

CHAPTER 4. CREDIT UTILIZATION AND MANAGEMENT

Credit is defined as unused borrowing capacity or the difference between maximum potential borrowing and amount already loaned (Baker et al., 1981). If the difference is positive, as in the case of a credit unconstrained borrower, credit reserve exist which can be an important source of household liquidity when cash demands vary (Gustafson, 1989). Also typical under a diverse small farm environmental setting, is that farmers who are credit constrained, borrow at capacity and still desire to borrow more. This type of credit demand behavior was also observed in the study area.

Loan funds obtained from credit are versatile and can be spent for a variety of purposes either related or unrelated to farm operation. Any of these forms of spending is greatly influenced not only by the cash requirement of the crop under cultivation, but also by the liquidity position of the farm-household at the time of borrowing. Hence, some empirical evidences are presented in the foregoing discussion to better understand how credit money from the formal source is actually used and managed by farm borrowers in both cropping systems.

4.1 Distribution of Farm Borrowers

From Table 6, it shows that in the province, 75.36 percent of farm borrowers were from the soybean-based system, indicating that

farmers in this crop has the greater tendency to borrow money for farm operation as compared with rice which was only about 34 percent. Although in terms of number of borrowers, rice-soybean system has the highest figure, but if we look at the total number of borrowers in each crop, our earlier contention still stands that in soybean system, farmers' propensity to borrow is seemingly greater.

Farmers normally borrow money for inputs e.g. fertilizer, pesticides, labor and other material cost. Most farmers have reserved seed from previous harvest, hence, spending part of the credit money for seed procurement was not predominant, except, for few cases in soybean cultivation. Those who availed for medium and long term loan, used a greater portion of the credit money to finance farm improvement such as irrigation and land development.

In terms of borrowings across districts, Chomtung has about 50 percent of the borrowers for rice cropping system, while for soybean, a high percentage of farm borrowers were observed in Doi Tao, about 45 percent (Table 7). In Hangdong and San Patong where rice-soybean system is predominant, farm borrowings were not as high as in the former two districts. Presumably because farmers in these areas can not only produce relatively higher yield due to better irrigation infrastructure, but also has good off-farm income opportunities and access to the market, making them less likely prone to shortage of capital. Doi Tao for example, which is the farthest district with poor soil type and with less develop farm infrastructures, is one of the most depressed area in the province (Table 8). With low and unstable yield, farmers demand for liquidity would understandably be greater than those economically better-off areas.

Table 7. Distribution of farm borrowers in the study area, CY 1990 - 1991

Districts	Cropping systems					
	Rice-soybean		Rice		Soybean	
	Number of borrowers	%	Number of borrowers	%	Number of borrowers	%
Hangdong	15	23.81	6	26.1	10	19.23
San Patong	18	28.57	3	13.04	3	5.77
Chomtong	24	38.1	12	52.17	15	28.85
Doi Tao	6	9.52	2	8.69	24	46.15
Total	63	100	23	100	52	100

source : formal survey

Table 8 . Per capita income classification and farm topography of poor areas* / in Chiang Mai Province ,1990

Income classification	Districts	General Farm topography
I. (< 3000 bht)	Doi Tao, Sa Moeng, Hod, Doi Saket and Om Koi	undulating to hilly land type(rainfed)
II. (3001 - 4000 bht)	Mae Ai	-same-
III. (4001 - 5000 bht)	Chomtong	plain to undulating rainfed land type

*/ All other districts not in the table have per capita income greater than 5,000 Bht. which is the upper income bracket considered as poor areas. It should be noted that Chomtong and Doi Tao have an actual per capita income of 2,400 Bht. to 350 Bht. respectively .

Source: Office of Agricultural Economics, 1991

4.2 Factors Influencing Farmer's Borrowing Decision

Table 9 shows rice and soybean farmers in Doi Tao have an average farm income of Bht. 1,090.50 and Bht. 865.32 respectively, which is at least 50 percent lower than in San Patong and Hang Dong area. It also shows differences in farm yield specially in rice, across areas. This points the fact that, in Chomtong and Doi Tao, not only is the income low, but also the yield per unit area particularly for rice, as well. These differences in farm production and income therefore, explain the major influencing factor why farmers from the first two districts (Hangdong and San Patong), tend to be less constrained with liquidity.

