A Study on Impact of Conservation Community Network on Environment and Receive Household: The Case study of Pakkading District, Bolikhamsai Province*

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Abstract

This final project is to study on impact of Conservation Community Network on Environment and Receive household in Pakkading district, Bolikhamsai province. The purpose of this study is to investigate the impact of CCN by comparing between Village have CCN and don't have CCN. We used the Logistic Regression, and to examine the impact of Conservation Community Network (CCN) on Receive household, and the number of samples equal to 295 households. The result of model analysis: the dependent variable which effect to change of environment are: the village have the CCN positive impact of environment, gender and household size negative impact to the environment. The dependent variable which effect to receive households are: the village have CCN, gender, land, loan size positive impact to receive households, occupation and number of going to forest negative impact to receive households.

Keywords: Conservation Community Network (CCN); Impact; Lao PDR.

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Introduction

Development of countries in the past is press on economic growth believe that if economic grow then income of people in countries and standard of living will grow same case of growth of economic is from quickly growth of manufacturing, it used natural resource such as land, water, forest, mineral, etc is factor of production without planning for use and protect loss on environment, bring environment problem such as blight and decreasing of natural resource, pollution, and social problem.

Social Unsustainable Development have same kind of Nationals unsustainable all around the world, making the member of United Nations paid attention to the impact of economic development to destroy the environment, including the problem are facing in the present moment, poor, hungrier unhealthy, can't legible and blight of the necessary ecosystem. So the members of these countries agree that economic growth will not even sustainable if we are not attending the natural resources and the impact of environment at the last time that we found it. Only once way to bring us to the assure future and sustainable as environment development and equilibrium by using earth resources suitably and necessary of human being and also management of ecosystem to the sustainable benefit.

The theory of sustainable development has play role of the main development since 1972, it was The United Nation held summit about human environment at Stoke Home City of Sweden. The world considered the effect of using environment extravagantly. In 1992 The United Nation held general assembly about environment and development (UD Conference on Environment and Development: UNCED) or Earth Summit in Rio de Janeiro in Brazil. The United Nation held summit on sustainable development (WSSD) in Johannesburg in South Africa during 26thAugustto 4th September 2002this summit is hold the meeting the member of countries 180 Countries to take action against the 21st plans for Development and effective of result.

Lao people live in the rural area surround by the forest. Sotheir living or making income of them is harvesting forest products for use in their family or for sell. So, we said that, forest resources is important and necessary for improve their life. Bolikhamsai province has a river flowing through important for economic of country especially making electricity from waterfalls, the potential for hydrower development in the current moment is Namthern and Namkading river, which hasthree dams. Constructing sustainable waterfall electricity often requires whole and don't used reservoir. These reservoir was announced conservation forest including Namkadingriver conservation forest of nation, Narkai-Namthern conservation forest of nation, Phukhaokhuay conservation forest of nation. To meet the need to protect natural resources and the environment so, The Community Conservation Network Project was designed to support communities around the Narkai-Namthern conservation forest of nation and Namkading conservation forest of nation to change the behavior of people in living from using the natural resources extravagantly to protect and use sustainable.

In order accomplish the goal of this study, following questions will be concentrated during the research. This project is researching between the two Village has the CCN and Environment project is different or not? How Conservation Community Network affects environment? How Conservation Community Network affects receive household?

Literature Review

There are quite few studies related with the impact of Conservation Community Network (CCN) on livelihood of local people and natural resources. We could find some studies related with these issues. For instance, Lravan Vongkhamsarn (2003: 5-6) said: environment is a system of the relationship between three things: abiotic component, biotic component, and manmade component. Kasem Jankaew divided natural resources three type: Natural resources used to don't gone; Substitute natural resources; Natural resources used gone.Also, Kasem Jankaew divided natural resources two type: biotic environment and abiotic environment. Gibbe summated case of degeneration of natural resources and environment tree things: The use of resources without precautions for export and foreign currency demand. A resource protection policy that is overlook local level management. Development policies that make migration to the reservoir. K. Willam Easter presented method for modify degeneration of natural resources and environment: Use of legal measures: restricting the use of land by control rules or authorization to take advantage of natural resources and the environment. Use of incentives in the form of money or reward, use tax, compensation or fine in violation. Providing knowledge and information by helping research technical, advocating and education.Direct investment to ensure that measures for modify naturalresources and environmental are effectively utilized and beneficial to human.

Data and Method

The example for study we used to the population ofsix village: Narphong village have 37 households, Namdeua village have 121 households, Namheen village have 27 households, Huayphet village have 51 households, Phonethong village have 31 households, Xonephunsai village have 28 households.

