittance income (15.13%) dominated the household income in the study area.



**Figure 5.2 Income compositions of participant households**



**Figure 5.3 Income compositions of non-participant households**



### 5.1.12 Household income level of the study area

In this study, households were divided into three groups based on their per capita income as described in Table 5.13. In the participant households, 25% of the households were classified as low income and 63.33% were categorized in medium income group. The rest 11.67% of households were in high income group. The majority of non-participant households (52.71%) were placed in medium income group. About 30.23% and 17.06% of non-participant households were included in low income and high income group respectively.

**Table 5.13 Household income level of participant and non-participant households**

Income group	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
Low income (≤200,000 MMK/person/year)	39 (30.23)	15 (25.00)
Medium income (200,001 – 500,000 MMK/person/year)	68 (52.71)	38 (63.33)
High income (> 500,000 MMK/person/year)	22 (17.06)	7 (11.67)

Note: Figures in the parentheses represent percentage.

### 5.1.13 Average source of income and per capita income of participant and non-participant households

Table 5.14 showed average source of income and per capita income of participant and non-participant households. Concerning about average per capita income, the participant households received MMK 294,020 while



non-participant households got MMK 342,161. However, the average income source of participant household was 2.1 and that of non-participant was 1.96. From those findings, it was concluded that average per capita income of participant households was lower than non-participant households but participant households relied on more income sources than non-participant households did.

**Table 5.14 Average source of income and per capita income of participant and non-participant households**

Description	Non-participant households (N=129)	Participant households (N=60)
Avg. per capita income (MMK/person/year)	342,161	294,020
Avg. sources of income (Number/household/year)	1.96	2.1

#### **5.1.14 Expenditure patterns of the sampled households**

The pattern of household expenditure was presented in Table 5.15. Spending level of expenditure was set with four indicators in terms of food consumption expense, medical expense, educational expense and other household expense respectively which were based on the estimation of the respondents quantitatively. In this study, other household expenses included in terms of electricity, water, house maintenance and social affair.

In participant households, 55.68% of total expenditure was used in food consumption. About 16.89%, 3.44% and 23.99%, of total expenditure were used in education, medical and other household expense respectively. For non-participant households, consumption expense was 50.65% of total expenditure. Medical expense, educational expense and other household expense were 6.05%, 16.22% and 27.08% of total expenditure in that order.



Based on research finding, it can be seen that average consumption expense of participant household was higher than that of non-participant household. Medical expense of non-participant household was greater than that of participant household. In the case of educational expense, both households were nearly the same.

In the study area, food items which took above 50% of samples households were necessities of life, hence expenditures on them was usually high. However, overspending on them will adversely affect the other expenses as well as investment of the people. Surprisingly, expenditure on education, which is the engine of growth and development, was above 16% in both households. This reveals how difficult it was for household to spend on education in the study area. But expenditure on health was low in both types of households.

**Table 5.15. Distribution of household's expenditure**

Description	Amount in MMK/hh/year	
	Non-participant households ( N=129)	Participant households (N= 60)
Food consumption expense	897,188 (50.65)	946,655 (55.68)
Medical expense	107,319 (6.05)	58,468 (3.44)
Educational expense	287,318 (16.22)	287,279 (16.89)
Other household expense	473,631 (27.08)	407,826 (23.99)
<b>Total</b>	<b>1,771,456 (100)</b>	<b>1,700,228 (100)</b>

Note: Figures in the parentheses represent percentage of total expenditure.

### 5.1.15 Household expenditure conditions

In this study, sampled households total expenditure condition was raised by comparing their total household income (Table 5.16). In the study area, total expenditure of 53.33% of participant households and 51.16% of



non-participant households were more than their household total income. Based on this finding, more than half of both types of households did not have enough income to cover their household basic needs.

**Table 5.16. Total household expenditure condition of the sampled households**

Expenditure conditions	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
More than household income	66 (51.16)	35 (58.33)
Less than household income	63(48.74)	25 (41.67)

Note: Figures in the parentheses represent percentage.

Average household income = 1,702,734MMK/year (Non-participant households)

Average household income = 1,552,592 MMK/year (Participant households)

### 5.1.16 Poverty status of the sampled households

The poverty and food poverty status of the sampled households were explained in Table 5.17. To examine poverty and food poverty status of sampled households, poverty and food poverty lines in 2010 were applied (UNDP 2013). The food poverty line which represents the study area was 277,768 MMK/person/year and poverty line was 379,951 MMK/person/year.

Among the sample households, 51.16% of non-participant households and 58.33% of participant households were below food poverty line. In relation to poverty status of sampled households, 65.11% of non-participants and 76.67% of participants were under poverty line. In the study area, the percentage of participant households under food poverty and poverty line



were significantly higher than that of non-participant households and poverty level of both households was still high in the study area.

**Table 5.17 Poverty status of participant and non-participant households in 2014**

Status	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
Below food poverty line	66 (51.16)	32 (58.33)
Below poverty line	80 (65.11)	44 (76.67)

Note: Figures in the parentheses represent percentage.

Regional poverty line in 2010 was 379,951 MMK/person/year (UNDP 2013)

Regional food poverty line in 2010 was 277,768 MMK/person/year (UNDP 2013)

### **5.1.17 Status of credit received by the sampled households**

In this study, the sampled households received credit from four sources. Some participant households (43.33%) took the credit only from one source. It was found that 36.67% and 18.33% of participants household had two and three sources of credit respectively. However in the study area, only one participant household (1.67%) received credit from four sources. In this study, 44.40% of non-participant households did not have debt. About 51.90% of non-participant households received credit from only one source. The rest 3.90% and 0.80% of non-participants households obtained credit from two and three sources respectively. From this finding, it was concluded that about half of both households got credit from one source. Thus, the percentage of participants' households which took credit by means of more sources was higher than non-participants (Table 5.18).



**Table 5.18 Number of credit sources received by the sampled households in 2013**

Credit source	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
No debt	56(44.40)	-
Indebtedness household	73 (55.60)	60 (100.00)
- One source of credit	67 (51.90)	26 (43.33)
- Two sources of credit	5 (3.90)	22 (36.67)
- Three sources of credit	1 (0.80)	11 (18.33)
- Four sources of credit	-	1 (1.67)

Note: Figures in the parentheses represent percentage.

The amount of credit received by non-participant and participant households were diverse in average, minimum and maximum (Table 5.19). In participant households, average credit amount was MMK 336,666 which ranged from MMK 30,000 to MMK 2,400,000 and that of non-participant households was MMK 190,000 which ranged from MMK 10,000 to MMK 1,800,000. Therefore the amount of credit taken by participant households was nearly two times that by non-participant households.

**Table 5.19 Average credit amount received by sampled households from various sources in 2013**

Items	Credit amount (MMK/hh)	
	Non-participant households (N=73)	Participant households (N=60)
Mean	190,000	336,666
Minimum	10,000	30,000
Maximum	1,800,000	2,400,000
SD	253,420	343,025



In the study area, the sampled households took credit from different sources. There were 7 credit sources namely Myanmar Agricultural Development Bank (MADB), PACT Myanmar, Cooperative, Money lender, Relative, Village community fund and Foundation. Among these 7 types, MADB and cooperative were the formal credit source, PACT Myanmar was semi-formal credit source and the rest four sources were informal credit sources. PACT Myanmar was the largest semi-formal financial institution which operated from 1997 up to now in the study area.

In the case of formal financial institution, MADB lent with the lowest interest rate 0.71%. The amount of credit borrowed by participant households was ranged from MMK 100,000 to MMK 300,000 and that by non-participant households was ranged from MMK 20,000 to MMK 1,800,000. In the study area 28.33% of participant households and 58.90% of non-participant households took credit from MADB. Therefore non-participant households more used credit from MADB than participant households.

The main source of credit for the participant group was PACT Myanmar. All participant households in the study area could borrow with 3% per monthly interest rate. The highest credit amount used by participant households was MMK600,000 and the lowest was MMK100,000.

In the case of cooperative, 26.67% of participant households took credit which was the third largest credit source with the monthly interest rate of 1.5%. In addition, 24.66% of non-participant household took credit from this source which was the second largest credit source for non-participant households. In the study area, 11.67% of participant household borrowed money from money lender with the monthly interest rate 2 – 8%. For non-participant household, about 13.7% borrowed money from money lender with the monthly interest rate of 1.5 to 10 %.



