CORPORATE SOCIAL RESPONSIBILITY AND SOCIAL CAPITAL DEVELOPMENT: CASE STUDIES OF THE BAN SAN DIN DAENG AND BAN KLONG RUE HYDROPOWER PLANTS

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ABSTRACT

Title of Dissertation	Corporate Social Responsibility and Social Capital Development: Case Studies of the Ban San Din Daeng and Ban Klong Rue Hydropower Plants
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The objectives of this study were 1) to study the implementation of corporate social responsibility in a community hydropower plant construction project; 2) to investigate the social capital development process resulting from the implementation of corporate social responsibility; and 3) to develop a model of the social capital development process resulting from the implementation of corporate social responsibility. The present research employed the qualitative method. The case studies were conducted in the Ban San Din Daeng community and Ban Klong Rue community.

The documentary research technique and in-depth interview method were applied to collect data from the key informants involved in the construction of the hydropower plants; namely, the representatives from the organizations implementing corporate social responsibility, the community leaders and the villagers in the Ban San Din Daeng community and Ban Klong Rue community, and the network partners. The results suggested that the hydropower plant construction was one form of charitable corporate social responsibility. The organizations provided financial assistance, equipment, and volunteer staff to support the hydropower plant construction, which consequently affected the social capital development in the dimension of networks, norms, and trust. In the dimension of networks, it was found that there was the highest number of network partners during the construction period. The network resources included money, labor, machinery, knowledge, and facilitation. In the dimension of norms, during all three phases of the construction

there were network norms, which were determined according to the roles and responsibilities of the network partners. However, during the construction and post-construction phases, the network norms seemed to have an effect on the community norms. In the dimension of trust, it was found that trust among the network partners did not occur during the pre-construction phase unless the network partners had prior relationships with each other. Trust tended to develop during the construction phase; however, it could subsequently regress due to conflicts among the network partners. Trust could be finally revived through the effective coordination of an intermediary partner, informal meetings, and honest talk. Thus, the social capital development process resulting from the implementation of corporate social responsibility was dynamic.

Considering the results of the comparative study, it was found that the Ban San Din Daeng community and Ban Klong Rue community had similar social capital development processes. Networks were likely to be created first, followed by norms and trust. Sometimes norms or trust could be created first, depending on the prior experiences and relationships of the network partners. Trust remained until the post-construction phase seemed to be stable.

A model of the social capital development synthesized from the research results suggested that organizations with corporate social responsibility seek target communities through an intermediary partner. Then additional network partners are acquired to raise network resources. Network norms are determined by network resources and roles of each network partner. Trust among network partners can be created, and stability of trust can be maintained.

The researcher proposed a corporate social responsibility strategy in order to ensure that the community hydropower plant construction initiative would be continually supported. An integration of corporate social responsibility strategy and cross-organizational synergy should be promoted so that other potential organizations place more importance on community hydropower plant construction, which could ultimately enhance the quality of life and develop strong social capital in communities.

Most importantly, the findings of this research suggested that new knowledge can be created from a community-based approach. If a community is considered as an organization, social capital, which is an objective of a community, can be an objective of organizational theory as well.

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This research on corporate social responsibility and social capital development carried out in the Ban San Din Daeng community and Ban Klong Rue community could not have been completed without the generous collaboration of various persons and parties.

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CHAPTER 1

INTRODUCTION

1.1 Significance of the Study

In the past, most business organizations were operated with the aim to create wealth for their owners and shareholders according to the principles of profit maximization. Most of the executives tended to focus on operational efficiency and sought to maximize the difference between total revenue and total economic costs. Thus, many organizations were found to neglect social responsibility, especially responsibility to the stakeholders and the environment, because it seemed to cause a higher cost and lower profit. Nowadays, the organizations with the goal to achieve maximum benefit alone without taking account of social responsibility may not be accepted by the society, leading to unsuccessful business operation. This is because most organizations are currently competing for people's acceptance, which has an effect on their purchasing decisions. In addition, the role of the people sector is now growing stronger. If a product, service, or organizational operation is clearly reported to be unfair or causes a negative impact on the society, intentionally or unintentionally, it will be widely criticized. The worst consequence is that the people may forever lose their trust in the organization. For this reason, executives should not overlook the importance of corporate social responsibility and should pay attention to this issue as much as possible.

There are many forms of social responsibility, such as making a donation and providing support that can truly benefit the society or rarely benefit anyone. Some organizations have a hidden agenda behind their social responsibility. They use it for public relations purposes without the aim to benefit the society. Good social responsibility should be targeted to creating benefits and better changes, which leads to sustainable social development at the macro and micro level.

Applying corporate social responsibility as a tool for community development is considered a helpful and interesting practice because the community is the basic unit of the society and is vital for national development. The stronger the community becomes, the more sustainable the national development will be. It also complies with the development guidelines of the 11th National Economic and Social Development Plan (BE 2555-2559), which emphasizes the participation of all development sectors at the community, regional, and national levels so as to build a happy society full of equality, fairness, and immunity to change (Office of the National Economic and Social Development Board, 2012). There are many ways to develop a community, including promoting occupations, supporting children's education, providing useful knowledge, and developing infrastructure that is essential to the lives of the people in the community such as road construction, basic infrastructure provision, and the development of water resources, water supply systems, and electricity systems.

The construction of small power plants in the community in Thailand is one way to develop the community, especially in the remote communities where the power system of the Provincial Electricity Authority is not available. Building a community power plant using local natural resources as a fuel source is an approach that has gained more attention from the related parties. Currently, many community power plants have been constructed to generate electricity using several fuel sources, such as solar, wind, biomass, and hydro. However, one of the most interesting types of power plants is the hydropower plant, which brings water from waterfalls to generate electricity. Hydropower plants cause less environmental impact compared to other types of power plants, such as biomass power plants and waste power plants.

The construction of a community hydropower plant not only gives the people in the community electricity for living and working, but also creates indirect benefits for the community and society. As the construction of a hydropower plant requires a sufficient amount of water from natural sources, the community members must take good care of the upstream forest in order to maintain moisture from the forest and increase rainfall. In addition, the construction of small power plants in the community also contributes to the development of social capital within the community in terms of participation, collaboration, and network building and social capital between the community and other organizations, including governmental agencies, private

organizations, and non-governmental organizations, which is an important factor in making the community stronger. The construction of a community hydropower plant will truly benefit the community, when all related sectors and the community members participate in every processes during pre-construction, construction, and post-construction phases. Participation makes people in the community have the sense of ownership and makes them willing to support and maintain the power plant. If they only perceive that the power plant makes them able to use electrical equipment and that they have a duty to just pay for the electricity bill, the community will never be truly empowered or successfully developed.

