SOUTHEAST ASIAN STUDIES

CONTENTS

Savings Groups in Laos from a Comparative Perspective
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Introduction:
Savings Groups in Laos from a Comparative Perspective

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Poverty-lending Approach vs Financial Systems Approach

Delivering financial services to the rural poor in developing countries is believed to be a costly business. This is because it entails high transaction costs and a perceived high risk due to various reasons that range from the relatively high demand for small loans to precarious livelihoods and the paucity of financial institutions in these areas, which makes for low deposit capability. In addition, formal laws are insufficient in terms of the protection of property rights of privately held collateral. These circumstances compel formal financial institutions to hesitate to provide sufficient services to the rural poor.

Micro-finance Institutions (MFIs) are thought to be the best alternatives to extending loans to the rural poor who are living under the above-mentioned circumstances. A large part of the literature on MFIs has centered on their effectiveness with respect to poverty alleviation from the perspective of the poverty-lending or credit-led approach. Bangladesh's Grameen Bank is the most notable MFI along this line.

The poverty-lending approach, however, has invited a twofold criticism: financial unviability and limited MFI outreach. First, in what Vogel (1984) referred to as the forgotten half of rural finance, MFIs generally do not provide services for savings primarily due to the misconceived belief that the rural poor are unable to save because of their poverty, and thus, do not respond to savings products. This absence of savings services jeopardizes the financial viability and sustainability of MFIs. Further to this point, most MFI programs incur large loan losses and require frequent capital injections from external organizations. The extensive presence of rotating savings and credit associations (ROSCAs) in the rural areas of developing countries, however, suggests that the low-income people are capable of savings.[1] As Rutherford (2000) claims, the rural poor in

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1) In Laos, ROSCAs called "*houei*" can be widely observed in rural areas.

developing countries have a monetary surplus albeit a limited one. Second, targeting the rural poor and placing a heavy reliance on external organizations for loan funds leads to the problem of poor outreach in terms of the narrow segment of the social strata that is serviced and the limited areas in which these services are provided.

This signifies the need for financial systems or a savings-led approach that emphasizes a commercial financial intermediary between cash-surplus and cash-deficit households through the provision of savings services (Rhyne 2001). Robinson (2001) referred to the shift from the poverty-lending approach to the financial systems approach as being a micro-finance revolution. She claims that "large-scale sustainable micro-finance can be achieved only with a financial systems approach" (*ibid.*, 2).

Savings groups (hereafter SGs) epitomize this revolution. SGs have numerous similar forms under different names in different places, such as credit unions, credit cooperatives, savings and loans cooperatives, accumulating savings and credit associations, self-help groups, village banks, self-reliance village banks. Though they have distinct features, taking a blanket interpretation, we define the SG as a member-owned-and-governed financial institution whose funds are contributed almost solely through the internal mobilization of members' savings under the principle of savings-before-credit. Thus, the SG performs as a financial intermediary among the members within a village community. SGs and credit unions are customarily differentiated in Thailand and Laos in that the former are officially registered savings groups. Thus, SGs are often regarded as semi-formal financial institutions. Though we follow this definition, the two terms are used interchangeably.

MFIs in developing countries are mostly operated under the principle of the poverty-lending approach, whereas there are only a handful of MFIs that employ the financial systems approach. In addition, so far only a few research attempts have been made on the ongoing SGs in developing countries. This special issue attempts to provide empirical evidence on how the SGs of the Lao People's Democratic Republic (hereafter Laos) serve the needs of rural people and the factors that facilitate or hinder the growth of these groups.

Savings Group Movement in Laos

Laos is primarily an agricultural economy with over three quarters of the total population currently living in rural areas. Since becoming liberalized under the New Economic Mechanism in 1986, the Lao economy has shifted from a socialist economy toward a market-based one. Creating rural financial markets is one of the central mechanisms of

policy interventions aimed at moving the economy through a process of becoming a market-based economy. In 1993, the Lao government established the Agricultural Promotion Bank (APB) as a state-owned bank tasked with extending financial services to rural households by offering subsidized loans for agriculture. However, the APB branch network has remained extremely poor. It also reportedly suffers from high non-performing loans (ADB 2006). To compensate for the insufficient outreach of the APB, the MFIs have taken an active role in rural areas in Laos.

Among the various MFIs in Laos, the SGs initiated by the Foundation for Integrated Agricultural and Environmental Management (FIAM: a Thai NGO) hold a unique position in rural finance. A joint project of the FIAM and Lao Women's Union (LWU) to form SGs marked the first organized movement of this kind. It took place under the auspices of the Small Rural Development Project for Women (SRDPW). In 2002, another SG movement commenced under the Women and Community Empowerment Project (WCEP) in cooperation with the LWU and the Community Organizations Development Institute of Thailand (CODI: a Thai Government Agency). As the director of the WCEP is an ex-director of the SRDPW, the WCEP organized SGs using the same method as the SRDPW. The SGs have accumulated their loan funds almost solely from members' savings. Though FIAM and CODI delivered technical assistance, including the training of accountants, they did not provide lines of credit, especially after the initial stage of their development.[2]

These two projects established the largest SGs in Laos in terms of the number of SGs and their members. Though the SG movement was implemented in cooperation with a government body (LWU), the SGs remain outside the regulation and supervision of the central bank (Bank of Lao).[3] Thus, they are regarded as semi-formal financial institutions.

The SG programs were first implemented in the nine districts of Vientiane Municipality by compartmentalizing the districts between the two projects.[4] Their services were extended to the other provinces of Luang Prabang, Bolikhamxai, Champasak, and so forth. In the Vientiane Municipality, at the time of our survey, the SGs were servicing more than 90% of the villages and approximately half of the households, realizing greater outreach than the MFIs, based on the poverty-lending approach.

SG membership is self-selected and members are mostly women. As a rule, only

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2) Some SGs in the Vientiane Municipality and most SGs in Luang Prabang Province receive seed money, named project funding, at the time of foundation, to a maximum of 10,000,000 kip (US$ 1,000).
3) This hampers the integration of the rural financial markets created by the SGs with the formal financial markets.
4) Note that the Vientiane Municipality split from Vientiane Province in 1989, and the capital of Laos is located there. In 2009, the Vientiane Municipality had 491 villages and 453 SGs.

women are entitled to obtain loans from the groups. Managing committee members are selected by suffrage from among group members. SGs mobilize savings and extend short-term loans (normally for three- or six-month terms) to members on an individual basis. Though there is no direct link between the loan amount and the extent of a member's savings, a ceiling on borrowing is set at five times the borrower's savings amount. Thus, collateral is required. The members determine the group rules, such as the interest rates (normally 3% per month), terms of loans, and the penalty for delinquency.[5] Though no interest is paid on savings, members receive dividends from the group's profits, which is directly proportional to the amount of savings each member has contributed to the group.

The SG is an autonomous financial institution in that it solely relies on the savings mobilized from its own members. Monthly meetings are held to collect savings and disburse loans. Members are required to attend these meetings and to make a deposit every month. Negligence of this duty (generally, three months in a row) results in membership cancelation. To assure high autonomous control of the SG, members have to reside in a sufficiently cohesive area. In other words, the SG is community-based and utilizes community pressure for contract enforcement. Despite its high autonomy, the SG cannot be managed without the supporting institutions (mostly international NGOs) and its donors, particularly in terms of accounting training for poorly educated villagers, who are elected as committee members, as well as monitoring.

Diversified Growth Path

Figs. 1 and 2 demonstrate the diversified growth paths of the SGs in Naxaythong and Pakngum districts of Vientiane Municipality (N=83 surveyed in 2008). While some groups have achieved reasonable growth in terms of average savings per member, others demonstrate only modest growth.

The loans-to-savings (LTS) ratio, a ratio between the total amount of loans and savings (including reserves) of the SGs, is mostly in a range of 1 to 1.5. As a stipulated proportion of the group's interest profits (generally 10–20%) are accumulated in the group's loan funds as reserves, in the course of time the LTS ratio will be greater than 1.[6] Some groups have an LTS ratio greater than 1.5. This cannot be attained through the normal accumulation of reserves. These SGs are supposed to obtain external funds,

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5) In the initial stage when loan demands exceed savings, interest rate tends to be as high as 4%.
6) Reserves are, as a rule, for loan losses. However, as loan losses are negligible for most of the SGs in Laos, reserves are treated as loan funds.
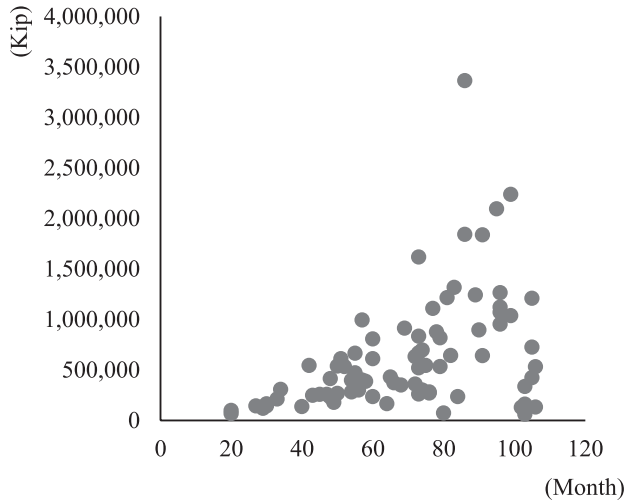
Fig. 1   Relation between SG Age and Savings per Member
Source: Authors.
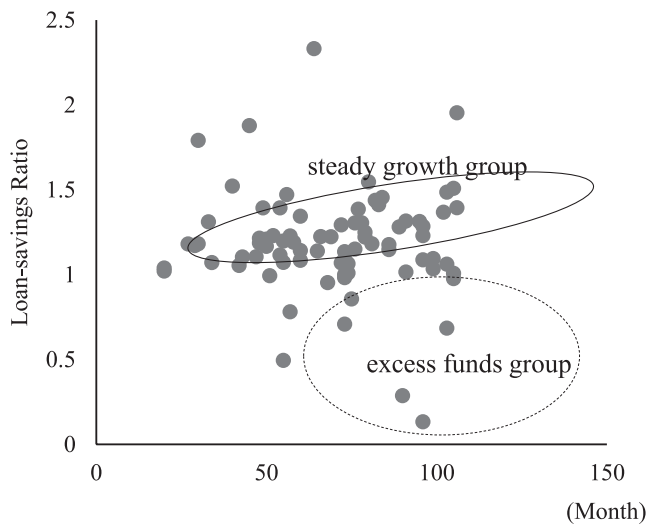
Fig. 2   Relation between LTS Ratio and Group Age
Source: Authors.

called project money, from international NGOs. On the other hand, there are some SGs with an LTS ratio of less than 1. This implies that the total amount of savings exceeds the total amount of loan demands, thus causing an excess- or idle-funds issue. One of the primary aims of this special issue is to identify the factors behind the diversified growth paths of the SGs in Laos.

Different Initial Conditions

The emergence of the SGs/credit unions dates back to the nineteenth-century Germany. This movement diffused throughout the world and has had a prolonged history in many developed countries, such as Japan. The experiences of these countries offer lessons for the SGs in developing countries. However, initial socio-economic conditions differ among countries. To provide a better understanding of Lao SGs, we show the initial conditions that characterize the SG movements in Laos, Japan, and Thailand.

Differences in agrarian structures are likely to affect the performance of SGs. The agrarian societies of Laos and Thailand, during this time, can be said to have been egalitarian, whereas that of pre-war Japan, when the credit union movement was in full swing, was landlord dominated. In Japan, it was the landlord class that exercised initiative in the wide sphere of village politics, including the foundation and management of credit unions. The landlord class constituted a major net saver in the credit unions, while the tenant class was a major net borrower. As a great number of landlords held a stake in regional banks, they drew on credit unions so as to mobilize savings at a lower cost. In addition, purchasing chemical fertilizers was a main reason for borrowing from credit unions. Increasing the use of chemical fertilizers could have stabilized the tenants' livelihood, and secured land rent for the landlords. Thus, keeping the loan interest rates low was compatible both for the landlord and the tenant classes.

The landlords' active commitment to credit unions in Japan facilitated their sound management, especially in mobilizing savings (see the first article of this special issue by Ohno). In Laos and Thailand, on the other hand, agriculture was dominated by peasant proprietors. There existed no particular class of households that could be net savers for the SGs. Thus, the savings mobilization required an interest rate or a dividend that was higher than the interest rate of the formal banks.

Another notable initial condition is that the Lao economy was incurring economic turbulence when the SG movement had only just begun in the second half of the 1990s. The Lao currency faced a critical loss of confidence in the markets. The Asian financial crisis of 1997 and the mismanagement of the economy by the Lao government resulted in a drastic depreciation of the Kip and a subsequent spiraling of inflation as is shown in Figs. 3 and 4. To secure reasonable dividends, the lending interest rate of the SGs had to be maintained at rates as high as 4–5% per month.

Inflation started to level off at around the turn of the century. Since 2005, the rate has been as low as a single digit. Correspondingly, the annual deposit interest rate of the formal banks (Fig. 5) decreased to below 10%. In 2010, it decreased to below 5%. The Lao SGs started to lower the lending interest rate, but it still remains in a range of 2–3%
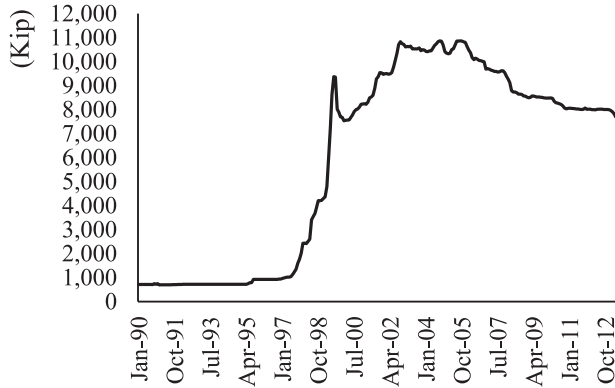
Fig. 3 Exchange Rate of the Kip against the US Dollar
Source: Bank of the Lao P.D.R., website.
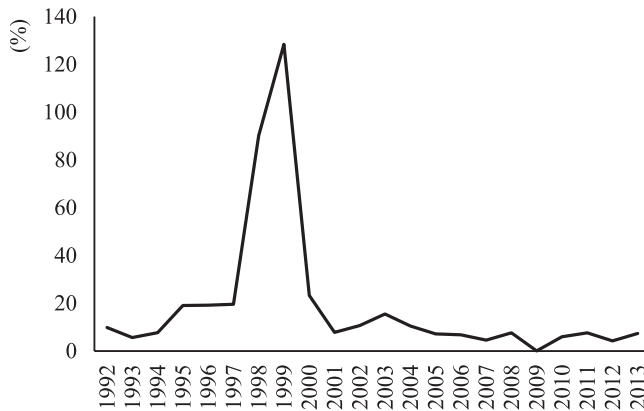
Fig. 4 Inflation Rate in Laos
Source: IMF (2013).

per month. As 70% of interest revenues are allocated to dividends, the annual dividend is equivalent to 16.8–25.7% of the interest rate on deposits. This is mainly because net savers of these SGs are opposed to lowering the lending interest rate due to a fear of reducing the dividend. This phenomenon was also observed in a Thai SG (see the first article of this issue by Ohno). A low LTS ratio is a serious sign for SGs, as this creates excess funds and, hence, lowers profits and dividends.
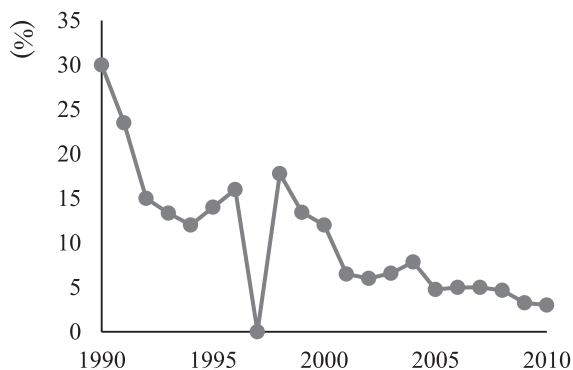
Fig. 5 Annual Deposit Interest Rate in Laos
Source: Bank of the Lao P.D.R., website.

Coping with Excess Funds

Three possible ways to deal with the excess-funds issue are: (1) lowering the lending interest rate; (2) increasing the demand for loans; and (3) linking excess funds with loan demands outside the SG in a creditable way. These countermeasures against excess funds are represented in Fig. 6. Needless to say, lending the excess funds to non-members who reside outside the village is the worst option, as will be discussed in the sixth article by Fujita in this special issue.

Loans can be classified into those for insurance purposes and those for production. Loan demands for insurance take place idiosyncratically and thus will be more or less constant over time (D_0) as long as generic natural disasters do not hit the village economy. As the fifth article of this issue, by Chansathith, Ohno, Fujita, and Mieno reveals the major purposes of borrowing are for medical treatment and daily consumption. These loans are supposed to deal with shocks and smooth consumption, and are, thus, idiosyncratic in nature. Loans for production purposes constitute the second largest reason for borrowing. Expenditures for planting and harvesting are for agricultural workers' wages. Purchasing chemical fertilizers accounts for a negligible portion of expenditures. This finding reveals a stark contrast with Japanese credit unions that disbursed loans mainly for the purchase of chemical fertilizers.[7]

When loan demands for production purposes are negligible, we cannot expect savings accumulation to occur right from the start. These types of SGs are seen in the

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7) That loans are extended for non-production and production purposes in Laos would make it difficult to estimate the borrowing function (the fifth article of this issue). Furthermore, multiple loan purposes would diversify the growth path of the SGs in Laos.
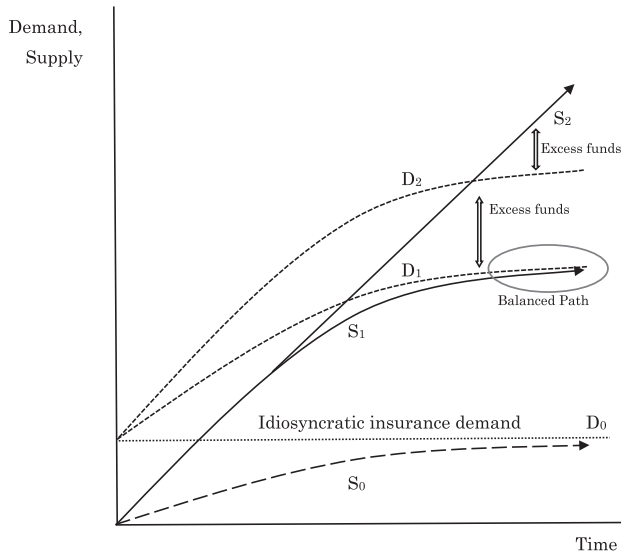
Fig. 6   Growth Path of Savings Group
Source: Authors.

backward areas of Luang Prabang Province, as is discussed in the second article of this issue by Fujita, Ohno, and Chansathith. As savings accumulation cannot be expected to grow steadily under such circumstances, SGs will be sluggish, as S_0 depicts.

As a village economy develops, total loan demand (D_1) increases. When production methods remain indigenous and excess funds emerge, however, demand easily reaches a plateau. In Japan, an increasing use of chemical fertilizers in the Meiji era shifted the loan demand upward to D_2. In Laos, in contrast, the use of chemical fertilizers was not yet common. Thus, loan demand remained stagnant at D_1.

Though shifting loan demand upward leads to a favorable growth of SGs, this does not necessarily deter the emergence of excess funds for long as accumulated savings constantly increased, as indicated by S_2. As long as a balanced growth ($S_1 = D_1$) cannot be maintained, excess funds emerge by any means. As the loan interest rate was reasonably low in Japan, the Japanese credit unions had to resort to the third measure of linking excess funds to external demand. According to the Industrial Cooperative Law of 1900, the Japanese credit unions were equipped with systematic mechanisms to transfer such funds to other savings-deficient credit unions and even to formal financial markets (banks), including the government bond market. However, the Lao and Thai SGs were totally devoid of such mechanisms.

As mentioned above, the Lao SGs decreased their loan interest rate to achieve a balanced growth path by shifting loan demand upwards and by reducing the growth rate

of savings. However, lowering the lending interest rate is difficult for the Lao SGs because members fear a reduction in dividends. Thus, some SGs in the Vientiane Municipality failed to deter the emergence of excess funds. To address this issue, FIAM and CODI established service networks, among the SGs in the Vientiane Municipality, to transfer excess funds to the under-resourced SGs, but with very limited effect.

Let us now introduce the papers to follow. The first paper, entitled "Savings Groups and Rural Financial Markets: Japanese and Thai Experiences," by Ohno, discusses the SG movements that took distinct growth paths in Japan and Thailand. Historically speaking, the new paradigm of micro-finance, referred to as a revolution by Robinson, is not a recent phenomenon. The first credit union movement in German countryside is known as Raiffeisen's credit unions (Guinnane 2001).[8] The Raiffeisen model was widely transplanted to other countries, including Japan. In Thailand, a nation-wide SG movement began in 1974. This paper discusses how the rural financial markets created by the SGs/credit unions were integrated into nation-wide financial markets in Japan and why this integration process did not take place in Thailand. The results offer practical viewpoints for policy interventions aimed to integrate individual SGs with wider financial markets in Laos.

The second and third papers deal with rural financial markets in Luang Prabang Province. The second paper, entitled "Performance of Savings Groups in Mountainous Laos under Shifting Cultivation Stabilization Policy," by Fujita, Ohno, and Chansathith, examines the SGs in remote and poor villages in the Luang Prabang Province, where market economies are less developed. Though it has been emphasized that low-income people do have savings capacity, in the mountainous villages in Laos SGs show poor savings accumulation. A probit analysis on what facilitates the households' participation in an SG revealed that the households that secured a constant flow of income tended to join SGs, and those that could obtain cash income in an emergency were more likely to not join an SG. And even though member households obtain loans from SGs to cope with emergency cash expenditures associated with illness, such shock experiences do not affect an intention to join an SG. This seems to be because emergency expenditures have opposite forces. While having experienced an emergency might encourage households to join an SG, the experience may make it difficult for these households to save every month. The surveyed villages had just ceased shifting cultivation, but yet were without sufficiently stable cash income sources. It was also found that medical expenses accounted for 7–28% of total household cash expenditures, depending on the village.

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8) Chronologically, the Schulze-Delitzsch model is the vanguard of credit unions. However, while the model targeted urban areas, the Raiffeisen model was intended for rural areas.

These factors hamper the growth of SGs. Our conclusion demonstrates that the SGs are required to deal with emergency expenditures, and that policy interventions that aim to realize a constant flow of income are highly required for the growth of SGs.

The third paper, entitled "Informal Network Finance as a Risk Coping Device in Mountainous Laos," by Ohno and Chansathith, discusses the importance of the informal network in coping with idiosyncratic shocks. However, they also suggest that the poor have less access to the informal network because the range of the finance network is subject to blood relationships and geographical proximity. Thus, the raison d'etre of the SGs in the remote, backward areas rests on providing micro-insurance to the poor.

The fourth to sixth papers deal with the SGs in the Vientiane Municipality. The fourth paper, by Kongpasa and Mieno, uses the same methodology developed by Coleman (1999) to examine whether SGs enhance the welfare of rural people. Coleman claims that the impact of SGs to the welfare of rural households is insignificant in Northeast Thailand. However, Kongpasa and Mieno found a positive impact of SGs in the Vientiane Municipality.

The fifth paper, by Chansathith, Ohno, Fujita, and Mieno, explores how the SGs function in the four sample villages in the Vientiane Municipality. They examine the borrowing behaviors of rural households, by comparing loans from different lenders: SGs, a formal bank, and informal lenders. These three types of lenders have their own particular features, and thus distinct borrowing functions were obtained among the three types of lenders. A formal bank extends loans for production purposes, while informal lenders do so for risk-coping purposes. SGs fall between the two. Another important finding is that though the rich class participates in SGs more than the poor class does, the latter obtains loans from SGs more than the rich class. Thus, the SG is supposed to function as a financial intermediary between the cash-surplus rich households and the cash-deficient poor households. Also important is the finding that the SGs in the villages with a higher loan demand for production purposes show favorable performance and rapid growth. This will explain the diversified growth paths of SGs in Laos.

The final paper, by Fujita, examines an SG that is facing a serious problem of excess funds. To maintain a high dividend rate, the Don Neua SG extended loans to entrepreneurs outside the village, thus violating the SG's rules. This eventuated in a problem of non-performing loans. The Don Neua SG in Vientiane Municipality is not exceptional. Integration of independent village financial markets created by the SGs are highly sought after to cope with the excess-funds problem.

We can draw three major policy conclusions from these findings: (1) The management of the SGs is deeply embedded in the social relations of agrarian societies. In Japan, it was the landlord class that exercised the critical initiative in the foundation and man-

agement of credit unions. As long as such a social class is nearly non-existent in Laos, support from a third-party body such as an NGO or a government agency is very much required for managing and monitoring SGs. (2) The purposes of loan demand vary from insurance against idiosyncratic risks, primarily in the poor areas, to investment for agriculture, primarily in the irrigated areas. It follows that distinct devices are installed within SGs to deal with the different loan demands in different areas. Special emphasis should be placed on an insurance mechanism for SGs in economically disadvantaged or backward areas. (3) An external institution should be established in Laos to coordinate excess funds, otherwise an excess-funds issue could jeopardize SGs. This is because the SG that is a within-a-village institution is not equipped with an inter-group coordination mechanism.

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Savings Groups and Rural Financial Markets: Japanese and Thai Experiences

Ohno Akihiko*

Savings groups/credit unions serve as a financial intermediary within a village by mobilizing savings from rural households and extending loans to them. This system often encounters an issue of excess funds when total savings exceed loan demands within a credit union. In Thailand rural financial markets created by savings groups are segregated not only from those created by other savings groups but also from formal financial markets. Excess funds become a critical issue for some savings groups and hinder their development. On the other hand, in Japan, the market integration with respect to excess funds was pursued by organizing segregated rural credit markets (horizontal integration) and aligning rural credit markets with formal financial markets (vertical integration). This paper discusses the contrasting evolutionary paths of Japanese credit unions and Thai savings groups to offer practical insights for Lao savings group movement.

Keywords: Japan, Thailand, Laos, excess funds, market integration

I Introduction

Savings groups (hereafter SGs) offer a new approach for microfinance as referred to as microfinance revolution (Robinson 2001). As mentioned in the introduction of this special issue, SGs and credit unions are used interchangeably in this paper. The emergence of credit unions dates back to the nineteenth-century Germany and the movement had diffused throughout the world including Japan. The movement has long course of history that would elicit valuable lessons for the introduction of the SG in developing countries.

The aim of this paper is to provide an analytical perspective for the development of Lao Village Savings and Credit Groups (hereafter also abbreviated as SG) by examining the growth paths of Japanese credit unions and Thai SGs as they show a stark contrast. We draw focus to two critical issues that determine the growth path of SGs. First, as the SGs accumulate savings, total savings tend to exceed loan demands especially among

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active SGs, causing an excess or idle funds issue. In Japan, excess funds provided momentum for the integration of rural credit markets into nationwide financial markets through policy interventions. On the other hand, in Thailand rural financial markets created by SGs are segregated not only from respective SG markets but also from formal financial markets. As a result, excess funds are likely to exert destabilizing influence on some of SGs. This contrast provides important clues for Lao SG movement. Second, the traits of agrarian society are likely to affect the growth path of SGs in a vital aspect of who take the initiative in the establishment and management of the groups. This suggests that unique policy interventions are quested for different countries, considering the features of respective agrarian society. Note that the agrarian structure is related to the management issue within the SG, but not directly to the coordination among the SGs especially with respect to excess funds.

    This paper is organized as follows. In section 2, we present two perspectives for discussion: an integration of rural financial markets created by SGs with nation-wide financial markets, and the effect of agrarian structures on the functioning and growth of SGs. Section 3 investigates Thai SGs mainly based on the household data collected in Northeast Thailand followed by an examination of Japanese credit union movement in section 4. Finally, section 5 summarizes the main findings and discusses their implications.

II   Analytical Perspectives

The SG restricts the range of the operations to a small geographic area where sufficiently cohesive community mechanisms are obtainable for ensuring contract enforcement and quasi-perfect information about borrowers (Guinnane 2001).[1] Violating this principle imperils the viability of the SG as discussed by the sixth article of this issue by Fujita. The community mechanisms are where the SG can advocate its advantage over formal banks. As the other side of the coin, a rural credit market created by a particular SG is not only segregated from formal financial markets but also segmented from other rural credit markets created by SGs in the absence of external coordination mechanisms. Due to this feature of the SG, successful development of an SG inevitably eventuates in an issue of excess funds as total accumulated savings surpass the total amount of members' loan requests.

    There are two plausible strategies to deal with excess funds with respect to the

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1) Raiffeisen credit union confined its members belonging to a same Christian church community, parish. In Japan, article 9 of the Japanese Industrial Cooperative Act of 1900 stipulated the coverage of credit unions to operate within a village. Thai SGs have the same rule.

market integration: organizing segregated rural credit markets created by SGs (horizontal integration) and aligning those rural credit markets with formal financial markets (vertical integration). The former involves a transfer of money from savings-surplus SGs to savings-deficit SGs, and a ruling body is required to adjust excess liquidity among SGs by endorsing the transferred money. On the other hand, the latter implies a transfer of savings from SGs to formal financial institutions, especially banks. It should be noted that this savings mobilization can be done without establishing branch networks of banks. These evolutionary paths are historically traceable in Japan. In Thailand, however, little efforts have been made for the market integration. Contrasting strategies taken in the two countries lead to different growth paths of rural financial markets.

The historical experiences of Japanese and German credit unions reveal that policy intervention to excess funds had facilitated the integration of rural credit markets with nation-wide financial markets. However, little attention has been given to the point in the current literature on microfinance in developing countries. The distinct strategies of Japan and Thailand on excess funds would provide suggestive hint for the development of Lao rural financial markets.

Also noteworthy is the fact that SGs range in function across different agrarian societies. For example, agrarian society in pre-war Japan was basically landlord-dominated in that over 40% of farmland was tenanted. It was landlord class that exercised initiative in the wide sphere of village politics including the foundation and management of credit unions. On the other hand, Thai agriculture is dominated by peasant proprietors, and tenancy is modestly significant only in parts of the central plain. In Northeast Thailand, an egalitarian village structure has traditionally precluded acquisition of new land from poorer neighbors (Hirsh 1990). Thus, village leadership tends to be provided by an elder who is respected by the villagers (Seri and Hewison 2001) apart from his political and economic influence. We need to explore how the agrarian structure of the respective countries affects their SG movement.

III Thai Savings Groups

III-1 *Policy Intervention in Thailand*

A major policy intervention in Thai rural financial markets was made in 1966 by the foundation of the state-owned Bank for Agriculture and Agricultural Cooperative (hereafter BAAC). The BAAC had gradually expanded its branch network. In 1996 (1970), the network had 535 (45) provincial and district branches and 875 (205) field offices. As of March 2008, the BAAC had a rural network of 75 provincial offices, 962 branches, and

956 field offices. It has expanded clients, outreaching approximately 98% of all farm households in Thailand in 2007 (Foundation for Development Cooperation and Banking with the Poor Network 2010).

The BAAC was unconcerned with saving mobilization during its initial phase, because its operating funds had been furnished with from commercial banks and international agencies (Myer and Nagarajan 2001). In 1975, Thai commercial banks were regulated to lend 5% of their total lending of previous year to the agricultural sector. When the required amount was not disbursed, the remaining had to be deposited in the BAAC. The rate of quota was increased to 20% in 1987. The obligatory deposits from commercial banks had constituted the largest portion of the operating funds of the BAAC before the bank embarked on saving mobilization in 1989. In the sense that the BAAC could have procured loan funds without being devoted to mobilize savings from rural households, the BAAC is said to have been heavily dependent on subsidies (Sacay *et al.* 1996). In the wake of the financial crisis of 1997, the bank came to pay more attention to prudential regulations and became fully committed to savings mobilization.

Establishing extensive branch network of the BAAC can be referred to as creating rural financial markets from above (a top-down approach). Though the BAAC has deepened its outreach gradually, it was far from sufficient in its early stages. Thailand is subdivided into 76 provinces (*changwat*). As of 2006 there are 877 districts (*amphoe*) except for Bangkok. Thus, each district has almost one BAAC branch and field office. However, as there are more than 70,000 villages (*muban*) in Thailand, each branch/field office has to cover nearly 40 villages. Thus, villagers' accessibility to the BAAC is considered far from satisfactory. In addition, the BAAC circumscribes the range of loans for production-oriented businesses, and does not serve as a consumption smoothing mechanism, especially for emergency expenditures.

To supplement the areas and loan demands that the BAAC did not cover, in 1974 nation-wide movement to promote SGs for Production (*klum orm sup phua karn-pa-lid*) started under the guidance of the Department of Community Development (DCD) of the Ministry of Interior (hereafter, DCD SGs). Though named as SGs for Production, DCD SGs serve loans for consumption purposes as well. This is partly because the rules of group were determined by village members themselves. As its loan funds are accumulated savings of the members, loan purposes can be at their discretion. The number of SGs showed a tremendous increase to 1,354 in 1980, and 9,927 in 1993. This movement can be referred to as creating rural financial markets from below (bottom-up approach). SGs were seemingly expected to carry out complementary functions until the BAAC attains full outreach. However, SGs still persist extensively in rural Thailand, despite of the BAAC's current extensive outreach. This is partly because SGs extend consumption

loans, and partly because some of the SGs offer emergency loans. SGs function as a device for consumption smoothing, while the BAAC does not. Consumption smoothing is one of the most expected function of SGs for the rural poor as is discussed by Fujita, Ohno, and Chansathith, the second paper in this issue.

III-2 *Savings Groups in Northeast Thailand*

This paper examines three SGs in Northeast Thailand that showed different performance, based on our household survey (N=676) conducted in 2006/07: A DCD SG in Khone Kaen Province (hereafter K-SG), SGs under the technical and financial assistance of the Foundation for Integrated Agricultural and Environmental Management (FIAM) in Roi Et Province (R-SG), and a successful SG with an eminent leader in Chaiyapoon Province (C-SG). As the size of villages is small in Roi Et Province, R-SG contains seven SGs of adjoining villages. Of the three groups, K-SG shows the poorest performance, while C-SG outperforms others.

   The major characteristics of sample households are presented in Table 1. Being on the river, village C has pump irrigation facilities owing to which double-crop rice and vegetable farming are widely practiced. Villages R and C are in rain-fed areas. In village R, livestock farming contributes a significant part of agricultural income. However, the levels of cash income do not differ much among the three groups (Table 2). Accordingly, durable holdings indicate little difference among three groups (Table 3). Despite similar

Table 1   Major Characteristics of Sample Households

Group	Sample	Farm Land (*rai*) [a]	Upland (*rai*)	Marketed Rice [b] (%)	Landless (%)
K	188	17.14	0.24	27.32	10.4
R	250	16.41	0.81	48.31	2.8
C	238	10.43	3.72	52.40	24.4

Source: Surveyed by author.
Notes: [a] 6.25 *rai*=1 ha.
         [b] Marketed rice denotes the proportion of paddy sold to total paddy production.

Table 2   Cash Income by Sources

(1,000 baht)

Group	Total	Agriculture	Agricultural Wage	Non-farm	Salaried Income	Remittance	Transfer	Others
K	91.3	31.9	5.0	6.4	13.0	13.3	10.0	11.7
R	144.2	46.5	22.4	12.1	30.0	10.2	9.2	13.8
C	98.8	32.4	11.3	12.4	9.6	6.2	9.2	17.7

Source: Surveyed by author.

Table 3 Durables Ownership

(%)

Group	Vehicle	Motorbike	TV	Refrigerator	Telephone	Washing Machine
K	17.6	76.0	97.4	77.1	55.1	13.6
R	18.4	90.4	98.5	84.3	58.5	14.9
C	19.6	77.2	95.0	76.9	53.7	22.4

Source: Surveyed by author.

wealth levels of households, the three SGs show contrasting growth paths.

(a) Stagnant K Savings Group

As the DCD program did not provide seed capital to SGs, the groups had to mobilize savings from the members for loan funds. The members are required to deposit monthly commitment savings, called *sat-ja* (a Buddhist term meaning sincerity). The monthly savings amount is fixed throughout a year so as to facilitate the calculation of dividends. The savings are treated as collateral to ensure loan repayments.

The SG shares some features with rotating savings and credit associations (ROSCAs) in that they mobilize savings from their members and extend loans to them.[2] ROSCAs participants have to bid for a loan and wait for their turn to borrow. Loans may not be available when needed, and savings may not be liquidated when needed. In the SG, on the other hand, the members can obtain loans in a set day as long as they want to borrow. In addition, the members are no longer required to borrow as long as they do not want to borrow. Thus, the SG performs a financial intermediation function, particularly between cash-surplus and cash-deficit member households more than ROSCAs do.

In Thailand it is common that several SGs coexist in a single village, and villagers have memberships in a number of SGs. For example, village K has four SGs: DCD SG established in 2000, Farmers' SG established in 1994, DCD SG of Queen's Birthday established in 1995, and the Thailand Village and Urban Revolving Fund known as the Million Baht Fund established in 2001. All of these groups were established under the guidance of the government.

Farmers' SG was introduced by the department of agricultural extension in order to promote the sericulture industry. After a while, however, consumption loans came to be allowed. As it has similar traits with the DCD SG and they have a majority of common members, they hold a joint annual meeting in April. Both have commitment saving products. Members are required to deposit compulsory savings with a minimum amount

2) In Japan, some ROSCAs transformed into credit unions. Bouman (1995) observes the same.

of 10 baht every month. Considering that daily agricultural wage rate in the surveyed areas was 110 baht at the time of the survey, the amount of commitment savings is not a heavy burden for the rural households. As there are no external shareholders, the members are the owners of the groups. A major strength of the SG rests on the members' sense of ownership. As the money loaned out is members' deposits, members have an incentive to monitor their SG management and borrowers. Larger external financing, on the other hand, would weaken the common bond of the SG and undermine its development.[3] The dividend distributed to members is directly proportional to the amount of savings each individual has contributed to the groups.[4] The net profit of SGs calculated at the time of an annual meeting is distributed according to the group regulations.

The total deposits amounted to approximately 230,000 baht for the Farmers' SG and 50,000 baht for the DCD SG. The average amount of savings per member is 2,000 and 800 baht respectively, which are far from satisfactory when compared to the daily agricultural wage rate of 110 baht. As accumulated deposits solely constitute the funds for lending, and 70 to 80% of the members are said to apply for loans, average loan amount exceeds average savings only moderately. This is what Coleman (1999; 2006) claims that the loans from SGs in Northeast Thailand may be too small to make a notable impact on the welfare of households. It is possible to see this situation as one obtains loans from her deposits, paying interest. The members seem to regard the SG as a device of self-control or spouse control to refrain from impulsive spending.

Loans are made only once a year at the time of an annual meeting with one year loan period. Interest rate is set at 3% a month on a simple interest rate basis and lump-sum payment is the rule. Though the loan ceiling is set at the amount of borrower's savings, loans three times more than borrowers' savings are permitted as far as other members admit to be cosigners using their savings as collateral. Cross collateralization is a general rule of the surveyed SGs.

There are different operations between Thai and Lao SGs. As is so in Thailand, Lao SGs demand commitment savings with which they purchase shares. One share is priced at 5,000 to 10,000 kip per month in general, and the members have to purchase at least one share every month. However, Lao members can purchase as many shares as they can afford every month. In addition, the members can apply for a loan every month at the time of a monthly meeting with a loan ceiling set at five times as much as the amount

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3) A typical polar case is Grameen Bank that relies on external financing almost fully. Grameen Bank, thus, needs to equip several devices to maintain its effective functioning, such as peer groups to reduce lending risk.

4) Exactly speaking, the members purchase share rather than make a deposit. One share is priced at 10 baht per month.

of their savings.[5] Loan period is three to six months. Thus, Lao SGs are more flexible, and thus practical in operations than Thai ones.

Operational inflexibility of DCD SGs is partly because villagers having little book-keeping experience to manage the groups. The government did not provide any assistance on work contents for the villagers. Actually, as there is no stylized bookkeeping format, the record of deposits, loans, and repayments are often jotted down in a notebook. This causes troubles, for example, if a debt was cleared or not. In addition, there are no internal and external auditing mechanisms to check group books. This is apt to disturb members if the money they deposited is properly managed. For example, once a rumor that the committee members embezzled the deposited money circulated among the members of K group. This triggered a run on the SG. After withdrawing all the deposits, the members confirmed it was just a rumor and restarted to make deposits. On the other hand, in Laos international NGOs have implemented training programs, and request Lao SGs to submit a quarterly financial report for monitoring.

The Million Baht Village Fund Program launched in 2001 is another reason behind the poor performance of DCD SGs. The program injected a million baht (approximately US$22,500) to every village and urban community in the country as working capital for locally-run rotating credit unions. Villages were required to set up village fund committee to run the fund, and to establish regulations in line with a guideline given by the National Village and Urban Community Fund Office. By 2002, 92% of Thai communities had formed the committees, and by May 2005, 99.1% of all villages had the Million Baht Fund in operation (Arevart 2005). According to Kaboski and Townsend (2009), the typical loan amount extended in the Million Baht Fund should be below 20,000 baht, and the loans need to be secured by guarantors among the members. As no collateral is demanded, the Million Baht Fund restricts loans to productive purposes. Loan duration is 12 months and the interest rate is 7% per annum. In Village K, for example, all the households participate in the program. The members deposit commitment savings (20 baht) every month as a condition of receiving a loan. Villagers seem to perceive the commitment savings as a membership fee to obtain a loan, because the amount of the commitment saving is negligible compared with the allowable amount of loan of 20,000 baht. In other word, villagers can access loans from the Million Baht Fund without sizeable savings.

In village K, the accumulated savings of the DCD SG and the Farmers' SG (50,000 and 230,000 baht) are far short of 1 million baht. In addition, annual interest rate of the

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5) This makes Lao SGs ask for collateral that is usually durable goods such as motor bike, television, refrigerator.

Million Baht Fund (7%) is significantly lower than that of other SGs (36%). The emergence of the Million Baht Fund, thus, debilitated villagers' propensity to saving in the SGs. Poor external assistance to train committee members and the emergence of the Million Baht Fund are likely to make DCD SGs inactive and fragile.

(b) R Savings Groups Supported by FIAM

FIAM, a Thai NGO established in 1988, started all sorts of assistances in Roi Et Province of Northeast Thailand, including the provision of toilets, jars for drinking water, lunches for local schools, and the establishment of buffalo banks. In 1994 FIAM embarked on the rehabilitation program of DCD SGs with financial assistance from an American NGO, Catholic Relief Services (CRS). FIAM conducted a training program on basic bookkeeping using stylized account ledgers and passbooks for committee members. The members set regulations by reference to the model regulations offered by FIAM. The following discussion is based on the data collected from seven DCD SGs (group-1 to group-7) assisted by FIAM in Roi Et Province.

FIAM makes a loan of 1,500 baht per member as seed capital (external account) with the flat interest rate of 2% per month. As the loans from CRS are provided in a series of six month cycles with lump-sum payments, loan period to the members has to be six months. In addition to the external account, the SGs have internal account contributed by members' commitment savings. After the accumulated commitment savings come to satisfy the credit requirements of the members, the SG is declared graduation from FIAM assistance to be registered as a credit union.

