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Developing a Knowledge Management Model for Self-reliant Communities

Chalard Chantarasombat
Mahasarakham University, chalard9@hotmail.com

Boonchom Srisa-ard
Mahasarakham University, Boonchom2004@yahoo.com

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Chalard Chantarasombat
Mahasarakham University
chalard9@hotmail.com

Boonchom Srisa-ard
Mahasarakham University
Boonchom2004@yahoo.com

Abstract

This study aimed to develop a knowledge management (KM) model for self-reliant communities. The areas and focus groups were Ban Nam Kliang and Ban Lao Rat Phatthana, Amphoe Wapi Pathum, Changwat Maha Sarakham with 8 groups and 40 persons. Mixed research methodologies were used. Results: 1) the developed community organization KM model consisted of these stages: community preparation; building motivations, awareness, participation promotion, and building visions; making plans/developing team potentials; implementing/plans in practice and work development; and summary evaluation. 2) Every organization group generated community knowledge managers. There were KM operations comprising: building, classifying, storing, implementing, sharing, and evaluating knowledge. 3) The focus groups showed their satisfaction with work operation as a whole at a high level. And 4) The factors of KM success of the community organizations included: enthusiasm about learning, leadership of the researcher and participants, participatory work climate, action learning, and work mechanisms (community organization KM centers).

Keywords

Developing Model, Knowledge Management, Self-reliant Communities, and Mixed Research Methodologies.

1. Introduction

Currently the world has rapid economic, social and technological changes. Present global competitions rely on knowledge. Modern society does not need only funds, labor, natural resources or raw materials for creating production values but also needs knowledge for creating added values and intellectual property. The needed knowledge must be basic, advanced, and applied knowledge for production and creation of different jobs. Development of the new body of knowledge can affect competitions and create the strength of community, organization, and institute which are regarded as the great importance for the progress of national development (Patthamasiriwat. 2004). In sharing knowledge, developing the new body of knowledge leading to innovations relying on advanced technology, and socioeconomic development, a strong knowledge foundation can cause knowledge proportions within and outside persons to change. An important element of knowledge management (KM) is the process of KM (Wichianpanya. 2005). Therefore, Thai society should promote knowledge builders and users to create added values and competitive capability with social purposes to make Thai society valuable, good to live in, and peaceful by using 5 religious principles. These 5 principles are: morality, intelligence, right economy, right state, and strong society. These are in accordance with National Plan for Economic and Social Development 9 (2002-2006). This plan determines development vision: The society is strong and balanced in 3 aspects, namely quality society, society of intelligence and learning, and society of unity and kindness to one another (Watthanasiritham. 2003).

In current society, the most valuable commodity is not resources, labor or money but it is knowledge. This is the age of the learning society. KM and learning process are the most important. Management of learning process for the community can help it discover and develop human potentials until it can rely on itself. Any strong community which can rely on itself must be on these 4 basic principles: 1) create reliability, 2) rehabilitate relationships, 3) develop management systems, and 4) learning process (Phongphit, Nanthasuwan, and Raekphinit. 2001).

All strong communities and organizations must be ready to learn. Self-reliant communities in Changwat Maha Sarakham have a variety of organizations such as cooperative group, occupation group, local wisdom group. There are interesting areas of learning, particularly Tambon Na Kha and Tambon Pracha Phatthana in Amphoe Wapi Pathum (Chantarasombat. 2004). These communities regard principles of community welfare and community enterprises as guidelines for self-reliance. They began activities by forming occupation groups, using available local raw materials to be transformed and using local wisdom to adjust to current situations. There is a trend to be able to create jobs and occupations for community people to rely on themselves. However, they still lack systematic KM and mechanisms to support the communities to work efficiently and continuously. Thus the researcher was interested in conducting this study to develop a KM model for self-reliant communities in the area of Changwat Maha Sarakham by applying research techniques in mixed methodologies: applications of participatory research, research and development, quantitative research, and qualitative research. If the testing of the KM model for self-reliant communities was appropriate, it would cause development of the community organizations to have quality, to be able to rely on themselves, to create sufficient self-reliant communities, and to love and help one another.

