

Livelihood Rehabilitation of Project Affected People Caused by NN2 Hydropower Project in Laos

Saychai Syladeth

Abstract—The study aimed to examine characteristic impacts and new livelihood rehabilitation activities among PAP caused by NN2 hydropower project in Laos. The results of study revealed that, the reasons behind construction of NN2 project were not only for renewable and energy supply, but also included to eradicate insecurity and poor living conditions among rural people. The project had agrarian livelihood impacts among rural villages. Those new livelihood activities were rehabilitated by compensating lost properties, providing social services, establishing vocational groups, providing agricultural area and inputs, practicing on-farm and off-farm activities, increasing annual income, reducing poverty, implementing MDGs and enhancing capacities.

Index Terms—Livelihood, Rehabilitation, Project Affected People, Resettlement, NN2 Hydropower Project

I. INTRODUCTION

Resettlement is a new marginal science. With the continuous development of large-scale water conservancy and hydropower construction, water resource workers realize more and more clearly that it is extremely important to plan resettlement rationally, compensation and rehabilitation, implement successfully the plans and manage well the implementation. In the world today, there is no fixed mode in solving the problem of compensation, resettlement and rehabilitation. Each nation, according to its own practical situation, has found out its own way to have successful resettlement and rehabilitation and has accumulated valuable experience [1]. If the hydropower projects continue to develop at a rapid pace under existing regulatory conditions, the developments may cause adverse and irreversible damage on the environment and local people's livelihood. Therefore, there is a pressing need to improve environmental and social standards as well as improve the skills and capacity of the hydropower sectors as a whole [2]. At the same time, impoverishment is the central issue in development-caused population displacements and resettlement. Historical experience shows that more often than not, the risks of impoverishment and social disruption turn into grim reality. During displacement people lose their natural, physical (man-made), human and social capitals. Thus, during re-establishment, they must regain these capitals. The resettlement creates eight risks including landlessness, joblessness, homelessness, marginalization, food insecurity, social disintegration, loss of access to common property, and increased morbidity and mortality [3]. When planned and implemented diligently, reservoir resettlement programs can be effective vehicles for substantial social and economic

development for the affected people. Resettlement programs help provide better economic resources, renewed civic infrastructure, and increased access to new markets. Successful resettlement programs that preserve the social capital of affected communities have resulted in improved literacy and health indicators, increased incomes and standards of living as defined by the affected people themselves and enhanced access to economic opportunities, all of which may have been difficult to achieve in reservoir areas [4].

Additionally, good practices in this respect are those that focus on means of livelihood rather than on assets, assume an inclusive relationship between people and assets and admit of a negotiated definition of just compensation. The successful re-settlement with development is a fundamental commitment and responsibility of the state and the process must result in the creation of new rights that will render people direct beneficiaries of the development project [5]. Moreover, the best-practices in resettlement (affected community and livelihoods) are restoration and development of sustainable livelihoods of affected people, land for land as the first priority option for rural farmers, help to generate multi income sources, deliver the post-resettlement support fund for livelihoods, deliver micro credit support, deliver technique skills and training, create non-farming jobs and deliver employment services. The possible results of good practices should be affected people want to be resettled, from involuntary resettlement to voluntary resettlement, turn risks to opportunities through resettlement, affected people shares benefits of hydropower development rather than be impoverished, increase social sustainability and social friendship of hydropower development [6].

The Lao People's Democratic Republic (Lao PDR) is commonly referred to as 'Laos abroad, and is a land-linked country in the heart of Southeast Asia. The country encompasses 236,800 km² and borders with China to the north, Cambodia to the south, Vietnam to the east, Myanmar to the northwest, and Thailand to the west. For centuries it has been known by outsiders as the land of a million elephants (Lan Xang or Lao Kingdom of Million Elephants) and around 70% of Laos' terrain is mountainous [7]. Laos has a total population of 6,492,400 people with a growth rate of 1.45. The population density was 27 persons per square kilometer in 2015. Major people or 67% lived in rural areas while minor people or 33% lived in urban areas [8]. The Lao population consists of 49 different ethnic groups who speak four main languages including Lao (55%), Khmou (11%), Hmong (8%) and others (26%). The leading religion sects are Theravada Buddhism (67%), Christianity (1.5%), Islam and Bahai (less than 1%); and there are more than 30% of believers of animism and others [9]. The official language of the Lao PDR

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is Lao. French is also spoken, but English is emerging as the readily used language in business.

