

## CHAPTER 6

### THE QUALITY OF LIFE OF FARM HOUSEHOLD

Microfinance not only has an objective to be a financial resource for its members, but it also helps improve the life of poor households. This chapter will discuss the quality of life of farm households using the Human Development Index or HDI from UNDP as an indicator. It will also discuss factors that influence the quality of life using the data derived from 399 household members from a total of 100 microfinances.

#### 6.1 The Household quality of life

There are ten indicators of the quality of life of the farm households who are microfinance members as follows: four Economic indicators, one Food indicator, two educational indicators, and three accommodation indicators. The following is the presentation of the survey to show the household the quality of life in aspects previously mentioned, respectively.

##### **Economic Aspect**

There are four economic indicators: income, saving, total property value, and debt value. By average, a microfinance household has an income of about 250,825.48 baht/household/year, savings of 102,093 baht/household, property value at 464,386.40baht/household and debt at 79,405.56 baht/household. Data of both types of microfinance farm household indicate that the credit union households have higher average incomes, savings and property values than the ones from the

production groups. Household belonging to credit union have a higher average income the production group members by around 20,715 baht or 8.75%. The average savings of the credit union household members are higher than production groups at around 129,873 baht by 214.92 %, roughly three times greater. On average, the credit union household's property value is higher than the other group by around 5,436 baht or 1.17% while the debt value of the credit union household is lower than the production group at around 38,103 baht or by 41.58%. These figures show that the economic status of the credit union households is generally higher than that of the production group (Table 6.1).

#### **Food Aspect**

According to the Food and Agriculture Organization of the United Nations (FAO), Food security typically indicates a household's ability to provide safe and sufficient food to fulfill the dietary needs of the household's members including the ability to access its source as well. However, in this study, food security means a household's ability to have sufficient food for its members measured by food value calculated from raw products and average purchase (baht). The data found that the average of a household's food value was around 157,057 baht per household per year. The credit union's household food value averaged 164,139 baht/household/year. It is higher than the production group's household, whose food value averaged approximately 153,712 baht/household/year (Table 6.1), which shows that the credit union's household food security is only a little higher than that of the production group.

### **Educational Aspect**

Education is an essential factor in the development of quality of life. According to the survey of both of microfinance's household members, their education levels are similar. About 50% of them finished compulsory education, 25% finished lower than the compulsory education, and who those finished higher than the compulsory education was at 25% (Table 6.1). This shows that households of both types of microfinance have education levels from minimum to higher than the compulsory education.

### **Housing Aspect**

Housing is one of the four essentials important to a human's well-being. The data shown in the survey, show that the microfinance household has an average living space of 33 sq.m/person. The credit union's household has an average of 44 sq.m/person for living space, which is higher than the production group with a living space of around 27 sq.m./person. This goes along with the fact that the credit union households are doing better than those of production group economically. Moreover, the data also show that there are 398 households or 99.75 % of the total household who own their houses. All of the credit union households have their own houses, and only one production group household (Or 3.36% of the production group households) rents a house from a relative. In the housing security aspect, it is found that there are 307 microfinance households or 76.94% of the total households. The production group households have a little higher housing security than the credit union members by 77.37% to 76.61% (Table 6.1).

**Table 6.1** Average and proportion of the sample households with different indicators.

Security	Indicators	Production group household	Credit union household	Overall
Economic	Average income (baht)	236,756.17	257,470.76	250,825.48
	Average saving (baht)	60,429.41	190,302.87	102,093.08
	Average property (baht)	462,642.53	468,078.49	464,386.40
	Average debt (baht)	91,629.15	53,525.94	79,405.56
Food	Food value calculated from raw products and purchase (baht)	153,711.61	164,138.98	157,056.73
Education	Lower than compulsory education (%)	25	25	25
	Compulsory education (%)	50	50	50
	Higher than compulsory education (%)	25	25	25
Housing	Average living space (sq.m/person)	27	44	33
	Own their house (household)[%]	274[96.64]	124[100.0]	398[99.75]
	Housing security (household)[%]	212[77.37]	95[76.61]	307[96.94]

Source: Survey and calculation.

