

Chapter 4

Result and analysis

4.1 Introduction

The main objective of this research is to propose a defensive protection system for Thai local traditional knowledge that provides the local communities a prototype of self management and protection from the misuse and the misleading or loss of the community's traditional knowledge. Initially, this research has verified reasonable grounds to select the Mea-hiya community as a case study. The community can be represented as a good example for a rural community that is gradually and rapidly transformed to be an urban community with the issues of conserving its' traditional knowledge. The conceptual frameworks and theoretical models have been translated into an initial design of the integrated eight steps process. The process was applied and investigated within a specific situation in Mea-hiya community (Figure 4.1).

The research actually started in late 2007 in investigating the traditional knowledge situation in Thailand especially the local community. The research verified and identified background, unique characteristic and situations of the traditional knowledge in the Mea-hiya community to select the community as a case study. The field research was conducted in the Mea-hiya community from April 2008 to May 2009. The eight steps process was executed in a step by step fashion according to the designed methodology. The research selected the Mea-hiyas as the interviewees. In each stage, there was a different research design, sampling, tool, and technique. The research selected and applied proper research methods in each stage such as the qualitative and quantitative methods (documentary research, intensive interview, observation, participation and questionnaire).

This chapter illustrates the results of the process. The research has been identified through exploratory research conducted in co-operation with the Mea-hiya

Community Cultural Council. The chapter emphasizes on analyzing the data from the Mea- hiyas responses. The research outputs from eight step process are analyzed in this chapter.

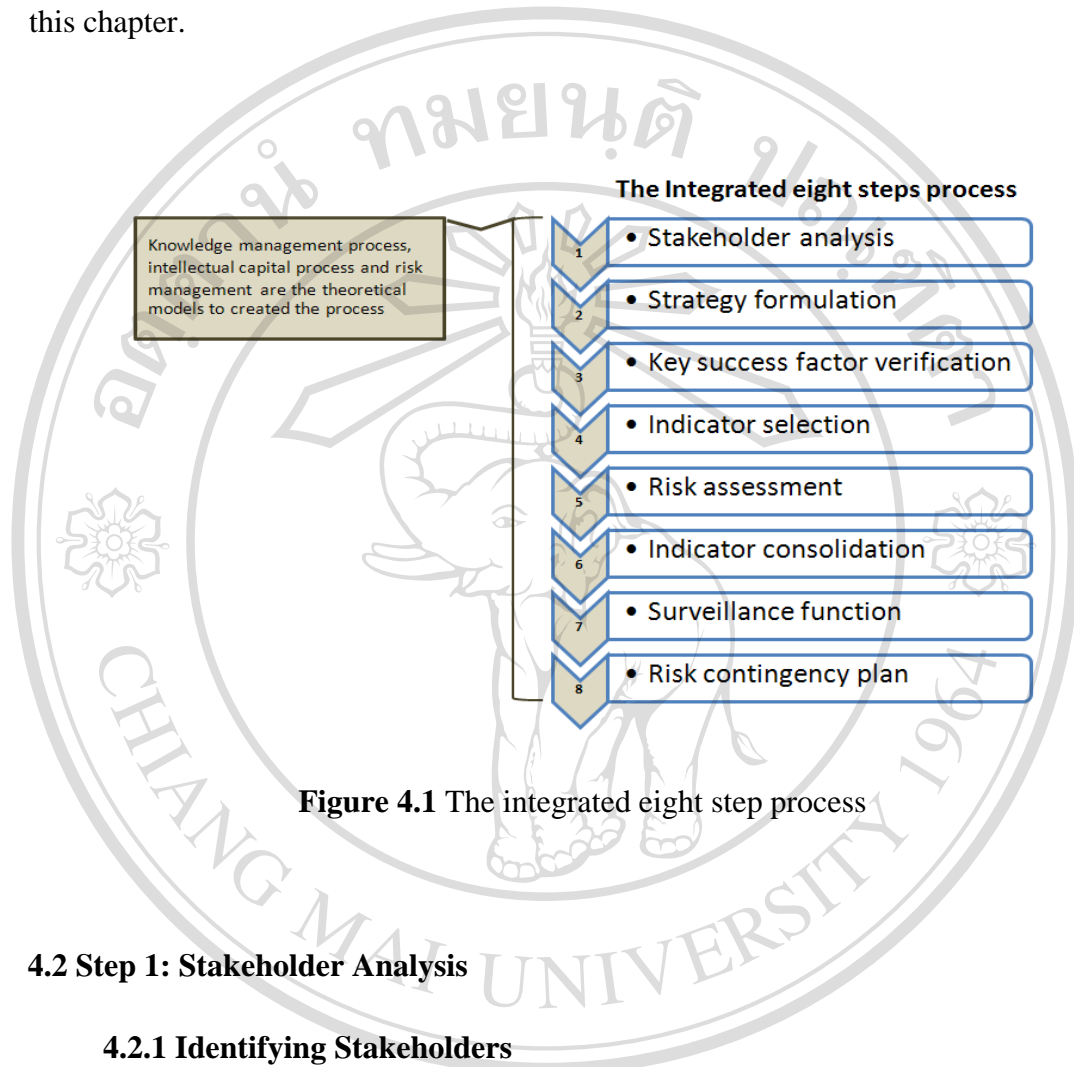


Figure 4.1 The integrated eight step process

4.2 Step 1: Stakeholder Analysis

4.2.1 Identifying Stakeholders

Results: seven key stakeholders were identified; the local government, the cultural council, local leaders, temples, local philosophers, schools and villagers had a high direct relevance to cultural management in the Mea-hiya community. These groups of people and organizations were highly involved in managing the community's traditional knowledge. They were identified as the Mea-hiya community's key stakeholders in the cultural domain.

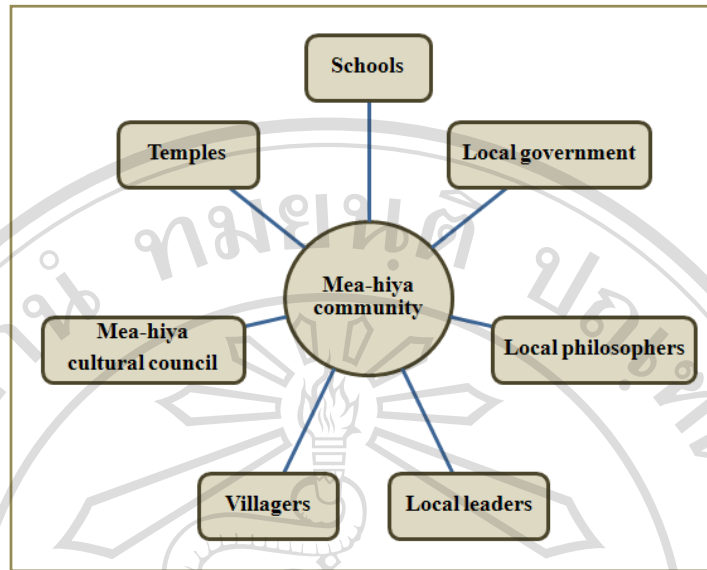


Figure 4.2 Mea-hiya community key stakeholders

From the result, the researcher selected the representatives of each stakeholder and assigned a code to each stakeholder group. The researcher qualified samples as follows: the local government prime minister, the deputy chief, and the president of local parliament as the representatives for the local government; the president, vice president, and secretary as the representatives for Mea-hiya Cultural Council; the sub-district chief, the head men of the village, and the president of the youth association as the representatives of the local leader group; the abbot of Phajee Temple, the abbot of Doicome Temple, and the abbot of Ubosot Temple as the representatives of the temples; the principle of Sirimangklajran School, the principle of Donpin School, and the principle of Mea-hiya Samukkee School as the representatives of the schools, six local philosophers, and ten villagers. These representatives were chosen as the target samples. There were 34 people selected as the key stakeholders.

Table 4.1 Stakeholders' representatives

Stakeholders	Code	Representatives	Amount
Local Government (representative)	LG	: the local government prime minister : the deputy chief : the president of local parliament	3
MC: Mea-Hiya Cultural Council (representative)	MC	: the president of Mea-hiya cultural council : the vice president of Mea-hiya cultural council : the secretary of Mea-hiya cultural council	3
Local Leader	LL	: the sub-district chief : the head men of the village : the president of the youth association	6
Temple (representative)	TP	: the abbot of Phajee temple : the abbot of Doicome temple : the abbot of Ubosot temple	3
Local Philosopher	LP	: six local philosophers	6
Villager	VG	: villagers in Mea-hiya community	10
School (representative)	SC	: the principle of Sirimangkajran school : the principle of Donpin school : the principle of Mea-hiya Samukkee school	3

4.2.2 Analyzing Stakeholder

The stakeholders were analyzed based on four fundamental: the power of the stakeholders, the influence of the stakeholders, and the participation level of the stakeholders and the support level of the stakeholders.

Results: According to the stakeholders' answers, it was found that:

The power of the stakeholder in managing traditional knowledge in the Mea-hiya community: the local government received the highest score at 138 points followed by the Mea-hiya Cultural Council 132 points and the local leader 120 points.

The influence of the stakeholder in managing traditional knowledge in the Mea-hiya community: the local government received the highest score at 132 points followed by the Mea-hiya Cultural Council 122 points and the local leader 116 points.

The participation level of the stakeholder to cultural activity: the local government received the highest score at 146 points followed by the Mea-hiya Cultural Council 132 points and the temple 124 points.

The support level of the stakeholder for conducting cultural activities in the Mea-hiya community: the local government received the highest score at 148 points followed by the Mea-hiya Cultural Council 130 points and the local leader 122 points.

Table 4.2 Stakeholder analysis

Community Cultural Management	Power Legitimate power Information power Coercive power Reward power Referent power Expert power			Influence The level of making decision			Participation The frequency of joining the cultural event			Support The capability of supporting resources						
	H 5	M 3	L 1	H 5	M 3	L 1	H 5	M 3	L 1	H 5	M 3	L 1				
Villager	11	13	10	10	11	13	11	20	3	7	16	11				
	55	39	10	104	50	33	13	96	55	60	3	118	35	48	11	94
Local Gov	20	12	2	19	11	4	22	12	0	23	11	0				
	100	36	2	138	95	33	4	132	110	36	0	146	115	33	0	148
Mea-hiya cultural council	18	13	3	18	8	8	20	9	5	19	10	5				
	90	39	3	132	90	24	8	122	100	27	5	132	95	30	5	130
Local leader	15	13	6	14	13	7	12	12	10	11	15	8				
	75	39	6	120	70	39	7	116	60	36	10	106	55	45	8	108
Local Philosopher	8	16	10	10	13	11	14	9	11	15	11	8				
	40	48	10	98	50	39	11	100	70	27	11	108	75	33	8	116
Temple	9	14	11	11	15	8	16	13	5	16	12	6				
	45	42	11	98	55	45	8	108	80	39	5	124	80	36	6	122
School	8	16	10	7	15	12	16	10	8	15	12	7				
	40	48	10	98	35	45	12	92	80	30	8	118	75	36	7	118

4.2.3 Prioritizing Stakeholders

To prioritize the stakeholders, the research combined the power and the influence scale into single element and combined the participation and the support scale in the other single element. These two elements would be the fundamental principles to evaluate the stakeholders.

Results: the local government received the highest score in every sector (the power sector: 138, the influence sector: 132, the participation sector 146, and the support sector: 148, the total score: 564); the second place was the Mea-hiya Cultural Council (the power sector: 132, the influence sector: 122, the participation sector

132, and the support sector: 130, the total score: 516); the third place was the temples (the power sector: 98, the influence sector: 108, the participation sector 124, and the support sector: 122, the total score: 452); the fourth place was the local leaders (the power sector: 120, the influence sector: 116, the participation sector 106, and the support sector: 108, the total score: 450); the fifth place was the schools (the power sector: 98, the influence sector: 92, the participation sector 118, and the support sector: 118, the total score: 426); the sixth place was the local philosophers (the power sector: 98, the influence sector: 100, the participation sector 108, and the support sector: 116, the total score: 422); the last place was the villagers (the power sector: 104, the influence sector: 96, the participation sector 118, and the support sector: 94, the total score: 412). The result is present in the Table 4.3.

Table 4.3 Stakeholder scoreboard

Community Cultural Management	Power & Influence			Participation & Support		
Local Gov (score: 564)	<u>138</u>	<u>132</u>	<u>270</u>	<u>146</u>	<u>148</u>	<u>294</u>
Mea-hiya cultural council (score: 516)	<u>132</u>	<u>122</u>	<u>254</u>	<u>132</u>	<u>130</u>	<u>262</u>
Temple (score: 452)	<u>98</u>	<u>108</u>	<u>206</u>	<u>124</u>	<u>122</u>	<u>246</u>
Local leader (score: 450)	<u>120</u>	<u>116</u>	<u>236</u>	<u>106</u>	<u>108</u>	<u>214</u>
School (score: 426)	<u>98</u>	<u>92</u>	<u>190</u>	<u>118</u>	<u>118</u>	<u>236</u>
Local Philosopher (score: 422)	<u>98</u>	<u>100</u>	<u>198</u>	<u>108</u>	<u>116</u>	<u>224</u>
Villager (score: 412)	<u>104</u>	<u>96</u>	<u>200</u>	<u>118</u>	<u>94</u>	<u>212</u>

The seven key stakeholders have been prioritized based on who are deemed as the most important figure to the community's cultural domain in regards to the power-influence element and participation-support element (adapted from Rachel 2007; Perrot 1996, Figure 4.3). The vertical axis is the participation and support element

scale. The horizontal axis is the power and influence element scale. The local government has been identified as the key figure with the highest level of participation in the cultural domain of the community. The second influential stakeholder is the Mea-hiya Cultural Council. After the cultural council, the next stakeholders are the local leaders and the temples follow by schools. The stakeholders that have the least influence are the local philosophers who provide consultations and the local villagers who participate in cultural activities.

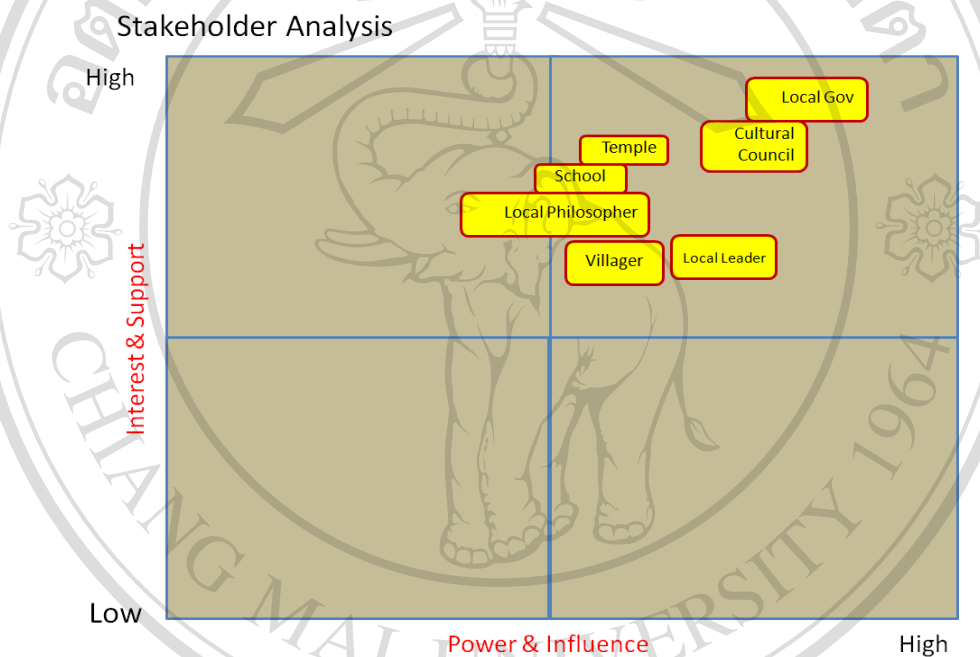


Figure 4.3 Stakeholder Analysis (adapted from: Rachel 2007; Perrot 1996)

4.2.4 Analyzing the Stakeholders' Roles and Resources

Each stakeholder has his/her own roles and resources. The stakeholders can provide support to the community differently depending on what they have and what they are capable of.

Results of analyzing the stakeholders are summarized as followed:

The local government has all of the resources (money, staff, material and available space) provides for and to support the community. The local government

also has a legitimate authority in controlling the community's activities. That is why the local government has been identified as the key figure with the highest level of influence in the cultural domain of the Mea-hiya community.

The Mea-hiya Cultural Council, the second most influential stakeholder, the council's role is to be the central management of the cultural function within the community. The cultural council does not have any physical resources or even an office nor budget. The council operates on an agenda and has been received a budget from the local government to manage cultural activities. However, with having the cultural knowledge and skill of performing cultural activities, all official annual cultural activities have been conducted by the cultural council.

The temples can provide some material, space and religious knowledge to the community for conducting a cultural activity. The temples' role (represented by the abbot and monk) are varied from providing material and a place for cultural activities, leading religious performances, consulting and calling for meetings.

The local leaders, their roles are varied from being recruiters, gathering the villagers, calling for meetings, and assigning jobs to villagers.

The schools have supported cultural activities by attending meetings, sending students to join cultural events and sometimes conducting cultural activities for students in school.

The local philosophers provide consultations to the local government, cultural council, schools or villagers when they need a guideline of cultural activities. Sometime the local philosophers are invited to lead the cultural activities at the site.

The local villagers participate in cultural activities and assist with cultural management.

The Table 4.4 presents stakeholder's resources & roles.

Table 4.4 Stakeholder's resources & roles

Stakeholders	Resources	Major Role
Local Government	<ul style="list-style-type: none"> •Money •Man •Material •Place •Managing skill •Legitimate power 	<ul style="list-style-type: none"> •Providing support (money, man, material & place) •Decision making
Mea-Hiya Cultural Council	<ul style="list-style-type: none"> •Cultural knowledge •Managing cultural Act skill 	<ul style="list-style-type: none"> •Community cultural center •Organizing meeting •Consulting •Decision making
Temple	<ul style="list-style-type: none"> •Material •Place •Religious knowledge 	<ul style="list-style-type: none"> •Religious leader •Consulting •Supporting (material & place)
Local Leader	<ul style="list-style-type: none"> •Managing skill 	<ul style="list-style-type: none"> •Participating •Recruiting people
School	<ul style="list-style-type: none"> •Man (teacher & student) •Place 	<ul style="list-style-type: none"> •Participating •Supporting (man & place)
Local Philosopher	<ul style="list-style-type: none"> •Cultural Knowledge 	<ul style="list-style-type: none"> •Lead Performing •Consulting
Villager	<ul style="list-style-type: none"> •Man 	<ul style="list-style-type: none"> •Participating

4.3 Step 1: Results Analysis

4.3.1 Managing the Stakeholders

According to the previous stakeholder analysis, the Mea-hiya community's stakeholders can be presented in order from the most power-influence and participation-support to the least as follows; the local government, the Mea-hiya Cultural Council, the local leaders, the temples, the schools, the local philosophers and the local villagers.

To manage the stakeholders intensively, this analysis focuses on the upper right quadrant and again applies the power-influence and participation-support grid into this particular quadrant. The quadrant is divided into four sub-quadrants which are quadrant 1 (high power-influence and high participate-support), 2 (low power-influence and high participate-support), 3 (high power-influence and low participate-support) and 4 (low power-influence and low participate-support); thus, the stakeholders are plotted in the sub-quadrant. As the result, the stakeholders in each sub-quadrant can be managed differently.