In the case of rice for example, yield is relatively higher and stable in areas with sufficient irrigation source (Hangdong and San Patong) than in the rainfed uplands of Chomtong and Doi Tao where yield performance is low and unpredictable. Considering that this crop is generally for consumption-oriented cultivation across districts, then the need for farm credit in poorer areas could be quite higher.

One primary factor influencing farmers' borrowing across cropping system was low interest rate. Contact with extension officer (Kaset tambol) and access to BAAC loan promotion were considered secondary factors (Table 10). This could be expected considering that BAAC has either a full time branch banking or office in every district (Figure 2) and road infrastructure are more developed in most districts. In fact there are more farmers borrowing directly to BAAC than with the BAAC-sanctioned credit cooperative because of lower interest charges.

Table 9. Average yield and net farm income of rice and soybean cropping systems across four districts in Chiang Mai Province, crop year 1990-1991

Districts	Yield (kg/rai)		:	Income (Bht./rai)	
	Rice	Soybean	:	Rice	Soybean
Hangdong	708.04	207.51		2328.00	1854.42
San Patong	590.89	197.13		1728.84	1836.43
Chomtong	474.69	204.08		1508.11	1277.96
Doi Tao	442.15	213.68		1090.50	865.32

Table 10. Ranking of factors influencing farmers to borrow from the formal source in Chiang Mai Province, crop year 1991-1992

Factors	Cropping systems					
	Rice-Soybean		Rice		Soybean	
	Percentage of farmers responding according to the rank (%)	Rank	Percentage of farmers responding according to the rank (%)	Rank	Percentage of farmers responding according to the rank (%)	Rank
Previous experience	17.94	4	--	--	--	--
Success of relatives and friends	23.85	2	32.3	3	23.08	3
Low interest	55.94	3	20.07	1	19.28	1
Advice from extension worker and from the bank	41.27	1	64.44	2	44.83	2

Multiple responses

Note : These percentages are computed on the basis of the number of times that a given factor was chosen for a corresponding rank across respondents.

Rice-soybean system which is basically grown in well developed areas, access to bank and extension officer were considered primary factors influencing formal borrowings, while success of relatives and friends were considered secondary. This could be due to the relative accessibility of the banks (BAAC and other commercial banks) in the area and a well established marketing network because of its proximity to Chiang Mai city. Interest rate was revealed third among the factors (Table 10).

4.3 Extent of Formal Credit Constraint

During the conduct of the survey a series of questions were designed in order to permit an important answer on whether the respondent is credit constrained or credit unconstrained. Borrowers were asked whether at the going market rate of interest and the amount they have borrowed, would they still want to borrow more than the amount they were actually granted? Non-borrowers were also asked of the reason for not borrowing. The most common reasons for not borrowing were availability of sufficient owned resources, fear of not being able to pay back and credit limit imposed by the bank. The borrowers who indicated a desire to borrow more and non-borrowers who could not obtain credit were classified as credit constrained. Furthermore, information such as available owned money for soybean and rice cultivation, amount of liquid assets of the farm household including bank deposits were also considered in finally classifying the respondent farmer.

As shown in Tables 11a to 11c, 33 percent of the total respondent farmers for rice-soybean system, 56 percent for soybean and 36 percent for rice in the study area, were credit constrained. A high percentage of about 41 percent of the farmers in rice-soybean classified as credit constrained, were in San Patong. Chomtong and Doi Tao had the highest percentage of credit constrained farmers in soybean; 64 percent and 67 percent respectively.

Finally, 45 percent and 43 percent of rice farm-household classified as credit constrained are in Hangdong and San Patong respectively. The figures in these Tables imply that if rice or soybean is cultivated either in Doi Tao or Chomtong, the chances are that farmers are more credit constrained than in Hangdong and San Patong. This behavior reinforces earlier hypothesis that differential access to farm infrastructure, market and physical land types are some of the important influencing reasons.