2. Literature review

Research related to KM success can be classified into four focus areas: KM success factors and KM outcomes. KM success factors can be viewed as facilitating factors for a KM initiative. KM developing model of community organizations is the main focus of this article of KM.

There have been efforts to identify organization factors for KM framework. Panich (2004) research conceptual framework model of the community organization, Jennex and Olfman (2004) present a knowledge management system (KMS) success model, recommend that developing a successful KMS would involve designing a technical infrastructure for the enterprise, gaining senior management support, and building motivational factor into the system. Anantatmula (2005) says a source of competitive advantage will continue to gain strategic importance, and organizations will be compelled to implement KM initiatives to improve organizational performance. Nonaka and Takeuchi (1995) say knowledge is a dynamic human process of justifying personal belief toward the truth. Other research indicate that establishing leadership, investing in people, and developing supporting organizational conditions are critical to achieving success in a KM program (Chorides, longbotton, &Murphy. 2003). Similar success factors were suggested based on a study of several projects to define knowledge in an evolving mix of framed experience, values, contextual information, and expert insight the provided framework for evaluating and incorporating new experiences and information (Davenport and Prusak. 1998), and Wiig's KM cycle addresses how knowledge is built and used as individuals or as organizations are building knowledge, holding knowledge, pooling knowledge and applying knowledge in process KM (Wiig. 1993), a framework for assessing KMS success model (Jennex and Olfman. 2005) assessing

knowledge management system success models. The framework uses three criteria: help to establish a basis for assessing the value and evaluating well the model fits actual KMS success factors, the degree to which the model has a theoretical foundation, and if the model can be used for both types of KMSs (Jennex and Olfman. 2006). A model of KM success that is derived from observations generated through a longitudinal study of KM in an engineering organization and KM success factors which were modified by the application of these observations and success factors in various projects.

3. Purposes:
- To develop a KM model for self-reliant communities,
- To examine satisfaction with KM operation for self-reliant communities, and
- To examine factors of success in KM of self-reliant communities.

4. Methodology
The study was divided into 3 phases:

Phase 1 studied documents and related literature, and determined conceptual framework.
> Studied theories and concepts of knowledge and KM.
> Studied concepts involving development of models and research related to development of models.
> Determined research conceptual framework in terms of scope of important activities of the organizations in KM, KM cycle, and factors affecting KM.

Phase 2 selected focus villages, areas, and self-reliant communities.

Two villages in the focus areas of study were Ban Nam Kliang and Ban Lao Rat Phatthana. The following requirements were used to consider selecting these villages:

1) In the case of Ban Nam Kliang, Tambon Na Kha, Amphoe Wapi Pathum, Changwat Maha Sarakham, the requirements for selecting were: it was a village with various community organization groups and continuous development activities but KM had not yet been implemented together with work development.

2) In the case of Ban Lao Rat Phatthana, Tambon Pracha Phatthana, Amphoe Wapi Pathum, Changwat Maha Sarakham, the requirements for selecting were: it was a village with various community organization groups and it had activities under development, and KM had not yet been implemented together with work development.

Eight community organization groups in this study were: agricultural cooperative group, mulberry and silk raising group, biofertilizer group, Thai traditional massage group, toxin-free rice production group, herbal Thai noodles group, cultural conservation group, and savings group.

The requirements for selecting included considering to cover 3 dimensions: establishment, sizes, and activity types. Establishment dimension had 2 types: established by the state and established by each community itself. Size dimension had large size, medium size, and small size. Dimension of activity types had various types such as cooperative group, occupation group, and local wisdom group.

Phase 3 developed the KM model in 2 stages.

Constructed tentative model of KM for self-reliant communities based on the research conceptual framework in terms of the scope of major activities for KM according to the concepts of Nonaka and Takeuchi, Vicharn Panich and Wiig's KM process for developing tentative KM model for self-reliant communities. The tentative KM model was submitted to 5 experts for considering appropriateness, feasibility in practice, and congruence with KM plans and group development plans.

