



ETUDES ET DOCUMENTS DU GRAESE

**How to finance agricultural activities in mountainous
areas of Viet Nam?
A case study in Lao Cai province**

BUI THI Lam

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PRESENTATION OF THE AUTHOR

Dr. Bui Thi Lam works as a lecturer at the Vietnam National University of Agriculture, Vietnam. Currently, she is the head of Financial Department, Faculty of Accounting and Business Management. She fulfilled a Bachelor of corporate accounting and a Master of Business Administration from the Vietnam National University of Agriculture in 2008 and 2010, respectively. In 2020, she completed a doctoral fellowship in the field of agriculture financing at the Gembloux Agro-Bio Tech, University of Liege, Belgium. With 12 years in both teaching and research, she has experience in managing projects, team building, professional development, strategic implementation, and publishing papers.

Her research interests are the agri-food chain in both the production and consumption sides, which can help us to obtain the sustainability in terms of economic, social and environmental development. She also pays attention to value chain financing, which is considered the most suitable way to meet the financial and non-financial demands of smallholder farmers and other farming actors. Thereby, they can optimize their performance, effectiveness, and efficiency.

In May 2021, she also received the postdoctoral scholarship granted Académie De Recherche et D'Enseignement Supérieur (ARES CCD) with the postdoc project namely *"Innovations in cinnamon value chain financing in mountainous areas of Vietnam: an empirical study in Lao Cai province"*. At the same time, she is also team leader of the project *"Moving toward a healthier diet: Consumer intention to eat more vegetables and less meat in Vietnam"* funded by International Foundation for Science (IFS), Sweden, during 2021-2023. Additionally, she participates the international project *"Eating green or eating meat, eating beef or eating cricket? Sustainable food consumption in Vietnam and Switzerland"* funded by National Foundation for Science and Technology Development, Vietnam and carried out from 2022-2024.

ABSTRACT/TOM TẮT

In Vietnam, the Northern Midlands and Mountains (NMM) region is the poorest area of the country, therefore, almost farmers here lack of capital to finance their agricultural production. This study examines financial demands of farmers and other farming actors in Lao Cai province as well as their constraints to access affordable credit to finance agricultural activities, and then, suggests feasible recommendations to increase funds to agriculture in the research site. In doing so, we approach the agricultural financial markets in Lao Cai province based on financial supply-side and demand-side analysis. On the supply side, 24 in-depth interviews with financial providers about their agricultural credit provision were conducted. On the agricultural finance demand side, we study two subclasses: (i) agricultural production by local farmers (193 respondents) and (ii) the Seng Cu rice value chain, including producers (n=160), small collectors (n=9), large collectors (n=12) and retailers (n=12).

Our findings show that the financial sources for agricultural activities are diverse: formal sector (two state-owned banks: VBARD and VBSP); semi-formal sources (Farmers' Union, Women's Union); informal actors (moneylenders, friends, relatives). In addition, VBARD's and VBSP's decision-making on disbursement strongly depends on collaterals and assessments of local authorities, which is often distorted by nepotism. These are considered large constraints of local farmers to access bank's credit.

Indeed, the house survey shows that a large proportion (84%) of them have high credit demand, however, 48% of them received nothing or smaller loans than their desires. They are mainly small and medium farmer households. The study points out determinants of credit access of households: (i) lack of collateral; (ii) lack of good relationships with local authorities involved in application screening, (iii) low human capital (education/ethnicity). Difficulties in formal credit access, these farmers often fall into the following three actions: 1) reduce investment in agriculture; 2) using a large proportion of self-produced and low-quality inputs; and/or, 3) borrow money from informal lenders at very high interest rates. All these actions make agricultural production inefficient and undermine farmers' income.

Likewise, the majority of actors participating in the SC rice value chain had high specific financial needs. The linkages between chain actors contributed to the great potential of this value chain. However, banks still maintained the strict risk-avoidance strategy, which strongly depends on collateral of individual chain actors, not the entire chain. As a result, almost chain actors received lower-than-expected loans from banks, especially SC rice growers in uplands and the leading chain actor.

From the above research results, we can conclude that improving banks' efficiency in credit provision and banks' participation in the chain are the first steps to improving the agricultural finance system in the research site. In addition, farmers and other chain members need to improve their production capacity and financial management in order to be assessed creditworthy by the bank. In addition, it is necessary to enact new legal regulations from the Government to encourage value chain financing models nationwide and to support the infrastructure system in mountainous areas.

Tại khu vực Trung du miền núi phía Bắc Việt Nam, ngành nông nghiệp đóng vai trò thiết yếu trong kinh tế địa phương bởi đây là sinh kế chính của phần lớn dân cư nông thôn. Trong các yếu tố ảnh hưởng đến phát triển nông nghiệp, nguồn vốn đầu tư ngày càng trở nên quan trọng vì nó ảnh hưởng đến các yếu tố đầu vào được sử dụng, đầu tư vào tài sản cố định và việc áp dụng công nghệ tiên tiến. Trên thực tế, hầu hết nông dân địa phương thiếu vốn đầu tư sản xuất nông nghiệp và mắc kẹt trong vòng luẩn quẩn đói nghèo: đầu tư thấp, năng suất thấp, chất lượng thấp và thu nhập thấp. Mặt khác, các nghiên cứu thực nghiệm đã chỉ ra rằng các tác nhân trong chuỗi giá trị nông sản ở Việt Nam cũng phải đối mặt với tình trạng thiếu hụt tài chính. Xuất phát từ thực trạng nêu trên, nghiên cứu này xem xét nhu cầu tài chính của hộ nông dân và các chủ thể khác trong chuỗi giá trị nông sản tại tỉnh Lào Cai cũng như những hạn chế của họ trong việc tiếp cận tín dụng, từ đó, đưa ra các khuyến nghị khả thi để tăng nguồn vốn cho nông nghiệp tại địa điểm nghiên cứu.

Trong nghiên cứu này, chúng tôi tiếp cận thị trường tín dụng cho các hoạt động nông nghiệp tỉnh Lào Cai dựa trên phân tích cung và cầu. Về phía cung, 24 cuộc phỏng vấn sâu với các nhà cung cấp tài chính được thực hiện. Về phía cầu, chúng tôi tách thành hai hai phân lớp nghiên cứu: (i) 193 hộ nông

dân sản xuất nông nghiệp nói chung và (ii) các tác nhân trong chuỗi giá trị lúa gạo Ség Cù (SC), bao gồm 160 hộ trồng lúa và 31 tác nhân khác trong chuỗi (người thu gom nhỏ, người thu gom lớn và người bán lẻ).