Note: [ ] is percentage.

## 6.2 Value in each of the index

The measurement of the Microfinance agricultural household's quality of life needs to have an index as a standard point to divide different levels of quality of life.

The values come from the calculation of the index (shown in equations 3.13-3.15)

which leads to the following conclusions:

### Value of economic security index

From the calculation, it is found that the values of the indicators of economic development consist of savings, assets values, and liabilities, which equal to 0.063, 0.007, 0.033 and 0.949, respectively. When calculating these points to measure the values of quality of life on the economic security index, the average is 0.6008 and the

deviation standard is 0.0620. When using these to calculate according to the above formula, the basis standard point was arrived at to group quality of life in Table6.2. However, when the values are used to measure the agricultural household, it is found that there are only 0.50% of the household with a high level of quality of life, while households with a medium level of quality of life are up to 90.98%. This indicates that most farmer families have a medium quality of life as their income and savings levels are close to their level of debt.

#### **Values of the food security index**

The indicator of food security has a single element, the food value calculated from food production and purchasing. The calculation shows that values of indicators of quality of life concerning food security's mean and standard deviation equal to 0.0392 and 0.0672, respectively. When calculating these values according to the above formula, the value to be used as criteria to group the quality of life was arrived at in Table6.3. However, when using this value to sort the agricultural households, it is found that the quality of life of all families is in moderate - high and none of them has a low level at all. The highest percentage (95.24) of them has a moderate quality of life nutritionally. It means they have a sufficient amount of food for household consumption only, and no household is short of food at all. The remaining 4.76 % of farm households have a high level of food security, which means that they have enough food both for storage for next year and for sharing with others as well.

#### **Value of the education security index**

The calculation showed that the value of indicators for the quality of life in education security averages 0.3560 and standard deviation is equal to 0.1305. When

calculating these values according to the above formula, the value to be used as criteria to group the quality of life on the economic aspects in Table 6.3 was arrived at, identifying the farming households. The greatest percentage (73.43) has medium security, while 14.4% has a high security level, and 12.53% had a low education security level. The above analysis shows that the majority of farm households have at least finished compulsory education or higher. Only a few of them have finished lower than the compulsory education.

#### **Value of the housing security index**

Housing security index has three sub-components: home ownership, housing stability and living space. The values of the indicators from the calculation were 0.9962, 0.5401 and 0.0785, respectively (Table 6.2). The values of the indicators of quality of life in housing security have an average value of 0.7607 and standard deviation at 0.0870. After calculating these values according to the above formula, the value was used as criteria to group the quality of life on the economic aspects on the Table 6.3. When using this value to group the farmer households, it is found that the highest percentage (68.42) have a moderate quality of life on housing security which is a modest living space. The house is mostly a half brick and a wood house or wood house with a high basement, which is moderately strong. The next group has a high level of quality of life in housing security at 31.08% with a lot of living space. Their housing is buildings which are very strong. Only 0.50% have a low quality of life. The living areas of the houses are quite small and crowded. The houses are wooden but not very strong. The results of the analysis indicate that most farmers have housing security, that is, they own their houses, live in a stable house and have adequate space for the use of members of the household.

### The total Value of the quality of life of farm household index

The calculations show that the total values of the indicators of farmer's quality of life was 0.5683 and standard deviation was at 0.0452. After calculating these values according to the above formula, the value was used as criteria to group the quality of life on the economic aspects on Table 6.3. When using this value to group the farmer households, it is found that the highest percentage at (70.43) have a moderate quality of life, and 22.31 % have a high level of quality of life, while only 7.26 % a low level.

These analysis results can be concluded that most farmer households have a moderate quality of life.

**Table 6.2** Average of the indicator's components in each aspect.

Security	Component of indicator	Average values of the component	Values of the security indicator
Economic aspect	Income	0.0635 [0.0733]	0.6008 [0.0620]
	Savings	0.0068 [0.0506]	
	Assets	0.0329 [0.0615]	
	Debt	0.9492 [0.1072]	
Food aspect	Have sufficient food	0.0392 [0.0672]	0.0392 [0.0672]
Education aspect	Lower than compulsory education	0.2209[0.1848]	0.3560 [0.1305]
	Compulsory education	0.3130 [0.1503]	
	Higher than compulsory education	0.2832 [0.2344]	
Housing aspect	Housing Ownership	0.9962 [0.0569]	0.7607 [0.0870]
	Housing security	0.5401 [0.3662]	
	Living space	0.0785 [0.0948]	

Source: the calculation.