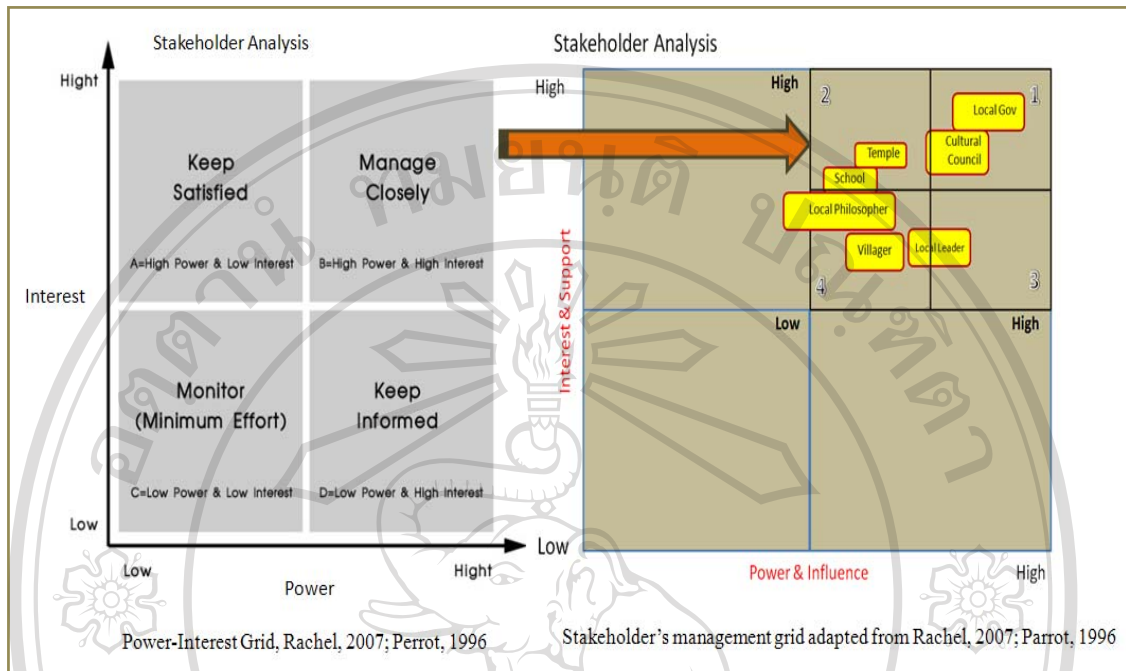


Figure 4.4 Stakeholder's management grid adapted from Rachel, 2007; Parrot, 1996

The stakeholders in quadrant 1 (high-high) are the local government and the Mea-hiya Cultural Council. This appearance concurs with the fact that the local government has all of the resources (money, staff, material and space) that are supporting and being provided to the community. The local government also has a legitimate authority in controlling the community's activities. The Mea-hiya Cultural Council, the central management of the cultural function within the community, is officially supported by the local government to manage cultural activities. With having the traditional knowledge and skill of performing cultural activities, all official annual cultural activities have been conducted by the cultural council. These stakeholders have the biggest stake in managing traditional knowledge.

To manage these stakeholders, the Mea-hiyas must fully engage with, and make the greatest efforts to satisfy of what they need. These stakeholders must be communicated early and often to ensure that they know what cultural projects are implemented within the community and fully understand the benefits of the projects.

This means they are likely to provide the project coalition of support in planning and implementation. The community should partner them to increase their engagement and commitment. The community can also use the opinions of the most powerful stakeholders to shape the projects at an early stage to gain support from these stakeholders that can help you to win more resources. This makes it more likely that the cultural projects will be successful. The Objective is to win their support.

The stakeholders in quadrant 2 (low-high) are the temples and schools. These stakeholders are good supporters. Temples which are represented by the abbots and monks, provide material and space for cultural activities, lead a religious performance, consult and call for meetings. The schools support cultural activities by attending meetings, sending students to join cultural events and sometimes conducting cultural activities for students in school.

To manage these stakeholders, the Mea-hiyas must keep these stakeholders adequately informed of decisions taken that may affect them directly. It is unlikely that they would play an active role in making those decisions. However, these stakeholders should be communicated with to ensure that no major issues arise. These are the stakeholders who need to be adequately informed so they can support the cultural projects efficiently and often are very helpful with carrying out the details of the projects.

The stakeholders in quadrant 3 (high-low) are the local leaders. According to cultural affairs, the local leaders' roles are varied from being recruiters, gathering the villagers, calling for meetings, and assigning jobs to villagers.

To manage this stakeholder, this stakeholder needs to be kept on board. The community can use his/her leadership by consulting with them to actively seek their opinions and input for key decisions (and not only those which may affect them directly) to maintain higher levels of commitment. This stakeholder is the key element to get cooperation from the villagers.

The stakeholders in quadrant 4 (Low-Low) are the local philosophers and the villagers. The local philosophers provide consultations to the local government, cultural council, schools or villagers when they need a guideline for doing cultural activities. Sometime the local philosophers are invited to lead the cultural activities at the site. The local villagers participate in cultural activities and assist to manage cultural activities.

To manage these stakeholders, the Mea-hiyas should keep these stakeholders up to date and monitor them, but do not bore them with excessive communication. Moreover, the community should support these stakeholders to get involved in cultural projects as much as possible. These stakeholders need to be stimulated. Even though these stakeholders have low power-influence and participation-support; these are the majority of the population in the community. They need to be respected and to be pleased because they would otherwise divert valuable management attention and resources.

4.3.2 The Stakeholders' Resources and Roles

Because of the variety of stakeholders, the synergy among them is important for understanding the increasing levels of complexity when it comes to managing local activity (CBNRM Net, 2001). The stakeholders' roles and resources are analyzed into two perspectives: cultural management perspective and knowledge management perspective.

4.3.2.1 Cultural Management Perspective

The Mea-hiya key stakeholders can be classified into three groups. The first group is called the decision maker which includes the local government and the cultural council. This group can formulate policies, set up plans and manage the community cultural activities. The group holds an official right to manage annual major cultural activities. All major cultural activities in the community are initiated and assigned from these key stakeholders. The second group includes the local government, cultural council, local leader and temple. This group is the provider. The group provides the necessary resources such as money, material, human resources and

management to operate cultural activities. This group is also sometime the manager of the cultural event. They are able to recruit and gather the villagers, calling for meetings, and assigning jobs to workers. The third group includes cultural council, local leaders, temples, schools, local philosophers and villagers. This group is the user, and almost everyone in the community can be placed in this group. All resources from the providers has been allocated to this group to implement local cultural activities.

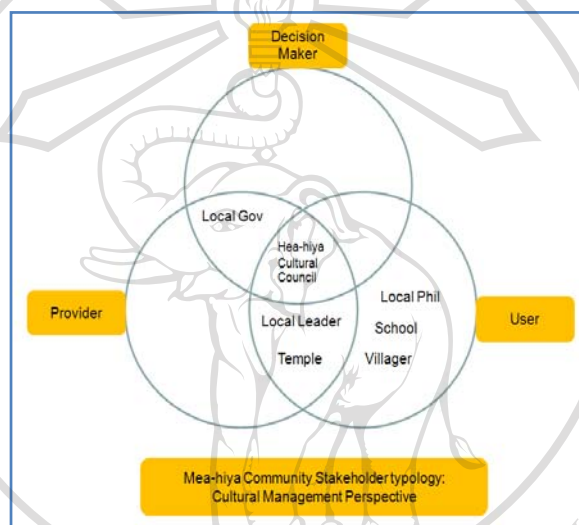


Figure 4.5 Stakeholder typology: Cultural management perspective

4.3.2.2 Knowledge Management Perspective

At a Knowledge Management perspective, the Mea-hiya stakeholders can be classified into three groups. The first group is the decision maker which includes the local government, the Mea-hiya Cultural Council, local leaders and local philosophers. The group's role is to make decisions about what, when, where, who and how to do cultural activities. The cultural projects are initiated and assigned from these key stakeholders. This group uses their management skill to conduct and control all major cultural activities. However, when decisions are needed to be made, this group needs advices from the knowledge providers. The second group is the knowledge providers which includes the, cultural council, local philosophers and temples. The necessary knowledge of preparing material, conducting cultural activity or performing ritual (know-what, know-why and know-how) come from this group.

This group possesses cultural traditional knowledge that has been transmitted from generation to generation. They provide consultations to the community. The third group is the knowledge user which includes the cultural council, local leaders, schools, and villagers. The knowledge and informational resources from the knowledge provider group have allocated to this group to implement local cultural activities.

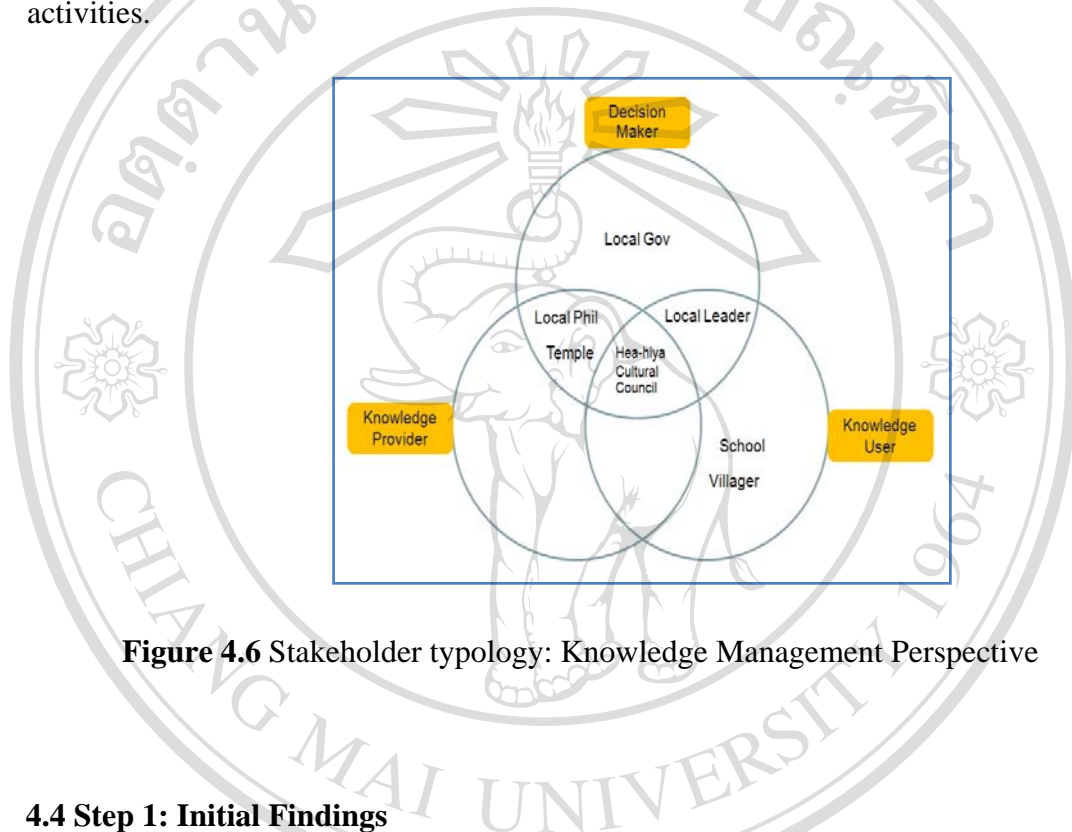


Figure 4.6 Stakeholder typology: Knowledge Management Perspective

4.4 Step 1: Initial Findings

The local government has been examined as the key figure with the highest level of participation in the cultural domain of the community follows by the Mea-hiya Cultural Council, local leaders, temples, schools, local philosophers and villagers. Each stakeholder has their own roles and resources which can provide support to the community differently. However, it is apparent that the local government has all of the resources (money, staff, material and space) that are supporting and being provided to the community. All stakeholders need to be managed differently. To manage the stakeholders intensively, the Mea-hiya can apply the completion of the Mea-hiya stakeholder's management which is concluded in Table 4.5.

Table 4.5 The Mea-hiya's stakeholders management completion

Participation & Support	<p>High</p> <p>Stakeholders: Temples, Schools</p> <p>Strategic managements:</p> <ul style="list-style-type: none"> • keep these adequately informed of decisions taken that may affect them directly • communicate to ensure that no major issues are arising <p>Objective:</p> <ul style="list-style-type: none"> • get them help with the detail of the projects 	<p>Stakeholders: Local Government, Cultural council</p> <p>Strategic managements:</p> <ul style="list-style-type: none"> • monitor them • fully engage, make partner • communicated early and often • use the opinions to shape the projects to gain support <p>Objective:</p> <ul style="list-style-type: none"> • to win their supports
	<p>Stakeholders: Local philosopher, Villagers</p> <p>Strategic managements:</p> <ul style="list-style-type: none"> • keep up to date • do not bore them with excessive communication • stimulated and support them to involve in cultural project • need to be respected and to be pleased (majority of the population) <p>Objective: get them involve cultural activities</p>	<p>Stakeholders: Local leaders</p> <p>Strategic managements:</p> <ul style="list-style-type: none"> • be kept on board • use his/her leadership to send messages to villagers • consult and seek their opinions and input for key decisions <p>Objective: make them to be cultural medium (massage sender and recruiter)</p>
Low	Power & Influence	
	Low	High

4.5 Step 2: Strategy Formulation

4.5.1 The Mea-hiya Community Key Stakeholders' Needs & Expectations

The stakeholders' needs and expectations can be illustrated as follows:

- i. The local government: (the local government's prime minister, the Mea-hiya deputy chief, and the president of Mea-hiya parliament).
 2. To conserve, support and restore the local culture
 3. To create cooperation from citizens (private, household, temple and school)
- ii. Mea-Hiya Cultural Council: (the president, the vice president, and the secretary of Mea-hiya Cultural Council).
 4. To disseminate the right cultural information to the public
 5. To conserve local culture
 6. To support the youth for cultural development

iii. Local leaders: (the sub-district chief, the head men of the village and the president of the youth association).

7. To promote cooperation (government, villager, school and temple)
8. Support budget consistently and sufficiently

iv. Temple: (the abbot of Phajee, Doicome and Ubosot Temple).

8. Promote cooperation within the community
9. Children and school are important for cultural development
10. To make local cultural inventory from local philosophers

v. Local philosophers: (six local philosophers).

11. To make cultural writings from people with expertise of that specific field
12. Focus on the cooperation from villagers
13. To disseminate the right cultural information to villagers and the public

vi. School: (the principle of Sirimangklajran, Donpin and Mea-hiya Samukkee School).

14. To promote cooperation within community
15. Budget supporting sufficiently
16. Transfer the cultural knowledge to children

vii. Villagers: 10 villagers.

17. To make cultural writings from local philosophers and experts
18. Local history subject in school
19. Focus on the youth

The stakeholders have provided 19 needs and expectations. From all 19 ideas, the results can be analyzed and categorized into 5 main ideas based on their common norm. The first main idea is to conserve & support local culture which involves the needs and expectations No.1, 4, 7, and 15. The second main idea is to disseminate the right local culture information to villagers and the public which involves the needs and expectations No.3 and 13. The third main idea is to make local cultural inventory

which involves the needs and expectations No.10, 11 and 17. The fourth main idea is to promote cooperation within the community which involves the needs and expectations No.2, 6, 8, 12, and 14. The fifth main idea is to focus on the youth which involves the needs and expectations No.5, 9, 16, 18 and 19. The stakeholders' need and expectations and their common norms are presented in the Table 4.6.

Table 4.6 The stakeholders need and expectations similarity

Needs & Expectations	Common norm
The local government	
No.1 To conserve, support and restore the local culture	To conserve & support local culture (No.1, 4, 7, 15)
No.2 To create cooperation from citizens (private, household, temple and school)	
Mea-Hiya Cultural Council	
No.3 To disseminate the right cultural information to the public	To disseminate the right info (No.3, 13)
No.4 To conserve local culture	
No.5 To support the youth for cultural development	
Local leaders	
No.6 To promote cooperation (government, villager, school and temple)	To make cultural inventory (No.10, 11, 17)
No.7 Support budget consistently and sufficiently	
Temples	
No.8 Promote cooperation within the community	To promote cooperation within the community (No.2, 6, 8, 12, 14)
No.9 Children and school are important "for cultural development"	
No.10 To make local cultural inventory from local philosophers	
Local philosophers	
No.11 To make cultural writings from people with expertise of that specific field	To focus on the youth (No.5, 9, 16, 18, 19)
No.12 Focus on the cooperation from villagers	
No.13 To disseminate the right cultural information to villagers and the public	
Schools	
No.14 To promote cooperation within community	To focus on the youth (No.5, 9, 16, 18, 19)
No.15 Budget supporting sufficiently	
No.16 Transfer the cultural knowledge to children	
Villagers: 10 villagers	
No.17 To make cultural writings from local philosophers and experts	To focus on the youth (No.5, 9, 16, 18, 19)
No.18 Local history subject in school	
No.19 Focus on the youth	

4.5.2 Strategies

These five main ideas from the stakeholders' needs and expectations of managing community traditional knowledge would be fundamental concept to create cultural strategies which are statements that defines the future and identity for Mea-hiya community. Thus, nineteen needs and expectations from the stakeholders have been indentified, grouped and categorized into five strategies:

First strategy (S1): To conserve, support and restore the local culture.

Second strategy (S2): To promote community cooperation.

Third strategy (S3): To focus on children and schools for cultural development.

Fourth strategy (S4): To make traditional knowledge inventory from local philosophers and experts.

Fifth strategy (S5): To disseminate the right cultural information to the public.

4.6 Step 2: Results Analysis

According to Riege & Lindsay (2006), in order to develop strategies and identify related issues, an organization should consult with targeted groups of stakeholders. The consultation provides a better environment to facilitate debate and develop more equitable strategies. The stakeholders' needs and expectations are fundamental input factors to develop the strategies. Five precise strategies have been determined. In this step, the research has adapted a new method to the process. Instead of waiting to receive the policy and strategies from the central government or the local government, the stakeholders' needs and expectations of the Mea-hiya community would be the key element for developing the strategies of the community traditional knowledge management. Therefore, the precise five strategies have been formulated. The strategies which are formed by the community's stakeholders can respond more direct to any situation than strategies that are formed by the central

government. According to Byrne & Davis 1998, the organization needs to have a clear and transparent structure and process to keep stakeholders and their consultation focused. In addition, the stakeholders can formulate strategies by sharing and participating from the beginning. The participation process creates a sense of belonging in managing their traditional knowledge for the whole community. The cultural management can initiate actions to respond directly to the stakeholders demands.

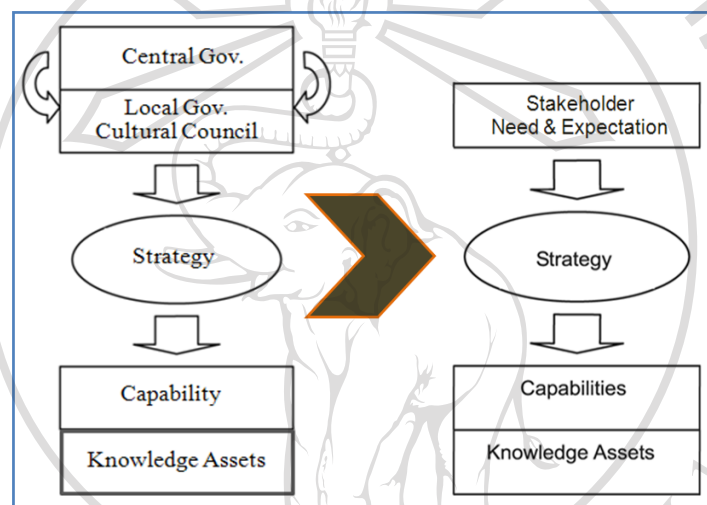


Figure 4.7 Top down and bottom up process

4.7 Step 2: Initial Findings

The research has adapted a new method to the process. The stakeholders' needs and expectations have become the key elements for developing the strategies of the community traditional knowledge management. The strategies which have been formed by the community's stakeholders can respond more direct to any situation than strategies that have been formed by the central government. Five strategies of community cultural management are formulated by sharing and participating of the stakeholder. The four modes of knowledge creation process occur in this step.

4.8 Step 3: Key Success Factor (KSF) Verification

4.8.1 Verifying KSFs

Results: ten KSFs have been verified by the stakeholders as follows:

- i. First strategy (S1): to conserve, support and restore the local culture, the key success factors were:

S1K1: The budget must be increased

S2K2: Must have policies to support the cultural affairs

S2K3: constructing a Mea - hiya history center (learning center)

- ii. Second strategy (S2): to promote community cooperation, the key success factors were:

S2K1: Building a strong networking

S2K2: Supporting the Three Generations Center

- iii. Third strategy (S3): to focus on children and schools for cultural development, the key success factors were:

S3K1: Local history subject in schools

S3K2: Create the youth groups and support activities

- iv. Fourth strategy (S4): to make traditional knowledge inventory from local philosophers and experts, the key success factors were:

S4K1: Intensive seminars

S4K2: Focusing on local philosophers

- v. Fifth strategy (S5): to disseminate the right cultural information to the public, the key success factors was:

S5K1: Strong public relations

Table 4.7 Strategies and Key Success Factors

Stakeholders' strategies	KSFs
S1: To conserve, support and recover the local culture	S1K1: Increase budget
	S1K2: Policy support
	S1K3: Constructing a Mea - hiya history center (for learning)
S2: To promote community cooperation	S2K1: Strong Networking
	S2K2: Supporting "the Three Generations Center"
S3: To focus on children and schools for cultural development	S3K1: Local history subject in schools
	S3K2: Create the youth groups & support Activities
S4: To make traditional knowledge inventory from local philosopher and experts	S4K1: Intensive seminars
	S4K2: Focusing on local philosopher
S5: To disseminate the right information to the public	S5K1: Strong Public relations

4.9 Step 3: KSFs Result Analysis

In this step, the community can put the strategies into practice. The stakeholders, by themselves, have identified and verified the key success factor of each strategy. The strategies have been used to identify the key success factors (KSFs). This step provides the stakeholders' needs and expectations to be more quantifiable. As a result, the community's traditional knowledge management has specific actions to reach goals. This step of the process creates some opportunities to fix the problems within an organization using identified strategies which otherwise would be forgotten due to the focus primarily on their short-term goals (Roos et al., 1997).