Kết quả nghiên cứu cho thấy, các nguồn tài chính cho hoạt động nông nghiệp tại Lào Cai rất đa dạng: khu vực chính thống (Ngân hàng Nông nghiệp (VBARD) và Phát triển nông thôn Việt Nam và Ngân hàng chính sách xã hội Việt Nam (VBSP)); nguồn bán chính thống (Hội Nông dân, Hội Phụ nữ); các tác nhân không chính thức (người cho vay tiền tư nhân, bạn bè, người thân). Trên thực tế, VBARD và VBSP có rất nhiều lợi thế từ hỗ trợ của Nhà nước nhằm thực hiện mục tiêu kép tăng trưởng nông nghiệp và xoá đói giảm nghèo. Tuy nhiên, đòi hỏi tài sản thế chấp và vốn đối ứng của hộ cũng như thủ tục phức tạp là những rào cản lớn để hộ nông dân tiếp cận và vay vốn ngân hàng thành công. Số liệu thống kê cho thấy, chỉ 18.3% tổng dư nợ tín dụng của VBARD Lào Cai dành cho các hộ nông dân.

Mặt khác, kết quả điều tra 193 hộ nông dân cho thấy, một tỷ lệ lớn (84%) số hộ có nhu cầu vay vốn nhưng chỉ có 52% trong số họ được vay vốn như yêu cầu; số còn lại không được vay vốn hoặc vay với số lượng thấp hơn. Khó khăn trong việc tiếp cận tín dụng chính thức, những nông dân này thường rơi vào ba kịch bản: 1) giảm đầu tư vào sản xuất nông nghiệp; 2) sử dụng các đầu vào tự sản xuất với chất lượng thấp; và/hoặc, 3) vay tiền từ tư nhân với lãi suất rất cao. Tất cả những hành động này làm cho sản xuất nông nghiệp không hiệu quả, giảm thu nhập của nông dân và tiếp tục nghèo đói.

Tương tự như vậy, phần lớn các tác nhân tham gia vào chuỗi giá trị gạo SC có nhu cầu tài chính cụ thể cao nhưng gặp nhiều rào cản trong tiếp cận tín dụng. Các liên kết chiều dọc và chiều ngang giữa các tác nhân trong chuỗi đã góp phần nâng cao hiệu quả tài chính của từng tác nhân cũng như tạo nên tiềm năng to lớn của chuỗi. Tuy nhiên, ngân hàng nông nghiệp vẫn duy trì chiến lược quản trị rủi ro nghiêm ngặt, quyết định cho vay vốn phụ thuộc chủ yếu vào tài sản thế chấp của từng thành viên trong chuỗi chứ không phải tiềm năng toàn bộ chuỗi giá trị. Kết quả là, hầu hết các thành viên trong chuỗi đều nhận được các khoản cho vay không như kỳ vọng, đặc biệt là người trồng lúa SC ở vùng cao và Hợp tác xã Tiên Phong – tác nhân quan trọng nhất trong chuỗi.

Kết quả nghiên cứu nêu trên có thể kết luận rằng, tăng cường sự tham gia các ngân hàng trong việc cung cấp tín dụng theo chuỗi giá trị là giải pháp

quan trọng nhằm cải thiện hệ thống tài chính nông nghiệp tại địa điểm nghiên cứu. Ngoài ra, nông dân và các thành viên khác trong chuỗi cần nâng cao năng lực sản xuất và quản lý tài chính để được ngân hàng đánh giá mức độ tín nhiệm. Ngoài ra, cần ban hành các quy định pháp luật mới của Chính phủ để khuyến khích các mô hình tài trợ chuỗi giá trị trên toàn quốc cũng như xây dựng hệ thống cơ sở hạ tầng khu vực miền núi nhằm phát triển chuỗi giá trị.

1. INTRODUCTION

In Vietnam, the NMM region is the largest agro-ecological zone and it also is the home to approximately 55% of the country's poor (GSO, 2017a). Under this general context, almost local farmers lack of capital to finance their agricultural production and obtain food security. In reality, many subsidized credit packages granted by the central government support to local farmers but difficult credit access is still their biggest barrier to develop agriculture production (GSO, 2016). Obviously, it is an urgent need to have a better understanding about credit constraints of local farmers derived from both supply side, demand side and other relevant (f)actors.

Nowadays, Agricultural Value Chain Financing (AVCF) is considered an interesting topic for agricultural development and has increasingly been applied worldwide, especially in agriculture-based regions. Indeed, with the AVFC approach, a diversity of funding can provide the tailored financial services to meet financial needs of almost chain actors. Besides this, small farmers, who is the weakest actor in the value chain, likely gain a greater share of value added and mitigate market risks to obtain stable income. More broadly, AVCF also is able to tackle the environmental issues and sustainable development. Unfortunately, literature tells us that the application of AVCF in Viet Nam is still very limited and lack of systematic research in this topic in mountainous areas of the country.

Based on the theoretical and practical context mentioned above, the study on agricultural financing in mountainous areas of Viet Nam will be conducted to fill the gaps related to credit constraints and to find out the effective approach of agricultural financing. The results of this case study would be in form of feasible solutions to the government in shaping effective agricultural financial sources that will contribute to sustainable agricultural development and increasing incomes of agriculture-based actors. In this study, Lao Cai – the 6th poorest province of the nation located in the NMM region – was selected as a case study.

2. OBJECTIVE OF THE STUDY

The study analyzes the agricultural financing market in Lao Cai province by using supply-side and demand-side analyses, and then, identifies promising lending provision for farm households and other chain actors. Specifically, the study addressed the following objectives:

- i. Describe the agricultural credit provision of financial providers in Lao Cai province;
- ii. Analyze the current pattern of local farmers on how they finance their agricultural production;
- iii. Examine the agricultural value chain financing of the Seng Cu rice chain in Lao Cai;
- iv. Develop feasible recommendations to improve the credit access and to achieve efficient agricultural value chain financing in Lao Cai.

3. RESEARCH SITE AND METHODOLOGY

3.1 Analytical framework

In this study, there are four main contents (Figure 1), including:

1. the available agricultural credit market and/or financial suppliers for local farmers.
2. the credit demand of farm households.
3. credit gap among credit demand and actual credit access.
4. the lending practiced in the agricultural value chain of the Seng Cu rice.