During the past decade, many community hydropower plants have been built in Thailand by the Department of Alternative Energy Development and Efficiency (DEDE), which is directly responsible for this duty, and other organizations with indirect involvement such as the Electricity Generating Public Company Limited and the Electricity Generating Authority of Thailand. The constructions of hydropower plants that were supported by these organizations according to the CSR model include: 1) the Ban San Din Daeng Hydropower Plant, Ban Luang Sub-district, Jom Thong District, Chiang Mai Province was supported by the Electricity Generating Public Company Limited and several network partners such as the Ban San Din Daeng community, the Department of Alternative Energy Development and Efficiency, Maejo University, and the Thai Forest Protection Foundation. The collaboration of these organizations made the power plant ready to generate electricity for the people in mid-2010. 2) The Ban Klong Rue Hydropower Plant, Phato District, Chumphon Province was supported by the Electricity Generating Authority of Thailand, Thammasat University, Prince of Songkla University, Life University (Nakhon Si Thammarat), King Mongkut's University of Technology Thonburi, Phato Watershed Conservation and Management Unit, the Phato Provincial Administration Organization, and the Ban Sai Khao community. The good cooperation of those related parties made this power plant able to supply electricity to the people in early 2012.

Although the construction of those power plant projects were completed and achieved the objective of generating electricity for the people, which confirms the success of the projects to a certain extent, it is essential to learn how the social

responsibility of the Electricity Generating Authority of Thailand and the Electricity Generating Public Company Limited can affect the social capital development process in the dimension of networks, norms, and trust. The completion of power plant construction may not be considered beneficial to community development if the power plant cannot create social capital development in the community, which is the crucial factor for community development in other dimensions both at present and in the future. Thus, it is interesting to study the impact of social responsibility performance on the social capital development process in the Ban San Din Daeng community and Ban Klong Rue community. The results of the study will explain how social responsibility can affect the social capital development process. The comparison of the social capital development process in these two communities can result in new academic knowledge concerning community development and a model of social capital development model associated with social responsibility operations.

1.2 Objectives of the Study

In this study, there are four main objectives as follows.

1) To study the implementation of social responsibility in the community hydropower plant construction projects of the Electricity Generating Public Company Limited and the Electricity Generating Authority of Thailand

2) To investigate the social capital development process resulting from the implementation of social responsibility in the community hydropower plant construction projects in the Ban San Din Daeng community and Ban Klong Rue community

3) To compare the social capital development process in the Ban San Din Daeng community and the Ban Klong Rue community.

4) To develop a model of social capital development through corporate social responsibility activities

1.3 Research Questions

In order to discover findings that were in line with the research objectives, the research questions were determined as follows.

1) What is the implementation process of social responsibility in the community hydropower plant construction projects of the Electricity Generating Public Company Limited and the Electricity Generating Authority of Thailand?

2) How does the implementation of social responsibility in the community hydropower plant construction projects affect the community's social capital development process?

(1) How do the pre-construction, construction, post-construction phases of the community hydropower plant project of the Electricity Generating Public Company Limited affect the social capital development process of the Ban San Din Daeng community in terms of networks, norms, and trust?

(2) How do the pre-construction, construction, post-construction phases of the community hydropower plant project of the Electricity Generating Authority of Thailand affect the social capital development process of the Ban Klong Rue community in terms of networks, norms, and trust?

3) What are the differences in social capital development process of the Ban San Din Daeng community and Ban Klong Rue community in terms of networks, norms, and trust?

4) What are the characteristics of the model of social capital development through corporate social responsibility activities?

1.4 Definition of Terms

1) Social capital refers to the creation of networks, processes, norms, and trust that are conducive to collaboration within and between groups. A network of social capital can create more work potential than an individual's social capital (Putnam, 1993, p. 167). It helps to enhance effective work collaboration and the achievement of a common purpose (Putnam, 1995, p. 664).

2) Corporate social responsibility refers to the organizational concept that integrates social and environmental concerns into the business. Companies with corporate social responsibility will interact with their stakeholders on a voluntary basis (The European Commission, 2013).

3) Community hydropower plant refers to the small power plant that uses water as an important source of energy for electricity generation. It can be categorized into 2 groups: 1) community power plants established to generate electricity for people with no access to electricity. This type of plant is usually located in rural areas where the transmission system is inaccessible and the system installation is not worthwhile. Therefore, it needs to apply a stand-alone power system. 2) This is community power plants that are located in areas where electricity is already available but there are still potential resources that can generate electricity. The electricity produced will be connected to the Provincial Electricity Authority or the Metropolitan Electricity Authority using the grid connect method.

1.5 Scope of the Study

The target areas of this study were communities with a small hydropower plant. The researcher intended to conduct a study only in the communities with no access to electricity. Apart from providing financial support, the organizations that initiated the construction of the power plant in the aspect of social responsibility had to take part in all operational processes during the pre-construction, construction, post-construction periods. Moreover, the power plant construction had to have been completed and the power plant had to have been ready to supply electricity to the community.

Considering the study of the social capital development process in the network dimension, the researcher placed importance on the network partners that participated in the projects without having direct responsibility. The governmental agencies responsible for defining, approving, and monitoring the construction of the power plant were not considered as network partners in this research.

Regarding the study of the social capital development process in the norms dimension, the researcher studied and explained the empirical phenomena in an overall manner.

1.6 Contributions of the Study

Currently, corporate social responsibility is a practice that every organization cannot afford to overlook. There are many forms of social responsibility implementation, including CSR in process and CSR after process. CSR in process is part of a work process that requires compliance with rules and regulations, normally implemented in every organization. On the other hand, CSR after process is more diverse. It is mostly carried out in the form of activities or projects such as donations of money, items, and various equipment.

The results of corporate social responsibility implementation can be considered in two dimensions, which are: 1) the performer or organization that conducts the CSR activities and 2) the receiver that gains benefit from the CSR performer, including individuals, families, the community, and the country. Considering the performer or organization dimension, the CSR results may enable stakeholders to accept the organizational operations and enhance their organizational image. Consumers may also purchase more products. In terms of the receiver dimension, the results can contribute to a better quality of life and economic, social, and environmental development.