Since the government of Lao PDR (GoL) started the economic reform process in 1986 under the new economic mechanism (NEM) and the Lao economy has shifted from a centralized, planned economy towards an open, liberalized market-oriented system. ‘Open-door’ policies toward global market have been implemented to promote and attract foreign direct investment (FDI). The changes have made favorable conditions for social and economic development [10]. In the late 1980s, the government identified the country’s hydropower potential as a major natural resource that could help generate the revenue and energy needed to kick-start Laos’s economic development. Furthermore, Laos has huge potential for hydropower development and is able to provide further electric energy to other ASEAN members such as Thailand and Vietnam. Laos has planned to transform itself to become the ‘Battery of ASEAN’ and so rid itself of the status of least developed country by 2020 [11].

By 2013, about 136 hydropower projects with the expectation of installed capacity of 21,906 MW signed their contracts for hydropower development projects through nationwide. About 74 projects are under memorandum of understanding (MOU) for feasibility study and starting construction after 2020, 12 signed project development agreement (PDA) and starting construction before 2015, 28 signed concession agreement (CA) and more than 22 hydropower projects signed concession operational delivery (COD) with totally installed capacity of 3,205 megawatts have been operated in the country. The concerned sectors expect an additional 40 to 50 projects to be operational by 2015 [12]. These are larger hydropower projects including Nam Theun2, Nam Ngum2, Nam Theun Hinboun, Nam Xekhaman3, Nam Ngum1 and so forth. The Nam (in Lao word), refers to water or stream. Nam or Menam also represents the river (mother of river) such as Me Nam Kong (Mekong), Me Nam Ngum, Me Nam Xe, so on, but Lao people always call Nam Ngum, Nam Kong, etc.

Those major projects have provided the better infrastructural facilities, the largest clean and renewable energy source and they have played essential role in the local, national, and regional energy mix. However, those larger hydropower projects have made negative impacts on environmental, social, psychological, economic and resettlement issues. Actually, Laos has initiative experienced in first involuntary resettlement implementation of Nam Ngum1 Hydropower (NN1) Project during 1960s to 1970s. The NN1 project relocated more than 23 villages, 570 households, 3,242 people and there was not clear compensation implementation giving to those projects affected people (PAP) at that period. Based on available papers, there are very few studies and papers on resettlement and livelihood rehabilitation caused by hydropower projects in Laos. However, the authors could not find any paper that has been carried out on the livelihood rehabilitation of PAP caused by Nam Ngum (NN2) hydropower project. Thus, this study aimed to examine the characteristic impacts and new livelihood rehabilitation activities based on management functions, SWOT analysis, comparative analysis, and lessons learnt on livelihood rehabilitation from affected villages to new Phonsavath town caused by NN2 hydropower project in Laos.

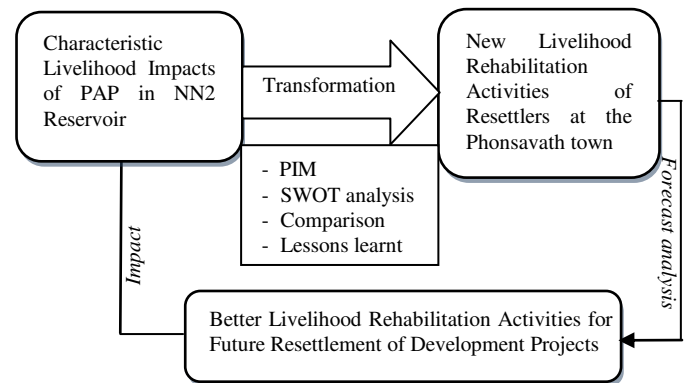
II. METHODOLOGY

This study used descriptive method based on management and documentary studies by combining both qualitative and quantitative approaches to describe and analyze the livelihood rehabilitation of PAPs from villages to town caused by NN2 hydropower project. The study applied management functions in planning, implementing and monitoring (PIM) of livelihood rehabilitation activities among PAP.

In addition, the study was followed techniques for data gathering: interview, in-depth interview, focused group discussion, observation and the use of existing documentary sources included environmental and social impact assessment (ESIA) reports, social development plan (SDP), resettlement action plan (RAP), ethnic minority development plan (EMDP) and other progress reports of NN2 project. A total of 14 key informants and 225 respondents (out of 1,122 resettled families) were part of this study. The method of selecting the respondents was non-probability sampling by using the purposive sampling. The SWOT was used as a analysis mode for analyzing and emphasizing the livelihood rehabilitation activities.