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4.10 Step 3: KSFs Initial Finding

The ten KSFs have been verified by stakeholders which lead to quantifiable and actionable strategies. For successful implementation of an intellectual capital system, there needs to be a linking of the selected intellectual capital measures to the strategies (Shulver, Lawrie, & Andersen 2000). This step responds to the statement. The community's strategies are measured by KSFs. The knowledge creation process occurs in this step because of the expressing and exchanging of experiences and knowledge from the stakeholders. Finally, the stakeholder's knowledge and experiences have become fundamental concepts of formulating the strategies which respond directly to situations in the community.

4.11 Step 4: Indicator Selection

The stakeholders selected 30 indicators for measuring 10 key success factors. The indicators selection is presented in the Table 4.8.

Table 4.8 Indicator selection

Stakeholders' strategies	Key Success Factors	Indicators	Amount
1. S1: To conserve, support and recover the local culture	S1K1: Increase budget	1. The increasing percentage of the local government budget	29
		2. <i>The amount of money that is supported by villagers</i>	6
		3. The amount of money that is supported by local private units	25
	S1K2: Policy	4. The number of cultural public policies	27
		5. The strategic planning of the cultural policy	22
		6. <i>the long term plan of cultural management</i>	7

	support K1: Increase budget	7. The number of projects/activities which relate to cultural policy	24
		8. <i>The number of visitors</i>	5
	S1K3: Constructing a Mea - hiya history center (for learning)	9. The number of media alternatives for studying	28
		10. The number of subject manuals to guide people's learning	28
		11. The number of members	26
S2: To promote community cooperation	S2K1: Strong Networking	12. The number of people who involve in the projects/activities.	26
		13. <i>The number of meetings</i>	13
		14. The percentage of people that satisfy the projects/activities	19
		15. The number of projects/activities that use participation process	25
	S2K2: Supporting the Three Generations Center	16. The number of Three Generation Center's member	25
		17. The number of people who are involve in the projects/activities.	20
		18. The number of project that collaborates with all three generations	24
		19. <i>The satisfaction level of the members</i>	7
S3: To focus on Children and school	S3K1: Local history subject in schools	20. The number of students that study the cultural subject	28
		21. The number of media to teach subjects	25
		22. The number of local philosophers who are involve in teaching activities	21
		23. <i>The level of subject evaluation</i>	6
	S3K2:	24. The number of children who are involve in the projects/activities	26

	Create the youth groups & support Activities	25. The number of activities that mix to modern life style	24
		26. The amount of budget that support the youth activities	23
		27. <i>The number of projects that receive awards</i>	6
S4: To make TK inventory from local philosophers and experts	S4K1: Intensive seminars	28. The number of seminars	26
		29. The number of cultural subjects and inventories	27
		30. <i>the number of people who transmit knowledge</i>	9
		31. The number of training program in cultural subject for the villagers	22
		32. The number of local philosophers and experts involve in the activities	21
	S4K2: Focusing on local philosophers	33. <i>The number of local philosophers that are in the health program</i>	8
		34. The number of programs to look after the well being of local philosophers	22
		35. The number of local philosophers that are recognized and admired	23
		36. The number of cultural inventories that come from local philosopher 's knowledge	19
S5: To disseminate the right information to the public	S5K1: Strong Public relations	37. The number of media alternatives partnerships	23
		38. <i>The number of disseminations local cultural activities news</i>	7
		39. The number of project that collaborates with external organizations	18
		40. Good image on part of the community	27

4.11.1 The Mea-hiya community's Strategies, KSFs & Indicators.

i. First strategy (S1): To conserve, support and restore the local culture

The key success factor: S1K1: the budget must be increased

Indicators:

S1K1I11: The increasing percentage of the local government budget

S1K1I22: The amount of money that is supported by local private units

The key success factor: S2K2: Must have policies to support the cultural affairs

Indicators:

S1K2I13: The number of cultural public policy

S1K2I24: The strategic planning of the cultural policy

S1K2I35: The number of projects/activities which relate to cultural policy

The key success factor: S2K3: Constructing a Mea - hiya history center

Indicators:

S1K3I16: The number of members

S1K3I27: The number of media alternatives for studying

S1K3I38: The number of subject manual to guide people's learning

ii. Second strategy (S2): to promote community cooperation

The key success factor: S2K1: Building a strong networking

Indicators:

S2K1I19: The number of people who involve in the projects/activities.

S2K1I210: The number of project/activity that use participation process

S2K1I311: The percentage of people that satisfy the projects/activities

The key success factor: S2K2: Supporting the Three Generations Center

Indicators:

S2K2I112: The number of member

S2K2I213: The number of people who are involve in the projects/activities.

S2K2I314: The number of project that collaborates with all three generations

iii. Third strategy (S3): to focus on children and schools for cultural development

The key success factor: S3K1: Local history subject in schools

Indicators:

S3K1I115: The number of students that study the cultural subject

S3K1I216: The number of subjects in the school curriculum which can integrate cultural concept

S3K1I317: The number of local philosophers who are involve in teaching activities

The key success factor: S3K2: Create the youth groups and support activities

Indicators:

S3K2I118: The number of children who are involve in the projects/activities

S3K2I219: The number of activities

S3K2I320: The amount of budget

iv. Fourth strategy (S4): to make traditional knowledge inventory from local philosophers and experts

The key success factor: S4K1: Intensive seminars

Indicators:

S4K1I121: The number of seminars

S4K1I222: The number of cultural subjects and inventories

S4K1I323: The number of local philosophers and experts involve in the activities

S4K1I424: The number of training program in cultural subject for the villagers

The key success factor: S4K2: Focusing on local philosophers

Indicators:

S4K2I125: The number of local philosophers that are recognized and admired

S4K2I226: A program to look after the well being of local philosophers

S4K2I327: The number of cultural inventory that come from local philosopher's knowledge

v. Fifth strategy (S5): to disseminate the right cultural information to the public

The key success factors: S5K1: Strong public relations

Indicators:

S5K1I128: The number of media alternatives partnership

S5K1I229: The number of project that collaborates with external organizations

S5K1I330: Good image on part of the community

The Mea-hiya community's strategies, Key Success Factors & Indicators are presented in the Table 4.9.

Table 4.9 Strategies, Key Success Factors & Indicators

Stakeholders' strategies	KSFs	Indicators
S1: To conserve, support and recover the local culture	S1K1: Increase budget	S1K1111: The increasing percentage of the local government budget S1K1122: The amount of money that is supported by local private units
	S1K2: Policy support	S1K2113: The number of cultural public policy S1K2124: The strategic planning of the cultural policy S1K2135: The number of projects/activities which relate to cultural policy
	S1K3: Constructing a Mea - hiya history center (for learning)	S1K3116: The number of members S1K3127: The number of media alternatives for studying S1K3138: The number of subject manual to guide people's learning
S2: To promote community cooperation	S2K1: Strong Networking	S2K1119: The number of people who involve in the projects/activities. S2K11210: The number of project/activity that use participation process S2K11311: The percentage of people that satisfy the projects/activities
	S2K2: Supporting "the Three Generations Center"	S2K21112: The number of member S2K21213: The number of people who are involve in the projects/activities. S2K21314: The number of project that collaborates with all three generations
S3: To focus on Children and school	S3K1: Local history subject in schools	S3K11115: The number of students that study the cultural subject S3K11216: The number of media to teach subjects S3K11317: The number of local philosophers who are involve in teaching activities
	S3K2: Create the youth groups & support Activities	S3K21118: The number of children who are involve in the projects/activities S3K21219: The number of activities that mix to modern life style S3K21320: The amount of budget
S4: To make TK inventory from local philosophers and experts	S4K1: Intensive seminars	S4K11121: The number of seminars S4K11222: The number of cultural subjects and inventories S4K11323: The number of local philosophers and experts involve in the activities S4K11424: The number of training program in cultural subject for the villagers
	S4K2: Focusing on local philosophers	S4K21125: The number of local philosophers that are recognized and admired S4K21226: A program to look after the well being of local philosophers S4K21327: The number of cultural inventory that come from local philosopher's knowledge
S5: To disseminate the right information to the public	S5K1: Strong Public relations	S5K11128: The number of media alternatives partnership S5K11229: The number of project that collaborates with external organizations S5K11330: Good image on part of the community

4.12 Step 4: Indicator Analysis

This step presents that the process strives to be practical by having a measuring method in the process. The process of managing traditional knowledge in the Mea-hiya is quantifiable. The aims of measuring is to identify the knowledge component of an organization in order to manage them so they can continually improve their performance (Marr, Schiuma, & Neely 2004). In fact, selecting the right indicators is very difficult or near impossible because the indicators are proxy variables and must reflect KFSs drastically. However, appropriate indicators have been selected with care by the stakeholders. The thirty indicators of the key success factors have been identified.

4.12.1 The Mea-hiya community's Cultural Intellectual Capital

In this step, the 30 selected indicators can be analyzed and arranged according to the particular outlook of the community's intangible capital.

Table 4.10 Indicator arrangement

Indicators	IC
S1K1I11: The increasing percentage of the local government budget	Structural Capital
S1K1I12: The amount of money that is supported by local private units	Structural Capital Relational Capital
S1K2I13: The number of cultural public policy	Structural Capital
S1K2I24: The strategic planning of the cultural policy	Structural Capital
S1K2I35: The number of projects/activities which relate to cultural policy	Structural Capital
S1K3I16: The number of members	Human Capital Relational Capital
S1K3I27: The number of media alternatives for studying	Structural Capital
S1K3I38: The number of subject manual to guide people's learning	Structural Capital
S2K1I19: The number of people who involve in the projects/activities	Human Capital
S2K1I210: The number of project/activity that use participation process	Relational Capital Structural Capital
S2K1I311: The percentage of people that satisfy the projects/activities	Relational Capital
S2K2I112: The number of members	Relational Capital Human Capital
S2K2I213: The number of people who are involve in the projects/activities.	Relational Capital Human Capital
S2K2I314: The number of project that collaborates with all three generations	Relational Capital
S3K1I115: The number of students that study the cultural subject	Human Capital
S3K1I216: The number of subjects in the school curriculum which can integrate cultural concept	Structural Capital
S3K1I317: The number of local philosophers who are involve in teaching activities	Human Capital
S3K2I118: The number of children who are involve in the projects/activities	Human Capital Relational Capital
S3K2I219: The number of activities	Structural Capital
S3K2I320: The amount of budget	Structural Capital
S4K1I121: The number of seminars	Human Capital
S4K1I222: The number of cultural subjects and inventories	Structural Capital
S4K1I323: The number of local philosophers and experts involve in the activities	Human Capital
S4K1I424: The number of training program in cultural subject for the villagers	Human Capital
S4K2I125: The number of local philosophers that are recognized and admired	Human Capital Relational Capital

S4K2I226: A program to look after the well being of local philosophers	Relational Capital
S4K2I327: The number of cultural inventory that come from local philosopher's knowledge	Structural Capital
S5K1I128: The number of media alternatives partnership	Relational Capital
S5K1I229: The number of project that collaborates with external organizations	Relational Capital
S5K1I330: Good image on part of the community	Structural Capital

According to the indicator arrangement, fifteen indicators relate to structural capital, twelve indicators relate to relational capital and eleven indicators relate to human capital (Figure 4.11).

Table 4.11 Mea-hiya Community Capital Focus

KSFs	Indicators	Capital Focus
S1K1:	S1K1I11: The increasing percentage of the local government budget S1K1I22: The amount of money that is supported by local private units	
S1K2:	S1K2I13: The number of cultural public policy S1K2I24: The strategic planning of the cultural policy S1K2I35: The number of projects/activities which relate to cultural policy	
S1K3:	S1K3I16: The number of members S1K3I27: The number of media alternatives for studying S1K3I38: The number of subject manual to guide people's learning	
S2K1:	S2K1I19: The number of people who involve in the projects/activities S2K1I20: The number of project/activity that use participation process S2K1I31: The percentage of people that satisfy the projects/activities	
S2K2:	S2K2I12: The number of member S2K2I23: The number of people who are involve in the projects/activities S2K2I34: The number of project that collaborates with all three generations	
S3K1:	S3K1I15: The number of students that study the cultural subject S3K1I26: The number of subjects in the school curriculum which can integrate cultural concept S3K1I37: The number of local philosophers who are involve in teaching activities	
S3K2:	S3K2I18: The number of children who are involve in the projects/activities S3K2I29: The number of activities S3K2I30: The amount of budget	
S4K1:	S4K1I21: The number of seminars S4K1I22: The number of cultural subjects and inventories S4K1I32: The number of local philosophers and experts involve in the activities S4K1I44: The number of training program in cultural subject for the villagers	
S4K2:	S4K2I25: The number of local philosophers that are recognized and admired S4K2I26: A program to look after the well being of local philosophers S4K2I37: The number of cultural inventory that come from local philosopher's knowledge	
S5K1:	S5K1I28: The number of media alternatives partnership S5K1I29: The number of project that collaborates with external organizations S5K1I30: Good image on part of the community	

4.12.2 Mea-hiya Community Capital Focus

The fifteen indicators relate to structural capital can be weighted in percentage term at 40% of the Mea-hiya community’s intellectual capital. Twelve indicators relate to relational capital can be weighted in percentage term at 31% of the Mea-hiya community’s intellectual capital. Eleven indicators relate to human capital can be weighted in percentage term at 29% of the Mea-hiya community’s intellectual capital. The value of intellectual capital is presented in percentage weighting terms is an attempt to show how much a certain area contributes to creating wealth for the community in the eye of the stakeholders. Thus, the direction of managing the Mea-hiya community’s traditional knowledge is to focus majorly on structural capital. The relational capital and human capital are nearly equal in focus (Figure 4.7).

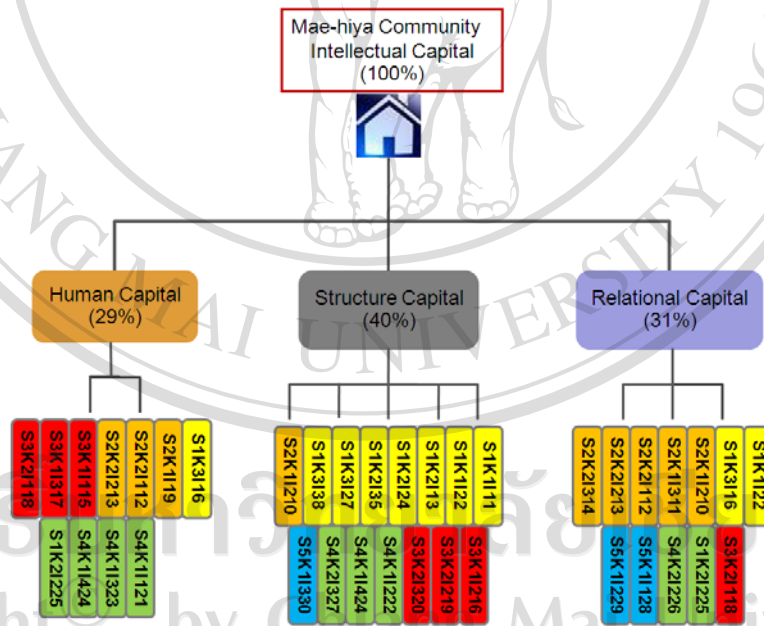


Figure 4.8 Mea-hiya community capital focus

4.13 Step 4: Initial Finding of Indicator Development

At step 1, the Mea-hiya community's stakeholders have provided 19 needs and expectations. Their needs and expectations have been classified based on a common norm of the ideas into five major concepts. Those five main concepts of managing community traditional knowledge have become fundamental concept of the Mea-hiya cultural strategies. Thus, the five cultural strategies have been formulated. After having strategies, the stakeholders then have identified 10 key success factors (KSFs) for the strategies. Each strategy has its own KFSs to achieve the strategic goals. The stakeholders also have selected 30 indicators to measure KSFs.

The process demonstrates that the stakeholders have involved since the beginning. Knowledge creation process has occurred during the process (strategies formulation, KSFs verification, and indicator selection). Everything that has accomplished to this point came from the Mea-hiya community's stakeholders. Their knowledge and experiences can be shared and exchanged effectively. The Mea-hiya community's value of intellectual capital presents that the direction of managing their traditional knowledge is focus majorly on structural capital. The relational capital and human capital are nearly equal in focus.

At this point, the research has accomplished half the way of the investigation of managing the Mea-hiya's traditional knowledge. The designed process has supported the Mea-hiya community to identify and analyze the key stakeholders, the strategies, key success factors, and the indicators. There are five strategies, ten Key Success Factors, and thirty indicators (Figure 4.7)

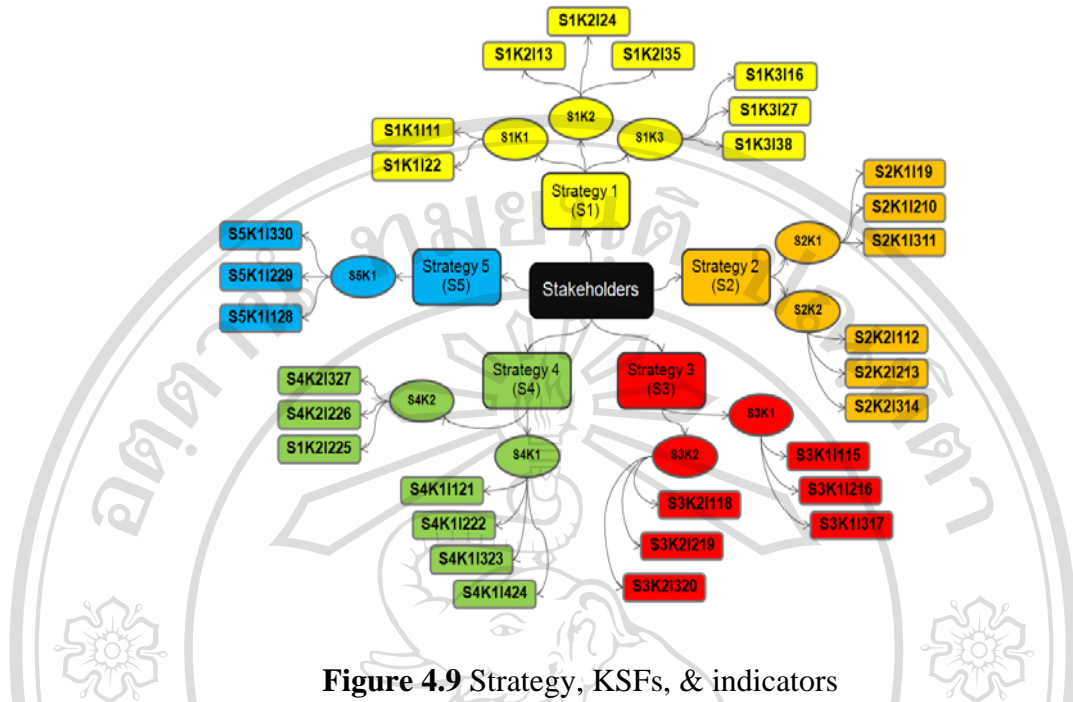


Figure 4.9 Strategy, KSFs, & indicators

4.14 Step 5: Risk Assessment

4.14.1 Risk Identification

At the half way through of this exploratory research, the Mea-hiya community has successfully formulated five strategies, ten Key Success Factors, and thirty indicators. In this step, risk management technique can be applied to consolidated indicators. The risks have been identified by the stakeholders.

Results of identifying risks are presented as followed:

- i. First strategy (S1), to conserve, support and restore local culture, contains three KSFs, 1K1: Increase budget, S1K2: Policy support and S1K3: Constructing a Mea-hiya history center. The stakeholders have identified two risks:
 - The local government reduces the budget because of the economic crisis.
 - The policy to support cultural activities is changed because the new local government might not have such a policy.

These risks associate with the indicators No.S1K1I11 and No.S1K2I13.

ii. Second strategy (S2), to promote community cooperation, contains two KSFs, S2K1: Strong Networking and S2K2: Supporting the Three Generations Center. The stakeholders have identified two risks:

- A lack of village participation because the villagers do not have time and the local government does most of the jobs.
- The three generations do not always join the same cultural activities because the types of the activities do not fit to all three generations.

