

Credit for Rice Farmers: A Study in Takeo Province¹

Introduction

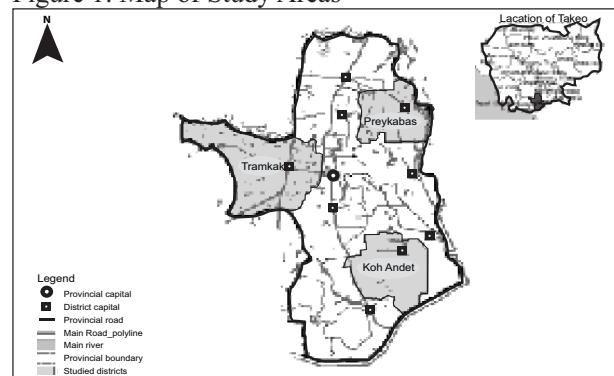
Lack of access to both working and investment capital by farmers is the major factor hindering transition from low-input agricultural systems to more productive ones (ACI 2005). Microfinance has boomed in Cambodia (CAM 2011), yet the outreach to smallholder farmers remains limited mainly due to risks posed by insecure land tenure and uncertain returns to on-farm investment. Meanwhile, rice productivity in Cambodia is significantly constrained by low application of agricultural inputs, i.e. fertiliser, mechanisation and irrigation (ACI 2005; World Bank 2007). Easing access to rural credit would be a significant step forward for agricultural development. Understanding the pattern of credit access and the way it affects rice farmers' loan decision could usefully inform policy options to improve the viability of rural credit delivery.

The hypothesis is that ready access to credit raises rice farmers' productivity and farm income, thus improving the well-being and reducing the vulnerability of rural households. This study seeks to (1) understand the patterns and characteristics of credit access of different farmers, (2) investigate the impact of credit on farmers' livelihood and production systems, (3) identify challenges and opportunities for successful credit utilisation, and (4) provide key options for improving credit access and promoting successful farm credit utilisation.

Rice Farming Systems in Takeo Province

There are two main rice-farming systems in Takeo province: lowland non-irrigated and lowland irrigated (UNCDF 2011). Four districts, namely Kirivong, Koh Andet, Borei Chulsar and Angkor Borei, lead in dry season rice production due to their favourable natural endowments, i.e. secure water supply and proximity to the border with Vietnam where farmers can readily access agricultural inputs and markets. The total cultivated area of 248,228 ha is made up of about 9139 ha irrigated land, 97,505 ha flooded

Figure 1: Map of Study Areas



Source: Constructed by author using national census map (NIS 2008)

rice and the remainder is non-irrigated land used for other crops. Average yield in 2011 was 2.53 tonnes per ha for wet season rice and 3.3 tonnes per ha for dry season rice. Total rice production in the same year was 1,105,031 tonnes with reported surplus of around 800,000 tonnes, equal to 17.61 percent of the country's total rice surplus (UNCDF 2011).

Rice farming in Takeo is transforming from traditional subsistence farming to commercialised farming (Oveson *et al.* 2012). This is evidenced by gradual replacement of traditional inputs with fertiliser, pesticides and mechanisation in the wet season, irrigated farming in the dry season, and the cultivation of fast growing high-yielding varieties (UNCDF 2011). Market demand for rice export to Vietnam is one of the main drivers of commercial rice farming in Takeo. Other contributing factors include availability of water and irrigation facilities, access to farm production technology and inputs (seeds, fertilisers, pesticides, credit), and increased agricultural mechanisation.