The data were treated by two modes. For quantitative data were checked, categorized, coded and tabulated into each category, frequency, and percentage by using statistical package for social sciences (SPSS). While qualitative data were grouped and analyzed SWOT according to the similarities and differentiations by classifying them into categories. The data were only emphasized the livelihood rehabilitation of PAP during transitional period (2009-2015). Finally, the paper was presented, analyzed and interpreted qualitatively and quantitatively. The conceptual framework of this study was also drawn in the (figure 1).

Figure 1. Conceptual framework of the study



III. FINDING

A. Profile of NN2 hydropower project

Nam Ngum2 (NN2) Hydropower Project is located in Saysomboon province, Lao PDR; it lies roughly at 90 km north of the Vientiane capital, approximately 35 km upstream of the existing Nam Ngum1 (NN1) dam. It is located on the Nam Ngum River, which is one of the major tributaries to the Mekong River. The project is with an installed capacity of 615 MW being built to produce energy for the Thai electricity grid and all the output will be sold to the Electricity Generating Authority of Thailand (EGAT). The project comprised cofferdams, two river diversion tunnels, a concrete

faced rock fill dam of 185 m height, a gated spillway with chute and flip bucket and a power waterway system consisting of a headrace tunnel, manifold and three inclined pressure shafts which are steel lined and an above-ground powerhouse with 3x205 MW units and is to produce ~2'220 GWh of energy per year. The reservoir volume is approximately 4'200 million m³ [13]. The NN2 hydropower project is owned by CH. Karnchang of Thailand (28.5%), EDL of Laos (25%), Rathchabury of Thailand (25%), Bangkok Express of Thailand (12.5%), Shalapak Group of USA (4%), PT Construction of Laos (4%), and the Team of Thailand (1%). As found, the Pöyry Energy Ltd of Switzerland and NN2 Power Company Ltd served as independent engineers during the construction while PT Development Co; Ltd of Laos was selected as a responsible company for the resettlement and compensation management.

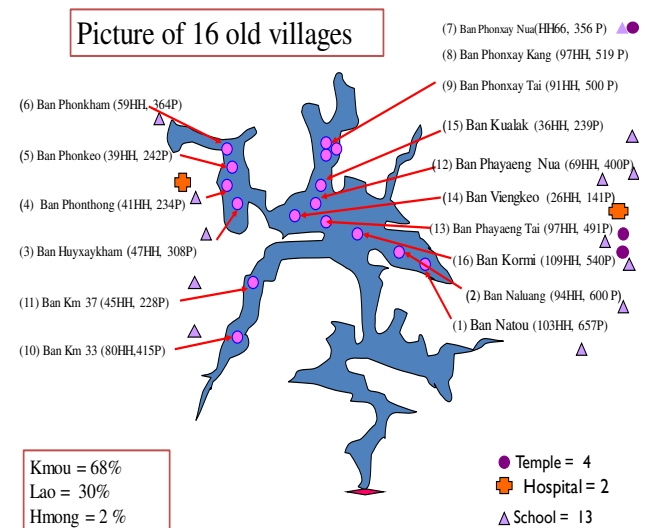
B. Characteristic impacts of NN2 project

Actually, the reasons behind the construction of NN2 hydropower project were not only for renewable and energy supply, but also included to eradicate insecurity and poor living conditions among rural people, who still lived under poverty line, according to the national standard on development and poverty. As recorded in ESIA reports of NN2 project, almost PAP/ resettlers in NN2 reservoir were engaged in agricultural activities for planting lowland and upland rice fields, feeding animals, hunting, fishing, collecting non-timber forest products and so forth [14]. These agricultural activities could be more appropriately termed as ‘agrarian’ livelihoods system based on natural resources for food sources and income making.

An ‘agrarian’ system is a mode of livelihood. In contrast to ‘market oriented’ activities, an agrarian system does not optimize production or even produce for exchange. Farmers in this system produce just enough to support their food and non-food needed [15]. As approximated before resettlement of NN2 project, the lowest annual family income of PAP earned US\$ 59 and the higher annual family income per household was US\$ 109. On average, the GDP per capita of each PAP was about US\$ 10-19 per year. Unlikely, the construction of NN2 project had environmental, social, economic, cultural and livelihood impacts on rural communities at a large scale. Particularly, it affected 16 villages, 1,099 families and 6,234 PAPs and these also included 4 temples, 13 schools and 2 hospitals (figure 2).