This present research will focus on the results of corporate social responsibility in the receiver dimension as well as the community's social capital. The community's social capital development is important because each community has an unequal amount of social capital. There are many factors that differentiate the social capital of each community, such as community engagement activities, a strong community leader who can motivate or convince the people in the community, problems or difficulties that make the people harmoniously unite to fight back, and external factors from public and private organizations.

The Electricity Generating Public Company Limited's and the Electricity Generating Authority of Thailand's initiatives for the construction of a small hydropower project in the Ban San Din Daeng community and Ban Klong Rue community are a part of their social responsibility implementation, which may have an effect on the social capital development process of these two communities in the dimension of networks, norms, and trust. At the theoretical level, the present research

may discover new knowledge that can be used to describe or argue concerning other related theories such as social capital theories and social networking theories, which are fundamental theories in the field of social science. As most of these theories were initiated by western experts, in the process of deduction they may not clearly explain the phenomena occurring in the eastern hemisphere. In terms of induction, discovering general rules and forming principles from western examples may not be consistent with the Thai context. In addition, this research may discover new organizational concepts that place importance on communities. Normally, the organizational theories will focus on governmental agencies, private organizations, and public benefit organizations. There are a few organizational theories focusing on communities, although each community has certain objectives for its establishment and existence that need to be accomplished in the same way as other organizations. Thus, it is possible to discover new knowledge concerning social capital and community-based organizational theories.

The study of the relationship between social responsibility and social capital is also expected to create new knowledge or discover new academic insight. Generally, the purpose of social responsibility in each project is different. However, if the social responsibility activities that support various aspects of the power plant construction projects can actually affect the social capital development process, it would be interesting to find out the characteristics of social capital resulting from those social responsibility activities.

All of the issues mentioned above are essential for synthesizing knowledge and creating a model of social capital development. The findings from this research can be used to describe the causal relationship between the social responsibility (cause) and the social capital development process (effect). The model will show how expressing corporate social responsibility through hydropower plant construction can create many network partners. It will also identify the factors that can support and maintain the network in a sustainable way.

At the practical level, the results of the study can be helpful for organizations that want to initiate and support the power plant construction project in areas with no access to electricity, especially in the south and north of Thailand. The interested organizations can apply the developed model to examine the feasibility of the project

and prepare for community selection, organizational capacity assessment, partner acquisition, and resources provision. Some organizations may have enough funding but lack technical know-how and experienced personnel. If they have partners to support and fulfill what they need, the completion of the power plant construction project will be highly possible.

In addition, the practical recommendation and learning from the fieldwork may result in an in-depth strategy that can be applied to organizational operations both in the dimension of social responsibility and collaboration between the organization and the community. The knowledge of community development contained in textbooks may not be practically used, and learning from fieldwork can help fill this gap.

The policy recommendations in this study may be beneficial to organizations that are committed to showing their social responsibility by building a power plant. If the organization has no serious commitment, the power plant project cannot successfully proceed due to complicated procedures. Projects require not only financial support but also community engagement throughout all processes, which helps to create the sense of ownership. Moreover, the study of the relationship between the social responsibility and the social capital development process in the Ban San Din Daeng community and Ban Klong Rue community can highlight the importance of the social capital development process in Thai education. This is because most social capital research tends to focus on the conditions and benefits of social capital. There is little research on the application of social responsibility as the key driver for social capital development, while the implementation of social responsibility is actually diverse. The researcher expects that in the future there will be further research aiming to study the social capital development process resulting from social responsibility in other aspects.

1.7 Organization of the Paper

This dissertation is organized into eight chapters. Chapter 1 introduces the significance of the study, the objectives of the study, the research questions, the definition of terms, and the contribution of the study.

Chapter 2 explains the Electricity Generating Public Company Limited's and the Electricity Generating Authority of Thailand's general conditions, business operational approach, shareholder structure, electric power operations, corporate social responsibility practices, and other organizational practices.

Chapter 3 provides a literature review of social responsibility, social capital, and fundamental model development as a guideline for the study.

Chapter 4 presents the methodology and procedures regarding the research design, the data collection, the research instruments, the method of data analysis, the validity and reliability tests, and the research plan.

Chapter 5 contains general information about the Ban San Din Daeng community and Ban Klong Rue community. The implementations of social responsibility in the community hydropower plant construction projects in the Ban San Din Daeng community and the Ban Klong Rue community of the Electricity Generating Public Company Limited and the Electricity Generating Authority of Thailand are also discussed.

Chapter 6 explains the social capital development process divided into 3 phases: pre-construction, construction, and post-construction. The development of networks, norms, and trust occurring during each phase is also analyzed.

Chapter 7 provides a comparison of the social capital development process in the Ban San Din Daeng community and Ban Klong Rue community.

Chapter 8 contains the conclusion and a discussion of the results, presents a social capital development model synthesized from the corporate social responsibility implementation, provides what was learned from the case study in the two communities, and offers theoretical and practical recommendations for policymakers and relevant organizations as well as suggestions for further research

CHAPTER 2

GENERAL CONDITIONS OF RELEVANT ORGANIZATIONS

This study is associated with the social responsibility implementation of the Electricity Generating Public Company Limited and the Electricity Generating Authority of Thailand. Therefore, this chapter presents the general conditions of the two organizations, including business and corporate social responsibility practices, which are the contextual background of this study.

2.1 General Conditions of the Electricity Generating Public Company Limited

2.1.1 General Information and Operational Guidelines

The Electricity Generating Public Company Limited (EGCO) is one of the recognized companies in the energy business in Thailand, as it is the first independent power producer in Thailand. EGCO was incorporated by the Electricity Generating Authority of Thailand (EGAT), which marked the commencement of the Thai government's privatization initiatives to allow broader private sector investment in the power sector. EGCO has a clear vision to be "a major sustainable Thai power company doing business in Thailand and the Asia Pacific region, with full commitment to environment protection and social development support." In order to achieve this vision, EGCO has set 3 key organizational missions, which are to secure continuous growth in order to maximize the shareholder's value, to offer reliable power supply, and to be a good corporate citizen and be considerate to society and the environment. The business philosophy is also created to inform all aspects of its business practices.

According to EGCO's business philosophy, sustainable business success derives from mutual support and cooperation, never from unscrupulous competition, nor from taking advantage of each other. Sustainable friendship is based on sincerity

toward others. Good operating results and profits are the end products to be justly allocated. Harmonization of activities with moral principles will bring about sustainable progress to business transactions. All of these help confirm that EGCO has a clear set of operational guidelines focusing on both business growth and social and environmental sustainability.