Table 11a. Extent of formal credit constraint of rice-soybean farmers from four districts in Chiang Mai Province, crop year 1991-1992

Category	: Hangdong		: San Patong		: Chomtong		: Doi Tao		: Total	
	: No of HH	: % const.	: No of HH	: % const.	: No of HH	: % const.	: No of HH	: % const.	: No of HH	: % const.
Borrower	15	33.33	18	55.55	24	33.33	6	33.33	63	39.68
Non borrower	15	20	21	28.57	11	27.27	4	25	51	25.5
Total	30	26.66	29	41.03	35	28.57	10	30	114	33.33

total respondents = 114

Table 11b. Extent of formal credit constraint of soybean farmers from four districts in Chiang Mai Province, crop year 1991-1992

Category	: Hangdong		: San Patong		: Chontong		: Doi Tao		: Total	
	: No of HH	: % const.	: No of HH	: % const.	: No of HH	: % const.	: No of HH	: % const.	: No of HH	: % const.
Borrower	10	30	3	66.66	15	68.42	24	70	52	61.53
Non borrower	3	0	4	50	6	50	4	50	17	41.18
Total	13	23.07	7	57.14	25	64	24	66.67	69	56.52

total respondents = 69

Table 11c. Extent of formal credit constraint of rice farmers from four districts in Chiang Mai Province, crop year 1991-1992

Category	: Hangdong		: San Patong		: Chontong		: Doi Tao		: Total	
	: No of HH	: % const.	: No of HH	: % const.	: No of HH	: % const.	: No of HH	: % const.	: No of HH	: % const.
Borrower	6	33.33	3	33.33	12	58.33	2	100	23	52.17
Non borrower	3	60	4	50	28	14.28	6	50	43	27.91
Total	11	45.5	7	42.86	40.0	27.5	8	42.5	66.0	36.36

total respondents = 66

Looking at other indicators of classification, it was found out that the liquidity positions of credit constrained farm household were 33 percent and 38 percent lower than the credit unconstrained farm households for rice and soybean respectively. The average liquidity for credit constrained farm household was Bht. 21,141.10 for rice and Bht. 19,699.40 for soybean. All have no deposit in financial institution, which is consistent with intuitive expectations.

4.4 Credit Needs for Farm and Non Farm Operation

Over all, formal and informal sources does not directly compete with each other in the agricultural credit market of the study area. Table 12 shows that informal loans are basically intended for non farm related spending, except for few cases when it is provided by relatives or friends, interest-free. We can deduce from this situation that formal and informal loans do not have direct substitutability with each other. The highest spending for informal loans was for medicine and other emergencies like funeral , etc. This was about 40 percent of the reported informal loans. Medical expenses absorbed the next highest spending about 29.41 percent.

Table 12. Distribution of loan purposes by type of lender for rice and soybean cropping systems in Chiang Mai Province, crop year 1990-1991

Loan sources	Respondents (n)	Farm Prodn.	% Farm	Farm Equipt.	% Farm	House const. and improv.	% House const. and improv.	Food	% Food	Medicine & etc.	% Medicine & etc.	Education etc.	% Education etc.
Formal	148	104	70.27	7	4.73	8	5.4	2	1.35	1	0.68	34	22.97
Informal	51	4	7.8	1	1.96	3	5.88	8	15.68	20	39.22	15	29.41

During the interview, the farmer respondents were also asked to indicate some of the farm and non-farm activities they desire to be provided with credit assistance. Figures 4 and 5, show the primary and secondary credit needs for farm activities across crops. Farm cultivation was a dominant primary credit needs for all cropping