However, all 16 affected villages, 1,053 families/ households and 5,772 PAPs who were Khmou (68%), Lao (30%) and Hmong (2%) were relocated from NN2 reservoir and they were put together at the same Phonsavath resettlement town. While after getting the crash compensation from project developers, more than 46 families and 462 PAP decided to move away to another new place in other provinces [16].

Figure 2. Sketch of 16 affected villages in NN2 reservoir



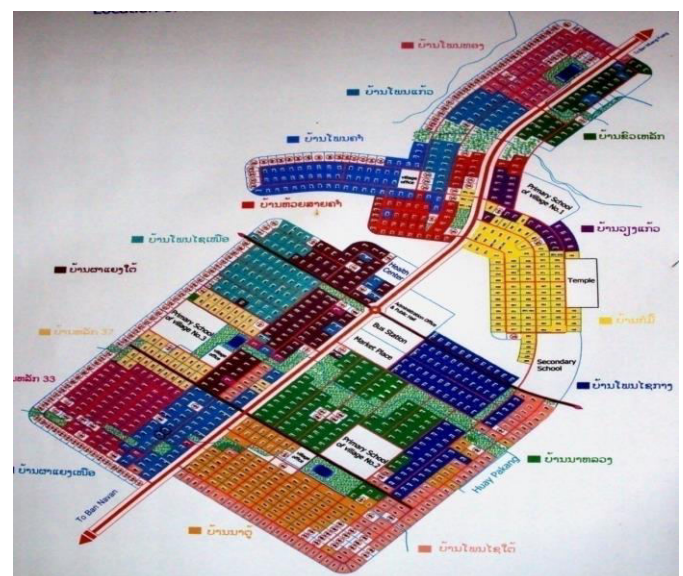
Source: PT Development Co; Ltd

C. Livelihood rehabilitation of resettlers at the new Phonsavath resettlement town

C1. Profile of new Phonsavath resettlement town

All 16 rural villages affected by NN2 project were put together at the new Phonsavath resettlement big village (*Ban Yai*) or town. The new Phonsavath resettlement town (PRT) was established on February 20th, 2010 and it is located about 7 kilometres from the northern of Feuang district (*Muang*), Vientiane Province. According to Lao word, ‘Phon’ refers to a raised area of small land, while ‘Savath’ means the light or colourful place. It also represents colourful and comfortable place where people can see everywhere and get everything. Actually, there were many reasons that local authorities and resettlers liked to name the village ‘Phonsavath’; for instance, six former villages (out of 16 affected villages) were named ‘Phon’. Likely, many Lao villagers also like to call ‘Phon’ as the name of their villages because it is very meaningful word according to Lao traditional beliefs and practices (figure3).

Figure 3 Sketch of new Phonsavath resettlement town.



Source: PT Development Co; Ltd

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The PRT shares borders with eight host-communities including Ban (*Village*) Konleang, Ban Sammouan, Ban Muangfuang, Ban Phosy, Ban Navan, Ban Nathua, Ban Tha and Ban Napheung. The PRT encompasses 1,031.29 hectares that cover about 122,94 hectares of residential land; 908,35 hectares of agricultural land, forestland, protected areas and surrounded by gold cliffs [17].

As of the year 2015, the local administration of new Phonsavath resettlement town was divided into 3 villages or sections (*Khum*) including Keomixay, Phonsavath and Saysamphan, 13 party units, 75 solidarity units. It is also integrated by 4 social organizations like Lao Front for National Construction (LFNC), Lao Youth's Revolutionary Union (LYRU), Lao Women Union (LWU) and Lao Trade Union (LTU). Recently, they are consisting of a head and 6 deputy heads of town, 75 solidarity unit heads. At the same time, head and deputy heads of social organizations were also appointed. The number of villagers at the PRT has increased to 1,442 households, 1,122 families and more than 6,479 people (3,151 females). These 122 people (67 females) are Hmong; 4,425 (2,176 females) of them are Khmou and 1,905 people (908 females) are Lao [18].

