DETERMINANTS CREDIT DEMAND OF SMALL FARMERS IN REMOTE AREAS OF VIETNAM: A CASE STUDY OF SENG CU RICE PRODUCTION IN LAO CAI PROVINCE

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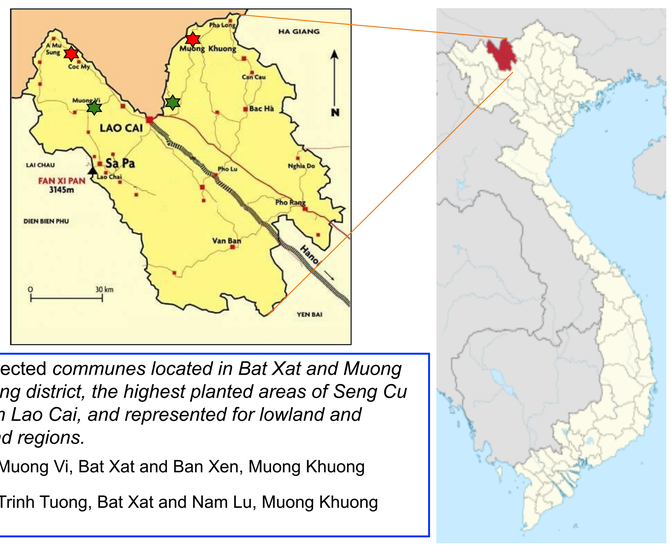
I - INTRODUCTION

- In Vietnam, almost small farmers in rural areas have low accumulation and their cashflows strongly fluctuate because of seasonal agricultural investment. As result of temporary deficits, smallholders have to take loans with high interest rate from input sellers and/or moneylenders. In another word, the imperfect credit market cause to deeply poorer for small farmers and inequality statement in rural areas.
- According to various recent report, Seng Cu rice is one of the most effective agricultural products for escaping poverty and developing economic households. The research with the primary data from 124 producers in Lao Cai province is good empirical evidence for the above arguments. However, cultivated area for Seng Cu rice remains much lower than its potential, especially in upland regions at 11.8% of total agricultural land where have various natural advantages for growing this special product.
- Beside describe credit demand by production cycle, the paper applies Binary Logistic Regression Model to determine main factors affecting to credit demand at household level. Base on research results, the paper suggests several recommendations for financing providers to tailor with demand-side. The right financing at the right time able to make greater efficiency, improved product quality and increased income.

II - RESEARCH SITE

Figure 1: research study



4 selected *communes located in Bat Xat and Muong Khuong district, the highest planted areas of Seng Cu rice in Lao Cai, and represented for lowland and upland regions.*

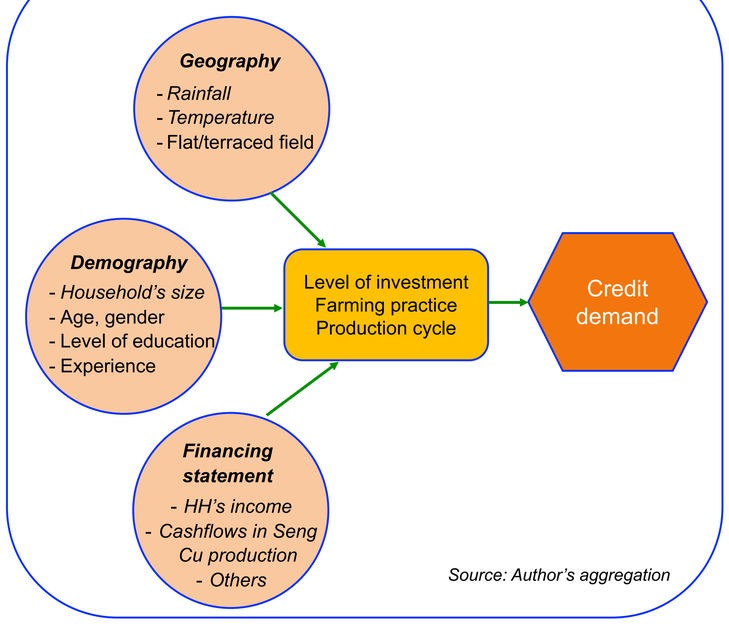
: Muong Vi, Bat Xat and Ban Xen, Muong Khuong

: Trinh Tuong, Bat Xat and Nam Lu, Muong Khuong

Upland **Lowland**

III - METHODOLOGIES

Figure 2: Conceptual framework



Source: Author's aggregation

Data collection

- ***Secondary data***: Historical data in statistical yearbook of Lao Cai
- ***Primary data*** was conducted to collect information on endogenous characteristics of households, social – economic situation of household and cost/income for growing Seng Cu, etc.