**Table 5.20 Average credit amount received by participant and non-participant households**

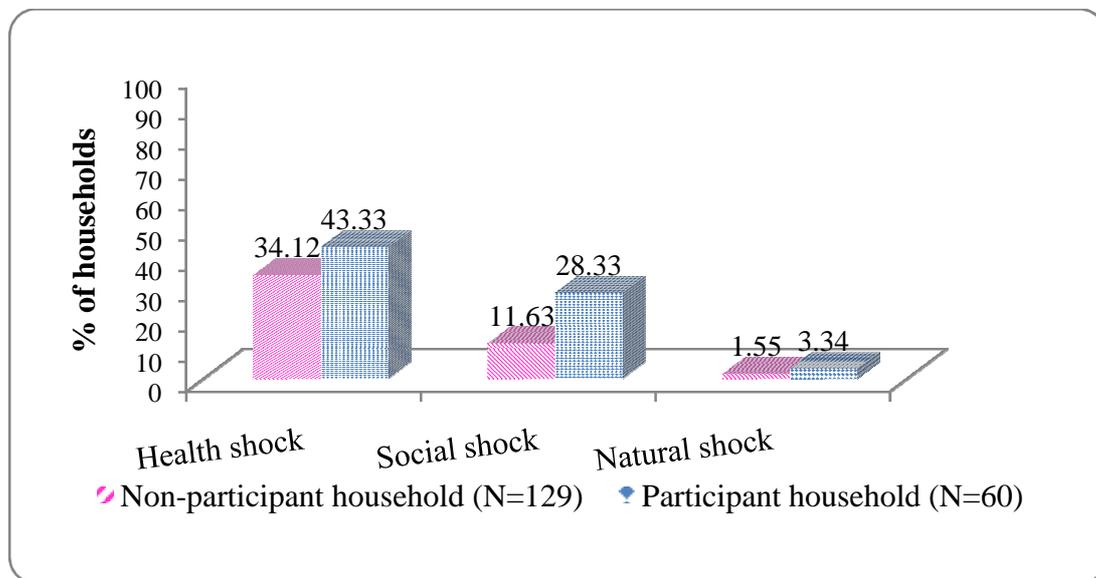
Name of credit source	Non-participant households (N= 73)	Participant households (N=60)
MADB	43	17 (28.33)
	Borrower (Number) (58.90)	
	Interest rate (%/month) 0.71	0.71
	Credit amount- Average (MMK/hh) 192,143	154,117
	- Maximum 1,800,000	300,000
	20,000	100,000
PACT	-	60
	Borrower (Number) -	(100.00)
	Interest rate (%/month) -	3.00
	Credit amount- Average (MMK/hh) -	18,333
	- Maximum -	600,000
	-	100,000
Cooperative	18	16 (26.67)
	Borrower (Number) (24.66)	
	Interest rate (%/month) 1.5	1.5
	Credit amount- Average (MMK/hh) 95,000	103,125
	- Maximum 200,000	300,000
	10,000	50,000
Money lender	10	7 (11.67)
	Borrower (Number) (13.70)	
	Interest rate (%/month) 1.5-10	2-8
	Credit amount- Average (MMK/hh) 121,111	521,428
	- Maximum 400,000	2,000,000
	30,000	50,000
Friends & Relative	6 (8.22)	4 (6.67)
	Borrower (Number) 5	6
	Interest rate (%/month) 278,333	202,500
	Credit amount- Average (MMK/hh) -	300,000
	- Maximum 1,000,000	100,000
	10,000	
Village community fund	-	2 (3.33)
	Borrower (Number) -	4-5
	Interest rate (%/month) -	
	Credit amount- Average (MMK/hh) -	50,000
	- Maximum -	50,000
	-	50,000
Foundation	3 (4.11)	1 (1.67)
	Borrower (Number) 2-3	1.5
	Interest rate (%/month) 106,667	250,000
	Credit amount- Average (MMK/hh) -	250,000
	- Maximum 200,000	250,000
	20,000	250,000



### 5.1.18 Frequency and type of shocks

In this study, the sampled households were asked about their experiences of unexpected shocks faced in the past two years. These include health related shocks (illness, death or disability, child birth), natural shocks (crop failure, drought, untimely rain, insect damage, fire) and social shocks (education fee, house repair, death of livestock, a decline in output price). Among the sampled households, 45 participant households (75.00%) and 61 non-participant households (47.29%) were faced unexpected shocks in the past two years.

Among the participant households, 26 (43.33 %), 17(28.33%) and 2 (3.34%) faced with health shocks, social shocks and natural shocks respectively. In non-participant households, 44 (34.12%) faced with health shocks, 15 (11.63%) faced with social shocks and 2 (1.55%) faced with natural shocks (Figure 5.4). Therefore participant households more faced in health, social and natural shock than non-participant households.



**Figure 5.4 Types of shock faced by sampled households in the last two years**



### 5.1.19 Coping strategies for shocks

Coping strategies used for each of the three shock types are described in Table 5.21. As described in the table, households used multiple responses to deal with the effects of shocks. It was found that households tended to rely quite heavily on borrowed money which was a key external coping response to shocks, by 71.11% of participant households and 96.72% of non-participant households respectively. A second internal household response was by selling of gold and household assets in both households by 22.22% of participant households and 42.62% of non-participant households. Such a response may protect households in the short-run but may have adverse long-term consequences. The other two coping responses were selling cattle and bullock, or pawn land. Household reliance on these coping measures was not uniform between non-participant and participant households.

**Table 5.21 Coping responses of sample households for shock in the last two years**

Solving ways	Frequency of households	
	Non-participant households (N=61)	Participant households (N=45)
Borrowed money	59 (96.72)	32 (71.11)
Selling gold & household assets	26 (42.62)	10 (22.22)
Selling cattle and bullock	4 (6.55)	5 (11.11)
Selling or pawn land	1 (1.64)	2 (4.44)

Note: Figures in the parentheses represent percentage.



As described in above, borrowing money from different sources to cope shock was the most in both types of households (Table 5.22). In terms of the source of borrowing, the bulk of the loans, across all shock types were provided by relatives and friends by 68.75% in participant household and 76.28% in non-participant households. Reliance on money lenders was second source for both types of households to cope shock by 18.75% in participant households and 18.64% in non-participant households respectively. About 3.39% of non-participant borrowed money from formal source to cope shock. The rest source to borrow money for sampled household was organization (Sagawa foundation) by 12.50% in participant and 1.69% in non-participant households.

**Table 5.22 Sources of borrowed money to cope with the shock**

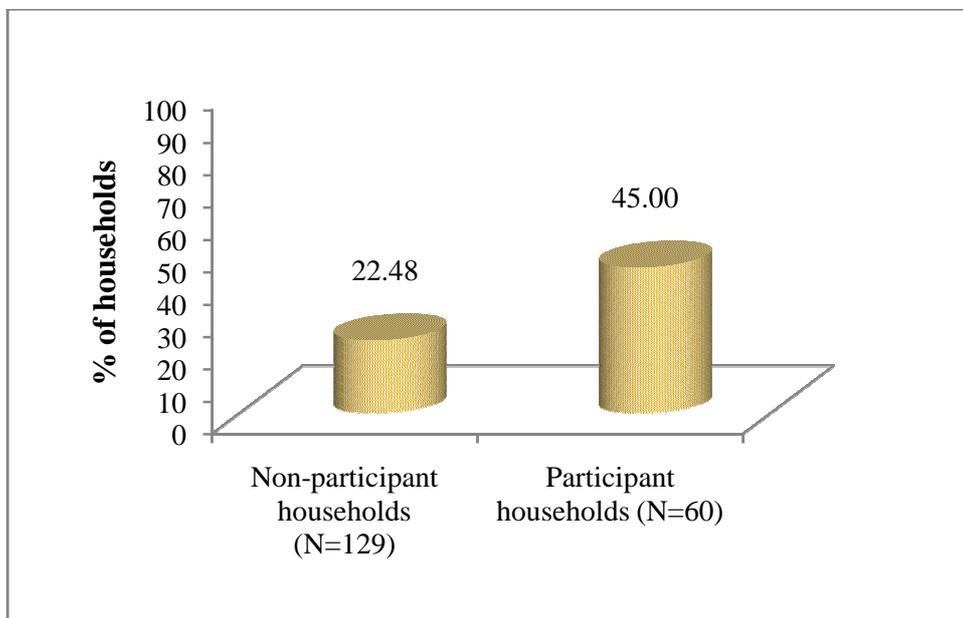
Source of borrowed money	Number of households	
	Non-participant (N=59)	Participant (N=32)
Relative & friends	45 (76.28)	22 (68.75)
Money lender	11 (18.64)	6 (18.75)
Formal source	2 (3.39)	-
Organization	1 (1.69)	4 (12.50)
<b>Total</b>	<b>59 (100)</b>	<b>32 (100)</b>

Note: Figures in the parentheses represent percentage.



