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Assessing the Sustainability of Community-Driven Development Projects in Lao PDR

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Abstract

The Community-Driven Development (CDD) approach has been applied to more than 5,000 subprojects in 2,000 villages in the Lao PDR. CDD has the potential to make poverty reduction efforts more responsive to the need, more inclusive, more sustainable, and more cost-effective than traditional, centrally led programs. Many CDD projects could not survive due to financial support since many CDD projects could not sustain costs. The overall objective of this research is to assess the sustainability of CDD projects in Lao PDR with the specific objectives to investigate whether the degree of community contribution does matter for the current existence of CDD projects and to assess whether the community's contribution could enhance the current performance of CDD projects. Logit regression is the main model to analyze the impact of the community's contribution to the sustainability of CDD projects in Lao PDR. The result suggests that community participation in labor and finance are key factors for the sustainability of CDD projects.

Keywords: community driven development, poverty reduction, sustainability

1. Introduction

1.1 Background

The Community Driven Development (CDD) projects have become an important channel of development assistance for village. CDD programs stem from the trust in local people by treating them especially poor people as assets and partners in the development process. Recently, more than 80 countries have implemented CDD projects.

Experiences from many countries show that by directly relying on poor people to drive development activities. CDD has the potential to make poverty reduction efforts more responsive to the needed, more inclusive, more sustainable, and more cost-effective than traditional centrally led programs [1].

In Lao PDR, the Poverty Reduction Fund Project (PRF) initiated the CDD in 2003 which was among the earliest CDD approach development project. The CDD approach has been applied to more than 5,000 sub-projects in 2,000 villages in Lao PDR. The CDD approach is considered an effective poverty reduction mechanism to promote local development and capacity building, improve service delivery, and

provide risk management instruments to the poor. Compared to an earlier generation of community-based rural development projects where communities acted as rather passive beneficiaries, recent CDD projects give communities more voice and place communities at the center of the development process [2].

While there is general recognition of the potential of CDD approach, there remain criticisms regarding: conceptual issues, practical issues, institutional issues. These shortcomings of CDD approach could decrease the effectiveness and sustainability of the projects.

Questions often arise among development practitioners whether CDD projects sustainable? Does the more participation of community on the project bring more sustainability? and what are factors determining the sustainability of CDD projects? These questions come from the fact that many CDD projects could not survive without continued financial support. Since many CDD projects are constructed in poor villages, they could not effort for operating and maintaining costs. Therefore, confirming a correlation between a CDD approach development project and its sustainability is critical especially for Lao PDR to achieve her sustainability poverty reduction goal.

It is thus interesting to observe the community's participation on the CDD project and relationship with the sustainability. The participation refers to the community participate on finance, labor, management, and coordination on the CDD project while the sustainability of defines as whether the project is still functioning and how the community response when the project requires the maintenance.

1.2 Objectives

The overall objective of this research is to assess the sustainability of CDD projects in Lao PDR. The specific objectives are to investigate whether the community's contributions do matter for the current existence of CDD projects and to assess the factors determining sustainability of CDD project.

2. Literature review

2.1 CDD project and sustainability

Community Driven Development is considered an effective poverty reduction mechanism to promote local development and capacity building, improve service delivery, and provide risk management instruments to the poor. Most of the evidence reviewed compares CDD project sites with communities that are otherwise similar but are either blank slates without any projects or have received other interventions of unclear method and provenance. Khwaja [3] compares a random sample of AKRSP projects with other projects in the same village that were built without any participation from the community. Consistent with the theory, Khwaja finds that community managed projects are better maintained than projects managed by the local government.

Khwaja's findings are consistent with Finsterbusch and Van Wincklin [4]. In their meta-analysis of project reports from 52 USAID projects that had participatory elements, they conclude that projects that were less technically complex were more effective, as were smaller projects. Facilities constructed with community involvement tend to be quite effective in improving access to public services. Paxson and Scady [5] for instance find that the Peruvian social fund, FONCODES, increased school attendance particularly for younger children.