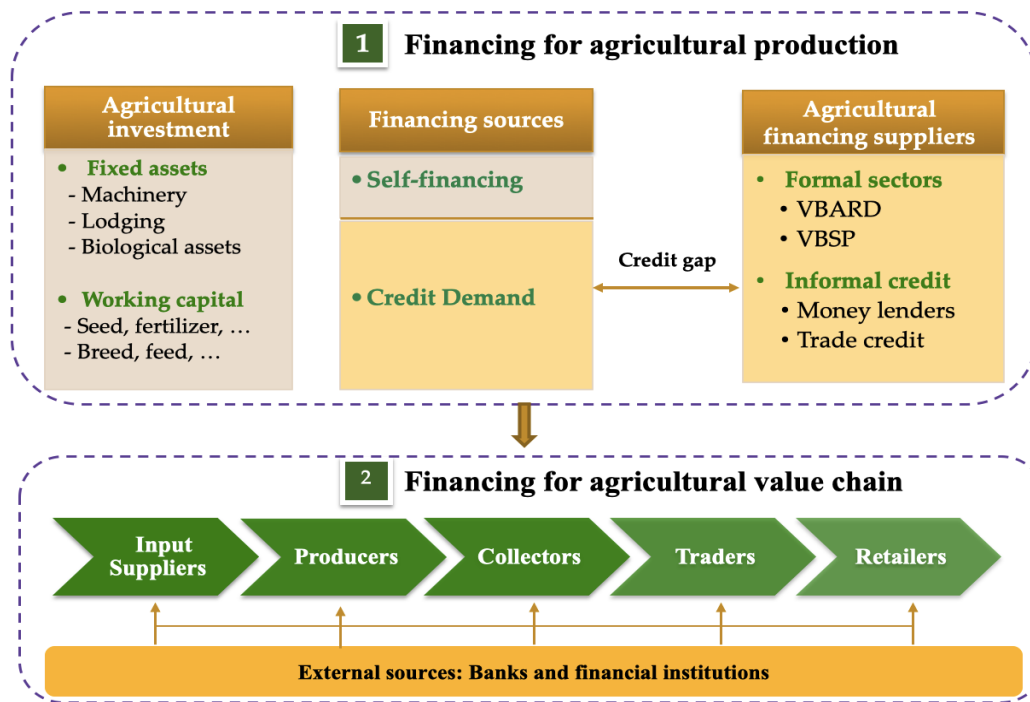


Figure 1: Analytical framework

3.2. Research site

This research has two main contents: (i) an examination of agricultural credit market and (ii) an analysis of lending related to the Seng Cu rice value chain in Lao Cai.

For the first one, the study selected three agriculture-based districts namely: Bao Thang, Muong Khuong, and Bat Xat (Figure 2, on the left). Three districts were selected by using three criteria: (i) the level of agricultural production; (ii) the development level of the banking sector in terms of credit volume, loan contracts, the average growth rate; (iii) the poverty rate of the districts.

For the second one, the study choose Four largest SC rice production communes in two typical agro-ecologic zones for rice growing, upland and lowland (Figure 2, on the right). In upland, rice is planted in small-terraced plots on hillsides and once a year in the wet season. In contrast, lowland rice is grown twice a year in larger and flat fields receiving water from a well-constructed irrigation system.

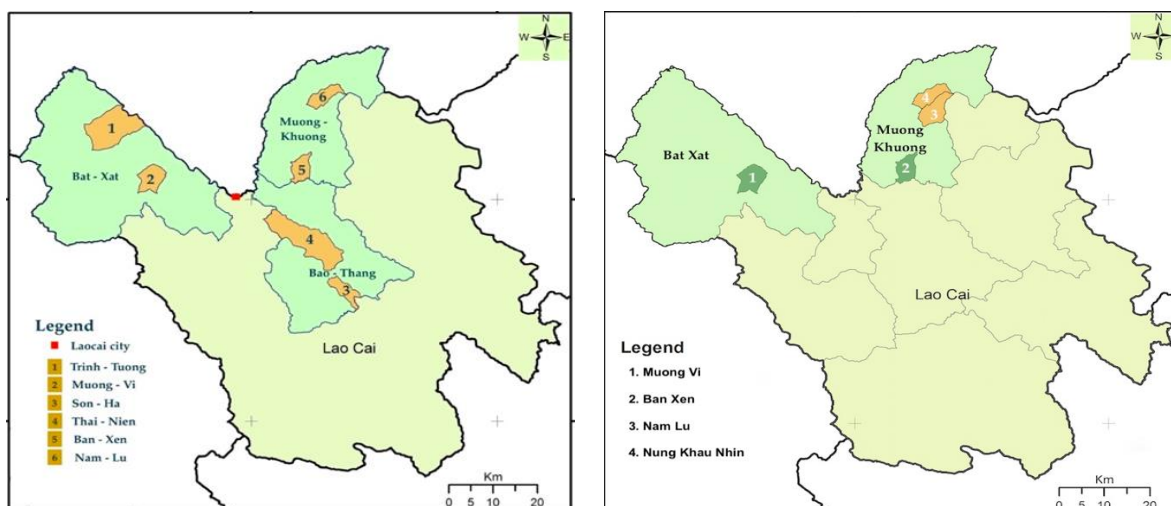


Figure 2: The map of research site in the agricultural credit market (left) and the Seng Cu rice value chain (right)

Source: Author's own elaboration

3.3. Data collection and sampling

The study collected both secondary and primary data for the qualitative and quantitative analyses.

❖ Secondary data collection

We used archival research in gathering all previous reports and relevant official statistics about the given regions. These consisted of articles, books, consultancy reports, technical notes, project reports, government official reports, policy documents, and so on. This step allowed us to identify the proper research sites (3 districts of the total 8 districts in Lao Cai) and a representative agricultural product for the study (SC rice).

❖ Primary data collection

We used three methods for primary data collection, including:

(i) In-depth interviews

The study conducted two sets of in-depth interviews, including 24 credit providers at the provincial, district and communal levels and 33 chain participants in the Seng Cu rice value chain. Besides this, we interviewed the local managers (1 province, 3 districts, and 6 communes); 10 officials working at (sub)department(s) of Agriculture and Rural Development in accordance with the three administrative levels mentioned above.

(ii) Household survey

For the first main content, *financing for agricultural production*, **193 households** were surveyed to capture the cross-sectional micro data on (i) farming activities, actual and desired investment; (ii) features of credit sources obtained and credit constraints; and (iii) the impacts of each credit source on households' agricultural credit and their lives.

To get the lending data in the Seng Cu rice value chain, we conducted individual interviews with **160 Seng Cu rice producers**: 80 upland and 80 lowland. The sample size was determined by the formula introduced by Cochran (1977):

$$n = \frac{Z^2 \times p \times (1-p)}{e^2}$$

Where, **n** is the sample size; **Z** is the statistical value containing the area under the normal curve (e.g., Z = 1.96 for 95% level of confidence); **p** is the estimation proportion of a feature existing in the population (the p-value is often equal to 0.5); and **e** is the level of precision desired (7.75%).

(iii) Focus Group Discussions

Through 6 focus group discussions in 2017-2018, we validated the collected data on current obstacles to agricultural production, credit constraints, the loans as desired and their relationship in the lending group. In addition, perspectives of farmers about the contract farming with enterprises were recorded.