These risks associate with the indicators No.S2K1I19, No.S1K1I210.

iii. Third strategy (S3), to focus on children and school, contains two KSFs, S3K1: Local history subject in schools and S3K2: Create the youth groups & support activities. The stakeholders have identified two risks:

- A lack of enthusiasm for the subject because the teaching style is too conservative.
- The youths' lack of interest to join activities because the activities are outdated.

These risks associate with indicators No.S3K1I216 and No.S3K2I219.

iv. Fourth strategy (S4), to make cultural inventory from local philosophers and experts, contains two KSFs, S4K1: Intensive seminars and S4K2: Focusing on local philosophers. The stakeholders have identified two risks:

- The local philosophers are unable to attend seminars because he/she has a health condition.
- Each philosopher may have a different version for the traditional knowledge because the tacit and explicit literature narrated in different style (the stakeholders have different background).

These risks associate with indicators No.S4K1I323 and No.S4K1I222.

v. Fifth strategy (S5), to disseminate the right information to the public, contains one KSF, S5K1: Strong public relations. The stakeholders have identified one risk:

- Having a limited amount of public exposure because the community is inexperienced with promotion strategies. This risk associates with indicators No.S5K1I128.

From the five strategies and ten key success factors, the stakeholders have identified 9 risks. These risks associate with 10 indicators. These 10 indicators are important because if the community cannot meet the indicator's target, the strategy has high potential to fail. The Mea-hiyas' strategies, KSFs, risk, root causes and indicators are presented in the Table 4.12.

Table 4.12 Strategies, KSFs, risk, root causes and indicators

Strategy & KSFs	Risk	Root cause	Monitor indicator
S1: To conserve, support and recover the local culture S1K1: Increase budget S1K2: Policy support S1K3: Constructing a Mea - hiya history center (for learning)	1.1 Local Gov reduces budget	Economic crisis	S1K1I11 The increasing percentage of the local government budget
	1.2 Policy change	New government	S1K2I13 The number of cultural public policy
S2: To promote community cooperation S2K1: Strong Networking S2K2: Supporting "the Three Generations Center"	2.1 Lack of village participation	The local gov. does most of the jobs Villagers do not have time	S2K1I19 The number of people who involve in the projects/activities S2K1I210 The number of project/activity that use participation process
	2.2 The three generations do not always join the same cultural activities	Type of the activities	S2K2I314 The number of project that collaborates with all three generations
S3: To focus on Children and school S3K1: Local history subject in schools S3K2: Create the youth groups & support Activities	3.1 Subjects lack enthusiasm	Teaching style is too conservative	S3K1I216 The number of optional media to teach the subjects
	3.2 Lack of interest from the youth	Activities are outdated	S3K2I219 The number of activities that mix to modern life style
S4: make TK inventory from local philosopher and experts S4K1: Intensive seminars S4K2: Focusing on local philosopher	4.1 Local philosophers are unable to attend	Health condition	S4K1I323 The number of local philosophers and experts involve in the activities
	4.2 Different version for the traditional knowledge	The stakeholders have different background	S4K1I222 The number of cultural subjects and inventories
S5: To disseminate the right information to the public S5K1: Strong Public relations	5.1 Limited amount of public exposure or relations to the community	Inexperience with promotion strategy	S5K1I128 The number of media alternatives partnership

4.14.2 The Linkage of Risks, Indicators and Capitals

After identifying the risk, the risks are linked to the appropriate indicators and the intellectual capital.

Risk No.1.1, the local government reduce budget to support cultural activities, associates with the indicators No.S1K1I11. This indicator relates to structural capital.

Risk No.1.2, the change of policy to support cultural activities, associates with the indicator No.S1K2I13. This indicator relates to structural capital.

Risk No.2.1, a lack of village participation, associates with the indicator No.S2K1I19 and No.S1K1I210. This indicator relates to human and relational capital.

Risk No.2.2, the three generations do not always join the same cultural activities, associates with the indicator No.S2K2I314. This indicator relates to relational capital.

Risk No.3.1, the subject lack of enthusiasm, associates with the indicator No.S3K1I216. This indicator relates to structural capital

Risk No.3.2, the youth lack of interest to joint activities, associates with the indicators and No.S3K2I219. This indicator relates to structural capital.

Risk No.4.1, the local philosophers are unable to attend a seminar, associates with the indicators and No.S4K1I323. This indicator relates to human capital.

Risk No.4.2, a different version for the traditional knowledge, associates with the indicators No.S4K1I222. This indicator relates to structural capital.

Risk No.5.1, a limited amount of public exposure of relations to the community, associates with indicators No.S5K1I128. This indicator relates to relational capital.

The Table 4.13 presents risks, key indicators and capital form. The Table 4.14 presents the linkage of strategies, risks, indicators and intellectual capital forms.

Table 4.13 Risks, key indicators and capital form

No	Risks	Key indicator	Capital Focus
1	1.1 Local Gov reduces support	S1K1I11	Structural Capital
2	1.2 policy change	S1K2I13	Structural Capital
3	2.1 lack of villager participation	S2K1I19 S2K1I210	Human Capital Relational Capital
4	2.2 not all three generations joined the activities	S2K2I314	Relational Capital
5	3.1 subjects lack enthusiasm	S3K1I216	Structural Capital
6	3.2 lack of interest from the youth	S3K2I219	Structural Capital
7	4.1 local philosophers are unable to attend	S4K1I323	Human Capital
8	4.2 different version for the traditional knowledge	S4K1I222	Structural Capital
9	5.1 limited amount of public exposure or relations to the community	S5K1I128	Relational Capital

Table 4.14 The linkage of strategies, risks, indicators and intellectual capital forms

Strategy & KSFs	Risk	Monitor indicator	Capital Focus
S1: To conserve, support and recover the local culture S1K1: Increase budget S1K2: Policy support S1K3: Constructing a Mea-hiya history center (for learning)	1.1 Local Gov reduces budget	S1K1I11 The increasing percentage of the local government budget	Structural Capital
	1.2 policy change	S1K2I13 The number of cultural public policy	Structural Capital
S2: To promote community cooperation S2K1: Strong Networking S2K2: Supporting "the Three Generations Center"	2.1 lack of village participation	S2K1I19 The number of people who involve in the projects/activities S2K1I210 The number of project/activity that use participation process	Human Capital Relational Capital
	2.2 not all three generations joined the activities	S2K2I314 The number of project that collaborates with all three generations	Relational Capital
S3: To focus on Children and school S3K1: Local history subject in schools S3K2: Create the youth groups & support Activities	3.1 subjects lack enthusiasm	S3K1I216 The number of optional media to teach the subjects	Structural Capital
	3.2 lack of interest from the youth	S3K2I219 The number of activities that mix to modern life style	Structural Capital
S4: make TK inventory from local philosopher and experts S4K1: Intensive seminars S4K2: Focusing on local philosopher	4.1 local philosophers are unable to attend	S4K1I323 The number of local philosophers and experts involve in the activities	Human Capital
	4.2 different version for the traditional knowledge	S4K1I222 The number of cultural subjects and inventories	Structural Capital
S5: To disseminate the right information to the public S5K1: Strong Public relations	5.1 limited amount of public exposure or relations to the community	S5K1I128 The number of media alternatives partnership	Relational Capital

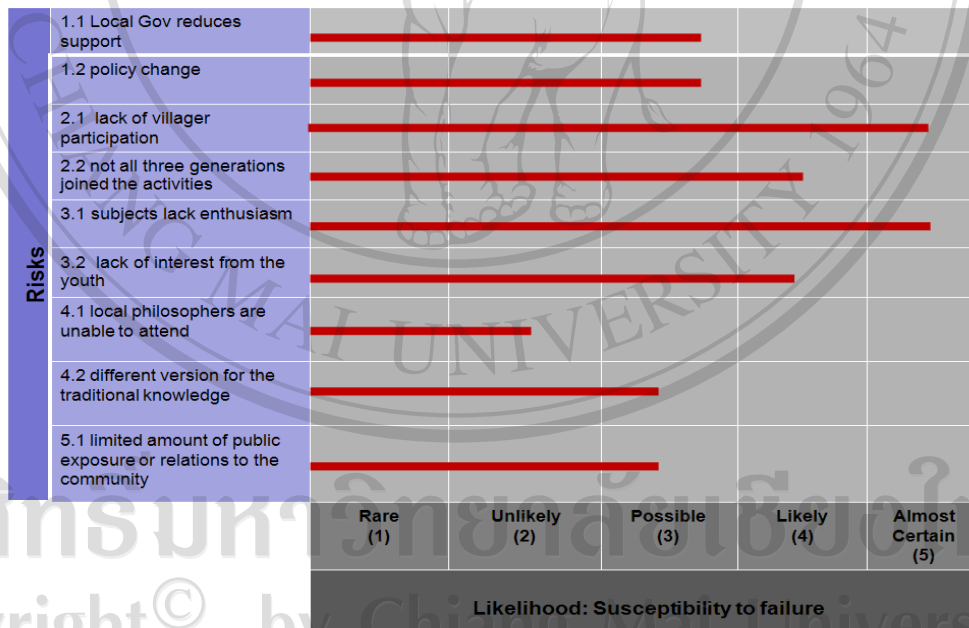
4.15 Step 5: Risk Result Analysis

4.15.1 Risk Evaluation and Assessment

The risks can be evaluated on two scales: the likelihood and the seriousness. The risks have been evaluated by the stakeholders as follows:

The likelihood: risk No 2.1, a lack of villagers participation, and risk No.3.1, subjects lack enthusiasm have been ranked on the almost certain spot. Risk No.2.2, the three generations do not always join the same cultural activities, and No.3.2 lack of interest from the youth have been ranked on the likely spot. Risk No.1.1, No.1.2, No.4.2 and No.5.1 have been ranked on the possible spot. Risk No.4.1 has been ranked on the unlikely spot. No risk is ranked on the rare spot.

Table 4.15 Likelihood evaluation



The seriousness: risk No 1.2, the policy change, and No.2.1, lack of villager participation have been ranked on the catastrophic spot. Risk No.1.1, local government reduce support, and risk No.2.2, the three generations do not always join the same cultural activities have been ranked on the major spot. Risk No.2.2, No.4.1, No.4.2 and No.5.1 have been ranked on the moderate spot. Risk No.3.1 has been ranked on the minor spot. No risk is ranked on the insignificant spot.

Table 4.16 Seriousness evaluation

Risks	1.1 Local Gov reduces support			✓	
	1.2 policy change				✓
	2.1 lack of villager participation				✓
	2.2 not all three generations joined the activities		✓		
	3.1 subjects lack enthusiasm	✓			
	3.2 lack of interest from the youth			✓	
	4.1 local philosophers are unable to attend			✓	
	4.2 different version for the traditional knowledge			✓	
	5.1 limited amount of public exposure or relations to the community			✓	
		1	2	3	4
	Insignificant	Minor	Moderate	Major	Catastrophic
Seriousness: Impact to community					

In this step, the risk assessment matrix can be used to analyze and rank risks. The matrix has ranges of consequences and likelihood as the axis. Risk No.2.1 has been plotted in the red zone at the almost certain spot (scale 5) on the likelihood axis and the catastrophic spot (scale 5) in the seriousness axis. Risk No.1.2 has been plotted in the orange zone at the possible spot (scale 3) on the likelihood axis and the catastrophic spot (scale 5) in the seriousness axis. Risk No.3.2 has been plotted in the orange zone at the likely spot (scale 4) on the likelihood axis and the major spot (scale 4) in the seriousness axis. Risk No.1.1 has been plotted in the yellow zone at the possible spot (scale 3) on the likelihood axis and the major spot (scale 4) on the seriousness axis. Risk No.2.2 has been plotted in the yellow zone at the likely spot (scale 4) on the likelihood axis and the moderate spot (scale 3) on the seriousness axis. Risk No.3.1 has been plotted in the yellow zone at the almost certain spot (scale 5) on the likelihood axis and the minor spot (scale 2) on the seriousness axis. Risk No.4.2 has been plotted in the light blue zone at the possible spot (scale 3) on the likelihood axis and the moderate spot (scale 3) on the seriousness axis. Risk No.5.1 has been plotted in the light blue zone at the possible spot (scale 3) on the likelihood axis and the moderate spot (scale 3) on the seriousness axis. Risk No.4.1 has been

plotted in the gray zone at the unlikely spot (scale 2) on the likelihood axis and the moderate spot (scale 3) on the seriousness axis (Table 4.15).

Table 4.17 Risk assessment

Likelihood	Almost Certain	5		R 3.1			R 2.1
	Likely	4			R 2.2	R 3.2	
	Possible	3			R 4.2 R 5.1	R 1.1	R 1.2
	Unlikely	2			R 4.1		
	Rare	1					
			1	2	3	4	5
			Insignificant	Minor	Moderate	Major	Catastrophic
			Seriousness: Impact to community				

4.16 Step 5: Initial Finding

From five strategies and ten key success factors, the stakeholders have identified 9 risks. The risks associate with 10 indicators. Risk management techniques provide a mechanism to consolidate Mea-hiya community traditional knowledge management indicators to a smaller numbers. The Mea-hiya can focus comprehensively on 10 indicators from the 30 indicators in total.

4.17 Step 6: Indicators Consolidation

4.17.1 Risks and Indicators Prioritization

i. The first rank is risk No. 2.1.

Risk No.2.1, a lack of village participation, associates with the indicator No.S2K1I19 and No.S1K1I210. These indicators relate to human and relational

capital. The risk has the highest score 5 in the likelihood and 5 in the seriousness. The total score is 10.

ii. The second rank is risk No.1.2 and 3.2.

Risk No.1.2, the change of policy to support cultural activities, associates with the indicator No.S1K2I13. This indicator relate to structural capital. Risk No.1.2 has the score of 3 in the likelihood and 5 in the seriousness. The total score is 8.

Risk No.3.2, the youth lack of interest to joint activities, associates with the indicators and No.S3K2I219. This indicator relates to structural capital. Risk No.3.2 has the score of 4 in the likelihood and 4 in the seriousness. The total score is 8.

iii. The third rank is risk No. 1.1, No. 2.2 and No. 3.1.

Risk No.1.1, the local government reduce budget to support cultural activities, associates with the indicators No.S1K1I11. This indicator relates to structural capital. Risk No.1.1 has the score of 3 in the likelihood and 4 in the seriousness. The total score is 7.

Risk No.2.2, the three generations do not always join the same cultural activities, associates with the indicator No.S2K2I314. This indicator relates to relational capital. Risk 2.2 has the score of 4 in the likelihood and 3 in the seriousness. The total score is 7.

Risk No.3.1, the subject lack of enthusiasm, associates with the indicator No.S3K1I216. This indicator relates to structural capital. Risk 3.1 has the score of 5 in the likelihood and 2 in the seriousness. The total score is 7.

The fourth rank is risk No.4.2 and No.5.1.

Risk No.4.2, a different version for the traditional knowledge, associates with the indicator No.S4K1I222. This indicator relates to structural capital. Risk 4.2 has the score 3 in the likelihood and of 3 in the seriousness. The total score is 6.

Risk No.5.1, a limited amount of public exposure of relations to the community, associates with indicator No.S5K1I128. This indicator relates to

relational capital. Risk 5.1 has the score of 3 in the likelihood and 3 in the seriousness. The total score is 6.

The fifth ranking is the risk No.4.1.

Risk No.4.1, the local philosophers are unable to attend a seminar, associates with the indicator No.S4K1I323. This indicator relates to human capital. Risk 4.1 has the score of 2 in the likelihood and 3 in the seriousness. The total score is 5.

Table 4.18 presents risk and indicator ranking.

Table 4.18 Risk ranking

No	Risks	Likelihood	Seriousness	Total	Key Indicator	Capital Focus
1	2.1 lack of villager participation	5	5	10	S2K1I19 S2K1I210	Human Capital Relational Capital
2	1.2 policy change	3	5	8	S1K2I13	Structure Capital
2	3.2 lack of interest from the youth	4	4	8	S3K2I219	Structure Capital
3	1.1 local Gov reduces support	3	4	7	S1K1I11	Structure Capital
3	2.2 not all three generations joined the activities	4	3	7	S2K2I314	Relational Capital
3	3.1 subjects lack enthusiasm	5	2	7	S3K1I216	Structure Capital
4	5.1 limited amount of public exposure or relations to the community	3	3	6	S3K1I218	Relational Capital
4	4.2 different version for the traditional knowledge	3	3	6	S4K1I222	Structure Capital
5	4.1 local philosophers are unable to attend	2	3	5	S5K1I323	Human Capital

4.18 Step 6: Risk and Indicators Prioritization Result Analysis

With proxy 30 indicators that express in the most divest units of measurement such as number of people, number of members, and number of projects etc., The consolidation of all indicators into one smaller measure helps to improve the visualization of the value-created processes of the Mea-hiya traditional knowledge management. The nine risks and ten indicators have been prioritized providing the Mea-hiya cultural management to focus on the right spots so they can manage

traditional knowledge comprehensively and effectively. From 30 indicators, the Mea-hiya community can pay more attention to 10 indicators. These 10 indicators are important because if the community cannot meet the indicator's target, the strategy has high potential to fail.

In this step, there are 10 indicators which associate with nine risks. Five indicators associate with the structural capital (50% of the intellectual capital). Three indicators associate with the relational capital (30% of the intellectual capital). Two indicators associate with the human capital (20% of the intellectual capital). The indicators consolidation also can confirm that the structure capital is the most important follows by relational capita and human capital to Mea-hiya community (Figure 4.10).

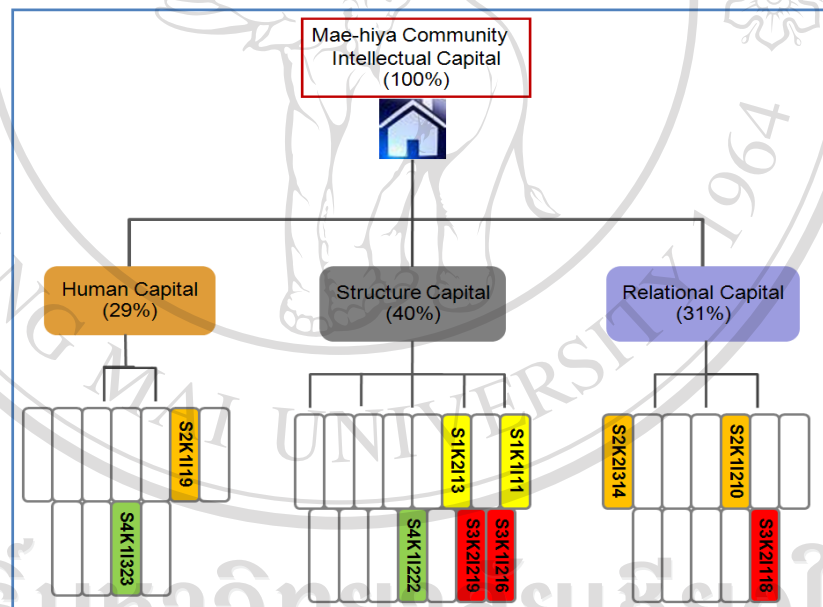


Figure 4.10 Indicators and capitals result from risk management technique

4.19 Step 6: Initial finding

The risk management technique can be used to consolidate indicators. From 30 indicators, the Mea-hiya cultural management can comprehensively manage 10

indicators and nine risks. The Mea-hiya cultural management now knows what indicators and risks that are the most important for them to manage.

The indicators consolidation also has confirmed that the structure capital is the most important follows by relational capita and human capital to Mea-hiya community in managing their cultural traditional knowledge.

4.20 Step 7: Surveillance Function

Since the risks have been identified by the stakeholders, the integrated eight steps process is designed to manage the risks on order to avoid or mitigate them. In order to develop effective risk mitigating measures, the Mea-hiya community's risk monitor index must be created. The monitor index can be designed and presented to the stakeholders. The four levels monitor index has been verified by the stakeholders as follows:

4.20.1 Monitor Index

i. The first rank, risk No.2.1, a lack of village participation which relates to the indicators S2K1I19, S2K1I210:

1st level is the negligible level which requires no action.

The situation of this level is a cultural activity which has a participation number of 80% (at least) of the project's target number.

2nd level is the preventable level which is acceptable but requires controls.

The situation of this level is a cultural activity which has a participation number less than 60% of the project's target number.

3rd level is the undesirable level which requires the action of close monitor.

The situation of this level is a cultural activity which has a participation number less than 50% of the project's target number.

4th level is the unacceptable level which requires a remedy and protective action. The situation of this level is a cultural activity which has a participation number less than 40% (at least) of the project's target number.

ii. The second rank, risk No.1.2, the change of policy to support cultural activities which relates to indicator S1K2I13:

1st level is the negligible level which requires no action. The situation of this level is a cultural topic is a part of the community's main policy and strategy.