All the seven villages have their own Million Baht Fund. Its loan ceiling is set at 20,000 baht and all the borrowers obtained the ceiling amount. As one million baht was injected regardless of the village population, the SGs of villages such as groups 4, 6, and 7 received a relatively intense injection in terms of per capita funds (Table 4). This

Table 4   Performance of Savings Groups Surveyed in Roi Et

Group	FIAM Intervention	Assessment	HHs	Members	Total Savings (baht)	Per Capita Savings (baht)
1	1990	Excellent	121	58	987,815	17,031
2	1992	Excellent	86	109	1,137,810	10,439
3	1991	Fair	75	63	383,000	6,079
4	1995	Fair	43	38	116,503	3,066
5	1991	Fair	134	116	517,187	4,458
6	2000	Poor	50	27	39,210	1,453
7	1993	Fair	46	133	400,410	3,010

Source: Internal documents of FIAM.
Note: Assessment is conducted by FIAM.

deteriorated the performance of DCD SGs. For example, group-6 was established in 1998 with 32 members, and FIAM started to support it in 2000. In 2001 the Million Baht Fund started operating in the village. This made the DCD SG unattractive to the villagers. The members came to be less committed to the group, and five members withdrew from the group. On the contrary, the SGs established far before the introduction of the Million Baht Fund and having relatively larger members, such as group-1 and group-2, have remained less affected by the Million Baht Fund and they showed favorable performance.

Generally speaking, the advent of the Million Baht Fund discouraged the members of DCD SGs from committing to their SGs. FIAM, thus, lost its ballpark in Thailand, and decided to shift its major target areas to Laos.

(c) Thriving C Saving Group

While most of DCD SGs in Thailand have lost dynamism in the 2000s due to the implementation of the Million Baht Fund, some met with success. C-SG was set up in 1987 by the village elementary school principal, following the guidance of DCD. Village C engages in vegetable cultivation that occupies approximately 70% of arable land of this village. There are 14 pickup trucks in the village for transporting vegetables to Nakhon Rachasima, one of the major cities of Northeast with two hour distance by road.

The group had 597 members in 2003. In 2004 the number jumped to 999 as the group admitted new enrollment. As village C has 367 households, and approximately 90% of village households have members, there are nearly three members per member household. Non-member households are those who are affluent enough not to need loans from the group, those who are too poor to afford monthly commitment savings, and those resigned from the group.[6]

The most distinctive feature of C-SG consists in the prominent leadership of the founder. He set the strict group regulations, and an annual report of the group is distributed to the members to ensure transparency of group administration. The report discloses not only the detailed financial positions of the group, but also the names of group members together with the amount of savings, loans, and dividends. The report preserves the transparency of the group's accounts. In addition, group C supplies more flexible loan services in that the members can take out loans several times a year until the ceiling is reached. Thus, C-SG has a similar management practices with Lao SGs than other Thai SGs discussed in this paper.

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6) Twenty members resigned during the initial stage of the group development. Though they proposed to re-participate in the group, their request was rejected. This is because the group regulation states that the re-registration of a person who resigned from the group will not be accepted.

Loan rate of interest is 1.5% per month (18% per annum) with 12 months loan period. At the time of survey total savings amounted to 12.4 million baht, and per capita savings was approximately 20 thousand baht. Thus, average amount of savings per household reached nearly 60 thousand baht. Because of this immense amount of savings, C-SG could have remained unaffected by the Million Baht Fund.

The immense amount of savings, however, causes a problem of excess funds. As the annual rate of dividend is approximately 13%, which is significantly higher than the deposit interest rate of commercial banks, 0.75% per annum, the members are willing to deposit money in the SG. This annoys the founder in that an issue of excess funds becomes more likely and a high dividend will not be assured anymore. Though he proposed the reduction of the lending interest rate at an annual meeting, the members expressed their opposition to it with a fear of lowering dividend. To deal with an excess funds issue, C-SG put a 200,000 baht cap on savings per person. At the time of the survey, five members had reached this limit. However, the chairperson thought this was just an emergency measure insufficient to cope with excess funds properly.

III-3 *Problems with Thai Approach*

The Thai government took a twofold approach to the development of rural financial markets: the top-down approach through the BAAC, and the bottom-up approach through SGs. However, the government has made little attempt to coordinate the two approaches. In addition, the markets created by SGs are separated from each other because no ruling body was established to integrate them. The segmentation of rural credit markets is likely to exacerbate the problem of excess funds among thrived SGs. Furthermore, due to the lack of policy coherence on the SG movement, there coexist several SGs within a single village. This causes the problem of over-indebtedness or borrowing for reimbursement purposes.

To deal with excess funds C-SG resorts to two measures. First, as already mentioned, the committee set a ceiling on the amount of total savings. Some of the FIAM assisted SGs have a similar regulation that sets 10,000 baht as a ceiling. C-SG deposits nearly two million baht in commercial banks, but at the annual interest rate of mere 0.75%. Due to the absence of a ruling body, the saving capability of rural households cannot be parlayed effectively. Second, C-SG embarked on a joint purchase business of agricultural inputs in 2001, using the excess funds. For example, a member purchases a bag of chemical fertilizer at 420 baht on credit through the group shop, and half year later he pays 450 baht after harvesting paddy. The 30 baht margin represents 6.7% of annual interest rate. Though 438 thousand baht was applied to the joint purchase business in 2004, the investment accounted for mere 3.53% of the total deposits.

Table 5   Number of Financial Institutions in Loans

(%)

Number of Institutions	No. of HHs (%)	Group		
		K	R	C
0	21.9	20.7	16.8	28.2
1	41.4	39.9	39.8	44.5
2	30.5	32.4	36.8	22.3
3	5.8	6.4	6.0	5.0
4	0.4	0.5	0.8	0.0
Total	100.0	100.0	100.0	100.0

Source: Surveyed by author.

Table 5 shows the number of financial institutions from which the sample households obtained loans. Approximately 80% of the households are indebted, and one-third obtained loans from several financial institutions. Table 6 indicates the proportion of households that obtained a loan from the respective financial institutions. In village K the Million Baht Fund seems to have crowded out the DCD SG, because the latter had mobilized relatively small amount of savings. On the other hand, C-SG that accumulated huge amount of savings serves as a major financial institution in the village even after the advent of the Million Baht Fund.

Table 6   Proportion of Borrowers from Major Financial Institutions

(%)

	Group		
	K	R	C
Studied Savings group	14.9	61.2	51.3
Million Baht Fund	52.1	64.4	37.4
Other Savings group	9.0	7.6	4.6
BAAC	15.5	10.4	6.4
Commercial banks	10.2	19.2	11.4

Source: Surveyed by author.

The problem of over-indebtedness can be seen from Table 7 that indicates the intended allocation of windfall income (approximately US$100).[7] For comparison, the results obtained from Lao villages in Vientiane are presented for the village with (N=332) and without (N=259) SGs based on our survey conducted in 2007. In Thailand, nearly

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7) The question is "suppose you get 5,000 baht as windfall income, how do you allocate the money among the followings." The options are indicated in Table 7.

Table 7 Intended Allocation of Unexpected Income

(%)

	Thailand				Laos	
	K	R	C	Average	With	Without
Keep at Home	8.3	6.9	6.2	7.2	25.6	26.4
Commercial bank	27.7	22.7	30.9	27.2	1.2	2.8
Savings group	4.0	13.5	10.0	8.7	35.4	2.3
Gold	0.4	0.3	0.3	0.4	0.5	1.9
Livestock	18.9	17.1	4.7	13.9	7.9	20.9
Consumption	4.9	4.4	6.1	5.2	9.1	12.6
Debt Repayments	26.6	26.7	27.9	27.1	2.2	0.9
Others	8.9	8.4	14.0	10.4	18.7	32.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Surveyed by author.
Note: Commercial bank includes BAAC. "With" and "without" denote villages with and without an SG respectively.

30% of windfall income is indicated to be allocated to repay debts. Plural SGs in a single village are likely to jeopardize the disciplined saving behavior of the villagers. In economics, competition is supposed to yield favorable outcomes in the market. However, competition may be detrimental to the borrower's behavior in a microfinance market (McIntosh and Wydick 2005; McIntosh *et al.* 2005).

By way of concluding this section, it must be emphasized that Thai SGs are mostly inactive due to inappropriate and inconsistent government intervention. Some NGOs such as FIAM have acted as a substitute for government support, but only to limited areas. Though leadership as observed in C-SG will be an effective solution for proper group management, we cannot expect such leadership everywhere at any time. Thus, it is imperative that government policy intervention support and audit village SGs.

IV   Credit Union in Japan

IV-1 *Credit Union Movement in Japan*

Modern credit union movement in Japan was initiated by the Industrial Cooperative Law of 1900 modeled on the German cooperative act of 1899.[8] The proportion of credit unions to total number of municipalities surpassed 100 at the end of 1910s (Fig. 1), indicating

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8) Note that there were numerous informal SGs prior to 1900, best known of which is Hotokusha in Shizuoka Prefecture initiated by Sontoku Ninomiya. They were registered as credit unions after the enactment of the Industrial Cooperative Law.
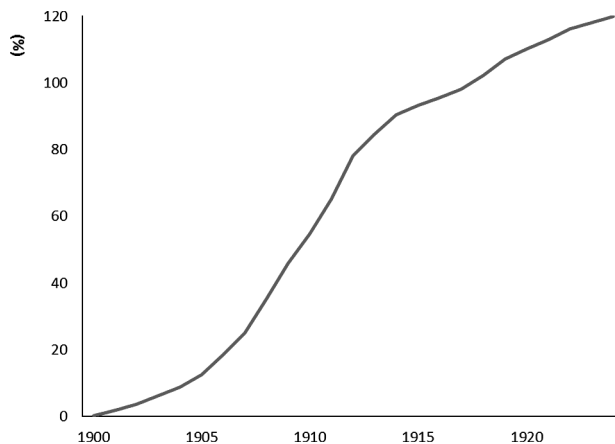
Fig. 1   Growth of Credit Unions in Japan

Source: Sangyo Kumiai Chuokai (Various years).

Note: Growth of credit unions is indicated by the number of credit unions over the number of munici-
palities in Japan.

that credit unions became widely prevalent across the country. Unlike the SGs of Thai
and Laos, Japanese credit union was allowed to serve three additional functions of
marketing, purchasing, and joint production union as industrial cooperatives.[9] Even in
the case of combining two or more functions, however, credit union occupied a critical
position.

Table 8 indicates the sources of borrowing by the rural households belonging to
different economic strata in 1932. A wealthier stratum of the agrarian society, the land-
lord class, could obtain bank loans, while poorer strata, inter alia the tenant class, had to
rely mostly on informal financial institutions such as ROSCAs and individuals lenders.
Credit unions occupied one of the major sources of borrowing across all the strata. Fifty
seven percent of rural households joined credit unions, and the proportions of credit
union membership were almost same across strata except for miscellaneous that includes
traders and non-farm producers (Table 9). Thus, credit unions could have outreached
the village poor. The loan-to-savings (LTS) ratio (B/A), a ratio between the SG's total
loans and total savings, is below 1 for the landlords (0.65) and miscellaneous, while it
is highest for tenants (1.65). Accordingly, Japanese credit union had served as a finan-
cial intermediary between cash-surplus and cash-deficit households within a village
community.

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9) Purchasing unions dealt with various commodities including agricultural inputs and daily necessities
at cheaper prices through joint procurement. Production unions, later renamed as utilization unions,
produced joint production by members.

Table 8   Sources of Borrowing

(%)

	Landlord	Peasants Proprietor	Peasants Proprietor cum Tenant	Tenant
Credit Unions	21.9	24.2	24.4	22.1
Bank	40.6	22.4	16.4	2.6
ROSCAs	15.8	23.8	27.2	33.1
Traders	1.8	3.2	5.0	8.9
Individual lenders	14.7	20.2	21.2	26.9
Others	5.2	6.2	5.8	6.4
Total	100.0	100.0	100.0	100.0

Source: Norin-sho Keizai Kosei-bu (1938).

Table 9   Credit Unions Performance and Agrarian Strata

	Landlord	Peasants Proprietor	Peasants Proprietor cum Tenant	Tenant	Miscel- laneous	Total /Average
Households (%)	4.0	19.0	29.0	20.0	28.0	100.0
Operational Holding (Ha)	4.64	1.25	1.20	0.98	NA	
Union Members (%)	5.0	24.0	34.0	22.0	15.0	100.0
Membership Proportion (%)	74	72	67	58	36	57
Savings per union (Yen) (A)	19522.2	28416.9	26392.0	78756.0	25167.0	107374.0
Loans per union (Yen) (B)	12682.5	30681.1	33267.7	130022.5	20622.0	110275.4
B/A	0.65	1.08	1.26	1.65	0.82	1.03

Source: Norin-sho Keizai Kosei-bu (1938).

Japanese credit unions procured their loan funds in a different manner from Thai and Lao SGs (Table 10). By definition, internal funds should constitute a major part of loan funds of credit unions. As to Thai and Lao SGs, members' savings are the sole source of internal funds, except for the groups supported by Thai FIAM. As members' deposits are called shares, SGs are owned by the members. They receive dividends according to the number of shares they hold. On the other hand, a major portion of internal funds of Japanese credit unions at the early stage was paid-up share capital supplied primarily by the wealthier strata of the agrarian society—mostly landlords. They also contributed funds by taking loans (debts loan) from local banks. The members from relatively poor strata deposited savings with fixed interest instead of purchasing shares. Thus, Japanese credit unions possessed similar features of the banking system. The characteristics of Japanese agrarian society might predominate as the cause of this contrast. The agrarian society in pre-war Japan was basically landlord-dominated as approximately 40 to 45% of

Table 10   Composition of Credit Union Funds

(%)

| Year | Internal Funds | | | Debt Loan | Total |
	Capital Stock Paid-in	Reserves	Savings		
1905	56.6	16.4	18.0	9.0	100.0
1910	38.1	16.8	37.4	7.7	100.0
1915	29.2	21.4	39.0	10.5	100.0
1920	15.7	14.2	63.3	6.9	100.0
1925	15.0	9.5	69.0	6.5	100.0
1930	13.6	14.2	65.5	6.8	100.0
1935	11.6	11.5	70.8	6.1	100.0

Source: Sangyo Kumiai Chuokai (Various years).

farmland was tenanted.[10]   Under this skewed socio-economic status within a village, it was the landlord class that afforded initial funds to credit unions.

Several factors were likely to serve as triggers of organizing credit unions under the leadership of landlords.   First, the latter half of the Meiji era (1868–1912) witnessed an increase in the use of chemical fertilizer.[11]   Purchasing chemical fertilizer was ranked at the top reason of borrowing from credit unions.   The use of chemical fertilizer would have not only stabilized livelihood of farmers, but also secured land rent for landlords.   Second, since around the turn of the nineteenth century, a number of local banks were established with a maximum of over 2,000 in the early 1900s.   Faced with severe competition for deposits, the newly-established banks were in the dearth of funds.   It is known that a great number of landlords who participated in the establishment of credit unions took a stake in local banks as well.   For such a wealthier agrarian class, credit unions were a device designed to transfer savings from rural areas to the banks.   Thus, the landlords were motivated to manage credit unions properly and made an effort for the accumulation of savings by persuading community members to save money at credit unions.   For example, Kanai credit union in Yamagata prefecture set the 20th of each month as the day of deposits.   Rotatory persons in charge of every hamlet of the village collected deposits from the members and brought them to the business premise of the credit union (Sangyo Kumiai Chuokai 1906).

The literature on Japanese credit unions mostly claims that the government had provided little support at the initial stage of credit union movement.   However, this does

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10)   The rate hit a peak at 48% around 1930 (Ando 1979).

11)   The proportion of nitrogen input from chemical fertilizer to total nitrogen input for agriculture was 15.7% in 1898–1907, 30.4% in 1908–17, 42.1% in 1918–27, and 46.2 % in 1928–37 (Hayami 1973). The other source of nitrogen is natural manure.

not imply that the government was indifferent to the movement. The government intended to pave a way to facilitate the credit union movement and to integrate the segmented credit markets into nation-wide financial markets.

After the enactment of the Industrial Cooperative Act of 1900, the Ministry of Agriculture and Commerce provided the prefectural governments with the model form of cooperative regulation, and county chiefs organized the campaigns for cooperative movement. Industrial cooperatives began to be organized under the guidance of the heads of regional governments.

The Central Cooperative Federation (hereafter Central Federation) was founded in 1905 as a voluntary association under the leadership of Tosuke Hirata, ex-Minister of Agriculture and Commerce, who laid the foundation of the Industrial Cooperative Law. The revised Industrial Cooperative Law (1909) admitted the federation as a judicial entity. In addition, the regional cooperative federations as the second tier were organized across the country. The areas covered by the second tier federations did not coincide with the realm of prefectures in the first place. After alignment efforts were made, each prefecture came to have a single second tier cooperative. Thus the second tier is referred to as Prefectural Federation, hereafter.

The Central Federation issued varieties of publications to facilitate cooperative movement. For example, it launched a monthly magazine *Sangyo Kumiai* [Industrial Cooperative] in 1905 to bring enlightenment to the movement with a main focus on credit unions. It contained articles on the management of credit unions such as accounting system, the criteria of creditworthiness, and financial viability of the loan applicants. To facilitate the movement, the association started to make annual honorable recognition of distinguished cooperative associations in 1910. In the first round, 51 cooperatives were commended, of which 48 had credit unions.[12]

IV-2 *Financial Markets Integration and Excess Funds*

As long as credit unions are based on rural communities, credit unions in Japan had to be compartmentalized in the early phase of development as is so the cases of the SGs in Thailand and Laos. The integration approach came to be attached weight as an excess funds issue came to the fore.[13] As savings turned out a major component of loan funds in the mid-1910s (Table 10), the average loans-to-savings (LTS) ratio declined drastically

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12) The association disseminated their operation information through the report titled *Kensho Sangyo Kumiai* [Commended Industrial Cooperative].

13) The postal savings system that started in 1875 played another vital role in mobilizing savings from the rural sector in Japan. Due to a space constraint and the fact that the system did not offer loan services, we make no direct reference to it.
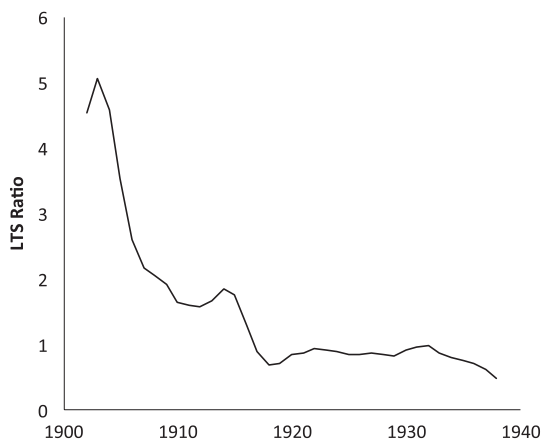
Fig. 2 LTS Ratio of Japanese Credit Unions
Source: Sangyo Kumiai Chuokai (Various years).

to have remained below 1 since 1917 (Fig. 2), suggesting the emergence of excess funds.[14]

The declining trend differed among regions as is shown in Fig. 3. For presentation ease, the figure includes only major zones of Japan: agriculturally backward zones of Tohoku (Northeast) and Kanto (Tokyo and its vicinity), and agriculturally advanced zones of Kinki (Osaka and its vicinity) and Western Japan. The LTS ratios were high in all the zones in the initial stage, because savings accounted for only a smaller portion of loan funds. However, the ratios declined drastically, especially in Kinki and Western Japan of agriculturally advanced zones. On the other hand, the ratio had remained above 1 for long in agriculturally backward zones of Tohoku and Kanto, suggesting the dearth of funds. This quested for horizontal integration of credit unions to coordinate demand and supply within and among prefectures. The Central Federation advocated horizontal integration of credit unions by establishing the Central Cooperative Bank as early as in 1906, partly in response to the request made by credit unions in Tohoku zone suffering from the dearth of funds (Norin Chuo Kinko 1973).

The integration system was composed of three tires: individual credit unions as a bottom tier, Prefectural Federations as a second tier, and the Central Cooperative Bank as an umbrella institution. Through the horizontal integration system, credit unions started to deposit their excess funds to Prefectural Federations. The prefectural fed-

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14) Note that the ratios are not more than 1 in the credit unions of Lao and Thailand, because their funds for loans are furnished with almost solely members' savings.
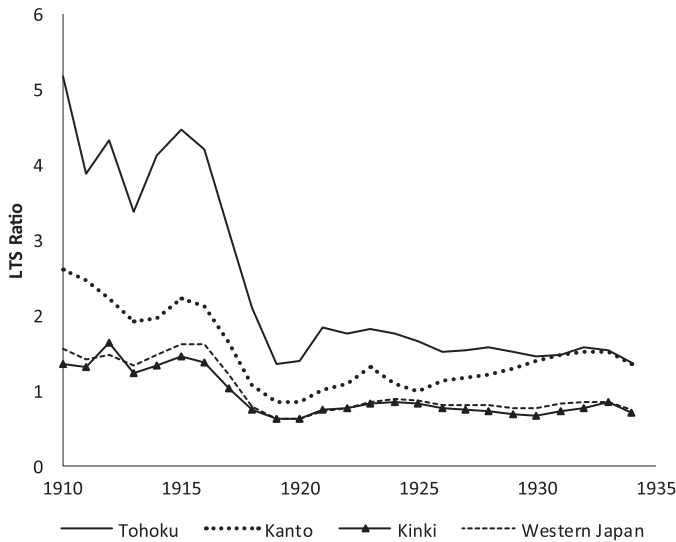
Fig. 3 Zone-wise LTS Ratio of Credit Unions
Source: Sangyo Kumiai Chuokai (Various years).

erations adjusted demand and supply of credit among their member credit unions. As Fig. 4 shows, however, the LTS ratio of Prefectural Federations in Kinki and Western Japan were below 1 from the start. In the 1920s more than half of excess funds of credit unions were deposited at banks (Table 11), partly because banks offered favorable deposit interest rate for credit unions to mobilize excess funds. As the overall LTS ratio had come lower than 1 as early as 1917 (Fig. 2), the financial position of credit unions turned out over-savings as a whole. After that, bond especially that issued by the government became another investment outlet of excess funds, not only for individual credit unions, but also for Prefectural Federations and the Central Federation. As a consequence, a horizontal integration approach facilitated the embedment of segmented rural credit markets into nation-wide financial markets, attaining vertical integration. In this sense, Japanese credit unions could grow without a sizable capital infusion from the government.[15]

IV-3 *Nation-wide Rural Development Program in Japan and Thailand*
Excess funds in Japanese rural credit markets were transferred to nation-wide financial

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15) Note that this paper does not discuss overall resource flow between agriculture and industry. For details, please refer to Ishikawa (1967).
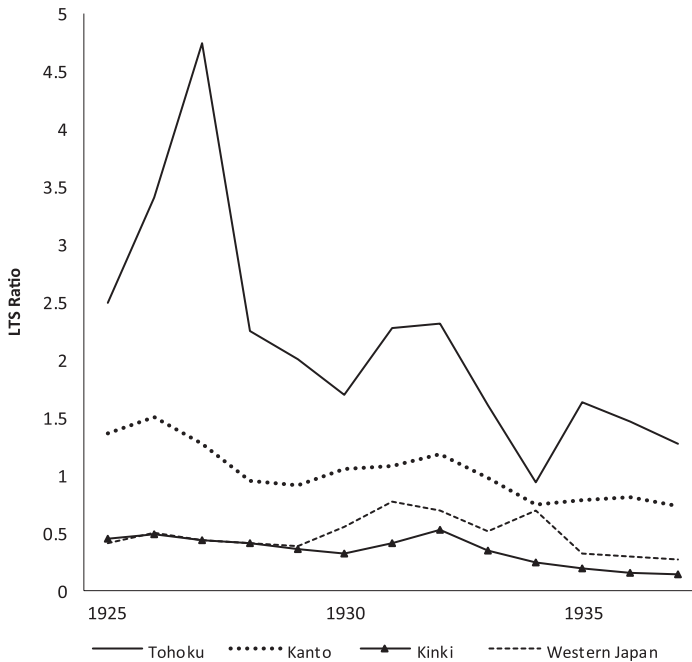
Fig. 4 Zone-wise LTS Ratio of Prefectural Federations
Source: Sangyo Kumiai Chuokai (Various years).

markets through the government bond market and deposits in commercial banks after the second half of the 1910s. However, this does not imply unidirectional cash flow from credit unions to nation-wide financial markets. As a final point, it may be worth mentioning about nation-wide rural development programs through rural financial markets in Japan and Thailand. Their distinct implementation processes reflect the features of policy intervention into rural financial markets in the two countries.

The rural economy of Japan was seriously damaged by the Great Depression of 1929. The government embarked on the Economic Rehabilitation Movement (Keizai Kosei Undo) in 1932 to recover devastated rural economy. It was a bottom-up program in that the village communities had to submit a rehabilitation draft and that they were responsible for implementing the plan. Credit unions were expected to be a pivotal actor for a capital infusion in the vertically integrated financial system. In 1933 the first five-year plan for the intensification of industrial cooperatives was launched. The plan intended to set up industrial cooperatives every village and those fully equipped with the four functions of credit, marketing, purchasing, and production. Thus, the program is said to pursue comprehensive development of rural economy. In addition, the government

Table 11 Excess Funds Allocation of Credit Unions

(%)

Year	Gov. Bonds	Central Federation	Prefectural Federation	Bank	Others	Total
1927	15.85	1.69	27.18	53.81	1.47	100.00
1928	14.07	2.22	29.39	52.98	1.33	100.00
1929	15.68	2.34	29.84	50.67	1.47	100.00
1930	21.22	3.38	30.79	43.19	1.42	100.00
1931	24.65	3.98	33.00	36.90	1.46	100.00
1932	25.13	4.50	36.34	32.72	1.32	100.00
1933	19.87	3.69	42.13	33.07	1.23	100.00
1934	20.97	3.79	42.21	31.72	1.31	100.00
1935	21.47	3.93	41.54	31.62	1.44	100.00

Source: Norin Chuo Kinko (1973).

promulgated the Debt Clearance Act in 1933 to rehabilitate debt-laden farmers sprung up by the Great Depression. Debt clearance unions were set up across the country, and credit unions assumed a vital role in debt clearance. Thus, credit unions embedded in the nation-wide financial markets were vital actors of a bottom-up government policy for the development of rural economy.

The Million Baht Fund program of Thailand launched in 2001 is the largest scale government microfinance initiative in the world. Village communities were required to set up a local committee to run the fund and to draw up the rules for operations such as interest rate, loan duration, maximum loan size, and objectives. Unlike the Economic Rehabilitation Movement of Japan, existing SGs were kept out of the loop in the program. Though the Million Baht Fund demands commitment savings from members as rotating credit union, the amount, normally 20 baht per month, is virtually negligible compared with the average loan amount of 20,000 baht. In addition, the committee is not allowed to handle funds directly, but is required to open an account at the BAAC.[16] A million baht was disbursed to and held at the BAAC. Thus, the Million Baht Fund should be characterized as rural financial institutions based on a top-down approach.

The two nation-wide rural development programs show a distinct contrast in terms of a bottom-up and a top-down approach. The contrast is in line with the distinct evolutionary path of rural credit markets of the two countries.

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16) The accounts of urban communities were opened at the Government Savings Bank.

V   Conclusion

Creating rural financial markets is challenging policy intervention for decades in developing countries. While poverty alleviation has been paid attention somewhat overly in the literature of rural financial markets, little was discussed on the integration of rural credit markets into nation-wide financial markets. The integration concerns the system of saving mobilization from the rural sector to fuel industrialization and the infusion of capital into the rural sector to address the issues of rural development or rehabilitation. Though community mechanisms provide a basis for sustained management and growth of the SGs, the mechanisms cannot cope with coordination of the SGs for establishing integrated financial markets. This paper discussed the contrasting evolutionary paths of Japanese credit unions and Thai SGs to offer practical insights for Lao SG movement.

We traced the history of credit unions of Japan and SGs of Thailand with a focus on the integration process. Though both countries have conducted policy intervention to create rural financial markets, their growth tracks showed a contrasting picture in that Japan pursued the bottom-up approach while Thailand employed the top-down approach. As rural institutions including credit unions are deeply embedded in distinct agrarian structure, any investigation neglecting the embeddedness would lead to incomplete policy implications. In addition, the Japanese government attempted to integrate the segmented rural financial markets of credit unions horizontally and vertically, while the Thai government has been almost indifferent to the integration. The outcomes of these approaches would offer practical insights into the development of rural financial markets in developing countries including Laos.

As mentioned Lao SG movement was initiated by Thai NGO (FIAM) that has promoted microfinance in Northeast Thailand, following the village bank methodology of the Foundation for International Community Assistance (FINCA). FIAM shifted its area for major activity to Laos in the latter half of the 1990s. Though Lao SGs are structured in accordance with the Thai FIAM model, they show clear distinctions. First, while Thai FIAM offers seed money to the assisting SGs, Lao FIAM does not or offers only limited amount if any to the SGs. Lao SGs, thus, had to mobilize internal savings for working operational funds from the start. Second, Thai SGs are stand-alone without ensuring any authorized formal linkage with either other SGs or formal banks, while Laos started to connect themselves to transfer excess liquidity to the SGs in the dearth of funds since 2007, even though with a limited effect.

Lao SG movement started to pursue horizontal integration with leaving vertical integration untouched. In this sense Japanese experiences would provide more relevant framework for Lao SGs. However, it should be noted that Lao agrarian society has more

similar features with Thai society rather than pre-war Japanese agrarian society in that Lao and Thailand farmers are more egalitarian in landholdings than landlord-dominated Japanese society. Considering the fact that Japanese landlords took positive initiative in creating rural financial markets in pre-war Japan, policy interventions including NGOs support come to be critically important for the development of Lao SGs.

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Performance of Savings Groups in Mountainous Laos under Shifting Cultivation Stabilization Policy

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The shifting cultivation stabilization policy after the mid-1990s in northern Laos had a fundamental impact on rural lives, including an accelerated migration of non-Lao ethnic people. Based on household-level detailed data collected in 2010–11 from eight villages in Luang Prabang Province, we analyze first the differential impacts of such a policy on different types of villages in terms of location (access to urban centers), land endowments, ethnic composition, etc. Then we examine the role and limitations of village-level savings groups (SGs) introduced by an NGO (supported by the Lao Women's Union) from the middle of the first decade of the twenty-first century. It is found that most of the SGs faced difficulties in accumulating savings, which resulted in a shortage of funds that could be credited to needy members. Money borrowed from SGs is used mainly for medical treatment and consumption. It is suggested that income stabilization and diversification is one of the key factors that facilitate villagers' participation in SGs.

Keywords: Laos, savings group, shifting cultivation stabilization policy, emergency

I Introduction

In the late 1990s, village savings and credit groups (hereafter savings groups, or SGs) were introduced from Northeast Thailand to Laos by NGOs—Foundation for Integrated Agricultural and Environmental Management and Community Organizations Development Institute of Thailand—with the cooperation of the Lao Women's Union (LWU), first to villages in Vientiane Municipality and later to hinterland areas where the market economy was less developed (see Ohno and Fujita, special issue introduction paper).

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Raiffeisen's credit unions in Germany formed the original model for credit unions later developed in other areas, including other European nations, the United States, Japan, and also Northeast Thailand. When credit unions were introduced to these other areas, the economy—even in rural areas—was already commercialized and had a favorable infrastructure, which resulted in the successful growth of credit unions. In contrast, such conditions do not exist in Laos. The rural economy of Laos is still basically subsistence-oriented and largely isolated from urban centers due to poor infrastructure.

Luang Prabang Province, which consists mostly of mountainous areas, is a typical case. Until recently, villagers there depended on shifting cultivation under a village-level communal land management system, with staple food (rice) being produced for self-consumption. Non-rice foods, such as various kinds of vegetables, were collected from the surrounding natural environment. Wild animals and fish were obtained through hunting and catching. Sales of livestock and non-timber forest products largely met the area's cash needs, and rural livelihoods remained basically in a state of self-sufficiency.[1]

However, in recent years the situation has gradually changed due to the growing population and increased cash needs among inhabitants, which have put pressure on natural resources. At the First National Forestry Conference, held in 1989, deforestation was officially identified as a major problem threatening the sustainability and stability of natural resource management in Laos (Khamphay and Phouthone 2009). Besides illegal logging, shifting cultivation was identified as a major cause of deforestation. After the conference, a national program for "shifting cultivation stabilization, land use planning and land allocation" was launched in 1990 and implemented on a trial basis in Luang Prabang and Sayabouly Provinces. Finally, the Seventh Party Congress in 1994 set a policy target to "stabilize" shifting cultivation by 2005 with complete eradication by 2010, and donors and international organizations provided financial and technical support for implementing the policy in northern Laos (Takahashi and Liang 2010).[2]

The land use planning (LUP) program aimed at imposing restrictions on villagers' customary land use rights by introducing land use categories such as "protection forest" and "conservation forest." Villagers were allowed to continue shifting cultivation only in specific land categories. After a while, the land allocation (LA) program was introduced

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1) There is evidence, however, that the rural economy in Laos was much more commercialized long before. See, for instance, Rigg (2005, 47–50) in general and Yokoyama (2003) in the upstream area of the Ou River (upstream of our research area).

2) Whether the practice of shifting cultivation really damages natural resources or not, however, is a controversial issue. Rigg (2005) believes there is not enough rationale for a shifting cultivation stabilization policy, saying that "a context is created from which certain development interventions are justified and given legitimacy" (*ibid.*, 26).

and three to five plots of land were equally allocated to every household. When villagers signed the Land Use Agreement,[3] they were issued a Temporary Land Use Certificate (TLUC)[4] for certifying ownership rights. They were prohibited from cultivating other lands. This implied de facto an introduction of a private landownership system in rural Laos. Villagers traditionally dependent on shifting cultivation in communal land had to abandon it and start permanent upland cultivation. A policy of resettlement of highland people to lowland areas was also incorporated in this LUP/LA program.[5]

Under such a "forced commercialization" of livelihood in a short period of time, a critical question is: how did people adapt to the new policy and institutional environment in general, and how could they earn sufficient cash income to purchase rice and other necessities in particular, since it appears to have been difficult to produce enough rice only in the allocated upland fields?

Migration, especially among non-Lao ethnic people who had hitherto lived in mountainous highland areas, began toward lowland areas, including Vientiane and other cities. The movement seemed to occur voluntarily (if not always willingly) but was often accelerated by government policy, including the LUP/LA program, because non-Lao people lost their major means of livelihood in their original areas. Many lowland Lao villages accepted such migrants.

After the middle of the first decade of the twenty-first century, almost at the same time as the introduction of the LA program, savings groups were introduced in some villages in Luang Prabang Province. Their effect seems to have been rather limited, especially compared to the impact of the shifting cultivation stabilization policy, but nevertheless rural livelihoods were affected to a certain degree.

The major purpose of this paper is to assess the impact of the SGs on rural finance and livelihoods in mountainous Laos, where the market economy is less—or least—developed and the effect of the shifting cultivation stabilization policy is substantial. Conclusions are based on an analysis of household-level data collected by the authors in 2010–11 from several selected villages in Luang Prabang Province.

Not much research on rural finance has been carried out in Laos. The study by

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3) The agreement contained details on the formal authorization of use rights to the concerned families over allocated parcels, with a prohibition on the sale of land and the amount of fines to be paid by users if agreements were not followed. The agreement was signed by the concerned landholder, village head, and District Agriculture and Forestry Office. See Khamphay and Phouthone (2009).

4) The TLUC specified the period of validity for three to five years and was planned to be replaced by the Permanent Land Use Certificate, but this procedure was actually not followed (Khamphay and Phouthone 2009).

5) For a critique of the shifting cultivation stabilization policy and resettlement policy in Laos, see Rigg (2005).

UNDP and UNCDF (1997) is an important and comprehensive one on rural savings and finance. The researchers covered nearly 3,000 rural households from 129 villages all over the country. Especially notable points in connection with our study are that (1) they collected data on non-financial savings such as livestock and precious metals, along with financial savings such as cash and bank deposits; and (2) they dealt with "village revolving funds" (VRFs) such as rice banks and livestock banks, along with a list of major NGOs that initiated VRFs. They indicated that in the mid-1990s there were about 1,650 VRFs, of which more than 1,000 were rice banks.

NERI (2003) issued a report on VRFs, based on a questionnaire survey to 142 district government offices such as LWU, Lao Youth Union, Agriculture Office, Planning Office, Social Welfare and Labour Office, Finance Office, and Agricultural Promotion Bank (APB) branch (by special arrangement with the post office). The number of villages with VRF activities reached 2,452, of which the APB branch accounted for 1,231 (50.2%), followed by LWU (642; 26.2%). But in terms of the number of beneficiaries and the amount of savings, LWU was the most important, accounting for 31% and 40% of the total, respectively. The importance of LWU in monitoring VRFs is notable. It is reported that there were 1,203 rice banks, of which 366 (30.4%) were monitored by LWU, and 420 livestock banks, of which 124 (29.5%) were monitored by LWU (*ibid.*, 14–15).

NERI and Concern Worldwide Lao PDR (2005) conducted an in-depth study on expenditure patterns and saving habits of ethnic minorities in Laos. Twelve villages from six provinces—Hauphanh, Luang Prabang, Khanmmoune, Savannakhet, Saravan, and Attapeu—were selected, and a total of 117 households were surveyed. Focus group discussions were also carried out. Notable findings in connection with our study include the following: (1) there was major spending in health care and education, with an average of 12.8% of total expenditure going to health care and 5.6% to education (2005, 21); and (2) 40.1% of households had no savings, and the major savings of the remaining 60% households were in the form of livestock (49.3%), stored grain (23.1%), cash (22.4%), precious metals (2.6%), and so on.

The World Food Programme (Vulnerability Analysis and Mapping Branch) (2006) carried out a comprehensive study, although it focused on food security and related vulnerability, not savings and finance. A total of 398 villages were selected across the country, and 3,926 households were surveyed. One of the most notable findings in connection with our study is on the coping strategies of households by asset wealth (*ibid.*, 115). The coping strategies are classified into the following: "reduce/change food consumption," "reduce primary expenses," "wild foods," "borrow/help from relatives," "credit," "labor/migration," "destructive valorization," "sales animals/assets," and "savings."

Most of the studies mentioned above were conducted before the shifting cultivation stabilization policy started to have a strong impact in rural areas. Our study conducted during 2010–11 can shed light on this recent important issue, because the LA policy was introduced to our study villages during 1993–2005. The other major difference of our study is that it focuses on SGs transplanted from Northeast Thailand, which are quite different from traditional VRFs in that financial savings, not non-financial savings (such as rice and livestock), are regularly collected from members and loaned back to needy members. Monetary transactions are much more complicated, and training of some women villagers is indispensable. In this sense, the SG is more "formal" in nature at the village level compared to traditional VRFs.

In section 2 of this paper we analyze household-level data to show the basic economic structure in the study villages, including population characteristics, landholding and cultivation, rice production and consumption, occupations and income-earning structure, and major non-land asset distribution. The effect of the government's shifting cultivation stabilization policy on rural economy and livelihood is one of the focuses. In section 3 we discuss the role and limitations of SGs in the study villages, with special reference to coping strategies for health and other risks people face.

II   Economic Structure of Study Villages

II-1 *Population Characteristics*
We selected eight villages in Luang Prabang Province for this study. Two of them are located in suburban Luang Prabang, while the remaining six are along the valley of the Ou River in Ngoy District, spread between the towns of Nong Khiaw and Muang Ngoy (Fig. 1).

Table 1 is a summary of population characteristics of the villages. Kogneiw (KN) and Xieng Lek (XL) are adjacent to Luang Prabang, while the other villages are in Ngoy District. The six Ngoy District villages are ordered according to their distance from the main road (national highway no. 1, hereafter NH1), where Nong Khiaw town is located. Sop Houn (SH) village is also located along NH1, Had Sao (HS) is closest to NH1, and Had Chan (HC) is closest to the inner town of Muang Ngoy.[6] The villages of SH, HS, Sop Khon (SKO), and HC are on the left bank of the Ou River, while Houei Hoi (HH) and Sop Khan (SKA) are on its right bank. There is a connecting dirt road between HS and

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6) Muang Ngoy town was the center of Ngoy District before the construction of NH1. After the road construction, Nong Khiaw town developed rapidly and replaced Muang Ngoy as the center. Sop Houn (SH) is located at the opposite side of Nong Khiaw town, beyond the Ou River.
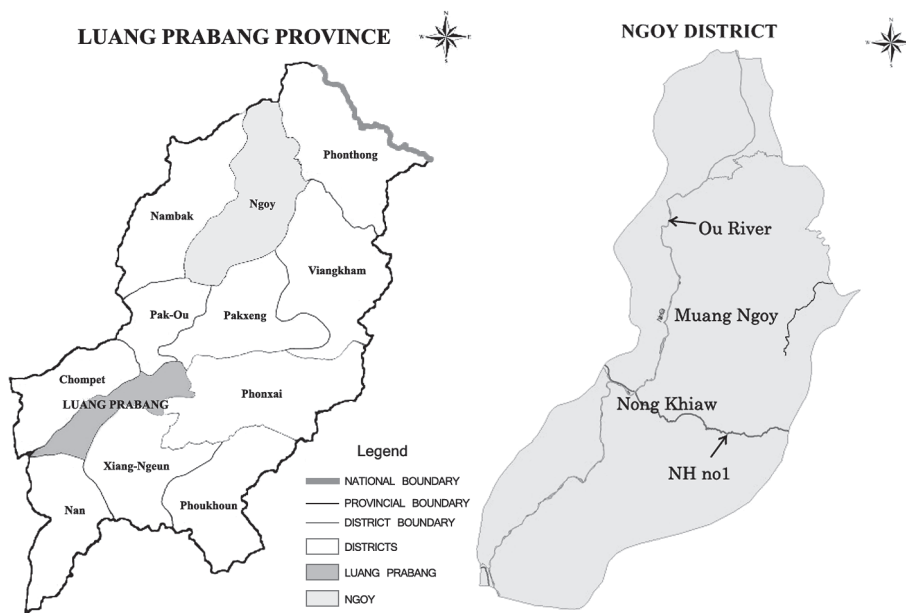
Fig. 1   Map of Luang Prabang Province and Ngoy District

NH1. Another connecting road between SKA and NH1 was completed in 2010,[7] which improved the communication system for SKA.[8] However, as vehicles are unable to use these unpaved roads during the rainy season, boat transportation is still important. The other villages (SKO, HH, and HC) depend solely on boat transportation for communicating with the outer world. In sum, the rural infrastructure, especially road networks, is much better for XL, KN, and SH than for the remaining five villages. Except for XL and KN,[9] we conducted a census household survey.[10] The average number of house-

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7) The road construction started in 2006. SKA is located at the end of the road, and there are four villages in between before reaching NH1. The total length of the road is approximately 17 km. The responsibility of road construction was allocated to the five villages, and SKA was responsible for 5.3 km up to the adjacent village. The NGO World Vision provided 12 tons of rice to SKA village for the road construction and the improvement of irrigation facilities. Three wooden irrigation weirs were substituted by concrete weirs in 2008, and the road was completed in 2010. The villagers basically provided free labor, but they were given rice as wages when they worked hard and intensively.

8) According to several village informants, after the road construction traders often came to the village to sell daily necessities and purchase agricultural products.

9) In KN we selected 74 households (39.6%) based on random sampling, because the village size was too large (187 households). In the case of XL, 42 samples were selected from 67 households (62.7%) as the major purpose of the survey in the village was to provide training to the survey enumerators (university students).

10) However, we failed to cover a few households due to various reasons.