Chase and Sherburne-Benz [6] evaluating the Zambia social fund report similar findings on school attendance. They also find that the presence of a school

constructed by the social fund seemed to increase household education expenditures, and the presence of a health facility increased use of primary care and prevalence of child vaccinations. Katz and Sara [7] analyze the performance of water systems in a variety of countries. They find that the performance of water systems was markedly better in communities where households were able to make informed choices about the type of system and the level of service they required, and where decision making was genuinely democratic and inclusive.

Katz and Sara also report that community members were more willing to pay for investment costs when they had control over the funds and were particularly unwilling to contribute if funds were controlled by government staff or contractor. There is further evidence correlating greater community participation with better project outcomes. Isham and Kahkonen [8, 9] in two analyses of water projects in Indonesia and India and Sri Lanka confirm that greater community participation is associated with better water supply and that well designed community-based water services lead to improvements in health outcomes. Heterogeneity in project effectiveness is largely explained by the ability of a community to engage in collective action, and high levels of 'social capital' improve participation in design and monitoring.

This is also the conclusion of Rao and Ibanez [10] studying the Jamaica Social Fund who find that a community's capacity for collective action influences its ability to generate a successful application for funds. Regarding project sustainability, Khwaja's study suggests that since community managed projects are better maintained they are also more sustainable than those managed by local governments. Katz and Sara and Isham and Kahkonen also find strong associations between participation and sustainability.

2.2 CDD projects in Lao PDR

In Lao PDR, donors have increasingly used CDD components in their projects to promote effectiveness and efficiency of poverty reduction efforts. Since 2004, according to a social protection and community development project inventory compiled by the World Bank, 6 projects within Lao PDR maintained a CDD component. After 2 years, about 25 projects implemented by multilateral and bilateral donors, and INGOs, possessed a CDD component. Active donors include the International Fund for Agricultural Development (IFAD), the Canadian International Development Agency (CIDA), the United Nations Development Program (UNDP), the European Union (EU), the World Bank, the German Agro Action (GAA), Village Focus International (VFI), World Concern, as well as other INGOs.

CDD projects were mainly concentrated in the northernmost provinces, the provinces bordering Vietnam, and in the southern provinces. CDD projects aim to empower communities, reduce poverty, and improve economic and social conditions of the poor in rural and remote areas. These programs seek to enhance village capacity and increase local ownership by helping communities to identify and prioritize their needs and develop and implement community development plans. Community-based participatory planning and implementation is a common feature of CDD projects, usually accompanied by efforts to ensure women's participation.

In almost all provinces, CDD projects support education, health, livelihood activities, and agriculture. The education sector (infrastructure, support of formal and non-formal education, curriculum development, teaching materials) receives the greatest support, followed by the health sector (infrastructure, family planning and reproductive health support, health education and training, water and sanitation, mother and childcare), agriculture (agricultural training, food crop

and livestock production, irrigation), and livelihood activities. Most CDD projects support activities in the poorest provinces, but not necessarily in provinces with a high proportion of ethnic minorities. Most provinces receiving multiple projects with CDD components, such as Huaphan, Phongsaly, Oudomxay, Luangnamtha, Attapeu, and Xekong, face high poverty incidence; nonetheless, provinces such as Champasak, Xiangkuang and Savannakhet also receive a high number of projects despite being less poor. Since then, CDD components are widely adopted and implemented in most development projects country wide.