3.4 Data analysis

❖ *Group classification and comparative data analysis*

In this study, **total agricultural capital cost** in the last year was used to classify the surveyed 193 households into three groups. The households were considered small-scale if their agricultural cost was among the 25% having the smallest cost (i.e. 50 small-scale farmers). Medium-scale farmers were those with investment ranking between 26% to 75% (i.e., 94 medium-scale farmers) and large-scale farmers belonged to the highest quintile of agricultural cost (49 households).

❖ *Cost -benefits analysis and agricultural capital cost*

The collected data in this study were analyzed through indicators (Figure 3) of the value-added analysis by using the program Value Links 2.0 (Springer-Heinze, 2018). These three main indicators are defined as follows:

<p>VALUE GENERATED by the whole chain or by each different actor in the chain.</p> <p>Value generated = Quantity × Unit price of product sold</p> $TR_i = P_i \times Q_i$ $TR = \sum_i^k TR_i$	<p>VALUE ADDED is created in one stage of the value chain by a specific actor.</p> <p>Wage Interests and rents Depreciation Taxes</p> <p>Profit/Income</p>	<p>Used to pay for the owners involved in (capital, labor, land, taxes)</p>
	<p>INTERMEDIATE COSTS</p> <p>Raw materials Semi-finished or traded products</p>	<p>Transferred to operators of the previous stage</p>
	<p>Other Inputs and Services</p> <p>Input, equipment Energy, water Operational services</p>	<p>Transferred to external suppliers</p>

Figure 3: Main indicators applied in the Costs and Benefits analysis

Source: Adapted from Springer-Heinze (2018)

4. FINANCING SYSTEM FOR AGRICULTURAL ACTIVITIES IN LAO CAI PROVINCE

4.1. Overview of main financial providers in research site

In Lao Cai, farmers can access this formal credit but also a wide range of other financial sources (Figure 4), comprising three typical ones (formal, semi-formal and informal) and direct Government’s subsidies (i.e. non-reimbursable aid).

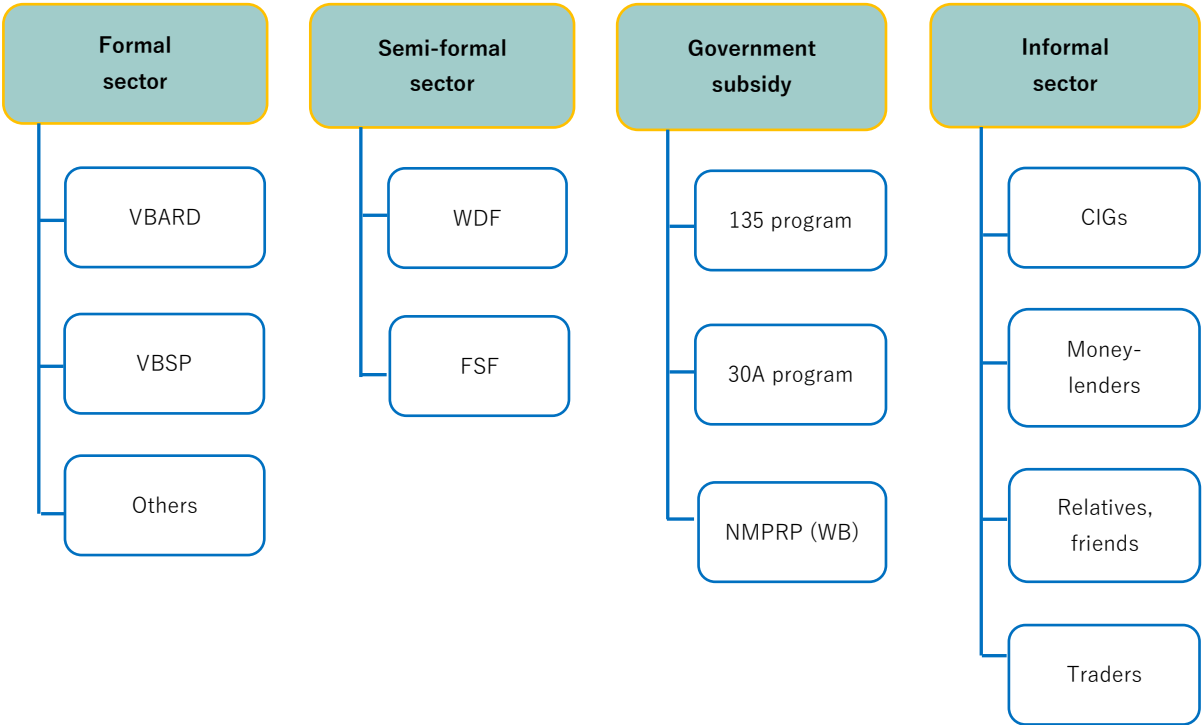


Figure 4: Rural financial landscape in Lao Cai

Abbreviations: VBARD – Vietnam Bank for Agricultural Development; VBSP – Vietnam Bank for Social Policy; WDF – Women Development Fund; FSF –Farmer Support Fund; NMPRP-2 – the second Northern Mountain Poverty Reduction Project; CIG – Common Interest Group.

To spur to the goals of agricultural development and poverty reduction, the central government establish and nurture two state-owned banks, VBARD and VBSP. Understandably, with huge and multifaceted subsidies (initial and additional capital, interest rate subsidies, required reserve ratio; tax and other financial obligation remissions), two banks have many advantages in credit provision performance compared to other

competitors. As a result, these can tighten the performance of existing financial entities (FSF, WSF) and set up the high barrier against the entrants (Lienviet Post Bank, BIDV, etc.).

Indeed, VBARD and VBSP has a overwhelming proportions in the rural market. While VBSP serves low-income borrowers, VBARD provides credit services to higher income customers. In 2017, in terms of outstanding loan, VBARD and VBSP accounted for 81.2% and 18.5%, respectively, of the credit provision in the rural market of Lao Cai. Total household borrowers were clients of both VBSP (64%) and VBARD (34%).

There are two semi-formal institutions: the Farmer Support Fund (FSF) and the Women’s Support Fund (WSF). Their funds come from the contribution of members and the provincial authorities (20-30% of total charter capital). Due to limited capital, both organizations account for a mere share of the rural credit market.

4.2 Credit provision of VBARD and VBSP in Lao Cai

Both the VBSP and VBARD use an eight-step procedure to approve a loan (Figure 5). The lending procedures between them differ on one point. Regarding VBSP’s subsidized interest rate, the eligible borrowers have to be elected publicly in annual village and commune meetings, including the representative of Commune People’s Committee (CPC), Mass Organization (MO), the head of villages and all villagers. For VBARD the Poverty Board of the CPC ranks the village borrowers.