C2. PIM of livelihood rehabilitation among resettlers

The planning, implementing and monitoring (PIM) of livelihood rehabilitation among resettlers from villages to town caused by NN2 hydropower project were applied management functions. The original *planning* of livelihood activities was initiative designed by TEAM Consulting Engineering & Management Co; Ltd during 2005-2006 as a main part of social development plan (SDP), resettlement action plan (RAP) and ethnic minority development plan (EMDP) of NN2 hydropower project. Later on, the mater plans of livelihood rehabilitation activities were updated by PT Development Co; Ltd based on the comments of PAP and stakeholders in following the requirements of decree No. 192 on compensation and resettlement of development projects [19] and advices of local resettlement committees during 2007-2009. As of year 2007, those master plans were gotten approvals by provincial resettlement and environment committee (PREC). The planning of livelihood rehabilitation activities was involved by many sectors like PREC, district resettlement committee (DRC), village resettlement committee (VRC), resettlement - environment management and monitoring unit (REMMU), PAP and project owners through several consultation meetings.

Through *implementing* of livelihood rehabilitation activities, the PT Development Co; Ltd was implemented by arranging, structuring and working closely with local resettlement committees, concerned sectors, resettlers and stakeholders by following the specific agreement of PREC (No. 067) on compensation and livelihood rehabilitation standard for PAPs caused by NN2 project [20]. As promised, in making better livelihood activities and quality of life (QoL) among resettlers effectively, the PT Development Co; Ltd was,

- compensated major lost properties through property-cash and land-for-land compensations for land, tree, fruit, crop, rice, cassava and other necessities in different rates based on specific agreements and market values (table 1).

Table 1. Compensation rate for land, tree, fruit, crop, rice

Item	Unit	Quan.	Price (Lao kip)*	Remark
a. Land compensation				
Agricultural area (rice filed)	hectare	1	42 million	Disturbance fee for 6 years
Construction land	m ²	1	6,000-10,000	
Garden land	m ²	1	300	
Grass land for feeding animals	m ²	1	200	
b. Tree (Mai) compensation				
Hard wood tree (Mai Du/ Tae)	trunk	1	10,000-100,000	Base on age
Teak tree (Mai Sak)	trunk	1	10,000-80,000	Base on size
Perfumed tree (Mai Ketsana)	trunk	1	10,000-60,000	Base on age
Rubber tree (Yang Phala)	trunk	1	6,000-50,000	
Vick tree (Mai Vick)	trunk	1	5,000-30,000	Base on size
Bamboo tree (Mai Pong)	pile	1	2,000-3,000	
c. Fruitful tree (Ton) compensation (with disturbance fee for 6 years)				
Mango tree (Ton Muang)	trunk	1	5,000-23,000	
Papaya tree (Ton Houng)	trunk	1	5,000-22,000	
Jackfruit tree (Ton Mee)	trunk	1	5,000-12,000	
Banana tree (Ton Kuy)	trunk	1	5,000-11,000	Base on product
Other fruits	trunk	1	5,000-10,000	
d. Crop compensation				
Rice compensation	kilogram	1	1,500-4,000	
e. Rice compensation				
Rice compensation	kilogram	1	1,800-2,000	
f. Cassava compensation, others				
Cassava compensation, others	kilogram	1	1,500-2,000	

Remark: * Exchange rate in 2010, USD 1 was equal to 8,056 Lao kip
Source: Synthesized by author based on the PREC of NN2 project

- provided basic social services like foods, water supply, electric power, health care and other necessities during the transitional period.
- established the vocational working groups for both on-farm and off-farm livelihood rehabilitation activities.
- provided about 0.5 hectares of agricultural area (on-farmland) for all 1.053 resettled families together with agricultural inputs/ facilities and technical services on the livelihood rehabilitations activities.
- rehabilitated new livelihood activities through both on-farm and off-farm activities. For those on-farm activities included feeding animals and insects, fishing fishes, planting rice, mushrooms, vegetables, rubbers, fruits, and so forth. For off-farm activities consisted of handicraft making, Lao skirts weaving, blacksmithing, trading, micro-credit (village development fund), gold collecting, beauty serving and others.
- increased the annual income of resettled family (figure4) and the GDP per capita of resettler that was higher rate than baseline data in several times (figure5). Major resettled families have learned higher annual income than income target.

