ENVIRONMENTAL MANAGEMENT KNOWLEDGE AND PRACTICE TRANSFER PROCESS OF SUB-DISTRICT ADMINISTRATIVE ORGANIZATION OFPHITSANULOK PROVINCE

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Abstract - This research aims to propose environmental management knowledge and practice transfer process to Sub-District administrative organization of Phitsanulok Province. This article is a partial of the research "Environmental Management Knowledge and Practice Transfer Process to Sub-District Administrative Organization of Phitsanulok Province. The objectives of this research are to propose environmental management knowledge and practice transfer process of sub-district administrative organization of Phitsanulok province. This study is a qualitative study. Data were collected through in-depth interviews, participatory observation, and non-participatory observation. Content analysis techniques was used in the data analysis. Methodological Triangulation is used to test the reliability of the data. The research found that knowledge and best practice transfer process to Sub-District administrative organization of Phitsanulok province is PARTICIPATION Model; Participatory Planning, Participatory Learning Process, Participatory Measurement and Evaluation, and Participatory Benefit and Utilization. Key success factors are participatory commitment in all steps of environmental operations and people strong motivation based on love, hope, power, and faith.

Keyword - Environmental Management Knowledge and Practices, Environmental Management of Local Organization, Participatory Environmental Management

I. INTRODUCTION

The environmental problems in Phitsanulok one the major province in the north of Thailand are getting more intense as the problems are now expanding outside the city area. Size of the cities in this province are also expanding. As supports by many incidences, the problem of local government related to their responsibility is where to get rid of city waste; one district desperately chose decaying forest area to use as city waste landfill. To solve this problem sustainably, many researches support the zero-waste concept which is a set of principles focused on waste prevention that encourages the redesign of resource life cycles so that all products are reused. This can start from where the waste was started such as private houses and markets, private business places and public organizations. To make this method works at the community level, we need an efficient local government.

Sub-District Administrative Organization (SAO) is the local authority that is closest to the people. The administers of this organization are chosen by the people in the area. Key success factors of this level of government are their vision, the transfer of knowledge inside, the systematic cooperation, strong leadership, skill and experienced staffs, listening to outside opinion, allowing people to have project initiation, close evaluation of the project and supporting budget. Fortunately, income of local government has been increasing continuously. Their duties and responsibilities are also increasing. Some works were transferred from the government including environmental management. Therefore, they must balance, among many things, local development, organization development, organizational finance and local people participation. To be success at organization level, the success at the project is one the key factor. Like other problems, environment management requires an efficient government with the right environmental management vision, environmental knowledge, sharing culture among stakeholders in the area, flexible organization (less barriers among departments), active and responsible staffs, measurements of operation and most people participation. Bound by long-term national strategy on natural conservation, it is SAO duty to move forward by an effective management process.

II. RESEARCH OBJECTIVE

To proposea transfer process of the environmental management knowledge and practice for Sub-district Administrative Organization in Phitsanulok, Thailand

III. LITERATION REVIEWS

Knowledge transfer models

In an organization, big or small, knowledge is regarded as a means to overcome psychological barriers such as ignorance and misinformation; it is viewed as a necessary, though generally insufficient, precondition for successful action. Knowledge helps supporting mechanisms that facilitate behavior change. There are many forms of knowledge; form that is close to action is called procedural knowledge, the knowledge that transforms factual knowledge into action. With a better understanding of the interrelationship of different types of knowledge, the organizational changing behavior can become a more scientifically informed process.

Within the context of an organization, knowledge can

be transferred through social interchange. The flow of knowledge may be extremely rapid and circulatory as we can see in the case of active learning. The quality of organization and staffs depend on the ability of leaders and staffs to acquire, organize, share, use and even create new knowledge. To take advantage of the intellectual assets they already have both inside and outside an individual is a necessary process to improve the organization's performance (Pasaribu, Gumilar, Rizanti, & Rohajawati, 2017). Organizations with limited resources has to tackle even more as required knowledge is technical and complicated.

The transfer of environmental management knowledge and practice

There are 3 types of environmental knowledge. System knowledge is about the natural state of ecosystems, the processes within the system, the answer to the question of how it operates such as the relationship between carbon dioxide (CO_2) and global climate change; it is about "knowing what", a rational knowledge of the environment.

The second type of environmental knowledge is about actions and courses of actions to solve environmental problems, what can be done about this problem; it is about "knowing how" a task knowledge that can be called "action-related knowledge".