2.1.2 Shareholder Structure and Business Operational Practices

The major shareholders of EGCO are the Electricity Generating Authority of Thailand (25.41%), TEPDIA (23.94%), Thai NVDR (15.81%), foreign investors (20.88%), and Thai investors (13.96%). When comparing the amount of shareholding, the Electricity Generating Authority of Thailand is found to be the largest shareholder of EGCO while Thai investors have the least shareholding.

EGCO's operating businesses can be categorized into 5 groups as follows: 1) Independent Power Producer: IPP, 2) Small Power Producer: SPP, 3) Very Small Power Producer: VSPP, 4) Overseas Power Producer, and 5) other businesses. In addition, EGCO has categorized its business line into 2 groups, namely, power business and other businesses. Considering the power business, EGCO's power plants generate electricity using several fuel sources such as natural gas, coal, biomass, waste, hydro, solar, wind, and geothermal. From 1992 to 2015, EGCO has run 23 operating power plants in Thailand and other countries. There are 7 projects under construction and development.

2.1.3 Corporate Social Responsibility Concept

The sustainable success of EGCO in producing "energy for life" can result from 2 main factors: the achievement of organizational performance and participation in social and community development in economic, environmental, and social aspects. EGCO intends to create value for its employees and to take account of the needs and expectations of its stakeholders, a group of individuals or organizations that are both positively and negatively affected by its business operations, which is comprised of shareholders, investors, employees, customers, trading partners and contractors, communities, competitors, and creditors. EGGO is also committed to developing a wide variety of participation and communication processes suitable for each group of stakeholders.

2.1.4 Corporate Social Responsibility Practices

EGCO realizes the importance of social development and has developed projects for the community and society based on 3 approaches as follows.

2.1.4.1 Paths to Preservation of Watershed Forest

EGCO is committed to the conservation of natural resources, especially watershed forests, which are a natural producer of fresh water and thus the origin of rivers that give life to all living things. EGCO has initiated and supported numerous projects and activities to promote the preservation of watershed forests as shown in Table 2.1.

Table 2.1 Key CSR Activities on the Path to Preservation of Watershed Forests

Projects/Activities	Objectives
1. Kanchanapisek Building Construction Project, Doi Inthanon, Chiang Mai	1. To provide a building for learning enhancement
2. Watershed painting and photo contest, outstanding community forest contest, and Kew Mae Pan nature trail	2. To support the forest conservation community
3. Local guide training, forest planting on high mountains, Forest: The Circle of Life Project	3. To develop the upstream forest learning resources
4. Thai Forest Conservation Foundation	4. To promote forest conservation and improve the quality of life
5. The Watershed Forest: A Source of Energy for Life	5. To support a sustainable balance between the community and the forest

Source: Electricity Generating Public Company Limited, 2015.

2.1.4.2 Paths to Learning Enhancement and Building a Public Consciousness among Youth

EGCO has carried out youth camp projects to educate the importance of natural resources and the environment and also has conducted many learning activities to build environmental awareness, expand creative learning, and cultivate environmental and energy conservation habits among young children. The details are presented in Table 2.2.

Table 2.2 Key CSR Activities on the Path to Learning Enhancement and Building a Public Consciousness among Youth

Projects/Activities	Objectives
1. EGCO Forest Youth Camp	1. To build awareness among youth
2. How to Fight Global Warming with Sustainable Living	2. To promote learning sources
2. Green Learning	3. To promote early childhood development
3. EGCO Green Blood	4. To enhance sustainable conservation

Source: Electricity Generating Public Company Limited, 2015.

2.1.4.3 Paths to the Promotion and Development of the Quality of Life

EGCO aims to improve the quality of life for the community, covering various dimensions such as public health, occupation promotion, the environment, youth consciousness, and the volunteer spirit of employees, as illustrated in Table 2.3.

Table 2.3 Key CSR Activities on Paths to Promotion and Development of Quality of Life

Dimensions	Projects	Objectives
Public Health	1. Healthcare Market and Supporting Mobile Medical Unit Projects	1. To promote health status
Occupation Promotion	1. Blue Swimming Crab Productivity Project 2. Local Wisdom-Building Project	1. To increase income 2. To provide occupational knowledge
Environment	1. New Home for Undersea Livings 2. Green Space Development Project	1. To support underwater ecological rehabilitation 2. To increase the forest areas
Youth Consciousness	1. Biological Agriculture for the Sustainable Development Project at Khao Chamao	1. Build awareness among young people
Volunteer Spirit of Employees	1. The 5th Shift Initiative, Vocational Students Help People Project, School Painting Project, and Rice Harvest Project	1. To enhance engagement

Source: Electricity Generating Public Company Limited, 2015.

Concerning the communities surrounding the power plants, EGCO has determined a policy to develop and enhance the quality of life of the people living in those areas by focusing on the communities' needs and participation. EGCO's employees are also encouraged to show their responsibility to the communities. In addition, EGCO has continually disseminated its corporate social responsibility performance to the public and community, employed local labor, promoted natural resources and environmental conservation, and also developed occupational skills, public utility, and learning enhancement helpful for the people in the communities.

For society as a whole, EGCO has taken initiatives in allowing its employees to take part in various social development projects, creating awareness and understanding, promoting knowledge sharing with other organizations for further improvement, and conducting a wide range of activities, such as satisfaction surveys, complaint taking, *ad hoc* meetings, and community visits.

2.1.5 Other Organizational Practices

EGCO recognizes the importance of the environment, as its power business needs to mainly rely on the natural resources and environment. In order to make effective use of the natural resources, EGCO applies high-performance equipment and always keeps good maintenance of that equipment. Apart from utilizing advanced technology to improve the quality of water from the production process and the wastewater treatment system until it can be used in fish farming and tree watering, EGCO also has an effective environmental management system and measures, which strictly comply with environmental laws and regulations. Its organizational management focuses on the prevention and reduction of environmental impacts.

2.2 General Conditions of the Electricity Generating Authority of Thailand

2.2.1 General Information and Operational Guidelines

The Electricity Generating Authority of Thailand (EGAT) is Thailand's leading state-owned power utility under the Ministry of Energy. It was established on May 1, 1969 by the promulgation of the Electricity Generating Authority of Thailand Act B.E. 2511, which merged the assets and operations of the 3 previous state enterprises, namely the Yanhee Electricity Authority (YEA), the Lignite Authority (LA), and the North-East Electricity Authority (NEEA). With the initially-installed capacity of 90 MW, EGAT has a mission to generate, transmit, and sell electric energy to the Metropolitan Electricity Authority (MEA), the Provincial Electricity Authority (PEA), direct customers prescribed by law, and neighboring countries as well as to conduct other related businesses according to the EGAT Act. In 2016,

EGAT operated 40 power plants nationwide with a total installed capacity of 16,000 MW, which accounted for 44.63% of the country's gross energy generation.