Note: [ ] is standard deviation.

**Table 6.3** Value of the indicator of each aspect and proportion of farm household.

Indicator	Value of indicator	Criteria of life quality	Meaning	Percentage
Economic security	$\bar{X} = 0.6008$ S.D. = 0.0620	Value higher than 0.6628	High	0.50
		$0.5387 \leq \text{value} \leq 0.6628$	Moderate	90.98
		Value less than 0.5387	Low	8.52
Food security	$\bar{X} = 0.0392$ S.D. = 0.0672	Value higher than 0.1063	High	4.76
		$-0.0280 \leq \text{Value} \leq 0.1063$	Moderate	95.24
		Value less than -0.0280	Low	0.00
Education security	$\bar{X} = 0.3560$ S.D. = 0.1305	Value higher than 0.4865	High	14.04
		$0.2254 \leq \text{value} \leq 0.4865$	Moderate	73.43
		Value less than 0.2254	Low	12.53
Housing security	$\bar{X} = 0.7607$ S.D. = 0.0870	Value higher than 0.8477	High	31.08
		$0.6737 \leq \text{value} \leq 0.8477$	Moderate	68.42
		Value less than 0.6737	Low	0.50
Total farmer's quality of life	$\bar{X} = 0.5683$ S.D. = 0.0452	Value higher than 0.6135	High	22.31
		$0.5231 \leq \text{value} \leq 0.6135$	Moderate	70.43
		Value less than 0.5231	Low	7.26

Source: the calculation.

### 6.3 The quality of life of the microfinance farm household

When using the analysis results of quality of life of the farm households above (Table 6.3) to each microfinance, it is found that 88.93% of the production group households have moderate economic security and 11.07% have a low economic security, and none has a high level of security. While 95.31% of the credit union households have a moderate level of economic security, and 3.13% have a low level of security, only 1.56% have high economic security. It is also found that households with low economic security would have a lower income and savings than debts, while



the ones with high economic security would have more income and savings than debts (Table 6.4).

In terms of food security, it is found that most (94.83%) of the production group households have a medium level of food security, and the rest, (5.17%), have a high level of food security. At the same time, the credit union households mostly have a medium level of food security at 96.09 %, and the rest, (3.91%) have a high level of food security. The comparison of households from both types of microfinance is similar. It is to be noted that none of the households, from either microfinance, do not have sufficient food for the consumption for their household needs. When considered as a whole, the households from both types of microfinance's food security level is as a percentage of 95.24 of the total (Table 6.4).

Regarding education security, it is found that most households have a medium level of security in both of the microfinances. They have studied in compulsory education at a percentage of 73.43 of the total households, followed by a high security level, which means higher than compulsory, at 14.04% and the low level, which is lower than compulsory education, at 12.53%. When considering each type of microfinance, it is found that the production group households have a medium level of education security at 75.28%, followed by the low-level security at 12.55%, and the high level at 12.18 %. In comparison households in the credit union have mostly middle level of education security at 69.53%, followed by a high security level at 17.97% and a low level of education at 12.50%. It is found that the proportion of households in both groups have mostly moderate – high levels of education security at a similar percentage of 87.50 (see Table 6.4).

In regards to housing security, most microfinance household's housing security level is moderate. They own their housing at a percentage of 68.42 of all households, followed by a high level of stability in housing which means that the building is strong, and the land is not mortgaged at a percentage of 31.08. The group that has a low level of security (as they do not own their housing) is at 0.50%. When considering the different types of microfinances, it is found that the production group households mainly have medium housing security at 70.48%, followed by a high level of residential security at 28.78 percent and a low level of residential security at 0.74%. The households from the credit unions have a mostly moderate level in the residential level at 64.06%, followed by high-security housing accounting for 35.94 % of households and none with a low-security level at all. When comparing the two types of households, the ratio was found to be similar (Table 6.4).