### 5.1.20 Regular health care situation of the sampled households

As health is an important thing for protecting the productivity of the household rural household's attention on health care was inquired in this study (Figure 5.5). According to research finding, 29 non-participant households (22.48%) and 27 participant households (45.00%) practiced health care regularly. Therefore participant household the interested in regular health care was higher in participant households than in non-participant households.



**Figure 5.5** Regular health care situations of the sampled households

### 5.1.21 Involvement in organization and training programs

In the study area, there were many kinds of organization forming for different purposes but every group was going for development and strengthening local capacity with many aspects. It is good for the village development in the long run; enhancing collective capacity for rural development. In this study, concerning social and institutional aspect, one indicator: participation in organization and the training programs of the sampled households was interviewed.



To do these, sampled households were asked about their involvement in self-help or social welfare organizations and training attended condition (Table 5.23). Among the sampled households, 4.65% of non-participant households and 16.67% of participant households were concerned in organizations such as government, non-government organization, village association and village administrative. Out of the participant households who participated in organization, 6.67% were joined in village administrative organization and each of 3.33% were integrated in government, non-government and village associations respectively. However, 2.33%, 1.55% and 0.77% of non-participant households were integrated in village association, village administrative and non-government organization. Large proportion of participant households (83.33%) and non-participant households (95.35%), were not involved in the activities of organizations.

**Table 5.23 Participation of sample households in organization**

Participation status	Number of households	
	Non-participant households (N=129)	Participant households (N=60)
<b>Not-involve in organizations</b>	<b>123 (95.35)</b>	<b>50 (83.33)</b>
<b>Involve in organizations</b>	<b>6 (4.65)</b>	<b>10 (16.67)</b>
- Government	-	2 (3.33)
- NGOs	1 (0.77)	2 (3.33)
- Village association	3 (2.33)	2 (3.33)
- Village administrative	2 (1.55)	4 (6.67)

Note: Figures in the parentheses represent percentage.



Table 5.24 showed different types of training attended by the sampled households. In the study area, there were 3 different training programs which were offered by different organizations. In this study, 13.33% of participant households and 11.63% of non-participant households attended these programs. Among them, training program which related with agriculture was the most important training program and 8.33% of participant households and 9.30% of non-participants households involved in this training. About 3.33% of participant household and 2.33% of non-participant household attended training which deal with livestock. Rural development training program was participated by 1.67% of participant households. Regarding the number of households participating organization and attending training programs, it was observed that participant households were more interested in the training programs and organizations than the non-participant households. However by means of total sampled households, participation in organization and training was still weak.

**Table 5.24 Type of trainings attended by participant and non-participant households**

Type of training	Number of households		
	Non-participant households (N=129)	Participant households (N=60)	Total Households (N=60)
Agriculture	12 (9.30)	5 (8.33)	17 (8.99)
Livestock	3 (2.33)	2 (3.33)	5 (2.64)
Rural development	-	1 (1.67)	1 (0.53)
<b>Total</b>	<b>15 (11.63)</b>	<b>8 (13.33)</b>	<b>23 (12.17)</b>

Note: Figures in the parentheses represent percentage.



## 5.2 The Impact of PACT Microfinance Program on the Participant Households' Livelihoods

Before exploring the progress of participant households after participating in microfinance program, reason of participating in microfinance program, and type and used of credit which borrowed from microfinance program were first examined.

### 5.2.1 Reasons of participating in microfinance program

In the study area, participant households have several reasons to participate in the PACT microfinance program (Figure 5.6). Regarding to the reasons of participating in the microfinance program, most of the participants (78.33%) were participated in the microfinance program because of the requirement of loan which was the major reason. About 11.67% of sample households participated due to the low interest rate of this program. The other reasons of participating were no need of the clients' collateral (5%) and to join in group work (5%) respectively.

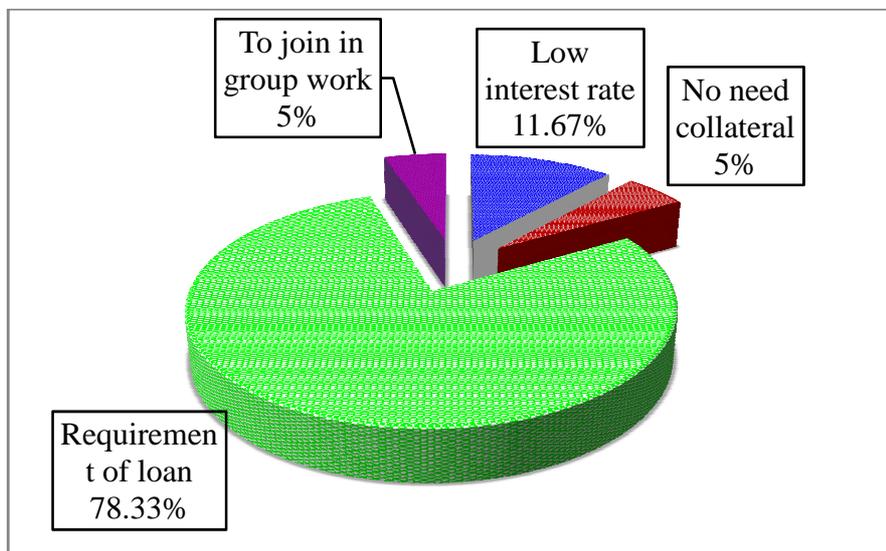


Figure 5.6 Reasons of participating in the PACT microfinance program



## 5.2.2 Types and allocation of credit borrowed from PACT microfinance program

In the study area 83.33% of participant households used regular credit which was the most useful credit type among the participants. The other types of credit were small and medium enterprise loan (5%), education loan (6.67%) and agriculture loan (5%) respectively in Table 5.25.

**Table 5.25 Types of credit borrowed from PACT microfinance program**

Types of credit	Participant households (N=60)	
	Number	Percentage
Regular	50	83.33
For education	4	6.67
For small & medium enterprise	3	5.00
For agriculture	3	5.00
<b>Total</b>	<b>60</b>	<b>100</b>

The PACT microfinance program emphasizes the allocation of credit in the particular activity. Participants may use part or all of the credit in their income generating activities such as agriculture fields, livestock rearing, and small and medium enterprises. So, participant's allocation of credit which borrowed from PACT microfinance program is shown in Table 5.26.



**Table 5.26 Allocation of credit borrowed from PACT microfinance program by participant households**

Types of credit allocation	Participant households (N=60)	
	Number	Percentage
For household consumption	20	27.40
For agriculture	19	26.03
For livestock rearing	16	21.92
For education	9	12.33
For investment in marketing	5	6.85
For health expense	2	2.74
For repayment of debt	2	2.74

According to the research results, it was found that 27.40%, 26.03%, 21.92% and 12.33% of participant's households used credit for household consumption, agriculture, livestock rearing and education fees. Moreover, 6.85% of participant households used credit for the investment in marketing and 2.74% each of households used for health expense and debt repayment respectively. From this finding, it can be seen that 55 % of participant households allocated credit in income generating activities (agriculture, livestock rearing and marketing).

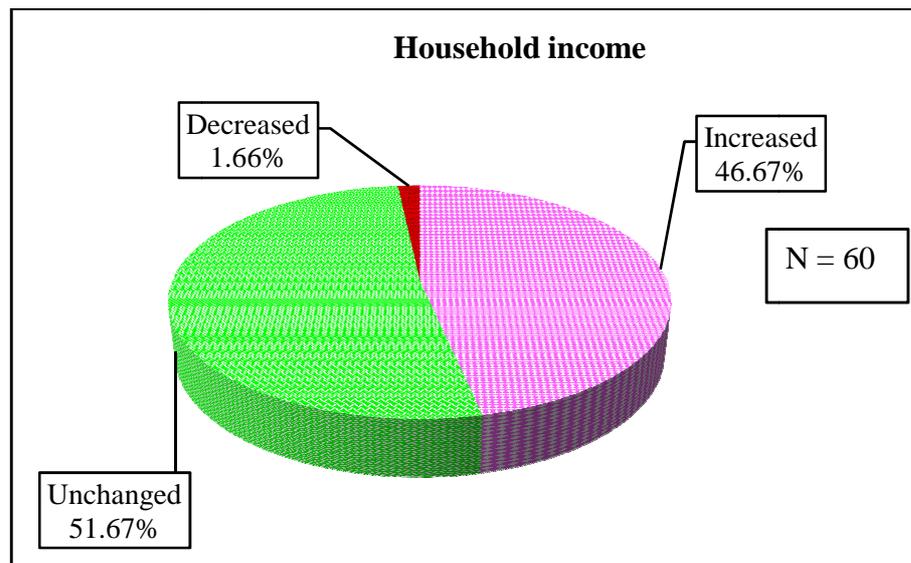
### **5.2.3 The impact of microfinance program on participant household's livelihoods**

In this context, brain storming session was conducted among the participants in order to generate opinion based on their experience in dealing with the project. Through the personal interview, the respondents answered individually on their experience of participating in the program regarding the households' income, food intake, education expenditure, housing improvement and job opportunities, other benefits and problems.