Figure 4. Primary credit needs for farm activities

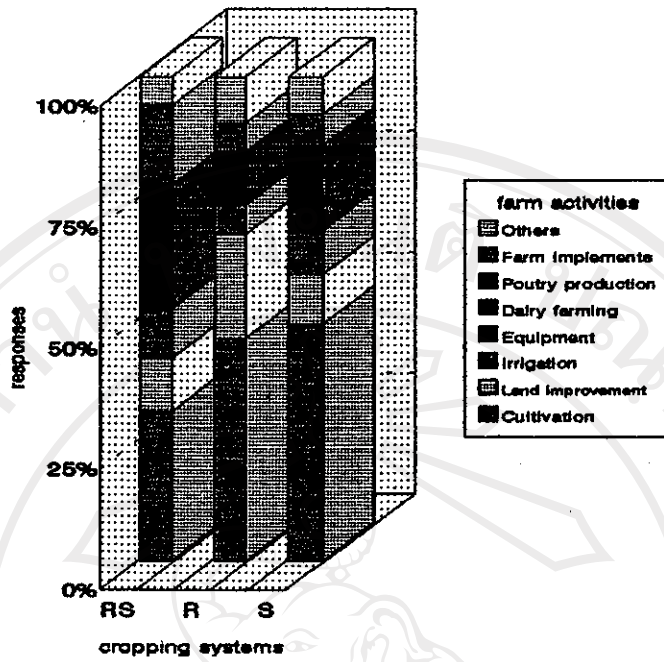
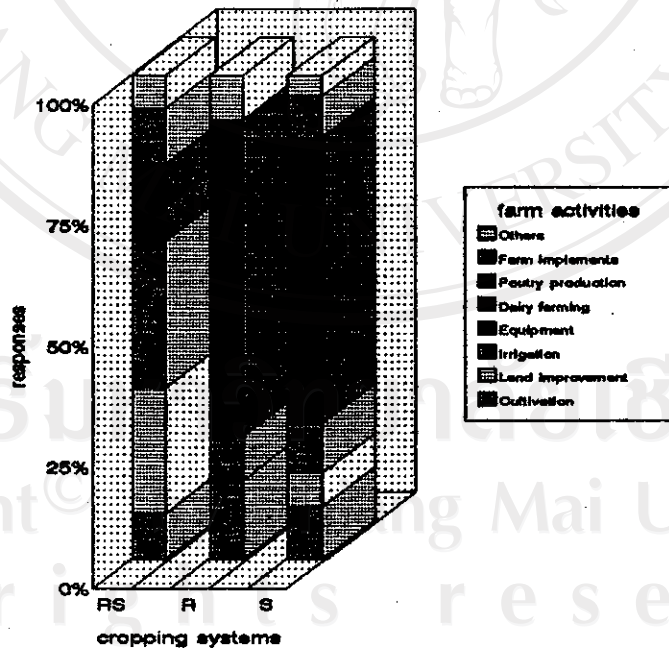


Figure 5. Secondary credit needs for farm activities



systems, while for secondary credit needs was more vary across cropping systems. Poultry and dairy farming were more preferred secondary credit needs for rice and soybean farmers while loans for land improvement and irrigation was identified to be important in rice-soybean systems.

These differences in ranking and preference could be due to the variations in land types and other physical characteristics of each district. Hangdong and San Patong with better location and many farmers cultivate rice-soybean system, decisions on their traditional cropping system depend much on the certainty of water availability which have been noticeably dwindling this past few years. In fact some farmers were forced either to fallow or plant non-traditional crop such as watermelon or muskmelon because of water problem.

Those rice farmers who considered equipment loan as secondary need and soybean farmers for dairy or poultry farming were mostly from Chomtong and Doi Tao respectively. Due to their uneven and undulating land topography and purely upland condition (in the case of Doi Tao), these types of credit needs are expected to have priority consideration among the farmers in these areas.

For non-farm credit needs, primary consideration ranges from consumption to house repair across cropping system. Farm products trading and other merchandising operation were considered secondary credit needs (Table 13). Amount of credit needs desired ranges from Bht. 3,000.00 to Bht. 45,000.00 for farm activities and Bht. 5,000.00 to Bht. 75,000.00 for non-farm activities.