Table 1 Basic Population Information

Village	No. of HHs	Average HH Members			Average No. of HH Members in Labor Force		
		Male	Female	Total	Male	Female	Total
XL	42	2.47	2.52	4.99	1.38	1.36	2.74
KN	74	2.76	2.72	5.48	1.44	1.47	2.91
SH	78	2.86	2.54	5.40	1.37	1.26	2.63
HS	61	2.74	2.69	5.43	1.40	1.23	2.63
HH	44	2.68	2.29	4.97	1.27	1.16	2.43
SKO	62	2.87	2.60	5.47	1.38	1.31	2.69
SKA	75	2.28	2.53	4.81	1.16	1.04	2.20
HC	54	2.78	2.70	5.48	1.19	1.11	2.30
Total	490	2.68	2.59	5.27	1.33	1.24	2.57

Source: Prepared by authors based on household survey in 2010–11.

hold members and labor force per household for 490 households were 5.27 and 2.57, respectively.

The people in the study villages consisted mainly of three ethnic groups: Lao, Khmu, and Hmong.[11] As Table 2 demonstrates, XL, SH, and SKA are nearly pure Lao villages and HC is a nearly pure Khmu village. The remaining villages are multiethnic.

Table 2 also shows the percentage of households recently (within 15 years before our survey in 2010–11) immigrated into each village. Most of the multiethnic villages expanded recently due to the immigration of Khmu and Hmong to Lao-dominated villages. KN is an exception as the village was formed relatively long ago. Note that HC (a Khmu village) also accepted many Khmu immigrants in recent years.

II-2 *Land Tenure and Utilization*
In the early 1990s the Lao government initiated a program for shifting cultivation stabilization, as mentioned earlier. Table 3 summarizes the progress of the land allocation program in the study villages. The program was started in the mid-1990s, beginning in villages with a favorable infrastructure and followed by remote villages several years later. The program was not implemented in XL village, as this village was relocated to the bank of the Mekong River from a more favorable lowland area soon after 1975 by the Revolutionary government as penalty for taking sides with the ousted regime.

Our survey reveals that in most cases three plots of land were allocated to each household, with the size of a plot varying from 0.5 to 1.5 ha, depending on land endow-

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11) According to the 1995 National Census, the population of Luang Prabang Province comprised Khmu (45.9%), Lao (28.6%), Hmong (15.2%), and others (Yokoyama 2003, 7).

Table 2 Ethnic Composition and Immigrants

Village		No. of HHs	Newly Immigrated (%)			
			Within 4 Yrs.	5–9 Yrs.	10–14 Yrs.	Total
XL (Lao)		42	9.5	4.8	7.1	21.4
KN	Lao	19	0	0	0	0
	Khmu	43	7.0	7.0	9.3	23.3
	Hmong	5	0	20.0	80.0	100
	Intermarried	7	0	0	0	0
SH	Lao	75	2.7	1.3	5.3	9.3
	Intermarried	3	33.3	0	0	33.3
HS	Lao	23	0	8.7	4.4	13.0
	Khmu	26	19.2	50.0	19.2	88.5
	Intermarried	11	0	9.1	9.1	18.2
	Unknown	1	Unknown			
HH	Lao	31	12.9	3.2	12.9	29.0
	Khmu	12	58.3	41.7	0	100
	Intermarried	1	100	0	0	100
SKO	Lao	15	0	0	0	0
	Khmu	40	15.0	20.0	25.0	60.0
	Intermarried	7	14.3	0	0	14.3
SKA	Lao	72	5.6	5.6	4.2	15.3
	Khmu	1	100	0	0	100
	Intermarried	2	0	0	50.0	100
HC	Khmu	47	14.9	6.4	19.1	40.4
	Intermarried	7	0	14.3	28.6	42.9
Total		490	9.4	9.2	10.4	29.0

Source: Prepared by authors based on household survey in 2010–11.

ments in each village.[12] The LA program induced villagers to reduce or stop shifting cultivation. In HS, for instance, before 2005 (when the program was introduced in the village) villagers had 7 to 10 plots of land per household, which enabled them to secure a sufficient fallow period and an upland rice yield of more than two tons/ha. However, after the program the fallow period was sharply shortened and the rice yield dropped to less than one ton/ha.

We surveyed the status of shifting cultivation for each household. On average, 36.2% of households never practiced shifting cultivation, 25.8% used to practice it but

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12) The exception was HC, where only two plots were allocated due to the limited availability of land.

Table 3   Implementation of Land Allocation Program

	Year of Land Allocation	Allocated Land per Household	Size of Plot	Note
XL (Lao)	Not applicable	Not applicable	Not applicable	
KN	1996	NA	NA	
SH (Lao)	1993	2.05 ha/HH (176 ha/86 HHs)	NA	
HS	2005	3 plots/HH	NA	7–10 plots/HH before allocation
HH	2005	3 plots/HH	1 ha/plot	
SKO	2005	3 plots/HH	1–1.5 ha/plot	
SKA (Lao)	2005	3 plots/HH	0.5–1 ha/plot	
HC (Khmu)	2000	2 plots/HH	0.5–0.75 ha/plot	

Source: Prepared by authors based on household survey in 2010–11.

stopped, and 37% were still practicing it.[13] Households still practicing shifting cultivation are generally found more in Ngoy District villages (except SH and SKA). There is a notable difference between ethnic groups. Among the Lao 52.7% never practiced and 28.9% have stopped (with only 18.4% still practicing); 62.1% of the Khmu are still practicing and 27.2% have stopped (with only 10.7% never having practiced); and 80% of the Hmong are still practicing and 20% have stopped.

According to the local land categorization, there are mainly three types of land: lowland (*naa*), upland (*hai*), and garden (*suan*). Lowland has been reclaimed by individual households[14] and is not allocated under the LA program. It is managed by individual households for growing lowland rice. Table 4 shows the landholding status of households for lowland, upland, and garden land. Land under fallow when we conducted our survey was often not reported by the respondents and thereby not recorded in the table. Several important findings can be drawn from the table.

First, there is a large disparity among villages in terms of endowment of lowland, although the average area per owner household is almost identical—0.9–1.1 ha. The percentage of lowland owner households is highest in SKA (89.3%), followed by SKO (75.8%), SH (65.4%), HH (50%), HS (44.3%), and KN (33.8%).[15] In the case of HC the

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13) We noticed a tendency for respondents to try to hide from us the fact that they were still practicing (or even used to practice) shifting cultivation, as they were afraid of the government.

14) Usually, villagers reclaimed lowland fields by manual labor (including hired labor) step by step for a fairly long period of time.

15) HH still has substantial room for reclaiming lowland fields, as the villagers just migrated from the opposite side of the Ou River in 2000. By contrast, there is no such room remaining in SKO and only a little in SKA.

Table 4 Landholding and Cultivation Area

Village/Ethnic Group		No. of HHs	Lowland (Owned)		Upland (Cultivated)		Garden (Cultivated)	
			% of HHs	Average Area per Owned HH (ha)	% of HHs	Average Area per Cultivated HH (ha)	% of HHs	Average Area per Cultivated HH (ha)
XL (Lao)		42	0.0	–	2.4	0.80	26.2	1.63
KN		74	33.8	0.97	44.6	1.16	64.9	1.87
SH (Lao)		78	65.4	0.99	16.7	0.73	48.7	1.21
HS		61	44.3	0.99	44.3	0.80	68.9	1.34
HH		44	50.0	1.06	43.2	1.06	40.9	1.23
SKO		62	75.8	0.86	35.5	1.30	29.0	1.38
SKA (Lao)		75	89.3	0.99	25.3	0.80	40.0	1.41
HC (Khmu)		54	3.7	1.00	88.9	0.93	14.8	1.20
Total		490	49.2	0.98	37.1	0.94	43.5	1.41
KN	Lao	19	73.7	0.99	21.1	1.08	78.9	1.86
	Khmu	43	23.3	1.00	51.2	1.12	60.5	1.96
	Hmong	5	0.0	–	80.0	1.08	40.0	1.50
	Intermarried	7	14.3	0.50	42.9	1.67	71.4	1.60
HS	Lao	23	69.6	0.87	21.7	0.56	91.3	1.35
	Khmu	26	19.2	0.90	65.4	0.93	57.7	1.31
	Intermarried	11	45.5	1.54	36.4	0.58	54.5	1.40
HH	Lao	31	41.9	1.12	45.2	1.17	38.7	1.13
	Khmu	12	66.7	1.04	41.7	0.82	54.5	1.40
SKO	Lao	15	86.7	0.94	6.7	1.00	40.0	1.00
	Khmu	40	72.5	0.81	47.5	1.33	30.0	1.56
	Intermarried	7	85.7	0.93	28.6	1.25	0.0	–

Source: Prepared by authors based on household survey in 2010–11.
Note: Upland and garden in XL were not allocated through LA program. Average area is calculated for only landowning households. In the case of lowland, XL is excluded.

percentage is almost nil (3.7%). The low percentages in HS, KN, and HC seem to reflect the composition of ethnicity, because the Khmu and Hmong have traditionally not engaged in lowland paddy cultivation. However, it should also be noted that the percentage is quite high among the Khmu in SKO and HH. The generally assumed relationship between ethnicity and choice of crop cultivation is not necessarily fixed.

Second, naturally, there is a tendency for villages with poorer lowland endowments (i.e., HC, KN, HS, and HH) to depend more on the other types of land. In upland fields, many people still grow (upland) rice. Since each household is allocated three plots of land, the villagers usually follow a system in which a two-year fallow period is incorporated—such as rice-fallow-fallow. Since they apply no chemical fertilizers to upland field (with a few exceptions), at least a two-year fallow period is indispensable. In the case of

HC, since a household is allocated only two plots, the people have to rent-in another plot in order to follow the two-year fallow system. In fact, our survey in 2011 revealed that 15 households rented-in a plot from SKA village and paid 150,000–200,000 kip per household as land rent.

On the other hand, people usually grow cash crops in their garden. With the exception of KN,[16] when people introduce cash crops such as vegetables and tree crops such as teak and fruit, they re-categorize the upland as garden. In this sense, the percentage of households with garden can be a good proxy indicating the extent of agricultural commercialization. HS (68.9%) recorded the highest figure, followed by SH (48.7%), HH (40.9%), SKA (40%), SKO (29.0%), and HC (14.8%). Table 4 also shows that the Khmu attained lower figures in both reclamation of lowland paddy fields and introduction of cash crops to upland. The failure of HC in these two aspects represents a typical case of the Khmu people adjusting poorly to the new policy and institutional environment in northern Laos.

Table 5 summarizes the status of production and consumption of rice in each village. Regarding the per capita annual rice consumption, SKA, SKO, and HH show the highest figures—195–250 kg—in contrast with the lower levels—130–170 kg—in the other villages. The former three villages have a rice surplus at the village level.

Notable here is the large gap in rice consumption among different ethnic groups in KN and HS. However, the cases of HH and SKO are the opposite, probably because there was still plenty of land available to be reclaimed for lowland paddy cultivation when the non-Lao people immigrated into the villages.

II-3 *Income-earning Structure and Non-land Asset Distribution*

Table 6 shows household income and its sources. Income from subsistence rice (produced and consumed by the same household) is added by imputing it with the prevailing rice price in the market. The major findings are as follows.

First, a large disparity is observed in per capita household income among the villages. XL experiences an extraordinarily high income, mainly because of its handweaving indus-

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16) KN is widely known as a "pineapple village." Pineapple was introduced to the village before 1977. In 2010 a rotational land use system was practiced as follows: in March farmers slashed and burned bushes and grasses in the field; in June they sowed upland rice seeds; during July–September they carried out monthly weeding before the harvest in October. In the meantime, pineapple was planted in the same field in July. Harvesting of pineapple starts only after two years. During the two-year period, weeding is repeatedly performed in the field. Pineapples are harvested during June–September, usually for three successive years. After that, the field is left fallow for two to three years before the same cropping cycle starts again or the field is converted to teak plantation.

Table 5 Rice Production and Consumption

| | Village/Ethnic Group | No. of HHs (Excl. Rice Traders) | Average HH Members for Rice Consumption | Net Production (Excl. Seed for Next Year) (A) | Disposal of Net Production | | | Purchase from Market (E) | Total Annual Consumption (B)=(C)+(D)+(E) | Per Capita Annual Consumption | Rice Self-sufficiency Rate (A)/(B) (%) |
					Sale	Self-consumed (C)	In-kind Provision (D)				
	XL (Lao)	36	4.89	20.5	5.0	15.5	0	625.0	640.5	131.0	3.2
	KN	72	6.11	635.7	42.3	540.6	35.1	322.4	898.1	147.0	70.8
	SH (Lao)	74	5.80	864.5	85.1	728.4	41.8	198.9	969.1	167.1	89.2
	HS	59	5.43	463.3	10.2	429.3	21.1	357.8	808.2	148.8	57.3
	HH	44	5.25	1,114.9	210.3	852.6	33.7	142.5	1,028.8	196.0	108.4
	SKO	59	5.59	1,406.0	218.9	1,097.2	14.1	87.2	1,198.5	214.4	117.3
	SKA (Lao)	75	5.05	1,386.0	129.7	1,176.1	15.8	74.9	1,266.8	250.7	109.4
	HC (Khmu)	54	5.65	637.7	20.6	611.0	0.7	228.1	839.8	148.7	75.9
	Total	473	5.52	863.0	91.2	723.4	22.0	234.4	979.8	178.7	88.1
KN	Lao	19	6.11	1,149.6	160.4	882.9	58.9	141.7	1,083.5	177.3	106.1
	Khmu	41	6.17	433.5	0.0	410.5	28.2	393.0	831.7	134.8	52.1
	Hmong	5	6.20	406.1	0.0	406.1	0.0	314.0	720.1	116.1	56.4
	Intermarried	7	5.71	588.9	0.0	470.0	35.9	404.7	910.6	159.5	64.7
HS	Lao	22	5.41	559.1	0.0	529.1	22.4	379.2	930.7	172.0	60.1
	Khmu	25	5.80	380.8	0.0	355.9	24.8	325.9	706.6	121.8	53.9
	Intermarried	11	5.73	444.0	0.0	378.0	11.5	420.3	809.8	141.3	54.8
HH	Lao	31	5.42	1,088.2	233.2	810.2	38.7	180.1	1,029.0	189.9	105.8
	Khmu	12	5.00	1,226.7	168.8	983.4	23.5	49.0	1,055.9	211.2	116.2
SKO	Lao	15	5.73	1,529.1	305.0	1,194.9	12.0	107.4	1,314.3	229.4	116.3
	Khmu	39	5.69	1,367.3	166.8	1,101.9	13.5	68.1	1,183.5	208.0	115.5
	Intermarried	5	4.40	1,339.2	367.2	768.0	24.0	176.0	968.0	220.0	138.3

Source: Prepared by authors based on household survey in 2010–11.
Note: 1) The conversion rate from paddy to rice was assumed to be 0.6.
2) Rice traders/shopkeepers/restaurant owners (N=17) were excluded from the estimates.
3) The number of household members is much larger than in Table 1, because some respondents included family members who should not be included as household members (according to our definition), so in Table 1 adjustment was done. However, all the family members the respondents mentioned to us should be included when estimating per capita rice consumption.

Table 6 Income and Income Sources

	Village/Ethnic Group	No. of HHs	Average HH Members	Annual HH Income (1,000 kip)				Source of Cash Income (%)										
				Cash	Rice (Subsistence)	Total	Per Capita Income	Rice (Sold)	Non-rice Crops	Livestock and Fishery	Labor Wage	Salary	Hand-weaving	Boat Transportation	Self-employment	Remittance	Others
	XL (Lao)	42	4.99	52,300	44	52,344	10,490	0.2	3.0	4.8	2.5	27.2	33.0	0.9	26.5	1.9	0
	KN	74	5.48	10,076	1,564	11,640	2,124	2.0	39.0	4.8	24.3	16.4	0	0.3	8.2	3.1	2.0
	SH (Lao)	78	5.40	15,687	2,137	17,824	3,301	2.3	12.6	13.8	13.2	20.1	5.8	3.3	22.9	4.3	1.7
	HS	61	5.43	5,187	1,461	6,648	1,224	0.7	37.1	21.2	6.8	13.2	0.5	3.3	3.0	11.4	2.7
	HH	44	4.97	4,054	3,015	7,069	1,422	21.0	24.3	24.8	1.5	2.9	0.2	13.8	5.7	5.2	0.6
	SKO	62	5.47	5,960	3,764	9,724	1,778	36.3	12.3	12.4	3.4	8.1	1.1	6.7	6.3	13.0	0.4
	SKA (Lao)	75	4.81	3,682	4,095	7,777	1,617	20.0	19.6	47.0	0.5	3.7	0.2	0.1	4.7	1.0	3.3
	HC (Khmu)	54	5.48	2,411	2,057	4,468	815	9.3	23.0	11.0	8.9	3.2	0	0	10.3	1.8	32.6
	Total	490	5.27	11,095	2,362	13,457	2,588	11.3	22.0	18.2	8.5	11.8	4.0	3.2	10.7	5.2	5.1
KN	Lao	19	5.68	14,054	4,122	18,176	3,200	6.3	27.7	4.9	5.9	16.9	0	0	23.0	2.9	12.4
	Khmu	43	5.42	8,300	1,724	10,024	1,849	0	46.6	3.6	32.0	7.2	0	0.7	4.7	5.1	0.1
	Hmong	5	6.20	6,047	1,692	7,739	1,248	0	46.0	9.8	1.2	9.9	0	0	33.1	0	0
	Intermarried	7	4.67	13,070	2,454	15,524	3,324	0	18.9	1.2	34.0	39.3	0	0	6.6	0	0
HS	Lao	23	5.14	7,070	2,228	9,298	1,809	0	29.5	33.0	1.2	14.3	0.7	4.7	9.2	6.3	1.2
	Khmu	26	5.62	3,657	1,525	5,182	922	0	45.5	8.3	15.6	13.9	0	2.1	0	10.9	3.7
	Intermarried	11	5.73	5,260	1,623	6,883	1,201	4.3	38.6	21.7	1.9	14.5	0	12.4	1.4	5.2	0
HH	Lao	31	4.91	4,427	3,562	7,989	1,627	34.4	28.5	38.7	2.0	9.9	0.2	32.3	14.1	9.1	1.0
	Khmu	12	5.00	3,179	4,408	7,587	1,517	12.4	45.4	39.3	2.1	0	0	0	0	0.8	0
SKO	Lao	15	5.70	7,036	5,101	12,137	2,129	28.1	6.8	22.3	0.9	3.1	0	3.8	34.1	0	0.8
	Khmu	40	5.60	4,115	4,611	8,726	1,558	39.3	10.8	8.8	1.5	11.3	1.5	10.5	0.4	15.8	0.1
	Intermarried	7	4.29	14,201	4,393	18,594	4,334	5.0	0.4	2.3	0	79.7	0	12.6	0	0	0

Source: Prepared by authors based on household survey in 2010–11.
Note: Income from subsistence rice was calculated on the assumption of 2,500 kip/kg (paddy), from which cost (assuming 20% of gross income) was deducted. Seed for the next year and paddy sold were deducted from the gross produce.

try and small trade businesses.[17] The two villages of SH and KN follow.[18] In SH some villagers operate guesthouses or restaurants for tourists, which is a major factor in the village's high income. Pineapple production is the major income source in KN. Besides, salary and wages are important in the three villages due to their proximity to urban centers.

Second, per capita income of the remaining five villages ranges from 1.2 million to 1.8 million kip, except for HC, which records only 815,000 kip. Note that the important income sources of these villages (except HC) are agriculture (both rice and non-rice) and livestock. HC is an exception, depending more on sales of non-timber forest products such as *chandai* (wood of aloe), *khem* (tiger grass), and *mak neng* (cardamom). The HC villagers seem to be further impoverished after the LA program, because they failed to introduce new cash crops. The Khmu in HS also suffer an extremely low income.

Education is important when people try to get remunerative non-farm income. Table 7-1 illustrates educational status according to age group.

First, most people aged 31–40 (born during 1970–80) did not go to junior high school—an average of 65% (especially high at 88% in HH, 82% in HC, 78% in HS, and 71% in SKA). On the other hand, more people studied up to senior high school/vocational school/university in XL (35%), SH (20%), and KN (14%).

Second, more people aged 21–30 (born during 1980–90) attained higher education. The share of people who did not go to junior high school decreased to 46% on average. However, the share was still quite high in SKO (75%), HH (73%), HS (71%), and HC (69%).

Third, young people aged up to 20 (born after 1990) were more educated in general, although many people aged 16–20 decided not to go to junior high school, especially in HH (64%), HS (51%), and SKO (40%). Notable here is the low figure in HC (32%). HC villagers seem to have started investing more in education, but the problem is that all the villages along the Ou River have only primary schools. Parents need to send children to Nong Khiaw or Muang Ngoy for junior high school, which requires large expenditure.

Fourth, in all the generations a large gap can be observed among different ethnic groups in the multiethnic villages of KN, HS, HH, and SKO (Table 7-2). The Khmu and Hmong in general lag behind in child education; this has serious implications for young people in obtaining remunerative non-farm jobs in the future.

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17) Since the villagers were forced to move to the bank of the Mekong River without lowland fields, they tried to overcome the difficulty by starting a handweaving industry. Small trade businesses were developed after many tourists came into the village to see and buy handwoven products.

18) The per capita income of KN is relatively low, close to the level of SKO and SKA, but in terms of cash income KN records a much higher amount.

Table 7-1 Education Level by Age Group

Age Group	Village	Population	Distribution of Education Level (%)						
			No Education	Primary School	Junior High School	Senior High School	Vocational School	University	NA
	XL (Lao)	18	0	11.1	83.3	5.6	–	–	–
	KN	44	0	52.3	40.9	6.8	–	–	–
	SH (Lao)	68	0	26.5	58.8	14.7	–	–	–
	HS	40	7.5	72.5	15.0	5.0	–	–	–
11–15	HH	38	10.5	47.4	31.6	10.5	–	–	–
	SKO	44	6.8	43.2	47.7	2.3	–	–	–
	SKA (Lao)	67	3.0	47.8	38.9	10.4	–	–	–
	HC (Khmu)	50	2.0	60.0	34.0	4.0	–	–	–
	Total	369	3.5	46.4	42.0	8.1	–	–	–
	XL (Lao)	25	4.0	4.0	20.8	56.0	8.0	4.0	4.0
	KN	53	3.8	20.8	20.8	45.3	3.8	5.7	0
	SH (Lao)	68	0	13.2	22.1	47.1	5.9	8.8	2.9
	HS	39	5.1	46.2	23.1	17.9	5.1	2.6	0
16–20	HH	25	12.0	52.0	8.0	28.0	0	0	0
	SKO	42	7.1	33.3	33.3	26.2	0	0	0
	SKA (Lao)	42	2.4	33.3	28.6	35.7	0	0	0
	HC (Khmu)	34	5.9	26.5	29.4	32.4	5.9	0	0
	Total	328	4.3	27.1	23.9	36.9	3.7	3.4	0.9
	XL (Lao)	60	0	8.3	8.3	35.0	31.7	16.7	0
	KN	80	8.8	20.0	18.8	20.0	21.3	8.8	2.5
	SH (Lao)	74	6.8	28.4	18.9	17.6	18.9	4.1	5.4
	HS	56	23.2	48.2	21.4	3.6	3.6	0	0
21–30	HH	33	3.0	69.7	12.1	6.1	3.0	6.1	0
	SKO	40	7.5	67.5	15.0	5.0	2.5	2.5	0
	SKA (Lao)	54	9.3	40.7	31.5	14.8	1.9	1.9	0
	HC (Khmu)	36	8.3	61.1	25.0	0	0	5.6	0
	Total	433	8.6	37.6	18.9	14.8	12.7	6.0	1.4
	XL (Lao)	23	4.3	17.4	43.5	21.7	8.7	4.3	0
	KN	50	18.0	42.0	26.0	12.0	2.0	0	0
	SH (Lao)	49	2.0	44.9	26.5	2.0	14.3	4.1	6.1
	HS	32	34.3	43.8	15.6	3.1	3.1	0	0
31–40	HH	24	29.2	58.3	12.5	0	0	0	0
	SKO	41	19.5	48.8	26.8	4.9	0	0	0
	SKA (Lao)	58	1.7	69.0	20.7	6.9	0	1.7	0
	HC (Khmu)	34	35.3	47.1	17.6	0	0	0	0
	Total	311	16.1	48.6	23.5	6.1	3.5	1.3	1.0

Source: Prepared by authors based on household survey in 2010–11.

Table 8 shows the holding status of livestock and gold, the two major in-kind forms of savings in rural Laos. On average, 10% of households have 3.2 heads of cattle, 38.8% of households have 2.6 buffaloes, 40.4% of households have 2.7 pigs, 75.7% of households have 20.5 chickens, and 18.6% of households have 2.6 *baat* (1 *baat*=15.2 grams) of gold. The international price of gold during 2010–11 was around US$40–50 (≒ 400,000–500,000

Table 7-2   Education Level by Age Group in Multiethnic Villages

Age Group	Village	Ethnicity	Population	No Education	Primary School	Junior High School	Senior High School	Vocational School	University	NA
				Distribution of Education Level (%)						
11–15	KN	Lao	11	0	27.3	45.5	27.3	–	–	–
		Khmu	28	0	60.7	39.3	0	–	–	–
		Hmong	2	0	100	0	0	–	–	–
		Intermarried	3	0	33.3	66.7	0	–	–	–
	HS	Lao	12	0.0	58.3	33.3	8.3	–	–	–
		Khmu	19	10.5	84.2	5.3	0	–	–	–
		Intermarried	8	12.5	62.5	12.5	12.5	–	–	–
	HH	Lao	29	3.4	48.3	34.5	13.8	–	–	–
		Khmu	9	33.3	44.4	22.2	0.0	–	–	–
	SKO	Lao	11	9.1	27.3	63.6	0	–	–	–
		Khmu	31	6.5	51.6	41.9	0	–	–	–
		Intermarried	2	0	0	50.0	50.0	–	–	–
16–20	KN	Lao	19	0	5.3	0	84.2	5.3	5.3	–
		Khmu	27	7.4	18.5	37.0	29.6	3.7	3.7	–
		Hmong	5	0	80.0	0	0	0	20.0	–
		Intermarried	2	0	50.0	50.0	0	0	0	–
	HS	Lao	14	0	35.7	28.6	28.6	7.1	0	–
		Khmu	18	5.6	55.6	27.8	0	5.6	5.6	–
		Intermarried	7	14.3	42.9	0	42.9	0	0	–
	HH	Lao	22	9.1	54.5	9.1	27.3	0	0	–
		Khmu	3	33.3	33.3	0	33.3	0	0	–
	SKO	Lao	12	8.3	33.3	41.7	16.7	0	0	–
		Khmu	26	3.8	34.6	30.8	30.8	0	0	–
		Intermarried	4	25.0	25.0	25.0	25.0	0	0	–
21–30	KN	Lao	27	3.7	7.4	11.1	25.9	33.3	18.5	–
		Khmu	41	12.2	29.3	17.1	14.6	17.1	4.9	4.9
		Hmong	6	0	16.7	50.0	33.3	0	0	–
		Intermarried	6	16.7	16.7	33.3	16.7	16.7	0	–
	HS	Lao	18	5.6	38.9	44.4	0	11.1	0	–
		Khmu	24	41.7	50.0	8.3	0	0	0	–
		Intermarried	14	14.3	57.1	14.3	14.3	0	0	–
	HH	Lao	22	4.5	54.5	18.2	9.1	4.5	9.1	–
		Khmu	9	0	100	0	0	0	0	–
	SKO	Lao	11	18.2	27.3	9.1	27.3	9.1	9.1	–
		Khmu	35	5.7	51.4	34.3	8.6	0	0	–
		Intermarried	8	12.5	12.5	50.0	25.0	0	0	–
31–40	KN	Lao	10	30.0	20.0	20.0	30.0	0	0	–
		Khmu	31	12.9	48.4	29.0	6.5	3.2	0	–
		Hmong	1	100	0	0	0	0	0	–
		Intermarried	8	12.5	50.0	25.0	12.5	0	0	–
	HS	Lao	16	18.8	50.0	25.0	0	6.3	0	–
		Khmu	9	77.8	22.2	0	0	0	0	–
		Intermarried	6	0	66.7	16.7	16.7	0	0	–
	HH	Lao	19	15.8	68.4	15.8	0	0	0	–
		Khmu	5	80.0	20.0	0	0	0	0	–
	SKO	Lao	12	0	75.0	16.7	8.3	0	0	–
		Khmu	25	28.0	40.0	28.0	4.0	0	0	–
		Intermarried	4	25.0	25.0	50.0	0	0	0	–

Source: Prepared by authors based on household survey in 2010–11.

Table 8　Livestock and Gold Holding

Village/Ethnic Group	No. of HHs	Cattle		Buffalo		Pig		Chicken		Gold	
		% of HHs	Average (no.)	% of HHs	Average (no.)	% of HHs	Average (no.)	% of HHs	Average (no.)	% of HHs	Average (baat)
XL (Lao)	42	2.4	10.0	0	–	0	–	40.5	22.6	47.6	4.6
KN	74	0	–	13.5	3.0	18.9	2.6	73.0	27.5	28.4	2.3
SH (Lao)	78	6.4	3.4	44.9	2.5	32.1	2.8	75.6	20.6	30.8	2.5
HS	61	16.4	2.3	49.2	2.3	49.2	3.6	86.9	18.5	13.1	1.5
HH	44	0	–	38.6	2.6	36.4	1.8	70.5	12.2	4.5	1.0
SKO	62	0	–	59.7	2.2	43.5	2.5	67.7	22.3	11.3	1.0
SKA (Lao)	75	13.3	5.7	77.3	3.0	77.3	2.3	96.0	22.5	9.3	1.9
HC (Khmu)	54	44.4	2.1	5.6	2.0	53.7	2.5	83.3	13.9	5.6	1.3
Total	490	10.0	3.2	38.8	2.6	40.4	2.7	75.7	20.5	18.6	2.6
KN　Lao	19	0	–	36.8	3.1	10.5	2.5	94.7	42.3	31.6	4.3
KN　Khmu	43	0	–	7.0	2.7	20.9	2.0	60.5	22.5	32.6	1.6
KN　Hmong	5	0	–	0	–	60.0	4.7	100.0	8.6	0	–
KN　Intermarried	7	0	–	0	–	0	–	71.4	19.0	14.3	1.0
HS　Lao	23	17.4	3.3	78.3	2.6	52.2	4.8	91.3	25.4	21.7	1.8
HS　Khmu	26	7.7	1.5	23.1	1.3	57.7	2.6	84.6	13.6	3.8	1.0
HS　Intermarried	11	27.3	2.0	45.5	2.8	18.2	5.5	81.8	15.8	18.2	1.0
HH　Lao	31	0	–	35.5	3.0	32.3	1.8	80.6	12.4	6.5	1.0
HH　Khmu	12	0	–	50.0	1.8	50.0	1.7	41.7	11.8	0	–
SKO　Lao	15	0	–	73.3	1.7	53.3	2.9	86.7	34.3	13.3	1.0
SKO　Khmu	40	0	–	57.5	2.2	42.5	1.9	60.0	17.4	7.5	1.0
SKO　Intermarried	7	0	–	42.9	3.7	28.6	6.5	71.4	14.4	28.6	1.0

Source: Prepared by authors based on household survey in 2010–11.
Note: Averages are only for owning households.

Table 9　House Type and Holding of Major Consumer Durables

Village	No. of HHs	Share by House Type (%)					% of HHs with Consumer Durables						
		Concrete	Semi-concrete	Wooden	Cottage (Bamboo)	Unknown	Car	Motorbike	Bicycle	Boat	TV	Refrigerator	Mobile Phone
XL (Lao)	42	64.3	23.8	11.9	0	0	40.5	95.2	61.9	11.9	95.2	95.2	97.6
KN	74	24.3	40.5	27.0	8.1	0	13.5	78.4	60.8	8.1	79.7	47.3	82.4
SH (Lao)	78	25.6	43.6	28.2	2.6	0	6.4	76.9	50.0	14.1	84.6	61.5	92.3
HS	61	19.7	8.2	42.6	27.9	1.6	0	6.6	23.0	41.0	14.8	1.6	37.7
HH	62	3.2	12.9	72.6	11.3	0	2.3	6.8	9.1	43.2	22.7	6.8	29.5
SKO	44	2.3	13.6	72.7	11.4	0	0	4.8	3.2	37.1	12.9	0	27.4
SKA (Lao)	75	4.0	14.7	73.3	8.0	0	2.7	12.0	10.7	26.7	12.0	0	62.7
HC (Khmu)	54	3.7	5.6	74.1	14.8	1.9	0	0	0	20.4	5.6	0	35.2
Total	490	17.3	21.8	50.0	10.4	0.4	7.2	36.2	28.4	24.7	42.0	26.2	59.9

Source: Prepared by authors based on household survey in 2010–11.

kip) per gram and therefore 6 million–8 million kip per *baat*.　One *baat* of gold is more valued than a buffalo.　Disparity among villages and households, however, is quite large.

　　Table 9 is a summary of house type and diffusion of major consumer durables.　It more or less corresponds to the per capita income level of each village shown in Table 6.

III Role and Limitations of Savings Groups

The savings groups (SGs) originating in Northeast Thailand were introduced to the study areas after the early years of the twenty-first century. According to a staff member of the Lao Women's Union (LWU) in Ngoy District, as of the end of October 2010, 35 of the 85 villages in the district (41.2%) had already organized SGs. The establishment of SGs in the district was started in 2006 with 3 groups, followed by 29 groups during 2007–08 (supported by the NGO World Vision) and 3 groups in 2009.

SGs are organized at the village (*ban*) level, and a few women are selected for training in accounting, bookkeeping, etc. The basic system is to collect monthly savings (usually a minimum of 5,000 kip per member),[19] which is lent back to members who request a loan. Loans are extended for several months at 3–4% monthly interest, though the amount of loans cannot exceed five times the savings of the borrowers. Besides, in some "emergency" cases, SG members are entitled to interest-free loans for the first month and loans at 3% per month for the succeeding months.[20] Any villagers, including males, can be members, but usually only women can borrow. Normally once a year 70% of profit is distributed to members as dividend according to their savings amount. A part of the remaining 30% of profit is set aside for a common fund, such as an "emergency fund," "welfare fund," etc. SGs are monitored by the LWU and have a more "formal" nature at the village level, so they are a bit different from traditional VRFs such as rice banks and livestock banks.

Table 10 shows an overview of SGs in the study villages. Note that in KN the first SG to be established was dissolved due to internal conflicts, and a new one was started after a while. Because of this, many members quit the group. In SKA, an SG was established in 2007 but due to the financial crisis arising from an excess demand for borrowing for "emergencies," it was closed in February 2009; it was reopened in April 2009.

On average, the rate of participation of households is 57.8%. It varies from 37.8% (KN) to 78.6% (XL), indicating no relationship with the degree of economic development in each village. In advanced villages (XL, KN, and SH), however, a clear tendency is observed: often more than one member from each household joins. This indicates that people in advanced villages try to utilize SGs as an opportunity to save rather than using it as a source of credit. In contrast, people in backward villages view SGs more as a source of credit.

With regard to the influence of ethnicity in the multiethnic villages, some villages

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19) There is usually no upper limit.
20) Some SGs have a regulation that interest-free loans are extended for more than one month until borrowers escape from their "emergency" situation.

Table 10 Membership of Savings Groups

Village/Ethnic Group		Establishment of SG	No. of HHs	No. of HHs with SG Member	% of HHs	No. of Members	Average Members per HH	No. of Members Quitting
	XL (Lao)	Jul. 2006	42	33	78.6	50	1.52	0
	KN	Jul. 2006	74	28	37.8	41	1.46	11
	SH (Lao)	May 2006	78	50	64.1	78	1.56	0
	HS	Mar. 2007	61	34	55.7	44	1.29	1
	HH	Jan. 2007	44	33	75.0	35	1.06	0
	SKO	Jul. 2007	62	42	67.7	43	1.02	0
	SKA (Lao)	2007	75	33	44.0	33	1.00	0
	HC (Khmu)	Jun. 2007	54	30	55.6	30	1.00	0
	Total		490	283	57.8	354	1.25	12
KN	Lao		19	8	42.1	11	1.38	7
	Khmu		43	14	32.6	21	1.50	4
	Hmong		5	1	20.0	1	1.00	0
	Intermarried		7	5	71.4	8	1.60	0
HS	Lao		23	15	65.2	18	1.20	0
	Khmu		26	12	46.2	17	1.42	1
	Intermarried		11	7	63.6	9	1.29	0
HH	Lao		31	22	71.0	22	1.00	0
	Khmu		12	10	83.3	12	1.20	0
SKO	Lao		15	10	66.7	10	1.00	0
	Khmu		40	28	70.0	29	1.04	0
	Intermarried		7	4	57.1	4	1.00	0

Source: Prepared by authors based on household survey in 2010–11.

(KN and HS) show less active participation of non-Lao people, but in other villages (HH and SKO) such a tendency is not observed. We can tentatively hypothesize that due to certain barriers non-Lao ethnic people tend to be alienated from SGs. This issue will be investigated later.

Table 11 demonstrates the accumulated savings in SGs. Except for XL, the amounts of savings remain relatively small, ranging from 170,000 to 400,000 kip per member, even though four years or so have passed since the establishment of SGs. Especially notable is the low growth rate in SH despite its relatively high per capita income.[21]

Table 12 shows the accumulated number of cases and amounts of borrowing from SGs. The amount of borrowing is on average 598,000 kip, with the most frequent amount being 500,000 kip (23.2%), followed by 300,000 kip (16.3%), 200,000 kip (16%), 1 million

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21) The same tendency is observed in KN, but there might be an influence of the internal conflicts among SG members mentioned above.

Table 11 Savings in Savings Groups

Village/Ethnic Group		No. of HHs	No. of Members	Total (1,000 kip)	Per Member (1,000 kip)
	XL (Lao)	42	50	39,428	839
	KN	74	41	13,213	322
	SH (Lao)	78	78	20,655	268
	HS	61	44	10,015	228
	HH	44	35	13,955	399
	SKO	62	44	11,434	260
	SKA (Lao)	75	33	11,220	351
	HC (Khmu)	54	30	4,617	171
	Total	490	355	124,537	359
KN	Lao	19	11	3,547	322
	Khmu	43	21	7,936	378
	Hmong	5	1	110	110
	Intermarried	7	8	1,620	203
HS	Lao	23	18	4,615	256
	Khmu	26	17	3,560	209
	Intermarried	11	9	1,840	204
HH	Lao	31	22	10,010	455
	Khmu	12	12	3,810	346
SKO	Lao	15	11	2,988	272
	Khmu	40	29	7,635	273
	Intermarried	7	4	811	203

Source: Prepared by authors based on household survey in 2010–11.

kip (13.7%), 100,000 kip (7.2%), 600,000 kip (4.9%), and so on. The maximum amounts are four million kip (two cases; 0.8%) and three million kip (two cases; 0.8%). The most frequent reason for borrowing is "medical treatment" (44%). The second-most frequent reason is "consumption" (12.5%), followed by "trade and business" (8.8%), "livestock" (8.6%), "education" (7.0%), "farming" (4.6%), "purchasing non-food" (3.4%), etc. The fact that more than 55% of borrowing is for either "medical treatment" or "consumption" implies that SGs in hinterland areas generally serve as micro-insurance providers rather than credit providers for production purposes.[22]

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22) We found an informal rotational savings and credit association (*houei*) in SH for the purpose of providing credit for production needs. Some of the villagers, especially those engaged in businesses for tourists, participate in the *houei*. They collect 300,000 kip per month, so the size of the *houei* is quite large. UNDP/UNCDF (1997, 43) pointed out that *houei* are much more an urban than a rural phenomenon. The case in SH also has an urban nature, in the sense that it is related to businesses for tourists. The other source of credit for production purposes is the Agricultural Promotion Bank (APB), but it is found only in villages with favorable access to urban centers. Our survey of village informants, for instance, shows that 27 households in SH borrowed from APB, with an average loan size of 5 million kip, and 16 households in HS borrowed from APB, with an average amount of 2.5 million kip. The interest rate is 1.2% per month.

Table 12 Borrowing from Savings Groups

Village/Ethnic Group		No. of HHs with SG Member	No. of Loan Cases	Average Loan Cases per HH	Total Loan Amount (1,000 kip)	Average Loan Size (1,000 kip)	Purpose of Loan Utilization (%)											
							Medical Treatment	Other Emergency	Consumption	Trade and Business	Livestock	Education	Farming	Purchase of Non-food	House Construction	Social Ceremony	Land Purchase	Others
XL (Lao)		33	25	0.76	32,400	1,296	55.6	0.6	11.4	27.8	0	0.3	0	2.8	0	0	0	1.5
KN		28	15	0.54	10,700	713	44.8	0	0.6	0	0	18.7	23.7	0	0	0	0	12.1
SH (Lao)		50	52	1.04	27,900	537	37.6	1.8	6.6	0	13.3	13.3	6.1	1.1	0	0.2	0	20.1
HS		34	76	2.24	31,700	417	45.9	1.3	9.2	3.1	18.0	3.2	4.7	7.4	0.0	0.6	0	6.6
HH		33	26	0.79	15,430	593	24.0	0	5.4	25.9	14.9	9.7	0	3.3	7.8	0	0	9.1
SKO		43	33	0.77	13,850	420	51.3	1.4	7.2	0	2.1	11.9	7.2	2.9	5.8	7.9	0	2.2
SKA (Lao)		33	22	0.67	21,100	959	43.1	0.9	37.9	0	4.7	3.3	2.8	2.4	0	0	4.7	0
HC (Khmu)		30	16	0.53	5,300	331	37.7	0	28.3	0	13.2	7.5	0	7.5	0	0	0	5.7
Total		284	265	0.93	158,380	598	44.0	0.9	12.5	8.8	8.6	7.0	4.6	3.4	1.3	0.8	0.6	7.3
KN	Lao	8	6	0.75	7,300	1,217	43.8	0	0	0	0	21.9	34.2	0	0	0	0	0
	Khmu	14	8	0.57	3,100	388	41.9	0	1.9	0	0	12.9	1.3	0	0	0	0	41.9
	Hmong	1	0	0.00	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Intermarried	5	1	0.20	300	300	100.0	0	0	0	0	0	0	0	0	0	0	0
HS	Lao	15	32	2.13	17,700	553	52.9	0	2.9	0	19.2	5.8	0	8.7	0	1.0	0	9.6
	Khmu	12	23	1.92	8,800	383	43.0	0	9.3	0	26.1	0	17.0	0	0	0	0	4.5
	Intermarried	7	21	3.00	5,200	248	26.9	7.7	30.6	19.2	0	0	0	15.6	0	0	0	0
HH	Lao	22	18	0.82	12,630	702	23.8	0	6.6	31.7	9.5	11.9	0	4.0	4.8	0	0	7.9
	Khmu	10	6	0.60	1,800	300	38.9	0	0	0	61.1	0	0	0	0	0	0	0
SKO	Lao	11	10	0.91	3,900	390	56.4	5.1	25.6	0	0	12.8	0	0	0	0	0	0
	Khmu	28	21	0.75	9,550	455	50.3	0	0	0	3.1	12.0	10.5	4.2	8.4	11.5	0	0
	Intermarried	4	2	0.50	400	200	25.0	0	0	0	0	0	0	0	0	0	0	75.0

Source: Prepared by authors based on household survey in 2010–11.

Considering the extreme importance of medical expenditure in utilizing loans from SGs, let us now examine how villagers face health risks and other emergencies and how they cope with such difficulties, before discussing the role and limitations of SGs.

Table 13 is a summary of the medical expenditure incurred by households. Medical expenditure is divided into two: "large" if exceeding one million kip (approximately US$100) per annum and "small" if less than one million kip.