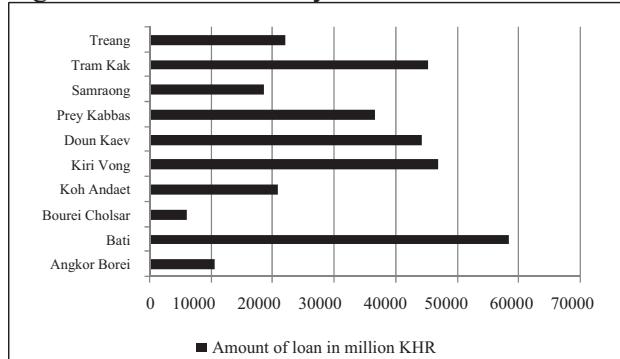
Key Findings

Credit Outreach

Both formal and informal credit is available in Takeo. Ten microfinance institutions (MFIs) currently operate in the province, covering all 10 districts. The number of MFI borrowers totalled 116,695 in 2011, but as Figures 2 and 3 illustrate, the distribution between districts varies widely, reflecting population density, economic diversification and agricultural production (CMA 2011). Most farming in the province is subsistence-based. Majority of people do not use credit to invest

¹ Prepared by Kem Sothorn, Research Associate, Poverty Agriculture and Rural Development Programme. This article draws on Case Study 4 of the ACIAR Project (ASEM/2009/023) "Developing Agriculture Policies for Rice-based Farming Systems in Laos and Cambodia" due to be completed in May 2014.

Figure 2: Size of Loans by District



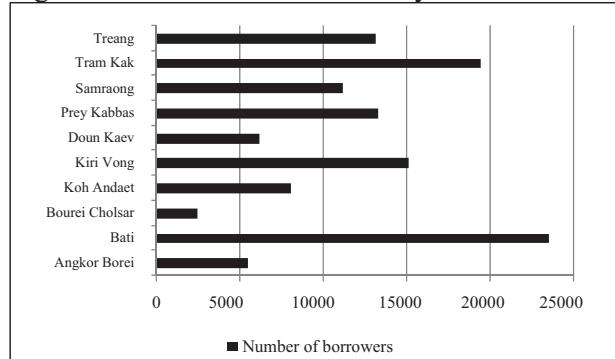
Source: CMA database 2011

in agriculture; instead, they take out loans for other purposes such as business expansion, migration and buying household assets. Around 70 percent of borrowers prefer small loans of USD250 to USD1500. Bati and Tramkak districts have the highest number of borrowers; however, the greatest demand for agriculture loans is from commercial rice producers in Angkor Borei, Bourei Cholsar, Kiri Vong and Kaoh Andet districts, which reportedly have the highest number of farmers accessing credit for irrigated rice production.

Several studies (see for example, Kim 2001 and Phlong 2009) highlight the important role of social networks in enabling farmers to access financial services. Most smallholders prefer to obtain credit from local (informal) moneylenders (Figure 4) because the system is flexible and no collateral is required. The average interest rate charged is 10 percent per month, three times higher than that charged by MFIs. Despite lower interest rates, several factors inhibit smallholder farmers from using MFI loans. First, lack of collateral is the biggest constraint as 57 percent of farmers in Takeo have less than one ha of land. Second, the poor's extreme vulnerability to both idiosyncratic and covariant² shocks impedes them from forming groups to access loans. Third, high risk of crop failure means MFIs are reluctant to extend loans to subsistence farmers. And lastly, farmers lack the necessary technical knowledge and entrepreneurial skills to secure and use loans effectively.

Semi-commercial rice farmers cultivate both wet and dry season rice for household consumption and for sale. They rely on local input suppliers (in-kind loans) or local moneylenders and MFIs for capital.