To examine the impact of Conservation Community Network on Environment and Receive household, the author applied Coleman's method by conducting a survey on 295 households in three villages within Conservation Community Network and three villages without Conservation Community Network. The empirical model estimate, which is based on the Coleman (1999), is as follows:

$$Y_{ij} = \alpha + \beta X_{ij} + \lambda GF_{ij} + \delta Cut_{ij} + \gamma CCN_{ij} + \delta LS_{ij} + \rho T_{ij} + \sigma Var_{ij} + \varepsilon_{ij}$$

Dependence variable is amount of money may be highly biased in estimation So, dependence variable in this equation use logarithm form, is as follows:

$$Ln(Y_{ij}) = \alpha + \beta X_{ij} + \lambda GF_{ij} + \delta Cut_{ij} + \gamma CCN_{ij} + \rho T_{ij} + \sigma Var_{ij} + \varepsilon_{ij}$$

Where Y_{ij} is receive of household i in village j, which author wants to measure by USD, $X_{ij}$is household characteristics i in village j, $GF_{ij}$is the going to forest of household i in village j,$Cut_{ij}$is the environmental destruction of household i in village j, CCN_{ij} is a membership dummy variable equal to 1 if household i is member of project in village j and 0 otherwise, LS_{ij} is number of loan that household i loan from CCN fund in village j, T_{ij} is training of household i in village j, Var_{ij} is giving breed from CCN of household i in village j. α is constant β, λ,γ, δ, ρ, σ are coefficient of X_{ij}, GF_j, Cut_j, CCN_{ij}, LS_{ij}, T_{ij}, Var_{ij}.

And$\varepsilon_{ij}$is error. We use ordinary least squares:OLS to examine the impact of Conservation Community Network (CCN) on receive household.

We use logit model to examine the impact of Conservation Community Network (CCN) on environment, is as follows:

$$P_{(y=1\ or\ y=0)} = P(\alpha + \beta X_{ij} + \lambda GF_{ij} + \delta Cut_{ij} + \gamma CCN_{ij} + \rho T_{ij} + \sigma Var_{ij} + \varepsilon_{ij})$$

Where P is changing of environment, equal to 1 if increase and 0 otherwise.

Empirical Results

The result from the estimate, average, standard error, max, min from the estimate: Age equal 45 years old, the lowest of the age is 23 years old, for the highest of the age is 79 years old. For normal Education is six years old from primary school, the low of education is not attend to school, highest is graduate from University. The normally number of household is five people, lowest is two people, highest is twelve. The receive of the household average is 3590$, the lowest is 434$, the highest 37,952$. Land average is 2.16 hectare, highest is 8 hectare. GF average is 23 time per years, highest is 240 time. Loan 75$ per family, the highest 2410$ per family (Table 1).

Table 1. Summary of variables for model

Variable	Obs	Mean	Std. Dev.	Min	Max
ccn	295	0.6271186	0.4843926	0	1
gen	295	0.7322034	0.4435634	0	1
age	295	45.59322	10.57484	23	79
occ	295	0.759322	0.4282215	0	1
status	295	0.8949153	0.3071837	0	1
edu	295	6.722034	3.239429	0	16
hs	295	5.864407	1.7676	2	12
receive	295	2.98E+07	2.79E+07	3600000	3.15E+08
land	295	2.162373	1.400884	0	8
train	295	0.4067797	0.4920678	0	1
var	295	0.0847458	0.2789762	0	1
cut	295	0.4677966	0.4998097	0	1
gf	295	23.56271	42.13101	0	240
ls	295	620352.5	1950136	0	2.00E+07
lnreceive	295	16.95562	0.6968235	15.09644	19.56808
natural	295	0.3254237	0.4693291	0	1

In order to testing multicollinearity in the model, we estimated correlation of independent variables (see table 2). We found out that the correlation of independent variables are lows, so it don't have multicollinearity.

Variable	ccn	gen	age	occ	status	edu	hs	land	train	var
ccn	1									
gen	0.0561	1								
age	-0.035	0.2552	1							
occ	0.0086	0.2505	0.2232	1						
status	-0.0585	0.2421	0.0433	0.1174	1					
edu	0.0399	0.0687	-0.2573	-0.4113	0.0116	1				
hs	0.0281	0.1878	0.272	0.2264	0.2305	-0.0179	1			
land	0.1373	0.2973	0.2281	0.4633	0.1574	-0.1676	0.4012	1		
train	0.6243	0.1268	0.0698	-0.0019	-0.0763	0.0818	0.0988	0.1261	1	
var	0.2346	-0.1183	-0.0275	0.1713	-0.0148	-0.1244	0.0441	0.0084	0.2188	1
cut	-0.106	0.076	0.031	-0.0284	-0.011	-0.0055	0.0335	-0.0078	-0.0849	-0.2365
gf	-0.0594	-0.0138	0.0746	0.1129	0.029	-0.1242	0.0795	-0.0252	0.0237	0.1956
ls	-0.0762	-0.0498	-0.0661	-0.008	0.0325	0.0338	0.0026	-0.0475	-0.0809	-0.0826
lnreceive	0.2505	0.1529	-0.0383	-0.1257	0.0891	0.1815	0.1317	0.2182	0.1186	-0.1353
natural	0.2214	-0.1028	-0.0466	0.0187	-0.0215	-0.0589	-0.1065	-0.0567	0.1465	0.1264