2nd level is the preventable level which is acceptable but requires controls. The situation of this level is a cultural topic is a part of the community's main policy but in minor strategy.

3rd level is the undesirable level which requires the action of close monitor. The situation of this level is a cultural topic is a part of the community's minor policy and strategy.

4th level is the unacceptable level which requires a remedy and protective action. The situation of this level is there is no cultural topic in the community's policy or strategy.

iii. The second rank, risk No.3.2, the youth lack of interest to joint activities which relates to indicator S3K2I219:

1st level is the negligible level which requires no action. The situation of this level is the youth club creates and manages cultural activities at least 6 activities/year.

2nd level is the preventable level which is acceptable but requires controls. The situation of this level is the youth club creates and manages cultural activities at least 4 activities/year

3rd level is the undesirable level which requires the action of close monitor. The situation of this level is the youth club creates and manages cultural activities at least 2 activities/year

4th level is the unacceptable level which requires a remedy and protective action. The situation of this level is no cultural activity crates by the youth club.

iv. The third rank, risk No.1.1, the local government reduce budget to support cultural activities which relates to indicator S1K1I11:

1st level is the negligible level which requires no action. The situation of this level is the local government reduces less than 20% of the budget to support cultural affairs.

2nd level is the preventable level which is acceptable but requires controls. The situation of this level is the local government reduces more than 20% of the budget to support cultural affairs.

3rd level is the undesirable level which requires the action of close monitor. The situation of this level is the local government reduces more than 40% of the budget to support cultural affairs.

4th level is the unacceptable level which requires a remedy and protective action. The situation of this level is the local government reduces more than 50% of the budget to support cultural affairs.

- v. The third rank, risk No.2.2, the three generations do not always join the same cultural activities which relates to indicator S1K1I314:

1st level is the negligible level which requires no action. The situation of this level is at least 6 cultural activities that have all 3 generations participate.

2nd level is the preventable level which is acceptable but requires controls. The situation of this level is at least 4 cultural activities that have all 3 generations participate.

3rd level is the undesirable level which requires the action of close monitor. The situation of this level is at least 2 cultural activities that have all 3 generations participate.

4th level is the unacceptable level which requires a remedy and protective action. The situation of this level is there is no activity for the 3 generation in the community.

- vi. The third rank, risk No.3.1, local cultural subjects lack enthusiasm which relates to indicator S3K1I216:

1st level is the negligible level which requires no action. The situation of this level is all local cultural subject is applied the student centered concept and used new medias as teaching method.

2nd level is the preventable level which is acceptable but requires controls. The situation of this level is less than 70% of the local cultural subject is applied the student centered concept and used new media as teaching method.

3rd level is the undesirable level which requires the action of close monitor. The situation of this level is less than 50% of the local cultural subject is applied the student centered concept and used new media as teaching method.

4th level is the unacceptable level which requires a remedy and protective action. The situation of this level is 40% of the local cultural subject is applied the student centered concept and used new medias as teaching method.

vii. The fourth rank, risk No.4.2, a different version for the traditional knowledge which relates to indicator S4K1I322:

1st level is the negligible level which requires no action. The situation of this level is every local traditional knowledge has the official inventory (document, sound, video footage or picture).

2nd level is the preventable level which is acceptable but requires controls. The situation of this level is less than 70% of local traditional knowledge has the official inventory.

3rd level is the undesirable level which requires the action of close monitor. The situation of this level is less than 40% of local traditional knowledge has the official inventory.

4th level is the unacceptable level which requires a remedy and protective action. The situation of this level is no local traditional knowledge has the official inventory.

viii. The fourth rank, risk No.5.1, a limited amount of public exposure of relations to the community which relates to indicator S5K1I218:

1st level is the negligible level which requires no action. The situation of this level is having all kind of media alternatives partnership (newspaper, magazine, TV, radio, website & media agency).

2nd level is the preventable level which is acceptable but requires controls. The situation of this level is having 4 kinds of media alternatives partnership.

3rd level is the undesirable level which requires the action of close monitor. The situation of this level is having 2 kinds of media alternatives partnership.

4th level is the unacceptable level which requires a remedy and protective action. The situation of this level is no media alternatives partnership.

ix. The fifth rank, risk No.4.1, the local philosophers are unable to attend a seminar which relates to indicator S5K1I323:

1st level is the negligible level which requires no action. The situation of this level is every activity is jointed by local philosophers.

2nd level is the preventable level which is acceptable but requires controls. The situation of this level is less than 70% of the total number of activity is jointed by local philosophers.

3rd level is the undesirable level which requires the action of close monitor. The situation of this level is less than 60% of the total number of activity is jointed by local philosophers.

4th level is the unacceptable level which requires a remedy and protective action. The situation of this level is less than 50% of the total number of activity is jointed by local philosophers

4.21 Step 7: Monitor Index Result analysis

The research has created the typical activation order of different levels of protection in response to situations in the Mea-hiya community. The Mea-hiya community's risk monitor index has been designed to have four levels to help the Mea-hiyas to understand how different levels of protection are challenged as atypical incidence develops. Each risk relates to the key indicator which means if the community comprehensively focuses on one particular indicator, they automatically prevent or mitigated the particular related risks (Figure 4.19). Via versa, if a risk happens, that means the community does not accomplish to meet an indicator's demand and it reflects to the key success factor and the strategy in managing traditional knowledge.

Table 4.19 Risk monitor index and key indicators

Risk Monitor Index					Key indicators
2.1 lack of villager participation	Participant >80% from the target Num.	Participant >60% from the target Num.	Participant >50% from the target Num.	Participant >40% from the target Num.	S2K1I119 S2K1I210
1.2 policy change	Main policy & strategy	Main policy but minor strategy	Minor policy	No policy	S1K2I13
3.2 lack of interest from the youth	The youth club manages 6 activities/year	The youth club manages 4 activities/year	The youth club manages 2 activities/year	No activity	S3K2I219
1.1 Local Gov reduces support	Reduce <20%	Reduce >20%	Reduce > 40%	Reduce > 50%	S1K1I11
Risks					
2.2 not all three generations joined the activities	6 activities that have all 3 generations participate	4 activities that have all 3 generations participate	2 activities that have all 3 generations participate	No activity	S1K1I314
3.1 subjects lack enthusiasm	Every subject applies student centered concept and new medias	<70% of the subject applies student centered concept and new medias	<50% of the subject applies student centered concept and new medias	<40% of the subject applies student centered concept and new medias	S3K1I216
5.1 limited amount of public exposure or relations to the community	Having all kind of media alternatives partnership (newspaper, magazine, TV, radio, website & media agency)	Having 4 kinds of media alternatives partnership	Having 2 kinds of media alternatives partnership	No media alternatives partnership	S4K1I322
4.2 different version for the traditional knowledge	Every local traditional knowledge has the official inventory (document, sound, video footage or picture)	<70% of local traditional knowledge has the Official inventory (document, sound, video footage or picture)	<40% of local traditional knowledge has the Official inventory (document, sound, video footage or picture)	No local traditional knowledge has the Official inventory	S5K1I218
4.1 local philosophers are unable to attend	Every activity is jointed by local philosophers	<70% of the total number of activity is jointed by local philosophers	<60% of the total number of activity is jointed by local philosophers	<50% of the total number of activity is jointed by local philosophers	S5K1I323
	Negligible (Acceptable as is)	preventable (Acceptable with controls)	Undesirable (Close monitoring)	Unacceptable (Remedy & Protection)	

4.22 Step 7: Monitor Index Initial Finding

Based on the findings of the consolidate indicator, the risk management techniques allow the community to manage risks. The monitor index can assist the community's traditional management to focus on the right indicator to prevent or mitigate risks. The community also has a typical activation order of different levels of protection in response to traditional knowledge situations in the Mea-hiya community.

This step demonstrates that the eight step process of the research is a self-correcting process. If an indicator is performed effectively, that leads to no risk occurrence. On the other hand, if a risk is managed properly, that leads to a succeeded indicator. This situation leads to an accomplishment of a KFS and strategy (Figure 4.10).

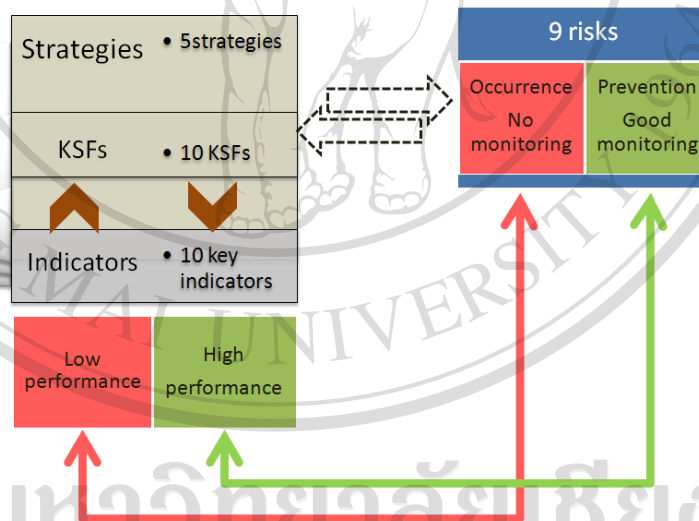


Figure 4.11 The diagram of self correcting process

4.23 Step 8: Risk Contingency Plan

In this step, the stakeholders were asked to provide an action plan to mitigate the risks. To create the plan, the root cause, the indicators and the capital form of the risk were reviewed as the key material.

The results of the contingency plan are presented as follows:

- i. The first ranked risk, risk No. 2.1, a lack of village participation because the local government does most of the job and the villagers do not have enough time. The risk associates with the indicator No.S2K1I19 and No.S1K1I210. This indicator relates to human and relational capital. The action plan to mitigate the risk is to let villagers manage activities, to promote an intensive PR and to give recognition to the people who run the activity. The groups responsible for the action are the cultural council, local government and temples. The knowledge that is required to manage the action is the skill of persuasion and the skill of crating public relation.
- ii. The second ranked risk, risk No.1.2: the change of policy to support cultural activities because the new local government might has a new policy which excludes the cultural topic. Risk No.1.2 associates with the indicator No.S1K2I13. This indicator relates to structural capital. The action plan to mitigate the risk is to monitor policy and to lobby the policy from the local politicians. The groups responsible for the actions are the Mea-hitya Cultural Council and the local leaders. The knowledge that is required to manage the actions is the negotiation and policy formulation knowledge.
- iii. The second ranked risk, risk No.3.2, the youth lack of interest to joint the cultural activities because the activities are outdated. Risk No.3.2 associates with the indicators No.S3K2I219. This indicator relates to structural capital. The action plan to mitigate the risk is to let the youth create and support these activities emphasizing more relevant youthful themes. The groups responsible for the action are schools, the youth club and the local government. The knowledge that is required to manage the actions is the skill of persuasion and the supportive skill.

- iv. The third ranked risk, risk No.1.1, the local government reduce budget to support cultural activities because the economic crisis. Risk No.1.1 associates with the indicators No.S1K1I11. This indicator relates to structural capital. The action plan to mitigate the risk is to lobby the budget and to create private organization networks to get support. The groups responsible for the actions are the Mea-hiya Cultural Council and the local government. The knowledge that is required to manage the action is the financial planning skill and the skill of creating social networking.
- v. The third ranked risk, risk No.2.2; the three generations do not always join the same cultural activities because the type of the activity does not fit all three generations. Risk No.3.2 associates with the indicator No.S2K2I314. This indicator relates to relational capital. The action plan to mitigate the risk is to give activity souvenir to the participants and to review and design activities that collaborates with all three generations. The group responsible for the actions are the Mea-hiya Cultural Council, the local leader and the temple. The knowledge that is required to manage the actions is the creative activities and the skill of persuasion.
- vi. The third ranked risk, risk No.3.1: the subject lack of enthusiasm because the teaching style is too conservative. Risk No.3.1 associates with the indicator No.S3K1I216. This indicator relates to structural capital. The action plan to mitigate the risk is to apply student centered learning concepts to teach students and to use new teaching media in the classroom. The groups responsible for the actions are the teachers and students and the local philosophers. The knowledge that is required to manage the actions is the curriculum development skill and the student centered technique.
- vii. The forth ranked risk, risk No.4.1, the local philosophers are unable to attend a seminar because they have health condition. Risk No.4.1 associates with the indicators No.S4K1I323. This indicator relates to human capital. The action plan to mitigate the risk is to create health care check up plan and to visit the local philosopher every month. The groups responsible for the actions are the local leader, local government and the local heal center. The knowledge that is

required to manage the actions is the skill to encourage people and medical skill.

- viii. The forth ranked risk, risk No.5.1: a limited amount of public exposure or relations to the community because the community is inexperienced with public relation. Risk No.5.1 associates with indicators No.S5K1I128. This indicator relates to relational capital. The action plan to mitigate the risk is to build good relationship with media. The groups responsible for the actions are the Mea-hiya Cultural Council and the local government. The knowledge that is required to manage the actions is the communication skill and public relation skill.
- ix. The fifth ranked risk, risk No.4.2: the different versions for the traditional knowledge because the tacit and explicit literature narrated in different style and the local philosophers have different background. Risk No.4.2 associates with the indicators No.S4K1I222. This indicator relates to structural capital. The action plan to mitigate the risk is to create united objectives to the seminars and to set the rule of listening to each one reason. The groups responsible for the actions are the Mea-hiya Cultural Council and the local philosophers. The knowledge that is required to manage the actions is the compromise skill and summary skill.

Table 4.20 Contingency plan

Risk Ranking	Capital	Zone	Key Indicator	Action plan	Risk owner	Knowledge Requirement
Risk No 2.1 lack of villager participation	Human & Relational Capital	Red	S2K1I19 S2K1I210	<ul style="list-style-type: none"> let villagers manage activities promote an intensive PR give recognition 	<ul style="list-style-type: none"> Cultural council Local Gov. Temple 	<ul style="list-style-type: none"> Persuade skill PR skill
Risk No1.2 policy change	Structure Capital	Orange	S1K2I13	<ul style="list-style-type: none"> monitor policy champagne lobby policy 	<ul style="list-style-type: none"> Cultural council Local leader 	<ul style="list-style-type: none"> Negotiation Policy formulation
Risk No 3.2 lack of interest from the youth	Structure Capital	Orange	S3K2I219	<ul style="list-style-type: none"> let the youth creates activities support & compliment 	<ul style="list-style-type: none"> School A youth club Local Gov. 	<ul style="list-style-type: none"> Persuade skill Supportive
Risk No1.1 Local Gov reduces support	Structure Capital	Yellow	S1K1I11	<ul style="list-style-type: none"> lobby budget create private orgs. network 	<ul style="list-style-type: none"> Cultural council Local Gov. 	<ul style="list-style-type: none"> Financial plan Social networking
Risk No 2.2 not all three generations joined the activities	Relational Capital	Yellow	S2K2I314	<ul style="list-style-type: none"> give activity souvenir review & design activities 	<ul style="list-style-type: none"> Cultural council School Local leader 	<ul style="list-style-type: none"> Creative activities Persuade skill
Risk No 3.1 subjects lack enthusiasm	Structure Capital	Yellow	S3K1I216	<ul style="list-style-type: none"> apply student centered learning concept use new teaching medias 	<ul style="list-style-type: none"> Teacher & student Local philosopher 	<ul style="list-style-type: none"> Curriculum development skill Student cantered technique
Risk No 5.1 limited amount of public exposure or relations to the community	Relational Capital	Blue	S5K1I128	<ul style="list-style-type: none"> build good relationship with media 	<ul style="list-style-type: none"> Cultural council Local Gov. 	<ul style="list-style-type: none"> Communication skill PR skill
Risk No 4.1 local philosophers are unable to attend	Structure Capital	Blue	S4K1I323	<ul style="list-style-type: none"> Create health care check up plan visit them every month 	<ul style="list-style-type: none"> Local leader Local Gov. Health center 	<ul style="list-style-type: none"> Cheering skill Medical skill
Risk No 4.2 different version for the traditional knowledge	Human Capital	Gray	S4K1I222	<ul style="list-style-type: none"> Create united objectives Set rule of listening 	<ul style="list-style-type: none"> Cultural council Local philosopher 	<ul style="list-style-type: none"> Compromise skill Summarize skill

4.24 Step 8: Contingency Plan Result Analysis

The contingency plan has been created based on the stakeholder ideas. Egbuji, 1999 recommends to gather information from risk analysis is used to make decisions on how to eliminate or mitigate the identified risks. Major activities in risk management are: planning, resourcing, monitoring, and controlling risks. To create the plan, the root cause, the indicators and the capital form of the risk must be reviewed as the key material. The plan has been designed to link the risks, the capital, the risk zone, the key indicator, the action plan, the risk owner, and the knowledge requirement to manage the risks. The research finally has created the contingency table to present the linkage of the plan so the Mea-hiyas can see the whole element of relationship.

4.25 Step 8: Contingency Plan Initial Finding

At this point, the research has accomplished the plan to manage the risks. Every risk can be managed. The plan has been created by the stakeholders recommendations including the action plan, the risk owner, and the knowledge requirement to manage the risks. In this research, the stakeholders have involved every step of risk management process. The knowledge creation process occurs continuously since the beginning.

Summary

At this point, the eight step process of this research has been completed. The Mea-hiya community has identified and evaluated seven key stakeholders. The stakeholders then has formulated the strategies, key success factors and indicators. The indicators leads to the arrangement of capital categories which are structure capital, human capital and relational capital. Next, the stakeholders has identified major risks, prioritized risks and indicator in order to consolidate key indicators. Finally, risk monitor index and contingency plan to prevent or mitigate the risks has been created (Figure 4.12). The stakeholders have involved in every step of the process.

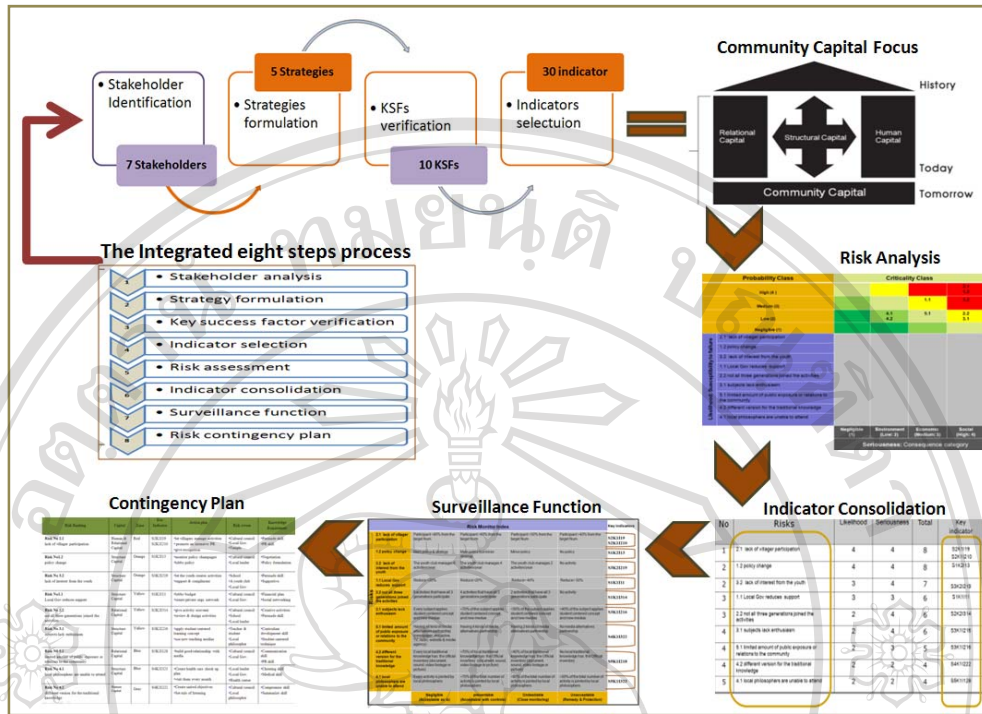


Figure 4.12 The research eight steps process

4.26 The Eight Steps Process Analysis

The main objective of this research is to propose a defensive protection system for Thai local traditional knowledge to provide local communities a prototype of self management and protection from the misuse and the misleading or loss of the community’s traditional knowledge. The research aims at developing and explaining valid and reliable knowledge for solving a specific problem which can be contributed to solve specific problems in the Mea-hiya community; moreover, contributed to classes of similar problems in similar contexts. This knowledge should not only be academic valuable, but also appropriate and relevant to improving the community effectiveness: it should comply with academic rigor and practical. Therefore, the research method has been designed; the integrated eight steps process has been created based on three theoretical backgrounds, intellectual capital process, knowledge management process and risk management process (Figure 4.13).