Figure 3: Number of Borrowers by District

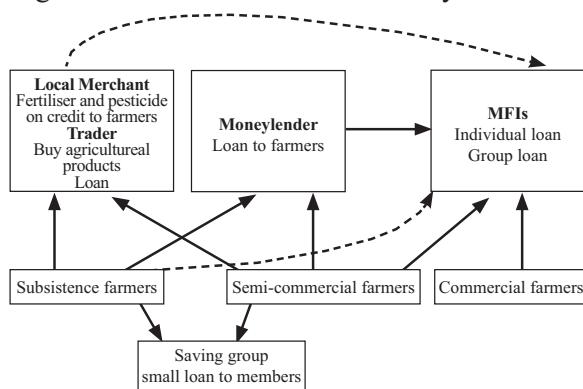


Source: CMA database 2011

On average, farmers apply 100 kg of fertiliser per hectare, equivalent to 21 percent of total input cost. They use MFI loans to hire agricultural machinery for dry season rice production, equal to 38 percent of total input cost. Loan sizes are usually modest—around USD250 to USD500—because most landholdings are too small to offer sufficient collateral to secure larger loans. This suggests that the credit farmers are able to access is less than actual demand. The cost of fertiliser and pesticide inputs for dry season rice farming is seven times higher than for wet season rice farming, claiming 32 percent of total output. Lack of capital forces farmers to buy inputs on credit from local suppliers at a monthly interest rate of 5 percent (Table 1). High input costs, volatile rice prices, exorbitant interest rates and inability to access medium size loans squeeze semi-commercial rice farmers' profit margin. Gross profit is USD277 per hectare for wet season rice and USD540 per hectare for dry season rice. Low agriculture income also suggests farm households' modest living conditions and limited ability to cope with shocks.

Commercial farmers cultivate dry season rice exclusively for sale (Table 2). They use MFI loans to cover all production expenditure. Most farmers

Figure 4: Pattern of Credit Access by Rice Farmers



² Idiosyncratic shocks affect some individuals or households but not others; covariant shocks affect many people at the same time.

Table 1: Production Costs of Semi-commercialised Rice Farming ('0000 riel per hectare)

Type of cost	Wet season rice			Dry season rice		
	Amount ('0000 riel)	% of input	% of output	Amount ('0000 riel)	% of input	% of output
1. Inputs						
Land preparation	16	13	7	36	11	6
Seed	7.5	6	3	36	11	6
Hired labour	35.2	30	15	0	0	0
Chemical fertiliser	24.5	21	11	129	37	23
Pesticide	0	0	0	50	15	9
Irrigation water	30	25	13	64	19	11
Threshing	6	5	3	28	7	6
Total input costs	119.2	100	52	343	100	61
2. Gross margin	110.8		48	215	0	39
3. Output: paddy production	230		100	558		100

Source: Data from field interviews (May 2012)

hold 3-4 ha of land that allows them to obtain MFI loans of USD1000 to USD1500, though some use their own capital. The cost of production is USD772 per ha, equivalent to 65 percent of total outputs. Farmers grow IR rice varieties which yield an average of 6 tonnes per ha. After harvest, farmers can make on average USD427 per ha. But the rush to repay MFI loans to avoid interest charges together with expenditure on machinery hire and irrigation force farmers to sell their rice immediately after harvest, preventing them from taking advantage of higher rice prices in the wet season. Credit seems to be much more viable when invested in commercial rice farming. Access to credit connects farmers to markets, agricultural inputs and physical infrastructure supports, and enables them to optimise benefits from natural endowments. This combination of enabling factors enhances rice productivity in the province and significantly contributes to farmer livelihood improvement.

Impact of Credit on Rice Farmers' Livelihood

The chance of loans successful use in subsistence rice production is slim due to binding constraints

Table 2: Production Costs of Commercialised Dry Season Rice Farming ('0000 riel per hectare)

Type of cost	Dry season rice		
	Amount ('0000 riel)	% of input	% of output
1. Input			
Land preparation	28	9	6
Seed	21	7	4
Hired labour	0	0	0
Chemical fertiliser	46	15	10
Pesticide	130	42	27
Irrigation water	56	18	12
Threshing	28	9	6
Total input costs	309	100	65
2. Gross margin	171		35
3. Output: paddy production	480		

Source: Data from field interviews (May 2012)

in the agriculture sector, i.e. lack of infrastructure supports, high input costs and insufficient collateral, risk exposure and vulnerability of farm households, limited opportunity for income diversification and rice price volatility. However, credit could have a more positive impact if smallholders use it for more productive non-farm purposes. In focus group discussion (FGD), some farmers who had used loans to diversify their income source by investing in non-farm activities reported having increased their household assets and food security. Ultimately, broader access to rural credit should contribute to gradual improvement in smallholders' livelihoods and build their resilience to shocks.