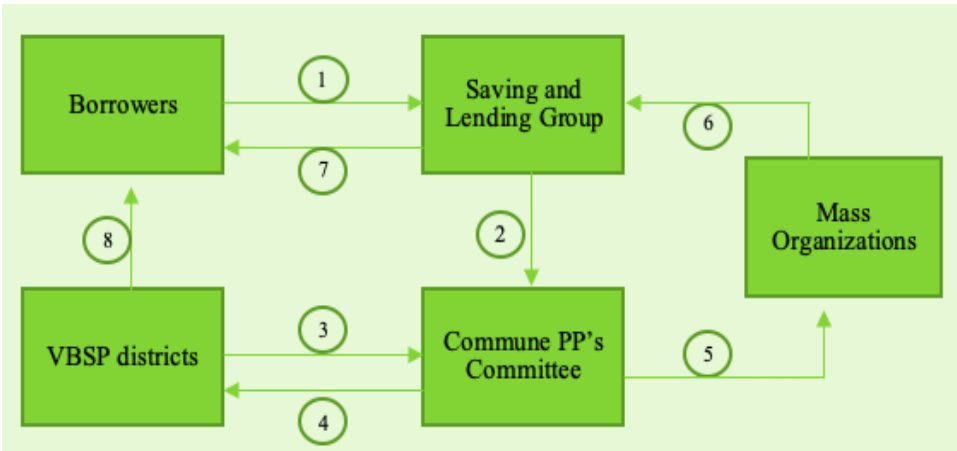
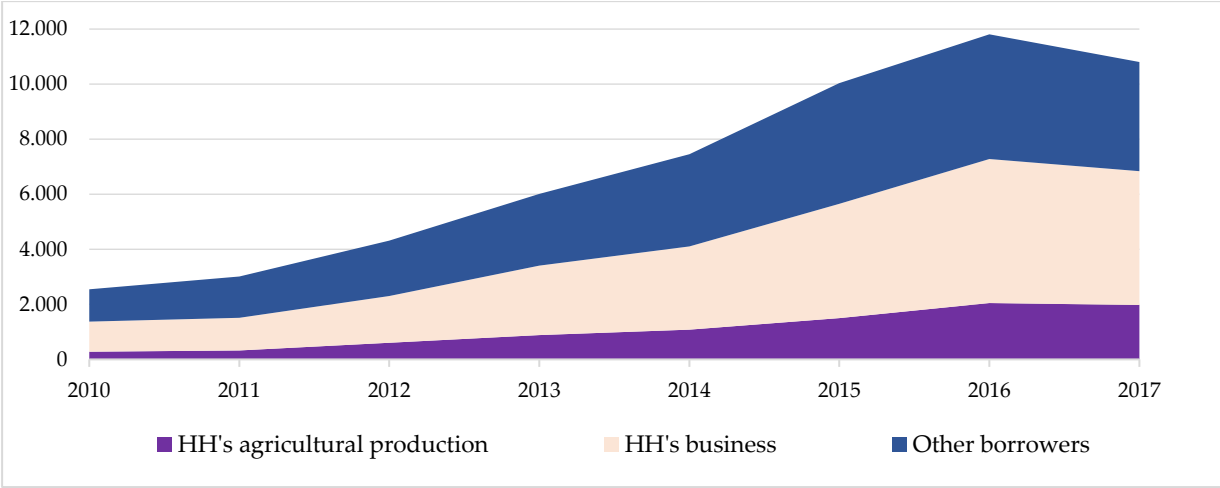


Figure 5: Lending group procedures of VBSP and VBARD in Lao Cai
 Source: Household survey and in-depth interview, 2016 - 2018

Thus, to receive a formal bank loan, a farmer has to join the JLLG or SLG and her/his loan aspiration to be approved by other group members. Next, s/he has to have good relations with local leaders, in particular the four authorities in charge of the screening process (i.e., the leader of the JLLG, the head of village, MO and CPC). The fourth step is the assessment by the group leader. He plays a crucial role in decision-making process of the clerk. In practice, credit officers seldom conduct field trips to collect reliable information and monitor their targeted clients using loans. Overall, the probability of a loan approved depends on the information given by the local network. It reveals that *social status* of borrowers has the strong impact on the result of their loan received, and not the agricultural production capacity and repayment risk. This finding confirms that “nepotism” is relatively widespread in rural areas of Viet Nam.

Concerning *collateral requirement*, VBARD requires a collateral (i.e., Land Use Certificate) while VBSP does not. In fact, residential land and their houses are their most important assets associated with their whole life. Many farmers, therefore, prefer keeping their red book and remain poor, instead of making it their collateral in taking a loan. This is a case of self-exclusion of smallholder farmers – deciding by themselves not to participate in the rural credit market.

According to the head of VBARD Lao Cai, the bank provides credit to agricultural and non-agricultural enterprises, and to households for their business and farm. From 2010 to 2017, the credit volume devoted for household borrowers increased by 32.1% per annum, but accounted 18.3% only (Figure 6). The representative of VBARD stated that lending for agricultural production is the riskiest, and that transaction cost for disbursement and enforcement of financial obligations is the highest. This opinion greatly influences the bank’s decision-making on lending the farmers. Loans for non-farm business of households and enterprises accounted for 45% and 37%, respectively.



**Figure 6: Outstanding loan of VBARD Lao Cai by main borrowers
(unit: Bill. VND)**

Source: Internal reports of VBARD Lao Cai, 2010 – 2017

5. Financial demands and credit constraints of farm households in Lao Cai

Agricultural production and financial needs of farm households

Table 1 presents the huge differences among three household groups in terms of their investment in cultivation and livestock as well as their value added. Regarding agricultural investment, clearly, small households had the lowest investment level at 8.3 million VND during the past 12 months at the time of survey. Medium and large households spent about 34 and 115 million VND, respectively.

Table 1: Agricultural production of households divided by different scales

	Small HHs (n=50)	Medium HHs (n=94)	Large HHs (n=49)	Total (n=193)
<i>Cultivation (million VND)</i>				
Intermediate Cost	5.7	9.5	17.6	10.6
Gross output	14.0	22.2	38.5	24.2
Value-added	8.4	12.7	20.9	13.7
<i>Livestock (million VND)</i>				
Intermediate Cost	2.6	24.2	97.8	37.3
Gross output	4.8	39.8	147.2	58.0
Value-added	2.2	15.6	49.4	20.7

Note: In this table, all comparisons are statistically significant (less than 5%) in the Kruskal Wallis Test.