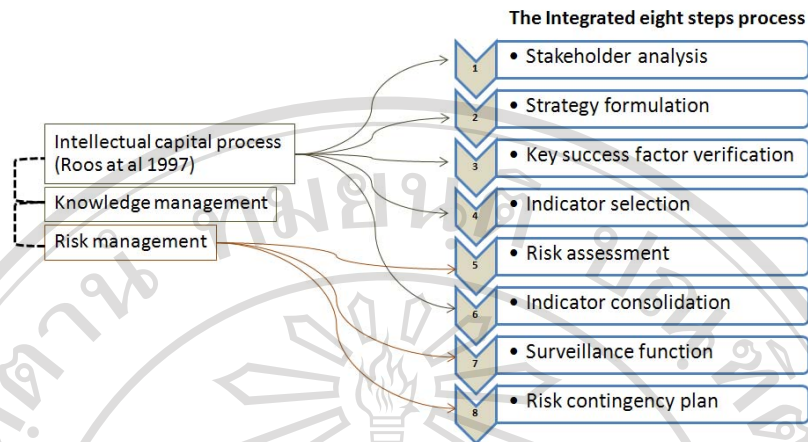


Figure 4.13 Theoretical background & eight steps process

The research demonstrates the importance of applying the eight steps process that has encouraged the community's participation. The process aims at successful acquisition requires full participation of stakeholders in every step. The process starts with stakeholder analysis that means the real key persons in the cultural domain are selected. This allows every segment of the community participate in the process from the beginning. This means every segment of the community can participate in developing strategies, KSFs, indicators, risk monitors index and contingency plan to manage the traditional knowledge. All results come from the stakeholders' knowledge, ideas and experiences. In addition, the process model provides an opportunity for the Mea-hiya cultural management to manage traditional knowledge systematically and practically.

4.27 Intellectual Capital and Knowledge Management

Petty & Guthrie 2000 suggests that intellectual capital and knowledge management are fundamental building blocks. They cannot be pursued in isolation. They must be interwoven with other management considerations to make a sound, balanced, and competitive enterprise. Knowledge Management associates with the ways of generating, increasing, and exploiting knowledge and pays attention on the value of the knowledge (measuring knowledge). To work on these approaches, the

intellectual capital concept represents the fusion between these two streams of thoughts (Roos et al, 1997 and Chatzkel, 2002). It is concerned with both managing and measuring knowledge and other intangible assets in the organization.

According to the research, the intellectual process model manages the allocation of cultural resources (capital form) and encourages learning, participation, and forming the awareness to the Mea-hiya community's traditional knowledge. In the process, the stakeholders have different backgrounds and experiences. They see things differently. However, to formulate strategies, key success factors, indicators and contingency plan, the stakeholders' knowledge and experiences can be exchanged and new knowledge to manage their traditional knowledge has been created.

According to the Mea-hiya community, two major achievements can be highlighted. First, there is a policy to have a meeting to gain community's opinions for every cultural activity. Local participants, representatives of schools, temples, villagers, local philosophers, local leaders, and local government gather to share their opinions and make decisions. This policy supports a physical share space for emerging relationship between people in the community. The meeting corresponds to the BA concept (Nonaka and Konno, 1998). BA is considered as a shared space that serves as a foundation for knowledge creation which is on of the processes in knowledge management.

Second, during the implementation of the process, there was a community meeting before the Leang Dong ritual in June 2008. The stakeholders gathered at the meeting to set up a plan for the ritual. In the meeting, there was a recommendation from local philosophers about the mistakes of last years' ritual. The ritual had many changes which were different from the way their ancestors performed. Changing the way to perform causes a misunderstanding of the meaning of the ritual. This might also lead to a Kuid (Kuid: an inauspicious event is one that give signs of bad luck or bad consequence) to the community based on their belief. Also, there were problems in managing the ritual last year. After raising problems, the meeting allowed participants to express opinions. At this point, the stakeholders' knowledge and experiences were exchanged and new knowledge to solve the problems was created in

the community meeting. According to Koenig 1998 and Liebowitz 1999, KM works with the process of creating value from an organization's intangible assets. It is the original focusing on the acquisition, structuring, retention, and dissemination of the organization's knowledge.

Nonaka and Takeuchi (1995) propose the SECI process by explaining how knowledge can be transferred and created. SECI is a spiraling process of interactions between explicit and tacit knowledge. The interactions between the explicit and tacit knowledge lead to the creation of new knowledge. According to the research process, regarding the Mea-hiya community, the example of knowledge spiraling process can be explained in the SECI Model as follows.

Socialization: the Mea-hiya stakeholders share experiences (tacit knowledge) through face to face communication. These key stakeholders get together for cultural community meetings and raise problems and share their opinions with each other.

Externalization: from the cultural event on exchanging experiences, they can identify the ways to solve problem based on their knowledge and experiences in regards to the cultural domain, which embedded knowledge is tacitly and explicitly combined.

Combination: the Mea-hiya stakeholders' combining of various elements of explicit knowledge leads to the final decision to solve the problems to manage the ritual.

Internalization: The explicit knowledge becomes part of the individual's knowledge base. For example, the cultural council can receive knowledge for managing stakeholders; the stakeholders can receive knowledge for managing traditional knowledge which takes part in encouraging the communities to arrange their cultural activities regularly. All stakeholders have learned from each other and found the new way of managing their traditional knowledge together.

In addition, the implementation of some community rules and regulations allows the community to appreciate their traditional knowledge value and to

recognize the guideline mutually set up by themselves in order to preserve, promote, and protect the community's traditional knowledge heritage.

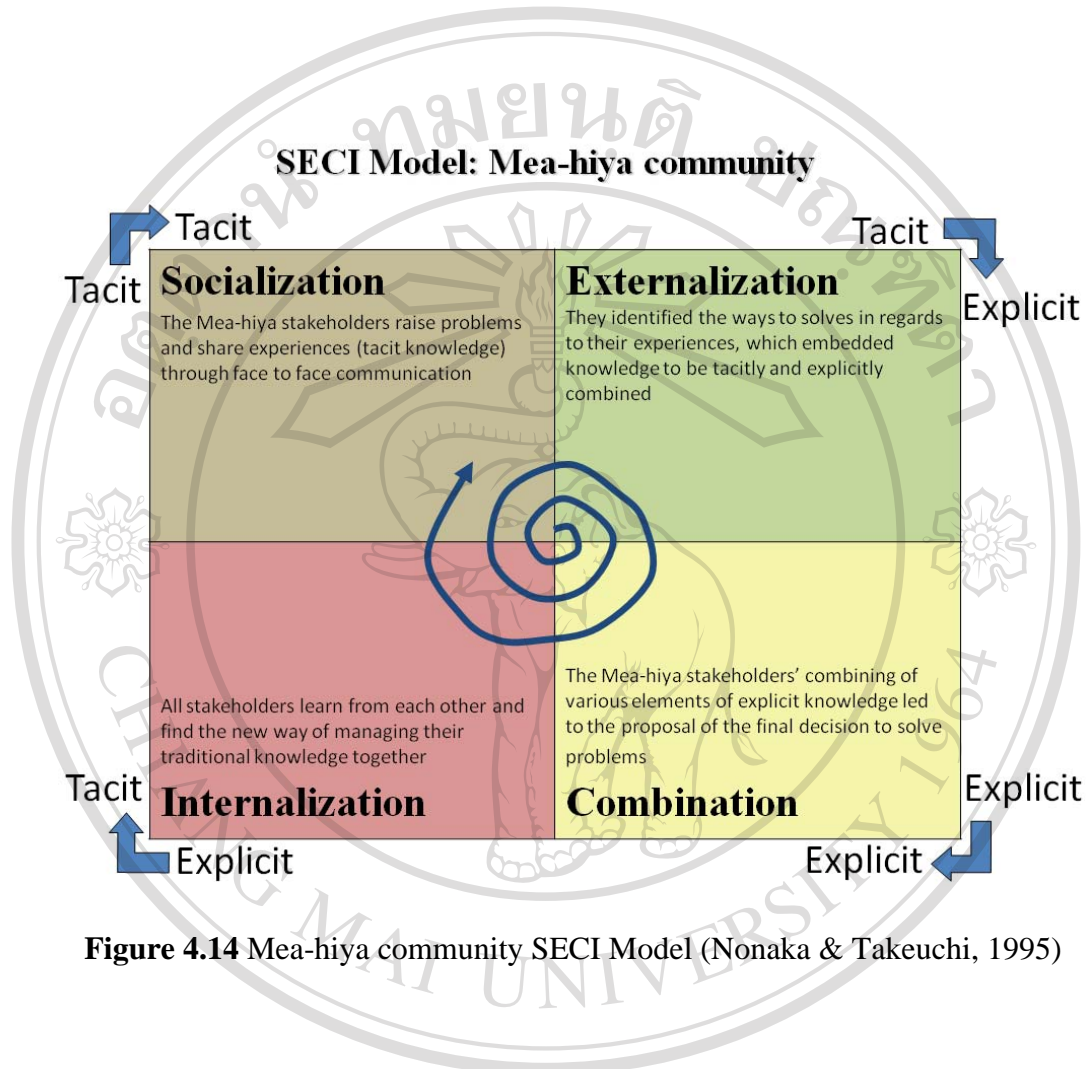


Figure 4.14 Mea-hiya community SECI Model (Nonaka & Takeuchi, 1995)

4.28 Systems Thinking Analysis

The research has accomplished in developing five strategies, ten KSFs, thirty indicators, community capital forms (structural, relational and human capital), risk monitors index and contingency plan to manage the Mea-hiya's traditional knowledge. To perceive a holistic picture of these accomplishes, the Systems Thinking approach must be applied. The Systems Thinking allows us to see the whole structure of complex situations and to identify the interrelationships of the different systems involves in the Mea-hiya cultural management. By regarding the Mea-hiya community, the traditional knowledge management can be categorized into six

systems (Figure 4.15), there are: 1) the TK inventory creation system, 2) the transmission system, 3) the supporting system, 4) the participation system, 5) the public relation system and 6) the surveillance function system. These six systems can be presented in a holistic picture.

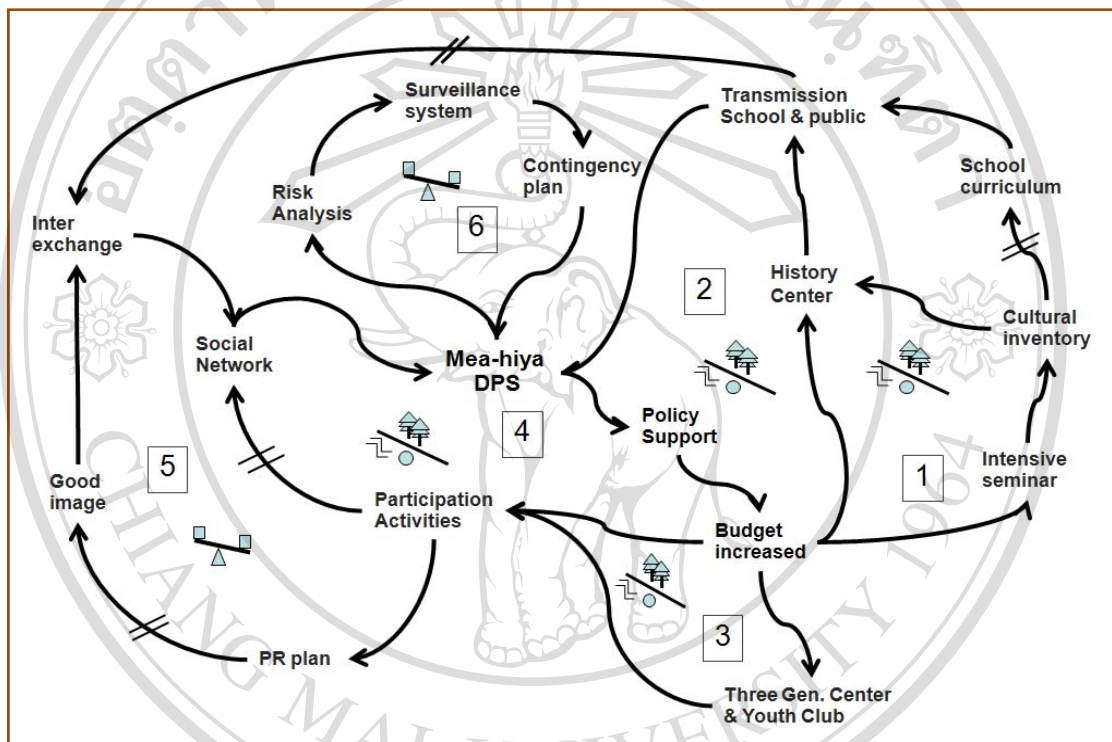


Figure 4.15 Mea-hiya community traditional knowledge management system

The first system: the TK inventory creation loop. The system starts at policy support; with having a back up policy, the budget has been allocated to conduct intensive seminars and cultural inventories are created. The cultural inventories can be distributed to the community history center or schools. The cultural inventories are the foundation of local subject curriculum taught in schools (this action expects a delay: a point where the link between these two actions takes a particular time). The cultural inventories can be also transmitted and exchanged to public (this action expects a delay). Afterwards, the exchanging crates social networks between Mea-hiya community and other parties. With this accomplishment, the policy can be continued.

In addition, this is a reinforcing loop. The community should accelerate growth of this system to create more outputs.

The second system: the transmission loop. The system starts at the policy support; with having a back up policy, the budget has been increased and enough to establish the community history center. The center is determined to be the hub of local data, studies, and research, as well as providing historical and other important documents. The data in the center can be transmitted to schools & the public. The knowledge from the history can be exchanged between inter-parties (this action expects a delay). Afterwards, the exchanging crates social networks between Mea-hiya community and other parties. With this accomplishment, the policy can be continued. In addition, this is a reinforcing loop. The community should accelerate growth of this system to create more output which is to transmit traditional knowledge to the youth and the public.

The third system; the supporting loop: The system starts at the policy support; with having a back up policy, the budget has been increased and allocated to the Three Generation Center and the youth group to organize activities. Cultural activities are part of the three generations for cooperating with each other which encourage participation. The young from the youth groups has opportunity to do an activity together. These circumstance cab create social networks between Mea-hiyas (this action expects a delay). With this accomplishment, the policy can be continued. In addition, the activities are promoted to the public which create a good image for the community (this action expects a delay). With a good image, there are outside parties who want to make a partnership and exchange knowledge. Afterwards, the exchange creates social networks between Mea-hiya community and other parties. With this accomplishment, the policy continues. In addition, this is a reinforcing loop. The community should accelerate growth of this system to create more output which is to support the youth and the Mea-hiya to participate in cultural activities.

The fourth system; the participation loop: The system starts at the policy support; with having a back up policy, the budget has been increased and allocated to the Mea-hiyas to organize activities. The activities must have a participation process

which crates social networks between Mea-hiyas (this action expects a delay). With this accomplishment, the policy can be continued. In addition, this is a reinforcing loop. The community should accelerate growth of this system to create more output which is to support the participation process in cultural activities.

The fifth system; the public relation loop: The system starts at the policy support; with having a back up policy, the budget has been increased and allocated to participation activities. The activities are promoted to the public which create a good image for the community (this action expects a delay). With a good image, there are outside parties who want to make partner and exchange knowledge. Afterwards, the exchanging creates social networks between Mea-hiya community and other parties. With this accomplishment, the participation continues. This is a balancing loop. The community has the goal of creating a good image. To accomplish the goal, the creation of public relation must be intensive implemented.

The sixth system, the surveillance system: The system starts at risk analysis to identify and assess risks. The risk analysis leads to surveillance parameter to monitor the risks and contingency plan to mitigate the risks. This is a balancing loop. The community has the goal of preventing or mitigating risks. To accomplish the goal, the surveillance and contingency must be implemented intensively.

These six learning systems can support the ea-hiya communities as a mechanism for conservation, promotion, and protection of their traditional knowledge systematically and practically

4.29 Investigating the Mea-hiya Community Initial Stage of Managing Their Traditional Knowledge

After accomplishing examination of the eight steps process, the community was investigated its' actions. It found that the Mae-hiya community has operated initial stage to manage their traditional knowledge as followed (see Appendix J):

- The local government has allocated 30% increased budget for education and local arts & culture for the 2009 annual budget. This action responds to structural capital, strategy 1, KSF: S1K1, and indicator: S1K1I11.
- The local government has determined to take the local culture conservation issue as one of the main local strategies. The activities of recovering the tradition, inheriting the tradition and significant local rituals have been established in the annual activity. For instance, the Dum Hua tradition (providing water to revere the elders and ask for blessing in Songkran festival), the Doi Kam mountain worship and Leang Dong ritual (a kind of ritual that worships the spirits of the ancestor's), are officially held every year. This action responds to structural capital, strategy 1, KSF: S1K2, and indicator: S1K1I13.
- The community agrees to set up a meeting to gain community's opinions before every cultural activity. The meeting is hosted by the cultural council. Local participants, representatives of the school and temple, village philosophers, local leaders, and local government gather to share their opinions and make decisions. The local government provides the support for having the meeting in order to generate cooperation from everyone. This action responds to relational capital, strategy 2, KSF: S1K1 and S1K2, and indicator: S1K1I19 and S2K1I210.
- The cultural council plans to revise the content of Leang Dong ritual by setting up a seminar among the ritual's experts, philosopher, monks and academics. The ritual has been in existence for over centuries but has never been officially recorded. There are only stories told by elders and village philosophers. It is believed that the ritual has been distorted from the original one. The essence has then changed, thus misleading the truth to the current generation. Revising and correcting the ritual's content by the experts can validate the ritual to be in the prestigious form for the next generation. This action responds to structural capital, strategy 4, KSF: S4K1 and indicator: S4K1I333 and S4K1I323.
- Under the support of the Chiang Mai provincial culture council, the Mea-hiya culture council arranged and video-taped the Dum Hua tradition (providing water on the hands of revered elders and ask for blessing during Songkran festival) in the Lanna authentic way. The footage was recorded on VCD and distributed to

schools and the public. The VCD can benefit students and local people by serving as a model for learning the original tradition. This action responds to structural capital and human capital, strategy 3 and 4, KSF: S3K1 and S4K1 and indicator: S3K1I216, S4K1I222 and S4K1I323.

- The culture council president, village philosopher and local people had an opportunity to broadcast Liang Dong ritual to the public through the channel 5 television station. This helped to create a sense of understanding about the community's background and belief which had existed for centuries. This also created a good image for the community as being the preserver of a very long and unique tradition. This action responds to relational capital, strategy 5, KSF: S5K1 and indicator: S5K1I128 and S4K1I330.
- The local government established the Three Generations Center to be the place for elders, middle age and youth participating together in any activity. The cultural activity was a part of the three generations for cooperating with each other. There was also an activity for learning how to play the local musical instruments and taking a traditional dancing course that taught by elders. In general of the Thai communities, the elders, housewives, teenagers and youth are separated. Each group just does their own activity which separates them. The Three Generation Center was considered as a place for grandfathers, grandmothers, fathers, mothers and grandchildren to do an activity together including cultural interests. This action responds to human capital and relational capital, strategy 2, KSF: S2K2 and indicator: S2K2I112, S2K2I213 and S2K2I314.
- The local government and the cultural council plan to establish a History Learning Centre of the Mae-hiya community. This centre plan to be established by 2010. The center is determined to be the hub of local data, studies, and research, as well as providing historical and other important documents. It will be located in the local government's area and under the authority of the Mea-hiya culture council. This action responds to structural capital, strategy 4, KSF: S1K3 and indicator: S1K3I16 and S1K3I27.