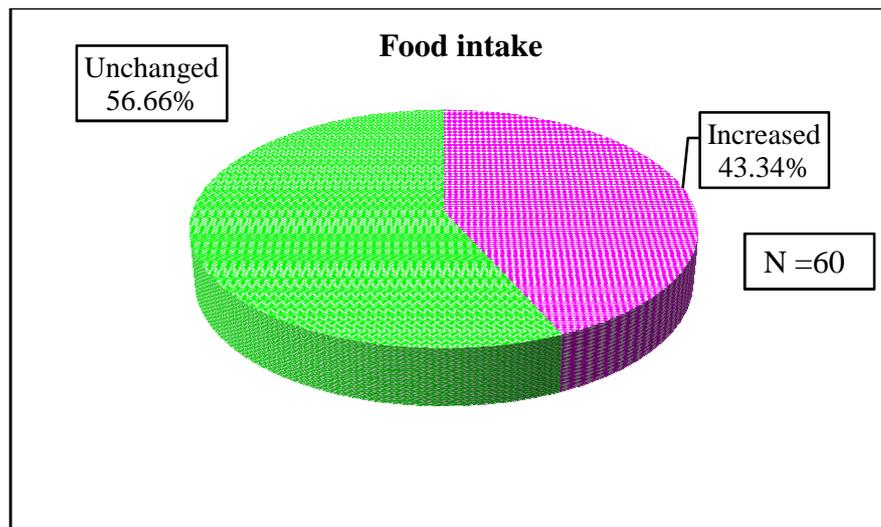
### 5.2.3.1 Overall households' income and food intake

The generation of income was another constituent to investigate the impact of program. When the participants were asked about their household income condition, the participants responded positively that they gained 46.67% growth in incomes as shown in the Figure 5.7 while 1.66% noted a decrease and 51.67% was remained unchanged.



**Figure 5.7 Situation of household income by participation in microfinance program**

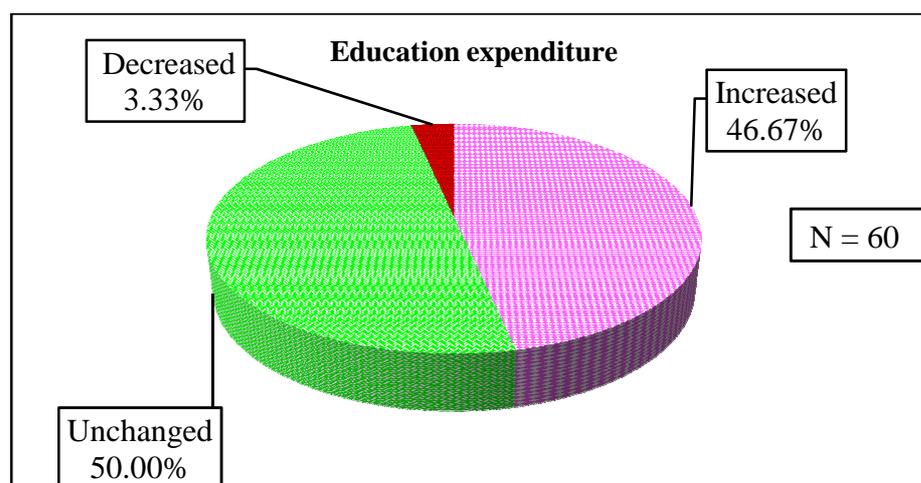
Household food condition was one of the factors to assess the effects of microfinance program on participant households (Figure 5.8). For majority of participant households (43.34%) felt that there has been an improvement in their food intake. However, the rest (56.66%) of the participants felt that the households' food intake remained the same by participation in microfinance program. Thus, the benefit of participation in the microfinance program was increased among participant households.



**Figure 5.8 Impact of microfinance program on household food intake**

### 5.2.3.2 Education expenditure

Education expense was one of the measurement units which can be used to evaluate the impact of program on household improvement (Figure 5.9). Among the participant households, 46.67% used more money for educational expense after participating in the microfinance program, although the next 50% did not change their expense for children's education. The rest participants (3.33%) responded that after participating in microfinance program their children's educational expense was decrease than before.

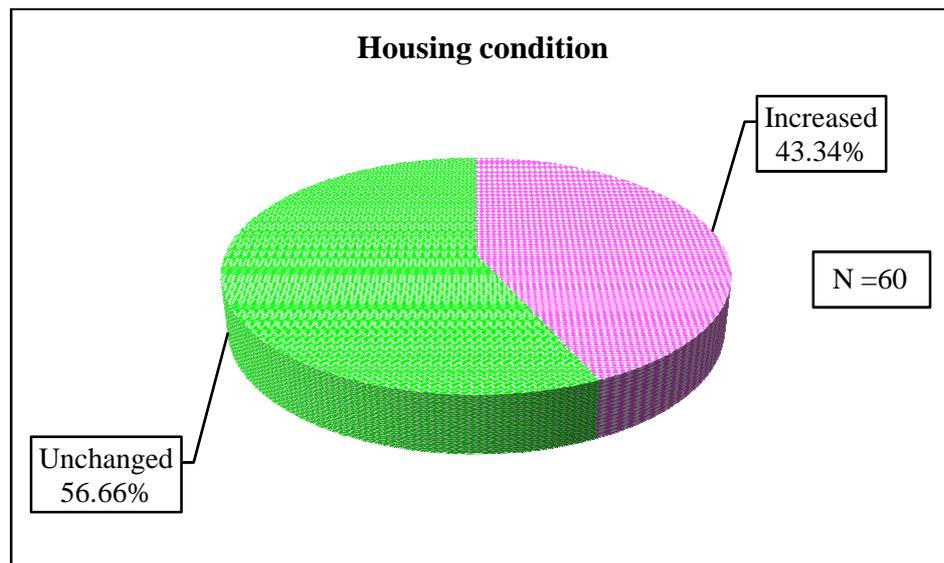


**Figure 5.9 Changes on educational expenditure of participant households**



### 5.2.3.3 Housing improvement

The impact of the program on improvement of living conditions was examined. In the study area 43.34% of the participants asserted that they have undertaken repair or improvement of the roof, floors, and wall etc after they have participated in the program. The housing condition of other (56.66%) participants did not change (Figure 5.10).



**Figure 5.10** Impact of microfinance program on housing condition

### 5.2.3.4 Other benefits gained by participant households by joining the PACT microfinance program

The other benefits which acquired by joining the program were shown in Table 5.27. The scheme of biweekly repayment system with instalment does a favour to save money and to ease burden of debt for most participants. By means microfinance program, 30 (50%) out of 60 participants, answered that their household members got more job opportunities after participating in microfinance program and half of 60 participants answered that they can participate more in social activities than before. Another benefit was that 38.33% of participants' households



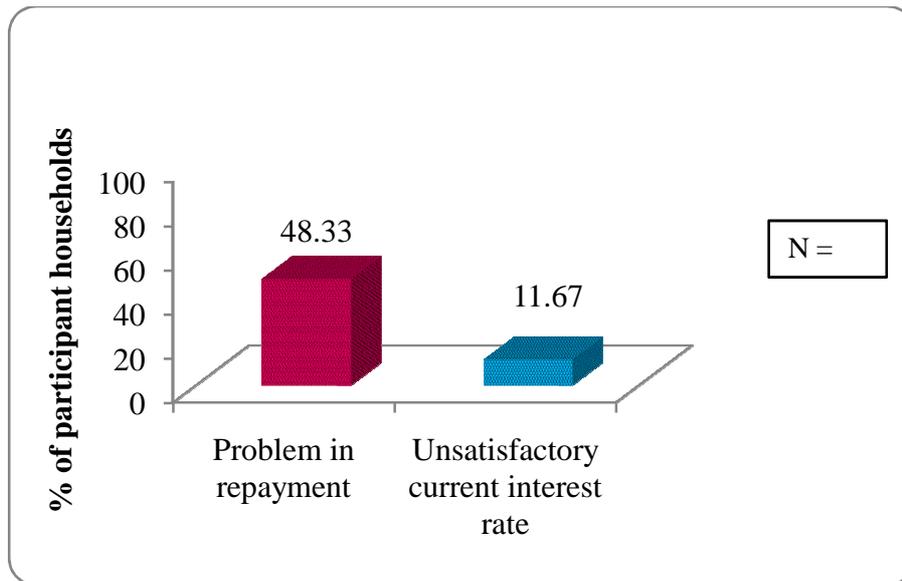
established new business by using money from microfinance project. In this study, regular health care condition of participant households was done by using microfinance program.