Some knowledge in this group is related directly to action such as using car less than regular use in order to reduce CO_2. Other type of knowledge is not directly related such as using products that were made by recycle materials. The effects of these actions could be measured and compared to identify the most effective actions. This third type of knowledge can be called "effectiveness knowledge". Comparing the effect of these 3 types of knowledge, we have found that action knowledge and effectiveness knowledge had the influence on conservation behavior significantly while system knowledge was not. (Jacqueline, Kaiser, & Wilson, 2014). The system knowledge affected the conservation behavior of the people (in Switzerland) indirectly but it has influenced action and effective knowledge directly. The impact on action was higher in the case of action knowledge than effective knowledge. The issues concerning knowledge usage in the environmental management is the level of knowledge, especially effectiveness knowledge. One of the major problem is their limited budget; usually, it is not enough to measure the operations and its results as it should. Without the data, it is difficult to make accurate conservation decision. This issue has been solved naturally by gathering all other resources from inside and outside the organization or community through participation of some kind in the community.

IV. RESEARCH RESULTS

Phitsanulok local government and environmental management

There are 83 sub-districts in the Phitsanulok province. The population in the SAO in the city area is around 20,000 while the population in the remote area close to mountain is around 10,000. The environmental problems normally are in the city district called Tambon. We found that the problems normally were concentrated in the city center of the province and its close perimeter.At the city municipality level, the success environmental management depends very much on leader vision with environmental policies, enough financial supports, dedicated responsible and informed personnel and the use of latest technology. Beside these internal factors, the emphasis should be on participation of the communities and cooperation from other government agencies, related private sectors and international experts (Pobun, 2008)

The transfer process of environmental management and practice

Experiences from SAO in Phitsanulok about key factors in environmental management were relatively supported by evidences in other countries. In developed countries like Canada, problems caused by the environment such as public health required effective long-term collaboration between science, policy and environmental public health (EPH) practitioners at all levels in order to facilitate coordinated deployment of multi-sectoral/jurisdictional resources when and where they are most needed (Genereux, Lafontaine, & Eykelbosh, 2019). To work with complicated problems, therefore, need a form of participation to bring in all information and experiences as much as possible especially in the case of emergency or in the case that damages already affected people in the problem areas.

Participatory transfer process of environmental knowledge and practice

To have participation implemented at each stage of environmental management, we should be aware that all actions are also knowledge management actions even though I may or may not be measurable. Intuitively, we know that every action beside past experience we had, data, information and knowledge of those particular tasks will determine the quality our actions and solutions. Therefore, details of works in environment such as protection, assessment, improvement and planning should be assisted with skills and tools in knowledge management so that at the end leaders and staffs could make their decision accurately and correctly.

Evidences from our research indicate that 3 types of knowledge on the environment could be acquired and managed effectively through the participation of staffs at the SAO and people in the communities. So, in this context, participatory actions mean integrating knowledge from all stakeholders involved. To be precise, we may define types of participation as follows.

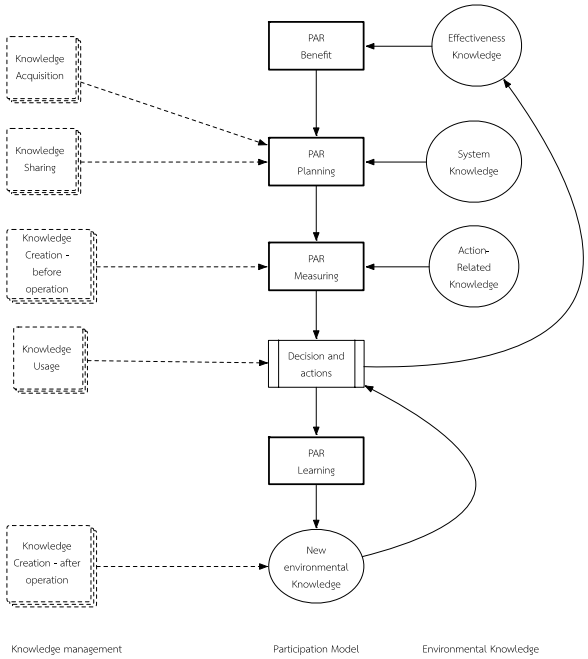
Participatory planning means the collection of what all parties in the community should do to correct environmental problems.

Participatory measurement and evaluation mean the process of quantifying all environmental data and changing it into valuable data.

Participatory learning process means the collection of experience from environment management in the area.