Table 4.21 Initiate stage of managing traditional knowledge

Stakeholders' strategies	KSFs	Indicators	Mea-hiya Community Initial Stage of Managing Traditional Knowledge				
			Action	Capital Focus	Strategy	KSFs	Indicators
S1: To conserve, support and recover the local culture	S1K1: Increase budget	S1K111: The increasing percentage of the local government budget S1K112: The amount of money that is supported by local private units	Allocated the annual budget up to 25 % for the educational and local cultural section	Structure capital	S1	S1K1	S1K111
	S1K2: Policy support	S1K213: The number of cultural public policy S1K224: The strategic planning of the cultural policy S1K235: The number of projects/activities which relate to cultural policy	Take the local culture conservation issue as one of the main local strategies	Structure capital	S1	S1K2	S1K213
	S1K3: Constructing a Mea - hiya history center (for learning)	S1K316: The number of members S1K327: The number of media alternatives for studying S1K338: The number of subject manual to guide people's learning	Rule of meeting to gain community's opinions before cultural activity	Relational capital	S2	S1K2 S2K1	S2K119 S2K1210
S2: To promote community cooperation	S2K1: Strong Networking	S2K119: The number of people who involve in the projects/activities S2K120: The number of project/activity that use participation process S2K131: The percentage of people that satisfy the projects/activities	Plan to revise the content of Liang Dong ritual by setting up a seminar among the ritual's experts	Structure capital	S4	S4K1	S4K11222 S4K11323
	S2K2: Supporting "the Three Generations Center"	S2K2112: The number of member S2K2213: The number of people who are involve in the projects/activities S2K2314: The number of project that collaborates with all three generations	Restored and video-taped the Lanna authentic way of Dum Hua tradition and distributed to the school and the public	Structure capital Human capital	S3/S4	S4K1 S3K1	S3K11216 S4K11222 S4K11323
S3: To focus on Children and school	S3K1: Local history subject in schools	S3K1115: The number of students that study the cultural subject S3K1216: The number of media to teach subjects S3K1317: The number of local philosophers who are involve in teaching activities	Broadcasted Liang Dong ritual through the channel 5 television station	Relational Capital	S5	S5K1	S5K11128 S5K11330
	S3K2: Create the youth groups & support activities	S3K2118: The number of children who are involve in the projects/activities S3K2219: The number of activities that mix to modern life style S3K2320: The amount of budget	Established the Three Generations Center	Relational capital Human capital	S2	S2K2	S2K21112 S2K2213 S2K2314
S4: To make TK inventory from local philosophers and experts	S4K1: Intensive seminars	S4K1121: The number of seminars S4K1222: The number of cultural subjects and inventories S4K1323: The number of local philosophers and experts involve in the activities S4K1424: The number of training program in cultural subject for the villagers	Set up a plan for building a History Learning Centre of the Mae-hiya community	Structural Capital	S1	S1K3	S1K3116 S1K3127 S1K3138
	S4K2: Focusing on local philosophers	S4K2125: The number of local philosophers that are recognized and admired S4K2226: A program to look after the well being of local philosophers S4K2327: The number of cultural inventory that come from local philosopher's knowledge					
S5: To disseminate the right information to the public	S5K1: Strong Public relations	S5K1128: The number of media alternatives partnership S5K1229: The number of project that collaborates with external organizations S5K1330: Good image on part of the community					

According to the initial action, the community has conducted eight activities that relates to five strategies, eight KSFs and seventeen indicators. Eight indicators associates with the structural capital, six indicators associates with the relational capital, and five indicators associates with the human capital. Thus, the structural capital and can be weighted in percentage term at 42% of the intellectual capital. The relational capital can be weighted in percentage term at 32% of the intellectual capital. The human capital can be weighted in percentage term at 26% of the intellectual capital. The value of intellectual in percentage of the initiate stage of managing traditional knowledge is to focus on structural capital follows by relational capital and human capital. This proves that the process has supported the Mea-hiya community to manage traditional knowledge systematically and practically.

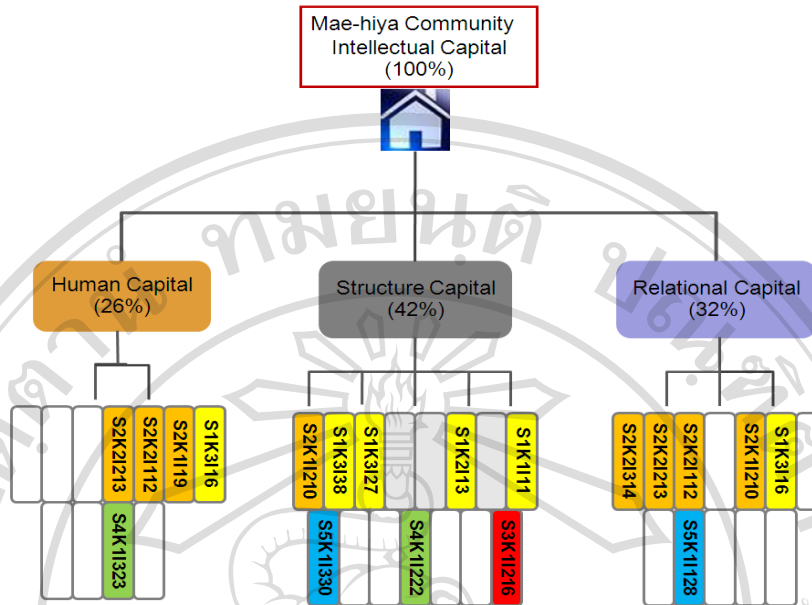


Figure 4.16 Initiate stage capital focus

4.30 The Mea-hiya Community Traditional Knowledge Management in the Context of the Sustainable Development

Sustainable development needs to be considered at all levels of decision making especially at local community, this section is particularly focused on sustainable development of Mea-hiya communities regarding the community strategies, key success factors and indicators. To approach sustainable development concept, the Mea-hiya community's strategies, key success factors and indicators must be verified to meet the sustainable development framework of Thailand National Sustainable Development Strategy (NSDS) which consists of 4 major strategies and twenty three actions.

4.30.1 The verification of The Mea-hiya community traditional knowledge management and NSDS:

NSDS 2nd strategy: enhance environmental security and sustainability, the strategy proposed to ensure water security and conserve and manage natural resources and biodiversity.

Mea-hiya community: strategy 1, and KSF: S1K1 (Table 4.22).

To correspond to NSDS, the Mea-hiya community by the local government has determined to take the local culture conservation issue as one of the main local strategies. The activities of inheriting significant local rituals have been established in the annual activity especially Leang Dong ritual would be officially held every year. The Leang Dong ritual has direct relevance to secure and conserve natural resources in the Mea-hiya community.

At the foot of Doiklam Mountain in June of every year the Mea-hiyas continue to perform the oldest ancient ritual to worship Pu Sae and Ya Sae, otherwise known as the Leang Dong ritual. The Mea-hiyas believe that Phu Sae and Ya Sae protect the Mea-hiya community and Chiang Mai. The Mea-hiyas also ask the spirits to provide the following for the Mea-hiyas and the people of Chiang Mai - good health to all living beings, harmonious relations, a prosperous future, and a blessed rainy season to enrich the agriculture. The indirect outcome of the ritual is the people believe that the foot of Doiklam is a sacred ground where the spirits of Phu Sae and Ta Sae occupy. Since the people pay high respect to this location, they respectfully and carefully utilize the forest because they do not want to pick up an inauspicious event or bad consequence (Kuid) given by Phu Sae and Ya Sae spirits according to their belief. As long as the ritual performed, the forest is conserved by the Mea-hiyas sustainably.

Table 4.22 The environmental development and Mea-hiya cultural management

SD: Environment	IC Process	
<p>2nd Strategy: Enhance environmental security and sustainability</p>	<p>Strategy: S1 the local culture conservation issue is one of the main local strategies</p>	
<p>Implementation: 1. Ensure water security</p> <p>Proposed Actions and Instruments:</p> <ul style="list-style-type: none"> • Developing models and replicating all sectors' integrated participatory water source management • Initiating any new laws, measures and mechanisms, forceful or incentive, for water resource conservation 	<p>KSF:</p> <p>S1K2</p>	<p>Indicator:</p> <p>S1K2I13 & S1K2I24</p> <p>S1K2I13, S1K2I24</p> <p>Remark: The Leang Dong ritual has direct relevance to secure and conserve natural resources in the Mea-hiya community.</p>
<p>Implementation: 4. Conserve and manage natural resources and biodiversity</p> <p>Proposed Actions and Instruments:</p> <ul style="list-style-type: none"> • Strengthening communities' potential in co-existing with natural resources and environment peacefully and favorably 	<p>S1K2</p>	

NSDS 3rd strategy: to create a knowledge-based and ethical society. The strategy proposes to support education and continuous learning, improve public access to information and promote religious and cultural awareness and sensitivity. These statements relates to every community's strategy and nine KSFs. The NSDS 3rd strategy has great direct relevance to the Mea-hiya community's cultural management.

The verification is presented as follows:

Implementation 1: to support education and continuous learning by increasing and extending lifelong learning opportunity for Thai people by:

NSDS: To establish of community learning center:

The Mea-hiya community: strategy 1 (S1): to conserve, support and restore the local culture, strategy 2 (S2): strong networking, and KSFs, S1K3: constructing a Mea-hiya history center and S2K2: support the Three Generation Center

NSDS: To develop and improve the efficiency of the educational curriculum, technology and innovation, as well as the educational system (formal and informal education) and continually and earnestly promote informal learning outside the school system:

The Mea-hiya community: strategy 1 (S1): to conserve, support and recover the local culture, strategy 1 (S2): to promote community cooperation, strategy 3 (S3): to focus on Children and school and KSFs, S1K3: constructing a Mea- hiya history center, S2K2: supporting the Three Generations Center, S3K1: local history subject in schools and S3K2: Create the youth groups & support activities respond to the statement.

NSDS: To promote and develop knowledge management and conservation and dissemination of local wisdom within communities such as the establishment of learning centers at community, district, and provincial level, and to collect and compile local wisdom and to honor local philosophers and gurus,

The Mea-hiya community: strategy 1 (S1): to conserve, support and recover the local culture, strategy 4 (S4): to make TK inventory from local philosophers and

experts, and KSFs, S1K3: constructing a Mea - hiya history center, S4K1: intensive seminars and S4K2: focusing on local philosophers respond to the statement.

NSDS: To emphasize on creating powerful community management by promoting the concept of unity, thinking, and working together in various forms and continuously organizing activities according to the readiness of community.

The Mea-hiya community: strategy 2 (S2): to promote community cooperation and KSFs, S2K1: strong networking respond to the statement.

Implementation 1: to support education and continuous learning, the NSDS proposes to develop comprehensive and continual intellectual infrastructure namely (1) human resource (2) information technology and communication including other technologies (3) culture and ethics in society (4) laws and motivation (5) infrastructure and institution (such as science institution, academic institutes, research and development institutes, etc.) by;

NSDS: To promote system and procedure on the development of knowledge and understanding of nature gained by observing, researching, analyzing and synthesizing. Then the knowledge gained would be systematized and organized to be used with technology and scientific systems. It is the beneficial adaptation of scientific knowledge in utilization, development and management of knowledge database, technological skills and experiences. This includes management for protection of intellectual property, organizational management and new marketing for commercial purpose and benefit of the public.

The Mea-hiya community: strategy 1 (S1): to conserve, support and restore the local culture, strategy 4 (S4): to make TK inventory from local philosophers and experts and KSFs, S1K3: constructing a Mea-hiya history center and S4K1: Intensive seminars. The local government and the cultural council have set up a plan for building a History Learning Center of the Mae-hiya community. The center is determined to be the hub of local data, studies, and research, as well as providing historical and other important documents.

Implementation 1: to support education and continuous learning, the NSDS proposes to aim at developing and promoting a process of public participation so that citizens are able to think and implement and know how to be self-reliant by:

NSDS: developing and extending the result of the planning process of the communities, building community leaders' capacity, establishing of a community coordination center for the exchange of experiences and to help each other as a network based on the Community Enterprise Promotion Act, B.E. 2548 (2005), the

Mea-hiya community: strategy 1 (S1): to conserve, support and recover the local culture, strategy 2 (S2): to promote community cooperation, and KSFs, S1K3: constructing a Mea- hiya history center, S2K1: strong networking and S3K1: local history subject in schools respond to the statement.

NSDS: To improve quality of teachers/inspectors as well as teaching and studying curriculum in order to increase quality of students.

The Mea-hiya community: strategy 3 (S3): to focus on Children and school, and KSFs, S3K1: local history subject in schools respond to the statement.

NSDS: To develop and promote maturity and good consciousness of the citizens in order to reduce threatening risks and dangers from mental and physical violation, for example, promotion of a happy family, reduction of family assaults, sexual oppression, and social class discrimination, by continuously and seriously developing a process for the enhancement of learning.

The Mea-hiya community: strategy 1 (S1): to conserve, support and recover the local culture, strategy 2 (S2): to promote community cooperation, and KSFs, S1K2: policy support, S2K1: strong networking and S2K2: supporting the Three Generations Center respond to the statement.

Implementation 2: to improve public access to information, the NSDS proposes to promote, support, and protect rights of the citizens and organization for society and community development by:

NSDS: To Promote rights in accessing information in order that the citizens can play important role in policy decision-making and development of the country together with all sectors.

The Mea-hiya community: strategy 2 (S2): to promote community cooperation and KSFs, S2K1: strong networking respond to the statement.

NSDS: To develop and promote freedom in performing duties of mass media in order to guarantee rights, freedom, and security of mass media. This will facilitate mass media to work straightforwardly for the overall benefit of the country and its citizens.

The Mea-hiya community: strategy 5 (S5): to disseminate the right information to the public and KSF, S5K1: strong public relations respond to the statement.

NSDS: Implementation 3: to promote religious and cultural awareness and sensitivity, the NSDS proposes to aim at continuous and serious development of morality, ethics, and valuable culture to be more widespread in Thai society by:

NSDS: To promote more learning and awareness of morality, ethics, and values of people in society, especially among youth; for example, promotion of reading of folktales and fables as well as supplementary reading with moral teaching and precept for elementary children; promote the awareness of value of Thai culture and way of life; and public relations to create sustainable consumption.

The Mea-hiya community: strategy 2 (S2): to promote community cooperation, strategy 3 (S3): to focus on children and school, and KSFs, S2K2: supporting the Three Generations Center, S3K1: local history subject in schools, S3K2: create the youth groups & support activities respond to the statement

NSDS: To Support and encourage parents, youths, and schools or education institutions to creatively organize religious, public service, and recreational activities together as well as encouraging the mass media to play a strong role in this matter.

The Mea-hiya community: strategy 2 (S2): to promote community cooperation, strategy 3 (S3): to focus on children and school, strategy 5 (S5): to disseminate the right information to the public, and KSFs, S2K2: supporting the Three Generations Center, S3K1: local history subject in schools, S3K2: create the youth groups & support activities, S5K1: strong public relations respond to the statement.

NSDS: To Promote, encourage, and enforce measurements and guidelines for the sustainable utilization and management of cultural and archaeological heritage.

The Mea-hiya community: strategy 1 (S1): to conserve, support and recover the local culture, S3: to focus on children and school, strategy 4 (S4): to make TK inventory from local philosophers and experts and KSFs, S1K2: policy support, S3K1: Local history subject in schools respond to the statement S1K3: and S4K1: Intensive seminars respond to the statement.

NSDS: To promote and organize public relation activities to create social awareness in conservation of culture and traditions as well as morality and ethics among youths and citizens.

The Mea-hiya community's strategy 5 (S5): to disseminate the right information to the public and KSF, S5K1: strong public relations respond to the statement.

The relevant of NSDS and the community's figure is presented in the Table 4.23.

Table 4.23 The social development and Mea-hiya intellectual capital process

SD: Society	IC Process	
3rd Strategy: Create a knowledge-based society and ethical society	Strategy: S1, S2, S3, S4, S5	
Implementation: 1.Support education and continuous learning		
Proposed Actions and Instruments: 1.Increase and extend lifelong learning opportunity for Thai people <ul style="list-style-type: none"> • Establishment of Community Learning Center • Develop and improve efficiency of educational curriculum, technology and innovation, as well as educational system • Develop supporting system for education in order to exalt learning achievement of students at all levels and all educational systems (formal and informal education) • Continually and earnestly promote informal learning outside schooling system such as to promote the role of civil sector in developing local community’s capacity to become a influential group of people who can protect both individual rights and mutual benefits 	KSF: S1K3 S2K1 S2K2 S3K1 S4K1	Indicators: S1K3I16, S1K3I27, S1K3I38 S2K1I19, S2K1I210, S2K1I311 S2K2I112 , S2K2I213, S2K2I314 S3K1I115, S3K1I216, S3K1I317 S4K1I121, S4K1I222

<ul style="list-style-type: none"> Promote and develop knowledge management and conservation and dissemination of local wisdom within communities such as the establishment of learning centers at community, district, and provincial level Collect and compile local wisdom and honor local philosophers and gurus Emphasize on creating powerful community management by promoting concept of being together, think together, and working together in various forms and continuously organizing activities according to the readiness of community 	S4K2	S4K1I323, S4K1I424 S4K2I125, S4K2I226, S4K2I327
<p>2. Develop comprehensive and continual intellectual infrastructure namely</p> <p>(1) human resource (2) information technology and communication including other technologies (3) culture and ethics in society (4) laws and motivation (5) infrastructure and institution (such as science institution, academic institutes, research and development institutes, etc.)</p> <ul style="list-style-type: none"> Promote system and procedure on the development of knowledge and understanding on nature gained by observing, researching, analyzing and synthesizing. Then the knowledge gained would be systematized and organized to be technology and science system. It is the beneficial adaptation of scientific knowledge in utilization, development and management of knowledge database, technological skills and experiences. This includes management for protection of intellectual property, organizational management and new marketing for commercial purpose and benefit of the public 	S1K3 S4K1	S1K3I16, S1K3I27, S1K3I38 S4K1I121, S4K1I222 S4K1I323, S4K1I424
<p>3. Aim at develop people and promote public participation process so that citizens be “able to think and implement” and know how to be self-reliant</p>	S2K1	S2K1I19, S2K1I210, S2K1I311

<ul style="list-style-type: none"> • Aim at developing and extending the result of planning process of communities; building community leaders' capacity, establishment of community coordination center for the exchange of experiences and help each other as a network based on the Community Enterprise Promotion Act, B.E. 2548 (2005) • Improve quality of teachers/inspectors as well as teaching and studying curriculum in order to increase quality of students • Develop and promote maturity and good consciousness of the citizens in order to reduce threatening risks and dangers from mental and physical violation, for example, promotion of happy family, reduction of family assault situation, sexual oppression, and social class discrimination, etc. by continuously and seriously develop process for the enhancement of learning 	<p>S3K1</p> <p>S1K3</p> <p>S1K2</p>	<p>S3K1I115, S3K1I216, S3K1I317</p> <p>S1K3I16, S1K3I27, S1K3I38</p> <p>S1K2I13, S1K2I24 , S1K2I35</p>
<p>Implementation: 2.Improve public access to information</p> <p>Proposed Actions and Instruments:</p> <p>Seriously promote, support, and protect rights of the citizens and organization for society and community development by</p> <ul style="list-style-type: none"> • Promoting rights in accessing information in order that the citizens can play an important role in policy decision-making and development of the country together with all sectors • Developing and promoting freedom in performing duties of mass media in order to guarantee rights, freedom, and security of mass media. This will facilitate mass media to work straightforwardly for the overall benefit of the country and its citizens 	<p>S2K1</p> <p>S5K1</p>	<p>S2K1I19, S2K1I210, S2K1I311</p> <p>S5K1I128, S5K1I229, S5K1I330</p>

Implementation: 3.promote religious and cultural awareness and sensitivity

Proposed Actions and Instruments:

Aim at continuous and serious development of morality, ethics, and valuable culture to be more widespread in Thai society by;

- Promoting more learning and awareness of morality, ethics, and values of people in society, especially among youth. For example, promotion of reading of folktales and fables as well as supplementary reading with moral teaching and precept for elementary children; promotion the awareness of value of Thai culture and way of life; and public relations to create sustainable consumption, etc.
- Supporting and encouraging parents, youths, and schools or education institutions to creatively organize religion activities, public service activities, and recreational activities together as well as encouraging mass media to play more role in this matter
- Promoting, encouraging, and enforcing measurements and guidelines for the sustainable utilization and management of cultural and archaeological heritage
- Promoting and organizing public relation activities to create social awareness in conservation of culture and traditions as well as morality and ethics among youths and citizens

S1K3

S1K3I16, S1K3I27, S1K3I38

S2K2

S2K2I112 , S2K2I213, S2K2I314

S3K1

S3K1I115, S3K1I216, S3K1I317

S3K2

S3K2I118, S3K2I219, S3K2I320

S4K1

S4K1I121, S4K1I222
S4K1I323, S4K1I424

S4K2

S4K2I125, S4K2I226, S4K2I327

S5K1

S5K1I128, S5K1I229, S5K1I330

NSDS 4th strategy, ensure good government at all levels of society, the strategy proposed to strengthen public participation process. These statements related to the community's strategy 2 (S2); to promote community cooperation, and strategy 3 (S3): to focus on Children and school, and KSF, S2K1 strong networking and S3K2: create the youth groups & support activities

NSDS: Implementation 4: to strengthen public participation process, the NSDS proposes to continuously promote the public participation by;

NSDS: To encourage people to use the voting rights and to play an important and powerful role in the decision making of policy and encourage public participation of people in each community for the decision-making of public policy

The Mea-hiya community: strategy 2 (S2); to promote community cooperation and strategy and KSF, S2K1 strong networking respond to the statement.

