



Gender Empowerment and Agricultural Production in Lao PDR



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Background and Rationale

- The promotion of equality between men and women is a priority in the 8th NSEDP.
- The effective participation of women in various areas (economic, cultural, political,...) is essential to reduce poverty and to improve living standards.
- The agriculture employed approximately 65% of the total workforce in 2015 (half of which were women).
 - ❖ Women's illiteracy was higher than men's in the rural areas (21.5% against 8.4%) in 2017 (Labor Force Survey, 2018) → lower opportunities.
 - ❖ As women work more in commercial agriculture, they are away from home for more hours, and devote less time to attend to family nutrition needs in traditional ways.

Background and Rationale

- Women seldom receive adequate and continuous attention (e.g., agricultural policies mainly target men). This may hinder the achievement of agricultural development and poverty eradication programs.
- There is a great need to:
 - ❖ Promote *gender equality* in agricultural production in Lao PDR in the national policy agenda.
 - ❖ Recognize the contribution of *women's empowerment* to food security and agricultural incomes.

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Concepts & Definitions

- **Gender equality**: equal access to resources and opportunities regardless of gender (including economic participation and decision-making); valuing different behaviors, aspirations and needs equally, regardless of gender.
- **Power** is the ability to make choices.
- **Empowerment** is the process by which those who have been denied the ability to make choices acquire such ability.
- For there to be a **real choice**: there must be alternatives (the ability to have chosen differently); alternatives must be seen to exist.
- **Strategic life choices**: where to live, whether and whom to marry, whether to have children (and how many) who has custody over children, freedom of movement and association, what activity to undertake, etc.

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Research Objectives

- Overall objective: To provide the Lao government with guidance on appropriate policies to increase farming productivity and food security through the promotion of women's empowerment in the agricultural sector.
- Specific objectives:
 - ❖ To measure women's empowerment rural areas of the Lao PDR;
 - ❖ To investigate the impact of women's empowerment on agricultural production in the Lao PDR.

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Main research questions

- Do intra-household gender inequalities exist and what forms?
- Are women in agriculture empowered and to what extent?
- What are the main areas where women's empowerment needs to be supported?
- How does women's empowerment affect agricultural production?
- What policy interventions can effectively promote gender equality and women's empowerment in agriculture?

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Main research hypotheses

H1. Intra-household gender inequalities exist.

- Inequalities: higher mortality rates; lower access to basic and higher education; lower access to markets (labor, land and credit) inequality (land, home, productive assets); lower access to credit; unequal sharing of housework and childcare, lower decision-making power within households.

H2. It is possible to measure women's empowerment in agriculture.

H3. Such women's empowerment has a positive impact on agricultural production.

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Research methodology

- To capture women's empowerment in agriculture, this research constructs an abbreviated version of the Women's Empowerment in Agriculture Index.
- Based on Alkire et al. (2013), this study focuses on five domains of women's empowerment (5DE).
 - ❖ Production
 - ❖ Resources
 - ❖ Income
 - ❖ Leadership
 - ❖ Time (workload)

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Research methodology (Cont.)

Domains	Indicators	Definition of indicators	Weight
1. Production	Input in productive decisions	Sole or joint decision-making over food and cash-crop farming, livestock, and fisheries.	1/5
2. Resource	Asset ownership	Sole or joint ownership of at least one major household asset.	1/15
	Buy, sale or transfer of assets	Participation in decision to buy, sell or transfer assets.	1/15
	Decision about credit	Participation in decision-making about credit.	1/15
3. Income	Control over use of income	Sole or joint control over the use of income from crop farming, livestock farming, and fishery production.	1/5
4. Leadership	Group membership	Active member in at least one formal or informal group.	1/5
5. Time	Workload	Spent less than or equal to 10.5 hours on paid and unpaid work during the previous day.	1/5

Source: Alkire et al., (2013)

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Research methodology (Cont.)

- To compare gender inequality across population groups, women's empowerment in five domains is broken down by:
 - ❖ Geographical locations
 - ❖ Ethnicities
- An econometric model is applied to quantify the impacts of women's empowerment on agricultural productivity, with a particular focus on rice and livestock production.

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Research methodology (Cont.)

- Model specification
- $\ln Y_i = \alpha_0 + \alpha_1 \ln WE_i + \alpha_2 \ln Land + \alpha_3 \ln Labor + \alpha_4 \ln Fertilizer + \theta HC_i + \lambda FC_i + u_i$
- $\ln L_i = \beta_0 + \beta_1 \ln WE_i + \beta_2 \ln Land' + \theta HC_i + \lambda FC_i + v_i$
- Estimation method:
- Ordinary Least Square **VS** Seemingly Unrelated Regression

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Data collection

Quantitative surveys

- A household survey are conducted from June to August 2020.
- Field survey are carried out in four provinces:
 - ❖ North (Xiengkhouang and Sayyaaboury)
 - ❖ Middle (Savannakhet)
 - ❖ South (Champassack)
- Sample size:
 - ❖ Proposed 400 farm households
 - ❖ Mainly focus on primary female from each household.