When considered as a whole, it is found that most households have a moderate quality of life, 70.43 % of all households, followed by a high level of quality of life at percentage of 22.31 and 7.26% for the low quality of life. When considering by the type of microfinances, it is found that the production groups, households have mostly a moderate level of quality of life at a percentage of 69.74, followed by a high level of quality of life at a percentage of 21.77, and the remaining percentage of 8.49 for the low level ones. The credit unions households have a moderate level of the quality of life with an overall average percentage of 71.88, followed by a high quality of life of 23.44 percent and a low quality of life in comparison to 4.69%. When comparing between the two types of households, it is found that the proportion of the credit union households' overall quality of life in the moderate - high level is higher than that of the production group (Table 6.4).

**Table 6.4** The number of farm household grouping by the level of security and type of microfinance.

Aspect	Level	Type of the microfinance					
		Production group		Credit union		Total	
		Number	Percentage	Number	Percentage	Number	Percentage
Economic	High	0	0.00	2	1.56	2	0.50
	Moderate	241	88.93	122	95.31	363	90.98
	Low	30	11.07	4	3.13	34	8.52
Food	High	14	5.17	5	3.91	19	4.76
	Moderate	257	94.83	123	96.09	380	95.24
	Low	0	0.00	0	0.00	0	0.00
Education	High	33	12.18	23	17.97	56	14.04
	Moderate	204	75.28	89	69.53	293	73.43
	Low	34	12.55	16	12.50	50	12.53
Housing	High	78	28.78	46	35.94	124	31.08
	Moderate	191	70.48	82	64.06	273	68.42
	Low	2	0.74	0	0.00	2	0.50
Overall quality of life	High	59	21.77	30	23.44	89	22.31
	Moderate	189	69.74	92	71.88	281	70.43
	Low	23	8.49	6	4.69	29	7.26

Source: The calculation.

Note: The number in ( ) means percentage.

#### 6.4 Comparison between the data and the values of indicators in different aspects

From the data in Table 6.4, when considering the level in each security aspect and comparing to each indicator, it is found that the households with high economic security have the highest average income compared with the ones with moderate and low level which is 626,100baht/household. While the household with a moderate level

of security has an average income of 242,155baht/household, and the one with a low level of quality of life has the lowest income at average of 32,131baht/household, which is 19 and 7 times lower than the ones with a high and moderate qualities of life, respectively (Table6.5).

While the savings of the households with high qualities of life is average 7,604,000baht/household, the ones with moderate and low levels of quality of life are on average 64,603 and 61,057baht/household, respectively. When comparing these figures, it is found that the savings of the households with high quality of life is 118 and 125 times higher than the ones with moderate and low levels respectively. The savings of the household with moderate and low qualities of life are similar (Table6.5).

In the average assets, it is found that the households with high economic security have an average level assets per household at 2,043,450baht, while the ones with a moderate and low level have similar assets at 487,593 and 453,512 baht/household, which is 4.19 and 4.5 times higher than households with moderate and low qualities of life respectively (Table 6.5).

However, when considering the debt aspect, it is found that the households with high economic security have the lowest debt at an average of 35,000baht/household, while the ones with moderate and low levels have average debt of 41,671 and 453,512baht/household, respectively. The average debt is 484,888 baht/household (Table 6.5). Furthermore, it is noteworthy that households with high and moderate qualities of life have similar amounts of debt. However, households with low quality of life have 14 and 12 times higher average debt levels than the ones with high and medium levels quality of life, respectively.

**Food Aspect**

Considering the levels of food security in each indicator, it is found that the households with high food security have average food value calculated from raw food products and the purchases per household are at 980,016 baht/household, which is higher than for a household with a medium level by around 8.45 times, without any households with low food security. In general, the value is based on an average equal to 157, 056 baht per household (Table 6.5).