NSDS: Implementation 4: to strengthen public participation process, the NSDS proposes to promote the participation of all sectors systematically and comprehensively, especially by;

NSDS: To encourage participation of children and youth in school, community, municipality, and business sector in the implementations that lead the country to sustainability based on the initiations made by NGOs and educational sectors.

The Mea-hiya community: strategy 2 (S2); to promote community cooperation, strategy 3 (S3): to focus on Children and school, and KSFs, S2K1 strong networking S2K2: Supporting the Three Generations Center and S3K2: create the youth groups & support activities respond to the statement.

Table 4.24 presents the relevant of the social/governmental development and Mea-hiya intellectual capital process

Table 4.24 The social/governmental development and Mea-hiya intellectual capital process

SD: Society/Government	
<p>4th Strategy: Ensure good government at all levels of society</p>	<p>Strategy: S2 to promote community cooperation</p>
<p>Implementation: 4.Strengthen public participation process</p> <p>Proposed Actions and Instruments :</p> <p>1. Continuously promote the public participation, for example:</p> <ul style="list-style-type: none"> • Encouraging to use the voting rights and to play important and powerful role in the decision making of policy • Public participation of people in each community for the decision-making of public policy <p>2. Promote the participation of all sectors systematically and comprehensively, especially</p> <ul style="list-style-type: none"> • Participation of children and youth in school, community, municipality, and business sector in the implementations that lead the country to sustainability based on the initiations made by NGOs and educational sector 	<p>KSF: Indicators:</p> <p>S2K1 S2K1I19S2K2I210</p> <p>S3K1 S3K1I115, S3K1I216, S3K1I317</p> <p>S3K2 S3K2I118, S3K2I219, S3K2I320</p>

Summary

Accordingly, the Mea-hiya community's strategies, key success factors and indicators have been verified by the NSDS framework. Thailand National Sustainable Development Strategy comprises of 4 major strategies and twenty three actions. The research has analyzed the relevance of the NSDS's strategies and actions to the Mea-hiya community's strategies, KSFs, and indicators. The research found that three strategies of NSDS (2nd, 3rd, and 4th strategy) and six actions (No.1 and No.4 in the 2nd strategy; No.1, No.2 and No.3 in the 3rd strategy; No.4 in the 4th strategy) associate with the Mea-hiya community's strategies, KSFs, and indicators (Table 4.25).

The verification has showed that Mea-hiya community's traditional knowledge management relates to three out of four NSDS strategies. There are the 2nd strategy: enhance environmental security and sustainability (environmental development), the 3rd strategy create a knowledge-based and ethical society (social development) and the 4th strategy: ensure good government at all levels of society (social development). The consequence has showed that the community's traditional management is highly intertwined in social development. The result concurs with the fact that most of the Mea-hiya community's strategy and key success factors of managing traditional knowledge corresponds to social segment. The economy development, 1st strategy: eliminate poverty through sustained and equitable economic growth is excluded because there are no strategy or key success factors that correspond to that sector. However, with the sustainable development validation, the eight steps process encourages the community to manage their traditional knowledge sustainably.

Table 4.25 Structure of a guidance manual for Thailand Sustainable Development Strategy and the Mea-hiya community correspondent

<p>SD Vision of Thailand: <i>“to create the Green and Happiness Society. Thai population should have morality and wisdoms, strong family value, strong community, peaceful society, with quality, stable and fair economy. The country should have quality environment and sustainable natural resources management under the good governance principle, and maintain the democracy under the King. It should be able to stay in the world community with dignity” (NSDS, 2008)</i></p>			
<div style="border: 1px solid yellow; padding: 5px; display: inline-block;">Society</div>		<div style="border: 1px solid orange; padding: 5px; display: inline-block;">Economy</div>	
<div style="border: 1px solid green; padding: 5px; display: inline-block;">Environment</div>			
<p>1st Strategy: Eliminate poverty through sustained and equitable economic growth</p>	<p>2nd Strategy: Enhance environmental security and sustainability</p>	<p>3rd Strategy: Create a knowledge-based society and ethical society</p>	<p>4th Strategy: Ensure good government at all levels of society</p>
<p>Implementation</p> <ol style="list-style-type: none"> 1.Reduce vulnerability and improve livelihoods 2.Enhance national and household savings rate 3.Ensure fiscal sustainability and reduce public dept 4.Improve green productivity and economic competitiveness 5.Ensure energy security and renewable energy usage 6.Ensure food safety 	<p>Implementation</p> <ol style="list-style-type: none"> 1.Ensure water security 2.Manage hazardous substance and waste 3.Manage air quality 4.Conserve and manage natural resources and biodiversity 5.Ensure human and environmental biosafety 	<p>Implementation</p> <ol style="list-style-type: none"> 1.Support education and continuous learning 2.Improve public access to information & develop innovation system for science and technology 3.promote religious and cultural awareness and sensitivity 4.Improve public health services and access rights 5.Strengthen project and develop labor rights 6.Reduce crime and drug abuse 	<p>Implementation</p> <ol style="list-style-type: none"> 1.Improve transparency and accountability 2.Eliminate corruption 3.Strengthen law enforcement 4.Strengthen public participation process 5.Empower local government authorities 6.Promote regional and international cooperation

4.31 The Mea-hiya Community Traditional Knowledge Management in the Context of UNESCO and WIPO Frameworks

The UN Education, Scientific and Cultural Organization (UNESCO), the World Property Right Organization (WIPO) have studied the protection of TK under the theme of public domain property and IP mechanisms to protect traditional knowledge (Cunha, 2004).

UNESCO and WIPO's frameworks to manage traditional knowledge are to promote equal rights, identification, documentation, research, preservation, protection, promotion, enhancement, transmission, and exchange particularly through formal and non-formal education in order to promote understanding and respect of each culture. To approach UNESCO and WIPO framework, each party shall endeavor to ensure the widest possible participation of communities and individuals that create, maintain and transmit such heritage, and to involve them actively in its management. Allied parties need appropriate measures regarding laws, management and financial systems to promote strength to organizations which function to administrate and conserve cultural heritages. Allied parties are also required to promote knowledge and build understanding towards the cultural heritage and ensure that access to intangible cultural heritage will respect traditional practices (UNESCO 2003).

The eight steps process provides an opportunity for the Mea-hiya Cultural Council to manage traditional knowledge systematically and practically. The process responds to this requirement directly because it based on the participation of the people and identified stakeholders. The followings demonstrate how the Mea-hiya community's management is in compliance to the UNESCO & WIPO frameworks.

Table 4.26 The Mea-hiya community's management and UNESCO & WIPO frameworks

UNESCO & WIPO framework (UNESCO 2003 & WIPO 2001)	Mea-hiya community's strategies	Mea-hiya community's KSFs	Mea-hiya community's indicators
Developing TK databases that used as evidence to claim a patent on such TK	S4: To make document from local philosophers and experts	S4K1: Intensive seminars S4K2: Focusing on local philosopher	S4K1I121: The number of seminars S4K1I222: The number of cultural subjects and inventories S4K1I323: The number of local philosophers and experts involve in the activities
Adopt a general policy aimed at promoting the function of the intangible cultural heritage in society	S1: To conserve, support and restore the local culture	S1K1: Increase budget S1K2: Policy support S1K3: Constructing a Mea - hiya history center	S1K1I11: The increasing percentage of the local government budget S1K1I22: The amount of money that is supported by local private units S1K2I13: The number of cultural public policy S1K2I24: The strategic planning of the cultural policy S1K2I35: The number of projects/activities which relate to cultural policy S3K2I320: The amount of budget
Foster scientific, technical and artistic studies, as well as research methodologies, with a view to effective safeguarding in particular the intangible cultural heritage in danger	S4: To make document from local philosophers and experts	S4K1: Intensive seminars S4K2: Focusing on local philosopher	S4K1I121: The number of seminars S4K1I222: The number of cultural subjects and inventories S4K1I323: The number of local philosophers and experts involve in the activities
Establishing documentation institutions for the intangible cultural heritage and facilitating access to them.	S1: To conserve, support and restore the local culture	S1K1: Increase budget S1K2: Policy support S1K3: Constructing a Mea - hiya history center	S1K1I11: The increasing percentage of the local government budget S1K1I22: The amount of money that is supported by local private units S1K2I13: The number of cultural public policy S1K2I24: The strategic planning of the cultural policy S1K2I35: The number of projects/activities which relate to cultural policy S3K2I320: The amount of budget

UNESCO & WIPO Framework (UNESCO 2003 & WIPO 2001)	Mea-hiya community's strategies	Mea-hiya community's KSFs	Mea-hiya community's indicators
Keep the public informed of the dangers threatening such heritage, and of the activities	S5: To disseminate the right information to the public	S5K1: Strong Public relations	S5K1I128: The number of media alternatives partnership S5K1I229: The number of project that collaborates with external organizations S5K1I330: Good image on part of the community
Specific educational and training programmes within the communities and groups concerned	S3: To focus on Children and school	S3K1: Local history subject in schools S3K2: Create the youth groups & support Activities	S3K1I317: The number of local philosophers who are involve in teaching activities S3K2I118: The number of children who are involve in the projects/activities S3K2I219: The number of activities that mix to modern life style
Designate or establish one or more competent bodies for the safeguarding of the intangible cultural heritage present in its territory	Risk monitor index & Contingency plan	Risk monitor index & Contingency plan	S1K1I11 S1K2I13 S2K1I19 S2K1I210 S2K2I314 S3K1I216 S3K2I219 S4K1I323 S4K1I222 S5K1I128
Exchange particularly through formal and non-formal education	S3: To focus on Children and school	S3K1: Local history subject in schools S3K2: Create the youth groups & support Activities	S3K1I115: The number of students that study the cultural subject S3K1I216: The number of media to teach subjects S1K3I27: The number of media alternatives for studying S1K3I38: The number of subject manual to guide people's learning S4K1I424: The number of training program in cultural subject for the villagers
Encouraging the widest possible participation of individuals to involve actively in management	S2: To promote community cooperation	S2K1: Strong Networking S2K2: Supporting the Three Generations Center	S1K3I16: The number of member S2K2I213: The number of people who are involve in the projects/activities. S2K2I314: The number of project that collaborates with all three generations

The Table 4.26 demonstrates the compliances of the Mea-hiya initial stage actions to manage traditional knowledge and the WIPO & UNESCO framework.

Table 4.27 Mea-hiya initial activities and UNESCO & WIPO framework

WIPO & UNESCO Frameworks	Mea-hiya KSFs & Initial stage of a defensive protection system
Developing TK databases that used as evidence to claim a patent on such TK	<p>-The cultural council is planning to revise the content of Liang Dong ritual by setting up a seminar among the ritual's experts</p> <p>-The Mea-hiya Cultural Council has arranged and video-taped the Dum Hua tradition and distributed to the school and public</p>
<p>To ensure recognition of, respect for, and enhancement of the intangible cultural heritage in society, in particular through:</p> <ul style="list-style-type: none"> • <i>educational, awareness-raising and information programs, aimed at the general public, in particular young people;</i> • <i>specific educational and training programs within the communities and groups concerned;</i> • <i>capacity-building activities for the safeguarding of the intangible cultural heritage, in particular management and scientific research; and</i> • <i>non-formal means of transmitting knowledge;</i> 	<p>-The local government gets a 30% increased budget for education and culture for the 2009 annual budget</p> <p>-The Mea-hiya culture council has arranged and video-taped the Dum Hua tradition and distributed to the school and public</p> <p>-The activities of recovering the tradition, inheriting the tradition and significant local rituals have been established in the annual activity</p> <p>-The local government has established the “Three Generations Center” to be the place for elders, middle age and youth participating together in any activity including cultural activities</p>
To keep the public informed of the dangers threatening such heritage, and of the activities carried out in pursuance of this Convention.	-The culture council president, village philosopher and local people have an opportunity to broadcast Liang Dong ritual to the public through the channel 5 television station

To promote education through formal and non-formal education for the protection of natural spaces and places of memory whose existence is necessary for expressing the intangible cultural heritage	<ul style="list-style-type: none"> -The local government has established the “Three Generations Center” to be the place for elders, middle age and youth participating together in any activity including cultural activities - Establish the community history center
To ensure the widest possible participation of communities, groups and, where appropriate, individuals that create, maintain and transmit such heritage, and to involve them actively in its management.	-There would be a meeting to gain community’s opinions for every cultural activity

UNESCO & WIPO frameworks majorly focus on protecting of TK under the theme of public domain property and IP mechanisms to protect traditional knowledge such as disclosure of TK information, setting-up of TK database and amendment of patent laws, encouraging the widest possible participation of communities and individuals that create, maintain, promote and transmit traditional knowledge and to involve them actively in its management equally through formal and informal mechanisms. These organizations also focus on ensuing recognition of, respect for, and enhancement of the intangible cultural heritage, and keep the public informed of the dangers threatening such heritage and building activities for the safeguarding of the intangible cultural heritage, in particular management and scientific research.

The research has demonstrated the importance of implementing process model that encouraged the community’s participation. The eight steps process aimed at successful acquisition required full participation of stakeholders to conserve, promote and protect traditional knowledge. This means every segment of the community can participate in developing strategies, KSFs, indicators, risk monitors index and contingency plan to manage the traditional knowledge. The stakeholders’ knowledge and experiences has been expressed and exchanged during the process. Every idea of managing traditional knowledge in the community comes form the stakeholders. These achievements complies with UNESSCO and WIPO frameworks which

encourages the widest possible participation of communities, groups and individuals to involve actively in managing traditional knowledge.

Mea-hiya community traditional knowledge management system (see page 218) which has been created based on strategies, KSFs, indicators, risk monitors index and contingency plan that supported the community as a mechanism for conservation, promotion, and protection of traditional knowledge systematically and practically can be presented the compliance of the system with the objectives of UNESCO and WIPO frameworks:

The first system: the creating TK inventory loop. This system is based on the fourth strategy (S4): to make traditional knowledge inventory from local philosophers and experts. The intensive seminars are conducted to create cultural inventories (document or VOD footage). This system complies with:

UNESSCO and WIPO framework

- foster scientific, technical and artistic studies, as well as research methodologies, with a view to effective safeguarding in particular the intangible cultural heritage in danger,
- developing TK databases that used as evidence to claim a patent on such TK.

The second system: the transmission loop. This system is based on the first strategy (S1): to conserve, support and restore the local culture and the third strategy (S3): to focus on children and schools for cultural development. The community plans to establish the community history center. The center is determined to be the hub of local data, studies, and research, as well as providing historical and other important documents. The knowledge from history center can be transmitted to schools & the public. This sub-system complies with:

UNESSCO & WIPO framework:

- transmission, and exchange particularly through formal and non-formal education in order to promote understanding and respect of each culture.

The third sub-system: the supporting loop. This system is based on the first strategy (S1): to conserve, support and restore the local culture and the KSFs, S2K2: must have policies to support. The community has policy to support the Three Generation Center and the youth group to organize activities. Cultural activities are a part of the three generations for cooperating with each other which encourage participation. The young from the youth groups has opportunity to do an activity together. These circumstances create social networks between Mea-hiyas. This system complies with:

UNESCO & WIPO framework:

- adopt a general policy aimed at promoting the function of the intangible cultural heritage in society

The fourth sub-system: the participation loop. This system is based on the second strategy (S2): to promote community cooperation and KSF, S2K1: building a strong networking. The community's cultural activities must have a participation process which creates social networks between Mea-hiyas. This system complies with:

UNESCO & WIPO framework

- preservation, equal rights and endeavor to ensure the widest possible participation of communities and individuals to involve them actively in its management.

The fifth sub-system: the public relation loop. This system is based on the fifth strategy (S5): to disseminate the right cultural information to the public. The community cultural activities information is promoted to the public. This sub-system complies with:

UNESCO & WIPO framework:

- promote and keep the public informed of the dangers threatening such heritage.
- disclosure of TK information and setting-up of TK database.

The sixth sub-system: the surveillance system. This system is based on the first strategy (S1): to conserve, support and restore the local culture and the risk contingency plan of the community. The system starts at risk analysis to identify and assess risks. The risk analysis leads to surveillance parameter to monitor the risks and contingency plan to mitigate the risks. This sub-system complies with

UNESSCO & WIPO framework:

- protect and create capacity-building activities for the safeguarding of the intangible cultural heritage, in particular management and research.

Finally, the compliance of the Mea-hiya community's traditional knowledge management and UNESCO & WIPO framework is presented in the system thinking diagram to identify the interrelationships of the different systems and the frameworks (Figure 4.17).

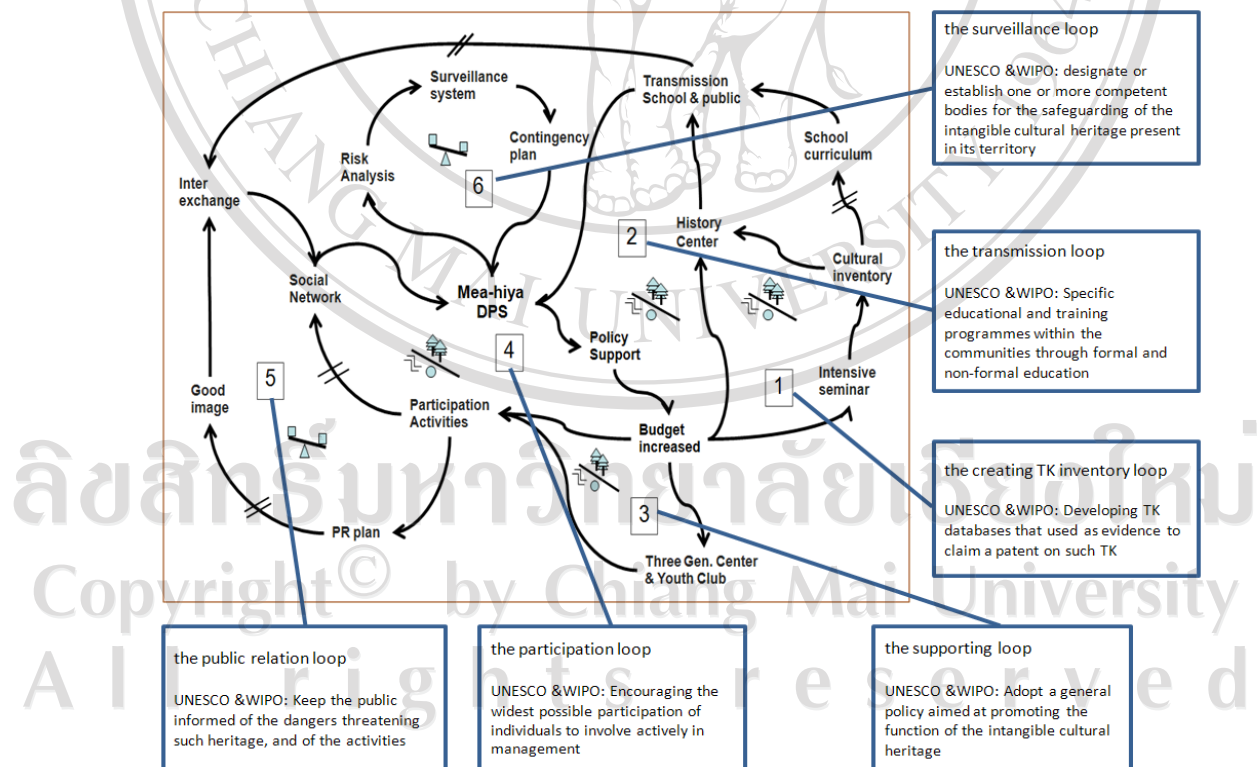


Figure 4.17 Mea-hiya community traditional knowledge system and UNESCO & WIPO frameworks

4.32 Closing Thought

The research has demonstrated that the Mea-hiya community traditional knowledge management responds and approaches to sustainable development directly in term of environmental and social development. The management is based on the participation of the people which provided an opportunity for creating a knowledge-based and ethical society, enhancing environmental security and sustainability and promoting religious and cultural awareness and sensitivity. In addition, with the sustainable development validation, the eight steps process has encouraged the community to manage their traditional knowledge sustainably.

The research has demonstrated the importance of the process model (strategies, KSFs, indicators and risk management) that has encouraged the community's participation. These achievements comply with sustainable development of NSDS, UNESCO and WIPO frameworks. These frameworks have encouraged the widest possible participation of communities, groups and individuals to involve actively in managing traditional knowledge.

Mea-hiya community's traditional knowledge management system has responded to NSDS, UNESCO and WIPO frameworks. This is a very good sign that the community can reach an initial stage of managing its' traditional knowledge which complies with the objectives and standard requirements in national and international levels.