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Data collection (Cont.)

- The distribution of samples by provinces

Provinces	Frequency	Percent
Xiengkhouang	57	13.23
Sayyaboury	76	17.63
Savannakhet	175	40.60
Champasack	123	28.54
Total	431	100.00

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Data collection (Cont.)

Ethnic groups	Frequency	Percent
Lao-Tai	277	64.27
Hmong	54	12.53
Khmu	57	13.23
Other ethnics	43	9.98
Total	431	100.00

	Lao-Tai	Hmong	Khmu	Others	All
Xiengkhouang	21	26	10	0	57
Sayyaboury	45	27	3	1	76
Savannakhet	130	1	44	0	175
Champasack	81	0	0	42	123
Total	277	54	57	43	431

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Data collection (Cont.)

Qualitative surveys

- This research also aims to collect information from:
 - ❖ Head of village,
 - ❖ Head of women's union
- Focus groups are organized with rice and livestock farmers.
- Interviews are organized with representatives of government agencies (PAFO, DAFO, PLW, DLW, and Women's union).
- These interviews aim to determine:
 - ❖ Whether the existing policies are sufficiently effective.
 - ❖ What additional policies are needed to enhance women's role in agriculture.

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Results and Discussions

	Xiengkhouang	Sayyaboury	Savannakhet	Champasack
Land preparation	0.381	0.251	0.249	0.170
Planting	0.488	0.504	0.564	0.480
Tending	0.378	0.280	0.372	0.305
Harvesting	0.486	0.457	0.542	0.495

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Results and Discussions (Cont.)

- Women considerably contribute to agricultural production.
- Their labor contribution to planting and harvesting activities is relatively high
 - Around 48 to 57 percent of household labor in planting activity.
 - Around 45 to 55 percent of household labor in harvesting activity.
- The largest share of women's labor in planting and harvesting work appears in Savannakhet and Sayaboury.
- Women's labor contribution in land preparation and tending is relatively small.
 - Their labor contribution is between 17 and 38 percent of household labor.

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Results and Discussions (Cont.)

	Lao-Tai	Hmong	Khmu	Others
Land preparation	0.246	0.340	0.219	0.177
Planting	0.525	0.471	0.574	0.465
Tending	0.326	0.425	0.352	0.370
Harvesting	0.517	0.454	0.538	0.478

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Results and Discussions (Cont.)

- Women's labor contribution to planting and harvesting works is relatively high regardless of their ethnicities.
 - Around 46 to 58 percent for planting.
 - Around 45 to 54 percent for harvesting.
- Lao-Tai and Khmu women have a larger share of their labor in these activities.
- Smaller share of women's labor in land preparation and tending rice
 - Around 17 to 34 percent for land preparation.
 - Around 32 to 45 percent for tending rice.

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Results and Discussions (Cont.)

Province	Share		Ethnic groups	Share
Xiengkhouang	0.396		Lao-Tai	0.580
Sayyaboury	0.345		Hmong	0.478
Savannakhet	0.527		Khmu	0.486
Champasack	0.723		Others	0.397

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Results and Discussions (Cont.)

- Women's labor contribution to tending cattle is relatively high compared to their engagement in rice production.
- Women's labor contribution to livestock production is not much different across ethnic groups.
 - Around 39 to 58 percent of female members engaging in raising cattle.
- Labor contribution to tending cattle is relatively high among Lao-Tai and Khmu women.
 - Around 58 percent by Lao-Tai women.
 - And 49 percent by Khmu women.

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Results and Discussions (Cont.)

- Five domains of women's empowerment in agriculture by provinces

	Production	Resource	Income	Leadership	Time	5DE
Xiengkhouang	0.178 (0.272)	0.110 (0.168)	0.167 (0.255)	0.124 (0.189)	0.076 (0.116)	0.656 (1.00)
Sayyaboury	0.170 (0.226)	0.145 (0.193)	0.185 (0.246)	0.134 (0.179)	0.116 (0.155)	0.751 (1.00)
Savannakhet	0.173 (0.231)	0.143 (0.191)	0.184 (0.245)	0.105 (0.140)	0.145 (0.193)	0.750 (1.00)
Champasack	0.186 (0.260)	0.169 (0.236)	0.195 (0.272)	0.067 (0.093)	0.099 (0.138)	0.716 (1.00)

Note: Numbers in parenthesis are the share of each domain in women's empowerment in agriculture

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Results and Discussions (Cont.)