The table shows that, on average, the number of cases of "large" and "small" expenditure in a year reached 0.41 and 0.84 per household respectively. The average amount of expenditure per case is 3.81 million kip for "large" and 242,000 kip for "small" medical expenditures. And the total medical expenditure per annum is quite large: on average 860 million kip, which is 7–28% of total cash income.

Besides medical treatment, villagers had "unexpected" expenditures for other "emergencies." Table 14 shows such unexpected expenditures for the two years prior to our survey.[23] On average, the expenditure per annum is 5.57 million kip. The most frequent expenses cited are for education (22.2%) followed by childbirth (21.2%), house construction (13.2%), poor harvest (11.8%), marriage (11.3%), and death of family members (10.4%).[24]

Table 15 shows how villagers cope with the needs of both medical and unexpected expenditures. On average, in the case of large medical expenditure, after 53% of the total expenditure is covered by villagers' own savings the gap is filled by property sales (53%), borrowing from informal sources (12%), earning extra income (11%), bestowal (11%), and borrowing from an SG (9%). In the case of small medical expenditure, after 70% of the total expenditure is covered by villagers' own savings the gap is filled by property sales (27%), earning extra income (24%), borrowing from an SG (20%), and bestowal (14%). Lastly, in the case of unexpected expenditure, after 64% of the total expenditure is covered by villagers' own savings the gap is filled by property sales (52%), earning extra income (18%), bestowal (15%), borrowing from informal sources (7%), and borrowing from an SG (4%). The property most often sold in an emergency is livestock, including cattle, buffalo, pig, chicken, etc. Other properties that are sold include gold, teakwood, stored crops, and so on.

In sum, our analysis clearly indicates the limitations of SGs. Although the major purpose of borrowing from an SG is to meet medical expenditure, only a very small fraction of such expenditure (5.2% and 5.9% for large and small medical expenditure, respec-

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23) As shown in the table, however, some cases occurred more than two years ago.
24) Although we asked about "unexpected" expenditure, cases are included that can be easily expected by villagers, such as house construction and education. Such occasions have been included since a relatively large expenditure is needed and people usually cannot fully prepare for such incidents.

Table 13 Medical Expenditures

Village/Ethnic Group	No. of HHs	No. of Cases of "Large" Expenditures	Annual Expenditures per Case (1,000 kip)	No. of Cases of "Small" Expenditures	Annual Expenditures per Case (1,000 kip)	Total Annual Medical Expenditures (1,000 kip)	Total Annual Medical Expenditures per HH (1,000 kip)	Annual Cash Income per HH (1,000 kip)	% of Medical Expenses to Cash Income
XL (Lao)	42	21	6,744	30	236	148,704	3,541	52,344	6.8
KN	74	40	3,020	95	227	142,395	1,924	11,640	16.5
SH (Lao)	78	37	3,608	66	269	151,250	1,939	17,824	10.9
HS	61	22	2,357	63	235	66,635	1,092	6,648	16.4
HH	44	14	3,843	18	257	58,426	1,328	7,069	18.8
SKO	62	30	4,173	50	317	141,068	2,275	9,724	23.4
SKA (Lao)	75	15	4,940	58	175	84,250	1,123	7,777	14.4
HC (Khmu)	54	21	2,870	30	244	67,590	1,252	4,468	28.0
Total	490	200	3,806	410	242	860,318	1,756	13,457	13.0
KN Lao	19	11	5,000	20	214	59,280	3,120	18,176	17.2
KN Khmu	43	26	2,388	57	229	75,141	1,747	10,024	17.4
KN Hmong	5	0	0	7	243	1,701	340	7,739	4.4
KN Intermarried	7	3	1,233	11	234	6,273	896	15,524	5.8
HS Lao	23	10	1,985	13	182	22,216	966	9,298	10.4
HS Khmu	26	8	3,038	35	255	33,229	1,278	5,182	24.7
HS Intermarried	11	3	1,900	14	245	9,130	830	6,883	12.1
HH Lao	31	10	2,980	12	204	32,248	1,040	7,989	13.0
HH Khmu	12	4	6,000	6	363	26,178	2,182	7,587	28.8
SKO Lao	15	10	7,830	11	354	82,194	5,480	12,137	45.1
SKO Khmu	40	17	2,494	35	296	52,758	1,319	8,726	15.1
SKO Intermarried	7	3	1,500	4	404	6,116	874	18,594	4.7

Source: Prepared by authors based on household survey in 2010–11.
Note: "Large" expenditures entail more than one million kip a year and "small" entail less than one million kip.

tively) is actually met by borrowing or withdrawal from an SG. There is a possibility that the role of SGs in meeting medical expenditure will be enhanced in the future if savings increase, but in fact the SGs in most of our study villages are not experiencing a smooth accumulation of savings. One of the major problems with SGs is apparently the small amount of loans they can provide, especially compared to the cash needs in emergencies (Table 16).

SGs can meet the cash needs of small-scale emergencies such as a "small" medical treatment, but as Table 15 demonstrates, when such small-scale emergencies do occur people do not actually rely heavily on borrowing from SGs, probably because the latter have far smaller funds relative to people's needs.

On the other hand, our survey shows that villagers usually keep substantial amounts of cash in hand—almost 300,000 kip on average. Note that there is no substantial difference observed among the study villages and also no seasonality in the amount of cash.[25]

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25) In KN we observed more cash in hand in July and August, mainly because residents had to pay school fees.

Table 14 "Unexpected" Expenditure

Village/Ethnic Group		No. of HHs	No. of Cases Reported	Average Expenditure per Case per Year (1,000 kip)	Year (%)				Purpose (%)						
					2011	2010	2009	2008 and Before	Education	Childbirth	House Construction	Poor Harvest	Marriage	Death of Family Member	Others
XL (Lao)		42	16	15,438	0	68.8	31.3	0	6.3	43.8	6.3	6.3	12.5	12.5	12.5
KN		74	48	5,908	0	10.4	64.6	25.0	20.8	20.8	12.5	12.5	20.8	6.3	6.3
SH (Lao)		78	49	7,553	0	8.2	75.5	16.3	36.7	14.3	18.4	14.3	4.1	4.1	8.2
HS		61	31	1,930	0	32.3	61.3	6.5	29.0	16.1	12.9	12.9	3.2	6.5	19.4
HH		44	17	2,780	23.5	70.6	5.9	0	17.6	23.5	11.8	5.9	11.8	23.5	5.9
SKO		62	21	2,688	19.0	76.2	4.8	0	9.5	23.8	14.3	9.5	23.8	14.3	4.8
SKA (Lao)		75	15	6,300	33.3	40.0	26.7	0	13.3	13.3	13.3	13.3	13.3	20.0	13.3
HC (Khmu)		54	15	1,505	13.3	73.3	6.7	6.7	13.3	33.3	6.7	13.3	0	20.0	13.3
Total		490	212	5,572	7.1	35.4	46.7	10.8	22.2	21.2	13.2	11.8	11.3	10.4	9.9
KN	Lao	19	13	13,592	0	7.7	46.2	46.2	30.8	7.7	23.1	15.4	15.4	7.7	0
	Khmu	43	28	1,566	0	14.3	67.9	17.9	17.9	25.0	3.6	14.3	21.4	7.1	10.7
	Hmong	5	1	3,700	0	0	100	0	0	0	0	0	100	0	0
	Intermarried	7	6	9,893	0	0	83.3	16.7	16.7	33.3	33.3	0	16.7	0	0
HS	Lao	23	11	1,284	0	36.4	54.5	9.1	27.3	0	9.1	18.2	0	9.1	36.4
	Khmu	26	12	1,660	0	41.7	58.3	0	25.0	33.3	8.3	8.3	8.3	0	16.7
	Intermarried	11	7	3,621	0	14.3	71.4	14.3	28.6	14.3	28.6	14.3	0	14.3	0
HH	Lao	31	9	2,967	44.4	55.6	0	0	0	22.2	22.2	0	22.2	22.2	11.1
	Khmu	12	7	2,650	0	85.7	14.3	0	42.9	28.6	0	14.3	0	14.3	0
SKO	Lao	15	4	6,725	0	100	0	0	0	25.0	0	50.0	0	25.0	0
	Khmu	40	14	1,943	21.4	71.4	7.1	0	14.3	21.4	14.3	0	28.6	14.3	7.1
	Intermarried	7	3	783	33.3	66.7	0	0	0	33.3	33.3	0	33.3	0	0

Source: Prepared by authors based on household survey in 2010–11.

Table 15 Financing of Medical and "Unexpected" Expenditures

	No. of HHs	No. of Cases	Average Amount (1,000 kip)	Own Savings (1,000 kip)	Gap (1,000 kip)	Source of Filling the Gap (%)						
						Earned Extra Income	Borrow from SG	Withdraw from SG	Sales of Property	Borrow from Informal Sources	Bestowal	Others or Unknown
"Large" Medical Expenditures												
XL (Lao)	42	21	6,744	2,988	3,756	1.3	12.0	2.2	63.4	8.4	12.7	0
KN	74	40	3,020	1,676	1,344	13.1	4.1	8.3	54.7	4.1	13.3	2.5
SH (Lao)	78	37	3,608	2,194	1,414	6.4	15.6	0	52.0	5.4	20.7	0
HS	61	22	2,357	1,023	1,334	33.3	8.7	0	45.8	3.7	8.5	0
HH	44	14	3,843	2,014	1,829	19.5	13.7	3.4	42.2	12.8	6.3	2.1
SKO	62	30	4,173	2,491	1,682	7.9	13.2	0	39.7	32.8	4.0	2.5
SKA (Lao)	75	15	4,940	2,233	2,707	7.3	1.3	0	59.3	16.1	16.1	0
HC (Khmu)	54	21	2,870	1,705	1,165	24.6	6.9	0	44.8	8.1	0	15.5
Total	490	200	3,806	2,028	1,777	11.4	9.4	1.7	52.7	11.9	11.0	1.9
"Small" Medical Expenditures												
XL (Lao)	42	30	236	216	20	0	0	0	0	0	0	100
KN	74	95	227	169	58	50.8	5.5	3.9	21.5	6.3	12.1	0
SH (Lao)	78	66	269	193	76	27.0	13.1	0	51.8	0	8.2	0
HS	61	63	235	128	107	19.7	19.0	0	18.2	15.5	27.6	0
HH	44	18	257	179	78	7.2	64.1	0	25.0	0	3.6	0
SKO	62	50	317	201	116	17.3	5.2	0	27.1	14.2	22.5	13.7
SKA (Lao)	75	58	175	161	14	24.4	0	0	70.7	0	4.9	0
HC (Khmu)	54	30	244	184	60	46.9	22.4	11.0	16.7	0	0	2.9
Total	490	410	242	174	67	24.2	19.5	1.7	26.9	6.9	13.7	7.1
"Unexpected" Expenditures												
XL (Lao)	42	16	15,438	9,942	5,496	20.5	0.6	0	59.6	0	19.4	0
KN	74	48	5,908	3,545	2,363	21.4	3.5	3.5	24.4	1.3	33.7	12.3
SH (Lao)	78	49	7,553	4,638	2,915	10.6	3.9	0	56.0	21.0	8.5	0
HS	61	31	1,930	1,297	633	59.3	13.5	0	16.2	3.1	2.8	5.2
HH	44	17	2,780	2,230	550	0	9.0	6.5	49.2	22.6	0	12.6
SKO	62	21	2,688	1,693	995	39.2	11.9	0	32.4	15.7	0	0.8
SKA (Lao)	75	15	6,300	4,618	1,682	1.5	9.7	0	77.9	4.9	0	6.0
HC (Khmu)	54	15	1,505	892	613	12.0	0	0	70.5	0	17.4	0
Total	490	212	5,572	3,551	2,021	18.4	4.2	0.8	51.9	6.7	14.7	3.3

Source: Prepared by authors based on household survey in 2010–11.
Note: Medical expenditures are for the last year, whereas "unexpected" expenditures are also for one year but were incurred during the last two years.

Table 16   Annual Expenditure for "Emergencies"

	Total (Cases)	Annual Expenditure (1,000 kip)						
		Less than 100	100–300	300–500	500–1,000	1,000–2,000	2,000–5,000	5,000 and Above
Medical Treatment	641	25.0%	19.3%	11.2%	13.9%	13.1%	10.1%	7.3%
Education	47	0%	10.6%	10.6%	23.4%	12.8%	25.5%	17.0%
Childbirth	44	0%	11.4%	9.1%	29.5%	11.4%	29.5%	9.1%
House Construction	28	0%	0%	7.1%	3.6%	10.7%	21.4%	57.1%
Poor Harvest	24	0%	4.2%	16.7%	16.7%	8.3%	45.8%	8.3%
Marriage	23	0%	0%	0%	8.7%	17.4%	34.8%	39.1%
Death of Family Member	20	0%	0%	5.0%	10.0%	35.0%	10.0%	40.0%
Others	21	0%	14.3%	9.5%	19.0%	19.0%	14.3%	23.8%

Source: Prepared by authors based on household survey in 2010–11.

The villagers can only borrow from SGs more or less the same amount of their cash in hand.

In Ngoy District, World Vision operated rice banks in 28 villages as of March 2010 (interview at the World Vision Ngoy District Office on March 16, 2010). Among the study villages we find such rice banks in SH, HS, and HC. Rice banks started in 2006 in SH and 2008 in HS and HC, with an initial provision of 2.5–3 tons of rice from World Vision. Village managers are appointed, rice is loaned in July–September, and borrowers repay the loan the following January with 15–20% interest (making the annual interest rate well above 30%). The average amount of rice borrowed per household is around 100 kg (with a value of roughly 400,000 kip). Rice banks play a similar role to SGs, although their aim is to provide rice for home consumption.

"Borrowing from informal sources" and "bestowal" play an important role if people have a strong social network.[26] The problem here is also the limited amount of money for borrowing if people rely on relatives and friends alone. There are several professional moneylenders in Nong Khiaw town, but since they charge 15–20% monthly interest many people do not dare to borrow from them. As already mentioned, the last resort when people need a large amount of money is "property sales," including gold, livestock, and even some consumer durables (such as motorbikes).

On the other hand, Table 15 also shows that SGs play an important role, especially when people need small medical expenditures. After meeting a certain portion of the necessary expenditure from their own savings, as mentioned above, they borrow 9%, 19%, and 4% of the balance for large, small, and unexpected expenditures from SGs. At least for meeting small medical expenditures, SGs play an important role.

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26)   See the third article in this special issue by Ohno and Chansathith.

How can we facilitate greater participation in SGs, with household participation rates being limited to 57.8% on average—ranging from 37.8% (KN) to 78.6% (XL)? To address this question we propose a binary probit model to estimate a household's decision on whether or not to participate in an SG. A dependent variable is SG membership, which is 1 if the respondent household has an SG member and 0 otherwise. Village-wise results are shown in Table 17.

Data show that some variables turn out to be 0 for both members and non-members. They are indicated as "NA" in Table 17. Sometimes a variable has a positive value for members but 0 for non-members. Statistically such variables cannot be included in a probit model, because they turn out to be identical with the dependent variable. However, such variables are vital for decision making on whether or not to participate in an SG. These cases are indicated as "Z" in the table.

Note that the independent variables "age" and "education" are for household heads ("education" is categorized as no schooling, primary school, junior high school, senior high school, vocational school, and university). The "civil servant" and "trader" dummies are 1 if there are (at least one) civil servants and/or traders among household members, and 0 otherwise. The "shock" dummy depends on whether the household had unexpected expenditure during the last two years prior to our survey. The non-Lao dummy is 1 in the case of non-Lao households and 0 otherwise (including multiethnic households). The average figures for the independent variables are shown in Appendix 1. The major findings are as follows.

First, the parameters of the size of labor force are positive and significant for five villages among our eight target villages. This can be interpreted to mean that the higher the number of the labor force the more stable (at higher levels) the household income. A constant flow of income is assumed to induce households to participate in SGs, since it enables households to save every month with ease.

Second, at least one of the livestock parameters, especially that of small livestock such as pigs and chickens, is positive and significant except for KN. This can be interpreted to mean that more frequent opportunities to get cash income (from livestock activities) enable households to save on a regular basis and hence induce them to participate in SGs. Considering that the loan purpose from SGs associated with livestock is negligible (Table 12), obtaining loans for livestock working capital is not a strong motive for SG participation.

Third, the parameters of remittance are negative and significant for KN and SH. It can be assumed that remittance offers a safety net against emergencies and hence reduces the necessity for SG participation. Some types of non-farm income may play a role similar to remittances.

Table 17 Savings Group Participation Function

	XL Z-Coef	XL Wald Sig.	KN Z-Coef	KN Wald Sig.	SH Z-Coef	SH Wald Sig.	HS Z-Coef	HS Wald Sig.	HH Z-Coef	HH Wald Sig.	SKO Z-Coef	SKO Wald Sig.	SKA Z-Coef	SKA Wald Sig.	HC Z-Coef	HC Wald Sig.	Total Z-Coef	Total Wald Sig.
Age	0.71	3.78*	0.01	0.45	-0.05	5.29**	-0.04	1.92	-0.03	0.89	0.01	0.23	0.01	0.03	0.06	5.43**	0.01	0.15
Education	-12.9	3.34*	0.38	2.91*	0.21	0.86	0.39	1.32	0.08	0.02	0.36	2.19	0.44	1.78	1.58	9.27***	0.08	1.24
Lowland	NA		-0.61	2.11	-0.66	1.22	0.01	0.23	1.87	2.76*	-0.31	0.32	0.49	2.27	-1.83	1.36	0.07	0.28
Upland	NA		0.33	1.24	2.69	4.43**	-1.1	3.37*	2.22	5.59**	-1.09	7.67***	0.42	0.91	1.21	4.11**	-0.04	0.09
Garden	NA		0.12	0.66	-0.08	0.07	0.29	0.98	-1.01	1.85	-0.15	0.26	0.18	0.49	-1.8	4.93**	-0.06	0.65
Shock (dummy)	-8.1	1.14	0.99	1.14	0.6	1.16	0.39	0.59	-0.33	0.19	0.34	0.34	0.03	0.01	-1.13	2.99*	-0.05	0.13
No. in labor force	23.86	4.24**	0.3	2.69*	0.63	4.89**	0.73	5.92**	0.21	0.29	0.63	4.69**	0.05	0.04	-0.81	3.9**	0.22	11.33***
Civil sevant (dummy)	16.81	3.5*	1.02	2.15	-0.68	1.17	0.78	0.65	NA		1.23	2.29	0.01	0.01	2.93	2.67*	0.15	0.54
Trader (dummy)	16.81	2.08	0.81	1.15	-0.05	0.01	Z		Z		-0.46	0.43	-0.09	0.01	NA		0.19	0.89
Remittance	0.01	2.52	-0.01	4.08**	0.01	3.67*	-0.01	4.59**	0.01	0.02	0.01	2.69*	-0.01	0.77	Z		0.01	4.15**
Non-farm income	0.01	2.52	-0.01	2.09	0.01	0.01	Z		-0.01	2.84*	Z		0.01	0.64	NA		0.01	0.02
No. of cattle	Z		NA		Z		1.18	4.34**	NA		NA		-0.12	1.45	0.54	5.85**	0.06	1.19
No. of buffalo	NA		0.26	0.69	0.06	0.09	0.67	3.91**	-0.15	0.41	-0.14	0.95	0.03	0.08	MC		-0.01	0.04
No. of pigs	Z		0.11	0.49	1.1	8.38***	0.03	0.16	0.76	1.54	0.06	0.27	0.04	0.15	0.22	2.72*	0.11	9.18***
No. of chickens	-3.68	3.22*	0.02	1.99	0.04	5.27**	0.04	5.78**	0.12	2.96**	-0.01	0.36	-0.03	2.65*	0.03	1.6	0.01	1.37
Amount of gold	-3.68	3.22*	0.04	0.04	-0.27	2.16	-0.48	0.87	-5.31	4.59**	NA		-0.04	0.02	Z		-0.01	0.05
Non-Lao (dummy)	NA		-0.38	0.72	NA		1.38	3.59*	-0.21	0.06	1.33	6.16**	NA		NA		0.03	0.02
Member	9 (21.4)		39 (58.2)		28 (35.9)		26 (43.3)		11 (25.0)		20 (32.3)		42 (56.0)		24 (44.4)		199 (41.3)	
Non-member	33 (78.6)		28 (41.8)		50 (64.1)		34 (56.7)		33 (75.0)		42 (67.7)		33 (44.0)		30 (55.6)		283 (58.7)	
Total	42 (100.0)		67 (100.0)		78 (100.0)		60 (100.0)		44 (100.0)		62 (100.0)		75 (100.0)		54 (100.0)		482 (100.0)	
Log likelihood	4.7		62.57		58.47		45.24		24.33		53.25		87.01		46.6		581.37	
LR chi²	39.3		28.5		43.38		36.87		25.16		24.73		15.88		27.59		72.11	
Prob>chi²	***		**		***		***		*		*		NS		**		***	
Pseudo R²	0.61		0.035		0.43		0.46		0.44		0.33		0.19		0.4		0.14	

Notes: 1) Pseudo R^2 is Cox-Snell.
2) MC for HC implies that buffalo are excluded to evade the multicollinearity problem because only lowland owning farmers own buffalo.
3) Village dummies are included for the aggregate function, but not displayed.
4) * $p<10\%$, ** $p<5\%$, *** $p<1\%$.

Fourth, the parameters of gold are negative and significant in some villages (XL and HH). This can be interpreted to mean that savings in the form of gold functions as a substitute for savings in SGs. In this connection, the positive sign of the parameters of livestock mentioned above implies that savings in the form of livestock do not function as a substitute for savings in SGs, contrary to the case of gold.

Fifth, the parameters of the non-Lao dummy are generally not significant, and in SKO they are even positive and highly significant. The hypothesis that the non-Lao households in multiethnic villages are alienated from SGs is rejected, even in KN and HS.

Lastly, note that when we add an indicator for new (less than 15 years) immigration to villages as an explanatory variable, the variable does not show significance (not shown in Table 17). The hypothesis that new immigrants are alienated from SGs is also rejected.

IV   Conclusion

The savings group (SG) movement was transplanted from Northeast Thailand to Laos in the mid-1990s, starting from villages in Vientiane Municipality, one of the most advanced rural areas in the country, with a relatively favorable infrastructure. After several years the system was introduced to remote rural areas with a poor infrastructure. Since the middle of the first decade of the twenty-first century it has existed in Luang Prabang Province, including the remotest mountainous villages.

From the mid-1990s or a decade later, on the other hand, mountainous rural villages in northern Laos experienced a drastic transformation due to the government's policy initiative for shifting cultivation stabilization. Shifting cultivation based on a communal land management system became restricted, and with the introduction of a land allocation program rural households were allocated three to five plots of upland. Their customary land use rights were thus negated, and people were prohibited from using other lands for cultivation. They were encouraged to convert the allocated plots to permanent upland fields for growing cash crops. The government also encouraged them to reclaim lowland paddy fields.

Such a policy hit rural people, particularly those of non-Lao ethnicity, because, unlike the Lao, they had traditionally depended on shifting cultivation and were unfamiliar with cash crop production and lowland paddy cultivation. As a result, migration of non-Lao ethnic people accelerated from highland to lowland areas and from upstream to downstream areas. Some people even migrated to urban areas such as Luang Prabang and Vientiane. Others migrated mainly to Lao-dominated villages.

In this paper, based on data for 490 households collected in 2010–11 from eight villages in Luang Prabang Province, we first analyze how people responded to the shifting cultivation stabilization policy by showing detailed data on their economy and livelihood. Then, we focus on the performance of SGs. Together with the data on how people cope with health and other risks we discuss the role and limitations of SGs.

To conclude the paper we will summarize the major points, particularly in relation to the performance of SGs in the study villages.

The eight study villages are broadly classified into two categories: advanced villages (XL, KN, and SH) and backward villages (HS, HH, SKO, SKA, and HC). In general, there is a sharp contrast between the two groups in almost all aspects, including per capita income, rice consumption, occupational diversification, education, house structure, dissemination of consumer durables, and non-land assets such as livestock and gold.

It is found that the SGs in the study villages, after their establishment in 2006–07, have not experienced smooth growth (measured by accumulated savings), especially in backward villages. The sluggish growth of savings resulted in a shortage of funds to be credited to needy members. The amount of borrowing from SGs is slightly less than 600,000 kip on average, with the most frequent amount being 500,000 kip (23%), followed by 300,000 kip (16%), 200,000 kip (16%), 1 million kip (14%), 100,000 kip (7%), and 600,000 kip (5%).

Considering that the regular cash in hand among rural households is slightly less than 300,000 kip whereas the usual borrowing from rice banks (operated by World Vision) is 100 kg of rice, which is roughly equivalent to 400,000 kip, it can be said that the amount of borrowing from SGs is basically small.

Since the major reasons for borrowing from SGs are "medical treatment" and "consumption," SGs function as micro-insurance providers rather than credit providers for production purposes. However, the demand for credit for such purposes, especially for medical treatment, is quite large, far exceeding the funds that SGs accumulate. For instance, on average, 410 cases (for 490 households) spent 242,000 kip per year for small (with annual expenditure of less than 1 million kip) medical treatment and 200 cases spent 3.8 million kip for large medical treatment. In addition, 212 cases had to spend 5.6 million kip for other emergencies. A large part of such necessary expenditures is met by villagers' own savings and sales of property.

However, at the same time, it is found that after meeting a certain portion (53%, 70%, and 64% for large and small medical expenditures and unexpected expenditure, respectively) of the expenditure from their own savings, villagers cover 9%, 19%, and 4% respectively of the rest by borrowing from SGs. At least when it comes to small medical expenditures SGs do play an important role in funding.

On the other hand, this study found that the participation rate of rural households in SGs is limited to an average of 57.8%—ranging from 37.8% to 78.6%. In order to estimate a household's decision on whether or not to participate in SGs, we propose a binary probit model. The major findings include the following:

(1) Households with a greater labor force tend to participate more in SGs;
(2) Households with more livestock, especially pigs and chickens, tend to participate more in SGs;
(3) Households with remittance income tend to participate less in SGs;
(4) Households with a greater amount of gold tend to participate less in SGs;
(5) The hypothesis that non-Lao ethnic households in the multiethnic villages are alienated from SGs is rejected.

The probit analysis indicates that in order to facilitate rural people joining SGs, the most important thing is to stabilize their income (at higher levels), in other words to enable them to get cash income constantly (smooth the income-earning structure).

The other important factor for facilitating people joining SGs might be an injection of seed money from outside. In the case of rice banks, for instance, NGOs initially provide a certain amount of rice stock for starting the banks. In the case of SGs in Luang Prabang Province usually only a small amount of money is provided in the beginning. Generally speaking, SGs are much more cost-saving compared to Grameen Bank-type microfinance schemes, so the injection of more seed money can be justified if the money is used efficiently and with transparency.

Finally, the paper identifies several policy agendas for stabilizing or enhancing rural livelihoods, especially for the non-Lao ethnic minority. First, the development of infrastructure, especially rural roads (connecting to main roads), is vital for facilitating cash crop production in allocated upland fields. Second, programs for improving public health are vital for reducing the heavy financial burden on rural people. Third, given the critical importance of higher education for the long-term development of rural economies, serious consideration should be given to a strategy for financially supporting education expenditures. Fourth, in villages that still have abundant room for reclaiming lowland fields, financial support for accelerating a land reclamation process needs to be considered.

Acknowledgments

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Appendix 1　Average Figures of Variables for Regression Analysis

Village	Savings Group	Age	No. in Labor Force	Education	Lowland (ha)	Upland (ha)	Garden (ha)	Non-farm Income (1,000 kip)	Remittance Income (1,000 kip)	Civil Servant (Dummy)	Trader (Dummy)	No. of Cattle	No. of Buffalo	No. of Pigs	No. of Chickens	Amount of Gold (baat)	Shock (Dummy)	Non-Lao (Dummy)
XL	Non-member	37.22	2.22	3.00	0.00	0.00	0.00	90477.78	1066.67	0.44	0.56	0.00	0.00	0.00	16.33	1.89	0.56	0.00
	Member	50.70	2.88	2.21	0.00	0.03	0.00	15984.85	548.49	0.46	0.73	0.30	0.00	0.27	7.21	2.27	0.18	0.00
	Average	47.81	2.74	2.38	0.00	0.02	0.00	31947.62	659.52	0.45	0.69	0.24	0.00	0.21	9.17	2.19	0.26	0.00
KN	Non-member	44.95	2.46	1.33	0.45	0.41	1.08	958.97	238.46	0.05	0.10	0.00	0.26	0.31	13.05	0.54	0.41	0.74
	Member	48.39	3.32	1.29	0.36	0.21	1.11	2025.00	26.79	0.21	0.21	0.00	0.46	0.86	28.79	0.64	0.64	0.54
	Average	46.39	2.82	1.31	0.41	0.33	1.10	1404.48	150.00	0.12	0.15	0.00	0.34	0.54	19.63	0.58	0.51	0.66
SH	Non-member	49.71	2.39	1.79	0.58	0.07	0.58	9417.86	151.79	0.36	0.32	0.00	0.89	0.11	9.89	1.07	0.50	0.00
	Member	46.58	2.76	1.78	0.76	0.10	0.94	4292.50	530.00	0.30	0.28	0.34	1.28	1.36	18.74	0.60	0.62	0.00
	Average	47.71	2.63	1.78	0.69	0.09	0.78	6132.37	394.23	0.32	0.30	0.22	1.14	0.91	15.56	0.77	0.58	0.00
HS	Non-member	41.08	2.46	1.00	0.34	0.38	0.45	0.00	696.15	0.04	0.04	0.12	0.46	0.89	11.19	0.12	0.42	0.50
	Member	39.76	2.74	1.29	0.39	0.29	0.33	500.00	161.77	0.15	0.03	0.59	1.68	2.50	20.12	0.27	0.50	0.38
	Average	40.33	2.62	1.17	0.37	0.33	0.36	283.33	393.33	0.10	0.03	0.38	1.15	1.80	16.25	0.20	0.47	0.43
HH	Non-member	47.27	2.00	0.82	0.38	0.36	0.45	581.82	163.64	0.00	0.00	0.00	1.09	0.36	4.73	0.09	0.45	0.18
	Member	42.70	2.58	1.18	0.58	0.55	0.23	157.58	175.76	0.03	0.09	0.00	0.97	0.73	9.91	0.03	0.24	0.30
	Average	43.84	2.43	1.09	0.53	0.50	0.31	263.64	172.73	0.02	0.07	0.00	1.00	0.64	8.61	0.05	0.30	0.27
SKO	Non-member	38.15	2.45	1.25	0.68	0.80	0.46	0.00	1200.00	0.05	0.10	0.00	1.30	1.00	13.85	0.00	0.25	0.60
	Member	41.55	2.81	1.38	0.69	0.33	0.44	933.33	47.62	0.14	0.12	0.00	1.29	1.14	15.69	0.17	0.26	0.67
	Average	40.45	2.69	1.34	0.69	0.48	0.45	632.26	419.36	0.11	0.11	0.00	1.29	1.10	15.10	0.11	0.26	0.65
SKA	Non-member	42.43	2.14	1.17	0.79	0.14	0.36	44.05	83.33	0.05	0.02	0.91	2.43	1.69	24.50	0.17	0.19	0.00
	Member	43.18	2.36	1.39	1.00	0.21	0.48	448.48	6.06	0.09	0.09	0.58	2.18	1.88	17.85	0.18	0.12	0.03
	Average	42.76	2.24	1.27	0.88	0.17	0.41	222.00	49.33	0.07	0.05	0.76	2.32	1.77	21.57	0.17	0.16	0.01
HC	Non-member	37.25	2.29	0.87	0.04	0.96	0.33	333.33	0.00	0.04	0.00	0.46	0.08	0.71	9.88	0.00	0.29	0.00
	Member	40.87	2.30	1.17	0.03	1.07	0.13	403.33	121.67	0.03	0.00	1.30	0.13	1.83	12.93	0.13	0.20	0.00
	Average	39.26	2.30	1.04	0.04	1.02	0.22	372.22	67.59	0.04	0.00	0.93	0.11	1.33	11.57	0.07	0.24	0.00
Average	Non-member	42.75	2.33	1.30	0.47	0.39	0.55	5686.68	354.52	0.11	0.11	0.26	0.95	0.75	14.17	0.40	0.36	0.28
	Member	44.22	2.72	1.48	0.51	0.33	0.48	3134.72	220.85	0.18	0.20	0.37	1.05	1.33	16.35	0.53	0.36	0.24
	Average	43.61	2.56	1.41	0.49	0.35	0.51	4188.33	276.04	0.15	0.16	0.33	1.01	1.09	15.45	0.48	0.36	0.26

Note: Education: no schooling=0, primary school=1, junior high school=2, senior high school=3, vocational school=4, university=5.

Informal Network Finance as a Risk Coping Device in Mountainous Laos

Ohno Akihiko* and Chansathith Chaleunsinh**

Rural households in developing countries face difficulty in no small part in managing emergent expenditures on various events. It is commonly observed that rural households put up money for each other and swap small amounts of rice or other food stuffs with neighbors to cope with idiosyncratic shocks. This network finance plays an important role in supporting rural households facing an emergency with little or no administrative cost, especially in the society where formal safety-net mechanisms are de facto absent. As network finance is likely to function within a narrow range of blood and geographical proximity, the households tend to form a network in similar economic circumstances. Then, it can be assumed that the effectiveness of network finance will be vulnerable for the poor households whose network members belong to a similar stratum. This paper examines the accessibility of the poor to network finance, using household data collected in the hinterlands of Luang Prabang, Laos. We found that the poor can resort feebly to network finance. Therefore, the role of savings groups to mitigate shocks is more important for the poorer households.

Keywords: Laos, transitory shocks, network finance, safety-net, blood and geographical proximity

I Introduction

Living with various risks, rural low-income households in developing countries face difficulty in no small part in managing emergent expenditures on various events. Among various shocks, temporary diseases represent a typical shock. Though formal insurance schemes are de facto absent in rural areas of developing countries, rural households are known to maintain various informal risk coping measures to mitigate adverse shocks.

　　Households save for various reasons. The better off are likely to save mainly for

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long-term need, lumpy expenditures including those required in their life cycle, while the worse off save to smooth consumption. This quested for the investigation of micro-insurance as a forgotten third function of microfinance (Zeller and Sharma 2002).

Risk-coping measures that incur cash expenditure can be dichotomized into self-insurance and interpersonal insurance (hereafter, network finance). Self-insurance including withdrawing savings (Jalan and Ravallion 2001) and livestock sales (Kazianga and Udry 2006; McPeak 2004) is a major strategy to mitigate such shocks. However, it is commonly observed that rural households put up money for each other and swap small amounts of rice or other food stuffs with neighbors.

Development economics have investigated village insurance, where village house-holds insure each other against idiosyncratic shocks. Informal insurance arrangements based on informal networks such as family members, relatives, and friends serve as vital risk-coping measures (Platteau and Abraham 1987; Rosenzweig 1988; Udry 1994; Fafchamps and Lund 2003; Fafchamps and Gubert 2007). Though a full insurance hypoth-esis within a community or network is empirically rejected, many studies reveal that partial insurance mechanisms do exist (Townsend 1994; Grimard 1997; Armendariz and Morduch 2005; de Weerdt and Dercon 2006). Recent literature reveals that family and relatives in the village provide loan for production or consumption purposes (La Ferrara 2003), or they make income transfer to those who suffered from shocks (Foster and Rosenzweig 2001; Park 2003).

Note that network finance is likely to function within a narrow range of blood and geographical proximity. As the households tend to form a network in similar economic circumstances, the effectiveness of network finance will be vulnerable for the poor house-holds whose network members belong to a similar stratum.

The purpose of this paper is to explore the availability of network finance with respect to household wealth in the mountainous areas of Laos where a market economy is at an incipient stage. The household data (N=490) we use are collected by our unique household survey conducted in 2010 and 2011 in Luang Prabang Province of Laos. This paper is organized as follows. In section 2, we examine how transitory shocks are finan-cially coped with. Section 3 examines network finance in terms of rice transfer. Section 4 discusses the range of network finance based on the regression analysis. Finally, sec-tion 5 summarizes the main findings and discusses their implications.

II   Financial Expenditures to Cope with Transitory Shocks

Among various shocks rural households face, diseases represent a major idiosyncratic

Table 1 Incidence of Shocks

	HHs Suffered (%)	Medical Treatment Received (%)	Expenditure/ Annual Cash Income (%)[a]	Average Expenditure (1,000 kip)[a]
Transitory disease	78.57	59.48	16.79	841.50
Other exigencies	10.61		23.49	3,789.43

Source: Authors.

Note: [a] For those who experienced expenditure.

shock that incurs financial expenditures not only due to the direct costs for medical treatment but also indirect costs for the missing labor force.[1] As discussed in the second paper of this special issue by Fujita, Ohno, and Chansathith, medical treatment is the primary reason for borrowing from savings groups. The proportion of households reporting transitory disease over the preceding two years of the survey is 78.57% (385 HHs), of which 59.48% received medical treatment that incurred expenditure (Table 1). For those who experienced medical treatment, average expenditure was 841.5 thousand kip (approximately US$85) that accounted for 16.79% of annual cash income.

Non-disease shocks such as funeral, wedding, poor harvest, childbirth, and school fee also entail unexpected expenditures. Average expenditure per shock was 3,789.43 thousand kip (US$379) for those who encountered shocks. This accounted for as high as 23.49% of annual cash income. However, expenditures on such non-disease shocks, especially funeral and wedding constitute social obligations and thus community members and relatives would provide financial support for such events. In addition, the incidence of non-disease shocks is far lower than that of transitory diseases. Thus, this paper focuses on the shocks caused by transitory diseases.[2]

Table 2 shows how the surveyed households in Luang Prabang extend expenditure to cope with transitory disease and other exigencies that took place in the preceding two years of the survey. Emergencies are primarily addressed by self-insurance (own-savings). Self-insurance (own savings and selling property) accounts for 70 to 80% of the expenditures on shocks.

Though mostly being poor, the surveyed households do not entirely lack cash in hand. Approximately nearly a half of the households have more than 300 thousand kip (approximately US$30) at home (Table 3). Three hundred thousand kip is almost equiv-

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1) As to the surveyed households, average work-days lost due to temporary illness for the households whose member suffered from transitory illness were 6.6 days.

2) The proportion of households having members suffering chronic disease is 29.18% (143/490) and average expenditure per affected household is 3,257.79 thousand kip. However, neither informal insurance mechanisms nor depleting assets can cope with these events.

Table 2   Financial Sources against Shocks

(%)

Shocks	Sources					
	Own Savings	Selling Property	Network Finance	Savings Group	Others	Total
Disease	69.14	11.56	10.73	4.44	4.14	100.00
Others	49.94	21.37	16.01	2.02	10.66	100.00

Source: Authors.
Note: Network finance includes borrowing and gift. Savings group includes borrowing and the withdrawal of savings.

Table 3   Cash in Hand (March)

(%)

Cash (kip)	>100,000	−100,000	−300,000	−500,000	<500,000	Total
Advanced area						
Xieng Lek	5.9	11.8	23.5	14.7	44.1	100.0
Kogneiw	11.1	18.5	25.9	11.1	33.3	100.0
Sop Houn	6.1	8.2	22.4	22.4	40.8	100.0
Backward area						
Had Sao	14.3	25.7	22.9	20.0	17.1	100.0
Sop Khon	17.5	17.5	25.0	10.0	30.0	100.0
Houei Hoi	3.8	19.2	23.1	15.4	38.5	100.0
Sop Khan	3.0	21.2	36.4	9.1	30.3	100.0
Had Chan	0.0	26.7	36.7	10.0	26.7	100.0
Average	8.0	17.9	26.6	14.6	32.8	100.0

Source: Authors.
Note: No significant difference across months.

alent to 10 days' agricultural wages in the areas. As will be discussed later, even in the villages of backward areas, villagers hoard money at home. This reflects poor accessibility to bank institutions and presents the prospects for an expansion of savings groups in the areas.

Beside self-insurance, selling assets (mostly livestock, such as buffalos and pigs), drawing down savings, and network finance serve as important parts of this mix. Livestock in poor villages works an indispensable store of convertible asset to deal with shocks.

III   Rice Transfer

In-kind transfers are fairly frequent rather than cash in developing countries (Collins *et*
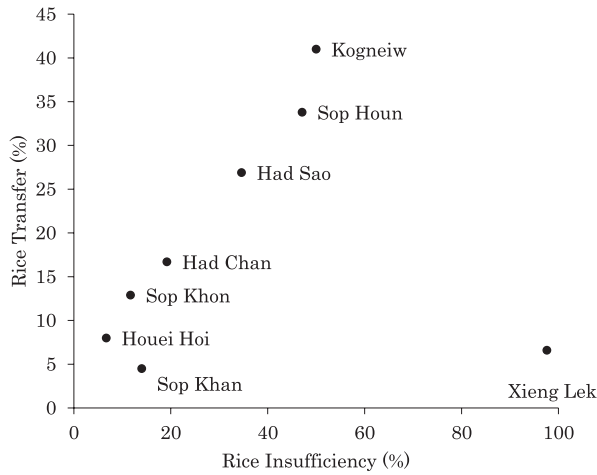
Fig. 1 Rice Insufficiency and Transfer
Source: Authors.

al. 2009). In the villages we surveyed, the incidence of rice transfer is the ordinary affairs of life along with money transfer to cope with idiosyncratic shocks.

Fig. 1 presents village-wise association between the fraction of households receiving rice transfer (proportion of households who received rice transfer in the preceding three years of the survey) and that reporting rice insufficiency (the proportion of net rice-purchasing households). Transfer includes both borrowing and gift. Of the sample, 85 households (17.34%) received rice transfer. Among them, 44 received rice-gift and 41 borrowed rice. On average, the former received 58.2 kilogram and the latter 56.6 kilogram of rice. Beside, 57 households borrowed 56.6 kilogram of rice on average from rice-banks run by international NGO. Xieng Lek is an outlier because paddy cultivation is not practiced there. As rice transfer is more common in the villages where the proportion of net rice-purchasing households is high, rice transfer is supposed to work as a device to mitigate rice insufficiency.

Cox (1987) considered three motives of transfer: market exchange, gift exchange, and altruism. The last two constitute the motives of network transfer—transfer embedded in social relations. Motive is regarded as gift exchange when a donor helps a donee anticipating donee's reciprocity someday in the future when needed.[3] Gift exchange here includes mutual insurance, in which one helps the other only when the latter is in

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3) Fafchamps and Lund (2003) revealed that in the rural Philippines motive of gift giving is returning favor to other households that provided loan or gave gift to them before. This indicates that reciprocal gift exchange sustains the social network among households.

need. On the other hand, motive is regarded as altruism or pure gift-giving when a donor helps a donee just because caring about the well-being of a donee increases the utility of the donor.

Efficacy of gift exchange and altruisms depends on whom the social network is formed with. Previous studies suggest that support by family member is featured as pure gift-giving based on altruism, while support by friends as gift exchange. Park (2003) found that income transfer among siblings in Indonesia tends to be provided to those who have lower income, younger age, and female headed households, and hence argued that the income transfer among siblings are motivated by altruism. Foster and Rosenzweig (2001) showed that for the rural households in South Asia income transfer to friends is more likely to be affected by the history of past income transfer (net income transfer to counterparts in past years) than income transfer to family is.

As Fafchamps and Lund (2003) show in the rural Philippines, relatives and friends are considered to be the major risk sharing partners for rural households. While risk sharing with non-kin entails the problem of limited commitment (Coate and Ravallion 1993; Ligon *et al.* 2002), the problem is mitigated by altruism (Foster and Rosenzweig 2001) with respect to risk sharing with kin. Thus, non-kin is supposed to be less reliable than kin as a provider of support in times of negative shocks.