The largest Bank's CDD project in Laos is the Poverty Reduction Fund (PRF) supported by World Bank, which assists the development of small-scale, community-based infrastructure and other activities in the water, transportation, education, health, and agricultural sectors to reduce poverty in rural villages. The Poverty Reduction Fund Project (PRF) has been the World Bank's primary instrument for supporting community-driven rural development in poor upland districts. Building on the experience of a UNDP-supported pilot on participatory planning approaches in 2000, the PRF adapted and developed tools and detailed methodologies appropriate to the context of the poorest districts. The objectives of the PRF are to: (i) Assist villagers to develop community infrastructure and gain improved access to services; (ii) Build capacity and empower poor villages in poor districts to plan, manage, and implement their own public investments in a decentralized and transparent manner; and (iii) Strengthen local institutions to support participatory decision-making and conflict resolution processes at the village, khet, and district levels, involving a broad range of villagers including women, the poor, and ethnic minorities.

3. Methodology

3.1 Model specification

It is broadly recognized that participatory development has played a prominent role in the achievement of projects. Despite increasing advocacy, it is still questionable whether the inclusion of the beneficiary community in project management could elongate the serviceable durability of community-driven development (CDD) projects.

The aim of this study is to assess the sustainability of CDD projects. This study intends to investigate a wide range of factors, potentially determining the durable existence of CDD projects. The outcome variable of the current study is dichotomous, coding one if a CDD project is well usable and zero if that project is not currently usable or broken. Given a binary response to the usability of the project as a dependent variable, there are several techniques applicable to estimate the equation. Linear Probability Model (LPM) is a straightforward approach that can be used in this context. This technique is a linear regression estimated by the Least Square method. Despite its simplicity, LPM is possibly subject to many shortcomings. The most critical constraint is that this model violates an important assumption that the predicted outcomes should bound in the restrictive range of zero and one [11].

Alternative approaches, in addition to LPM, are Logit and Probit Models. These two models are non-linear techniques estimated by the Maximum Likelihood method. While the Logit Model is reliant on logistic distribution, the Probit Model estimates the equation under a normal distribution. Since there is no convincing reason to justify the superiority of one to another, this research employs the Logit Model to investigate the extent to which community participation, monetary contribution, poverty rate, project types, and their locations have

considerable impacts on the persistence of CDD projects. The structure of the Logit Model is shown and explained as follows:

$$L_i = \ln \left[\frac{Prob(Y = 1)}{Prob(Y = 0)} \right] = \beta_0 + \beta_1 PRF_i + \beta_2 CF_i + \beta_3 PR_i + \beta_4 FS_i + \beta_5 PO_i + \sum_{j=1}^{J-1} \delta_j TP_{ij} + \sum_{k=1}^{K-1} \theta_k LP_{ik} + u_i \tag{1}$$

where L_i denotes logit which is the logarithm of ratio between the probability that a CDD project is currently usable, $Y = 1$, and the probability that this project is not currently useable, $Y = 0$. PRF_i represents the share of Poverty Reduction Fund's money contributed to the project i . CF_i is the share of community's money contributed to the total value of project. PR_i stands for participation rate which is the proportion of households participating in the project over total number of households in the village. FS_i denotes projects selected by females in the village. PO_i is poverty rate which is the ratio of poor villagers over the total number of villagers. TP_{ij} represents project type j , including gravity-fed water system, Projects related to health, transportation, and projected related to education. LP_{ik} denotes the location of projects in province k , including Phongsaly, Huaphan, Luang Namtha, Luang Prabang, Oudomxay, Xiengkhuang, Savannakhet, Saravan, Sekong, and Attapue. β_0 is constant term. β_1 to β_5 are the parameters of PRF's contributed money, community's contributed money, females' involvement in the selecting process, and poverty