- Women's empowerment index bounds between 0.65 and 0.75.
 - The highest empowerment score appears in Sayyaboury
 - The lowest empowerment score appears in Xiengkhouang province.
- Women in Sayyaboury, Savannakhet, and Champasack provinces have higher scores in controlling household income.
- Female samples from Savannakhet and Champasack have the lowest score in the domain of leadership.
- Women from Xiengkhouang have the largest score in productive decisions, but lowest score in workload domain.

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Results and Discussions (Cont.)

	Production	Resource	Income	Leadership	Time	5DE
Lao-Tai	0.182 (0.237)	0.158 (0.206)	0.191 (0.249)	0.107 (0.140)	0.130 (0.169)	0.768 (1.00)
Hmong	0.159 (0.263)	0.103 (0.171)	0.155 (0.256)	0.114 (0.189)	0.073 (0.121)	0.605 (1.00)
Khmu	0.168 (0.250)	0.114 (0.170)	0.175 (0.261)	0.096 (0.144)	0.118 (0.176)	0.671 (1.00)
Others	0.180 (0.260)	0.168 (0.243)	0.195 (0.281)	0.055 (0.079)	0.095 (0.137)	0.693 (1.00)

Note: Numbers in parenthesis are the share of each domain in women's empowerment in agriculture

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Results and Discussions (Cont.)

- Women's empowerment index bounds between 0.60 and 0.77.
 - The highest empowerment index appears in Lao-Tai group
 - The lowest index appears among Hmong women.
- There are higher scores in the income domain.
- Women from Lao-Tai, Khmu, and other ethnic groups are in a better position in the control of household resources.
- Hmong women tend to work harder whereas their engagements in the productive decision, ownership of household assets, and the control of household resources are comparatively small.

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Results and Discussions (Cont.)

	Rice		Livestock	
	Coefficient	S.E.	Coefficient	S.E.
Constant	13.038***	0.656	-14.472***	4.901
WE (Log form)	0.177**	0.084	2.761***	0.613
Production area (Log form)	0.453***	0.052	0.596**	0.248
Rice farm labor (Log form)	0.031	0.037	-	-
Fertilizer (Log form)	0.000	0.006	-	-
Rain-fed rice	0.424**	0.179	-	-
HH heads' characteristics	Yes		Yes	
HH characteristics	Yes		Yes	
R squared		0.2528		0.142
Chi squared		136.18***		66.83***
Observations		406		406

Note: *** denotes significant at the 1 percent level, ** significant at the 5 percent level, and * significant at the 10 percent level.

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Results and Discussions (Cont.)

- Positive association between production area and agriculture.
 - 1 percent increase in rice production area raises household income from livestock by 0.45 percent.
 - 1 percent increase in livestock production area raises household income from livestock by 0.60 percent.
- Labor and chemical fertilizer are found to have no significant impacts on rice output.
- Other controlled variables (household and household heads' characteristics) exerts mixed effects on rice and livestock production.

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Results and Discussions (Cont.)

- Women's empowerment index is a significant predictor of rice and livestock production.
 - 1 percent increase in women's empowerment index raises household income from rice production by 0.18 percent.
 - 1 percent increase in women's empowerment index raises household income from rice production by 2.76 percent.
- The findings implies that:
 - Women are altruistic and they allocate resources in a collective manner.
 - The rise of women's empowerment enables them to allocate productive resources optimally for agricultural production and in turn increase agricultural outputs.

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Results and Discussions (Cont.)

- The findings of this study are:
 - Compatible with Wouterse (2017) in the context of Niger;
 - Diiro et al. (2018) in western Kenya;
 - Rahman (2010) in Nepal.
 - Contradictory to Udry (1996) in Burkina Faso;
 - Karamba and Winter (2015) in Malawi
- The size of impact vary depending on the types of crop and livestock production.

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Conclusion

- The primary objectives
 - To measure women's empowerment in agriculture.
 - To investigate the impact of women's empowerment on agricultural outputs.
- The results show that:
 - Women significantly contribute to agricultural production.
 - Women from Lao-Tai, Khmu, and other ethnic groups are in a better position in the control of household resources.
 - Hmong women tend to work harder whereas their engagements in the productive decision, ownership, and the control of household resources are comparatively small.

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Conclusion (Cont.)

- This study supports a view that empowering women's role in agriculture would significantly increase the outcomes of agricultural production.
- Based on the empirical results:
 - Women's empowerment index significantly increase household income from rice and livestock production.
- This implies that a policy intervention to empower women in agriculture can improve the effectiveness of poverty eradication program in the Lao PDR.

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