Table 2: Testing multicollinearity

The result of logit model is shown in table 3. The result from estimate the example is n= 295 the result is LR chi2(8)=24.30 and prob>chi2 = 0.0020 the result from the estimate from the Significant level 99 percentage and Pseudo R2 = 0.0653 that mean estimate independent variable can explain dependent variable 6.53 percentage.The village has the CCN project is increating the enviroment 19.8 percen by Significant Level 99 percentage. Genders Male is decreasing for enviroment 11.64 percent by Significant Level 90 percentage.The Hosehold is decreasing for enviroment 2.9 percent by Significant Level 90 percentage.

Table 3: **Result of estimate from marginal effect**

Variable	dy/dx	Std. Err.	z	P>z
Cut	-0.0267907^{ns}	0.05678	-0.47	0.637
GF	0.0001282^{ns}	0.00068	0.19	0.850
CCN	0.1981069***	0.06591	3.01	0.003
Gen	-0.1164472*	0.07090	-1.64	0.100
OCC	0.0523831^{ns}	0.07245	0.72	0.470
Edu	-0.0069313^{ns}	0.01005	-0.69	0.490
HS	-0.0290452*	0.01663	-1.75	0.081
Train	0.0451174^{ns}	0.07025	0.64	0.521

Note *** Significant Level 99 percentage
** Significant Level 95 percentage
* Significant Level 90 percentage
Ns not singificant level

Table 4: Result of estimate from OLS

Lnreceive	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
CCN	0.4021624***	0.0981465	4.10	0.000	0.2089668	0.5953581
Gen	0.1585078*	0.0939999	1.69	0.093	-0.0265255	0.343541
Age	-0.0029486^{ns}	0.0038365	-0.77	0.443	-0.0105006	0.0046034
OCC	-0.3537151***	0.1078565	-3.28	0.001	-0.5660243	-0.1414058
Status	0.0967673^{ns}	0.1251489	0.77	0.440	-0.149581	0.3431156
Edu	0.0170215^{ns}	0.0130377	1.31	0.193	-0.0086424	0.0426854
HS	0.0310279^{ns}	0.0235609	1.32	0.189	-0.0153504	0.0774062
Land	0.1238477***	0.0322001	3.85	0.000	0.0604636	0.1872318
Train	-0.1035088^{ns}	0.0971393	-1.07	0.288	-0.2947219	0.0877043
Var	-0.233145^{ns}	0.1449805	-1.61	0.109	-0.5185308	0.0522408
Cut	0.0148771^{ns}	0.0752006	0.20	0.843	-0.1331509	0.1629051
GF	-0.0021082**	0.0008974	-2.35	0.020	-0.0038747	-0.0003416
LS	4.85E-08***	1.87E-08	2.59	0.010	1.17E-08	8.54E-08
_cons	16.41405***	0.251364	65.30	0.000	15.91926	16.90885

Note *** Significant Level 99 percentage
** Significant Level 95 percentage
* Significant Level 90 percentage
Ns not s Significant level

Conclusion

The purpose of this study is comparable between Village have CCN and don't have CCN, and to examine the impact of Conservation Community Network (CCN) on Environment by using Logistic Regression, and to examine the impact of Conservation Community Network (CCN) on Receive household, and the number of samples equal to 295 households.

The results found these villages have 295 households, the majority of the head of the family is male, the age between 30 - 40 and 40 - 50 years old, the most of the occupation are farmed, the member of household's 4 - 6 persons, the majority of receiving from selling agricultural product, the changing of natural is decreasing, the environmental destruction is increasing, the majority of object of going to forest for fisheries, the loan source of village development fund and for productive agricultural.

The result of model analysis: the dependent variable which effect to change of environment are: the village have the CCN positive impact of environment, gender and household size negative impact to the environment. The dependent variable which effect to receive households are: the village have CCN, gender, land, loan size positive impact to receive households, occupation and number of going to forest negative impact to receive households.

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