Variables	Descriptions
Still functioning	1 if a project is currently functioning and 0 otherwise
PRF contribution	The share of money contributed by PRF to the project
Community contribution	The share of money contributed by a community to the project
Participation rate	The proportion of participants in the project
Female selected	1 if a community is selected by females in the village
Poverty rate	The proportion of poor people in the village
Gravity-fed water	1 if a project is gravity-fed water and 0 otherwise
Health	1 if a project is related to health services and 0 otherwise
Transportation	1 if a project is related to transportation and 0 otherwise
Education	1 if a project is related to education and 0 otherwise
Phongsaly	1 if a project is located in Phongsaly and 0 otherwise
Huaphan	1 if a project is located in Huaphan and 0 otherwise
Luang Namtha	1 if a project is located in Luang Namtha and 0 otherwise
Luang Prabang	1 if a project is located in Luang Prabang and 0 otherwise
Oudomxay	1 if a project is located in Oudomxay and 0 otherwise
Xiengkhuang	1 if a project is located in Xiengkhang and 0 otherwise
Savannakhet	1 if a project is located in Savannakhet and 0 otherwise
Saravan	1 if a project is located in Saravan and 0 otherwise
Sekong	1 if a project is located in Sekong and 0 otherwise

Note: Irrigation and energy projects are reference groups for types of community-driven projects. Projects in Attapue province are reference groups for the location of projects.

Table 1.
The description of variables in the logit model.

rate, respectively. δ_j and θ_k are parameters of explanatory variables representing the types of projects and their provincial locations. u_i is the stochastic disturbance of equation.

Before proceeding to analyze the sustainability of the CDD project, it is necessary to draw particular attention to what project sustainability in the context of this study is. There is no consensus definition of project sustainability in the literature.

Since this study considers many types of CDD projects altogether, it is hard to define what the sustainability of the project exactly means. To overcome this indistinctness, this analysis uses a loose meaning of project sustainability. Based on a study of Chatterley et al. [12], the sustainability of CDD projects in this study is defined as if the project is not visibly dilapidated and still well workable. In other words, it means that the project functions appropriately without any significant repair needs, at least during the reference period of the survey. The description of this indicator and other variables attached in the empirical analysis are explained in **Table 1**.

3.2 Data descriptions

Main data sources are from secondary data of suitability assessment in 2016 and 2019. In 2016, the assessment was organized in PRF’s 10 targeted provinces for the

Variables	Obs	Mean	S.D.	Min	Max
Functioning	1,574	0.905	0.293	0	1
PRF contribution	1,574	0.897	0.076	0.134	1
Community contribution	1,574	0.101	0.073	0	0.960
Participation rate	1,574	0.361	0.159	0	1.461
Female’s selection	1,574	0.492	0.500	0	1
Poverty rate	1,574	0.371	0.314	0	1
Water and sanitation	1,574	0.333	0.471	0	1
Health infrastructure	1,574	0.046	0.209	0	1
Transportation	1,574	0.196	0.397	0	1
Education infrastructure	1,574	0.357	0.479	0	1
Agriculture and irrigation	1,574	0.059	0.236	0	1
Energy	1,574	0.010	0.097	0	1
Phongsaly	1,574	0.056	0.230	0	1
Huaphan	1,574	0.216	0.412	0	1
Luang Namtha	1,574	0.063	0.243	0	1
Luang Prabang	1,574	0.119	0.324	0	1
Oudomxay	1,574	0.139	0.346	0	1
Xiengkhuang	1,574	0.097	0.296	0	1
Savannakhet	1,574	0.123	0.328	0	1
Saravan	1,574	0.057	0.231	0	1
Sekong	1,574	0.067	0.251	0	1
Attapue	1,574	0.064	0.245	0	1

Source: Author’s calculation, 2020.

Table 2.
The summary statistics of variables.

project’s establishment during 2012–2016 that includes 1,930 sub projects. In 2019, the assessment was organized in 10 provinces for the project’s establishment during 017–2019 that include 1,169 sub projects. Therefore, total sub project during 2012–2019 are 3,099 (**Table 2**). More than 100 sub projects for each province has been evaluated. Approximately 696 projects or 22% of total have been assessed in Huaphan province.

In respond to a research question whether the contribution of the community, the involvement of female villagers, poverty rate, project types, and project locations by provinces do matter for the sustainability of CDD projects, this research is mainly reliant on a database of Poverty Reduction Fund (PRF). The dataset con tains the information of projects constructed from 2012 to 2019. The current study intends to emphasize CDD projects completed during 2012 and 2016. Those projects built and transferred to communities recently are not included in the analysis. This study solely focuses on all construction projects. Subprojects related to providing equipment and materials are excluded from the empirical analysis. After cleansing and removing missing data, the econometric analysis of this study is based on 1,574 projects.