Table 13. Ranking of credit needs for non-farm activities
in Chiang Mai Province, crop year 1991-1992

Benefits	Cropping systems					
	Rice-Soybean		Rice		Soybean	
	Percentage of farmers responding according to the rank (%)	Rank	Percentage of farmers responding according to the rank (%)	Rank	Percentage of farmers responding according to the rank (%)	Rank
Buy and sell	38.89	2	33.33	2	33.33	3
Consumption	17	1	37.04	1	50	2
House repair	33.33	3	--	--	23.81	1
Transport	--	--	--	--	--	--
Others	8.12	4	--	--	3.47	4
Multiple responses						

4.5 Credit Repayment Situation

About 80 percent of the farmers have no outstanding debts from the bank. Outstanding debts in this study, is defined as unpaid loans after maturity, normally after one year. Table 14 shows that on the average only about 68 percent of the farmers across cropping system pay their loans after harvest. Rice, registered the lowest repayment rate after harvest, at 31 percent. In other cropping systems, repayment rate after harvest ranges from 79 percent (rice-soybean) to 91 percent (soybean). The reason for this, is that, for rice being intended for home consumption, the farmers have the tendency to wait for his cash

crops to be harvested in order to pay the loan. Also, because of unstable price faced by rice farmers, they would be more inclined to wait for a favorable price. Unlike in soybean for example, where cultivation is market-oriented and has a relatively stable price, more farmers would likely sell their crop after harvest thereby raising the needed cash to pay for the loan.

Table 14. Percentage of farmers paying their loans after harvest in Chiang Mai Province, crop year 1991-1992

Pay after harvest	Cropping Systems		
	Rice-soybean	Rice	Soybean
	(%)	(%)	(%)
Yes	78.99	31.25	90.9
No	5.88	31.25	1.51
Not regular	15.33	37.5	7.56
Total	100 n = 119	100 n = 48	100 n = 66

Table 15 shows that in case of crop failure, restructuring of loans seems to be the common practice requested by farmers from the bank to get over with their indebtedness. Partial payment was also done by others as next option if the farm household still has enough money for the next operation. Selling of asset was ranked last in their option. However, if cash shortage occur due to either, their owned money or credit money is not enough for farm operation, farm household across cropping systems considered securing money from relatives as their first option. Formal lending was considered as the next alternative source (Table 16).

Table 15. Farmers source of money to pay for the loan in case of crop failure in Chiang Mai Province, crop year 1991-1992

Source	Cropping systems					
	Rice-Soybean		Rice		Soybean	
	Percentage of farmers responding according to the rank (%)	Rank	Percentage of farmers responding according to the rank (%)	Rank	Percentage of farmers responding according to the rank (%)	Rank
Restructure the loan	44.87	1	35.26	1	40.84	1
Partial payment	40.01	2	41.18	2	30.31	2
Borrow from relatives	33.93	3	38.5	4	28.92	3
Sell assets	48.48	4	28.08	3	41.18	4
Multiple responses						

Table 16. Distribution of farmers source of money for farm operation in case of cash shortage in Chiang Mai Province, crop year 1991-1992

Sources	Cropping systems					
	Rice-soybean		Rice		Soybean	
	Number of household	%	Number of household	%	Number of household	%
Relatives	52	43.70	31	64.58	30	45.45
Friends and neighbors	11	9.24	5	10.42	10	15.15
Bank/ Cooperative	42	35.29	8	16.67	14	21.21
Sell assets	2	1.68	0	0	0	0
Off-farm jobs	1	0.84	0	0	1	1.51
none	11	9.24	4	8.33	11	16.67
Total	119	100	48	100	66	100

4.6 Farmers Perception and Credit Use

Irrigation water source is considered by farmers as an important factor in their farming activities across cropping systems. In rice and soybean cropping systems, it is evident from the ranking that marketing and irrigation are more urgent than credit. This rank of third or fourth for credit is understandable because the latter two (product market and irrigation) are preconditions for active credit market. Unlike in Hangdong and San Patong areas where rice-soybean system is predominant, better land types, predictable irrigation source and accessible market for farm products, could obviously enhance the relative importance of credit .