Figure 4. Annual income of resettled families in 2014 (Lao kip)

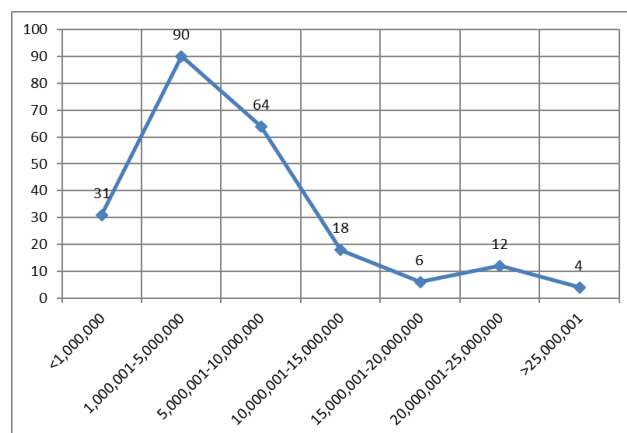
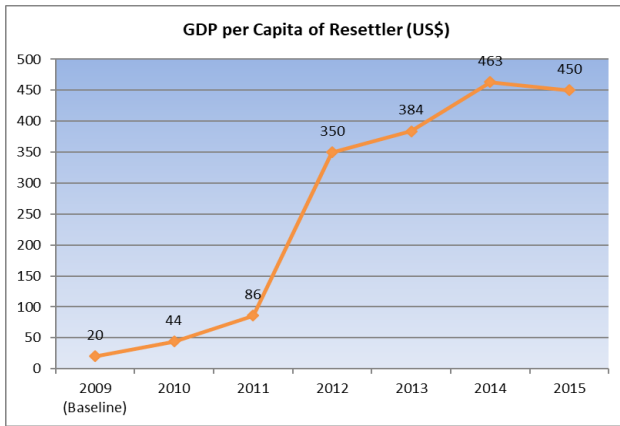


Figure 5. Annually Average GDP per capita of resettler during transitional period (2009-2015)



- reduced the number of poor/ vulnerable, and satisfied families who lived under the poverty line (table 2) and also implemented 8 millennium development goals (MDGs).
- provided several meetings, study tours and trainings on new knowledge, attitude and skill for transforming from agrarian livelihoods system to market livelihood system in the pre-industrial setup at the new Phonsavath resettlement town.
- As found during the *monitoring* of livelihood rehabilitation activities, the PT Development Co; Ltd was signed a sub-contract with Asia Consulting Group (ACG) as an independent agency for monitoring the livelihood rehabilitation and agricultural activities among resettlers. The internal monitoring was carried out by PT Development Co; Ltd, PREC, DRC, VRC, REMMU and resettled families as well while the external monitoring was done by ACG and other concerned sectors.

Table 2. Resettled family status during transitional period

Family Status	2012		2013		2014		2015	
	Amount	%	Amount	%	Amount	%	Amount	%
Well-off	82	8	615	57	779	69	813	73
Middle	550	52	136	13	255	23	250	23
Satisfied	355	34	279	26	43	4	25	2
Poor	66	6	54	5	45	4	20	2
Total	1,053	100	1,084	100	1,122	100	1,108	100

C3. SWOT analysis of livelihood rehabilitation program among resettlers

Based on the results of strengths, weaknesses, opportunities and threats (SWOT) analysis of livelihood rehabilitation activities found in this study, some *strengths* are in place, including available financial and technical resources; creating new participatory approach in PIM on livelihood activities; respecting the instructions and advices; gaining new knowledge, attitude and skill on market livelihood; increasing annual income and average GDP per capita; creating new mechanism management of village development fund and so forth. However, several *weaknesses* are still existed such as the domination of agrarian livelihood system, too dense population town, lack of natural resources for food sources and on-farm activities, without irrigation system, mountainous area, limited finance and technical supports, and lack of formal knowledge and skill in dealing with new market livelihood orientation. Likely, there are many *opportunities* from practice of livelihood rehabilitation activities including

more advices and recommendations for making better QoL, clear strategy on annual income target, implementing 8 MDGs, becoming a new case for transforming from agrarian livelihood to market livelihood systems, supporting the requirement on rural development of the country, and providing good chances for resettlers to re-think, reflect, plan and to improve the QoL through future development. Unlikely, many *threats* are comprised of a shadow for poor/ vulnerable and satisfied families who have lived lower than poverty line, hard getting profit and finding real market for some on-farm and off-farm activities, destruction of mixed plantations and biodiversity systems, PIM were based from out-inside rather than in-outside approach, monitoring mode was based more on average of GDP per capita rather than promoting real income and well- being of each family, without factory or company that can offer permanent job and income generation, and internal migration issues. From this resettlement case, some constraints are still existed and these livelihood rehabilitation activities should be addressed by project developers, PAP/ resettlers and concerned sectors.