**Education Aspect**

Concerning education, households with high education security have a proportion of lower than compulsory education: equal to compulsory education: higher compulsory education (as a percent) at 25:50:25, which have the same proportion as households with moderate security. While households with low education security have such accounts as 33.33:55.56:11.11 percent, which represents lower than compulsory education higher than the households with high and moderate education (Table 6.5).

**Housing Aspect**

Considering the housing aspect, it is found that households with high housing security and high quality of life have an average living space of 35 square meters/person which is higher than the ones in the medium and low levels with living spaces of 32 and 12 square meters/person, respectively. However, when considering ownership of housing, it is found that the households with high security own their house at an average of 31.8% of all households. 68.42% of the ones with high housing security and moderate quality of life own their house, at while only 0.25% of households with low housing security own their house. When considering the

indicator of housing stability, families with a high housing security level have a housing stability at percentage of 8.31, the households with moderate housing security at percentage of 45.86, and the ones with a low level of security with a housing stability at 6.23% (Table 6.5). The results from the above analysis shows that farmers who are members of a microfinance have housing security.

**Table 6.5** The average and proportion of the indicator data by the level of the indicator values in each aspect.

Security	Indicator	Level of the indicator value			
		High	Moderate	Low	Overall
Economic	Average income (baht)	626,100	242,155	32,131	250,825
	Average savings (baht)	7,604,000	64,603	61,057	102,093
	Average assets (baht)	2,043,450	487,593	453,512	464,386
	Average debts (baht)	35,000	41,671	484,888	79,406
Food	Food value calculated from average raw product and purchase (baht)	980,016	115,909	0	157,056
Education	Lower than compulsory education (%)	25	25	33.33	25
	Compulsory education (%)	50	50	55.56	50
	Higher than compulsory education (%)	25	25	11.11	25
Housing	Living space ownership (sq.m/person)	35	32	12	33
	House (household)	124	273	1	398
	Housing security (household)	124	183	92	399

Source: the calculation.

## 6.5 Factors affecting quality of life of farm household

Microfinances are small financial institutions established by farming communities to raise funds and manage the funds for the members to invest in the agricultural sector. The farmers should be able to increase their production resulting in increased productivity and income. Furthermore, it is a knowledge center of the financial management of the household which is likely to affect the quality of family life for the better. The review of the literature found that the quality of life of the

households depends on factors such as the age and gender of the head of the household and the length of time of their farming career. There are also the qualitative factors of the household such as the variable portion of the savings, amount of the loan, the knowledge of money management, as well as the fact that if the state does not intervene in the operations of the group, all of these will likely help their quality of life improve. Therefore, the analysis in this section is to analyze the relationship between the level of productivity of farm households ( $TE_F$ ), the level of effective implementation of the microfinance institute ( $TE_{MFI}$ ), including the factors of characteristics of the household head (gender (SEX), age (AGE), Experience in farming (FARMEX)), the household accounting (HAC), type of microfinance of which a household is a member ( $D = 0$  refers to the production group,  $D = 1$  refers to a credit union group), and quality of life of farm households in each level, which is the model Order Probit.

In this analysis, the variables of gender (SEX) and farming experience (FARMEX) are left out. These variables are correlated with the variable of age (AGE) in high levels (greater than 0.5). The analysis found that the efficiency of a farm household ( $TE_F$ ), age of household head (AGE), and the household account (HAC) can describe the quality of life of a farm household with a statistical significance at 0.05, 0.05 and 0.10, respectively. When considering the marginal effect, it is found that there is only one variable that affects the quality of life of families, which is the age of household head (AGE). It affects the quality of life of households, which can increase potential for the quality of life to be higher by 0.45% and decrease the opportunity to be at a moderate to low level of quality of life 0.02% and 0.25%, respectively. this is a result of the older head of the household who would

have accumulated knowledge and experience to improve the quality of life for themselves and their families.

Changes in the productivity of farming households (TEF) will result in changes to the quality of life of households. Farmers will have the opportunity of having a high quality of life ( $Y = 2$ ) at a percentage of 12.80 and opportunities to low and moderate quality of life decreased to 5.68 and 7.12 percent, respectively, concluding that farm households with higher productivity will result in a better quality of life for farmers.