Tested the tentative KM model for self-reliant communities and improved it.

5. Results:
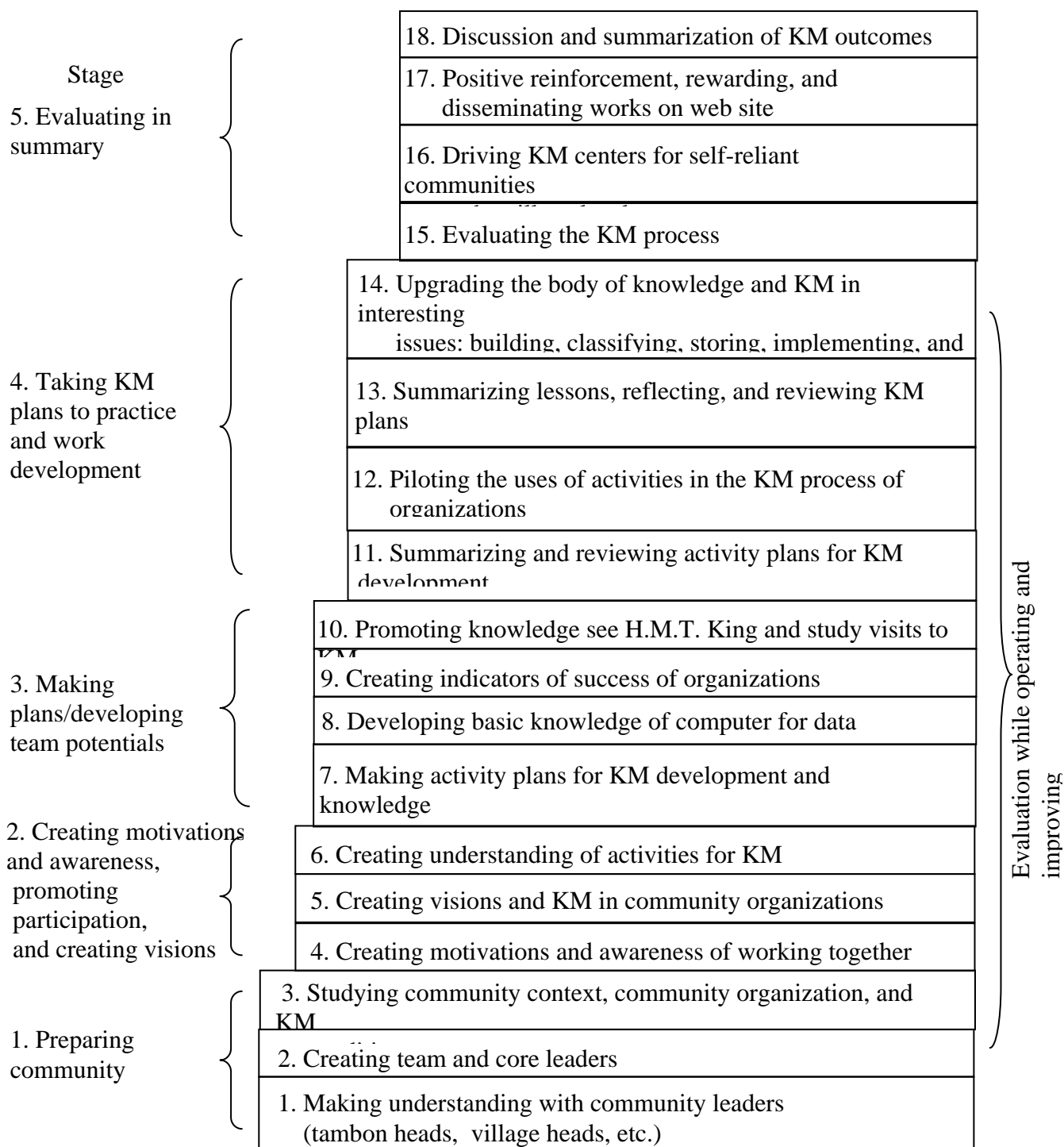The result of developing the KM model for self-reliant communities

The developed KM model for self-reliant communities was as the next page.