C4. Comparative analysis of livelihood activities in NN2 reservoir and at the new town

This study emphasized that, there are some similar livelihood activities such as from rural to rural living, still practicing the agrarian livelihood system and several on-farm and off-farm activities were rehabilitated as similar items. However, there are major different livelihood activities between old and new sites. Major PAP in NN2 reservoir were farmers, hunters, and even they received lower annual income than poverty line but they were enjoyed with food sources and agrarian livelihoods system that based on the wealthy conditions of natural resources. On another side, major resettlers at the new Phonsavath town are laborers, traders, farmers who may gain higher annual income but the livelihoods system are based more on day-to-day market orientation. Additionally, the results from this resettlement practice, are transformed from agrarian livelihoods system to market livelihoods orientation, from hill farmers and hunters to laborers and traders, from lower to higher annual income and average GDP per capita, and from inaccessible to accessible new knowledge, attitude and skill on QoL development towards the sustainable development concept. This study highlighted that, even major resettlers receive lower GDP per capita than nationwide but they could continue improving their QoL since they can access to natural resources that are available in other host-communities.

D. Discussion

Although, the livelihood rehabilitation activities among resettlers are more complicated rather than other aspects like administration, housing and construction, public facilities and physical reconstructions. These are common understanding for many project developers, the livelihood rehabilitation activities shall be taken more time, finance and these shall be depended on the available resources, educational level, occupational training and income creation among resettlers. As found during *planning*, the project developers and planners were applied three functions of management functions in PIM of livelihood rehabilitation. But the planning of livelihood activities was not setup clear goals and strategies toward sustainable livelihood development for resettlers in

the long run, except there were only setup income target and livelihood rehabilitation through both on-farm and off-farm activities. This practice was a little contrast with the management functions believe that, planning should involve setting goals, establishing strategies for achieving those goals, and developing plans to integrate and coordinate activities [21]. Of course, the planning of livelihood activities was involved by many sectors like PREC, DRC, VRC, resettlers and project developers in following related policies and specific agreements. However, it seemed almost creative activities and decision-making were made by project developers rather than the decision-making of resettled families/ resettlers. As preferred, the effective plans should be crafted to fit the particular project context, it should be elicited positive response from the effected population, resettlement plans should be conceived as development opportunities, resettlement plans should do not be conceived as blueprints [22]. The blueprint approach for resettlement planning is a rigid process ignoring the need for community participation and the dynamic factors involved. Its focus was on resettlement site development, infrastructure reconstruction, and physical relocation rather than livelihood development. A development approach for resettlement requires resettlement planning to be open, consultative, inclusive, and adaptive [23]. The plan is to ensure that livelihoods and standards of living of displaced persons are improved, or at least restored to pre-project (physical and/or economic) levels and that the standards of living of the displaced poor and other vulnerable groups are improved, not merely restored, by providing adequate housing, security of land tenure and steady income and livelihood sources [24]. Through *implementing* of livelihood rehabilitation activities was complicated in transforming rural resettlers from arraign livelihoods system to market orientation through pre-industrial setup. Thus, future implementing of livelihood rehabilitation activities should arrange, structure and work closely with many local resettlement committees, concerned sectors, resettlers and project developers. In addition, the administrative, legal, land, water and financial considerations were played critical part for livelihood rehabilitation activities in this resettlement project. To make better monitoring of livelihood activities, the project developers and concerned sectors should increase independent monitors who have experienced in engineering, environmental, agricultural, social, economic, resettlement and management sciences. As existed, it is transformed from agrarian livelihood to market livelihood systems, from hill farmers and hunters to laborers and traders and from lower to higher annual income or/ and the average GDP per capita of resettled family/ person. These transformations are needed by hydropower resettlement project, development projects and other concerned sectors that aim to provide resettled people alternative approach for new development without using natural resources but their living condition can still be grown up rapidly. This approach needs rural resettlers to have more knowledge, attitude and skill (KAS) for managing the QoL toward sustainable future development. Those new transformations have practiced transformation direction but this is a little far from real transformation believed that, the transformation is change process based on more about subject changes (spiritual and social aspects), but it is not object (physical and economic changes). The transformation is based on the knowledge centers into wisdom from knowing to learning how to live

holistically [25]. This study also provided some considerations that could be applicable to future livelihood rehabilitation among PAP/ resettlers caused by resettlement of development projects are as follow,