This corresponds to the cycle of poverty in that the cause of poverty is caused by low levels of investment due to the low level of savings resulting in low productivity, low consumption and low savings as well. In the end, this results in a lower quality of life.

Therefore, the farmers who are supported financially will increase their investment, thus resulting in higher productivity and consumption as well as amount of savings.

The living standards of the farmers will then be better. This is consistent with the findings of Aree Wiboonpongse et al. (2006).

Creating a household account (HAC), is a method of sufficient living. When a household knows their economic status and modifies their spending and investment, this results in a better quality of life. The evidence is from the marginal effect on the chance that a farmer will have their quality of life's percentage increased to 6.40, compared with households that did not do household accounts, which makes it more likely that the quality of life will decline to low and moderate to 3.19% and 3.21%, respectively. This is consistent with the data of the 288 farm households who did the household accounts which accounted, for 72.18 percent of all farm households. 268 of them have a moderate to high quality of life, representing 67.17 percent of all farm households, or 93.06 percent of the total farm households who do household accounts.



This shows that creating a household account improves living standards of agricultural households. The results are also consistent with the results of the study of Aree Wiboonpongse et al. (2012), which states that a household account (HAC), which is a sufficient way of living, helps households to know their economic status and modify their spending and investment. This results in a better quality of life.

Another variable, the type of microfinance, also affects the farm household member's better quality of life. That is, if you are a member of credit union, the opportunity to have a high quality of life will increase by 3.54% compared with the production group households, and decrease the chance to have a low or moderate quality of life by percentage of 1.50 and 2.04, respectively. This is a result of the credit union being sponsored by private businesses which support benefits to enhance the quality of life of its members. Moreover, credit unions also have a wide variety of loan types such as emergency loans to resolve initial trouble, ordinary loans to build or develop a career, and special loans which put emphasis on building or buying residential property. All of these affect the quality of life. The production groups have no such welfare and has both less types and amounts of lending than credit union.

However, although this study hypothesized that the variable on the performance of the microfinance ( $TE_{MFI}$ ) will affect the quality of life of the farmers significantly, the analysis' finding is that the variable on the performance of the microfinance does not affect the quality of life of the farmers significantly. This is consistent with the findings in chapter 5 which found that the performance of a microfinance does not affect the productivity of a household ( $TE_F$ ) or the quality of life of the farm households. This also is consistent with the results in chapter 4 that showed the microfinance's role, of which effects on the agricultural investment is low. If they

increase their role in the agricultural investment in production, product processing and marketing, the operational efficiency of the microfinance would affect the quality of life of farm households through the production efficiency of the household.

**Table 6.6** The analysis results of the relationship of the level of farmer's quality of life.

Variable	Coefficient	Statistic T	Marginal effect		
			Y= 0	Y= 1	Y= 2
Constant	0.3730	0.9940			
TE <sub>MFI</sub>	0.0170	0.0860	-0.0022	-0.0028	0.0050
TE <sub>F</sub>	0.4354**	1.9310	-0.0568	-0.0712	0.1280
AGE	0.0154**	2.3030	-0.0002	-0.0025	0.0045
HAC	0.2268*	1.6100	-0.0319	-0.0321	0.0640
TYPEM	0.1183*	1.6580	-0.015	-0.0204	0.0354
Mu1( $\sigma$ )	0.3730	20.174			
McFadden Pseudo R-squared			0.02242		
log likelihood function			-301.169		
restricted log likelihood			-308.077		
Chi squared			13.81606**		

Source: the calculations.

Note: 1. \*\*\* Significant level 0.01 \*\* Significant level 0.05 and \* Significant level 0.10

2. Y = 0 low quality of life level, Y = 1 moderate quality of life level, Y = 2 high life quality level.

Even though the effectiveness in productivity and the household account of the farm household affect the increase of the quality of life, such a model can only describe only 2.24% of the total quality of life. This shows that there are other factors that influence the farmer's household quality of life such as the fertility of the farmland and the government's policy on agriculture and education. However, the results of the study has shown that if microfinance would pay more attention to their role in agriculture investment, including giving knowledge on effective money management in a household, their efforts will certainly result in improving the farm household's life quality.