**Table 5.27 Other benefits gained by participating in PACT microfinance program**

Types of benefits	Participant households (N=60)	
	Number	Percentage
Increased jobs opportunities	30	50.00
Participation in social activities	30	50.00
Regular health care	27	45.00
Establish new business	23	38.33

### **5.2.3.5 Some problems faced participant households by participating in PACT microfinance program**

In the study area, participant households got not only opportunities but also constraints by participating in microfinance program (Figure 5.11). Some participant's households faced repayment problem and some were not satisfied with current interest rate. Among the participant households, about 48.33% faced repayment problems. This was due to no regular income of participants and short repayment period. Although 88% of participants agree to pay interest rate as specified by institution, 11.67% of participants did not satisfy with this interest rate. Even though the repayment has to pay biweekly with instalment, interest rate was uniformly collected every time as well. It was more burdens on participants who did not have regular income.



**Figure 5.11 Type of problems faced by participant households due to participating in microfinance program**

### 5.2.3.6 Daily income job opportunities of participation households

In this study the participant households' daily income job situation was inquired to know their repayment capacity (Table 5.28). Among the participant households, 51.67% had daily income by means of running grocery, tailor, and small business such as fried potato, betel nut chopping and weaving bamboo sieve and basket. The rest 48.33% of participant households did not have daily income jobs. It was the major reason for participant households to face repayment problem.

**Table 5.28 Daily income job opportunities of participant households**

Daily income status	Participant households (N=60)	
	Number	Percentage
<b>Without daily income</b>	<b>29</b>	<b>48.33</b>
<b>With daily income from small business</b>	<b>31</b>	<b>51.67</b>
- Grocery	12	20.00
- Tailor	3	5.00
- Fried potato	3	5.00
- Betel nut chopping	3	5.00
- Weaving bamboo sieve & basket	10	16.67
<b>Total</b>	<b>60</b>	<b>100</b>



### 5.2.3.7 Interest rate paid by participant households to PACT microfinance program

The interest rate of PACT microfinance program was calculated based on bi-weekly interest (Table 5.29). Based on this calculation average interest rate paid by participant households to PACT microfinance program was 4.58% per month. The official interest rate of PACT microfinance program was 3% per month. It was the reason of unsatisfied to current interest rate by participant households.

**Table 5.29 Interest rate paid by participant households (Unit = MMK)**

No.	Principal	Interest /bi-weekly	Interest rate/ bi-weekly	Interestrates/ month
1	100,000	600	0.60	1.20
2	96,000	600	0.63	1.25
3	92,000	600	0.65	1.30
4	88,000	600	0.68	1.36
5	84,000	600	0.71	1.43
6	80,000	600	0.75	1.50
7	76,000	600	0.79	1.58
8	72,000	600	0.83	1.67
9	68,000	600	0.88	1.76
10	64,000	600	0.94	1.88
11	60,000	600	1.00	2.00
12	56,000	600	1.07	2.14
13	52,000	600	1.15	2.31
14	48,000	600	1.25	2.50
15	44,000	600	1.36	2.73
16	40,000	600	1.50	3.00
17	36,000	600	1.67	3.33
18	32,000	600	1.88	3.75
19	28,000	600	2.14	4.29
20	24,000	600	2.50	5.00
21	20,000	600	3.00	6.00
22	16,000	600	3.75	7.50
23	12,000	600	5.00	10.00
24	8,000	600	7.50	15.00
25	4,000	600	15.00	30.00
<b>Average actual interest rate</b>			<b>2.29</b>	<b>4.58</b>
<b>Official interest rate</b>			<b>1.50</b>	<b>3.00</b>

Source: Own calculation based on PACT program bi-weekly interest amount



### 5.3 Factors Influencing on the Annual Household Income

In this analysis, some variables which are likely to impact on household income were examined. To explore the determinants of annual household income of sampled households, multiple regression model was used with particular dependent variables based on the nature of the data and its expected correlation.

The annual household income of sampled households in natural log value was included as the dependent variable in the regression model (Table 5.30). The independent variables of the model were household head's age (year), household head's schooling year (year), number of family member, number of income source, amount of non-farm income in 2013, and three dummy variables of household head's gender, farm household and participation in PACT microfinance program.

According to the descriptive statistics, average annual household income (MMK1,686,335) average household head's age (52.35) years, average household head's education (6.36) years, average family member per household(5.30), average income source of the sampled household in 2013 (2.01) and average annual non-farm income per household(MMK888,293) were shown in Table 5.30.



**Table 5.30 Descriptive statistics of dependent and independent variables in multiple regression model (N =189)**

Variables	Units	Minimu m	Maximu m	Mean	Std. Deviation
Annual household income	MMK/hh/yr	135,000	7,750,360	1,686,335	1,137,166
Household head's gender	Dummy				
Household head's age	Year	23	90	52.35	12.46
Household head's schooling year	Year	0	11	6.36	2.22
Family member	Number/hh	2	10	5.30	1.88
Farm household	Dummy				
Income source	Number/hh	1	3	2.01	0.59
Non-farm income	MMK/hh/yr	0	6,405,000	888,293	845,255
PACT participation	Dummy				

The estimated results of the multiple regression analysis on the annual household income of sampled households were summarized in Table 5.31. Overall, the estimated result is satisfactory because it fulfills the following criteria of good results. First, the adjusted  $R^2$  (which is a measure of goodness of fit of the estimated regression model) value 0.338 depicts a good fitting of the model. In this model, the  $R^2$  value of 0.366 and the F-test shows that the estimated regression was quite meaningful in the sense that the dependent variable was related to each specified explanatory variables. The linear relation of the model was highly significant (the p value for the F was less than 0.01). Second, the signs for the estimated coefficients were consistent with the prior expectations except number of income source.



Thirdly, most of the estimated coefficients were statistically significant at the 0.01, 0.05 and 0.1% level, which was significantly different from zero.

Table 5.31 shows that most of the explanatory variables were significantly related with the respondent's annual household income, which was indicated by the  $R^2$  adjusted  $R^2$  and F-value. Among explanatory variables, household head's age, number of family member, non-farm income and farm households were positively and significantly related to the annual household income at 1%, 5% and 10% level.

Moreover, the annual household income was positively related with microfinance participation status but not significant. Based on the results, there was a strong positive relationship between the annual household income and the four explanatory variables: household head's age, number of family member, non-farm income and farm household.

The determinant variable of household head's age was proved to be statistically significant and positively related to respondent's family income. If other factors remain the same, the positive coefficient shows that the older the age of household head, the higher the amount of the respondent's family income. According to coefficient value of household head's age, 1% increase in household head age, the household income will be increased by 0.27%. In addition, coefficient value of number of family member (0.74) and non-farm income (0.02) indicated that if 1% increases in family member and non-farm income, household income will be increased by 0.74% and 0.02% respectively. Moreover all other things being equal, if household is farm household, household income will be increased more than non-farm households. In this study it was also found that participation in PACT microfinance program was positively related with household income but not significant. This means that household income was increased by means of PACT microfinance program but not major.