Note: After discussing and summarizing KM outcomes, all the community organizations still continued KM in the issues they were interested and desired to develop their work by beginning from Activity 11: clearly summarizing and reviewing activity plans for KM development. This allowed easy operation of KM in community organizations together with activities for group development. They upgraded the body of knowledge and KM in the issues they were interested in, based on potentials of their own organizations, except Activities 16-18 which were the part of the KM center at the village level and had to operate continuously to create continuity.

For the results of testing the developed KM model for self-reliant communities with these 8 community organization groups: Nam Kliang Wiang Chai civic society, agricultural cooperative group, mulberry and silk raising group, biofertilizer group, Thai traditional massage group, toxin-free rice production group, herbal Thai noodles group, the following were found: 1) All the organizations could create community knowledge managers in these 4 groups: facilitators, group work performers, record keepers, and coordinators. 2) Learning was created together with performance and knowledge obtained from problems, raising questions, and solving problems by actual practices until the appropriate body of knowledge occurred. 3) The learning process occurred consisting of building, classifying, storing, implementing, sharing, and evaluating knowledge. 4) 2-4 sets of knowledge were obtained through the KM process of each group. 5) There occurred KM centers to be drivers of the groups to meet and share learning in each village. 6) There were web sites of KM centers in the Internet system as sources of disseminating KM outcomes and as sources of the sharing of learning.

The community organization groups had satisfaction with KM operation for self-reliant communities as a whole at a high level. When classified according to the village level, the following were found: 1) The self-reliant community of Ban Nam Kliang and every group had satisfaction with KM operation at a medium level, and 2) The self-reliant community of Ban Lao Rat Phatthana and every group had satisfaction with KM operation at a high level.

The factors of success of the KM model for self-reliant communities could be summarized as follows:

Stage	
5. Evaluating in summary	18. Discussion and summarization of KM outcomes
	17. Positive reinforcement, rewarding, and disseminating works on web site
	16. Driving KM centers for self-reliant communities
	15. Evaluating the KM process
4. Taking KM plans to practice and work development	14. Upgrading the body of knowledge and KM in interesting issues: building, classifying, storing, implementing, and
	13. Summarizing lessons, reflecting, and reviewing KM plans
	12. Piloting the uses of activities in the KM process of organizations
	11. Summarizing and reviewing activity plans for KM development
3. Making plans/developing team potentials	10. Promoting knowledge see H.M.T. King and study visits to KM
	9. Creating indicators of success of organizations
	8. Developing basic knowledge of computer for data
	7. Making activity plans for KM development and knowledge
2. Creating motivations and awareness, promoting participation, and creating visions	6. Creating understanding of activities for KM
	5. Creating visions and KM in community organizations
	4. Creating motivations and awareness of working together
1. Preparing community	3. Studying community context, community organization, and KM
	2. Creating team and core leaders
	1. Making understanding with community leaders (tambon heads, village heads, etc.)

Evaluation while operating and improving

Leadership of the researcher as the participant, learner, instructor, manager, and reinforcement maker

Opportunities for participants to have participation from the beginning including: thinking together, planning together, action together, research together, and being responsible for conducting research together could be a significant factor of being network owners; being members with initiation, visions, participatory working, and better management than at present. This factor could create continuity and commitment to perform work by themselves.

Also, reliability in their own organizational body of knowledge and more self-reliance could occur.

Action learning, improving and developing work, raising new questions, and implementing in practices to achieve the goals could be caused by participatory action research (PAR), which could create interactions with one another in their own group and other groups at the village.

People and self-reliant communities were enthusiastic to learn. For work performance in their own groups and sharing learning at the group, village, and cross-village levels, they tried to use tacit knowledge through practice and testing until they were confident. There were summaries of lessons and record keeping as explicit documents. Then the meaningful body of knowledge of the community organizations occurred.