4. Results

4.1 The community participation and sustainability

For many decades it has been believed the participation of communities is positively contribute to the sustainability of the project which means the more participation of the community on resources such as budget, labor, materials and the like, the more chance of sustainability of the project [13]. There is no surprise that community patriation rate in term of money is low comparing participation rate in term of labor contribution. However, monetary community participation rate varies among the project types. This maybe due to the nature of the development project itself whether it require large amount of money to invest or not. **Figure 1** shows the participation rate of community on the budget by activities There are six activities of CDD project. On average the community participation on the budget is 8.58% where the community participates the highest percentage on agriculture and forestry activities because it is the main source of their income. In addition,

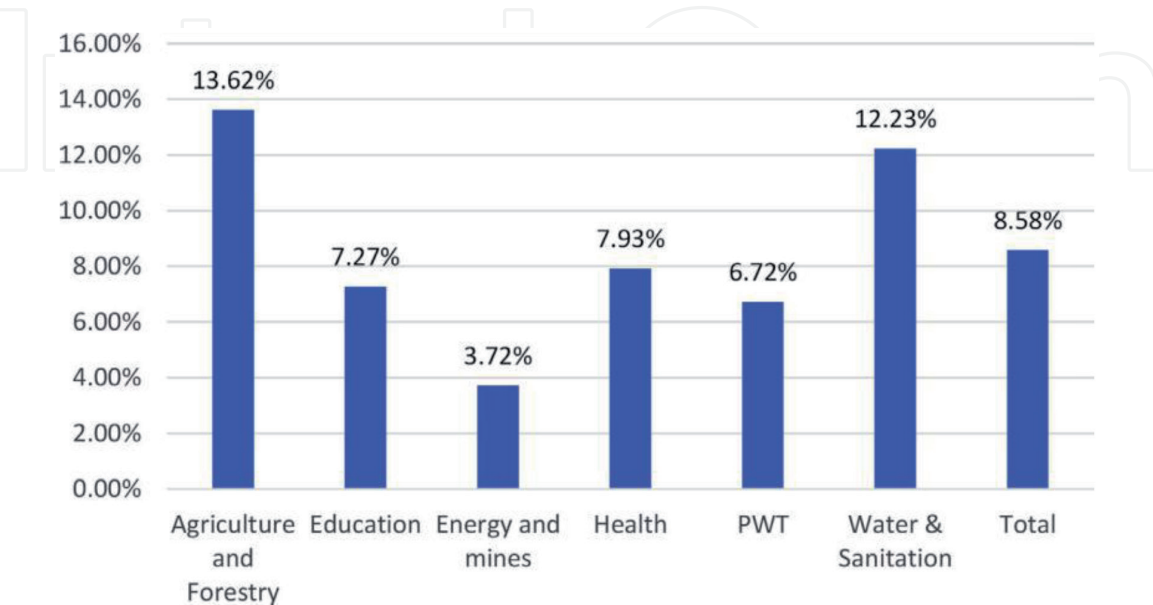


Figure 1.
The participation rate of community on the budget by activities. Source: Monitoring and evaluation division, 2016 and 2019.

community spend more on water and sanitation because it is very important for their livelihood. On the other hand, the community participate only 3.72% of total budget for the energy and mine sector since the investment on these activities were expensive. Communities tend to participate more on labor rather than budget since they have limit budget. On average 33.1% of community's member participate to work on the CDD project (See **Figure 2**). They work more on energy and mine activities to compensate the less participation on the budget.