Table 17. Ranking of major factors in farm activities in Chiang Mai Province, crop year 1991-1992

Farming factors	Cropping systems					
	Rice-Soybean		Rice		Soybean	
	Percentage of farmers responding according to the rank (%)	Rank	Percentage of farmers responding according to the rank (%)	Rank	Percentage of farmers responding according to the rank (%)	Rank
Technology	50	4	40	4	33.33	3
Credit	11.36	2	36.36	3	18.75	4
Marketing	33.33	3	45.45	2	55	2
Irrigation	73.33	1	61.54	1	75	1

Multiple responses

Table 18 suggests that availing of credit assistance is perceived by farmers as an important support in increasing crop yield and production potential of the farm. In fact between 35 to 40 percent of the farmers who availed of loan from three cropping systems reported that it had improved the farm household's capacity to buy household assets e.g. appliances (Table 19). Although about 17 to 23 percent of the respondent farmers in Chomtong and Doi Tao in rice and soybean system said that farm credit did not significantly help their farm households at all. This could be due to the poor land type they have and less accessible to market centers.

In order to evaluate the extent of fungibility of credit money, farmers were also asked about some important details of their actual use of loan. The result showed that on the average borrowers actual hired labor expense was about Bht. 3,212.46 per farm for rice and Bht. 4,381.53 per farm for soybean. If we consider an average formal loan per farm household of Bht. 6,556.04 for rice and Bht.9,128.02 for soybean, the average hired labor expense figure would only be equal to about 49 percent and 48 percent respectively. For fertilizer, pesticides and other input account, each farm borrower, on the average, spent about Bht. 639.00 per farm for rice and Bht. 738.40 per farm for soybean or about 25 percent and 30 percent of the average loan respectively. From these figures an estimated 25 percent of the average loan money for rice and 22 percent for soybean is either used for indirect farm expenses or totally diverted to other non-farm household expenditures.

Table 18. Ranking of farmers perceive benefits in utilizing farm credit in Chiang Mai Province, crop year 1991-1992

Benefits	Cropping systems					
	Rice-Soybean		Rice		Soybean	
	Percentage of farmers responding according to the rank (%)	Rank	Percentage of farmers responding according to the rank (%)	Rank	Percentage of farmers responding according to the rank (%)	Rank
Increase yield	48.67	1	34.44	1	57.89	1
Increase production capacity	90.62	2	83.33	2	85.18	2
Improvement in technology	83.33	3	--	--	--	--

Table 19. Farmers perception of the way the loan has helped their farm household in Chiang Mai Province, crop year 1991-1992

Farmers perception	Percentage of farmers responding (%)		
	Rice-Soybean	Rice	Soybean
Higher level of education	9.51	11.51	13.96
Improved time of recreation	23.71	15.68	8.47
Improve ability/capacity to buy appliances and other assets	42.31	34.48	37.46
It did not help at all	12.24	17.23	22.75
No comment	12.23	21.1	17.36
Total	100 n = 183	100 n = 58	100 n = 91

Multiple response

4.7 Highlights

One of the relevant points that had been emphasized at this stage is that, soybean farmers had the greater tendency to borrow comparably with others. From these farm-borrowers, more than 50 percent are from Doi Tao and Chomtong with per capita income considered poor. Although farmers borrow both formal and non-formal sources, but production loans were 75 percent of the formal indebtedness. Low interest rate was the main motivation for borrowing.

More than 40 percent of the farm borrowers across two crops in the province are credit constrained. About 56 percent of them are from the soybean cropping system. Average formal borrowings was highest in soybean. Labor and other inputs absorbed about 75 percent of the average formal credit. The rest are spent in non-farm related spending. Stability of output price and orientation of cultivation were likely to influence higher loan repayment after harvest for soybean than rice. Overall credit assistance is perceived as yield increasing support in their farm operation.

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