EGAT set a vision to be “a world-class organization in the electricity business,” with the aim to achieve excellence in five key aspects—good corporate governance, high performance organization, operational excellence, national pride, and financial viability.

In order to achieve its organizational goals, EGAT’s employees need to have a proper code of conduct and appropriate operational guidelines. Therefore, EGAT’s executives have determined the corporate values called FIRM C, which focus on fairness, integrity, accountability, mutual respect, and commitment to continuous improvement and teamwork. Once all employees comply with these values, it will result in EGAT’s unique behavior and organizational culture, which will enable the organization to truly achieve its vision.

2.2.2 Electric Power and Business Operational Practices

EGAT has the key mission to carry out electricity-related business operations. It has a total installed capacity of 16,000 MW, which is generated from 3 thermal power plants, 6 combined cycle power plants, 22 hydropower plants, 8 renewable energy plants, and 1 diesel power plant. In addition to generating electric power, EGAT purchases electricity from 11 large private power producers (12, 741.69 MW), small private power producers (2,444.60 MW), and neighboring countries, including Lao PDR and Malaysia (2,404.60 MW). EGAT transmits electricity generated by its own power plants and that purchased from private power producers through its own grid network covering all parts of the country. EGAT’s transmission lines are comprised of different voltages, ranging from 500 kV, 230 kV, 115 kV, and 69 kV. EGAT sells electricity to the Metropolitan Electricity Authority, the Provincial Electricity Authority, and direct customers. EGAT also sells electricity to the power utilities of neighboring countries, namely Lao PDR at 115 kV and at 22 kV lines and Malaysia at 300 kV HVDC lines.

EGAT also generates revenue from the provision of related services to various market segments such as providing a 7-year maintenance service to Lao PDR’s Nam Ngum 2 Power Plant, with a total installed capacity of 615 MW since 2012, providing

operating and maintenance service to the District Cooling System and Power Plant Company Limited, and selling by-products such as the fly ash resulting from power generation to external organizations to produce construction materials, fertilizer, and soil improvement materials.

EGAT has invested in electricity generation and energy-related businesses in the following five companies: Electricity Generating Public Company Limited (EGCO) with a 25.41% equity stake, Ratchaburi Electricity Generating Holding Public Company Limited (RATCH) with a 45% equity stake, EGAT International Company Limited (EGATi) with a 99.99% equity stake, EGAT Diamond Service Company Limited (EDS) with a 45% equity stake, and District Cooling System and Power Plant Company Limited (DCAP) with a 35% equity stake. The investment in these affiliates helps to strengthen EGAT's operational stability in a productive way.

2.2.3 Corporate Social Responsibility Concept

EGAT places great importance on corporate social responsibility. It is considered the main process that must be carried out along with electricity generation so as to achieve its organizational strategy to become one of the national-pride state enterprises (being capable and good). EGAT has operational guidelines that conform to ISO 26000 standards. EGAT also builds good relationships with its stakeholders, consisting of the government sector, regulators, financial institutions, employees and labor unions, raw material suppliers, business partners and contractors, major customers, general consumers, scholars, non-governmental organizations, the civil society sector, the communities surrounding power plants and transmission systems, and media and journalists in order to understand and accurately respond to their needs and expectations.

2.2.4 Corporate Social Responsibility Practice

EGAT has set its strategies for the implementation of corporate social responsibility as follows: 1) enhancing the sustainability of natural resources, environment, and energy; 2) developing quality of life and promoting community potential; 3) developing community and stakeholder engagement and building an electricity network; 4) developing and transferring knowledge to the communities;

and 5) integrating corporate social responsibility in compliance with international standards.

The Deputy Governor of Corporate Social Affairs is mainly responsible for determining the CSR strategies and analyzing the stakeholder relationship management. The corporate social responsibility master plan and annual plan are also developed to be guidelines for overall implementation. The Social Affairs Department will coordinate and integrate the CSR implementation in terms of social, community, and environmental development throughout the organization. Each business unit needs to conform to the CSR annual plan and report the progress to the Deputy Governor of Corporate Social Affairs on a quarterly basis. The overall CSR performance will be reported to the Corporate Governance Committee and the Board of Directors every quarter. Then the CSR performance will also be presented to EGAT's Executive Committee every six months. The Deputy Governor of Corporate Social Affairs will collect the suggestions from every committee and revise the CSR master plan and action plan accordingly. The details of the CSR projects that have been implemented based on the CSR strategies are shown in Table 2.4.

Table 2.4 Key CSR Projects in accordance with EGAT's CSR Strategies

Strategies	Projects	Objectives
1. Enhancing the sustainability of natural resources, environment, and energy	1. No. 5 Label Project 2. EGAT Rehabilitation Project in Honor of Her Majesty Queen Sirikit	1. To reduce carbon dioxide emissions 2. To increase forest areas and absorb carbon dioxide
2. Developing quality of life and promoting the community potential	1. Wan Kaew Project 2. Move World Together Project 3. The Biological Way of Life for Sustainable Development Project	1. To support the underprivileged 2. To Share Knowledge with society 3. To enhance knowledge sharing and environmental and economic development

Table 2.4 (Continued)

Strategies	Projects	Objectives
3. Developing community and stakeholder engagement and building an electricity network	1. Strengthen relationships with academic networks, social leaders, and NGOs through the Check Dam Project	1. To strengthen relationships
4. Developing and transferring knowledge to the community	1. EGAT Learning Center	1. To disseminate electricity knowledge
5. Integrating corporate social responsibility in compliance with international standards	1. ISO 26000 - CSR Promotion Project 2. Sustainability Report	1. To show commitment to social responsibility 2. To publish CSR performance

Source: Electricity Generating Authority of Thailand, 2016**.**

2.2.5 Other Organizational Practices

EGAT's operations are generally associated with power plant construction and power plant management, which may have an effect on natural resources and the environment. Therefore, EGAT always takes account of resource efficiency and has determined the operational guidelines as follows.

2.2.5.1 Committing to developing a stable power system and conducting continuous environmental management. The operation processes of all power plants should adhere to international standards such as ISO 14001, ISO 26000 and TIS 18001, and comply with environmental law. The Department of Project Environment will continually follow up and monitor this compliance with environmental law and regulations.