There were supporting mechanisms of KM centers of community organizations in partnership with Tambon Administrative Organizations. These tambon organizations allotted budgets to support some activities based on the plans/projects, and their representatives participating in the research as participants.

6. Discussion

In this study of developing KM model for self-reliant communities the following are interesting issues to be discussed:

For the results of testing the KM model for self-reliant communities, this model was found to be successful and able to create expected outcomes. This was because in developing the model the researcher used the conceptual framework from analyzing and synthesizing concepts and research results of qualified individuals at an international level both in the part of KM and the part of techniques of development, such as the KM concept of Nonaka and Takeuchi, and Panich; and the KM process of Wiig. Integration into techniques of development included: the use of principles of working of H.M. the King of Thailand involving self-reliance, participation; and knowing, love, and, unity. These were community preparation, after-action recording, question raising, and knowledge sharing both on real forum and realistic forum. Also, there were mechanisms supporting KM: village KM centers as centers for operational sources and as websites, causing integrated KM for self-reliant communities. Some significant evidence indicating success which should be discussed included the following:

1) Leadership: Every organization had 4 groups of knowledge managers: facilitators, practitioners, note takers, and network managers. This is in accordance with Nonaka and Takeuchi (1995). Building the managerial team began mainly from individuals. Members of each organization understood their own functions in KM: the real knowledge manager was the practitioner; the medium-level administrators were interpreters who recorded and documented knowledge. The group of knowledge managers determined goals, created the climate to help in sharing knowledge, and extracted knowledge to create values. This in accordance with Panich (2005). Leaders in KM in the organization were Khun Amnuai who promoted to create activities, systematic, and cultural knowledge sharing; Khun Kit who was group practitioner, regarded as the knowledge manager or the activity operator at approximately 90 percent of all the activities; Khun Likhit who was the note-taker on KM activities, narrations, summaries, and notes on meetings; and Khun Prasan who acted as the KM network manager among organizational groups.

2) There occurred learning together with practices. Sources of knowledge were problems, question raising, problem solving by real practices until the proper body of knowledge emerged. KM based on these issues consisted of building, classifying, storing, implementing, and sharing knowledge; and evaluation. This is in congruence with the principles of working of H.M. King Bhumibol Adulyadej (Office of Special Committee for Coordination in Projects from H.M. the King's Considerations. Unknown date). H.M. the King considers that for knowing, love and unity, people and the groups of people must know first before beginning to do anything: factors, problems, and how to solve those problems. We must have love to act in solving those problems. Also, we must have unity in practice, we should always remember that nobody can work alone. We must work collaboratively and spiritedly as an organization or staff to have power to solve problems successfully. This is in accordance with Wasi (2002) who says that only person's learning is not sufficient to make a task successful because other involved people, organizations, and institutes have not learned; and only action learning together will bring success by gathering sets of knowledge of each group of organizations. Also, it is in congruence with Phlainoi (2003) who says that after-action recording (AAR) is regarded as important learning in extraction of proper knowledge and findings of individuals or organizations and in congruence with Jennex and Olfman (2006) who say KM success that is derived from observations can generated through a longitudinal study of KM in an engineering organization and KM success factors which are modified by the application of these observations and success factors in various projects.

3) KM centers are drivers of groups to meet and share learning of each village and to operate work to achieve established visions, missions, goals, and purposes. Each center administrative committee followed up the progress in work development through the real monthly meeting forum and the realistic forum. Web sites act as sources of disseminating KM outcoms and as sources of storing knowledge and sharing learning. This is in accordance with the concept of Nonaka and Takeuchi (1995) and Vicharn Panich (2005) in the part that KM must rely on utilization of information technology and communication to support and on instruments or technology to use in KM. Jennex and Olfman. (2005) assessed KM success. The framework of assessing KMS success models uses three criteria: how well the model fits actual KMS success factors; the degree to which the model has a theoretical foundation, and if the model can be used for both types of KMSs.