The farming activities of the small-scale households focused on cultivation, accounting for 68% of their agricultural investment and 79% of their added value. They mainly exploited natural inputs (land, rainfall and sunshine) and used home-made agro-inputs (self-storage seeds, manure and green fertilizer). Moreover, they hardly invested in animals, even if they would like to raise more animals for food security and/or for their children's nutrition, but they were afraid of diseases and lacked money to build the facilities.

To finance agriculture operations, the households used four financial sources: (i) self-financing from the previous years' savings; (ii) home-stored/made inputs, like seed, manure fertilizer, breeding, fodder, and so on; (iii) borrowing money from the local banks, private money lenders,

friends and (iv) input suppliers through input trade credit (Table 2). The banks lent at reasonable interest rates (9-13% per year), but sometimes the borrowers had to pay non-interest fee and waited longer for loan disbursement.

Table 2: Financing sources of agricultural investment of local households

Sources	Small (n=50)		Medium (n=94)		Large (n=49)		Total (n=193)	
	Value (1000 ₺)	Propt (%)	Value (1000 ₺)	Propt (%)	Value (1000 ₺)	Propt (%)	Value (1000 ₺)	Propt (%)
Cash accumulation	0	0.0	6,768	20.1	31,429	27.2	11,276	16.7
Home-made in-kind input	2,526	30.4	7,233	21.4	21,499	18.6	9,636	23.0
Buy by borrowing money	4,33	52.2	15,448	45.8	43,446	37.6	19,676	45.4
Buy in trade credit	1,444	17.4	4,291	12.7	19,056	16.5	7,302	14.9
Total	8,3	100	33,74	100	115,43	100	47,889	100

Source: Own calculation based on the household survey, 2018

Note: All average indicators are statistically significant at 1% in the Kruskal Wallis Test.

Small-scale farmers, do not have savings, i.e., money accumulated from last year's added value, sometimes they were in debt. They financed their agricultural costs mainly from two external sources: loans and local input suppliers, contributing 52% and 17%, respectively. Small-scale farmers were often assessed as high non-repayment-risk borrowers and could not access formal loans; therefore, they suffered from higher interest rates compared to others. Their home-made inputs occupied approximately 30%, including seed (42% of the total seed cost); manure fertilizer from animal wastes (17%), breeding (10%), and fodder (65%). It is noted that home-made seeds and breeds often have lower quality than the commercial ones. As a result, small farmers achieved lower productivity and quality of output, thus lower income.

On the structure of financial source, 95% of the non-constrained households' agricultural investment was financed by formal credit. Meanwhile, the share of formal credit in the remaining household group was lower (70%). Many households having constraints (>40%) reported that they were only able to invest a meager amount for their agricultural

production, because they could not get loans from banks. They also said that the informal lenders tendered unaffordable interest for their loans.

The structure of financial access differentiates the total interest paid to capital owners by constrained and non-constrained borrowers (Table 3). Smallholdings being credit-constrained paid 2.2 million VND interest in 2018. The informal lenders' high interest rate forces the constrained households to borrow money from them on a short-term basis, and pay off their loans by using their wages from doing seasonal off-farm work. In this situation, small constrained households carry a debt burden which undermines their income; their accumulated cash was -6.6 million VND.

Table 3: Financial indicators of credit-constrained and non-constrained household borrowers
(Unit: VND million; %)

items	Small (n=50)			Medium (n=94)			Large (n=49)		
	Group A	Group B	T-Test	Group A	Group B	T-Test	Group A	Group B	T-Test
HHs in group (%)	38	62	-	55	45	-	88	12	-
Formal loan	41.0	14.8	***	45.5	33.0	**	53.7	37.5	N/S
Informal loan	2.1	8.4	***	3.7	9.7	**	1.2	15.0	***
Interest rate paid	3.8	2.2	**	4.6	4.9	N/S	5.3	4.4	N/S
Cash accumulation	2.7	-6.6	**	10.1	-2.6	**	42.6	23.3	**

Notes: Group A = Non-constrained HHs; Group B = Credit access constrained HHs ; ***, **, * and N/S indicate the significance of T-Test at the 0.01; 0.05; 0.1 level, and not significant, respectively

Likewise, the surveyed medium-scale households went to informal lenders for their loan which carried 4.9 million VND interest. On the average, they invested the highest amount of capital (11.5%) with an outstanding debt of -2.6 million. Although they invested the highest, they were stuck in financial shortage, because when provincial authorities issued the relevant supporting policy on livestock, they scaled-up their livestock production with limited experience and volatile price in 2017. As a result, they suffered financial loss.

6. FINANCING FOR SENG CU RICE CHAIN IN LAO CAI PROVINCE

6.1. Financial demands of main Seng Cu rice participants

SC rice producers in upland and lowland have many differences in terms of farming practices and investment. Overall, lowlanders used more commercial inputs (e.g., seed, fertilizer, pesticide, and cash-cost operating services) because they have advantages in cash accumulation and access more diversity of external funds from banks, enterprises in the chain, and informal actors. By contrast, upland producers applied a high proportion of home-made inputs because they lack of saving and poor access to external financing. For example, uplanders received small percentage of funding from banks, traders and money lenders (23%); meanwhile, external credit accounts for 45% of the cost for the lowland SC producers.

Table 4: Total SC rice intermediate cost and its source of investment

Items	Terraced uplands (n=80)	Irrigated lowlands (n=80)	All (n=160)
Total IC (1000 VND/ha/year)			
1. Seed	1,641	3,426	2,533
2. Fertilizer	4,476	7,025	5,750
3. Pesticide	1,209	4,088	2,649
4. Operational services	441	2,458	1,450
<i>Total</i>	<i>7,766</i>	<i>16,997</i>	<i>12,381</i>
Source of investment (%)			
i. Cash accumulation	9.3	28.4	18.9
ii. Home-made inputs	57.1	25.6	38.5
iii. Credit from banks & informal actors	14.6	26.9	23.5
iv. Credit by enterprises and input supplier	8.8	18.4	15.8
v. Gov. subsidies in seeds and fertilizer	10.2	0.7	3.3

Concerning chemical inputs, the majority of lowland producers tend to abuse these kinds of inputs in order to maximize the yield of paddy. Meanwhile, upland growers applied it a few due to their financial shortage and the unavailability of inputs market. Similarly, upland farmers use manual labor and animal power for most operational activities (land preparation, planting, and harvesting), while lowland farmers often use machines and operating services. To reduce manual labor, many upland

producers want to loan money from banks to buy small agricultural machinery.

Large collectors consists of TPC and other large collectors in downtown and Lao Cai city. TPC is considered as the leading actor in the SC rice chain. TPC exploits the trademark, “Seng Cu Rice Lao Cai”, and pays attention to innovation and high technologies.