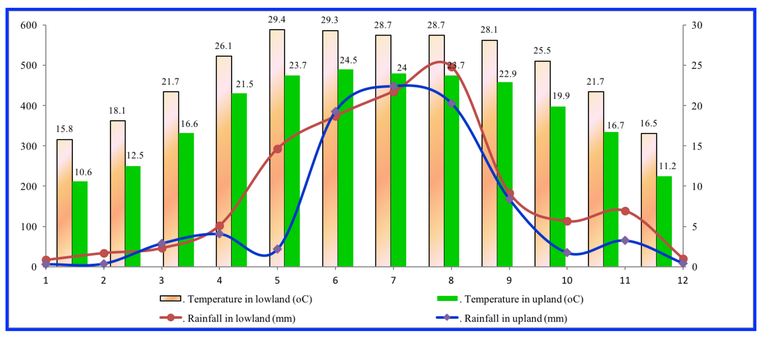
Data analysis methods: regression; comparison mean of quantities or ratio between upland and lowland areas

Binary Logistic Regression Model to determine factors affecting to credit demand of smallholders

IV - RESULTS AND DISCUSSIONS

There are three group factors including ***geography, households' characteristics*** **and** ***financing situation*** affecting to credit demand for Seng cu rice cultivation as well as household's level.

Figure 3: Rainfall and temperature in selected regions of Lao Cai



Source: Statistical yearbook of Lao Cai, 2014

Table 1: Some geographical differences in Seng Cu rice production

Items	Lowland	Upland
The height	Under 400 m	401 – 800 m
Kind of field	Flat	Terrace
Main water resource	Irrigated	Rainfed
No. of crops/year	Two (100% of HHs)	One (76.36%)
Growing season length	130 days for spring from Feb to Jun annual 115 days for summer from Jun annual to Oct	140 days for summer season from mid. Arp to early Oct
Main crops in agricultural land of surveyed households	Seng Cu rice (85.3%); hybrid rice (4.9%); Other (9.8%)	**Seng Cu rice (11.8%);** Hybrid rice (15.5%); Maize (72.8%)

Table 2: Demographical characteristics of households

	Lowland	Upland	P value
Ethnic group	Kinh (74.29%)	Minorities (94.55%)	-
Gender of HH's head	Male (72.86%)	Male (76.36%)	-
Age of HH's head	46.63	37.08	0.00***
Level of education	6.86	5.92	0.19
Family members	4.02	4.56	0.35
No. of labors	2.71	2.57	0.63
No. of dependents	1.49	1.98	0.02***
Years of experience	9.17	5.35	0.00***

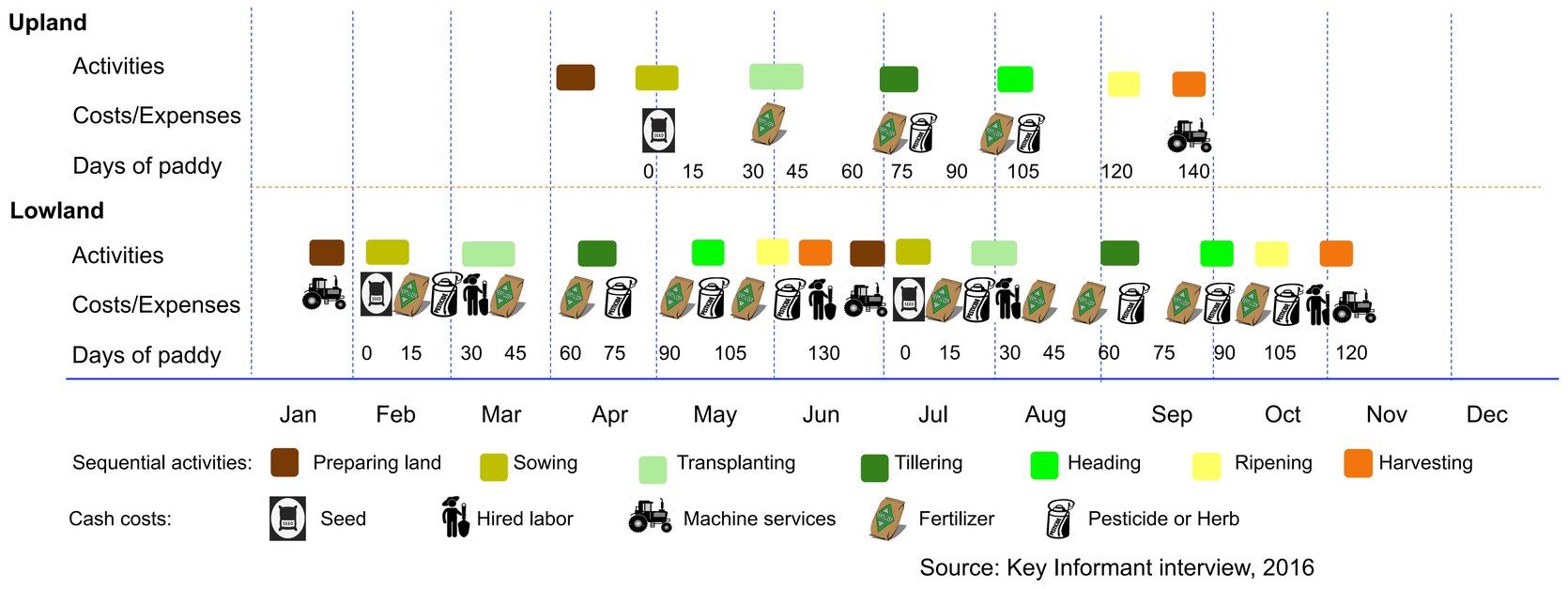
Source: Household survey, 2016.
Note: *** is significant level at 1%.