One component of sustainability in this paper is whether the project is still functioning. Approximately 2,939 projects or 94% of total project is still functioning where 3.7% of total projects is partly damage but those are already maintenance by the PRF (See **Table 3**). There are 43 non-functioning projects. The main cause of damage are due to the natural disaster such as flood, storm and land slide. There are 4 projects have not implemented in Attapue province and those are fresh market project.

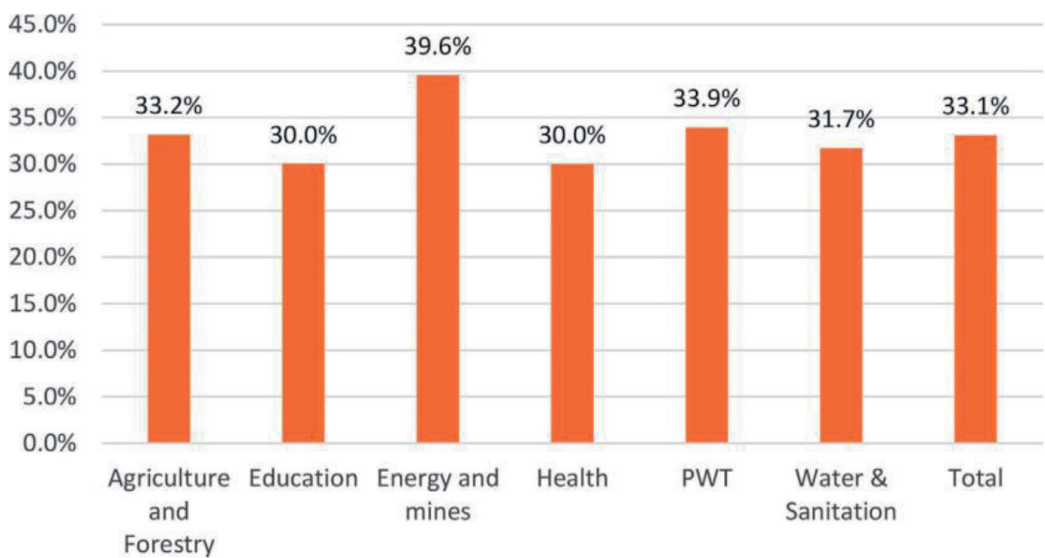


Figure 2.
The participation rate of community on labor by activities. Source: Monitoring and evaluation division, 2016 and 2019.

Province	No. project	Functioning	Partly damage	Non-functioning	Not implement	Request for maintenance
Savannakhet	435	409	24			2
Saravan	202	193	9	1		
Xiengkhuang	240	212	16	12		
Phongsaly	193	187	4	2		
Luangnamtha	168	160	7	2		
Huaphan	696	657	30	9		
Luangprabang	350	349	1			
Oudomxay	424	418	5	1		
Attapue	165	149	3	9	4	
Xekong	226	201	18	7		
Total	3,099	2,939	117	43	4	2

Source: Monitoring and Evaluation Division, 2016 and 2019.

Table 3.
Functioning of CDD project by province.

Functioning of the development project tends to vary among the provinces and the type of the projects due the differences of the geographical location and vulnerability of the project to natural disaster.

Huaphan province has the highest in term of number of projects and projects that are damaged and non-functioning, but it has low percentage of damage and non-functioning to total project. Xiengkhuang province has the highest rate of damage and non-functioning project. This is mainly due to the natural disaster such as flood and land slide.

Water and sanitation and public work and transport (PWT) sector have high percentage of non-functioning projects. This is maybe because these types of projects are easily affected by natural disaster especially during the rainy season. All of health project are functioning. Two projects in Savannakhet province to main-tenance roads are in the process of requesting fund from PRF as it requires amount of fund. However, communities use village fund to repair the road and it is now commutable with fair condition.

4.2 The impact of community participation on the sustainability of CDD projects

This study applies the Logit Model to examine whether the variation of covari-ates does matter for the durability of CDD projects. This analysis includes the amount of money contributed by PRF and community, the involvement of females in the selection of projects, the types of projects, the locations of projects by provinces. The estimated results are presented in **Table 4**. In this table, it reports estimated parameters and their standard errors in the first two columns. Since the direct interpretation of the Logit Model is not easy for understanding, this study exclusively focuses on the marginal effects of the Logit Model. This estimated result is shown in the two remaining columns.