Table 5: The marketable products of the TPC with other SC rice actors

Products	TPC	Other marketing actors
<i>I. Selling price of main products</i>		
1. White rice	D32,000/kg	D26,000–33,000/kg
2. Brown rice	D33,000/kg	Not produced
3. Germ rice	D80,000/kg	Not produced
4. Seng Cu alcohol	D50,000/liter	Not produced
<i>II. Other products</i>		
5. Lower class SC paddy	Ingredient for Seng Cu alcohol	Not much attention to quality
6. Broken rice	Ground as baby food at D25,000 /kg	Sold at D6,000/kg as animal feeding
7. Hull	Energy (like fuel) for cooking Seng Cu alcohol.	Sold at a cheap price or thrown away
8. Bran	Skin-care product	Sold at cheap price as animal feeds
<i>III. Rate of milled rice recovery</i>		
Rate (%)	65.7%	60-65.0%

TPC signs up contract-farming with 57 SC rice producers and funds in advance high-quality inputs, like certified seeds, organic pesticide and special rice fertilizers. In addition, TPC assigns one technician who collaborates with farmers and takes charge of disease control. To obtain the best quality of the Seng Cu special rice, TPC invested in the modern processing machinery such as dryer, miller, polisher, classifier, wrapper and vacuum-packer. This modern processing technology enables T.P.C to recover a higher rate (66%) of milled rice, compared to that of the large collectors (60-65%). To add more value on Seng Cu rice, TPC continuously innovates its products such as white rice, brown rice, germ rice, and alcohol and exploit by-products to become commercial products. (Table 7). In contrast, other large collectors focus only on one traditional product, the white rice. The portfolio of marketable products explains the significantly higher value addition of TPC over that of other large collectors.

6.2. Credit access of SC rice chain actors

Figure 7 reveals the financial flows (internal, external financing sources) and the commodity movement through the SC rice chain. Notably, credit demands of SC rice chain participants include short term credit for operational cost and long term for fixed assets.

Overall, each chain player has specific credit demands, which depends on their available cash accumulation/equity (+) and costs required from their economic activities in the chain (-). As the weakest financial point, internal financing within the chain mainly devoted for producers through vertical and horizontal linkages among participants.

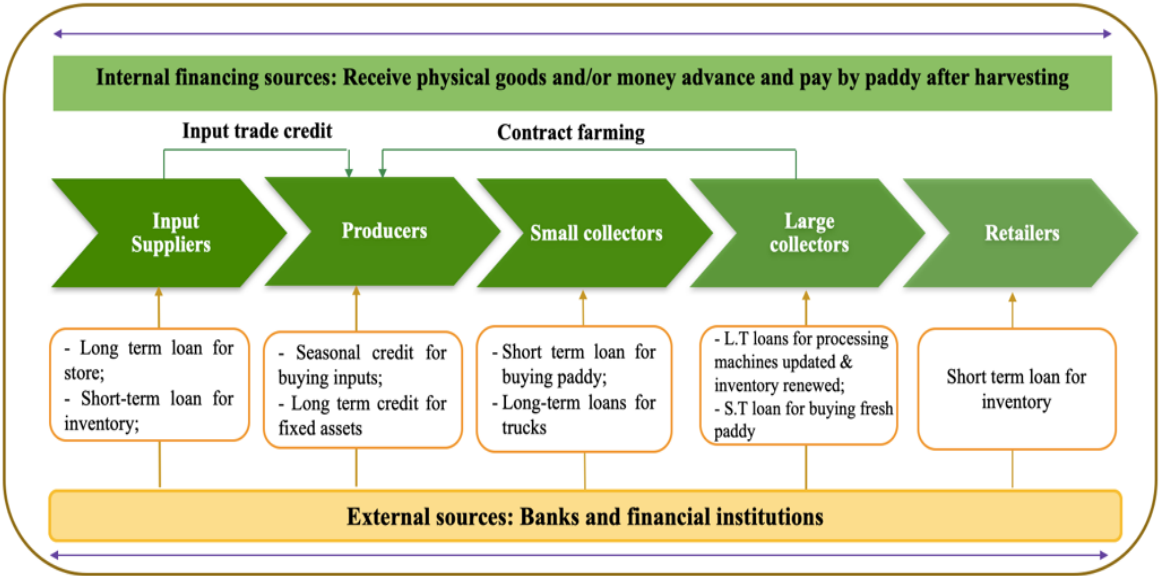


Figure 7: Financial needs of key actors in the SC rice value chain in Lao Cai

Our findings indicate that almost chain participants have high financial demand, however, they face many obstacles to fill it. Among the 160 Seng Cu rice producers, 85% of them wanted to borrow money from banks to buy: (i) inputs, especially certified seeds and fertilizer; (ii) cattle for traction and transportation (upland producers); (iii) small agricultural machinery for land preparation, planting, harvesting, drying, etc. However, only 71% of applicants were able to access credit; their obtained credit represented 67% of the desired total amount (Table 8).

Table 7: Credit access status of key Seng Cu chain actors in Lao Cai

Chain actors	Items	Interviewees have ...		Credit size (mil. VND)		
		... credit demand	... credit access	Volume desired	Volume received	Satisfied extent (%)
Producers (n=160)		136	97	41.2	26.6	67.2
Small collectors (n=9)		6	5	120	80.0	83.3
Large collectors (n=11)		10	10	1,000	750	75.0
TPC (n=1)		1	1	6,000	2,000	33.3
Retailers (n=12)		8	6	200	150	75.0

Without formal credit access, producers fell in three following scenarios: (i) investing lower as the dosage recommended by local extension; (ii) using mainly home-made inputs, which often have lower quality than commercial ones, especially seeds; (iii) buying inputs with later repayment and suffering from a high interest rates; (iv) borrowing money from informal credit (moneylenders with high interest rates and/or relatives, friends with lower/zero rate).

As described previously, the TPC attempts to manage the quality of SC rice and strongly contribute to chain development. TPC want to borrow 6 billion VND during 5 months to buy fresh paddy at the harvesting time. In fact, TPC borrowed 2 billion VND from VBARD. The remaining amount was financed by family members, private money lenders and other enterprises. However, all these financing sources still are short term and TPC has to pay back anytime, therefore, TPC cannot proactively use. With 700 tons of paddy collected, this volume just used less than 30% of TPC's machinery capacity. This under utility leads to a high depreciation cost and low profit.