**Table 5.31 Results of the multiple regression analysis for the determinants of annual household income of participant and non-participant households**

N=189

Independent variable	Unstandardized coefficient (B)	Standardized coefficient ( $\beta$ )	T-value	Sig.
(Constant)	11.478***		17.446	.000
Household head's gender (D)	-.139	-.056	-.813	.418
Household head's age (Year)	.274*	.115	1.742	.083
Household head's education (Year)	.065 <sup>---</sup>	.035	.526	.599
Family member (Number/hh)	.742***	.393	5.822	.000
Farm household (D)	.414***	.274	4.255	.000
Income source (Number/hh)	-.298 <sup>---</sup>	-.094	-1.434	.153
Non-farm income (MMK/hh/year)	.022**	.155	2.458	.015
PACT participation (D)	.025 <sup>---</sup>	.016	.261	.794

Note: Adjusted  $R^2 = 0.338$ ,  $R^2 = (0.366)$ ,  $F = (12.981)$ ,  $\text{Sig} = 0.000$ ,

Durbin-Watson=1.884, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

\*\*\*, \*\* and \* are significant at 1%, 5% and 10% level respectively and <sup>ns</sup>= not significant

Household head's gender - Female =1, other=0

Farm household- Farm household=1, other=0

PACT participation- Participant household = 1, other = 0



#### **5.4 The Empirical Results of Influencing Factors of Participating and Not Participating in Microfinance Program**

In this study, the empirical analysis of the determinants or influencing factors on taking microfinance program was carried out by using Probit Regression Model. In a Probit Model, the endogenous variable is a dummy or categorical variable with 1 representing household which participating in microfinance program and 0 representing non-participation. In the present study, not only some quantitative variables but also some qualitative or dichotomous variables were considered.

The estimation was done to determine the factors, which influence on participation in microfinance program by Probit Model. There were nine independent variables in the empirical Probit Model. According to the descriptive statistics, average household head's age(52.35) years, average household head's education(6.36) years, average income earning family member (3.33), average children schooling years (6.74) years, average land holding size (1.78) hectare, average credit source in 2013 (0.99), average credit amount (MMK 255, 671) were shown in Table 5.32.



**Table 5.32 Descriptive statistics of independent variables of participating and not participating in PACT microfinance program (N=189)**

Variables	Units	Minimum	Maximum	Mean	Std. Deviation
Average annual household income	MMK/hh/yr	135,000	7,750,360	1,686,335	1,137,166
Household head's age	Year	23	90	52.35	12.46
Household head's education	Year	0	11	6.36	2.22
Income earning family member	Number/hh	1	7	3.33	1.48
Total area of land	Hectare	0	8.09	1.78	1.79
Number of income source	Number/hh	1	3	2.01	0.59
Credit amount	MMK/hh/yr	10,000	2,400,000	255,671	26,317
Credit source	Number/hh	0	4	0.99	0.86





The estimated coefficients and the correspondents Z ratios which resulted from the Probit Model were given in Table 5.33. Chi-Square value (235.353) and p-value (0.003) suggested that the estimated model was significant at 1% level.

Analysis of the survey data revealed that 6 number out of the 9 variables included in the model were significant (at 1 % to 5 %) in explaining the variation in taking microfinance status of household in the study area. These variables were household head gender, income earning family member, land holding size, amount of credit and number of credit sources taken in 2013 year and regular health care. The other factors, household head age, household head education and average children schooling year were not significant.

In this study, the explanatory variable household head gender was positively related to the probability of participation in microfinance program and statistically significant at 5 % level. It indicates that female headed household more interested in microfinance program than male headed household.

In terms of the income earning family member, it is highly significant at the 99% confidence level and having positive impact on the probability of participation in microfinance program. The coefficient value of income earning family member (1.22) indicated that one unit increase in income earning family member, the probability of participation in microfinance program will be increased by 1.22%. It suggests that the increase the income earning family member, the higher the probability of participation in microfinance program.

Looking at the land holding size, the coefficient value (-0.65) was negative and significant at 1% level. This probably indicates that 1 unit



increased in land holding size, the probability of participation in microfinance program will be decreased by 0.65%. This implies that households with large land holding size were not likely to participate in the microfinance program.

According to the Probit regression results, the amount of credit and the number of credit source was positively and significantly related to the probability of participation in microfinance program at 5% and 1% level respectively. This means that the larger the amount and source of credit of household, the greater the probability of participation in microfinance program. All other things being equal, if one unit increases in credit amount and in number of credit source, the probability of participation in microfinance program will be increased 0.20% and 2.36% respectively. Moreover the probability of participation in microfinance program was positively related with household with regular health care at 1% level. This means that regular health care households more interested in microfinance program.

In this analysis, household head age was negatively related with the probability of participation in microfinance program but not significant. It was because the older the age the lesser interested in any organization. Looking at average children schooling year, the coefficient value was positive but not statistically significant. This means that the probability of a household to participate in the microfinance program was not affected by the average children schooling year.



**Table5.33 Regression results of influencing factors of participating and not participating in PACT microfinance program (Probit Model) (N =189)**

Parameter	Estimate coefficient	Standard error	Z	Sig.
Household head's gender (D)	1.807**	.772	2.340	.019
Household head's age (Year)	-1.062 <sup>ns</sup>	.915	-1.161	.246
Household head's education (Year)	.324 <sup>ns</sup>	.499	.649	.516
Income earning family member (Number/hh)	1.226***	.427	2.869	.004
Average children schooling year (Year)	.042 <sup>ns</sup>	.196	.217	.828
Land holding size (Hectare)	-.654***	.218	-2.998	.003
Credit amount (MMK/hh/year)	.208**	.086	2.423	.015
Credit source (Number/hh)	2.365***	.515	4.591	.000
Regular health care household (D)	3.147***	1.165	2.701	.007
Intercept	-.800	3.548	-.225	.822
Chi-square				235.353
P-value				.003***

Note: Chi-square = 235.353, P-value= 0.003, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

\*\*\* and \*\* are significant level at 1% and 5% level respectively and ns= not significant

Household head gender- Female =1, other=0

Regular health care household - Yes =1, other=0

## CHAPTER VI CONCLUSIONS AND POLICY IMPLICATIONS

This chapter centres on the conclusions of the assessment and their implications from the impact of PACT microfinance program on the livelihood of rural households in Kyaukpadaung Township, Dry Zone Area. This study was done carefully within the limited timeframe based on both qualitative and quantitative data collected for the study. Based on the findings of the study, conclusion and policy recommendation can be drawn to highlight the important points especially for livelihood of rural households in the study area.

### **6.1 Comparison of Socioeconomic Characteristics and Livelihood of Participant and Non- participant Households**

According to the demographic and socioeconomic characteristic results, there were statistically significant differences between participant households and non-participant households. Most of the participant household heads in the microfinance program were younger and higher educational level than non-participants household heads. In case of occupation, households with household heads who had secondary occupation more participated in microfinance program than other households. Average family size, income earning family members, number of students and children schooling years of participant households were higher than that of non-participant households.

Majority of participant households were found as landless and small holder farmers. Therefore, households who actively involved in the microfinance program were mostly landless and small farm households. In the study area, labor migration situation of both households was rather high in internal migration. Nowadays, labor migration (internal (domestic) and international) was one of the key income sources for the households especially in the dry zone area.



Income was one of the most important indicators to measure socio-economic status of the people. In the study area, the main source of household income for both types of households was from crop. The second largest income source for participant household was non-farm labour income and that of non-participant household was remittance income. Although number of income sources for participant households was higher than non-participant households, the average per capita income was lower. It showed that most of the participant households depended on various jobs which gave some amount of money for their living.

In the study area, consumption expense of participant households and non-participant households were above 50 % of total expenditure. Hence expenditure on food was usually high and excessiveness on it will adversely affect the other sectors. In addition, expenditure on education was above 16% in both households. This reveals how difficult it was for household to spend on education in the study area. Moreover, it was also found that about half of both households' total income was not enough for household total expenditure.

According to UNDP poverty line 2010, participant households' poverty and food poverty status were more severe than non-participant households in the study area.

The households which took credit from only one kind of sources were more in non-participant households than in participant households. However, taking from two and three source of credit were more in participant households. Moreover, the amount of credit taken by participant households was two times that by non-participant households. This showed that participant household had more severe indebtedness in the study area.

In dealing with shock and coping strategy it was found that more participant households faced shocks and coped these shocks with different



ways. Among the coping strategies, borrowing money from relatives and friends, and selling of gold and household assets were the majority in both households. Such a response may save households in the short-run but may have undesirable long-term consequences.

## **6.2 The Effects of Microfinance Program on Participant Household's Livelihoods**

By investigating the progress of participant households after joining in microfinance program, part or all of the credit could be in their income generating activities such as agriculture fields, livestock rearing and small micro-enterprises purposes by more than half of participant households. However, the rest participant households used the credit for non-business purposes such as to buy food for the family, pay for debt, pay for health care and pay for their children education.