Table 5 shows the estimated results of the Logit Model. It is evidenced that the contribution of the community in the CDD projects does matter for the sustain-ability of projects. The share of money contributed by communities in the projects is positively and statistically significant at the 1 percent level. Holding other factors unchanged, a 1 percent increase in the share of the community’s money in the total value of the project raises the likelihood that the project is still usable by, on

Sector	No. project	Functioning	Partly damage	Non-functioning	Not implement	Request for maintenance
Agriculture& Forestry	233	206	18	5	4	
Education	1,150	1,129	14	7		
Energy & Mines	34	32		2		
Health	145	139	5			
PWT	638	576	46	14		2
Water & Sanitation	902	854	33	15		
Total	3,102	2,936	116	43	4	2

Source: Monitoring and Evaluation Division, 2016 and 2019.

Table 4.
Functioning of CDD project by project type.

	Logit		Marginal effects	
	Coefficient	S.E.	dy/dx	S.E.
Constant	0.379	0.476	—	—
Community contribution	4.327**	1.946	0.225**	0.103
Participation rate	1.761***	0.646	0.092***	0.035
Female's selection	0.158	0.186	0.008	0.010
Poverty rate	−0.032	0.312	−0.002	0.016
Water and sanitation	0.110	0.364	0.006	0.018
Health	−0.208	0.525	−0.012	0.032
Transportation	0.590	0.404	0.026*	0.016
Education	−0.443	0.339	−0.025	0.020
Phongsaly	1.216**	0.500	0.041***	0.011
Huaphan	0.008	0.298	0.000	0.015
Luang Namtha	0.576	0.436	0.024	0.015
Luang Prabang	1.701***	0.477	0.054***	0.011
Oudomxay	4.165***	1.039	0.092***	0.009
Xiengkhuang	1.827***	0.477	0.054***	0.011
Savannakhet	0.802**	0.375	0.032***	0.012
Saravan	0.677	0.454	0.027*	0.014
Sekong	2.074***	0.578	0.054***	0.010
Pseudo R-square			0.136	
Chi-square			133.9***	
Observations			1,574	

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

Table 5.
The estimated results of the logit model.

average, 22.5 percent. Corresponding to the in-cash and in-kind contributions, the participation rate of households in the community is positively related to the survival of the project. This correlation is statistically significant at the 1 percent level. A rise in the participation rate of households in the community by 1 percent is associated with a 9.2 percent increase in the probability that the CDD project is still functioning at least during the time of the survey.

It seems that the engagement of females in selecting the CDD project exerts a positive impact on the durable existence of projects, constructed during 2012 and 2016. However, the linkage between the participation of female villagers in the selection of the CDD project and the durability of the project is not statistically significant. Consistent with the preliminary result that the proportions of the CDD projects selected by females between usable and non-usable projects are not significant at the conventional levels. Many CDD projects are intentionally constructed to improve the living standard of households in poor villages. The proportion of functioning projects in those areas is relatively low. Due to the lack of resource allocated to construction, management, and maintenance, CDD projects located in the area with a high rate of poverty are less likely to be still usable. Like the dummy variable controlling for the engagement of females in the selection of the project, the poverty rate in the village is not statistically significant at the conventional

levels. There is a minor difference between functioning and non-functioning projects across the types of CDD projects. According to the database of PRF, CDD projects are categorized into six types, water and sanitation projects, health infrastructure, transportation, education infrastructure, irrigation, and energy. The present study creates four dummy variables to control for water and sanitation, health infrastructure, transportation, and education projects. Other projects related to irrigation and energy are used as reference groups. The estimated result indicates that the probability that a transportation project, including road construction and maintenance, is currently usable is higher than irrigation and energy projects. On the contrary, the likelihood of being usable among water and sanitation, health, and education projects is relatively lower CDD projects in Ref. groups. Except for education-related projects, dummy variables for the types of CDD projects appears to be insignificant. Projects related to transportation are statistically significant at the 10 percent level. *Ceteris paribus*, the probability that transportation projects are still usable during the period of the survey is, on average, 2.6 percent higher than those projects in the reference groups.