Table 4 indicates the proportion of households that received money or time help (Money-Help and Time-Help respectively) from different groups in time of emergency. Also the proportion of households that assisted others when they necessitated the respondents in the preceding three years is presented. Help is available more from kin than from non-kin, and more from those living in the same village than those living out-

Table 4   Help in Time of Emergency from Different Groups

(%)

	Money-Help			Time-Help		
	Received	Assisted	R^2	Received	Assisted	R^2
Brothers/sisters	55.7	63.3	0.61	80.0	80.0	0.77
Relatives in	45.6	48.7	0.69	69.6	71.5	0.80
Relatives out	31.5	35.3	0.75	56.7	58.3	0.77
Friends in	36.5	41.8	0.76	66.7	70.7	0.80
Friends out	26.3	29.5	0.76	52.2	53.4	0.81

Source: Authors.
Notes: 1) Question for Money-Help: [Received] Have you received money help when you are in an emergency from the followings in the last three years? [Assisted] Have you offered money help to the followings when they were in an emergency?
2) Question for Time-Help: [Received] Have you called on the followings to spend a lot of time for helping out when there were a serious emergency in your household in the last three years? [Assisted] Have you offered time for helping out the followings when they were in an emergency?
3) "In" and "out" denote in the village and outside the village respectively.

side the village. Both blood and geographical proximity matter. What is interesting is that the receiving and assisting experiences show significantly high correlations (p<0.1%, Spearman). Thus, such help is said highly reciprocal. That the correlation for money help from brothers/sisters is lower than those of others implies that money help from brothers/sisters is relatively characterized as pure gift rather than gift exchange. This will lead us further into a consideration on the efficacy of network finance with respect to blood and geographical proximity.

IV Range of Network Finance

Informal network finance plays an important role in supporting low-income households in time of emergency with little or no administrative cost. However, as network finance functions within a narrow rage in terms of blood and geographical proximity, it is likely that the households that form a network belong to a similar economic stratum. Thus, it is hypothesized that the effectiveness of network finance is likely to be vulnerable for the poor households.

To examine this hypothesis, we consider perceived plausibility of rice transfer (rice gift and rice borrowing) from others. Economics tend to examine the effect of observed
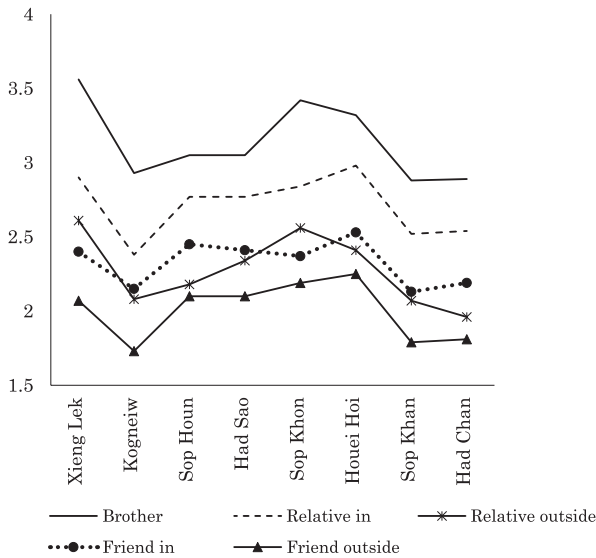
Fig. 2 Rice Gift

Source: Authors.
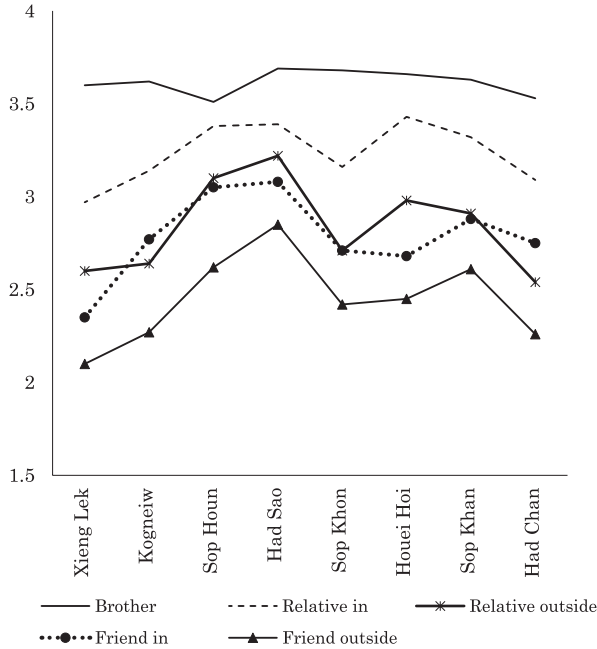
Fig. 3 Rice Borrowing

Source: Authors.

income transfer in an emergency (for example, Fafchamps and Lund 2003; Fafchamps and Gubert 2007). However, idiosyncratic nature of such events is likely to incur selection bias. Thus, we explore the effect of potential (or perceived) support from other households—a belief that one is entitled to support from them—which is widely analyzed in the field of psychology as perceived family and peer support (for example, Stice *et al.* 2004; Seidman *et al.* 1999; Procidano and Heller 1983).

Perceived rice support (rice-gift) is measured by a question: Suppose there were a serious emergency in your household and you are faced with rice insufficiency. Generally speaking, do the followings (brothers/sisters, relatives in the village, relatives outside the village, friends in the village, and friends outside the village) extend rice to you without an obligation of repayment? (No=1, Yes, but a little=2, Yes, moderately=3, and Yes definitely=4).[4] Then, a question about rice-borrowing follows. The results are presented in Figs. 2 and 3. As is shown in Table 5, brothers/sisters are most reliable in obtaining rice gift, and relatives residing in the village follow. Friends residing outside

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4) Rice transfer in case of emergency can be measured as giving rather than receiving. However, asking an intention of giving would let respondents put on an impressive show, and overestimates the scores.

Table 5 Average Score of Rice

	Rice-Gift	Rice-Borrowing
Brothers/sisters	3.10 (1.23)	3.61 (0.85)
Relatives in	2.69 (1.20)	3.25 (1.01)
Relatives outside	2.25 (1.20)	2.85 (1.18)
Friends in	2.31 (1.18)	2.82 (1.13)
Friends outside	1.99 (1.11)	2.47 (1.22)

Source: Authors.

Note: Standard deviations are in parenthesis.

the village are least dependable. We continued to ask a similar question about rice borrowing. Needless to say, rice borrowing is an easier way to obtain rice than rice gift as long as the households can repay (Table 5).

To analyze the link between household wealth and expected support, we use the following model (Standardized Regression Model):

$$\text{Rice} = \alpha X + \beta \text{Wealth} + \gamma \text{Social Capital} + \delta \text{VD} + \varepsilon$$

where X is a set of household characteristics that include age and education attainments of household head, marital status, savings group membership, and net rice surplus. As those control variables are found statistically insignificant, they are not displayed in the results. Wealth is cash income per adult male unit [PI] (unit: 10,000 kip). Cash income includes imputed value of rice consumption (2,000 kip/kilogram) out of rice production. Social capital is gauged by a question asking if the respondent can trust villagers (No=1~ Yes=4). VD is a village dummy.

Dependent variable of Rice is either Rice-Gift or Rice-Borrowing scores, and Rice-Gift and Borrowing from five classes of people classified by blood and geographical proximity. Rice-Gift and Rice-Borrowing scores are obtained as the principal component score (Rubin Anderson) using the level of the five perceived supports from brothers/sisters to friends living outside the village (Cronbach α=0.95 and 0.95, variance=69.7% and 67.5% respectively). The scores denote respondent's expectation of gift/borrowing from neighbors and relatives in case of emergency. Thus, the scores represent accessibility to informal support.

As is shown in Table 6, the coefficients of PI are negative and significant for rice-gift functions. As average PI is 0.41 and standard deviation is 1.52, most of the data exist on the left side of the inverted U-shape functions. With regard to rice borrowing functions, they are negative and significant except brothers/sisters and friend outside the village. As was shown in Table 5, brothers/sisters and relatives are most reliable sources of rice

Table 6 Rice-Gift and Rice-Borrowing Function

Rice-Gift

	Gift	Brother/ sister	Relative in	Relative out	Friend in	Friend out
PI	0.31* (1.90)	0.37** (2.27)	0.13*** (2.68)	0.27* (1.64)	0.42*** (2.72)	0.38** (2.34)
PI^2	−0.34** (2.193)	−0.35** (2.25)	−0.46*** (2.98)	−0.30** (1.96)	−0.42*** (2.57)	−0.38** (2.34)
TRUST	0.09* (1.94)	0.12** (2.25)	0.08 (1.64)	0.08* (1.81)	0.12** (2.53)	0.10** (2.40)
Adj-R^2	0.08	0.07	0.06	0.07	0.03	0.03
F-Value	2.08***	1.93**	1.81**	2.32***	1.79**	1.82**

Rice-Borrowing

	Borrowing	Brother/ sister	Relative in	Relative out	Friend in	Friend out
PI	0.37** (2.27)	0.17 (1.04)	0.30* (1.84)	0.27* (1.65)	0.24 (1.49)	0.17 (0.29)
PI^2	−0.35** (2.25)	−0.14 (0.85)	−0.36** (2.31)	−0.30** (1.96)	−0.27* (1.76)	−0.19 (1.25)
TRUST	0.12** (2.52)	0.05 (1.04)	0.10** (1.37)	0.08* (1.81)	0.07 (1.52)	0.10** (2.04)
Adj-R^2	0.07	0.03	0.05	0.07	0.06	0.07
F-Value	1.93**	0.08	1.62**	2.33***	1.88**	2.02**

Source: Authors.
Note: "In" and "out" denote in the village and outside the village respectively. Village dummies are included, but not displayed. ** $p<5\%$, *** $p<1\%$.

transfer. Accordingly, the results imply that the poor households are more likely to find it difficult to obtain support from any strata of people, mainly because the network households of the poor are likely to be poor as well.

Stark contrasts exist between the regression results of Rice-Gift and Rice-Borrowing from brothers/sisters and from friends outside the village. While all variables in Table 6 are significant for Rice-Gift, they are insignificant for Rice-Borrowing. Considering the fact that blood and geographical proximity concern the reliability of rice transfer, Rice-Borrowing from brothers/sisters is featured as reciprocal.

V   Conclusion

Network finance plays an important role in supporting rural households facing an emergency with little or no administrative cost, especially in the society where formal safety-net mechanisms are de facto absent. However, the poor have weaker accessibility to

network finance. As the range of network finance is subject to blood and geographical proximity, network partners of the poor belong to a similar wealth bracket. Thus, they cannot afford to offer financial help or rice transfer to the fellow people.

This paper examined the accessibility of the poor to network finance, using household data collected in the hinterlands of Luang Prabang, Laos. We found that the poor can resort feebly to network finance. Therefore, the role of savings groups to mitigate shocks is more important for the poorer households.

As a market economy is not prevalent in the surveyed areas, and thus cash economy has not picked up stream yet. Savings groups established in such economy have only a weak momentum for growth. Even in the initial stage of savings group movement, however, as Zeller and Sharma (2002) refer to micro-insurance as the forgotten third of microfinance, savings groups serve a vital role in coping with idiosyncratic shocks.

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Impacts of Savings Groups Programs on Household Welfare in Laos: Case Study of the Vientiane Vicinity during the Mid-2000s

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Based on original household survey on the six villages in Vientiane vicinity in 2005, the paper investigates the impact of Savings Groups (SGs) programs on household income, expenditure, and asset, applying the methodology of Coleman's (1999) study on Thailand to address placement bias and endogeneity problem.

The results revealed that SGs programs brought certain changes; SGs boosted educational expenditures implying activation of human capital formation, increased the house asset suggesting villagers' investment reflected by possible business activation, and brought a possible shift in income sources from traditional agriculture to livestock raising.

The paper interprets these different results from Coleman (*ibid.*) in two possible ways; First the Laotian case is to an extent, free from a bias associated with seed capital allocation, therefore is more suitable to capture the effect than Thailand, and second it is since the stage of financial accessibility in Laos is far less developed than in Thailand.

Keywords: Laos, poverty reduction, estimation bias, micro lending, savings groups

I Introduction

Since the late 1980s, the Laotian government has regarded microfinance and improved access to finance in rural areas as major tools for alleviating poverty. The government advanced microfinance as a priority program for agriculture and forestry under the National Growth and Poverty Eradication Strategy in 2004. Since 1987, the government or foreign donors have implemented broad microfinance initiatives under numerous development projects.

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In reality, however, microfinance in Lao PDR remains shallow despite donors having significantly invested in microfinance programs during the 2000s. According to the Microfinance Capacity Building and Research Programme (2005), one million economically active Laotians potentially need formal or semi-formal financial services, but only one-quarter gained access to them. For the estimated 300,000 Laotians who accessed loans and savings services, accessibility to formal financial services remains limited: 21% received microcredit from formal sources, 33% from semi-formal financing sources and project initiatives, and 46% from informal sources.

Since the early 2000s, however, one source of microfinance—savings groups (SGs), also called Credit Union or Village Banks—has spread around urban locales such as Vientiane or Luang Phabang. Usually established in villages, SGs mobilize savings from member households to provide loans. SGs typically operate under a cooperative system to improve members' lives and extract them from poverty. Most SGs around Vientiane receive technical support from the Small and Rural Development Project for Women and the Capacity Building Project for Women and Community, co-organized by the Central Lao Women's Union, the Foundation for Integrated Agricultural Management (FIAM), and the Community Organizations Development Institute of Thailand (CODI).

This paper evaluates whether Laotian SG programs during the mid-2000s meet their primary objective of alleviating poverty. Most of the poor and lower-income Laotians join microfinance programs seeking opportunities to save and borrow at rates more reasonable than those charged by informal moneylenders. Our study expects and hypothesizes that longstanding members of SGs may improve their living in terms of asset, income, and expenses.

This paper is organized as follows. Section 2 discusses earlier studies and the observation target of our analysis. Section 3 explains our survey design, and section 4 demonstrates our estimation methodology. Section 5 examines the general picture with descriptive statistics. Section 6 examines the estimation results. Section 7 concludes.

II   Overview and Object

Few empirical studies have examined data for individual persons, households, communities, or institutions to assess whether microfinance is reducing poverty in Laos. Further, studies that have investigated the poverty-reducing impact of microfinance programs in Bangladesh or Thailand suffer from selection bias and endogeneity (Pitt and Khandker 1996; 1998; Pitt *et al.* 1999; Coleman 1999; 2002; Khandker 2003; Khandker *et al.* 1998; McKernan 2002; Morduch 1998). In their pioneering study, Pitt and Khandker (1996;

1998) attempt to correct those two statistical problems in a study of Grameen Bank and two other group lending programs in Bangladesh. Their quasi-experimental household survey of 87 villages randomly sampled SG members and non-members from villages with microfinance programs, and it randomly sampled households from villages without such programs. Their studies evidenced a major problem in estimation methodology: When a dummy for credit program availability was applied as an identifying variable, endogeneity from program placement may have caused systematic variation between the two types of villages. To address that problem, their estimation considers village fixed effects to control for unobserved variation between villages. Nonetheless, their sampling of villages with SG programs may have included households ineligible for them,[1] causing collinearity among village-specific dummy variables (or fixed-effect dummy variables) and program availability.

Khandker (2003) addressed the problem by expanding the dataset into panel data via a follow-up survey of the same households he surveyed in 1998–99. He controlled self-selection bias using the criteria of eligibility for SG membership at the earliest period sample. Per Coleman (1999), however, such criteria are ambiguous in practice, and this method faces serious limitations.

Coleman (*ibid.*) sought to evade selection bias without exogenous membership criteria by creating a unique data-collecting survey methodology that applies straightforward estimation techniques. His survey was conducted among SG members and non-members in 14 villages in Northeast Thailand in 1995–96. Six of those villages that received NGO support to run SGs for less than one year were identified as "control" villages. There, a self-selection process arose on whether to join SGs, while the impact of the program was not realized. The remaining eight villages where SGs had operated for more than two years were defined as "treatment" villages.[2] A comparison between members of "old" SGs in treatment villages and "new" members in control villages could be undertaken. To estimate SGs' impact, Coleman used variations in the length of time programs that were available in the treatment villages. Based on empirical evidence, it concludes that most studies endorsing positive impact of microfinance found in Northeast Thailand may be merely seeming identifications occurred from selection bias or endogenous program replacement.

We follow Coleman's (*ibid.*) methodology for two reasons. First, it is the most suitable for considering the two bias problems, given the data available for the vicinity sur-

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1) Many programs excluded households that owned more than 0.5 acres of land.
2) Among the eight villages, one is an exception because the SG began operating immediately after the first survey.

rounding Vientiane.[3] Second, SG programs we observed closely resembled those in Coleman (*ibid.*). SG programs in our study were initiated by the same NGO as in Coleman (*ibid.*). An NGO, FIAM in Thailand organized SGs in rural Northeast Thailand during the 1990s. Together with another NGO, CODI, the practice was exported to villages in the Vientiane vicinity in the 2000s.

Practices of SGs in Northeast Thailand and Laos slightly differ. According to Ohno and Patcharin (2009) and Ohno's first paper in this special issue, FIAM usually introduced its programs to existing SGs instead of establishing new institutions, and it gave them seed money to strengthen their savings functions. Because seed money was allocated based on the number of SGs' members regardless of mobilized savings amounts, the impact of seed money may vary among SGs villages. Accordingly, the distinction between new and old SGs/villages in Northeast Thailand is vague. In addition, while the program contains function as pure credit providers similar to Grameen Bank type microfinance, its effect is possibly intermingled with that from SGs' own saving resources. In contrast, NGOs generally started Laotian SGs without seed money, and SGs gradually accumulated lendable funds from members' savings. Considering the differences in the two cases, Coleman's (1999) methodology is better suited to Laos. We expect to capture clearer evidence using his methodology even though it did not present compelling evidence concerning Northeast Thailand.

We surveyed 251 households in six villages in a semi-urban area of the Naxaithong District 16 kilometers from Vientiane. The six villages contained old SGs that had operated for more than one year or new SGs established more recently. In all six, villagers self-selected to become SG members; the survey sampled members and non-members. Members were classified into a "treatment" group who had obtained credit or received dividends from their SG and a "control" group who had received no such benefits. The effects upon SG members in the treatment group can be compared with SG members in the control group. We used the period of membership as basic information in the impact estimation. Finally, using non-member households in all six villages as samples, we implemented fixed-effects village estimations to control for endogeneity from program placement. This survey design facilitates straightforward assessment of how SG programs influence household welfare.

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3) The location was selected because most of Laos's 357 SGs are in and around Vientiane (Microfinance Capacity Building and Research Project, 2003, cited in Chansathith [2004, 7]).

III Interview Survey

During the period of our survey in 2005–06, 357 SGs operated throughout Lao PDR, primarily in and around the capital, assisted and monitored by one of seven agencies.[4] A significant number of SGs operated in Vientiane. We conducted interviews concerning the microfinance project launched by the Women and Community's Empowering Project in three semi-urban districts of the capital. From these three districts we selected villages in the Naxaithong District for observation.

A survey was conducted in September 2005 for 251 households in six villages that had their own SGs. Three villages had recently established new SGs, two had SGs that had been organized three months earlier and one village's SG had operated only for one month. Three villages had "old" SGs that had operated from slightly more than one year to almost three years. These surveyed villages were selected from the list provided by project administrators. Three "new" SGs were selected based on the distance condition in a way that the three old SGs were located not far, within 15 kilometers, from the three new SGs.

Table 1 summarizes the sampled SGs/villages. The percentage of member households varies between 40–89% and is seemingly unrelated to whether the SGs were old or new. We assured that our survey randomly sampled one-quarter of all households (24.4%). Old and new SGs have members who have been benefitted by obtaining credit or receiving dividends and those who have not received financial benefits from SGs.

Table 1 Sample

No.	Savings Groups	Vintage		No. of HH in Village	No. of Member HH		No. of Non-member HH	Sample Size by:			Sample Size	
		Established in	Vintage at Sep-2005		No.	% to Total		Treatment Group	Control Group	Non-member	Total of Sample	Sample Coverage
I. Old savings group in:												
1	Nakountay village	Oct-2002	37 months	215	186	86.5	29	39	3	19	61	28.4%
2	Huannamyene village	Jun-2003	27 months	353	217	61.5	136	34	1	13	48	13.6%
3	Dongluang village	Apr-2004	17 months	184	75	40.8	109	16	0	8	24	13.0%
	Sub-total			*752*	*478*		*274*	*89*	*4*	*40*	*133*	17.7%
II. New savings group in:												
4	Phonekeo village	Jun-2005	3 months	95	80	84.2	15	8	19	6	33	34.7%
5	Phonesavanh village	Jun-2005	3 months	123	56	45.5	67	19	9	17	45	36.6%
6	Sisavard village	Aug-2005	1 month	59	53	89.8	6	15	20	5	40	67.8%
	Sub-total			*277*	*189*		*88*	*42*	*48*	*28*	*118*	42.6%
	Grand total			1,029	667		362	131	52	68	251	24.4%

Source: Author's survey data, September 2005 and March 2006.

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4) The District Lao Women's Union, District Lao Youth's Union, District Planning Office, District Social Welfare Office, District Finance Office, District Agriculture and Forestry Office, and branches of the Agricultural Promotion Bank (Chansathith 2004).

Following Coleman (1999), we defined the first set as the treatment group and second as the control group for empirical analysis.

Our three-part survey questionnaires followed Hulme and Mosley (1996)[5] with slight modifications to fit purposes of our study. The first part pertained to member and non-member households in the six villages. It contained questions about household characteristics, including assets, income, expenditures, deposits, and borrowing. Some questions about assets, income, and expenditures inquired into households' financial situations during two periods: on the survey date in September 2005 and five years earlier. For each member and non-member household, we interviewed an adult or head of household at home concerning household finances.[6]

The second part of the questionnaire sought village-specific information such as schools or prices of goods. We interviewed the head of the village and members of each village SG's committee.

The third part of the questionnaire gathered general information about SGs. It included questions regarding the number of members, sources of funds, SGs' deposit balances, deposit and credit methods, and resolving bad debts.

Third-year students in economics and business management at the National University of Laos conducted the household surveys. They were trained and supervised by one of the authors in September 2005. One of the authors conducted the village surveys and in-depth interviews with the SG group committees. In addition, a follow-up survey in March 2006 with the chief of the Lao Women's Union for the Naxaithong District collected supplementary data about villages' and SGs' characteristics. Secondary data from summary reports, progress reports, and SG manuals were obtained from the project, municipal arms of the Lao Women's Union, and SG group committees.

IV   Estimation Model

This section discusses the model specifications and methodology with which we tested the hypothesis that long-term SG members enjoy a higher quality of life as measured by asset, income, and expense.

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5) Chanhsana (2004) conducted a similar study of Laotian microfinance in Saithani. It was reproduced in Mosley's (2001) study of microfinance and poverty in Bolivia.

6) Most interviewees were females (wives) because, per Laotian custom, wives generally oversee household income and expenses. As Sheck-Sandbergen and Choulamany-Khampoui noted about Laotian females, "Women are generally good at financial management and accounting because of their social and economic experience in managing the household finances and the local economy: they are the sellers, buyers, traders, middle-women and entrepreneurs" (in Kunkel and Seibel [1997, 116]).

IV-1 *Model Specification*

As discussed in Pitt and Khandker (1996) and Coleman (1999), the presiding difficulties in estimating the impact of microfinance programs arise from selection bias and endogenous placement of the program. Consider the following estimation specification:

$$C_{ij} = X_{ij}\beta_c + V_j\gamma_c + \varepsilon_{ij}^c \tag{1}$$

$$Y_{ij} = X_{ij}\beta_y + V_j\gamma_y + C_{ij}\delta + \varepsilon_{ij}^y, \tag{2}$$

where

C_{ij}: the level of SG program participation,

X_{ij}: a vector of household characteristics (e.g., age and education of household head),

V_j: a vector of village characteristics (e.g., prices and community infrastructure).

Traditional estimation of Equation (2) usually yields biased parameter estimates because ε_{ij}^y and ε_{ij}^c are correlated. As Coleman (*ibid.*) illustrated, the correlation between ε_{ij}^y and ε_{ij}^c arises through selection bias because households with attributes X_{ij} and V_j were motivated to join SGs, whereas others were not. For example, if many entrepreneurial households join SGs, the unmeasured factor "entrepreneurship" affects their decision to join and measures their income, expenditures, and assets. In addition, ε_{ij}^y and ε_{ij}^c may be correlated across villages if SG program placement is not random. As Coleman (*ibid.*) highlighted, ε_{ij}^y and ε_{ij}^c can be correlated if program placement is affected by villages' socio-economic factors such as conditions more suited to entrepreneurship, civic organization, dynamic leadership, or poverty-provoking situations (e.g., living in flood plains or drought-prone areas).

Better ways to cope with the statistical problem may include using a panel sample set or proper instrument variables. However, both methods are infeasible, and even a panel dataset does not resolve bias completely, thus Coleman (*ibid.*) proposed a primitive but interesting alternative, which we basically adopted. To collect an appropriate sample of households that are long-time SG members, households that recently joined SGs, and households that have not joined SGs, we surveyed two types of villages: those where SGs have operated for a long period (the old villages) and those where SGs were recently established (the new villages). In the old villages most member households have enjoyed the benefit in forms of credit or dividend, whereas in the new villages many new members have remained unbenefitted yet. The survey identified three types of households associated with SGs.

1) Treatment Group: SG member households who have benefitted as SG members in both old and new villages.
2) Control Group: SG member households who have recently participated SGs, and have not yet benefitted mainly in the new villages.
3) Non-Members: SG non-members in sampled villages.[7]

In the estimation process, combining a dummy variable for SG membership (M), isolates non-members, and a dummy for members who benefitted from SG membership eliminates the self-selection and endogenous placement biases, as follows.

$$Y_{ij}=X_{ij}\alpha + V_j\beta + M_{ij}\gamma + T_{ij}\delta + v_{ij}, \tag{3}$$

where

M_{ij}: a membership dummy equal to 1 if household ij self-selected SG membership and 0 otherwise.

T_{ij} : a dummy variable equal to 1 if a self-selecting household has already benefitted as an SG member and 0 otherwise.

δ : measures the average impact of SGs on Y_{ij}.

In practice, our sample gives a better proxy for T_{ij}. The empirical model in Equation (3) can be improved by recognizing that some treatment members have benefitted longer than others from SG membership. Our survey design captured SGs that operated in the six villages from one month to three years. In these six villages, some households belonged to relatively old SGs, and their span of membership varied with the age of the SGs. Taking into account that the cumulative effect that a member can utilize credit and receive dividend from their savings, grows over the life of the SG, one would expect to see greater impact in villages with older SGs. The empirical model can be rewritten as

$$Y_{ij} = X_{ij}\alpha + V_j\beta + M_{ij}\gamma + MAMT_{ij}\delta + \mu_{ij}, \tag{4}$$

where the treatment dummy T_{ij} is replaced by $MAMT_{ij}$, the number of months that the

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7) The identification of the treatment and the control group in this paper differs slightly from Coleman's (1999). Coleman (*ibid.*) distinguishes them based on the village type (old or new) households belong to; all the households in the old villages are defined as the treatment groups, whereas ones in the new are regarded as the control groups. Our study, however, identifies the treatment and the control household based on the direct questionnaire inquiring if they have benefitted from participating in SGs both in the old and new villages.

SG has operated in the village. In other words, $MAMT_{ij}$ can be construed as the number of months participants have benefitted from SG membership. Now, δ measures the impact per month of program availability. If the order of program placement, however, is not random with respect to unobservable village characteristics, then correlation between $MAMT_{ij}$ and ε_{ij}^y can be eliminated with village fixed effects. According to Coleman (*ibid.*), this specification in Equation (4) is considerably easier to estimate (if Y_{ij} is uncensored, ordinary least squares [OLS] is appropriate). If the order of program placement is random with respect to unobservable village characteristics, we can obtain efficient and unbiased estimates with V_j as a vector of specific village characteristics.

To carefully examine estimated impacts and possible biases, we compared the results of four types of estimations, following Coleman (*ibid.*).

1) The "Super-naïve" model: estimation without considering control variables for self-selection and non-random placement.
2) The "Naïve" model: estimation with a traditional variable controlling for self-selection. Here, the variable "land value owned by the household five years before this survey" is expected to absorb the participation incentive.

Our survey design enables us to employ the SG membership dummy to control self-selection bias, since we prepare measures for the length of time that respondents belonged to SGs (months of membership) besides the dummy. Because we must consider the possibility of non-random placement, we prepared two types of estimations.

3) A "Non-fixed-effects" model: if program placement is random, the model with non-fixed-effects for village attribute generates efficient and consistent estimators.
4) A "Fixed efficient" model: if program placement is not random, estimations by the non-fixed-effects model can be inconsistent. Using a fixed-effects model associated with village attributes, we gain consistent (though possibly inefficient) estimators.

IV-2 *Estimation Methodology*

Assuming that dependent variables (household outcomes) are uncensored, we applied OLS for estimating Equation (4). Moreover, we applied the White test for heteroskedasticity, which leads to unbiased estimators of OLS. Then we used generalized least squares (GLS) estimation to correct heteroskedasticity (weighted least squares estimations per Wooldridge [2003, 268–276]).

V   Descriptive Observation

V-1 *Sample Villages*
Table 2 summarizes basic information for sampled villages. The initial survey did not necessarily collect details about SGs/villages, as its objective was to collect household-level data about expenditures, income, and assets. As an alternative, we used data from Mieno and Chansathith (2014), who surveyed about 80 SGs around Vientiane, including all 6 of our surveyed villages, in September 2008. Note that Table 2 shows data for 2008, three years after our 2005 survey period. Table 2 suggests no notable distinction in primary source of livelihoods between old and new villages. Dong Luang appears to be an exception among all six villages because non-agricultural activities are its primary livelihood; the remaining five villages are essentially rice-producing communities with some secondary income sources.

The bottom half of Table 2 indicates the purposes for SG loans, and the non-agricultural nature of Dong Luang indicates no clear differences about the comparison among Consumption, Durables, and Production; for example, purposes for borrowing in Dong Luang parallel those in Nakountay, a typical rice-producing village. Data under the column Ground Average show little difference from that of 80 Sample Average.[8)] Remarkable differences in loan purposes appear between old and new SGs. The column Old SGs Average indicates that 84.2% of loans were for production purposes during the surveyed period. Among the new SGs, 51.7% of loans were for production purposes and 37.0% for consumption. Among components of consumption lending by new SGs, average percentages for education (7.2%) and medical services (7.7%) are strikingly higher than for old SGs (0.2% and 0.4%, respectively). Among new SGs, 40.6% of loans were for agricultural production versus 26.9% among old SGs, but old SGs issued a greater percentage of loans for business purposes (41.3% versus 10.7% for new SGs).

Data in Table 2 suggest that SGs lend to support members' consumption during their early stages and shift to production lending as they age. Agricultural lending dominates lending for production during SGs' early stages and shifts to business purposes. Table 2 shows the picture three years after our 2005 survey, when the three old SGs had operated one-and-a-half to three years. Thus, we presume that SGs which were old in 2005 were in a stage similar to new SGs during the 2008 period shown in Table 2. That is, relatively young SGs mainly granted credit for such consumption purposes as education or medical care.

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8) It is the sample average of SGs surveyed in 2008 and the same as Table 5 in Mieno and Chansathith (2014).

Table 2 Livelihood and Savings Groups Operation of Six Sample Villages

	1 Nakountay Village	2 Huannamyene Village	3 Dong Luang Village	I Old SGs Average	4 Phonekeo Village	5 Phonesavanh Village	6 Sisavard Village	II New SGs Average	Ground Average	80 Sample Average*
Major Livelihood (First)	Rice Production	Rice Production	Office Work		Rice Production	Rice Production	Rice Production			
Major Livelihood (Second)	Handcraft Making	Other Crop Production	Trading		Other Crop Production	Handcraft Making	Raising Livestock			
Major Livelihood (Third)	Raising Livestock	Raising Livestock	Construction Labor		Trading	Raising Livestock	Construction Labor			
Saving / Member (kip)	610,383	371,637	993,270	658,430	543,923	119,287	136,228	266,479	462,455	641,413
Total Loan (1,000 kip)	542,150	941,200	359,985	614,445	336,450	162,000	65,000	187,817	401,131	23,081,000
Loan Purpose (%)										
Consumption	0.0%	25.2%	1.2%	8.8%	10.8%	61.7%	38.5%	37.0%	22.9%	20.8%
General Consumption	0.0%	23.4%	0.1%	7.8%	7.9%	37.0%	15.4%	20.1%	13.9%	16.9%
Education	0.0%	0.7%	0.0%	0.2%	3.0%	18.5%	0.0%	7.2%	3.7%	2.0%
Medical Service	0.0%	1.1%	0.0%	0.4%	0.0%	0.0%	23.1%	7.7%	4.0%	0.2%
Emergency Loan	0.0%	0.0%	1.1%	0.4%	0.0%	6.2%	0.0%	2.1%	1.2%	1.8%
Durables	0.0%	21.2%	0.0%	7.1%	3.0%	30.9%	0.0%	11.3%	9.2%	8.0%
Housing, House Repairing	0.0%	5.3%	0.0%	1.8%	0.0%	6.2%	0.0%	2.1%	1.9%	2.7%
Motorcycle	0.0%	5.3%	0.0%	1.8%	3.0%	6.2%	0.0%	3.0%	2.4%	1.6%
Automobile	0.0%	10.6%	0.0%	3.5%	0.0%	18.5%	0.0%	6.2%	4.8%	3.6%
Production	100.0%	53.6%	98.8%	84.2%	86.2%	7.4%	61.5%	51.7%	67.9%	71.2%
Business	15.3%	37.4%	71.1%	41.3%	3.0%	6.2%	23.1%	10.7%	26.0%	31.4%
Agriculture	41.5%	15.6%	23.6%	26.9%	83.2%	0.0%	38.5%	40.6%	33.7%	34.5%
Livestock	15.3%	0.7%	4.2%	6.7%	0.0%	1.2%	0.0%	0.4%	3.6%	1.0%
Handcraft	27.8%	0.0%	0.0%	9.3%	0.0%	0.0%	0.0%	0.0%	4.6%	4.3%

Note: * Calculated from the survey for the chapter by Mieno and Chansathith (2014) at September, 2008

V-2 *Independent Variables and Characteristics of the Sample Households*

Table 3 summarizes variables representing household and village characteristics. The sample contains 251 households: 131 (52%) in the treatment group, 52 (21%) in the control group, and 68 (27%) non-members. Variables in Table 3 are generally utilized as independent variables in the estimation. They are classified into four categories.

Section I.1 shows the length of SG member scaled by month. The mean is 15 months for the treatment group and 1 month for the control group and by definition 0 for non-members.

Section I.2 shows household characteristics. Data in I2-3 and I2-4 indicate that, household heads are males in more than 90% of cases, whereas respondents to the

Table 3   Descriptive Statistics for Independent Variable

Sample Group			Whole		Treatment Group	Control Group	Non-member
Number of Sample			251		131	52	68
			Mean	Std. Dev.	Mean	Mean	Mean
I.1	I-1	Months as SG member (duration as SGs member)	8.08	12.00	15.00	1.00	
I.2 Household Characteristics	I2-1	Member Dummy	0.73	0.45	1.00	1.00	
	I2-2	Value of household-owned land 5 years ago	29,043	82,224	25,346	36,662	30,338
	I2-3	Sex of household head (female=1)	0.10	0.30	0.09	0.13	0.09
	I2-4	Gender of respondents (female=1)	0.89	0.32	0.92	0.88	0.82
	I2-5	Education of respondents (years)	4.90	3.00	4.69	5.27	5.01
	I2-6	Household size	5.51	2.00	5.65	5.54	5.24
	I2-7	Age of respondents (years)	41.0	12.0	42.3	38.6	41.0
	I2-8	Number of months doing business	161	146	155	161	172.0
	I2-9	Number of generations of family in village	0.50	1.00	0.50	0.50	0.51
	I2-10	Number of relatives in village	2.42	4.00	2.27	2.21	2.87
	I2-11	SGs committee member dummy	0.06	0.24	0.08	0.10	0
	I2-12	Number of civil servant in Household	0.27	0.56	0.28	0.37	0.16
	I2-13	Number of wage employment in Household	1.08	1.19	1.18	1.10	0.88
	I2-14	Number of school age children in Household	1.57	1.26	1.67	1.83	1.19
	I2-15	Number of dependent on your income in Household	2.64	1.67	2.66	2.65	2.59
I.3 Village Characteristics	I3-1	Village is near river (0/1)	0.43	0.5	0.56	0.08	0.47
	I3-2	Village has big pond which has water throughout the year (0/1)	0.38	0.48	0.36	0.42	0.37
	I3-3	Dummy for villages with a big pond or river access (0/1)	0.57	0.50	0.62	0.44	0.56
	I3-4	Village is located in district capital (0/1)	0.10	0.29	0.12	0.00	0.12
	I3-5	Dummy for villages with paved road or closeness to main road (0/1)	0.29	0.45	0.38	0.02	0.31
	I3-6	Village has irrigation (0/1)	0.19	0.39	0.26	0.02	0.19
	I3-7	Dummy for villages with secondary school	0.10	0.29	0.12	0.00	0.12
	I3-8	Dummy for villages with primary school up to grade 5	0.66	0.47	0.74	0.44	0.68
	I3-9	Distance from village to main markets (km)	22	6.84	23	24	20.97
I.4 Village Characteristics (Price and Wage)	I4-1	Price of one cattle (1,000 kip)	1,610	233	1,574	1,679	1,629
	I4-2	Price of one buffalo (1,000 kip)	3,261	524	3,271	3,135	3,338
	I4-3	Price of pig per Kg	14,596	5,097	15,485	11,484	15,262
	I4-4	Price of duck per Kg	14,572	617	14,668	14,356	14,551
	I4-5	Price of local chicken (Gailard) per Kg	18,857	896	18,985	18,288	19,044
	I4-6	Daily wage for harvesting rice	18,307	9,339	18,168	15,769	20,515
	I4-7	Daily wage for planting rice	27,875	18,081	32,664	11,913	30,853
	I4-8	Daily wage for construction	24,243	2,043	23,798	25,769	23,934

interview (i.e., SG members) are mostly females. The mean education year is 4.90 years for the whole sample, 4.69 years for the treatment group, 5.27 years for the control group, and 5.01 years for non-members. Table 3 suggests that internal networks influence participation in SGs as follows. For the whole sample, villagers have an average of 2.42 relatives in the village; the average number of relatives is 2.27 for villagers in the treatment group, 2.21 in the control group, and slightly higher at 2.87 for non-members. The average number of civil servants per household is 0.27 for the whole sample, 0.28 for the treatment group, 0.37 for the control group, and 0.16 among non-members.

Sections I.3 and I.4 report village characteristics and price factors, respectively. Data show that 40–50% of villages enjoy access to water. Only 19% of villages have irrigation systems. Two-thirds (66%) have a primary school, but only 10% have a secondary school.

V-3 *Observation on the Dependent Variables*

Table 4 presents three general categories of indices for household welfare as dependent variables: (A) Expenditures, (B) Assets, and (C) Income. Household expenditures consist of (A1) Food and (A2) Non-food Expenditures. The latter contains seven subcategories, including Transportation, Education, and Medical expenditures. Assets include (B1) House, (B2) Land, and (B3) Others. Others contain five subsets, including Agricultural assets, Livestock, and Savings. Household income includes (C1) Self-employment and (C2) Employment Income, subdivided into seven and five categories, respectively. In total, we prepared 34 dependent variables.

Table 4 compares the mean values of dependent variables classified by treatment, control, and non-member groups. The difference between mean values of the control group and non-members shows the possibility of participation bias. That means the values for the treatment group exceed those for the control group in all three categories— Expenditures, Assets, and Income—suggesting that SGs' lending programs sponsor positive welfare effects.

Among Expenditures, the notable relationships are for Non-food Expenditures and in subcomponents such as Education, Clothing, and Medical. Among Assets, the noteworthy relationships are House and Land. Among Income, on the other hand, SGs' positive effect is suggested by wide ranges in Self-employment and Employment income.

A comparison between control groups and non-members suggests household membership in SGs. Mean values for control groups are larger for Household Total Expenditures and most of its subcomponents, suggesting that households with higher expenditures have a larger tendency to be SG members. The gap between Food and Non-food

Table 4 Descriptive Statistics of Dependent Variables

A. Household Monthly Expenditure

Sample Group	Whole			Treatment Group		Control Group		Non-member	
Number of Sample	251			131		52		68	
	Mean	%	Std. Dev.	Mean	%	Mean	%	Mean	%
A Household total expenditure	**1,234,800**		**1,152,860**	**1,340,880**		**1,283,097**		**993,507**	
A1 Food expenditure	**417,481**	**33.8**	**329,570**	**429,160**	**32.0**	**435,058**	**33.9**	**381,539**	**38.4**
A2 Non-food expenditure	**817,319**	**66.2**	**998,698**	**911,720**	**68.0**	**848,039**	**66.1**	**611,968**	**61.6**
A21 Rental	10,267	0.8	84,549	2,061	0.2	39,396	3.1	3,799	0.4
A22 Transportation	210,553	17.1	432,975	209,551	15.6	311,404	24.3	135,363	13.6
A23 Education	167,807	13.6	333,357	201,508	15.0	129,619	10.1	132,086	13.3
A24 Clothing	136,084	11.0	184,019	161,304	12.0	95,556	7.4	118,490	11.9
A25 Medical	105,106	8.5	234,065	119,523	8.9	88,875	6.9	89,745	9.0
A26 Utensil	95,754	7.8	222,659	98,393	7.3	104,131	8.1	84,265	8.5
A27 Other major expenditures	91,748	7.4	316,805	119,380	8.9	79,058	6.2	48,221	4.9

Note: Unit: kip, monthly expenditure

B. Household Asset

Sample Group	Whole			Treatment Group		Control Group		Non-member	
Number of Sample	251			131		52		68	
	Mean	%	Std. Dev.	Mean	%	Mean	%	Mean	%
B Value of household owned total asset	**92,679**			**94,156**		**69,466**		**108,000**	
B1 Household-owned house	**33,965**	**36.6**	**45,450**	**36,757**	**39.0**	**33,009**	**47.5**	**29,316**	**27.1**
B2 Household-owned land	**45,479**	**49.1**		**43,987**	**46.7**	**22,100**	**31.8**	**66,232**	**61.3**
B3 Household-owned other assets	**13,235**	**14.3**	**33,073**	**13,412**	**14.2**	**14,356**	**20.7**	**12,037**	**11.1**
B31 Agriculture asset	2,525	2.7	7,607	2,703	2.9	3,156	4.5	1,699	1.6
B32 Livestock asset	5,550	6.0	19,242	4,907	5.2	8,011	11.5	4,907	4.5
B33 Other enterprise asset	460	0.5	2,229	413	0.4	727	1.0	346	0.3
B34 Savings at house	1,242	1.3	7,491	1,078	1.1	575	0.8	2,069	1.9
B35 Other asset	3,459	3.7	14,567	4,312	4.6	1,887	2.7	3,017	2.8

Note: Unit: 1,000 kip

C. Household Income

Sample Group	Whole			Treatment Group		Control Group		Non-member	
Number of Sample	251			131		52		68	
	Mean	%	Std. Dev.	Mean	%	Mean	%	Mean	%
C Household total income	**14,346,752**			**14,439,282**		**11,932,355**		**16,014,800**	
C1 Household total self-employment income	**11,592,111**	**80.8**	**25,294,651**	**11,487,380**	**79.6**	**9,626,000**	**80.7**	**13,297,368**	**83.0**
C11 from agriculture	2,419,044	16.9	5,979,001	2,537,023	17.6	2,370,000	19.9	2,229,265	13.9
C12 from livestock	1,578,175	11.0	3,486,485	1,466,794	10.2	1,580,385	13.2	1,791,059	11.2
C13 from handicraft & textile	1,888,122	13.2	3,243,976	2,134,983	14.8	1,703,500	14.3	1,553,735	9.7
C14 from trading	3,376,932	23.5	18,386,628	2,664,695	18.5	3,952,885	33.1	4,308,603	26.9
C15 from repairing & fixing service	379,482	2.6	2,459,819	552,672	3.8	0	0.0	336,029	2.1
C16 from rice mill & construction	1,648,562	11.5	15,460,301	1,703,733	11.8	19,231	0.2	2,788,235	17.4
C17 from vehicle service	301,793	2.1	2,944,454	427,481	3.0	0	0.0	290,441	1.8
C2 Household total employment income	**3,601,356**	**25.1**	**13,979,828**	**2,951,902**	**20.4**	**2,306,355**	**19.3**	**2,717,432**	**17.0**
C21 wage & salary income	2,205,797	15.4	3,799,600	2,327,977	16.1	1,870,000	15.7	2,227,206	13.9
C22 from remittance	407,822	2.8	1,704,379	448,352	3.1	249,816	2.1	450,569	2.8
C23 rental income	79,084	0.6	738,221	102,290	0.7	113,462	1.0	8,088	0.1
C24 monetary items income	40,425	0.3		45,802	0.3	38,462	0.3	31,569	0.2
C25 other income	21,514	0.1	253,644	27,481	0.2	34,615	0.3	0	0.0

Note: Unit: kip, yearly income

Expenditures is more remarkable for non-members, suggesting the necessity for non-food expenditures is an incentive to join SGs.