In this study, it can be seen that the participant households got several positive effects from the microfinance program as follow:

Based on participant household's response, about half of the households have increased incomes and improvement in their food intake. Another ways to explore the impact of program on household improvement were educational expense and housing improvement. About (45%) half of the participant households used more money for educational expense and improvements in the roof, floors, and wall only after they joined the program. Moreover, 50% of participant households' members got more job opportunities. They could afford health care regularly and more participated in social activities than before. Some participant's households established new business by using money which borrowed from microfinance program.

Nearly half of the participant households had repayment problems due to no regular income and short repayment period. Another problem was that some participants' households were not satisfied with current interest rate.



### **6.3 Factors Influencing on the Annual Household Income**

According to regression model result, the most positive influencing factors on annual household income were age of household head, number of family member, amount of non-farm income and farming households. It was also found that participation in PACT microfinance program led to increase household income but did not show significant effects.

### **6.4 Major Influencing Factors of Participating and Not Participating in Microfinance Program**

According to the research findings, it was evident that the main factors which determined the probability of a household to participate in a microfinance scheme were household head's gender, income earning family member, land holding size, amount of credit, number of credit sources and regular health care household.

Female headed households were more interested in microfinance program. Therefore this result was consistent with one of the criteria of microfinance program. Income earning family member was also significant with participation in microfinance program. And then, participation status was strongly and positively associated with credit amount and number of credit source. This finding was also consistent with descriptive results in this study. Based on these facts, it was concluded that households with more credit amount and source, more interested in microfinance program. Moreover household with regular health care practice was more interested in microfinance program. As, land holding size was negatively related with participation status, the larger the land holding size the less interested in PACT microfinance program.



## 6.5 Policy Implication

The results of this study confirmed many of the findings in the existing literature and offered some potentially new insights and suggested several lessons for the study of microfinance in general. Based on the findings of this study some recommendations are suggested as follow.

In the study area, participant household's heads were younger and higher education than non-participant household's head. In rural households, the higher the education level, the more potential to adopt the innovation. Therefore educating young generation is still needed to facilitate the technical adoption.

Crop income was the largest portion of the total household income in both households and second largest for participant households was non-farm labor income and for non-participant households was remittance. Moreover labor migration rate was relatively high in both households. So, programs on agricultural technology development and non-farm sector development should be accelerated simultaneously to increase the household income which can also reduce the migration rate in rural area.

At present situation, MADB and cooperative were major credit source for farming households and their interest rate were lower than other credit source. Therefore formal financial institutions should emphasize provision of loan not only on farming households but also landless households.

Although, poverty reduction program is implementing by means of microfinance program in the dry zone area, most of the households were situated below the poverty and food poverty line. Therefore it is pointed out that more effective poverty reduction programs should be performed in the study area.

In this study, there were three types of shocks faced by sampled households namely health shocks, social shocks and natural shocks. Among



them, health shock highly affected to participant and non-participant households. It showed that nutrition program which can relief health shock should be promoted in the long run for rural households.

In the selected area, although participant household's family members and income sources were higher, per capita income was lower than non-participant households. Rural households who had big family members earned significant income; they still relied on microfinance program. In addition, the sources of income did not influence the total household income. As a result, program on high income job opportunities which is demanding professional scales is essential to increase the rural household income significantly.

In this study, average credit amount and credit sources of participant households were higher than non-participant households. Although there were positive impacts of microfinance program in the study area, households with larger credit amount and more sources of credit were actively participating in the microfinance program. The indebtedness of participant households should be seriously taken into account and much more credit management training programs are urgently needed.

Although one of the objectives of PACT microfinance program was to create a sustainable microfinance institution by the member themselves, they could not implement this objective up to now. Improving the effect of PACT microfinance program on livelihood of rural people it is needed to resolve repayment and interest rate problems. Therefore, the State and microfinance institution itself should monitor and regulate the microfinance program to fulfill their vision and objectives, and encourage the program with flexible repayment schedule based on typology of households and reformulation of interest rate, etc.

## REFERENCES

- ABS (Australian Bureau of Statistics) 2005.** Statistical Year Book in Australia.
- ACTED and Banking with the Poor Network. 2010.** Microfinance Industry Report, Banking with the Poor in Collaboration with the Foundation for Development Cooperation, Myanmar. [http://www.bwtp.org/BWTP%20Network-ACTED%20Myanmar%20Microfinance%20Industry%20Report%20\(English\).pdf](http://www.bwtp.org/BWTP%20Network-ACTED%20Myanmar%20Microfinance%20Industry%20Report%20(English).pdf)
- Ahmed, F., C. Siwar & N. A. H. Idris 2011.** Microcredit's Contribution to the Socio-economic Development Amongst Rural Women: A Case Study of Panchagarh District in Bangladesh. American Journal of Applied Sciences Vol. 8, No.3, pp.238 - 245
- Ansera, A. 1996.** A Review of Approaches for Measurement of Microenterprise and Household Income, AIMS, USAID, Washington DC.
- Ashraf, N., X. Gine, & D. Karlan 2008.** Finding missing markets (and a disturbing epilogue): Evidence from an export crop adoption and marketing intervention in Kenya. Washington, DC: World Bank.
- Asiama, J.P. and V. Osei 2007.** Microfinance in Ghana: An Overview, Research Department Working Paper Bank of Ghana 07/01. Accra.
- Ayertey, M. N. 2008.** Microfinance and its impact on selected Districts in Eastern Region of Ghana, M.Phil (Thesis), Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.
- Barnes, C. 1996.** Assets and the Impact of Micro-Enterprise Finance Programs. AIMS paper. Washington DC: Management Systems International.



- Barnes, C. and J. Sebstad 2000.** Guidelines for Microfinance Impact Assessments: Washington, DC: Management Systems International.
- Barnes, C., E. Keogh, & N. Nemarundwe 2001.** Microfinance Program Clients and Impact: An assessment of Zambuko Trust Zimbabwe. Washington, DC: Assessing the Impact of Microenterprise Services (AIMS).
- Barnes, C., G. Morris, G. Gaile, R. Kibombo 2001.** The impact of Three Microfinance Programs in Uganda, Washington, DC: Development Experience Clearinghouse, USAID.
- Berggren, O. 2012.** The Impact of Informal Institutions on Microfinance Performance, Master Essay, Lund University.
- Chen, M.A. and D. Snodgrass 1999.** An Assessment of the Impact of SEWA Bank in India: Base line findings, USAID, Washington DC.
- Christen R.P., R. Rosenberg, and V. Jayadeva 2004.** Financial Institutions with a Double Bottom Line: Implication for the Future of Finance. CGAP Occasional Paper.
- Cohen, M. and D. Bourjorjee 2003.** The Impact of Microfinance: Donor Brief, CGAP. No.13.
- Coleman, B.E. 2001.** Measuring Impact of Microfinance Programs Finance for the Poor, Asian Development Bank, Vol.2 No. 4, pp.5-7
- Columbet, R. J. 2003.** Services: Concepts, Methods, Findings. IDS Bulletin, Vol. 34, No. 4, pp. 106- 114.
- Debadutta, K. P.2009.** Understanding Microfinance, Wiley India, New Delhi.



- Desilva, D. and N. Denby 1992.** Banking the Unbankable: Bring Credit to the Poor. Horizon India Books, New Delhi.
- Duflos, E. 2012.** Can Myanmar Leapfrog towards Financial Inclusion? CGAP Microfinance Blog.
- Duflos, E., P. Luchtenburg, L. Ren, and L. Y. Chen 2013.** Microfinance in Myanmar Sector Assessment. International Finance Cooperation. Advisory Services in East Asia and the Pacific.
- Dunn, E. 2002.** Research Strategy for the AIMS Core Impact Assessment, AIMS, University of Manchester.
- Dupas, P., & J. Robinson 2008.** Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya (Working paper no 14693). Cambridge, MA: National Bureau of Economic Research.
- Feder, G., L. J. Lau, J. Y. Lin, and X. Luo 1990.** The Relationship between Credit and Productivity in Chinese Agriculture: A microeconomic Model of Disequilibrium. American Journal of Agricultural Economics, Vol. 72. No.5: pp.1151-1157
- Ferka, A 2011.** The Impact of Microfinance on the Livelihoods of Women in Rural Communities: A Case Study of Jaman South District, M.Sc (Thesis) Kwame Nkrumah University of Science and Technology Ghana.
- Gaile, G.L. and J. Foster 1996.** Review of Methodological Approaches to the Study of Impact of Micro-Enterprise Credit Programs, AIMS, USAID, Washington DC.
- Greene, W. H. 2000.** Econometric Analysis. Fifth edition, Upper Saddle River, New York University, New Jersey.