Table 3: Analysis of financing situation by main activities of small farmers

Items	Lowland	Upland	P value
Seng Cu rice production			
1. Cultivated area (sao)	17.05	9.12	0.00***
2. Cash cost (1000 vnd)	10,011	1,968	
3. Turnover rice sold (1000 vnd)	36,490	15,039	0.00***
4. Total cash income (1000 vnd)	26,479	13,071	0.00***
5. Cash income per hectare (1000 vnd)	41,087	42,726	0.25
6. Turnover per cash cost (times)	3.45	8.55	0.000***
Other activities			
7. Costs' other products (1000 vnd)	51,910	18,637	0.00***
8. Turnovers' other products (1000 vnd)	98,249	41,434	0.00***
9. Living expenses (1000 vnd)	46,040	28,485	0.00***
10. Total income of HHs (1000 vnd)	26,778	7,383	0.00***

Determinants credit demand for Seng Cu rice production determined by growing season

Figure 4: Production cycle and cash costs in Seng Cu rice production of surveyed farmers



Source: Key Informant interview, 2016

Table 4: Cost paid for whole production cycle of Seng Cu rice

Unit: 1000 vnd

	Upland		Lowland	
	All[a]	per hectare [b]	All[a]	per hectare [b]
Spring season				
Land preparation	0	0	32,111	1,509
Seed	4,380	1,996	20,891	982
Hired labor	0	0	45,195	2,124
Fertilizer	4,872	2,220	160,680	7,550
Pesticide	2,380	1,085	89,120	4,188
Machine services	2,227	1,015	22,738	1,068
Total cost	13,859	6,316	370,735	17,421
Summer season				
Land preparation	3,860	338	32,709	1,509
Seed	22,798	1,996	21,279	982
Hired labor	0	0	46,035	2,124
Fertilizer	25,358	2,220	163,669	7,550
Pesticide	24,798	2,171	133,880	6,176
Machine services	11,591	1,015	23,162	1,068
Total	88,405	7,740	420,734	19,408

[a] and [b] are cost paid cash for total planted area and for per cultivated hectare, respectively
***, ** and * are significant level at 1%, 5%, 10%, respectively.
Source: Household survey, 2016

Determinants credit demand at household level

Table 5: Variable description and estimated coefficients in the model

	Codes/values	Est. coefficient	Sig.
Credit demand (Y)	1 = have demand; 0 = no demand		
Ethnic	1 = Kinh; 0 = others	0.051	0.821
Age of head's HH	years	5.34	0.021**
Gender	1 = Male; 0 = Female	0.373	0.541
Location	1 = lowland; 0 = Upland	0.397	0.259
Level of education	Years of schooling	10.534	0.001***
Numbers of labor	people	2.445	0.108*
Dependents	people	1.085	0.298
Years of Experience	years	0.635	0.426
Living expenses	1000 vnd	5.046	0.025**
Cash cost of SC rice	1000 vnd	4.352	0.037**
Cost of agri. production	1000 vnd	4.0000	0.046**
Income from SC rice	1000 vnd	13.375	0.000***
Income from others	1000 vnd	13.287	0.000***
Cultivated land of rice	Sao (1 sao = 360 m2)	15.932	0.093**

CONCLUSIONS AND RECOMMENDATIONS

- **Seng Cu rice production of household in lowland had much higher investment than upland area however its effectiveness was much lower in comparison with that of upland. It is provide an empirical work for the inconclusive argument about relationship between agricultural investment and effectiveness as well as traditional farming practices and extensive methods.**
- **As various recent research, endogenous factors including age of household's head and years of schooling have significant impact on demand of credit. However, Nwaru (2011) assumed that has no significant effect of household's age on credit demand.**
- **There are strongly affectation of cashflows in production and consumption on credit demand. This result implies that financing suppliers should provide loan to pay not only farm investment but also living cost.**
- **The guideline to determine demand credit for each agricultural activity is necessary to provide accordance credit with what small farmers want to receive.**

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