Regarding Assets, however, wealthier households appear inactive to join SGs. In

particular, the gap in the subcomponent of Land seems large (66,232 kip for non-members and 22,100 kip for the control group), suggesting that those richer in land asset are notably inactive to join SG activities. In fact, this tendency is overwritten by the independent variable Value of Household-owned Land 5 Years Ago (Table 3, I2-2). Similarly, Household Total Income and all its subcomponents suggest that wealthier households generally appear inactive to join SGs.

VI   Empirical Results

Equation (4) estimated the effect of SG membership duration, the SG membership dummy, ex ante household assets,[9] and other independent variables on all 34 dependent variables associated with household expenditures, assets, and income (Table 4).

In a comparable setting with data for similar SGs in Northeast Thailand, Coleman (1999) insists that the effect of SG membership is scarcely evident in any welfare indices after considering selection and placement biases. Although the influence of the SG participation on welfare could not be found in most dependent variable cases, we found five dependent variables influenced by it covering assets, income, and expenditures. Examining assets, we found a positive and significant result for (1) Household-owned House. With regard to income, we found correlations among subcomponents of Self-employment Income from (2) Livestock (positive) and (3) Agriculture (negative). Among Expenditures, we found correlations in variables for (4) Rental and (5) Education.

We now analyze estimation results for these five cases (Table 5). For all five, the effect of SG membership duration is significant—positive for four dependent variables and negative for agricultural income. Data for (1) House Asset suggests that SG credit has an improvement effect directly or indirectly. Positive results for income from (2) Livestock and negative results for (3) Agricultural income may suggest that SG members borrow to raise livestock and that lending for that purpose promotes a shift from traditional farming. The result for (4) Rental expenditures suggests that SG lending enables members to activate the livelihood activities in agriculture or non-agriculture. The result for (5) Education suggests that SG lending enables members to pursue education.

In Table 5, estimation results for Value of Household-owned Land 5 Years Ago, the variable for absorbing selection bias between the Super Naïve model and others, are significant only for agricultural income, but the effect of SG membership duration remains

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9) This value stands for the value of house with land (not empty land or land for rice fields and crops). Barnes (1996, 4) cited houses as one of the physical assets representing household wealth.

Table 5 Summery of the Estimation Result

Independent Variable	Asset	Income		Expenditure	
	Table 5	Table 6	Table 7	Table 8	Table 9
	House Asset	Livestock	Agriculture	Education	Rental
Months as SGs member (duration as SGs member)	** +	* +	*** −	** +	** +
SGs Member Dummy			* +		
Value of household-owned land 5 years ago			*** +		
Sex of household head (female=1)			*** −		
Gender of respondents (female=1)	** +				
Education of respondents (years)	** +		** −		** +
Household size		*** +	*** +	*** +	
Age of respondents (years)	** +				*** +
Number of months doing business	*** +		*** +	** +	** +
Number of generations of family in village			** +	** −	*** +
Number of relatives in village	*** +				** +
SGs committee member dummy	*** +	*** +			** +
Number of civil servant in household		* +			** +
Dummy for villages with a big pond or river access				* +	
Dummy for villages with paved road or closeness to main road	** +				
Dummy for villages with primary school up to grade 5				* +	
Distance from village to main markets			*** +		
Price of local chicken (Gailard) per Kg					
Daily wage for construction					

Note: Based on the non-fixed effects model. The superscripts ***, ** and * denote that coefficient is significant at 1%, 5% and 10% criteria.

positive after controlling for it. Some household characteristics are significant as control variables, but others are not. Variables representing village characteristics and wage/price variables are seldom significant.

VI-1 *Impact on Assets: Household House Asset*
Among the category Household Assets in Table 4, estimation results confirm that Household-owned House is a primary component (36.6%) of total household assets. In Table 6, F-statistics for all four model specifications are strongly significant. In all four specification regressions, the coefficient of Months as SG Member is positive and significant. A large proportion of coefficients in both the Naïve and Super-naïve models show significant impact. In the fixed-effect and non-fixed-effect models, which control possible placement bias, the coefficient of Months as SG Member is lower, but significant at 5% and 10%, respectively. These results sharply contrast with those in Coleman (1999; 2002), which shows insignificant effects of SG membership on house value.

The coefficient for Value of Household-owned Land 5 Years Ago (Table 6) is positive, but statistically insignificant in three specifications, implying that selection bias in a form

that the initial wealth affects the house asset at observation period is trivial and can be ignored.[10]

The coefficient of SG Member Dummy with respect to house asset value is insignificant, consistent with Coleman (1999; 2002), indicating that unobservable differences between members and non-members (such as entrepreneurship and preferences) make no difference. Therefore, in the fixed- and non-fixed effects models, Table 6 indicates no correlation between Member Dummy and house asset value, also suggesting no selection bias caused by unobservables.

Comparing the fixed- and non-fixed-effects models in Table 6, the effect of Months as SG Member is inconsequential; the statistical significance is slightly weak in the non-fixed-effects model, and coefficients are almost identical. For the explanatory variables to control village attributes in the non-fixed-effects, Naïve, and Super-naïve models, and the factor for paved roads is negative and statistically significant. The result roughly shows that the fixed-effects model sufficiently absorbs differences among villages and any effect of endogenous program placement is unclear.

Estimation results show significant influence of several household characteristics on house asset. Although the Sex of Household Head (female) dummy in Table 3 is insignificant, at least at the 10% level, the dummy for Gender of Respondents (Table 3) shows a positive and significant relation to house value in all four estimation models. Education of Respondents is highly significant in all four estimation models at the 5% level, which indicates that human and physical capital are complements in production (Coleman 1999, 120). Age of Respondents, Number of Months Doing Business, Number of Relatives in Village, and SG Committee Member Dummy are significant and positive in most specifications.

VI-2 *Impact on Income: Income from Livestock and Agriculture*

Unlike the examination of assets, we could hardly found the evidence of the overall impact for improvement by the SG membership in the income side. Results for regressions involving self-employment and employment income are insignificant. However, evidence of a certain change in composition of household livelihoods was suggested in the estimations: participation in SGs decreases the composition of agricultural income and slightly increases that of livestock income.

In Table 7, the effect of SG membership on income from livestock is positive in all four specifications: coefficients for Months as SG Member are positive and significant in

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10) This result also contrasts with those in Coleman (1999), who finds the coefficient of "female-owned land value 5 years ago" to be positive and statistically significant with regard to women's wealth.

Table 6 Impact of Savings Group on Household House Value—GLS

Independent Variable	Fixed Effects Model		Non-fixed Effects Model		"Naïve" Model		"Super-naïve" Model	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
Months as SGs member (duration as SGs member)	292,097	147,784 **	292,097	149,683 *	335,021	122,254 ***	358,260	123,456 ***
SGs Member Dummy	1,481,225	3,606,033	1,481,225	3,652,365				
Value of household-owned land 5 years ago	7.E-02	5.E-02	7.E-02	5.E-02	7.E-02	5.E-02		
Sex of household head (female=1)	-8,395,409	6,494,524	-8,395,409	6,577,969	-8,192,279	6,446,844	-8,324,504	6,502,591
Gender of respondents (female=1)	14,021,407	6,760,261 **	14,021,407	6,847,120 **	14,277,586	6,841,554 ***	10,800,449	6,236,708 *
Education of respondents (years)	854,694	422,396 **	854,694	427,823 **	875,203	4,152,112 ***	912,698	405,066 **
Household size	1,037,618	752,418	1,037,618	762,086	1,031,433	761,675	1,141,685	753,676
Age of respondents (years)	312,418	136,471 **	312,418	138,225 **	317,848	136,362 **	347,865	137,941 ***
Number of months doing business	29,502	11,177 ***	29,502	11,321 ***	29,811	11,347 ***	33,317	11,108 ***
Number of generations of family in village	843,836	1,191,177	843,836	1,206,481	796,147	1,209,852	542,343	1,190,404
Number of relatives in village	1,552,376	387,633 ***	1,552,376	392,613 ***	1,548,088	392,040 ***	1,544,427	381,940 ***
SGs committee member dummy	12,703,787	4,169,217 ***	12,703,787	4,222,785 ***	12,597,429	4,225,101 ***	12,995,561	4,189,169 ***
Number of civil servant in household	5,058,192	3,566,208	5,058,192	3,612,029	5,216,180	3,483,950	5,351,551	3,463,556
Dummy for villages with a big pond or river access			-44,768,692	36,726,790	-45,892,240	36,782,065	-47,125,621	36,182,599
Dummy for villages with paved road or closeness to main road			-17,908,249	7,655,365 **	-18,358,229	7,784,479 **	-18,674,677	7,906,479 **
Dummy for villages with primary school up to grade 5			45,390,649	38,241,483	46,212,441	38,344,587	47,538,868	37,641,126
Distance from village to main markets			583,219	424,715	599,591	416,257	585,607	424,001
Price of local chicken (Gailard) per Kg			-258	1,783	-429	1,846	-171	1,841
Daily wage for construction			-1,018	1,542	-886	1,613	-977	1,613
	F-statistic=2.858314		F-statistic=2.858314		F-statistic=3.044732		F-statistic=2.911104	
	Prob(F-statistic)=0.000149		Prob(F-statistic)=0.000149		Prob(F-statistic)=0.000080		Prob(F-statistic)=0.000217	
	R-squared=0.181513		R-squared=0.181513		R-squared=0.181768		R-squared=0.166006	

Note: The superscripts ***, **, and * denote that coefficient is significant at 1%, 5%, and 10% criteria.

the fixed-effects and non-fixed-effects models (at 10% significance), implying that SG participation increases livestock production. On the other hand, in all four specification models, agriculture income (Table 8) correlates significantly and negatively with months of SG membership. Results are significant at 1% in all models, suggesting the negative correlation is stable.

The member dummy is significant for agricultural income, implying that unobservable differences between members and non-members matter in estimation results, whereas they are insignificant for livestock income. Although estimations for agricultural income find correlations with many explanatory variables for household characteristics such as household size (positive) or education (negative), only a few explanatory variables influence livestock income. Village characteristics seldom influence the condition.

As summarized in Table 4, agricultural income averages 16.9% of total income in the whole sample, and livestock income averages 11.0%. Both are major income sources for village households. Our finding shows that membership in SGs is associated with a progression in village livelihoods from agriculture to livestock production. These results contrasted with results for Northeast Thailand. Coleman (1999) discovered nothing about the impact of SG membership on income and income structure. Our finding, however, is unclear. The positive correlation of SG membership with livestock income is significant only at 10%, and such substitution relation does not necessarily appear consistent with the descriptive observation in Table 4 (columns C11 and C12).

VI-3 *Impact on Expenditure: Education and Rental Expenditure*
We found no clear overall impact of SG membership on total expenditures (Table 4). But the clear and positive correlation between SG membership and educational expenditures is a noteworthy finding. Education expenditures average 13.6% of total expenditures, the second-largest component of Non-food Expenditure. SG members borrow for education—that is for human capital formation.

Table 9 shows the impact of SG membership on education expenditures with the four specifications. Months as SG Member relates positively at 5% significance in all specifications except in the Super-naïve model. Per results in the fixed-effects model, belonging to an SG for one more month could raise educational expenditures by 5,670 kip, for example.

As for the comparison among four specifications in Table 9, the SG Membership Dummy and Value of Household-owned Land 5 Years Ago are insignificant, suggesting negligible bias from unobservables. Among variables for village characteristics, Villages with a Primary School up to Grade 5 correlates positively and significantly with educational expenditures.

Table 7 Impact of Savings Group on Self-employment Income from Livestock—GLS

Independent Variable	Fixed Effects Model		Non-fixed Effects Model		"Naïve" Model		"Super-naïve" Model	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
Months as SGs member (duration as SGs member)	19,962	10,589 *	19,962	10,725 *	5,374	6,546	5,948	6,388
SGs Member Dummy	−557,276	358,369	−557,276	362,974				
Value of household-owned land 5 years ago	2.E-03	3.E-03	2.E-03	3.E-03	2.E-03	3.E-03		
Sex of household head (female=1)	−300,623	207,914	−300,623	210,585	−368,213	204,348 *	−371,531	202,203 *
Gender of respondentts (female=1)	80,203	845,785	80,203	856,652	−6,467	855,017	−84,635	861,953
Education of respondents (years)	12,190	33,842	12,190	34,277	2,017	33,190	4,484	33,169
Household size	318,013	97,539 ***	318,013	98,792 ***	306,585	95,545 ***	310,764	95,568 ***
Age of respondents (years)	4,370	10,151	4,370	10,281	1,298	9,339	2,549	9,296
Number of months doing business	−809	818	−809	828	−761	806	−689	792
Number of generations of family in village	107,168	83,641	107,168	84,716	110,511	78,823	110,934	78,738
Number of relatives in village	46,844	32,868	46,844	33,290	48,340	31,638	49,922	32,272
SGs committee member dummy	1,378,544	483,964 ***	1,378,544	490,183 ***	1,413,605	473,251 ***	1,445,757	479,883 ***
Number of civil servant in household	413,843	249,041 *	413,843	252,241	389,296	246,407	395,150	244,608
Dummy for villages with a big pond or river access			−3,014,492	2,745,199	−2,626,708	2,695,507	−2,669,113	2,678,944
Dummy for villages with paved road or closeness to main road			−654,752	684,148	−481,329	656,940	−493,312	659,751
Dummy for villages with primary school up to grade 5			2,453,660	2,861,017	2,144,790	2,823,562	2,186,486	2,806,690
Distance from village to main markets			−16,485	54,007	−21,839	53,026	−22,598	52,962
Price of local chicken (Gailard) per Kg			−99.92	117	−39	99	−31.38	100
Daily wage for construction			83	69	39	56	35	56
	F-statistic=2.296443		F-statistic=2.296443		F-statistic=2.281757		F-statistic=2.388660	
	Prob(F-statistic)=0.002577		Prob(F-statistic)=0.002577		Prob(F-statistic)=0.003352		Prob(F-statistic)=0.002513	
	R-squared=0.151228		R-squared=0.151228		R-squared=0.142720		R-squared=0.140397	

Note: The superscripts ***, **, and * denote that coefficient is significant at 1%, 5%, and 10% criteria.

Table 8 Impact of Savings Group on Household Self-employment Income from Agriculture—GLS

Independent Variable	Fixed Effects Model		Non-fixed Effects Model		"Naïve" Model		"Super-naïve" Model	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
Months as SGs member (duration as SGs member)	−28,207	9,287 ***	−28,207	9,406 ***	−19,530	7,505 ***	−20,080	7,382 ***
SGs Member Dummy	286,831	163,582 *	286,831	165,684 *				
Value of household-owned land 5 years ago	1.E-03	4.E-04 ***	1.E-03	4.E-04 ***	1.E-03	4.E-04 ***		
Sex of household head (female=1)	−541,902	108,493 ***	−541,902	109,887 ***	−512,509	107,430 ***	−486,574	107,728 ***
Gender of respondents (female=1)	72,762	129,788	72,762	131,456	103,555	128,713	74,531	127,055
Education of respondents (years)	−41,018	19,609 **	−41,018	19,861 **	−39,570	19,779 **	−28,726	17,799
Household size	74,184	25,956 ***	74,184	26,290 ***	74,259	25,928 ***	80,356	25,993 ***
Age of respondents (years)	6,792	4,806	6,792	4,868	5,988	4,768	7,609	4,585 *
Number of months doing business	2,310	573 ***	2,310	581 ***	2,347	580 ***	2,376	572 ***
Number of generations of family in village	137,676	58,041 **	137,676	58,786 **	138,985	57,809 **	127,146	56,916 **
Number of relatives in village	11,848	21,677	11,848	21,956	11,319	22,153	11,530	22,209
SGs committee member dummy	536,174	563,871	536,174	571,116	506,895	569,193	507,812	567,530
Number of civil servant in household	82,783	118,974	82,783	120,503	107,798	115,762	158,546	105,499
Dummy for villages with a big pond or river access			−1,348,716	5,157,754	−1,576,873	5,166,868	−1,521,957	5,156,553
Dummy for villages with paved road or closeness to main road			−1,464,704	3,444,240	−1,550,032	3,444,890	−1,536,444	3,437,276
Dummy for villages with primary school up to grade 5			4,407,984	8,395,579	4,576,076	8,394,287	4,510,155	8,377,608
Distance from village to main markets			−118,734	59,640 **	−116,338	59,163 **	−116,370	59,045 **
Price of local chicken (Gailard) per Kg			−697.26	999	−724.56	999	−720.7	997
Daily wage for construction			638	792	663.61	793	656.64	791
	F-statistic=1.492664		F-statistic=1.492664		F-statistic=1.537622		F-statistic=1.607735	
	Prob(F-statistic)=0.093412		Prob(F-statistic)=0.093412		Prob(F-statistic)=0.082866		Prob(F-statistic)=0.067655	
	R-squared=0.103790		R-squared=0.103790		R-squared=0.100871		R-squared=0.099043	

Note: The superscripts ***, **, and * denote that coefficient is significant at 1%, 5%, and 10% criteria.

As a supplemental finding, we note a clear but substantially weak correlation between SG membership and rental expenditures. Table 10 shows the regression results on rental expenditures for all specifications. The coefficient is significant at 1% for the Super-naïve model and 5% for the remaining specifications. This result could be evidence that SG membership facilitates self-employment in raising livestock and fish or in non-agricultural activities. At 0.8% of total expenditures, the effect of Rental expenditures is, however, limited. For rental expenditures, the explanatory variable of education level is positive and significant at the 5% level in all four estimation models. This result may imply that better-educated Laotians launch or expand new business by acquiring physical capital through SG credit.

VI-4 *Interpretation*

Our finding suggests that SG programs around Vientiane generally encourage diversification on household livelihoods. First, SGs' strong positive contribution to educational expenditures is apparent and confirmed in the fixed- and non-fixed-effects models, the strictest forms of estimation. The apparent difference in mean values for the amount and share of educational expenditures between the treatment group and others (control group and non-members) in Table 4 underwrites the estimation results. As Table 2 shows, education loans are one of the largest components of lending among young SGs, suggesting that increase of educational expenditures is realized through loosened cash constraint by SG loan as a direct effect. Supporting human capital formation beyond short-term income generation is the most vital service SGs provide during their early stages.

Second, we find that SG microfinance is associated with an increase in house values. There are two ways to interpret this finding. As a direct way, it can be realized by investment for a particular purpose such as starting or expanding a business; as an indirect way it can be a result of income generation. Table 2 indicates that loans for durables, including house repair, are a somewhat higher percentage of loans among young SGs, suggesting the existence of the direct effect; investment in housing is activated by improved access to credit.

Third, results for increased livestock income and decreased agricultural income imply that households gravitate toward livestock raising beyond their traditional agricultural pursuits. However, the result is not necessarily consistent with the descriptive observation. In Table 4, income from livestock among the treatment group is somehow less than among the control group, and non-members (although it is consistent in income from agriculture). Also, Table 2 suggests that lending for agricultural purposes is relatively robust among young SGs. Any effect SGs have in changing household income sources from traditional agriculture to more diversified livelihoods remains vague.

Table 9 Impact of Savings Group on Household Educational Expenditure—GLS

Independent Variable	Fixed Effects Model		Non-fixed Effects Model		"Naïve" Model		"Super-naïve" Model	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
Months as SGs member (duration as SGs member)	5,670	2,768 **	5,670	2,804 **	5,961	2,329 **	5,976	2,324 **
SGs Member Dummy	7,080	29,520	7,080	29,899				
Value of household-owned land 5 years ago	-8.E-05	1.E-04	-8.E-05	1.E-04	-8.E-05	9.E-05		
Sex of household head (female=1)	-73,347	49,734	-73,347	50,373	-71,354	49,885	-71,424	49,473
Gender of respondents (female=1)	-21,040	29,964	-21,040	30,349	-20,435	28,796	-16,809	28,283
Education of respondents (years)	6,287	3,931	6,287	3,981	6,319	3,875	6,306	3,879
Household size	20,530	5,013 ***	20,530	5,077 ***	20,846	4,978 ***	20,764	4,938 ***
Age of respondents (years)	1,592	1,142	1,592	1,157	1,550	1,129	1,464	1,108
Number of months doing business	-210	98 **	-210	99 **	-202	100 **	-207	97 **
Number of generations of family in village	-19,404	8,779 **	-19,404	8,891 **	-19,901	8,926 **	-19,118	8,493 **
Number of relatives in village	-136	1,293	-136	1,309	-186	1,232	-243	1,242
SGs committee member dummy	-19,448	76,585	-19,448	77,569	-23,656	73,922	-24,937	73,713
Number of civil servant in household	11,324	21,117	11,324	21,389	12,310	19,502	11,545	19,684
Dummy for villages with a big pond or river access			-321,773	166,553 *	-328,548	155,381 **	-327,368	154,915 **
Dummy for villages with paved road or closeness to main road			-142,432	98,763	-144,618	93,386	-144,249	93,205
Dummy for villages with primary school up to grade 5			408,506	223,863 *	413,289	214,579 *	411,673	214,080 *
Distance from village to main markets			1,380	1,976	1,477	2,101	1,454	2,093
Price of local chicken (Gailard) per Kg			-27.08	27	-28.12	25	-28.35	25
Daily wage for construction			17	21	17.75	20	17.94	20
	F-statistic=1.670459		F-statistic=1.670459		F-statistic=1.835944		F-statistic=1.952906	
	Prob(F-statistic)=0.045622		Prob(F-statistic)=0.045622		Prob(F-statistic)=0.024821		Prob(F-statistic)=0.017032	
	R-squared=0.114734		R-squared=0.114734		R-squared=0.118129		R-squared=0.117802	

Note: The superscripts ***, **, and * denote that coefficient is significant at 1%, 5%, and 10% criteria.

Table 10 Impact of Savings Group on Household Rental Expenditure—GLS

Independent Variable	Fixed Effects Model		Non-fixed Effects Model		"Naïve" Model		"Super-naïve" Model	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
Months as SGs member (duration as SGs member)	139	61 **	139	62 **	144	46 **	144	46 ***
SGs Member Dummy	176	1,355	176	1,372				
Value of household-owned land 5 years ago	3.E-06	4.E-06	3.E-06	4.E-06	3.E-06	4.E-06		
Sex of household head (female=1)	2,153	1,313	2,153	1,330	2,127	1,358	2,121	1,352
Gender of respondents (female=1)	514	1,036	514	1,050	460	1,025	367	1,024
Education of respondents (years)	483	205 **	483	207 **	489	207 **	499	209 **
Household size	-164	440	-164	445	-164	440	-155	439
Age of respondents (years)	-343	125 ***	-343	126 ***	-346	123 ***	-343	122 ***
Number of months doing business	-9	4 **	-9	4 **	-9	4 **	-9	4 **
Number of generations of family in village	8,346	2,666 ***	8,346	2,700 ***	8,418	2,626 ***	8,413	2,617 ***
Number of relatives in village	-325	134 **	-325	135 **	-336	131 ***	-333	130 ***
SGs committee member dummy	-2,927	1,212 **	-2,927	1,228 **	-2,960	1,218 **	-2,912	1,204 **
Number of civil servant in household	-1,736	891 **	-1,736	903 **	-1,734	837 **	-1,685	824 **
Dummy for villages with a big pond or river access			-46,765	83,437	-46,848	84,101	-46,845	83,916
Dummy for villages with paved road or closeness to main road			-30,659	55,918	-30,707	56,154	-30,714	56,031
Dummy for villages with primary school up to grade 5			78,514	137,373	78,574	137,836	78,567	137,533
Distance from village to main markets			-899	942	-898	932	-898	930
Price of local chicken (Gailard) per Kg			-9.975	16	-9.984	16	-9.98	16
Daily wage for construction			9	13	8.73	13	8.72	13
	F-statistic=2.851135 Prob(F-statistic)=0.000155 R-squared=0.181139		F-statistic=2.851135 Prob(F-statistic)=0.000155 R-squared=0.181139		F-statistic=3.099860 Prob(F-statistic)=0.000060 R-squared=0.184452		F-statistic=3.309186 Prob(F-statistic)=0.000032 R-squared=0.184518	

Note: The superscripts ***, **, and * denote that coefficient is significant at 1%, 5%, and 10% criteria.

Finally, the impact on rental expenditures gives side evidence that SGs encourage entrepreneurship. However, the share of rental income among total income is low (0.6% in Table 4), so the effect is trivial and caution is warranted in interpreting this result.

Although this study's primary contribution is fact-finding relevant to Laos, several factors distinguish Laos from Thailand in Coleman (1999). From a methodological perspective, characteristics of SGs differ, as Ohno and Patcharin (2009) and Ohno's first paper in this special issue indicate. Since NGO programs in Northeast Thailand started by supporting existing SGs, information about members of new groups (membership dummy=1 and duration=0 months) may not provide pure signals of the control group. In addition, since programs distributed seed money regardless of SGs' mobilized saving size, seed money may be significant for some SGs and trivial for others, resulting that the impact for the treatment group contained such serious disturbance factors.

In this sense, the methodology may better fit the Laotian case. Since NGOs began SGs in Laos the new SGs/villages are truly new. Seed money, a serious disturbing factor in analyzing Thailand's case, is rarely distributed among programs in the Vientiane area. In a socio-economic context, the stage of the village economy may offer an explanation. Thailand's rural economy was well developed and diversified even in the mid-1990s, and a degree of formal credit had reached even rural areas. However, only about three-quarters of Lao PDR's one million working population can access formal or semi-formal financial services. Moreover, only 6% of credit-eligible borrowers could benefit from reasonable interest rates, and 4% of them deposit money in formal financial institutions (Microfinance Capacity Building and Research Programme 2005).[11] Given this situation, SGs were a vital and nearly the sole (except for informal finance) providers of financial services during mid-2000s, even in the semi-urban area surrounding Vientiane.

VII   Conclusion

Coleman (1999) raised the possibility of selection bias and endogenous placement of program in pioneering studies such as Pitt and Khandker (1996; 1998) and Khandker (2003). He tackled the problem with a unique sample design in examining SGs in Northeast Thailand. He found that many apparent correlations were caused by biases between the program and welfare factors, and warned that earlier studies may overestimate the impact of microfinance.

Following Coleman's (1999) survey design and estimation methodology, we found

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11) Agricultural Promotion Bank, the largest policy-based bank.

that SG microfinance bolsters household income, expenditures, and assets in Laos. We estimated the influence of SGs on 34 welfare indices, about half the number (72) in the benchmark study. Although Coleman (*ibid.*) universally denied any causal impact in all of his observations, our estimations indicate an impact in five index cases on assets, income, and expenditures.

We found that SGs boost educational expenditures as a major function. We also found an increase in assets (house asset), suggesting villagers' investment (purchase of durables and house repair) reflected by possible business activation or agricultural diversification. Although a convincing interpretation is difficult, our estimations suggest that SG microfinance prompts a shift in income sources from traditional agriculture to livestock raising, and an increase in rental income.

Our findings are basically consistent to the argument on the function of SGs in Vientiane areas discussed in other papers of this issue, and strongly support the existence of the benefit of the SG practice in Laos. Our findings also endorse the Laotian government's current policies regarding SGs. Future scholarship needs to examine whether our findings can be generalized to situations in Laos beyond Vientiane's socio-economic context.

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An Analysis on Borrowing Behavior of Rural Households in Vientiane Municipality: Case Study of Four Villages

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Since the late 1990s the savings groups have been introduced in the villages of Laos. This movement has offered new borrowing opportunities for the rural people. Based on household survey using a structured questionnaire in four study villages (N=684) in Vientiane Municipality during 2007–08 we analyzed the role and performance of the savings group in rural financial markets, especially focusing on who borrows, from which sources, and for what purposes by comparing the savings group with informal and formal lenders. Two major findings are as follows. First, three types of lenders (savings groups, formal and informal lenders) have their own particular features, and thereby loan purposes differ significantly. Formal banks offer loans exclusively for production purposes, while informal lenders do for coping with emergencies. Savings groups fall between them. Second, though poor households are reluctant to be a savings group member, once they participate in they actively obtain loans from it. In contrast, though rich households actively participate in the group, they obtain loans less from it. Group members claim that the primary purpose of joining the savings group is to cope with emergencies. When the members obtain loans from the savings group, however, nearly 40% of the loans are used for production purposes, mainly in agriculture. There exists a change between saving purposes and borrowing ones. It is assumed that in villages with the higher loan credit for production purposes, the savings groups show favorable performance, and thus a rapid growth.

Keywords: Laos, savings groups, credit demand, precipitation incentive, household behavior

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I   Introduction

Since the late 1990s the savings groups (hereafter SG) have been introduced in the rural areas of Laos (Coleman and Wynne 2006), starting from the villages in Vientiane Municipality. In Laos rural people find it difficult to access formal financial markets. Though the Agricultural Promotion Bank (APB) is almost a sole formal financial institution for rural people, its branch network is poorly established. Thus, rural people rely on informal lenders such as relatives, friends, moneylenders, and so forth for loans. By the time of our survey the SG has been established in almost all the villages in Vientiane Municipality. Thus, the SG turns out a vital lender for rural people.

Some important questions arise as to who participate in the SG, who actually borrow, and for what purposes they borrow. In addition, we need to examine who participate in the SG and if the group substitutes for formal and informal lenders.

The emergence of SGs is a recent phenomenon (Ledgerwood 1999; Robinson 2001). The financial system has several forms of cooperative financial institutions called as credit unions, savings and loan cooperatives, village banks, self-help groups, and so forth. SGs are community-based credit and savings association established to provide access to savings and loan services in rural areas. However, only few research attempts have so far been made at SGs in developing countries (Gingrich 2004; Papias and Ganesan 2009; Cheruiyot *et al.* 2012). Furthermore, these studies do not explore the above research questions.

In order to examine such a series of questions, we selected four villages in Vientiane Municipality and conducted a detailed household-level survey in 2007–08 using a structured questionnaire (N=684). The Vientiane plain that covers Vientiane Municipality is a major rice producing area in Laos. In the Plain there exist two types of village, rice producing villages and villages engaging in rural non-farm activities, of which most well-known is hand-weaving cottage industry. Thus, we selected two agriculturally advanced villages especially in rice cultivation (paddy villages) and two villages with active hand-weaving cottage industry (hand-weaving villages) to explore how different village characteristics affect the role and performance of the three rural lenders: SGs, formal banks, and informal lenders.

The remaining part of this paper is organized as follows. In section 2, we present basic characteristics of the study villages and of 684 surveyed households. The households are classified into three economic classes; poor, middle, and rich, based on the holdings of major consumer durables and the amount of gold held. In section 3, we proceed to analyze the performance of the SGs and other rural financial markets in the villages. Section 4 discusses who borrow from which sources, and for what purposes.

In addition, we examine who participate in an SG. Finally, in section 5 we conclude.

II   Characteristics of the Study Villages and Households

The locations of our study villages (*ban*) are shown in Fig. 1 with traveling hours by motorcycle from the center of Vientiane city. As road condition to Thanasa and Natan is not favorable, vehicles take more time to reach the villages in the rainy season. The two paddy villages (Thanasa and Don Neua), located along the Mekong River, are agriculturally advanced, especially in rice production. In contrast, other two weaving villages (Natan and Phon Ngam) are agriculturally backward, whereas the hand-weaving cottage industry is thriving.

The history of Don Neua dates back to the early seventeenth century. Phon Ngam was established only in 1969 by the migrants (Tai-dam ethnic) from Xieng Khuang Province. The other two villages have roughly 100 years of history. Natan started in 1917 when people (Tai-puan ethnic) migrated from Xam Neua Province due to inter-ethnic conflicts. Thanasa started from 15 households more than 100 years ago when people (Tai-puan ethnic) migrated from somewhere between the two provinces of Xieng Khuang and Vientiane.

In 2007 and 2008, by using a semi-structured questionnaire we conducted a household census survey in these villages (N=684), although a few households could not be
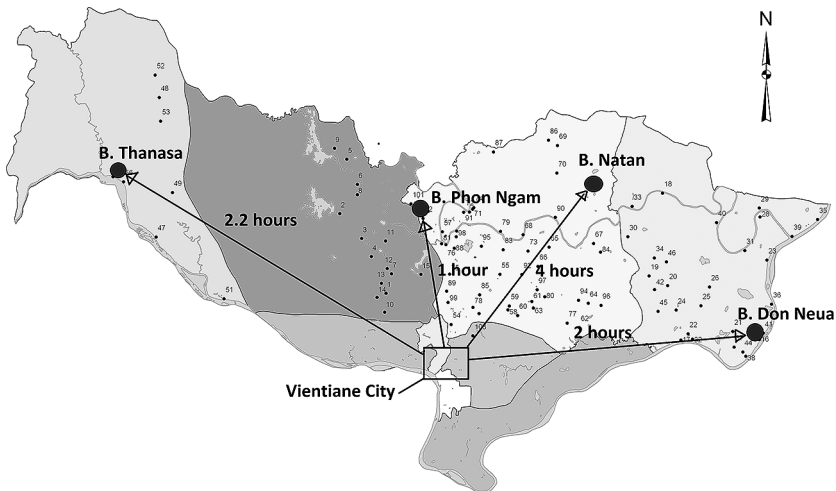
Fig. 1   Location of the Study Villages
Source: The National Geographic Department (NGD).

covered for various reasons. Table 1 demonstrates the basic structure of income earnings of the surveyed households in the four villages. Major notable findings are summarized as follows.

First, most households in Thanasa and Don Neua of the paddy zone are self-sufficient in rice, whereas 18–25% of households need to purchase rice in the two weaving villages. Note also that compared to Don Neua, Thanasa has much more marketable surplus of rice, with more than 85% of households selling rice in the market.

Second, Phon Ngam scores the highest average household cash income (nearly 25 million kip per annum, approximately US$2,500), followed by Thanasa and Don Neua at around 17–18 million kip, and the lowest is recorded by Natan at slightly more than 10 million kip.[1]

Third, the sources of cash income differ substantially among the four villages. Dependency on agriculture (including livestock) is already low even in the two agriculturally advanced villages (45.9% and 30.8% in Thanasa and Don Neua respectively, and 36.4% and 19.6% in Natan and Phon Ngam respectively). The share of income from hand-weaving is high in Natan and Phon Ngam, whereas the share of income from "other business" (business other than hand-weaving) is high in Thanasa and Don Neua. Other notable facts are that salary income is important for Phon Ngam and that remittance is important for Don Neua.[2]

Table 2 shows the status of major non-land assets holding among the households. Cattle mainly for meat are the most important livestock. It is found that motorcycles, TVs, refrigerators, and phones reach more than 70% penetration rates. Gold is an important form of savings for the villagers, along with livestock.

Let us classify the households based on the ownership of consumer durables and gold (as shown in Table 2) into three classes; poor, middle, and rich (Table 3).[3] Note that whereas middle class households occupy 46–54% of the households in the four vil-

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1) Note that the average household cash income in the eight villages studied by authors in Luang Prabang Province in 2010 and 2011 is as follows; 52 million kip in Xieng Lek, 16 million kip in Sop Houn, 10 million kip in Kogneiw, 6.0 million kip in Sop Khon, 5.2 million kip in Had Sao, 4.1 million kip in Houei Hoi, 3.7 million kip in Sop Khan, and 2.4 million kip in Had Chan (see Table 6 in Fujita, Ohno, and Chansathith, the second paper in this special issue). Although Natan is the poorest among the four villages, it is relatively wealthy compared to the villages in Luang Prabang Province.

2) After the social revolution in 1975 many villagers fled to abroad especially USA from Don Neua, which causes a high remittance income in the village.

3) The classification method applied is a bit arbitrary; i.e., we took up seven consumer durables as car, motorbike, bicycle, television set, refrigerator, telephone, and power connection and if a household has more than six items or five items plus more than two *baat* of gold, it is classified into the "rich" whereas if a household has less than three items (except for car and motorbike) it is classified into the "poor." However, even if a bit arbitrary, by and large it seems quite reasonable when looking at the other economic indicators for the three class categories (see Table 4).

Table 1 Status in Rice Transactions and Cash Income Sources in Four Villages

	HHs	Cultivated Area (ha)		Rice Transaction Status (HHs)			Cash Income (kip/year)								
		Rice	Non-rice	Sale	Pur-chase	No Trans.	Paddy	Other Agr.	Livestock	Weaving	Other Business	Salary	Agri. Wages and Others	Remittance	Total
Natan	175	1.35	0.78	95 54.3%	32 18.3%	48 27.4%	1,912,655 18.7%	105,086 1.0%	1,705,372 16.7%	2,166,004 21.2%	1,645,314 16.1%	1,522,789 14.9%	805,257 7.9%	343,029 3.4%	10,205,505 100%
Phon Ngam	169	1.08	1.16	68 40.2%	42 24.9%	59 34.9%	1,639,645 6.6%	1,361,952 5.5%	1,847,468 7.5%	3,817,953 15.4%	3,834,124 15.5%	5,351,988 21.6%	5,891,213 23.8%	1,027,249 4.1%	24,771,592 100%
Thanasa	202	1.47	2.40	172 85.1%	12 5.9%	18 8.9%	5,085,406 28.4%	602,401 3.4%	2,526,383 14.1%	26,733 0.1%	5,360,248 29.9%	1,905,604 10.6%	2,099,634 11.7%	301,980 1.7%	17,908,389 100%
Don Neua	138	1.33	1.61	77 55.8%	5 3.6%	56 40.6%	3,414,262 19.9%	398,406 2.3%	1,477,968 8.6%	116,297 0.7%	4,061,377 23.7%	2,451,623 14.3%	2,796,920 16.3%	2,414,565 14.1%	17,131,418 100%
Total	684	1.32	1.52	412 60.2%	91 13.3%	181 26.5%	3,085,139 17.7%	621,674 3.6%	1,937,063 11.1%	1,528,850 8.7%	3,770,668 21.6%	2,921,250 16.7%	2,694,051 15.4%	917,902 5.3%	17,476,598 100%

Source: Prepared by authors.

Table 2 Major Non-land Assets Holding among the Households

	HHs	No. of Livestock per HH					Durables (% of Holding HHs)							Gold (baat/HH)
		Cattle	Buffalo	Pig	Goat	Chicken	Car	Motorcycle	Bicycle	TV	Refrigerator	Phone	Power	
Natan	175	4.55	1.19	0.65	0.80	16.89	3.5	66.9	49.7	83.4	59.4	66.3	21.0	0.21
Phon Ngam	169	4.22	0.34	0.74	0.85	27.15	8.3	77.0	67.5	89.4	71.0	82.8	46.1	1.11
Thanasa	202	4.30	1.17	0.30	1.29	23.65	5.9	66.4	36.6	84.1	71.3	73.3	36.1	0.56
Don Neua	138	2.91	0.05	0.32	1.83	22.64	10.1	73.2	74.6	94.2	89.9	86.3	37.7	0.86
Total	684	4.06	0.75	0.50	1.16	22.58	6.7	70.5	55.3	87.3	71.9	76.5	35.1	0.67

Source: Prepared by authors.
Note: One baat of gold is equivalent to 15.2 gram.

Table 3 Economic Classes and Population

		No. of HHs	Share	No. of Population per HH		
				Male	Female	Total
Natan	Poor	51	29.1%	2.27	2.37	4.64
	Middle	94	53.7%	2.81	2.69	5.50
	Rich	30	17.1%	2.43	2.67	5.10
	Total	175	100%	2.59	2.59	5.18
Phon Ngam	Poor	32	18.9%	2.59	2.56	5.15
	Middle	77	45.6%	2.90	2.61	5.51
	Rich	60	35.5%	3.13	3.28	6.41
	Total	169	100%	2.92	2.84	5.76
Thanasa	Poor	60	29.7%	1.87	2.12	3.99
	Middle	102	50.5%	2.28	2.30	4.58
	Rich	40	19.8%	2.60	2.55	5.15
	Total	202	100%	2.22	2.30	4.52
Don Neua	Poor	19	13.8%	2.11	1.95	4.06
	Middle	69	50.0%	2.32	2.19	4.51
	Rich	50	36.2%	2.46	2.60	5.06
	Total	138	100%	2.34	2.31	4.65
Total	Poor	162	23.7%	2.17	2.27	4.43
	Middle	342	50.0%	2.57	2.45	5.03
	Rich	180	26.3%	2.71	2.83	5.54
	Total	684	100%	2.51	2.51	5.02

Source: Prepared by authors.

lages, the share of poor households is larger (29–30%) in Natan and Thanasa and that of rich households is larger (36%) in Phon Ngam and Don Neua. Average family size is the smallest in the poor, followed by the middle and the rich. This indicates that family cycle may at least partly concern the disparity. The largest household size of 5.76 is recorded in Phon Ngam and the smallest size of 4.52 in Thanasa. Thus, nuclear family is said to be the rule in Lao villages.

Tables 4 and 5 summarize the major economic indicators by the three economic classes. Several notable points are as follows. First, economic disparity as to household cash income is relatively small in Natan and Don Neua, while it is large in Phon Ngam and Thanasa. Natan is relatively egalitarian in terms of income distribution between the poor and the rich, though having a large share of the poor; Phon Ngam is inequitable in terms of income distribution, with a large share of the rich; Thanasa is inequitable in terms of income distribution, with a large share of the poor; and Don Neua is egalitarian in terms of income distribution, with a large share of the rich.