The impact of loan use on semi-commercial rice farmers' livelihood is uncertain, mainly because low agricultural diversification heightens the risk of production failure. Whether loan use has positive or negative outcomes depends on farm profit, which in turn depends on uncertainties such as rice price fluctuations and the weather. In 2012, for example, the rice price dropped from 1200 riel to 700 riel per kg, reducing farm net profit to just USD328 per ha. In such a situation, access to microfinance could actually worsen farmers' livelihoods and push them into deeper indebtedness. Nonetheless, access to capital can help accelerate the shift from subsistence production to commercial farming.

Greater presence of MFIs has led to the expansion of commercial agricultural production in Takeo province. Credit, together with irrigation and access to markets and agricultural technology, enhances the yield in commercial rice farming. Further, farmers reported increased household assets, better housing conditions, more mechanisation, better education for children, and improved food security as result of higher farm profit. However, rising production costs

and rice price volatility might negatively affect farm income. In addition, there have been reports of more frequent pest infestation and pollution from intensive pesticide use. This in turn could have environmental consequences that threaten the quality of farming systems. It is also likely that heavy use of pesticides not only increases production costs but also affects farmers' health, which will lead to higher health expenditure.

Challenges and Opportunities for More Viable Credit Use

The study findings highlight several challenges and opportunities for more viable credit use; these are summarised below:

Challenges

- **High interest rates:** MFIs charge around 30 percent interest per year in order to cover operational costs and maintain financial sustainability; many still depend on outside investors, while low domestic savings remain a barrier to lowering the interest rate in the near and medium term.
- **High farm production costs:** high input costs, particularly low quality fertilisers and rising cost of mechanisation due to the soaring fuel price, continue to hinder overall long-term agricultural growth, not just rice production.
- **Trade-off between better credit outreach and MFIs' financial sustainability:** the need to ensure maximum returns to loans by carefully assessing potential clients means that MFIs' effectively screen out smallholder farmers with no collateral and the poor who tend to be highly vulnerable. Some MFIs such as CREDIT and Vision Fund have developed a special loan package (with capital support from donors) for this particular group of people.
- **Lack of land titling and entrepreneurial skills:** without a formal land title, farmers have no collateral and therefore cannot access formal credit. To date, 273,253 plots of land have proper titles (MLMUPC 2011); however, there is no available data on the proportion of titled land to total landholdings. In the FGDs, some farmers implied that they could not access microfinance because their land lacks formal title, while others who could access finance lacked the entrepreneurial skills to use loans efficiently and effectively.

Opportunities

- **Lower interest rates:** MFIs are likely to cut interest rates on loans in the future due to two major factors: competition among MFIs, and increasing local savings/deposits. MFIs aim to reduce the interest rate to 1 percent per month, though this will depend on the amount of savings deposited.
- **Rice export:** increasing global food demand plus government policy to promote rice export is driving rice sector growth. Government efforts to improve agriculture sector infrastructure, such as irrigation facilities and the road network, and increased private sector investment in rice milling and storage will boost production, facilitate trade, ensure local markets and stabilise rice prices.

Policy Options

Drawing on the study findings, we recommend that policy decision making and planning consider the following options:

- **Accelerate land titling:** the Land Management and Administration Project (LMAP) is processing more land titles, but the needs of small farmers and the poor need to be further prioritised.
- **Invest in agricultural infrastructure:** long prioritised by the government to improve productivity and reduce production risks, further investment in infrastructure to support subsistence farming is needed; greater private sector involvement in the rice sector through contract farming could be encouraged; small and medium-scale rice milling will secure market demand for rice and smooth rice price fluctuations.
- **Provide more extension services:** demonstrating improved cultivation methods to farmers could help increase productivity and farm income; with the benefit of business skill training, farmers would stand a better chance of using MFI loans more efficiently and successfully. NGOs' and development partners' could integrate these measures into their development programmes.
- **Expand Social Protection Programme:** especially vulnerable to shocks, the poor commonly resort to loans when their income is stressed despite the high risk of falling even deeper into indebtedness; increased investment in the Social Protection Programme would help reduce risk and vulnerability among the poor and protect them from falling into debt.

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