2.2.5.2 Aligning with the resource management approach. The resources used in the production process of power plants, such as water, need to enter the water treatment process before being reused in other activities.

2.3 Chapter Summary

EGCO and EGAT are organizations that conduct electricity operations and energy-related businesses. EGAT is a state enterprise while EGCO is a public company. EGCO has the policy to become a leading power company in Thailand and in the Asia Pacific region. It has clear corporate social responsibility guidelines for forest preservation, youth potential development, community development, and others. Similarly, EGAT has set its operational practices with the aim to become a world-class leader in the electricity industry and to achieve national pride. EGAT has a corporate social responsibility approach that complies with the ISO 26000 standards. It develops work processes aligned with CSR standards and also focuses on stakeholder relationships and engagement.

Both organizations not only aim for business achievement but also pay attention to corporate social responsibility, stakeholders, natural resources, and youth, who are the future of the nation. They put an effort into developing work processes that do not affect the society, which indicates the implementation of both CSR in process and CSR after process.

CHAPTER 3

LITERATURE REVIEW

The following review of the literature presents the evolution, definitions, conceptual theories, practices, and models related to corporate social responsibility, the relationship between corporate social responsibility and community activities, social capital, the components of social capital, including networks, norms, and trust, social networks, and the relationship between corporate social responsibility and social capital. All of these will be used as the guidelines for answering the research objectives without inductive bias.

3.1 Corporate Social Responsibility (CSR)

3.1.1 Evolution of Corporate Social Responsibility

The CSR concept from past to present tends to become more and more complicated. In the 1950s CSR was considered a social bond but in the 1960s CSR was about the relationship between organization and society. Later, in the 1970s CSR was a matter involving the organization, the stakeholder, the well-being of citizens, and public interest. During this period the CSR concept seemed to pay a lot of attention to operational practice. In the 1980s, the motivations behind CSR activities such as willingness, profit, law enforcement, and ethical and social promotion were taken into account. Consequently, CSR not only focused on stakeholder engagement but also placed importance on environmental issues. Entering the 21st century, the concept of CSR has dramatically evolved. CSR is presently associated with social and environmental matters, public consciousness, ethical behaviors, economic development, quality of life improvement, human rights, labor rights, environmental protection, anti-corruption, transparency, and accountability (Rahman, 2011).

From the evolution of CSR above, the researcher believes that nowadays the concept of CSR not only focuses on the organization and society but also includes the

mutual relationship between the organization and society. This is considered a challenge for all organizations aiming to achieve operational success. Organizations with a higher level of CSR are likely to be more recognized by the public. On the other hand, organizations that ignore or avoid CSR will not be able to catch up with competitors and may not be accepted by the public and society. Eventually, those organizations will be abandoned and cannot survive.

3.1.2 Definition of Corporate Social Responsibility

Corporate social responsibility is a term that has a broad definition. Each scholar or organization defines this term differently according to their perspectives and interests as can be summarized below.

3.1.2.1 CSR in the Aspect of Organizational Stakeholders

Most scholars suggest that CSR is associated with organizational stakeholders and define CSR as the corporate initiative that integrates social and environmental concerns into business practice and interacts with organizational stakeholders on a voluntary basis (European Commission, 2013). According to the CSR concept, organizations have a responsibility to determine policy, make decisions, and conduct organizational operations to benefit the society. Apart from making maximum profits to satisfy their shareholders, organization also need to take care of their primary stakeholders, including employees, suppliers, governmental agencies, local communities, as well as secondary stakeholders such as the media and interest groups affected by their organizational operations (Williams, 2003). CSR is also considered a way for organizations to create value for society through corporate governance, stakeholder response, economic development, and environmental development (Visser, 2011, p. 7).

Moratis and Cochius have suggested that organizations need to have 2 basic fundamentals— responsibility and accountability. Responsibility refers to compliance with common social norms such as laws, rules, and guidelines for responsible behaviors, which are determined by the surrounding environment and community. As for accountability, in order to obtain “a license to operate” from society and their stakeholders, organization must be transparent and accountable for their behaviors and be able to answer questions from their stakeholders. Both

responsibility and accountability depend mainly on organizational consciousness. Organizations must acknowledge that they are a part of an open system that can influence and be influenced by relevant effects (Moratis & Cochius, 2011, pp. 16-17).

Thai scholars also have similar perspectives towards CSR. The Thaipat Institute defines CSR as the internal and external organizational activities that place importance on stakeholders in the "near society" such as customers, suppliers, and employees and stakeholders in the "far society" such as competitors and the general public. Activities may use existing internal resources or external resources and include both thinking, speaking, performing, planning, making decisions, communicating, managing, and implementing (Phiphat Nonthanathorn, 1990, p. 12). The Department of Industrial Works, a governmental organization that supports and supervises private companies in the industrial sector, defines CSR according to the standard for corporate social responsibility (CSR-DIW) as responsibility towards the community and the environment. It can result from decision-making, activities, and product and service production, which are carried out with ethical and transparent behaviors complying with the principles of sustainability and social welfare, taking account of the expectations of stakeholders, aligned with laws and international standards, and integrated throughout the organization (Department of Industrial Works, 2008, p. 3). In addition, CSR can be summarized as the organizational activities or operations that show responsibility towards society on a continuous and voluntary basis (Tippawan Lorsuwannarat, 2010, p. 190).

3.1.2.2 CSR in the Aspect of Marketing

Kotler and Lee have suggested that most organizational social activities are under the concept of CSR. They proposed a model of CSR that can be integrated with the corporate marketing concept, and determined 6 types of corporate social initiatives as follows: 1) cause promotion that helps increase awareness of social issues, such as advertising images or symbols of NGOs on products and in offices for public relations purposes; 2) cause-related marketing, such as donating money from product sales to charity; 3) corporate social marketing, such as using marketing campaigns to develop behavioral change and to make people enjoy new learning; 4) corporate philanthropy, such as providing students with research funding and then applying the research results to develop products or services; 5) community

volunteering, such as volunteering to work for the community with the clear aim to respond to the needs of the community and the organization; and 6) socially-responsible business practices that focus on the implementation of corporate social responsibility within the organization (Kotler & Lee, 2005, p. 24).