Table 4 Differences among the Economic Classes I

		Cultivated Area (ha)		Rice Transaction Status (HHs)			Cash Income (kip/year)									
		Rice	Non-rice	Sale	Purchase	No Trans.	Paddy	Other Agr.	Livestock	Weaving	Other Business	Salary	Agri. Wages and Others	Remittance	Total
Natan	Poor	0.79	0.29	19	19	13	931,908	10,000	615,569	1,732,275	1,448,431	495,294	473,176	421,373	6,128,026
				37.3%	37.3%	25.5%	15.2%	0.2%	10.0%	28.3%	23.6%	8.1%	7.7%	6.9%	100%
	Middle	1.44	0.82	50	12	32	2,070,494	155,106	1,937,351	2,440,638	1,525,106	2,015,723	663,298	173,404	10,981,120
				53.2%	12.8%	34.0%	18.9%	1.4%	17.6%	22.2%	13.9%	18.4%	6.0%	1.6%	100%
	Rich	2.04	1.49	26	1	3	3,085,367	110,000	2,831,167	2,042,820	2,356,667	1,725,000	1,814,600	741,333	14,706,954
				86.7%	3.3%	10.0%	21.0%	0.7%	19.3%	13.9%	16.0%	11.7%	12.3%	5.0%	100%
Phon Ngam	Poor	0.54	0.98	6	16	10	416,875	96,250	778,250	2,933,813	692,500	912,500	1,109,688	456,250	7,396,126
				18.8%	50.0%	31.3%	5.6%	1.3%	10.5%	39.7%	9.4%	12.3%	15.0%	6.2%	100%
	Middle	0.94	0.98	34	15	28	1,207,208	2,150,909	1,697,416	4,593,610	1,394,286	5,019,013	2,165,000	1,005,779	19,233,221
				44.2%	19.5%	36.4%	6.3%	11.2%	8.8%	23.9%	7.2%	26.1%	11.3%	5.2%	100%
	Rich	1.55	1.48	28	11	21	2,846,750	1,024,500	2,610,283	3,294,067	8,640,783	8,147,033	13,223,333	1,359,333	41,146,082
				46.7%	18.3%	35.0%	6.9%	2.5%	6.3%	8.0%	21.0%	19.8%	32.1%	3.3%	100%
Thanasa	Poor	0.82	1.88	46	8	6	1,970,500	346,717	517,292	0	428,333	578,000	1,534,167	133,333	5,508,342
				76.7%	13.3%	10.0%	35.8%	6.3%	9.4%	0%	7.8%	10.5%	27.9%	2.4%	100%
	Middle	1.59	2.47	89	4	9	5,849,206	682,451	3,093,725	52,941	1,204,118	2,326,039	2,079,765	297,059	15,585,304
				87.3%	3.9%	8.8%	37.5%	4.4%	19.9%	0.3%	7.7%	14.9%	13.3%	1.9%	100%
	Rich	2.14	3.01	37	0	3	7,810,075	781,750	4,093,300	0	23,356,250	2,824,900	2,998,500	567,500	42,432,275
				92.5%	0%	7.5%	18.4%	1.8%	9.6%	0%	55.0%	6.7%	7.1%	1.3%	100%
Don Neua	Poor	0.66	0.48	11	1	7	1,232,853	105,263	248,158	149,947	1,477,368	252,632	2,158,947	1,481,053	7,106,221
				57.9%	5.3%	36.8%	17.3%	1.5%	3.5%	2.1%	20.8%	3.6%	30.4%	20.8%	100%
	Middle	0.88	0.99	33	3	33	2,847,551	266,957	954,179	165,797	2,855,652	1,529,913	2,795,290	2,107,536	13,522,875
				47.8%	4.3%	47.8%	21.1%	2.0%	7.1%	1.2%	21.1%	11.3%	20.7%	15.6%	100%
	Rich	2.20	2.88	33	1	16	5,025,260	691,200	2,649,440	35,200	6,707,200	4,559,200	3,041,600	3,193,000	25,902,100
				66.0%	2.0%	32.0%	19.4%	2.7%	10.2%	0%	25.9%	17.6%	11.7%	12.3%	100%

Source: Prepared by authors.

Table 5 Differences among the Economic Classes II

		No. of Livestock					Durables (% of Holding HHs)							Gold (*baat*/HH)
		Cattle	Buffalo	Pig	Goat	Chicken	Car	Motorcycle	Bicycle	TV	Refrigerator	Phone	Power	
Natan	Poor	1.84	0.61	0	0.20	9.61	0	3.9	37.3	56.9	19.6	31.4	19.6	0.03
	Middle	4.96	1.07	0.83	1.06	16.14	0	91.5	44.7	92.6	68.1	75.5	46.8	0.13
	Rich	7.87	2.53	1.20	0.97	31.60	20.0	96.7	86.7	100	100	96.7	90.0	0.78
Phon Ngam	Poor	2.19	0.25	0.03	1.09	15.63	0	12.5	50.0	59.4	18.8	43.8	9.4	0.19
	Middle	3.81	0.46	0.48	0.58	24.22	0	85.7	62.3	96.1	72.7	85.7	35.1	0.36
	Rich	5.90	0.24	1.47	1.07	37.50	23.3	100	83.3	96.7	96.6	100	80.0	2.57
Thanasa	Poor	1.68	0.43	0.22	0	13.00	0	5.0	26.7	51.7	36.7	40.0	6.7	0.07
	Middle	4.28	0.87	0.09	2.39	25.12	0	92.2	29.4	97.1	81.4	82.4	34.3	0.25
	Rich	8.28	3.05	0.95	0.40	35.88	30.0	92.5	70.0	100	97.5	100	85.0	2.12
Don Neua	Poor	0.33	0	0	0.39	5.78	0	10.5	36.8	57.9	47.4	47.4	0	0.07
	Middle	2.47	0	0.27	1.14	22.03	0	72.5	73.9	99.0	94.2	87.0	20.3	0.20
	Rich	4.44	0.14	0.50	3.28	29.56	28.0	98.0	90.0	100	100	100	76.0	2.08

Source: Prepared by authors.

Second, the share of hand-weaving income in total household cash income is the highest for the poor both in Natan and Phon Ngam. It is evident that the development of the hand-weaving cottage industry in Laos is induced by poverty among the poorer households in agriculturally backward villages.[4]

Third, in the two villages of paddy zone the share of agricultural wage income (including other miscellaneous incomes) is the highest for the poor. This implies that agricultural development alleviates poverty through the agricultural labor market.

Fourth, business income (other than hand-weaving) is a major cause of income disparity among the three classes in the study villages, especially in the agriculturally advanced villages of Thanasa and Don Neua.

III   The Savings Groups and the Rural Financial Markets in the Study Villages

The SGs were introduced to the four villages almost simultaneously in the early 2000s; firstly in Don Neua in 2000, followed by in Phon Ngam in 2001 and finally in Natan and Thanasa in 2003. However, they show different growth pathways (Table 6). Don Neua achieves the most rapid development, with almost 100% of household participation in SG and 3.74 members per household on average.[5] Thanasa SG records nearly 80% of house-hold participation, although per household members is only 1.74. In contrast, the two "hand-weaving villages," the household participation rate is short of 50%, in spite of the relatively high per household members, especially in the case of Natan.

On the other hand, the table clearly shows among the four villages that the proportion of membership is the lowest for the poor and that the number of group members per member household is the smallest for the poor.

Table 7 demonstrates the borrowing behaviors of the households by the three economic classes; if a household borrowed money from at least one of sources (either from the SG, formal banks, or informal lenders) during the two year period prior to our survey, it is classified as a "borrower." The sources of loans are shown in the table. The first table is for all the households; the second one is for SG members; and the third one is for non-members.

There are several points to be noted here. First, overall, 50% of the households are borrowers, ranging from 31% in Phon Ngam to 67% in Thanasa. Usually, non-SG mem-

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4) For the hand-weaving cottage industry in Laos, refer to Ohno (2001; 2009).
5) For more information, see Fujita, the sixth paper in this special issue.

Table 6   Performance of the Savings Group in the Study Villages

		HHs		SG Member HHs	Rate of Participation (%)	No. of Members	No. of Members per HH
		Number	Share (%)				
Natan	Poor	51	29.1	16	31.4	20	1.25
	Middle	94	53.7	50	53.2	104	2.08
	Rich	30	17.1	18	60.0	42	2.33
	Total	175	100	84	48.0	166	1.98
Phon Ngam	Poor	32	18.9	12	37.5	18	1.50
	Middle	77	45.6	35	45.5	56	1.60
	Rich	60	35.5	30	50.0	53	1.77
	Total	169	100	77	45.6	127	1.65
Thanasa	Poor	60	29.7	38	63.3	58	1.53
	Middle	102	50.5	85	83.3	159	1.87
	Rich	40	19.8	34	85.0	56	1.65
	Total	202	100	157	77.7	273	1.74
Don Neua	Poor	19	13.8	18	94.7	52	2.89
	Middle	69	50.0	69	100.0	244	3.54
	Rich	50	36.2	50	100.0	217	4.34
	Total	138	100	137	99.3	513	3.74
Total	Poor	162	23.7	84	51.9	148	1.76
	Middle	342	50.0	239	69.9	563	2.36
	Rich	180	26.3	132	73.3	368	2.79
	Total	684	100	455	66.5	1,079	2.37

Source: Prepared by authors.

ber households record a significantly lower incidence of borrowing (vis-à-vis SG members) at only 15% on average, except for the case of Thanasa at 40%. In other words, those who intend to borrow are likely to be SG members.

Second, among the SG households the rich show the lowest incidence of borrowing from the SG. In contrast, though the participation rate in an SG is the lowest for the poor, they turn out active borrowers once they participate in an SG. This means that an SG functions as a financial intermediary between the cash-surplus rich to the cash-deficit poor.

Third, borrowings from formal banks are mainly observed in agriculturally advanced zone, Thanasa and Don Neua. This is mainly because the APB is almost the sole institutional lender in rural Laos, which extends loans only for agricultural purposes.

An Analysis on Borrowing Behavior of Rural Households in Vientiane Municipality   123

Table 7 Borrowers and Source of Borrowing (total HHs, SG member HHs, and non-SG member HHs)

		No. of HHs	Non-borrower	Borrower	%	SG Only	Bank Only	IF Only	SG+Bank	SG+IF	Bank+IF	SG+Bank+IF
Natan	Poor	51	38	13	25.5	8		3	1	1		
	Middle	94	51	43	45.7	34		3	2	3		1
	Rich	30	15	15	50.0	9	1	4		1		
	Total	175	104	71	40.6	51	1	10	3	5		1
Phon Ngam	Poor	32	22	10	31.3	6		4				
	Middle	77	51	26	33.8	15	1	5	1	3		1
	Rich	60	43	17	28.3	14		1	1	1		
	Total	169	116	53	31.4	35	1	10	2	4		1
Thanasa	Poor	60	22	38	63.3	19	1	8	6	3	1	
	Middle	102	28	74	72.5	41	4	3	19	6	1	
	Rich	40	17	23	57.5	9	5	1	7	1		
	Total	202	67	135	66.8	69	10	12	32	10	2	
Don Neua	Poor	19	4	15	78.9	9	1		1	3		1
	Middle	69	23	46	66.7	24	3	3	11	3		2
	Rich	50	26	24	48.0	11	3	1	4	4		1
	Total	138	53	85	61.6	44	7	4	16	10		4
Total	Poor	162	86	76	46.9	42	2	15	8	7	1	1
	Middle	342	153	189	55.3	114	8	14	33	15	1	4
	Rich	180	101	79	43.9	43	9	7	12	7		1
	Total	684	340	344	50.3	199	19	36	53	29	2	6

		No. of SG Member HHs	Non-borrower	Borrower	%	SG Only	Bank Only	IF Only	SG+Bank	SG+IF	Bank+IF	SG+Bank+IF
Natan	Poor	16	6	10	62.5	8			1	1		
	Middle	50	9	41	82.0	34		1	2	3		1
	Rich	18	7	11	61.1	9		2				
	Total	84	22	62	73.8	51		3	3	4		1
Phon Ngam	Poor	12	4	8	66.7	6		2				
	Middle	35	14	21	60.0	14	1	1	1	3		1
	Rich	30	13	17	56.7	14		1	1	1		
	Total	77	31	46	59.7	34	1	4	2	4		1
Thanasa	Poor	38	10	28	73.7	19			6	2	1	
	Middle	85	16	69	81.2	41	2	1	19	6		
	Rich	34	14	20	58.8	9	2	1	7	1		
	Total	157	40	117	74.5	69	4	2	32	9	1	
Don Neua	Poor	18	3	15	83.3	9	1		1	3		1
	Middle	69	23	46	66.7	24	3	3	11	3		2
	Rich	50	26	24	48.0	11	3	1	4	4		1
	Total	137	52	85	62.0	44	7	4	16	10		4
Total	Poor	84	23	61	72.6	42	1	2	8	6	1	1
	Middle	239	62	177	74.1	113	6	6	33	15		4
	Rich	132	60	72	54.5	43	5	5	12	6		1
	Total	455	145	310	68.1	198	12	13	53	27	1	6

		No. of Non-SG Member HHs	Non-borrower	Borrower	%	SG Only	Bank Only	IF Only	SG+Bank	SG+IF	Bank+IF	SG+Bank+IF
Natan	Poor	35	32	3	8.6			3				
	Middle	44	42	2	4.5			2				
	Rich	12	8	4	33.3		1	2		1		
	Total	91	82	9	9.9		1	7		1		
Phon Ngam	Poor	20	18	2	10.0			2				
	Middle	42	37	5	11.9	1		4				
	Rich	30	30	0	0							
	Total	92	85	7	7.6	1		6				
Thanasa	Poor	22	12	10	45.5		1	8		1		
	Middle	17	12	5	29.4		2	2			1	
	Rich	6	3	3	50.0			3				
	Total	45	27	18	40.0		6	10		1	1	
Don Neua	Poor	1	1	0	0							
	Middle	0	0	0								
	Rich	0	0	0								
	Total	1	1	0	0							
Total	Poor	78	63	15	19.2		1	13		1		
	Middle	103	91	12	11.7	1	2	8			1	
	Rich	48	41	7	14.6		4	2		1		
	Total	229	195	34	14.8	1	7	23		2	1	

Source: Prepared by authors.

IV   The Determinants of a Household Decision on Borrowing

In this section we propose a binary probit model to estimate a household's decision of whether or not to obtain loans from three types of lenders: SGs, a formal bank, and informal lenders. As these three financial sources have their own features, different loan functions are expected. Thus, we estimate two types of a loan borrowing function: (a) a general function that deals with loans from at least one of the lenders, and (b) a borrowing function from a respective lender: loans from an SG, a formal bank, and an informal lender. Each function is displayed using (1) entire sample, (2) the paddy zone sample, and (3) the weaving zone sample. However, a function for a formal bank is estimated only for the paddy zone, because only a few households borrow from a bank in the weaving zone.

The borrowing function we estimate is,

$$\mathbf{B}_{ij} = \alpha \mathbf{X}_{ij} + \beta \mathbf{Z}_{ij} + \gamma \mathbf{A}_{ij} + \delta \mathbf{S}_{ij} + \zeta \mathbf{Y}_{ij} + \eta \mathbf{Z}_{ij} + \mu_{ij},$$

where $\mathbf{B}ij$ stands for borrowing experience of ith household from a lender j, which equals 1 if the household has borrowed money from any lenders at least once in the past two years. $\mathbf{X}$ is vector measuring household's characteristics that include age and educational attainments of household head, wealth levels, family size, SG membership. $\mathbf{Z}$ represents paddy production characteristics that include planted area for paddy and expenditure for chemical fertilizer. $\mathbf{A}$ denotes social capital gauged by a question: If you suddenly needed a substantial amount of money (say, one million kip [approximately US$100]), how many people in the village could you turn to? (less than 3=1, 3 to 5=2, 6 to 8=4, more than 9=5). $\mathbf{S}$ is a shock dummy measured by a question if the household encountered a shock in the past two years (Yes=1, No=0). $\mathbf{Y}$ is per capita annual income from different sources. $\mathbf{Z}$ is an area dummy (paddy zone=0, weaving zone=1) and N and D are the dummies for Natan and Don Neua respectively. μ is the error term. The details of variables including their summary statistics are reported in Table 8.

The regression coefficients for the above equation are presented in Table 9. First, the results of a general function (columns 1 to 3) indicate that SHOCK is the major reason of loan taking. Living with various risks, rural households face difficulties in managing emergent expenditures on various events. From another perspective, the households having a constant inflow of cash income, WEAVING and SELFEMP, decrease the likelihood of obtaining loans. SALARIED and REMITTANCE also decrease the likelihood in the paddy zone. Remittance is mostly sent from overseas Laotians who fled

Table 8 Descriptive Statistics of Variables and Test of Equal Means by Zone

Description	Remark	Variable Name	Total	Paddy	Weaving	t-value
Savings group member	Member=1, otherwise=0	SGM-D	0.67	0.86	0.47	
Age of household head	year	AGE	44.62	42.12	47.1	–4.73 ***
Education of household head	no education=0 to university=5	ED	2.62	2.43	2.81	4.19 ***
Poor household	Poor household=1, otherwise=0	POOR-D	0.23	0.23	0.24	–0.46
Rich household	Rich household=1, otherwise=0	RICH-D	0.25	0.25	0.25	0.09
Household size		HHSIZE	5.02	4.57	5.46	–6.16 ***
Paddy land in ha		PADDYHA	1.31	1.42	1.19	1.81
Expenditure for chemical fertilizer	kip	CHEMI	216,011	199,075	232,750	–0.95
Reciprocal social capital	see, main text	KIN	0.38	0.31	0.45	–3.94 ***
Previous expenditure shock	see, main text	SHOCK	0.27	0.3	0.25	1.64
Cash Income from	kip					
paddy sales		PADDY	3,085,139	4,407,118	1,778,531	5.34 ***
agriculture other than paddy		OTHERAGRI	621,671	519,597	7,225,580	–0.84
livestock sales		LIVESTOCK	1,937,063	2,100,850	1,775,180	0.8
hand weaving		WEAVING	1,528,850	63,085	2,977,572	–11.17 ***
self-employed business		SELFEMP	3,770,668	4,833,058	2,720,631	1.71
salaried occupation		SALARIED	2,769,342	2,127,224	3,403,394	–2.49 **
remittance		REMITTANCE	917,902	1,159,441	679,171	1.73
agricultural wage		AGRIWAGE	1,803,854	2,382,650	1,231,787	3.47 ***
Gold	Gold ownership in *baat* (local unit of gold)	GOLD	0.67	0.69	0.66	0.65

Note: *** P<1%, ** P<5%.

t-value is for the difference between paddy villages and weaving villages.

the country following its communist Pathet Lao takeover as a result of the Laotian Civil War in 1975. The displaced persons were mostly the natives of indigenous villages in the Vientiane plain such as Don Neua (Table 1). Similarly, households in a rich stratum of village societies (Rich-D) borrow less. They are assumed to be able to self-finance emergencies. A significantly positive coefficient to SG membership (SGM-D) implies that SG turns out an additional lender for village households.

As Table 7 shows, the sample households obtain loans from different sources. Column 4 of Table 9 presents a borrowing function for a formal bank in the paddy zone. Educational attainments significantly increase the likelihood of obtaining a loan from a formal bank (mostly APB). This is possibly because higher educational attainment facilitates the procedure for a loan request. That expenditure for chemical fertilizer (CHEMI) has a significantly positive effect on a bank loan is because APB extends loans for agricultural production. As was observed in Japan (Ohno, the first paper in this special issue), increasing application of chemical fertilizer in Laos will necessitate well-established financial services for rural households. It should be noted that SHOCK also lets the households obtain loan from APB. This is mainly because the household having obtained loans from informal sources when they experienced emergent expenditure obtained a loan from APB to pay off their debt. This fungibility assumedly appears as a significant positive coefficient of SHOCK. In fact, what we observed in Don Neua during our field survey is that some villagers borrowed from informal sources (mainly relatives and

Table 9 Borrowing Functions

Column	1 Entire Sample		2 General Term Paddy Zone		3 General Term Weaving Zone		4 Bank Paddy Zone	
	Z-Coeff	Wald	Z-Coeff	Wald	Z-Coeff	Wald	Z-Coeff	Wald
Age	-0.007	2.784 *	-0.007	1.206	-0.001	0.028	-0.002	0.116
ED	-0.014	0.079	0.121	1.849	-0.081	1.188	0.225	4.939 *
Poor-D	0.028	0.036	0.05	0.058	-0.15	0.425	0.24	0.763
Rich-D	-0.326	5.344 **	-0.39	4.086 **	-0.072	0.095	-0.463	2.614
HHSize	0.026	0.688	0.066	1.931	-0.012	0.07	0.017	0.096
SGM-D	1.528	125.006 ***	1.018	18.891 ***	1.937	110.848 ***	0.387	1.791
PaddyHa	0.048	0.996	0.001	0.001	0.099	1.389	-0.031	0.405
Chemi	-4.25E-08	0.123	1.43E-07	0.553	-9.08E-08	0.192	4.48E-07	4.956 **
Kin	-0.14	1.5	-0.333	4.002 **	0.085	0.226	-0.1	0.279
Shock	0.26	4.312 **	0.411	5.648 **	0.17	0.691	0.489	7.464 ***
Zone-D	-0.112	0.665	-0.36	2.604	0.17	0.782	-0.53	4.242 **
Income by sources								
Paddy	4.50E-09	0.218	8.99E-09	0.56	-4.43E-08	2.44	1.70E-08	2.933 *
OtherAgri	-2.04E-08	0.862	-4.70E-08	1.912	5.31E-09	0.037	-8.50E-08	1.63
Livestock	-2.79E-09	0.054	-4.59E-09	0.088	4.06E-10	0	7.41E-09	0.258
Weaving	-3.92E-08	4.71 **	4.27E-07	1.798	-4.92E-08	5.615 **	9.92E-08	0.336
Selfemp	-1.07E-08	6.805 ***	-7.43E-09	3.689 *	-4.43E-08	5.388 **	-1.35E-09	0.112
Salaried	-9.22E-09	1.008	-4.01E-08	6.007 **	1.06E-08	0.682	-4.20E-08	3.562 *
Remittance	-4.38E-08	5.07 **	-0.55	3.173 *	-0.05	0.025	-1.411	5.211 **
Others	2.18E-08	2.498	0.244	2.191	0.37	1.995	0.049	0.093
N (%)	684.0	(100.0)	340.0	(100.0)	344.0	(100.0)	340.0	(100.0)
	0=340	(49.7)	0=120	(35.3)	0=220	(64.0)	0=269	(79.1)
	1=344	(50.3)	1=220	(64.7)	1=124	(36.0)	1=71	(20.9)
LR chi²	242.668		68.11		166.806		46.923	
Prob > chi²	***		***		***		***	
Pseudo R²	0.299		0.182		0.384		0.129	
Log likelihood	705.534		373.379		282.93		301.505	

Table 9 Borrowing Functions (continued)

	Informal Lenders						Savings Group					
	5		6		7		8		9		10	
	Entire Sample		Paddy Zone		Weaving Zone		Entire Sample		Paddy Zone		Weaving Zone	
	Z-Coeff	Wald	Z-coeff	Wald	Z-coeff	Wald	Z-score	Wald	Z-score	Wald	Z-score	Wald
Age	-0.01	3.464 *	-0.009	1.18	-0.018	4.249 **	-0.003	1.639	-0.001	0.009	0.007	0.523
ED	-0.074	1.185	-0.027	0.053	-0.195	3.865 **	-0.008	0.278	0.054	0.352	0.011	0.013
Poor-D	0.227	1.749	-0.005	0	0.009	0.001	-0.106	0.018	-0.048	0.046	-0.265	0.751
Rich-D	-0.038	0.042	-0.375	0.83	0.023	0.006	-0.481	0.362	-0.492	6.022 **	-0.24	0.634
HHSize	-0.079	3.501 *	-0.09	1.891	-0.078	1.685	0.036	9.152 ***	0.087	2.817 *	-0.018	0.108
SGM-D	-0.162	0.978	-0.884	10.552 ***	0.211	0.952	NA	NA	NA	NA	NA	NA
PaddyHa	0.052	2.025	0.045	1.207	0.107	0.888	0.07	1.048	0.021	0.136	0.102	0.449
Chemi	1.74E-07	1.684	2.22E-07	0.977	-1.72E-08	0.006	7.88E-08	1.243	2.14E-07	1.263	1.75E-07	0.347
Kin	-0.021	0.021	-0.017	0.006	-0.044	0.041	-0.133	0.337	-0.189	1.197	0.063	0.073
Shock	0.49	11.068 ***	0.494	5.652 **	0.579	5.797 **	0.07	1.017	0.215	1.515	-0.212	0.753
Zone-D	-0.017	0.009	0.326	1.249	-0.198	0.651	0.123	3.395 *	-0.503	4.998 **	0.457	3.415 *
Income by sources												
Paddy	-7.06E-09	0.277	-6.91E-10	0.003	-8.99E-08	2.621	-3.98E-09	0.263	-2.03E-09	0.045	-7.69E-08	3.584 *
OtherAgri	-1.88E-08	0.274	-2.06E-08	0.103	-2.64E-08	0.244	-1.72E-08	0.206	-4.43E-08	1.622	2.88E-08	0.54
Livestock	-9.16E-09	0.269	-4.07E-08	1.016	3.55E-09	0.021	1.13E-08	0.541	1.19E-08	0.208	1.73E-08	0.352
Weaving	-3.06E-08	1.087	-1.94E-06	0.003	-4.54E-08	1.979	-3.46E-08	0.407	2.50E-07	1.25	-2.94E-08	1.536
Selfemp	-4.73E-08	3.837 **	-3.81E-08	1.339	-1.06E-07	2.575	-3.00E-08	2.749 *	-3.04E-08	4.923 **	-2.38E-08	2.028
Salaried	-3.92E-09	0.081	-3.60E-08	1.391	1.02E-08	0.355	-8.64E-09	8.098 ***	-4.08E-08	5.517 ***	2.17E-08	1.198
Remittance	0.106	0.251	-0.1	0.057	0.236	0.469	-2.60E-09	0.734	-2.80E-09	1.027	4.00E-11	0.014
Others	0.068	0.206	0.099	0.247	-0.044	0.022	2.80E-09	3.395 *	4.00E-08	5.06 **	3.02E-09	-0.76
N (%)	684.0	(100.0)	340.0	(100.0)	344.0	(100.0)	455.0	(100.0)	294.0	(100.0)	161.0	(100.0)
	0=610	(89.2)	0=297	(87.4)	0=313	(91.0)	0=171	(37.6)	0=111	(37.8)	0=60	(37.3)
	1=74	(10.8)	1=43	(12.6)	1=31	(7.0)	1=344	(62.4)	1=183	(62.2)	1=101	(62.7)
LR chi²	41.884		35.889		28.116		50.698		56.045		24.425	
Prob>chi²	***		***		*		***		**		*	
Pseudo R²	0.059		0.1		0.078		0.105		0.174		0.141	
Log likelihood	426.941		222.254		180.215		551.706		333.712		188.212	

Note: *** P<1%, ** P<5%, * P<10%.
       Pseudo R² is Cox-Snell.

friends, and in some cases from moneylenders) when they faced emergencies, and after some time they borrowed from APB to repay the debt. In such cases, SHOCK induces villagers to borrow from formal banks, with a certain time lag.

Informal loan functions are shown in columns 5 to 7 of Table 9. The results indicate that SHOCK is a major reason of borrowing from informal lenders; on an average 62.3% are from relatives, 18.2% from neighbors and friends, and 11.7% from money lenders in the four study villages. Informal lenders offer convenient loans due to their swift procedure when rural households face emergencies. It is noted that in the paddy zone SGs are substituting for informal lenders. This will be discussed later as a difference between saving motive and borrowing purposes.

Columns 8 to 10 show borrowing functions for SGs (sample households are group members only). A constant inflow of cash income, SELFEMP and SALARIED, deceases the likelihood of a loan taking from SGs in the paddy zone. Pecuniary enough, SHOCK does not account for loans from SGs. This is probably because an urgent loan demand cannot be satisfied by SGs. SG loan is disbursed once a month on the fixed day, and group members who have a debt to repay cannot obtain a loan from SGs even if they faced shocks. In this respect, informal lenders are assumed to still offer most convenient loans against shocks that involve urgent expenditures.

In whole, especially for the weaving zone, SG borrowing functions are rather blurred. A major motivation to participate in an SG is for precautionary savings followed by education expenditure (Table 10). However, when it comes to loan usages (Table 11), though coping with shock (disease and other emergencies) is a major reason of loan usage that accounts for 24.5% of loan obtained, nearly 40% of loan is spent for production purposes including education. Another usage (16%) goes for consumption purposes. Unlike production-specific loans from APB, the usage of loan form SG is diversified. As the SG

Table 10   Reasons to Participate in Savings Group

(%)

	Entire Sample	Paddy Zone	Weaving Zone
Emergency	72.5	73.6	71.8
Education	11.9	10.4	12.7
To prepare for old age	5.7	7.4	4.5
Future consumption	0.2	0.6	0
To gain dividend	4.0	4.3	3.8
Not to waste expenditure	4.0	3.1	4.5
Agricultural purpose	1.1	0	1.7
Others	0.6	0	1.0
Total	100.0	99.4	100

Source: Prepared by authors.

Table 11 Usage of Loan from Savings Group

(%)

	Entire Sample	Paddy Zone	Weaving Zone
Disease	18.8	18.1	20.0
Emergency other than disease	5.7	3.3	10.0
Production purposes	(39.3)	(44.9)	(29.1)
Paddy planting	9.9	13.7	3.0
Chemical fertilizer	2.1	2.2	2.0
Paddy harvesting	2.8	4.4	0
Other agriculture	16.0	20.3	8.0
Livestock	1.8	2.7	0
Education	6.7	1.6	16.0
Consumption	16.0	14.2	19.0
Child birth	0.7	0.5	1.0
Ceremony	2.1	1.1	4.0
Others	17.4	17.9	17.0
Total	100.0	100.0	100.0

Source: Prepared by authors.

is a savings-first financial institution, borrowers tend to perceive the loans from an SG as withdrawal of own savings. Thus, purpose-specific loans cannot be bound to borrowers for the SG. This is likely to blur the SG borrowing function.

Tables 10 and 11 indicate that the motive of savings does not match the actual usage of loans. Though precautionary savings characterize saving behavior of rural households, they utilize sizeable amount of their loans for production purposes. Though this is a natural process of savings accumulation, it implies that growth prospects of the SG largely depend on loan demands for production purposes. Otherwise, as discussed in several articles of this special issue, emerging surplus money is concerned to jeopardize the SG movement of Laos.

The question that needs to be taken up next is who participate in the SG. Table 12 presents an SG participation function. The poor segment of the village households does not participate in an SG. They find it difficult to save every month, because SGs require members to save at least 5,000 to 10,000 kip every month. A shock experience has the effect of encouraging participation in the SG. As a rule, members are entitled to access loan after saving more than three months. Thus, transitory shock itself does not explain the participation in the SGs. It can be assumed that shock-prone households tend to participate in an SG.

It should be noted that income from livestock sales is negatively associated with participation in the SG. Table 13 shows the allocation of lump-sum income (one million kip); the question is that "Suppose you get one million kip, how do you allocate the money

Table 12 Savings Group Participation Function

	Z-coefficient	Wald	
Age	0.002	0.133	
ED	0.098	3.146	*
Poor-D	−0.457	9.329	***
Rich-D	0.076	0.207	
HHSize	0.055	2.65	
PaddyHa	0.034	0.405	
Chemi	−1.32E-07	0.736	
Kin	−0.003	0.001	
Shock	0.394	8.183	***
Cash income by sources			
Paddy	−4.04E-09	0.201	
OtherAgri	6.12E-09	0.128	
Livestock	−2.22E-08	3.501	*
Weaving	1.14E-08	0.554	
Non-farm self employment	4.03E-10	0.008	
Salaried	−9.68E-09	1.046	
Remittance	2.47E-08	1.044	
Agri. Wages and others	6.78E-09	0.196	
Gold	0.018	0.016	
N	−0.947	30.98	***
P	−1.173	39.836	***
N (%)		546 (100.0)	
	Member	318 (58.2)	
	Non-member	228 (41.8)	
LR chi^2		93.971	
Prob>chi^2		***	
Pseudo R^2		0.158	
Log likelihood		648.043	

Note: *** P<1%, * P<10%.

among the followings (choices are shown in the table)." Respondents have little intention to save the money in a formal bank, because they do not have ready access to savings facilities in formal financial institutions. Instead, they save one-third of the money in an SG. It should be noted that 17% goes for livestock purchase. Livestock is known in less developed countries like Laos as the most common means of non-cash savings. Thus, households who are endowed with favorable conditions for livestock farming tend not to participate in SGs. Though gold is said to be another means of savings, it does not affect participation behavior. This is partly because gold investment is far smaller than livestock investment as can be understood from Table 12.

Our major findings are; 1) Rural households have access to several lenders. SGs turn out to be a prepotent lender. 2) Lenders (SGs, formal bank, and informal lenders)

Table 13 Allocation of Lump-sum Income

(%)

	Entire Sample	Paddy Zone	Weaving Zone
Deposit money in a Laotian bank	7.0	4.5	9.4
Deposit money in a Thai bank	0.6	0.5	0.7
Deposit money in the Savings Group	31.6	40.0	23.2
Buy gold	3.8	1.4	6.2
Buy cattle	16.6	13.4	19.7
Buy something you want	18.2	19.8	16.5
Others	22.2	20.4	24.3
Total	100.0	100.0	100.0

Source: Prepared by authors.

have their own peculiarities in that formal banks extend loans for production purposes, informal lenders for coping with shocks. The SG falls between them. SG members borrow money to cope with shocks as well as for production purposes, and even for a consumption purpose.

V Concluding Remarks

Our major objective is to discuss how the SG functions in the villages of Vientiane Municipality, based on the case studies in four villages. We selected two "weaving villages" and two "paddy villages" in order to assess the differential performance and impact of the SGs between them. Our focus is to clarify who borrow, from which sources, and for what purposes. In order to deepen the analysis we classified the households into three economic classes; poor, middle, and rich.

The major findings and conclusions are summarized as below. First, the poor are less likely to participate in an SG. This is partly because the poor are too poor to afford monthly commitment savings of at least 5,000–10,000 kip (roughly US$0.5–1). Another plausible reason is an emotional barrier in participation due to their poverty and deprivation.

Second, the major motivation to participate in the SG is found "to prepare for emergencies" that accounts for more than 70% of the reasons of participation. However, as to actual usage of loans from the SG, dealing with shocks accounts for only 24.5% of loan amounts. On the other hand, nearly 40% goes for production purposes including education. Despite rapid economic growth in Laos in the last 10–15 years, the major concerns of rural people, even in Vientiane Municipality, are still "protective." In fact, the SHOCK dummy is significant in the SG participation function. Our interpretation is that those households with a high propensity to be hit by shocks are more willing to participate in

the SG.

Third, while SHOCK dummy is insignificant in the SG borrowing function, it is significant in the borrowing function for informal sources and partly for formal banks (mostly APB). It can be interpreted that obtaining SG loans is somewhat inconvenient for rural people to deal with emergencies in that the SG extends loans only once in a month and that members cannot apply for a loan when they have already borrowed money from the SG. Only after repaying all the debt, members can apply for a loan. In contrast, borrowing from informal sources (in the four villages average, 62.3% are from relatives, 18.2% from neighbors and friends, and 11.7% from money lenders) is far easier. The significance of SHOCK for the borrowing function from formal banks can be explained by the fact that some people borrow from informal sources, and later apply for formal banks to repay the debt.

Fourth, generally speaking, we obtained only blurred results for the SG borrowing function, especially in the case of the weaving villages. This is mainly because loans from the SG are spent for various purposes including emergencies and production purposes.

Fifth, however, it should be noted that the borrowing from informal sources became less if households participated in the SG, especially in the case of paddy villages. It means that at least some of the borrowings from informal sources were substituted by the borrowing from the SG.

Sixth, though rich households are more likely to be SG members, they tend to borrow less from the SG. Thus, it can be claimed that SGs provide financial intermediation between cash-surplus rich households and cash-deficit middle and poor households.

Seventh, SGs perform differently between the paddy villages and the weaving villages. With four sample villages, we can only propose a following hypothesis; the performance of paddy villages was better because of the higher percentage of loan usage (from the SG) for production purposes (44.9% in the paddy zone versus 29.1% in the weaving zone as shown in Table 11). In both of the weaving villages, as traders or master weavers provide raw materials for weavers, financial constraints turn out to be minimized for weavers. In contrast, as the borrowing function from formal banks indicates, there exists a strong demand for credit in the paddy villages, especially in rice cultivation.

It should be concluded, from what has been said above, that the SG carries out complementary functions with formal and informal financial institutions, and that the SG has potential for growth where growing loan demands for productive purposes are expected. Otherwise, the SG stagnates as observed in Luang Prabang Province and partially in Natan and Phon Ngam. This offers an answer to the research question of the diversified growth of the SGs in Vientiane Municipality as advanced in the introduction.

This does not imply, however, that the SG should be introduced only in the areas

endowed with the long-term prospects for growth of loan demands, because the SG functions as an insurance institution in economically backward areas. Distinct mechanisms for extending loans are required for different villages.

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The Excess Funds Problem of the Savings Groups in Laos: Case Study of a Village in Vientiane Municipality

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There is a tendency that the success of some of the village-level savings groups in Laos inevitably causes an excess funds problem, because the activity of a saving group is confined to a small village territory. Given the lack of efficient and reasonable system for coordinating between funds-surplus and funds-deficit savings groups, the excess funds problem of funds-surplus savings groups leads to a stagnation of such groups, whereas other funds-deficit groups continue to suffer from the fund shortage. The paper, based on a case study of a village in Vientiane Municipality since 2003 until 2012, analyzes how various stakeholders responded to such an excess funds problem with an apparent failure in the study village and alerts the policy-makers in Laos to make necessary measures, since the excess funds problem is also providing a good opportunity to establish a broader and integrated institutional financial system in rural Laos.

Keywords: village-level savings group, excess funds problem, Laos

I Introduction

The Village Savings and Credit Group (hereinafter, SG) in Laos is basically a closed, village-level financial group. Membership is confined to villagers, and savings mobilization and credit extension are limited to the members. Roughly 70% of profits from credit operations are distributed as dividends once a year to members in proportion to their savings amount. In general, at first, demand for credit exceeds savings and because external institutions generally provide no, or very little, seed funding, so an SG inevitably rations credit.[1] Later, as the group develops and savings accumulate to a certain level, savings begin to exceed credit demand. Lowering the interest rate, which is a common adjustment measure, has an apparent inhibitory effect on the development of SGs as a reduced interest

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  1) The case of the study village's SG gave priority to members with urgent needs and small loan amounts.

rate discourages savings mobilization, although a substantial savings surplus exists among village households. Such SGs suffer from an excess funds problem. We also note the existence of many SGs that suffer from shortage of funds in a prolonged period.

To avoid such a scenario, SGs require a system to coordinate the gap between demand and supply among funds-surplus and funds-deficit SGs. When SGs as a whole have excess funds, the surplus money should be transferred to external financial markets. Through such a developmental process, SGs can be integrated into the broader financial system, thus contributing to the development of the nation-wide financial markets. The agricultural cooperatives in Japan, for instance, established the three-tier cooperative system—village-level, prefecture-level, and nation-level—to transfer excess funds from village-level cooperatives to a nation-level cooperative bank (see the first paper in this special issue by Ohno) and thereby supported the formation of the country's more efficient and integrated financial market.

In Laos, some SGs, especially those in Vientiane Municipality, began facing an excess funds problem several years after establishment. The present study examines the responses of the various stakeholders—committee members and advisers of an SG, villagers, NGOs (Foundation for Integrated Agricultural and Environmental Management [FIAM] and Community Organizations Development Institute [CODI]),[2] and the Lao Women's Union (LWU)—to this problem. This study's major objective is to investigate the excess funds problem, focusing on the aforementioned stakeholders' responses through a detailed case study of a village in Pakngum District, Vientiane Municipality. By analyzing the process of the development of SG, this study also identifies the SG's impact on the village financial market and economy.

The paper proceeds as follows. In section 2, we describe the study village on the basis of a household survey of 75 sample households, followed by a discussion of the SG's development and impact on the village economy in section 3. Section 4 presents the process that caused the excess funds problem and the methods by which the SG committee and other stakeholders attempted to manage it. Section 5 presents the conclusions.

II   Profile of the Study Village

FIAM and CODI began organizing SGs in Vientiane Municipality (hereinafter, Vientiane) in 1997. By December 2003, a total of 217 SGs were formed in Laos, covering nine

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2) FIAM is a Thai NGO. CODI is a Thai semi-governmental organization. The system of governing SGs is almost the same for the two institutions. See Ohno and Arimoto (2005) for SGs under FIAM.

District	No. of Villages	No. of Villages with Savings Group	Share of Villages	No. of Members	Averave Number of Members per Group	Total Savings (1,000 kip)	Average Savings per Group (1,000 kip)	Average Savings per Member (1,000 kip)	NGO
Pakngum	53	53	100.0%	3,871	73	1,194,700	22,542	309	CODI
Naxaythong	56	15	26.8%	1,430	95	194,592	12,973	136	CODI
Xaythany	103	92	89.3%	11,289	123	3,797,347	41,276	336	FIAM
Sangthong	37	14	37.8%	903	65	167,214	11,944	185	FIAM
Xaysetha	52	4	7.7%	499	125	135,333	33,833	271	FIAM
Chanthabuly	37	0	0%	0	–	0	–	–	–
Sikhottabong	60	0	0%	0	–	0	–	–	–
Sisuttanak	40	0	0%	0	–	0	–	–	–
Hadxaifong	60	0	0%	0	–	0	–	–	–
Total Vientiane Municipality	498	178	35.7%	17,992	101	5,489,186	30,838	305	
Thakhek	141	24	17.0%	1,870	78	217,214	9,051	116	FIAM
Hinboon	166	2	1.2%	81	41	31,837	15,919	393	FIAM
Viengkham	18	7	38.9%	597	85	32,291	4,613	54	FIAM
Thoulakhom	74	6	8.1%	755	126	122,598	20,433	162	FIAM
Grand Total	897	217	24.2%	21,295	98	5,893,126	27,157	277	

Source: LWU and CODI (undated).
Note: CODI: Community Organizations Development Institute; FIAM: Foundation for Integrated Agricultural and Environmental Management

districts (*muang*) of which five were in Vientiane (Table 1). A total of 178 SGs existed in Vientiane, concentrating in the Xaythany District (92 villages out of 103) and Pakngum District (53 villages out of 53). Also notable was the amount of savings: as of December 2003, 217 groups had accumulated 5.89 billion kip (averaging 27.2 million kip per group),[3] of which 145 groups (roughly two-thirds the groups) in Xaythany and Pakngum Districts had accumulated 4.99 billion kip (84.7%).

The study village (*ban*), Don Neua, is one of the 53 villages in Pakngum District. Supported by CODI, an SG was established in September 2000. Don Neua is located along the Mekong River, which forms the border between Laos and Thailand. From central Vientiane city, vehicles must travel roughly 55 km to east along national highway no. 13 and roughly 15 km southwest along a dirt road (See Fig. 1 of Chansathith, Ohno, Fujita and Mieno, the fifth paper in this special issue). The village has a long history of around 400 years. In March 2003, when the author conducted the first preliminary survey, the village contained 147 households and 752 people. *Lao* was the predominant ethnic group.[4]

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3) The exchange rate in 2003 was roughly US$1 ≒ 10,000 kip.
4) There was another village, Don Tay ("*tay*" means south while "*neua*" means north in Lao language), which was separated from Don Neua village during the 1960s, although the two villages' residential area was continuous. In March 2003, Don Tay had 71 households and 345 people, including some migrants from Thailand.