Clearly, the participating of VBARD in the chain is able to remove various financial challenges and promote their economic performance that are limited and the effectiveness that is still low. In doing so, VBARD need to change the mind-set focusing on potential agricultural chains, like Seng Cu rice chain, and assess directly the repayment capability of customers through reliable information, not just focus on collateral as currently.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

Although the central government has channeled various financing sources to rural areas in Lao Cai as an attempt to raise agricultural investment, and, in turn, productivity and income, farmers still faced many obstacles from both banks and farmers themselves. The two rural banks, VBARD and VBSP, used the assessments of local authorities to decide on credit approvals. Those poor and small farmers having weak relationships with the head of the lending group and without LUCs were excluded or suffered credit rationing the banking credit. VBARD's priority given to enterprises and business households resulted in credit rationing of the remaining 18% of the total loanable fund for farmers.

Local farmers used three sources to finance their agricultural cost: (i) 30% from savings and home-made inputs; (ii) loans from banks or money lenders; (iii) in-kind credit from inputs suppliers. In contrast, the medium-farm households financed their agriculture cost as follows: 42% from savings and home-made inputs, 46% from formal loans and 13% traders. Likewise, large-farm households financed their agriculture cost as follows: 46% from savings and home-made inputs, 38% from formal loans and 16% from traders. High interest paid by smaller farmers led to unprofitable agriculture production and negative cash accumulation.

The common credit constraints such as the lack of collateral and strict risk-avoidance strategy of banks in the SC rice value chain also extended to the other chain actors. For example, upland producers need credit to create/repair the self-made pipe system to flow water in their plots; they also need money to buy cattle or small agricultural machines to reduce manual labor; and they need credit to increase commercial inputs. Similarly, the key actor in the chain, TPC, could not access enough credit to prefund its contracts with farmers because banks required collateral and did not consider their high value addition and high demand for their products. As a result, its profit and that of the contracted farmers was reduced. To sum up, participation of bank in the chain plays an essential role in achievement the effective value chain financing and agricultural development.

7.2. Recommendations

Improving agricultural finance in terms of quantity and quality depends on four relevant actors participating in the rural financial market.

❖ *Recommendations for farmers*

Farmers in Lao Cai faced two constraints in their agricultural production: (1) improper investment in inputs; (2) difficulties in accessing reasonable credit. To improve their financial management and investments, farmers need to learn how to record cash flows, i.e., do *bookkeeping*, related to each kind of farming activity. To facilitate group learning, farmers should participate in agricultural production communities such as CIGs, Farmer's Union, etc. to learn from each other and receive more useful information. Moreover, their creditworthiness can be enhanced by improving their (i) social and human capital by group training (knowledge and skills) and group activities (shared labor); (ii) capability to produce more and better; (iii) compliance with the contractual agreements signed with banks and/or enterprises.

❖ *Recommendations for agribusiness*

To access banking credit, agribusinesses need to enhance their creditworthiness by reducing three existing weaknesses: i/ Standardize the financial reports according to the current regulation; ii/ Increase the use of banking service in transactions, which allows banks to capture cash flows of agribusiness; iii/ Enhance the management capability and the effectiveness of loan use.

❖ *Recommendations for banks*

Both state-owned banks must collaborate with local authorities to increase effectiveness of loan uses. Bank officers must visit borrowers to verify information, instead of requiring LUC as collateral, and depending on the evaluation by local authorities. Rural banks need to examine specific credit demands of chain participants, and adjust their credit product to these demands. These banks also need to participate in the chain and assign credit officer(s) to gather accurate information about the main key chain actors, estimate their creditworthiness based on the repayment capability of individual actors as well as the potential of the whole chain.

❖ *Recommendations for public authorities*

The involvement of public authorities at the provincial and national level plays a crucial role in the realization of two key pillars: (1) well-managed subsidized finance for agriculture and rural development; (2) agricultural value chain financing. Currently, there is no legal framework to support agricultural value chain financing, which encourages banks to participate in value chains. Therefore, we suggest that it is an urgent need to enact new legal regulation about this shortage.

At the provincial level, institutions need to protect registered trademarks, like Seng Cu rice, and support the leading chain actors like TPC. At the communal level, nepotism and other opportunistic behaviors must be removed, even it is not easy, through enhanced democracy and the propagation of reliable information to local farmers.

GRAESE : Groupe de Recherches Asie de l'Est et du Sud Est



Le GRAESE (Groupe de Recherches sur l'Asie de l'Est et du Sud Est) regroupe des chercheurs concernés par les problèmes du développement en Asie Orientale et Sud Orientale. A son origine se trouvent des académiques et des chercheurs ayant participé à des projets de recherche, d'enseignement et de coopération dans cette région du monde depuis le milieu des années 1990. En Belgique, ces activités ont associé, dès le début, des chercheurs de l'UCL, des FUSAGX, et de l'ULG qui poursuivent une coopération régulière depuis une quinzaine d'années. En Asie ces activités ont concerné un grand nombre de chercheurs et d'académiques de diverses universités et institutions vietnamiennes, laotiennes, cambodgiennes, thaïlandaises et chinoises. L'Université Agronomique de Hanoi (UAH) est un partenaire privilégié depuis le début. Ces activités ont concerné particulièrement les projets de développement agricole, les composantes socio-économiques du développement rural, les rapports villes-campagnes et les politiques affectant ces différents domaines. En outre plusieurs thèses de doctorat ont été réalisées dans le cadre de ces activités, et sous diverses formes de partenariat entre les universités belges et asiatiques concernées. Le **GRAESE** vise à donner une meilleure visibilité à ces diverses activités, à faciliter la circulation de l'information entre les chercheurs et centres de recherches concernés, et à appuyer et soutenir l'intérêt en Belgique et en Europe pour les problèmes du développement asiatique dans un public plus large.

En pratique le **GRAESE** a pour objectif :

- 1) de stimuler la recherche interdisciplinaire concernant les problèmes et les enjeux du développement en Asie orientale et sud orientale
- 2) de publier sous forme de Working Papers (format papier ou online) des résultats de recherche liés aux projets en cours et aux questions concernant les diverses thématiques du développement appliquées à l'Asie orientale et sud-orientale, avec une attention particulière aux thèmes évoqués ci-dessus.
- 3) de réaliser des publications scientifiques de divers types concernant ces problèmes et réalisées par des chercheurs des différents centres partenaires en Europe et en Asie.
- 4) de fournir un lieu de rencontres entre chercheurs concernés par ces thèmes, particulièrement dans le cadre des doctorats en cours.
- 5) d'organiser des activités d'enseignement et d'information sur les problèmes du développement de l'Asie de l'Est et du Sud Est, notamment à travers l'organisation de conférences et séminaires donnés par des académiques et chercheurs asiatiques de passage en Belgique.

En Belgique les activités du **GRAESE** sont coordonnées par Ph. Lebailly (UEDR-Gembloux Agro-Bio Tech-ULiège) et J.Ph. Peemans (CED-UCL). Le secrétariat du **GRAESE** est assuré par l'UEDR.

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