- In the agricultural societies like Laos, the main purpose of new resettlement should be considered more about agricultural area, irrigation, food sources and suitable place for planting rice, crops, and for feeding big animals.
- The case of Phonsavath resettlement town showed that, even many resettlers get lower income in comparing with nationwide GDP per capita but they can continue to live because many of them go out to find food sources far away from host communities. Thus, the natural resources should be paid attention for future PIM of resettlement program.
- In many developing countries, the water irrigation system is still become the most effective factor for agricultural or on-farm activities and livelihood development among local farmers. Without water irrigation system or river is in place, this will be hard for farmers to have a better livelihood condition.
- The animals feeding, the rubbers and crops plantation may get some profits in the long run but this is easy to get the risk by other diseases. Thus, available technical and agricultural doctors at the field work may help to prevent some risks.
- It will be more successful for livelihood rehabilitation activities among resettlers if there are available graduates on agricultural studies who work with the grassroots like village or town level.
- Some off-farm activities such as the handicraft making and Lao skirt weaving are good opportunities among makers but they are hard to find the real market. The new market orientating and training will help to overcome these changes.
- Almost financial and technical supports have gained from project developers but the local resources are limited. Thus, learning how to raise or/ and access some financial support from other development projects will be most important recommendation.
- Since the village development fund is a good alternative approach for livelihood development but the available finance is limited, this shall be promoted to other resettled families to be a formal member.
- The benefit sharing through direction and indirection from project developers should be discussed in detail for longer run. This can be contributed to poverty reduction activities, village development fund and increased the socio-economic condition among resettlers towards the green and sustainable town.
- Too many resettlers have stayed at the same town and many of them may not be able to find a permanent job and income generation, so that the available factory or company at the new town will provide them some work and income. As resulted, many laborers or workers may not go out to find the work in other provinces and this may help to prevent internal migration automatically.
- For those poor families who have not enough laborers, income, properties and they are still lived lower than poverty line according to national standard. Thus, the social work for resettlement should be initiative identify, create and promote during the project PIM phases. As viewpoints of social work, it is professional helping of poor /vulnerable individual, groups, villages or

communities to enhance their capacities, skills, jobs and the qualities of life through better conditions.

- Too many resettlers put together at the same town without natural resources, this could make crowd, jobless, and insecure food sources, thus the distribution of resettlers into different place in other provinces should be promoted for future resettlement project.
- Transforming local resettlers from agrarian livelihoods system to market livelihood orientation may not be implemented easily since they are not ready in terms of knowledge, attitude and skill, thus the formal training on market orientation and financial supports should be carried out continuously.

IV. CONCLUSION

The reasons behind the construction of NN2 hydropower project were not only for renewable and energy supply but also included to eradicate insecurity and poor living conditions among rural resettlers who were depended on agrarian livelihoods system. Unlikely, NN2 hydropower project had several impacts on multiple local administration system, traditional houses and unlimited construction land, lost public and private facilities, and livelihood system of affected villagers in NN2 reservoir at a large scale. They were relocated from NN2 reservoir and they were put together at the same Phonsavath resettlement town while more than 46 families and 462 PAP decided moving away to another new place in other provinces.

Almost PIM of livelihood rehabilitation activities at the new town were completed by PT Development Co; Ltd in consultation with local resettlement committees (PREC, DRC, VRC) and PAPs based on preferable decree 192 and specific agreements on compensation and livelihood rehabilitation standard for PAPs caused by NN2 hydropower project. The livelihood activities among resettlers were rehabilitated by compensating major lost properties, providing social services during transitional period, establishing vocational working groups, providing about 0.5 hectare of agricultural area and its inputs for every family, practicing both on-farm and off-farm activities, increasing annual income and GDP per capita, reducing poverty, implementing 8 MDGs and also enhancing vocational capacities. These create some strengths and opportunities among resettlers for practicing market orientation but many weaknesses and threats on vocational training, job, income, food insecurity and migrant labour are still existed.

This study concluded that PIM of livelihood activities from 16 affected villages in NN2 reservoir to new Phonsavath town caused by NN2 hydropower project are applied management functions and the livelihood rehabilitation activities have tried to practice the transformative direction but these are little far from this perspective. Based on the foregoing findings and discussions, the recommendations are offered to project developers, concerned sectors, town authorities and PAP/resettlers in PIM future resettlement of development projects.

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