At the time of the survey in 2003, the economy of Don Neua was mainly based on crop cultivation, livestock raising, and brewing of rice alcohol locally called *jees*. The agricultural land was largely classified into paddy field and garden land, with areas of 223 ha and 63.4 ha, respectively. Garden land spread along the bank of the Mekong River, where farmers grew banana, mango, tamarind, teak, sugarcane, and other products as cash crops. Roughly 20–30% of the paddy field was irrigated with water pumped from the Mekong River,[5] where dry season rice was grown besides monsoon season rice. The average rice yield was 3.0 ton/ha and 4.0–4.5 ton/ha for the monsoon and dry seasons, respectively. Tenancy was developed to some extent in the paddy field, especially in the dry season.[6]

Villagers began brewing *jees* roughly 20 years before the 2003 survey, and 36 households (roughly 25%) were engaged in this cottage industry in 2003. Village statistics reported 184 heads of cattle, nine buffaloes, 80 pigs, and roughly 2,000 chickens. Fisheries were unpopular in the Mekong River, and only a small-scale operation was observed for self-consumption. Many emigrants from the village worked in the USA and regularly sent money as remittances. Roughly one-third of the households received such regular support from family/relative members in the USA. The remittances were sent in cash (US dollars) in a letter, instead of utilizing banking networks.

A total of 75 households (51% of the total) were randomly selected for a questionnaire survey in July 2003. Table 2 shows population characteristics of the sampled households, which were categorized by landholding size of paddy field. Of the 75 households, 7 (9.3%) were landless non-farm households, which neither owned nor rented farmland (including garden land). The average age of heads of landless non-farm households was 32.4 years, far less than that of farm households (49.2 years on average).[7] Among the farm households, it was observed that the larger the farm size, the older the household head.

Table 3 shows the distribution of farmland and other basic information for the sam-

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5) A pump was installed in the territory of Don Tay in 1984 by ODA from the Netherlands. Both Don Tay and Don Neua villagers used pumped water, covering roughly 227 ha of paddy field. In 2000, villagers established a water users association (WUA), the members of which paid a 150,000 kip/ha irrigation fee annually. The WUA assumed responsibility for managing the pump, including minor repairs. Ten groups of farmers under the WUA were responsible maintaining water channels. The WUA was reluctant to pay electricity charges to the government (for unknown reasons), and unpaid dues reached nearly 80 million kip in March 2003.

6) Land rent was paid with a one-third share of production in the rainy season, whereas in the dry season tenant farmers paid a fixed amount of paddy (three bags per *rai*, equivalent to 0.63 ton/ha).

7) The non-farm households were either new immigrants (five households; hereinafter, HHs) or households newly separated from parents (two HHs), engaged in wage labor (four HHs), *jees* brewing (two HHs), goldsmithing (one HH), and shop keeping (one HH).

Table 2 Sampled Households from Don Neua Village

Land Ownership (ha)	No. of HHs	Average Age of HH Head	Population				Labor Forces				
			Male	Female	Total	Average Number per HH	Male	Female	Total	Average Number per HH	Labor Force Participation Rate (%)
Non-farm HHs	7	32.4	12	12	24	3.43	7	7	14	2.00	58.3
Farm HHs[1]											
0–0.99	23	46.5	56	52	108	4.70	25	32	57	2.48	52.8
1.00–1.99	24	46.6	65	53	118	4.92	35	41	76	3.17	64.4
2.00–2.99	8	53.4	17	19	36	4.50	13	13	26	3.25	72.2
3.00–3.99	6	54.8	14	16	30	5.00	10	12	22	3.67	73.3
4.00–	6	56.7	12	17	29	4.83	11	11	22	3.67	75.9
Unknown	1	59.0	4	3	7	7.00	3	3	6	6.00	85.7
Total	75[2]	47.6	180	172	352	4.69	104	119	223	2.97	63.4

Source: Survey by author in 2003.
Notes: [1] Farm size includes only lowland paddy fields.
[2] The total number of households in June 2003 was 147.

Table 3 Land and Other Selected Indicators for the Sampled Households

Land Ownership (ha)	No. of HHs	Land Owned (ha)				Rented-in Land (ha)	Operated Land (ha)			HHs Engaged in Brewing (*Jees*)		HHs Received Remittance from US	
		Lowland	Per HH	Garden	Per HH	Lowland	Lowland	Per HH		No. of HHs	%	No. of HHs	%
Non-farm HHs	7	0	0	0	0	0	0	0		2	28.6	1	14.3
Farm HHs[1]													
0–0.99	23	13.2	0.6	4.5	0.2	8.2	21.4	0.9		7	30.4	6	26.1
1.00–1.99	24	32.7	1.4	20.6	0.9	6.1	38.8	1.6		7	29.2	8	33.3
2.00–2.99	8	18.7	2.3	2.9	0.4	0.6	19.3	2.4		3	37.5	7	87.5
3.00–3.99	6	19.4	3.2	3.7	0.6	0.0	19.4	3.2		1	16.7	2	33.3
4.00–	6	40.5	6.8	9.0	1.5	0.0	40.5	6.8		2	33.3	1	16.7
Unknown	1	NA	NA	NA	NA	NA	NA	NA		0	0.0	0	0.0
Total	75	124.5	1.7	40.7	0.5	14.9	139.3	1.9		22	29.3	25	33.3

Source: Survey by author in 2003.
Note: [1] Lowland paddy fields only.

pled households. The majority of farm households (47 out of 67) had less than 2 ha of paddy field, whereas 12 farm households owned more than 3 ha. More than 10% of paddy fields were rented out, mainly to land-poor households. The average land holding size of garden land was only 0.5 ha, but it was more equally distributed among the households. Twenty-nine percent (29.3%) of households were engaged in *jees* brewing (including yeast making). One-third of the households regularly received remittances from abroad. Table 4 shows that the average number of livestock holding per household was 3.1 cattle, 3.1 pigs, 10.5 ducks, and 16.8 chickens. Interestingly, small farmers had more cattle than large farmers.

The distribution of non-land production assets was skewed in favor of land-rich households (Table 5). Power tillers and irrigation pumps were widely diffused among

Table 4 Livestock Held by Sampled Households

Land Ownership (ha)	No. of HHs	Cattle				Buffalo	Pig			Duck		Chicken		Goat	Others
		Cattle for Meat	Cattle for Other Purposes	Baby-cattle	Per HH (excl. babies)		Mother Pig	Piglet	Per HH (excl. piglets)	Number	Per HH	Number	Per HH		
Non-farm HHs	7	2	0	1	0.3	0	43	24	6.1	82	11.7	173	24.7	0	0
Farm HHs															
0–0.99	23	28	19	31	2.0	0	10	18	0.4	291	12.7	327	14.2	0	0
1.00–1.99	24	69	17	24	3.6	14	41	24	1.7	160	6.7	358	14.9	7	0
2.00–2.99	8	2	6	5	1.0	0	7	14	0.9	95	11.9	250	31.3	0	0
3.00–3.99	6	0	8	6	1.3	0	12	24	2.0	97	16.2	98	16.3	0	2
4.00–	6	6	4	8	1.7	0	2	11	0.3	66	11.0	44	7.3	0	0
Unknown	1	0	0	0	0	0	0	0	0	0	0	10	10.0	0	0
Total	75	107	54	75	2.1	14	115	115	1.5	791	10.5	1260	16.8	7	2

Source: Survey by author in 2003.

Table 5 Assets Holding of Sampled Households

Land Ownership (ha)	No. of HHs	Per HH				
		Car	Power Tiller	Irrigation Pump	Motor Boat	Fishing Net
Non-farm HHs	7	0.29	0	0.29	0.14	0.29
Farm HHs						
0–0.99	23	0.04	0.22	0.61	0.13	0.78
1.00–1.99	24	0.13	0.58	0.71	0.29	1.54
2.00–2.99	8	0.13	0.88	1.00	0.38	1.50
3.00–3.99	6	0	0.50	0.67	0.17	2.17
4.00–	6	0.17	0.83	1.17	0.33	1.33
Unknown	1	0	0	0	0	0
Total	75	0.11	0.45	0.69	0.23	1.20

Source: Survey by author in 2003.

Table 6 Consumer Durables of Sampled Households

Land Ownership (ha)	No. of HHs	Per HH								
		Fan	TV	Bicycle	Refrigerator	CD Player	Motorbike	Radio-cassette	Sewing Machine	Washing Machine
Non-farm HHs	7	1.86	1.14	0.71	0.86	0.57	0.29	0.29	0	0
Farm HHs										
0–0.99	23	2.83	0.87	1.04	0.78	0.39	0.39	0.17	0.04	0
1.00–1.99	24	2.54	1.04	0.96	0.92	0.67	0.50	0	0.21	0
2.00–2.99	8	4.50	1.25	1.13	0.88	0.75	0.88	0.50	0.25	0.13
3.00–3.99	6	2.67	1.17	0.67	0.83	0.67	0.33	0.50	0.17	0
4.00–	6	4.50	1.17	0.50	1.17	0.83	0.67	0.67	0	0.33
Unknown	1	0	1.00	2.00	0	1.00	0	0	0	0
Total	75	2.91	1.04	0.93	0.87	0.60	0.48	0.23	0.12	0.04

Source: Survey by author in 2003.

The Excess Funds Problem of the Savings Groups in Laos   **141**

large farmers. The distribution of consumer durables (Table 6), however, had no clear relationship with landholding size, except for the smallest farm size class (0–0.99 ha). One household had, on average, three electric fans, one TV set, one bicycle, one refrigerator, 0.6 CD players, and 0.5 motor bikes. Sewing machines were diffused more widely among the land-poor households.

In sum, the study village had quite an egalitarian agrarian structure. Although disparity in the land holding size of paddy fields was quite large, it did not necessarily correspond to each household's economic status.

III   Development and Impact of the Savings Group

III-1 *Establishment and Development of the Savings Group*

Under the guidance of CODI and LWU, an SG started with 87 members on September 27, 2000. Initially, CODI provided four million kip (approximately US$400) as seed money.[8] Five village women were selected as committee members, and CODI provided them with four days of training. As Don Neua belonged to *khet* no. 5,[9] the SG was supervised by the chairman of that *khet*-level SG.[10]

At the time of our July 2003 survey, the minimum amount of monthly savings was 10,000 kip (approximately US$1).[11] Only female members could apply for a loan, with a ceiling of five times her savings amount at an interest rate of 4% per month.[12] The loan period was basically four months but could be extended to six months. On the first day of each month, all the transactions were completed. In the morning, the committee received three kinds of money: regular savings, interest payments, and principal repayments. In the afternoon, the committee disbursed new loans for the previously approved applications.

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8) Two different institutions provided seed money. The initially disbursed 2.5 million kip had to be repaid in installments within 25 years with no interest, but they did not have to repay the next 1.5 million kip in a specific time, but they did have to pay interest of 1.5% per month. When compared to the group's accumulated savings (50 million kip in November 2002, 500 million kip in March 2005), the size of the seed money was not significant.

9) *Khet* was an administrative unit in Laos between district and village, but it had been abolished before our first survey in 2003. The management of the SGs, however, still utilized it.

10) Pakngum District is composed of six *khet,* and *khet* no. 5 contained eight villages, including Don Neua.

11) During the initial 10 months from October 2000 to July 2001, the minimum amount was 5,000 kip. Each SG could determine its regulations to a certain degree.

12) During the initial 10 months, the interest rate was 3% per month. However, because of the strong demand for credit, the interest rate was raised to 4%.

The net profit after deducting expenditures[13] was distributed once a year (at the end of July in Don Neua) according to the following rule: 7% each to the reserves fund and the welfare fund, 12% for allowances to committee members, 2% for allowances to consultants (six men elected by the members),[14] 2% to the *khet*-level SG chairman, and the remaining 70% to members as dividends. Given the small amount of expenditures, the dividend rate was slightly less than 2.8% per month (70% of 4% per month interest). The dividend rate of 2.8% per month (33.6% per year) was much higher than the bank interest rates shown in Fig. 1, giving the villagers incentives to save more in the SG.[15]

Tables 7 and 8 summarize the development locus of the SG. As the tables report, the SG of the study village developed quite rapidly and smoothly. First, the number of members, which began with 87, increased to 168 (from 92 households) in July 2003. It jumped to 192 in August 2003[16] and further increased rapidly, exceeding 300 in September 2004 and 400 in July 2005. Almost all the households participated in the SG. Although the number of households and population of the village also increased, on average two to three members of each household became the members of the SG.

Second, the savings amount exhibited accelerated growth, partly because the average monthly savings per member increased. They saved more than the minimum amount of 10,000 kip per month, whereas very few instances and only small amounts of withdrawal from savings occurred.[17] The total amount of SG funds, therefore, increased rapidly despite the annual distribution of profit.[18] It exceeded 50 million kip in November 2002, 100 million kip in June 2003, 200 million kip in March 2004, and 500 million kip in March 2005.[19]

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13) The major expenditure items included furniture, stationery, meeting expenses (primarily food), travel cost, and donations to temples/festivals.

14) The committee members and the consultants were selected by vote for a one-year term, although re-election was allowed.

15) If we consider the high inflation rates in Laos as stated in footnote 19, the real bank saving interest rates were chronically negative, which also contributed to the increased deposits to the SG.

16) It seems that our intervention by conducting the survey encouraged greater villager participation in the SG, although we did not promote it.

17) The committee members stated that they strongly encouraged members not to withdraw savings even when they need it, and encouraged them to borrow from the SG.

18) As Table 7 reveals, members usually deposited considerable savings in the month following dividend distribution.

19) As the Laos inflation rate decreased substantially after 2001 (19.1% in 1995, 19.2% in 1996, 19.5% in 1997, 90.1% in 1998, 128.4% in 1999, 23.3% in 2000, 7.8% in 2001, 10.7% in 2002, 15.5% in 2003, 10.5% in 2004, 7.2% in 2005, 6.8% in 2006, 7.6% in 2008, 0.0% in 2009, 6.0% in 2010, 7.6% in 2011, and 5.1% in 2012), we can safely say that the amount of total funds of the SG increased sharply in real terms as well.
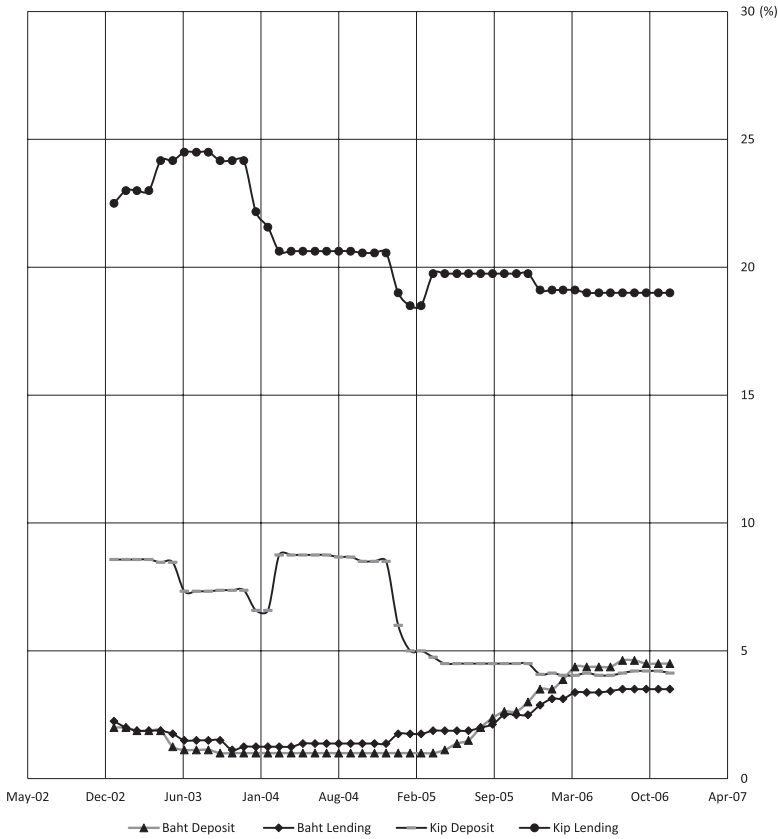
Fig. 1 Interest Rate Structure in Laos

Sources: Kip: Bank of the Lao. http://www.bol.gov.la/english/interrate1.html (accessed Jan. 15, 2015)
          Bhat: Bank of Thailand. http://www.bot.or.th/English/Statistics/FinancialMarkets/InterestRate/
          Pages/StatInterestRate.aspx (accessed Jan. 15, 2015)
Note: 12 months interest rate

Third, despite the relatively high lending interest rate (4% per month),[20] members showed a strong demand for loans, leaving a very small amount of funds in the hands of the committee. Under such a chronic excess demand for loans, the committee had to ration credit, granting priority to urgently needy members and members with small loan amount applications. However, as the shortage of funds eased, the average loan size increased; it exceeded 0.5 million kip in March 2002 and 1 million kip in April 2003.

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20) The real lending interest rates were also lower than 48% per annum if we consider the high inflation rates in Laos stated in footnote 19.

Table 7   Development of the Savings Group in the Study Village

(1,000 kip)

		No. of Members	Regular Savings		Lending			Distribution of Dividend	Total Fund	Carrying Over Cash
			Total Amount	Per Member	No. of Borrowers	Total Amount	Per Loan			
2000	Oct	87	1,077	12.4	2	1,000	500		1,080	42
	Nov	102	985	9.7	4	1,000	250		2,090	10
	Dec	112	1,040	9.3	6	1,050	175		3,190	60
2001	Jan	118	1,147	9.7	7	2,000	286		4,430	105
	Feb	121	1,405	11.6	8	2,000	250		5,500	27
	Mar	129	1,206	9.3	7	2,300	329		6,850	27
	Apr	133	1,143	8.6	12	3,450	288		8,190	7
	May	137	1,435	10.5	12	3,800	317		9,850	0
	Jun	137	1,250	9.1	10	3,600	360		11,250	92
	Jul	131	1,455	11.1	15	5,100	340		12,850	98
	Aug	137	1,360	9.9	14	6,100	436		14,570	102
	Sep	125	1,885	15.1	26	6,300	242	205	14,590	200
	Oct	128	1,305	10.2	9	1,700	189		16,140	157
	Nov	128	1,310	10.2	11	4,600	418		17,770	183
	Dec	135	1,428	10.6	20	8,800	440		19,680	0
2002	Jan	135	1,405	10.4	14	4,000	286		21,630	349
	Feb	135	1,320	9.8	16	5,400	338		23,560	422
	Mar	140	1,533	10.9	22	11,200	509		25,770	483
	Apr	142	2,730	19.2	26	8,900	342		29,280	343
	May	143	6,783	47.4	21	14,500	690		37,000	255
	Jun	143	1,775	12.4	22	13,100	595		39,020	531
	Jul	143	2,000	14.0	18	9,400	522		42,330	377
	Aug	137	5,548	40.5	25	14,300	572	710	38,590	469
	Sep	144	3,077	21.4	25	15,200	608		42,960	585
	Oct	147	2,503	17.0	26	13,700	527		46,930	481
	Nov	147	2,640	18.0	9	7,050	783		51,180	363
	Dec	150	3,002	20.0	18	14,800	822		56,950	436
2003	Jan	151	3,296	21.8	27	22,100	819		62,100	676
	Feb	153	3,552	23.2	32	18,300	572		67,820	58
	Mar	155	4,880	31.5	17	16,300	959		75,130	310
	Apr	154	3,426	22.2	24	23,500	979		81,260	180
	May	161	4,612	28.6	28	31,000	1,107		88,800	814
	Jun	162	10,625	65.6	28	29,825	1,065		102,630	1,202
	Jul	168	5,175	30.8	16	16,700	1,044	2,731	78,570	6,340
	Aug	192	25,559	133.1	25	31,300	1,252		104,130	2,699
	Sep	200	9,618	48.1	38	45,250	1,191		117,550	211
	Oct	206	6,308	30.6	30	33,890	1,130		128,450	535
	Nov	206	6,083	29.5	18	24,400	1,356		138,450	2,739
	Dec	207	7,447	36.0	9	6,060	673		151,040	12,267

Table 7 Development of the Savings Group in the Study Village (continued)

(1,000 kip)

		No. of Members	Regular Savings		Lending			Distribution of Dividend	Total Fund	Carrying Over Cash
			Total Amount	Per Member	No. of Borrowers	Total Amount	Per Loan			
2004	Jan	210	13,461	64.1	17	33,650	1,979		131,910	1,720
	Feb	212	13,832	65.2	35	38,000	1,086		145,740	14,620
	Mar	216	60,653	280.8	53	82,760	1,562		206,390	5,940
	Apr	219	15,000	68.5	34	32,360	952		221,390	7,770
	May	219	27,570	125.9	8	11,580	1,448		248,960	36,670
	Jun	222	8,670	39.1	19	42,280	2,225		255,160	36,520
	Jul	222	8,440	38.0	18	16,300	906		263,600	73,340
	Aug	281	75,730	269.5		271,160		8,689	294,080	38,110
	Sep	317	49,640	156.6		85,590			342,710	15,530
	Oct	322	19,960	62.0		21,360			354,460	33,870
	Nov	328	62,280	189.9		64,260			414,750	68,530
	Dec		13,800			60,520			428,550	55,910
2005	Jan		36,980			55,290			465,200	73,510
	Feb	364	26,050	71.6		138,170			489,960	41,030
	Mar	382	15,730	41.2		38,020			505,690	63,320
	Apr	395	13,780	34.9		46,400			519,460	75,650
	May	399	11,870	29.7		12,460			531,340	136,730
	Jun		14,630			18,780			545,970	177,580
	Jul	400	14,450	36.1		360			560,420	320,190
	Aug		42,460			540,950		20,732	533,170	21,380
	Sep-Dec									
2006										
2007	Jan–Jun									
	Jul								665,470	296,240
	Aug		76,040			226,900		21,375	729,400	48,350
	Sep		20,560			180,950			730,900	37,020
	Oct		18,600			35,500			746,230	55,890
	Nov		25,870			39,280			753,910	81,310
	Dec		13,630			33,300			765,540	99,940
2008	Jan	649	21,400	33.0		32,470			780,090	107,880
	Feb		13,110			162,900			790,400	35,100
	Mar		11,280			8,850			779,000	53,880
	Apr		10,660			44,780			787,520	90,710
	May		11,040			4,340			796,940	141,500
	Jun		9,870			51,460			805,610	147,610
	Jul		6,410			106,740			759,950	379,840
	Aug		115,350			2,900		25,101	751,380	143,930
	Sep		33,500			119,690			779,480	84,110

Source: Prepared by author based on documents collected from the savings group office.

Table 8 Credit from the Savings Group

Year	Month	No. of Borrowers	Total Amount (1,000 kip)	Average Amount (1,000 kip)	Distribution by Size of Loan (1,000 kip)								Purpose of Usage											
					-250	250–500	500–1,000	1,000–2,000	2,000–3,000	3,000–5,000	5,000–10,000	10,000–	Rice Cultivation	Production	Livestock	Agri. Machineries	Jees-making	Ice-making	Trade and Business	Education	Medical Expenses	House Construction	Consumption	Repayment
2000	Oct	2	1,000	500		1	1							2										
	Nov	4	1,000	250	2	2								2					2					
	Dec	6	1,050	175	6								1	1									4	
2001	Jan	7	2,000	286	3	3	1						4										2	
	Feb	8	2,000	250	6	2							2				1						1	
	Mar	7	2,300	329	3	3	1						1		1		1						2	1
	Apr	10	3,300	330	3	6	1										2		1				2	
	May	12	3,800	317	6	3	3										1	1	2				5	
	Jun	10	3,600	360	3	5	2										2		2	1				
	Jul	15	5,100	340	2	11	2								1		3		3	4			3	1
	Aug	14	6,100	436	5	3	5	1							1				3		1		2	
	Sep	25	6,100	244	13	12								2	1		3		2				6	
	Oct	9	1,700	189	8	1								1						1			7	
	Nov	11	4,600	418	2	4	4	1											2	1			2	
	Dec	20	8,800	440	5	4	11								1		3		3	1			5	
2002	Jan	14	4,000	286	6	6	2						2						4				7	1
	Feb	16	5,400	338	7	5	3	1					6				1		4				5	
	Mar	22	11,200	509	7	4	8	2	1				6.5		2		1.5	1	4	1			7	
	Apr	26	8,900	342	11	7	7	1					7		1		3		6				9	
	May	21	14,500	690	6	4	5	5		1			2		2		2		7				6	
	Jun	22	13,100	595	5	8	3	4	2				5				1	1	6	1			8	1
	Jul	18	9,400	522	4	2	8	4					5		1				7				4	
	Aug	25	14,300	572	6	4	8	7					5		2		3	1	7		1		6	
	Sep	25	15,200	608	6	6	8	2	3				10		1		2	1	6	2			5	
	Oct	25	13,400	536	2	1	3	6						3					5					
	Nov	9	7,050	783	2	3	7	2	1					3			1		5	1			2	
	Dec	18	14,800	822	3	2		3	3				4		2					2				4	
2003	Jan	27	22,100	819	1	6	10	7	3				3	3	2		5		10	1			5	
	Feb	32	18,300	572	6	6	12	7	1				9	3	2		6		5	2			4	
	Mar	17	16,300	959	6	2	3	3	1	2			2		4		1		5				4	
	Apr	23	23,200	1,009	6	1	6	5	3	2			6		7				5	1	1		2	
	May	28	31,000	1,107	1	2	10	10	4		1		7		5		6	1	7				3	
	Jun	28	29,825	1,065	3	6	6	7	3	3			13		4		5		3				3	
	Jul	16	16,700	1,044	4	1	2	6	2	1			6		1		1		6				2	
	Aug	25	31,300	1,252	1	4	5	9	4	2			9		6		6		8					
	Sep	38	45,250	1,191	5	3	8	13	7		2		13		11		5		4				1	
	Oct	30	33,890	1,130	4	6	6	7	3	4			9		4		9		5	1			3	
	Nov	18	24,400	1,356	3	3	5	5	2	1			6		3								3	
	Dec	9	6,060	673		2	4	3					9											2
2004	Jan	17	32,700	1,924	2	1	6	3	2	2	1			7	1		1		6	1		1		
	Feb	35	38,000	1,086	7	7	7	12	5	2				23	2		2	1	4		1	1	2	
	Mar	53	82,760	1,562	4	6	16	8			6	1		28	1	1	3		17	1			2	

Source: Prepared by author based on documents collected from the savings group office.

III-2 *Village Financial Market and the SG*

The financial market of the study village was rather simple before the advent of the SG. The only formal financial institution that villagers could use was the Agricultural Promotion Bank (APB), and its local branch was located in Naxon village on national highway no. 13, roughly 22 km from the village. Villagers' other sources of credit were informal, including relatives and friends, traders, shopkeepers, and professional money-lenders.

The APB Naxon local branch was established in 1996 with six officials, including one head of the branch, two accountants, one cashier, and two loan officers. Table 9 summarized the savings and loan amounts of the local branch as of March 2004.

As seen in Table 9, the amount of savings reached 728.0 million kip, comprising 3.6 million kip of current accounts (0.5%), 333.9 million kip of savings accounts (45.9%), 312.3 million kip of time deposits (42.9%),[21] and 78.2 million kip of APB bonds (10.7%). The amount of loans reached 1,743.6 million kip, including 999.9 million kip of crop loans (57.3%), 116.3 million kip of business loans (6.7%),[22] 274.0 million kip for livestock raising (15.7%), and 322.5 million kip for farmland development (18.5%). The amount of loans far exceeded savings mobilized by the local branch. Note also that the term loans such as those for farmland development and farm equipment did not correspond with the terms of mobilized savings, because most of them were termed within one year.

APB provided crop loans through a group lending system under which farmers formed a group of 4–10 persons. Such a new system facilitated quick disbursement of loans without collateral, although the amount of loan per borrower was rather limited. Loans other than crop loans provided directly to individuals were relatively larger, but

Table 9   Savings and Credit of APB Naxon Local Branch

(1,000 kip)

Savings		Loan	
Current account	3,609	Crop loan	999,876
Savings account	333,885	Business loan	116,309
Time deposit	312,295	Livestock	273,960
APB bond	78,172	Handicraft	22,500
		Farmland development	322,450
		Farm machinery	8,500
Total	727,961	Total	1,743,595

Source: Interview with head of the local branch in March 2004.

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21) The major periods of time deposit were three months and six months.
22) Business loans were disbursed mainly for working capital for trading activities.

they entailed cumbersome formalities, including provision of collateral.[23] However, the APB Naxon local branch had non-performing loans (NPLs) totaling 58.5 million kip, 80.5% of which were crop loans. According to the head of the local branch, this situation resulted largely from natural disasters such as flooding and pest infestations, especially in the monsoon season. Therefore, it can be said that the group lending system functioned rather ineffectively for recovering loans.

In Don Neua, five groups had received APB crop loans as of March 2004. Encouraged by APB officials, 11 farmers formed the first group in January 2001. According to a farmer who joined a group created in April 2003, six farmers with 1–2 ha of paddy fields formed a group that borrowed crop loans twice a year for monsoon season and dry season rice cultivation. The loan amount was 1.5 million kip for the monsoon season (six months) and 2 million kip for the dry season (five months), with an interest rate of 12% per annum.

Table 10 summarizes the borrowing status of the sampled households in July 2003. The sources of loans were categorized into informal credit, APB, and the SG.

The table reveals that 15 households (20%) borrowed from APB (12 households through the group lending system and the rest 3 households through the individual lending system), whereas 17 households (23%) borrowed from informal sources. Note that non-farm households were excluded from APB loans and more than half of them borrowed from informal sources. In contrast, 65% of the sampled households participated in the SG, and 69% of the member households borrowed from the SG. The number of borrowers from the SG, 34, far exceeded the number of borrowers from APB and informal sources. The loan size was the largest for APB individual loans (on average 7.7 million kip), followed by SG loans (1.5 million kip), informal credit (1.4 million kip), and APB group loans (slightly less than 1 million kip).

Table 11 shows the interest rate structure of informal credit, which exhibited bimodal distribution; that is, interest-free and a high interest rate of 10% per month were most common. Note that the APB loan interest rate was 1% (group lending) or slightly higher than 1% (individual lending) per month, whereas the SG charged 4% per month, as noted. The interest rate of the SG was much higher than that of APB, but lower than that of informal credit.

Table 12 shows the purpose of SG loans, based on information obtained from the sampled households. (Figures in Table 8 were based on the records of the SG committee.)

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23) According to a woman in the study village interviewed in March 2004, when she borrowed 5 million kip from APB for pig raising under an individual lending system, she had to submit three kinds of certificates (family certificate, address certificate, and collateral certificate), curriculum vitae, and six photos, in addition to paying a 120,000 kip processing fee. After submitting all the necessary documents, she waited roughly two months until the disbursement of the loan.

Table 10 Finance for Sampled Households

Land Ownership (ha)	No. of HHs	Informal Credit			APB						Savings Group					
		No. of Borrower HHs	% of Total HHs	Average Amount of Borrowing (1,000 kip)	Group Lending	Individual Lending	Total	% of Total HHs	Average Amount of Borrowing per HH (1,000 kip) Group Lending	Individual Lending	HHs with Members	% of Total HHs	No. of Members	Borrower HHs	% of Total HHs	Average Amount of Borrowing (1,000 kip)
Non-farm HHs	7	4	57.1	719	0	0	0	0.0	–	–	4	57.1	7	2	50.0	5,050
Farm HHs																
0–0.99	23	6	26.1	1,958	6	1	7	30.4	1,023	6,000	15	65.2	23	12	80.0	596
1.00–1.99	24	4	16.7	519	3	1	4	16.7	633	10,000	15	62.5	27	11	73.3	1,659
2.00–2.99	8	1	12.5	250	0	1	1	12.5	–	7,000	6	75.0	9	3	50.0	1,100
3.00–3.99	6	2	33.3	3,000	1	0	1	16.7	1,200	–	3	50.0	10	1	33.3	400
4.00–	6	0	0.0	–	2	0	2	33.3	1,350	–	5	83.3	9	4	80.0	1,125
Unknown	1	0	0.0	–	0	0	0	0.0	–	–	1	100.0	1	1	100.0	300
Total	75	17	22.7	1,350	12	3	15	20.0	995	7,670	49	65.3	86	34	69.4	1,479

Source: Survey by author in 2003.

Table 11 Interest Rates in Informal Credit

Loan Size (10,000 kip)	No. of Transactions	Monthly Interest Rate			
		0%	4%	5%	10%
<50	6	4		1	2
<100	6	1	1		3
<500	3	3			
500–	2	1	1		
Total	17	9	2	1	5

Source: Survey by author in 2003.

Table 12 Borrowing Purposes from the Savings Group for Sampled Households

Loan Size (1,000 kip)	No. of Transactions	Purpose								
		Farming	Livestock	Trade	*Jees* Making	Consumption	Education	Water Supply System	Birth/ Funeral	Unknown
<500	8	2	0	0	1	3	1	0	0	1
<1,000	8	4	0	0	3	0	0	0	1	0
<5,000	15	1	5	2	2	1	1	0	1	2
5,000–	3	0	0	1	0	0	1	1	0	0
Total	34	7	5	3	6	4	3	1	2	3
%	100.0	20.6	14.7	8.8	17.6	11.8	8.8	2.9	5.9	8.8

Source: Survey by author in 2003.

The result was close to that of Table 8, but the household survey additionally revealed a positive correlation between larger loan amounts and production purposes, especially pig raising. The strong demand for loan in the study village was basically for various production purposes such as rice cultivation, livestock rearing, *jees* brewing, and trade.

According to several village informants, a major impact of the SG was the eradication of standing crop (paddy) sales, which were previously widespread. The custom was that if farmers sold at the time of transplantation (about four months before harvesting), buyers offered only half the expected price at harvest, and if they sold two months after transplanting, they received only 60–70% of the expected price. It was reported that the major buyers were either villagers with a large amount of regular support from abroad (largely the USA) or village-level traders. The effective rate of interest involved in these transactions was estimated as high as 20–25% per month.

Study results thus suggest that although the SG loan interest rate was much higher than APB's, the SG provided villagers a much easier source of credit with reasonable

terms and conditions, and thereby contributed to production activities and poverty eradi-cation.[24] Most importantly, the SG, unlike major microfinance institutions such as the Grameen Bank in Bangladesh, mobilized villager savings and extended them to villagers who needed loans, filling local needs while generating interest income, and thus serving as an efficient intermediary between villagers with funds-excess and funds-deficit.

IV   The Excess Funds Problem

Table 7 reported information on "carry-over cash" in the hands of the SG committee. Carry-over cash was almost nil (below 1–2% of total funds) until the end of 2003. The demand for credit in the village was so strong that nearly all the funds (including the reserved funds and welfare funds) were extended as loans. However, the carry-over cash began increasing in 2004, when more than 10% of total funds remained after extending loans. Note that the SG opened an APB savings account in January 2001 but did not deposit the surplus money at APB. Instead, they divided the money among the five committee members and retained it in each household. The committee members report that only a very small amount of money was deposited in the bank account, primarily because the APB local branch was too far from the village.

If the excess funds become too large, the profit and member dividend decrease. The major reason for villagers depositing money in the SG was the high dividend rate of slightly less than 2.8% per month.

The excess funds reached an intolerable level in 2005. In June 2005, for instance, of the 546.0 million kip total funds, 177.6 million kip (32.5%) remained as surplus. In this situation, even if all loans were extended at the interest rate of 4% per month, the rate of dividend becomes less than 1.9% per month, far lower than the former rate of 2.8%.[25]

The SG committee responded to the new situation as follows. First, they decided to reduce the monthly lending interest rate from 4% to 3%, by which they intended to increase the demand for credit while discouraging members from saving. Second, to increase the demand for credit they decided that male members were also allowed to borrow from the SG. Third, they tried to invest the surplus money in pig raising as a venture of the SG itself; however, because pork prices declined, they soon stopped after incurring a loss. Finally, they decided to extend loans to non-members, especially per-

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24) The other contribution of the SG was that its welfare fund gave financial assistance to villagers for funerals and for travel expenses for selected students.

25) Because bank savings interest rate was lowered to 5% per annum in 2005 (Fig. 1), even the SG decreased the dividend rate to 1.9% per month which was still much higher than the bank rate.

sons living outside the village.

Soon after they implemented the final measure with large loan amounts, a serious problem arose. Many of the outside borrowers did not repay the principal, although they continued to pay monthly interest. According to the information I obtained when visiting the village in September 2008, a total 96 million kip of loans to 16 outside borrowers had become NPLs. At that time, the total loans extended by the SG was slightly less than 700 million kip (Table 7), with roughly 15% NPLs. Because the committee members did not provide me with the detailed record of the SG, Table 7 lacks data from September 2005 to June 2007. When I discussed this issue with the head of the village (one of the SG consultants), he disclosed that even he did not know about the committee's 2005 decision to extend credit to outside borrowers and became aware of it only after it developed into a serious problem.

In February 2012 when I visited the village again, the situation had become much worse, although the details of events between the two periods were unknown. At that time, the total amount of NPLs reached approximately 860 million kip, of which nine members accounted for 60 million and five outside borrowers for the remaining 800 million. The committee members stated that the problem of 60 million kip for nine members was relatively minor because the loans had only recently become NPLs when they failed to repay within six months from disbursement, although some of the members had intentionally failed to repay. However, they found the problem of 800 million for five outsiders very serious because it had occurred in 2005 and continued through 2012. Worse yet, the five outside borrowers had stopped paying even monthly interest during the year prior to February 2012.[26]

The committee members reported that the total funds in February 2012 were 1,289 million kip, with NPLs at 66.7%! If accurate, the financial situation posed a critical problem for the SG. Since 2009, the committee members had been gathering two to three times a month to discuss this issue.

The committee also decided to reduce the lending interest rate further to 2% per month (from the former 3%) since the beginning of 2012. At the time of the survey in February 2012, the total number of members was 847 (with 444 females), which exceeded

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26) The author could not determine how the 96 million kip NPLs in 2008 became 800 million kip in 2012. The NPL details in February 2012 were as follows. Of the five outside borrowers, two borrowers (one teacher with 17 million kip and one farmer with 91 million kip) had promised to complete repayment within two months, as expected by the committee, with the help of the *khet*-level SG. The farmer would repay the loan by selling his farmland. (The prevailing land price in the area was 52 million kip per *rai* [=0.167 ha].) Of the remaining three borrowers, two were farmers with a total of 400 million kip, and one was an owner of a construction company with 300 million kip. There was no clear repayment solution for them at that time.

810, the total population of the village, because some emigrants from the village remained as members. It was reported that of the total 160 households, all except 3 "poor" households participated in the SG. After the lending interest rate reduction, the members of 34 households (of 157 households) stopped providing monthly savings and also tried to withdraw their savings.

How had CODI (WECP)[27] and LWU, both of which were responsible for supervising the SGs, reacted to such a serious situation in the study village? My February 2012 interview survey at the LWU Pakgnum District Office found that they became aware of the problem in Don Neua only in 2010. They provided no clear plan of how to solve the problem.

According to the LWU Pakngum District Office, the excess funds problem in the district was as follows. Only one SG other than Don Neua, extended loans to outside borrowers, and the other village had so far had no serious problem like Don Neua's. The excess funds problem occurred in several other villages as well (among the total 53 SGs in the district), but all the other villages, except for these two, attempted to solve the problem through an official system, that is, extending loans to other SGs through coordination of the *khet*-level SG. However, the LWU Pakngum District Office stated that although this system began in 2005, very few SGs had extended loans to other SGs. Only three *khet* of the six in the district had experienced such transactions.

Our interview survey at the office of FIAM in 2007 found that it had introduced a system of transferring excess funds between SGs. But it was found that the system neither ensured sufficient profits to SGs which provide excess funds nor did it provide funds at a low lending interest rate to SGs with funds-deficit, because the system took a high margin in the intermediaries between two SGs.[28][29] It seems that this institutional deficiency was the major reason for these systems' unpopularity.

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27) Women's Empowerment in Communities Project (WECP) succeeded CODI in monitoring the SG.
28) According to a FIAM Thai officer (interviewed on August 31, 2007), FIAM established "Lao league of village banks" in July 2004 with 17 committee members and at the time of the interview 65 SGs were the member of the league. The system is that SGs with excess funds can deposit to the league with an interest rate of 1.5% per month. On the other hand, SGs that want to borrow from the league should pay 3% per month interest. The profits are distributed to shareholders (25%), bonus for staff (10%), bonus for the committee (10%), "Education fund" (10%), "welfare" for the committee/staff (10%), reserved fund (27%), etc.
29) On the other hand, according to an officer of CODI (interviewed on September 3, 2007), CODI organized a bank at the district-level LWU and provided a fund of US$5,000 to each during 2002–05 through the headquarter of the LWU. The margin of 0.3% per month interest is taken by the headquarter whereas 1.2% margin is taken by the district LWU. Finally, the village SG takes a margin of 0.5% so finally the interest rate paid by SG members becomes 2.0% per month. In this case, the high intermediary margins seem to be a problem.

In sum, results demonstrate that Don Neua might be an exceptional case where the excess funds problem developed into a very serious situation; however, the problem in Don Neua became so serious because the overall auditing system for the SGs was very weak and lacked a risk mitigation mechanism. The core problem may lie in the failure to establish an appropriate system of transferring funds from SGs with funds-excess to those with funds-deficit or to broader, less risky external financial markets. At the time of my February 2012 survey, six months had passed since CODI (WECP) withdrew from the SG program. LWU could not establish a new monitoring system for the SGs.

V Concluding Remarks

Some of the SGs organized in Laos since 1997 have experienced great success in that they mobilized considerable savings in rural areas in a short period and extended the savings to members in need as loans with reasonable terms and conditions. Such SGs contributed to the villages' economic development and alleviated poverty by eradicating exploitative informal credit such as that on standing crop sales. The most important point is that the SGs, unlike the major microfinance institutions such as the Grameen Bank in Bangladesh, mobilized rural villagers' savings and extended them to villagers who needed loans, and thereby have served as an *efficient* intermediary between villagers with funds excess and those with funds deficit. Efficient, since they successfully reduced transaction costs for transferring funds between villagers within the same village boundary. The SG in the study village had been one of the greatest successful cases.

However, that very success, because of its rapidity, created a trap. Because of the high rate of return for savings (at slightly less than 2.8% per month in Don Neua), villagers tried to make the largest possible deposits by increasing the number of members from the same family and by increasing their amount of monthly savings far beyond the minimum obligation. Finally, the accumulated savings exceeded the demand for credit, and a substantial amount of carry-over cash remained in the committee members' hands.

The basic problem lied in the system that the activity of the SG was confined to their village. There was no demand for credit any more in the village. The committee members could not determine a solution for the issue, given the members' high expectations for maintaining high rate of dividend. They even began a pig-raising investment project to obtain profits, but that project failed because the price of pork fell. They made their final decision to extend loans to entrepreneurs outside the village without consulting even the local SG consultants. And they finally faced a serious problem of non-performing loans.

The success of the SG in the repayment of loans can be attributed to a kind of com-

munity function at the village level. As the villagers remain in the village or have close day-to-day relationships, even if they migrate to other areas, they feel obligated to avoid outright non-repayment of loans extended by their SG. However, this control does not affect outsiders, as demonstrated by the Don Neua SG's serious problem. The committee members had too optimistic predictions of outside borrower behavior.

However, if SGs continue to confine their activity to their village, the falling rate of dividend will make villagers to stop savings after a certain point. The most important task for the policy-makers in general, or the SG supervisory organizations (such as FIAM, CODI, and LWU) in particular, is to establish an efficient and reasonable system for transferring funds between SGs, and a system for transferring funds to external financial markets after the SG funds become excessive as a whole.

To date, Laos has experienced apparent failure in these core system elements. The absence of these elements is the root cause of the Don Neua SG's failure. The experiences of other countries, especially Japan, suggest a solution to the problem of excess funds, which several successful village-level SGs in Laos now face: treating the situation as an opportunity to form a broader, integrated financial market in the country, involving the vast rural areas.

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