

THE DEVELOPING OF NATURAL RESOURCES DATABASE FOR SUPPORTING SUB-DISTRICT DEVELOPMENT PLAN BY USING PARTICIPATORY MAPPING (P-MAPPING) A CASE OF PHATTHALUNG PROVINCE, THAILAND

Anisara Pensuk Tibkaew^{a*} and Romanee Thongdara^b

^a Lecturer, Thaksin University, Phatthalung, 93110, Thailand Tel: +66(84)1232268;

Fax: +66(74)6939996, E-mail: anisara.pensuk@gmail.com

^b Lecturer, Mahidol University, Puttamonthon, Nakorn Pathom 73170, Thailand

Tel: +66(81)8084208, E-mail: romanee_t@yahoo.com

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Abstract: The sub-district development plan in Thailand is normally designed by the local government according to urgently required of their population. There are frequently found that the projects under the development plan consequences negative effects to the adjacent or other sub-districts, especially for the natural resources related plans, e.g. water resource, the permanently constructions, etc. This study aims to develop the natural resources database of Lamsin District in order to be helpful for the local government on developing the sub-district plan as it can help showing the nearby natural resources to be aware of. The Participatory Mapping (P-Mapping) was the main method used, the local sub-district member were called for meeting and share their knowledge about their natural resources and drew them on the simple way and their drawing maps were encoded into GIS file format as the official maps for each sub-district and. The official maps in GIS format were initially used by the sub-district members to design their own plan before reconsider by the local government to publish as the yearly sub-district government plan.

INTRODUCTION

People always play an important role on the natural resources as they use the resources for their livelihood. Hundreds of millions of people around the world rely on natural resources for their livelihoods. For example, an estimated 250 million people in developing countries directly depend on small-scale fisheries for food and income. In India alone, some 50 million people are directly dependent on forests for their subsistence (WWF, 2012). Poor countries depend on natural resources much more than richer countries. A quarter of the total wealth of low-income countries comes from 'natural capital', according to the World Bank, compared to only 2% in wealthier nations.

The activities of the human for example, agricultural activities has highly impacts on natural resources as they use natural resources as the means of living. The degradation of natural resources can cause negative impacts on people livelihood.

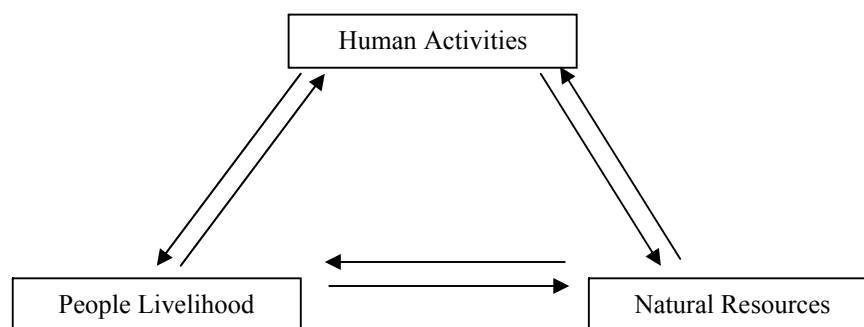


Figure 1: The relationship of natural resources and people livelihood

Recently, the mapped data of the resources become an important part of resource planning (Berry, 1991) in order to use as a useful mean for decision maker to develop plans and strategies. On the other hand, given the direct dependence on natural resources of the rural people, more effective local management has been considered as a key to achieve the sustainable use of resources (Kellert et al., 2000)

In addition to the decentralization policy of Thai government, the local governance has to major responsibility to establish the annual sub-district development plan, usually the annual sub-district plan has been doing by using the public hearing approach in order to obtain the participation from the representative from local people.

The objective of the study is to develop the resources map in sub-district level in order to be the tool for establish the annual sub-district development plan which should also concern about the natural resources within their area.

METHODS

1. The study area

Lamsin sub-district, Phatthalung province, southern Thailand was selected to conduct the research as it is locating on the high elevation where high potential of the occurrence of land slide (Department of Mineral Resources, 2012). Due to the sensitivity of the area on natural resources, any kind of projects implementation within the area can cause negatively impacts on the resources and finally to the livelihood of the local people.



Figure 1: The satellite image of Lamsin sub-district (The study area)

2. Methodology

The Participatory Mapping (P-Mapping) was the main method used, the local sub-district member were called for meeting and share their knowledge about their natural resources and drew them on the simple way. The formal and scaled maps were produced by using GIS software (ArcMap) and the GPS to identify the accurate co-ordinate of point of interest, area of resources etc. The local people's drawing maps were encoded into GIS format. Then, the maps were initially used by the sub-district members to design their own development plan.

RESULTS

1. The local people's drawing maps

In order to be obtained the information to develop the resources database, the participatory of local people is very important as they are the ones who have the direct impacts from the natural resources. The local people, especially the village leaders of each village were called for the meeting to provide the information about their natural resources and also their important places of their villages (Figure 2).