The survival of CDD projects significantly varies across provinces in Laos. CDD projects are distributed across ten provinces. This research generates nine dummy variables to control if projects are located in Phongsaly, Huaphan, Luang Namtha, Luang Prabang, Oudomxay, Xiengkhuang, Savannakhet, Saravan, and Sekong provinces. CDD projects in Attapue province are treated as reference groups. **Table 5** shows that except for projects in Huaphan and Luang Namtha the likelihood that CDD projects in other provinces are significantly different from those in Attapue province. The estimate indicates that the parameters of province dummies appear to be positively and statistically significant at least at the 5 percent, except projects in Saravan which are significant at the 10 percent level. The probability that CDD projects are currently usable is found to be lower in Attapue compared to projects in other provinces. The estimate indicates a higher likelihood projects in Oudomxay than those in other provinces. Keeping other factors constant, the durability of CDD projects in Oudomxay province increases by around 9.2 percent compared to projects in Ref. province. The likelihood that projects in Attapue are currently usable is lower on average, 5.4 percent in comparison to Sekong, Xiengkhuang, and Luang Prabang, respectively.

In sum, the contribution of the community is a key factor determining the sustainability of CDD projects. The participation of villagers in selecting and designing projects as well as their contributions in terms of money can increase the durable existence of CDD projects. The share of money contributed by PRF, the participation of females in the selection of projects, and the poverty rate do not significantly determine the persistence of projects. There is a small difference in the probability that CDD projects are usable across types of projects. This study finds that CDD projects in Attapue province are more likely to be not currently usable than those in other provinces.

5. Conclusion and policy implication

5.1 Concluding remark

The CDD project have been discussed on which factors impacts to the sustainability of the project in many countries. One of the key factors for suitability of the project is participation of community in term of capital and labor. This study aims to investigate the impact of community participation on sustainability of CDD project in Lao PDR. By doing that, the data base of PRF on project assessment was used to analyze the impact of community participation on sustainability through

the logit regression. In addition, field survey of functioning and non-functioning project is to reveal the factors of sustainability of the CDD project.

Main result shows that community participation on labor and finance are the key factors for sustainability of CDD projects while the female and ethnic participation is not statistically impact to the functioning of the project. This is due to the aim of CDD project to prioritize female and ethnic to be involve in the project. The project that communities decides as a priority project tend to be more sustainable than those decide by project authorities, donor, and local and central government.

While the CMS project is quite success in many countries, the quality of CMS projects in Lao PDR is still questionable. The result of field survey also supports that community participation on maintenance fund and ability of maintenance group are the key factors for sustainable of the project.

5.2 Policy recommendations

Base on the results of the studies, the policy recommendations are:

(1) Contribution of villagers is the key factors of sustainability, CDD project should be the role model for other government project; (2) There is some limitation of CFA project especially the value of investment, so it is very important that the PRF to reform the enabling policy and regulation of CFA project; (3) As the concern on quality of the CFA project, the capacity building of CBOs especially skills of planning, accounting, basic maintenance is required; (4) Poor village have insufficient fund and lack of skills and capacity for major maintenance and that cause the sustainable of the project. PRF should reserve fund for major maintenance for all project, establish rules and guideline on maintenance fund, provide technical support to maintenance group and PRF staffs especially a training on maintenance and request an assistant from technician to fixing and repairing for major problem; (5) Two villages expressed that responsiveness of local authorities on fixing issue often delayed. PRF and Village authorities should design to reduce the procedure on a report system.

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