3.1.2.3 CSR in the Aspect of Development

CSR can cause economic, social, environmental, and sustainability development. In the aspect of development, CSR includes organizational agreements that are in line with business practices and can support the sustainability of development (Wong, 2010, p. 242). It is considered a consensus that helps develop the community with organizational resources through organizational operations (Kotler & Lee, 2005, p. 3). Moratis and Cochius also suggested that CSR can refer to organizations with responsibility and accountability towards the society and the environment (Moratis & Cochius, 2011, pp. 16-17). The Electricity Generating Authority of Thailand has indicated that CSR involves achieving better environmental performance than the required standard, supporting community activities, continuously collaborating in sustainable quality of life development, and focusing on community engagement in every operational process (Electricity Generating Authority of Thailand, 2011, p. 8). According to all of the definitions above, most scholars agree that CSR is related to organizational stakeholders in both near and far societies. However, some of them state that CSR is a voluntary action while others suggest that CSR should be mandated. In the researcher's opinion, it does not matter whether CSR is voluntary, mandated, or even implemented for marketing purposes as long as the end result is beneficial to the people or society. The levels of CSR in each organization can vary according to its goals and practices.

3.1.3 Concepts and Models of Corporate Social Responsibility

A wide variety of CSR definitions, concepts, and models which have been developed significantly shows that CSR has currently become a very important issue. Organizations can utilize those CSR concepts and models in two dimensions: using them as CSR operational guidelines and applying them to the examination of CSR implementation in the organization.

Moratis and Cochius have suggested the concept of CSR focusing on responsibility and accountability. Responsibility here refers to compliance with common social norms such as laws, rules, and guidelines for responsible behaviors, which are determined by the surrounding environment and community. As for accountability, in order to obtain "a license to operate" from society and their stakeholders, organizations must be transparent and accountable for their behaviors and be able to answer questions from their stakeholders. Both responsibility and accountability depend mainly on organizational consciousness. Organizations must acknowledge that they are a part of an open system that can influence and be influenced by relevant effects (Moratis & Cochius, 2011, pp. 16-17).

In terms of implementation, Carroll proposed a CSR model which demonstrates that at the first level organizations need to make a profit to satisfy their shareholders and to create no burden for other organizations; at the second level organizations need to comply with relevant rules and regulations; at the third level organizations must have business ethics or a code of conduct in place; and at the last level organizations need to be dedicated to charitable activity without expecting something in return. In other words, organizations must act as a good citizen to help society (Carroll, 1991, p. 42).

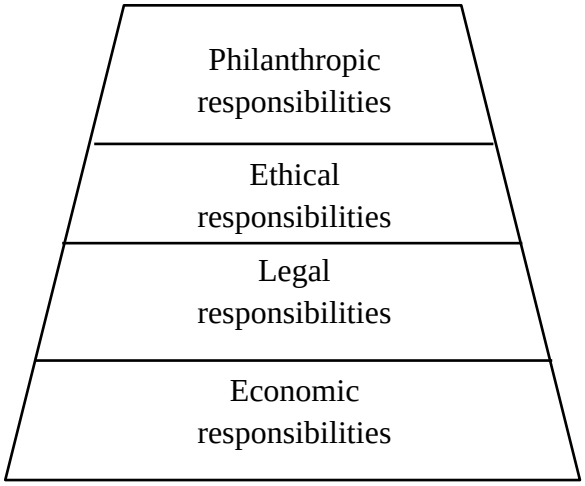

Figure 3.1 Carroll's Pyramid of CSR

Source: Adapted from Carroll, 1991.

Marrewijk and Were also proposed an interesting CSR model focusing on corporate sustainability and motivations. They stated that the organizational commitment to CSR implementation results from CSR motivations within organization. The first type of motivations is rules and regulations. CSR is considered to be an obligation. The second type of motivations is profit and achievement. Here CSR is integrated into decision making and business operations. CSR activities will be promoted if they can reduce risks, increase profit, and make organizations obtain acceptance from their customers, employees, and stakeholders. The third type of motivations is economic, social, and environmental concerns. Here CSR is implemented based on the belief that people, society, and the world are important. The fourth type of motivation is the collaborative work system. Here CSR activities tend to focus on balanced and practical implementation, stakeholder relationships, and win-win practices. Corporate sustainability is a key factor determining the progress of organizations. The fifth type of motivations is overall participation. At this stage, CSR is completely integrated and implanted in all parts of organizations by taking account of quality and continuity. Corporate sustainability is the heart of organizational survival. All living things depend on each other and on their environments. Therefore, each organization must be responsible for the well-being of others as well (Marrewijk & Were, 2003).

Visser has divided the stages of CSR into 5 categories: 1) Defensive CSR happens when limited corporate sustainability and responsibility practices are undertaken only to protect shareholders' value. It is also called the age of greed. 2) Charitable CSR is where an organization supports various social and environmental causes through donations and sponsorships and aims at empowering community groups or civil society organizations. 3) Promotional CSR happens when corporate sustainability and social responsibility are seen mainly as a public relations opportunity to enhance the brand, image, and reputation of an organization. Promotional CSR may be implemented through the practices of charitable and strategic CSR. 4) Strategic CSR means relating CSR activities to the core business of an organization with adherence to CSR codes and the implementation of social and environmental management. It typically involves cycles of CSR policy development. 5) Systemic CSR in the age of responsibility focuses on identifying and tackling the

root causes of unsustainability and irresponsibility through innovative business models and revolutionized processes, products, and services (Visser, 2011, pp. 17-19). The details are shown in Table 3.1.

Table 3.1 Guidelines for CSR Implementation Based on Organizational Purposes

Business age	**Stage of CSR**	**Modus operandi**	**Key enabler**	**Stakeholder target**
Greed	Defensive	Ad hoc interventions	Investments	Shareholders, government & employer
Philanthropy	Charitable	Donations	Projects	Communities
Marketing	Promotional	Public relations	Media	General public
Management	Strategic	Management systems	Codes	Shareholders, NGOs
Responsibility	Systemic	Business models	Products	Regulators & customers

Source: Adapted from Visser, 2011.

Thailand's Securities and Exchange Commission, an organization driving CSR in Thailand, has also developed a CSR model for sustainable business development. The model consists of 4 levels: 1) The mandatory level is legal responsibility. Organizations must comply with the laws or regulations. 2) The elementary level involves economic responsibility. Organizations must take account of their ability to survive and shareholders' interest. Seeking economic profit must not cause an impact on society. 3) The preemptive level deals with ethical responsibility. In addition to generating profit for shareholders, organization should pay more attention to giving back to society. 4) The voluntary level involves voluntary responsibility; organizations must voluntarily implement CSR without social demand.