During the meeting, the village representatives also perceived that there are natural resources problems occurred in their sub-district. There were various serious natural resources problems perceived by the villagers, for example flash flooding, the encroachment of rubber plantation on the natural forest. However, the problems of each village were different depending on their living location.

After obtained the drawing maps of natural resources from villagers meeting, the drawing maps were encoded into GIS format (Figure 3) and the GIS format map were used to be the information of the villagers to use for their annual sub-district development plan for the year 2013.

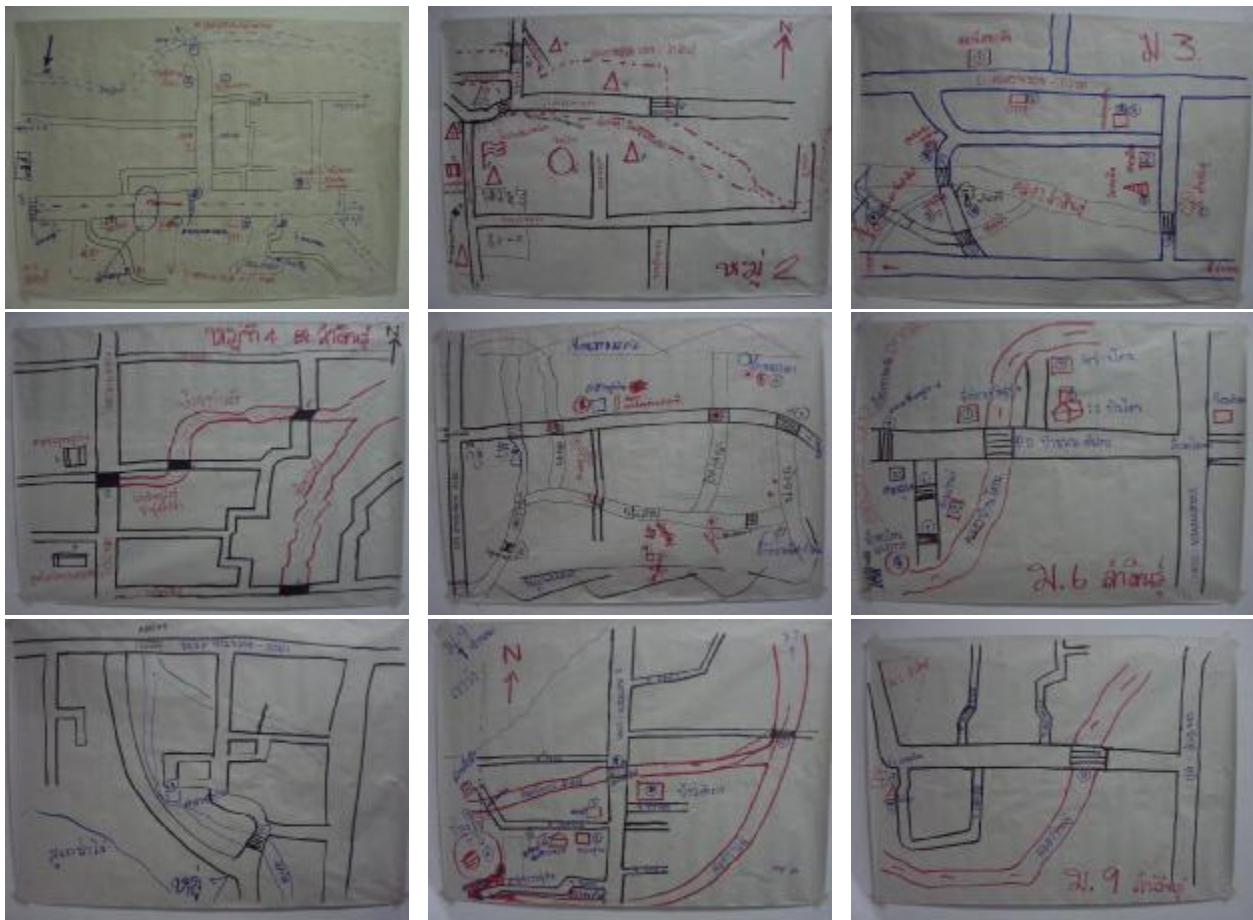


Figure 2: The drawing maps of natural resources and village's important points

2. The sub-district development plans developed by the villagers

The developed plans can be classified into 3 main categories – i) construction plans, e.g. road, water supply system ii) educated plans, e.g. initiating substitute career for women farmers, agricultural techniques iii) natural resources conservation plans, e.g. vetiver grass for soil conservation, fish species conservation.

There were about 20 plans were developed for each village and 50% out of the total plans were the construction plans especially, the road construction plans. There was only 1 plan for a village can be considered as the natural resources conservation plan.