Participatory benefit and utilization mean the managerial and financial benefit from the management and the utilization of environmental protection and waste management. Qualitative benefit is also measured in the form of feeling that by working in harmony the system they continue bringing a healthy life to everybody in the community.

Figure 1 below demonstrates flow of participations in environmental management and related knowledge management. Each group of participation represents what we have learned from the Phitsanulok's SAO environmental management activities and information from the analysis of previous researches and cases both in Thailand and other countries.



Figures 1 Transfer Process of Environmental knowledge management and practice of Sub-district Administrative Organization (SAO), Phitsanulok Province

Because the final formatting of your paper is limited in From figure 1, the environmental management practice and the knowledge management practice are actually in the same working process. The participatory at each level bring in the knowledge management practice with 3 different kinds of environmental knowledge.

In the middle of figure 1, the diagram shows that the transfer process of both environmental knowledge and practices normally run through the regular working process of the SAO. Started with "PAR benefit" or participatory benefit and utilization, this point of procedure is where SAO has to gather effectiveness knowledge which includes choices of actions related to the environmental solutions; for example, how to manage daily waste from the village, the operations that possibly save resources and at the same time achieve the demand of the community. To cover these extensive tasks, the organization needs pass experiences and lessons from other organizations with the same context.

Basic management principle is that the process will be efficient only in the case that results of organization are known, meaning data on the impacts of important actions can be observed and compared. It is clear and simple, but the implementation is very difficult. Since participation is at the core of all operations the evaluation should be done from different angles, reducing the chance of misinformation and misunderstanding.

Normally, the knowledge we gain from PAR benefit will be used in planning. This step is called PAR planning or participatory planning. Activities of this step should be in the form of cooperation from all sides of the communities. For SAO, the community is sub-district, the level of local government that comprise of many villages. Knowledge management activities at this point is in sharing and acquisition from all sources available. What the administers need here is the structure of all related knowledge. It consists of courses in ecology, the consequences of environmental problems and chain of impacts caused by the government policies (system knowledge). In fact, most data are unknown. The knowledge obtained sometimes is not specific to the problem at hand. The participatory actions of all stakeholders and holistic view of strong leader are a key factor here.

After planning stage. SAO has to work on the details of the operations. They need the knowledge of "how to" or practical knowledge; it is the action-related knowledge that link directly to what staffs must act following the choices chosen and planned from the beginning. This process is called PAR measuring or participatory measurement and evaluation, the step that need accuracy and precision of working procedures. For example, as the local government plan to reduce waste every year, what they have to do is find out how many people and organization should they get involved, what type of waste to be eliminated and what tactics should be applied for each type of participators. Without full participation of stakeholders, it's not easy to complete these practical requirements. In the knowledge management process, these actions are called knowledge usage process where knowledge both tacit and explicit are being used. Within this KM process, knowledge should be ready to be used. Specifically, knowledge has to be not only simple to understand but also easy to follow; it could be in the form of instruction or orders. The collection of data at this level will be very useful because it includes the results of planning, real action and performance. Systematically, this information could

be moved back to become effectiveness knowledge as shown by upper arrow of figure 1. Next step of operation is PAR learning or participatory learning process. The learning process are activities carried out to achieve objectives by individual, group or communities. This takes place in a cultural and social context, in which people combine their new knowledge with their previous cognitive structures (Thomas & Muga, 2014). The combination of experience from work and new knowledge just acquired before the operation could create a new one. The process could go back to the operation again, if there is a system of doing so, as indicated by the arrow line at the bottom of the diagram. For example, the use of EMS (Environmental Management System) could offer reviews of the operations whether it is consistent with the organization's values. (United States Environmental Protection Agency, 2017).

With all participatory activities including indicators of the best choice of action to planning, action supported by measured information, learning from the operations and creating new knowledge, SAO could achieve their environmental manage goals efficiently if they are able to realize that an effective knowledge management process can be conducted concurrently.

V. CONCLUSION

Evidences from this research support that the participatory efforts in environmental management could work in sync with knowledge management. The effectiveness knowledge (benefit of knowledge) is important for Sub-district Administrative Organization (SAO) in Thailand to improve their environmental management. However, the emphasis of SAO should concentrate on the measurement of actions in order to improve the whole system of environmental procedures. At the end, we come to realize that participatory at all level of environmental management means the collection of all possible data, information, knowledge as well as actions to suit today complicated and dynamic environmental problems.

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