**Gujarati, D.N. 2003.** Basic Econometrics. McGraw-Hill Higher Education  
United State Military Academy, West Point, USA.

[http://www.mm.undp.org/ihlca/01\\_Poverty\\_Profile/PDFs/12%20Poverty%20Profile\\_Complete%20Report.pdf](http://www.mm.undp.org/ihlca/01_Poverty_Profile/PDFs/12%20Poverty%20Profile_Complete%20Report.pdf)

<http://lift-fund.org/lift-in-action/content/liftbaseline-survey-results-2012>

<http://www.cgap.org/blog/can-myanmar-leapfrog-towards-financial-inclusion-0>

**IHLCA (Integrated Household Living Conditions Assessment). 2010.**  
Integrated Household Living Conditions Assessment Project,  
Terms of Reference. Yangon, Myanmar.

**Josily, S. 2006.** Women Empowerment through Microfinance in Dindigul District of Tamil Nadu, An economic analysis, M.Sc. Thesis, University of Agriculture Science, Dharwad, India.

**Khandker, S, B. Khalily and Z. Khan 1995.** Grameen Bank: Performance and Sustainability. World Bank Discussion Paper No. 306.

**LIFT. 2012.** Baseline Survey Results. LIFT, Yangon.

**Littlefield, E., J. Morduch, and S. H. Mesbahuddin 2003.** Is Microfinance an Effective Strategy to Reach the Millennium Development Goals? CGAP Focus Note.

**Moser, C. A. and G. Kalton 1971.** Survey Methods in Social Investigation, London: Heinemann.

**Nanor, M. A. 2008.** Microfinance and its Impact on Selected Districts in Eastern Region of Ghana. M.Sc. Thesis, College of Art and Social Sciences, Kumasi: Kwame Nkrumah University of Science and Technology.



- Nem Nei Lhing 2009.** An Impact Assessment of the Performance of PACT Microfinance Program on Rural Households. M.Sc.Thesis,Kyushu University, Fukuoka, Japan.
- Otero, M. 1999.** Binging Back Development in Microfinance. Journal of Microfinance, Vol. 1, No.1, pp. 8-19
- Panda, D.K. 2009.** Understanding Microfinance. Wiley India Pvt. Ltd, New Delhi.
- Robinson, M. 2001.** The Microfinance Revolution: Sustainable Finance for the Poor. World Bank, Washington DC.
- Rutherford, S. 1995.** The Poor and Their Money. An Essay about Financial Services for Poor People. Institute for Development Policy and Management. University of Manchester,
- Rutherford, S. 1996.**A Critical Typology of Financial Services for the Poor.ACTIONAID Working Paper No. 1
- San San Aye 2011.** A Study on PACT/Myanmar Microfinance Project in Ayadaw Township, Journal of Economics , Monywa University Vol.5, No.1,pp 27-47.
- Schreiner, M. 2001.** Seven Aspects of Loan Size. Journal of Microfinance, Vol.3, No.2, pp. 27- 47
- Takamatsu, K. 2012.** Family and Poverty Eradication in Developing Countries: Roles and Functions of Family in Myanmar. International Journal of Public and Private Healthcare Management and Economics, Vol. 2, No.4, pp 54-66.
- Tun Tun Naing 2011.**Assessment of Microfinance Groups in Myanmar. M.Sc. Thesis,Asian Institute of Technology, School of Environment, Resources and Development, Thailand.



**UNDP (United Nations Development Program). 2012.** Integrated Household Living Conditions.

**UNOPS (United Nations Office for Project Services). 2005.** Sustainable Microfinance to Improve the Livelihoods of the Poor Project: Myanmar, MYA/01/004, Bangkok.

**Wooldridge, J. M. 2000.** Limited Dependent Variable Models and Sample Selection Corrections. In: Introductory Econometrics: A Modern Approach. South Western College Publishing, USA, pp 529-569.

**World Bank 2002.** World Development Indicators. The World Bank, Washington, D.C.

**Wright, G. 2000.** Dropouts amongst Uganda MFIs. Published in Who Needs Credits?

**Yazar Hein 2012.** Impact of Microfinance on Climate Resilience and Livelihood Security of Rural Households in Pakokku Township. M.Sc.Thesis, Yezin Agricultural University, Myanmar.



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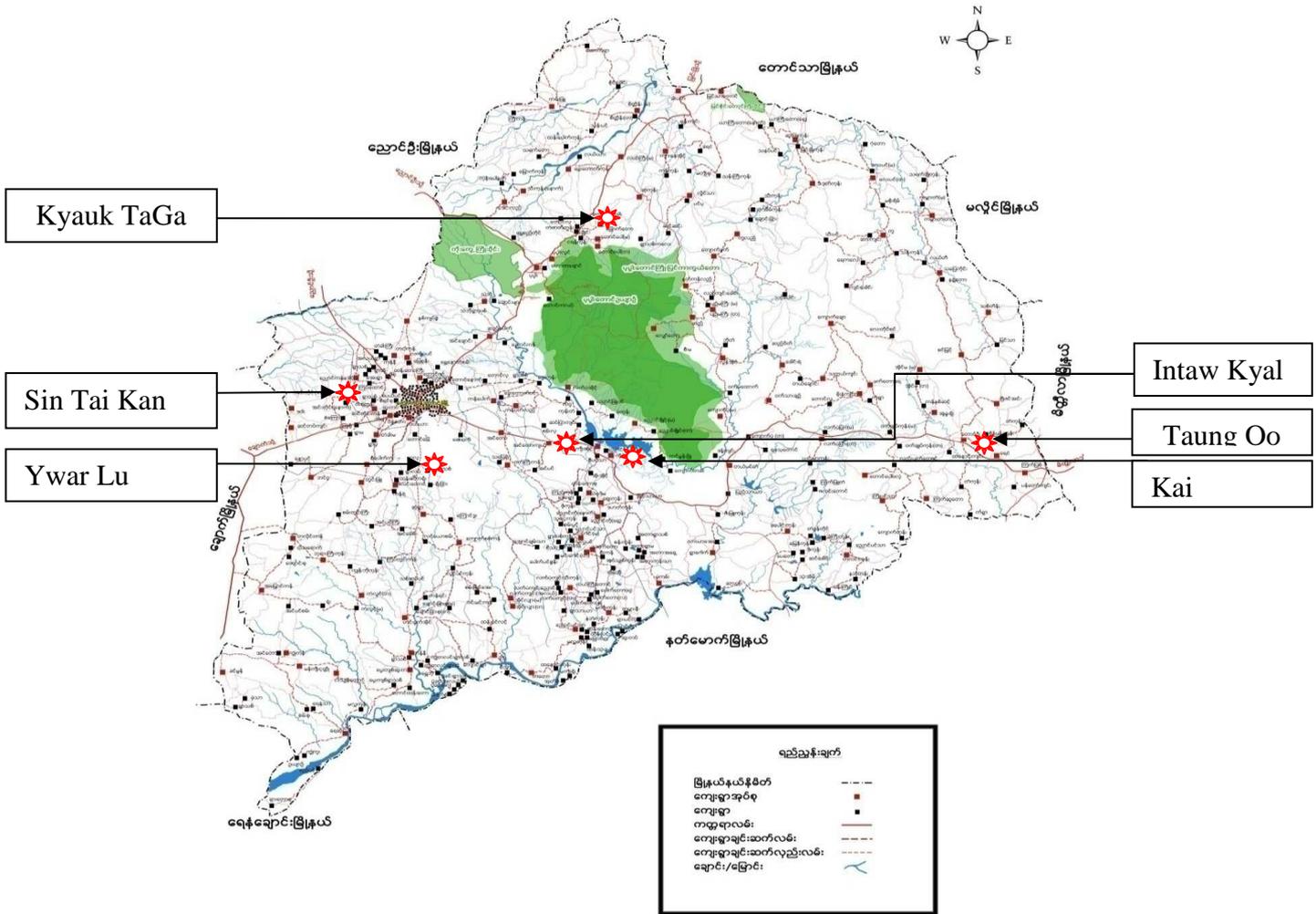
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# APPENDIX



Appendix 1 Map of the Survey Area of the Kyaukpadaung Township



*Photo: Farm in Pwintphyu Township, taken by TheingiMyint*