DISCUSSION

Due to the developed plans have highly relevant to the budget, therefore most of the plans developed by the community responded to support their convenient, for example constructing the transportation routes for their commutation and transportation of their agricultural production.

The community has well understanding of their own areas in general information e.g. land use, natural streams, natural resources but they are having less knowledge of the conservation information e.g. watershed classes, which is important as their area are locating at the high elevated area, the mismanagement of any activities can cause negative effects on their livelihood.

The challenging is the interpreting the formal information e.g. the disaster risk area to local people knowledge in the simple way in order to be the source for making decision on developing plans to avoid adverse effects to the community.

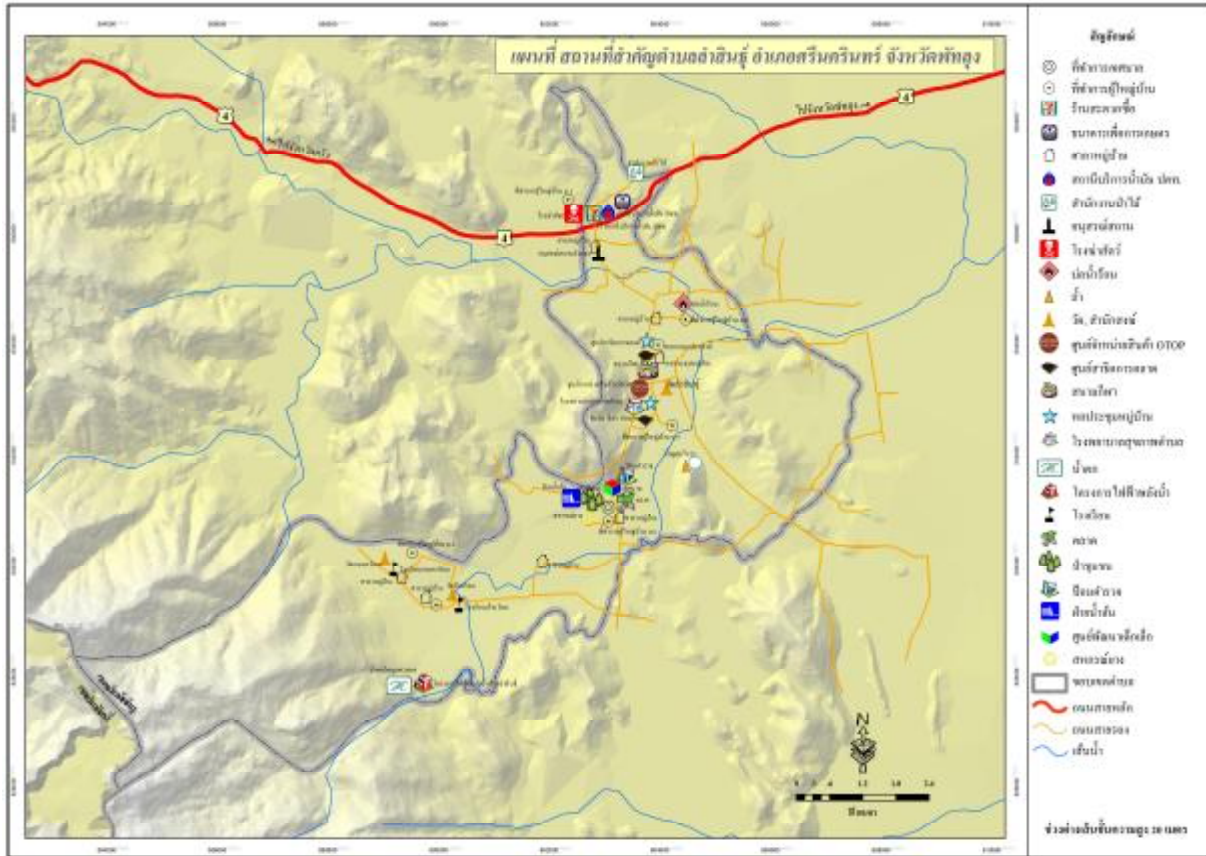


Figure 3: The scaled GIS format map of natural resources and village's important points

CONCLUSIONS & RECOMMENDATIONS

The community plan was conceptually developed based on the problems at the local level by the community people themselves as understood as the ones who is directly affected to the problems. The method of the study was separately divided into 2 parts, the first part was problem hearing and resources map drawing whereas the second part was the development of the community plan. At the stage of problem hearing, the local people was clearly specify the natural resources problems e.g. the water scarcity, the water quality problem, the encroachment of rubber plantation on the protected forest but in the part of developing the community plan the mentioned problems were not included in the plans. There are few points to be considered, i) if the decentralization to the local government and the plan developed by the local community response to the real problem happens in the area ii) the natural resources development plans should be initiated by the local community or the central government and iii) what should be the appropriate media to bridge the unofficial information e.g. the local knowledge to the official information e.g. GIS data in the same format.

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