The self-reliant communities had satisfaction with KM as a whole at a high level. When classified into each village, it was found that 3 community organization groups at Ban Nam Kliang had satisfaction with KM operation at a high level and 1 group at a medium level because the community leaders who were KM center heads had not yet realized the importance of group formation and participatory work performance, and because they did not participate in activities continuously. However, at Ban Lao Rat Phatthana, all the community organization groups had satisfaction with KM operation at a high level because the community leaders were interested in and had participatory administration, distributed work for all members to do according to the functional roles of KM centers, leading to operation to achieve the goals, visions, and missions; and Anantatmula (2005) who assessed KMS success models. The framework uses three criteria: help to establish a basis for assessing the value and evaluation.

Significant success factors of the KM model which should be discussed are as below:

1) For the leaders of KM for self-reliant communities when this research was being conducted in the last phase, participants intended to work for the public to create success

according to their functional roles, expressed their sense of belonging to activities and plans/work, and sought more cooperation from individuals and organizations both in and outside their communities.

2) Providing opportunities for participation from the beginning, this is in congruence with Sinlarat (1999). Organizational leaders have prestige and high influences on the organization. Therefore, if the leader built understanding and cooperatively determined assumptions on participating together, it would affect working together, satisfaction with working and having good work climate; and would push work to be successful.

3) Action learning is a way of life. Experience in the new body of knowledge emerges, which can help in actual applications. There occurred connection and relationships between individuals and groups of organizations. Integrated KM and participatory research emerge. This is in accordance with research study of Thinnalak (2006). She conducted a study entitled Building Knowledge of Thai Society for Sustainable Development. She found that building knowledge in accordance with Thai society promoted self-reliance, developed learning innovations toward which they had aptitudes, and could build the body of knowledge for solving problems and living joyfully in the society, and the societal psychology and common awareness of working for the common good in both benefits and losses as arisen to the public caused volunteer groups to participate in working for the public and the network of community organizations were: (1) Must be ready to adopt the new body of knowledge and techniques and methods of working together with the community. (2) Use the participatory action research process in working together with the community. (3) Spend more time working in the work area. (4) Must accept all the mistakes in community development operation in the past, and must be ready to open wide to receive recommendations from field research team parties for improvement. (5) Reduce obstinacy in the organization and agency. Use the principles of integrated work, and must mainly realize the community benefits. And (6) Participate more in learning about the project operation together with the research team parties (Chantarasombat. 2004).

4) There occurred mechanisms supporting working together: KM centers follow up the progress in operation of self-reliant communities to create continuity and relationships among one another. There were web sites and utilization of the Internet system as sources of seeing knowledge and disseminating KM outcomes and as sources of storing other kinds of knowledge and sharing knowledge of community people.

7. Recommendations
7.1. Recommendations for implementation
To obtain full benefits, it is necessary to operate all the 5 stages and 18 major activities. Those self-reliant communities which already have KM operation can begin from Activity 11. KM operation of organizations may begin with activities for group development which are not quite difficult, or may upgrade the body of knowledge. Activities 16-18 are a part which KM centers at the village level have to operate thoroughly to create continuity.

The team of participants regarded as real knowledge managers including facilitators, group practitioners, note takers, and coordinators should make preparations in academic format: participatory planning, community master plans, action learning together in utilizing the Internet.

The KM centers are the mechanisms driving the team of participants to share knowledge, with summaries and records of follow-up activities from real and virtual forums.

Support and promote self-reliant communities to use community plans for determining the direction of community development. There must be follow-up, evaluation, and measurement of success.

7.1. Recommendations for further research:

Learning processes should be examined together with practices of self-reliant communities. There should be more summaries, narrations, transcription of lessons, knowledge- sharing, and note-taking. Also, time for conducting research should be longer.

There should be research and development for capacity development of community leaders, organization group leaders, and local knowledge managers to be effective in KM to generate learning for healthy and joyful villages.

There should be research and development for upgrading KM centers and community organization networks.

Acknowledgement

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