According to the CSR models mentioned above, the researchers think that Carroll's model and the Securities and Exchange Commission's model are similar in terms of CSR levels. However, Carroll tends to focus on economic responsibility more than legal responsibility, while the Securities and Exchange Commission pays more attention to legal responsibility. The present researcher believes that the CSR model proposed by the Securities and Exchange Commission is suitable for the current Thai context. This is because organizations have to follow the laws, which are basic rules that everyone in society must obey. Those that do not comply with the laws will be targeted by the public and mass media. The researcher also thinks that these 2 models still cannot truly contribute to CSR sustainability because they only explain the levels of CSR implementation but do not include an in-depth integration of CSR into organizations.

The researcher thinks that Marrewijk and Were's CSR model is interesting because it does not specify that CSR must be implemented level by level—each organization can implement CSR differently according to internal and external factors without fixed order or control. The model proposed by Marrewijk and Were clearly divides CSR into 5 groups based on different types of motivations. It also shows how to integrate CSR into organizational work processes so as to achieve business continuity and sustainability. It is a good concept, and should be applied in every organization, although it may not be easy to do in practice.

3.1.4 Corporate Social Responsibility Practices

Each organization has different CSR practices, depending on its organizational context. Many organizations recognize the importance of CSR and determine clear guidelines for CSR implementation as shown below.

3.1.4.1 ISO 26000

The International Organization for Standardization (ISO) has determined the ISO 26000 Social Responsibility Guidance Standard, focusing on the relationship between organizations, stakeholders, and society in terms of impacts, interests, and expectations. Since organizational operations can cause social and environmental impact, the society expects that organizations will conduct CSR implementation, prepare preventive measures, and mitigate the impacts that may

occur from business operations. Stakeholders also expect interest from organizations. Thus, organizations must take account of the needs and expectations of society and their stakeholders.

Figure 3.2 Relationship between Organizations, Stakeholders, and Society and the Environment

Source: Adapted from Management System Certification Institute, 2014.

The ISO 26000 standard clearly defines seven CSR principles: accountability, transparency, ethical behavior, respect for stakeholder interests, respect for the rule of law, respect for international norms of behavior, and respect for human rights. The 7 core subjects for CSR integration, including organizational governance, human rights, labor practices, the environment, fair operating practices, customer issues, and community involvement and development, are also determined.

Figure 3.3 Core Subjects of ISO 26000

Source: Adapted from Management System Certification Institute, 2014.

These 7 core subjects also include 289 specific recommendations that organizational executives can select whether to implement based on relevance to their organizations. The researcher thinks that among the 7 core subjects of ISO 26000, organizational governance is the most important. This is because good organizational governance can consequently make the other six subjects occur.

3.1.4.2 Standard for Corporate Social Responsibility (CSR-DIW)

The CSR-DIW was initiated by the Department of Industrial Works to be the CSR guideline for all factories in the industrial sector regardless of their type, size, or location. It defines 10 CSR principles, including compliance with laws, respect for international practice, respect for stakeholders and their opinions, accountability, transparency, sustainability development, ethical practice, preventive practice, respect for human rights, and respect for diversity. These 10 principles are also used to determine the core subjects of CSR implementation, which consist of organizational governance, human rights, labor practices, the environment, fair operating practices, consumer issues, and social development.

Although the principles of the CSR-DIW are more detailed, the researcher finds that they are closely similar to the principles of ISO 26000. There are

some differences in the recommendations of these two standards because their objectives are different. ISO 26000 is designed to guide organizations in general, while the CSR-DIW is specifically determined to guide business operators in the industrial sector.

3.1.4.3 Guidelines for Multinational Enterprises Regarding Economic Co-operation and Development

The Organization for Economic Co-operation and Development (OECD) has established guidelines for multinational enterprises, which are non-binding principles and recommendations jointly addressed by the government. The main 7 practices include employment and industrial relations, the environment, combating bribery, consumer interests, science and technology, competition, and taxation. These practices are determined to protect the interests of countries in which multinational enterprises invest. The guidelines pay attention to science and technology and to combating bribery, which may cause direct and indirect impacts on the environment (OECD, 2000).

3.1.5 Relationship between Corporate Social Responsibility and Community

Moratis and Cochius suggested that the community is the source of CSR activities. Activities carried out in the community can cause tangible results. Therefore, a great number of organizations select to conduct community activities by using organizational resources such as money, experts, facilities, and networks. These activities are not intended for individuals but for the planet. Community activities help create motivation both inside and outside organizations and enhance the integration of social responsibility. Community involvement is seen as a part of CSR. Organizations taking account of community involvement and CSR are considered performing more than legal requirements, which clearly demonstrates their organizational ethics. Community activities are not related with the organizational core business; they focus on community development and empowerment without paying attention to financial benefits (Moratis & Cochius, 2012, pp. 18-20).

Moratis and Cochius's concept is consistent with the 7th core subject of ISO 26000, which is community involvement and development. The ISO 26000 standard

is a social responsibility guideline for organizations that need to implement CSR in a proper way. Many organizations have a policy to adhere to all 7 core subjects of ISO 26000. However, organizations that are not ready to implement all of them may choose to comply with one or two core subjects first. The 7th core subject is a good alternative for community development.

The 7th core subject of ISO 26000 concerning community involvement and development includes recommendations for 7 issues, which are community involvement, education and culture, employment creation and skills development, technology development and access, wealth and income creation, health, and social investment (Management System Certification Institute, 2011, p. 143). The researcher thinks that organizations that want to show their CSR commitment can select some of these issues for conducting community activities. Alternatively, organizations with high potential may select to integrate all important issues into one activity.

The above CSR concepts and practices are broadly related to the community. Considering the organizational impact of overall CSR performance, which includes community activities, Wong proposed the conceptual framework of CSR performance using corporate vision, mission, shared-value, and CSR vision as the success drivers. CSR activities can be divided into various forms, such as organizational governance, risk management, stakeholder relationship, environmental sustainability, labor practices, human rights, and workers and community-related projects. These activities can cause intangible results inside and outside organizations, which eventually leads to tangible results for organizations. Utilizing eco-friendly technology or conducting environmentally-friendly activities enables organizations to be good organizational citizens, have a good image and reputation, obtain acceptance and trust from investors, receive compliments from governmental agencies, and ultimately achieve tangible results such as higher profit and a greater market share. A good work environment is one of the intangible organizational results from implementing occupational health and safety management activities, which can turn into tangible results such as a decrease in operating costs. Fair labor practices can improve the quality of work. Community-based projects will enhance volunteer behaviors among employees, promote employee morality, strengthen employee relationships, and then reduce the cost of human resource management (Wong, 2010, p. 67).

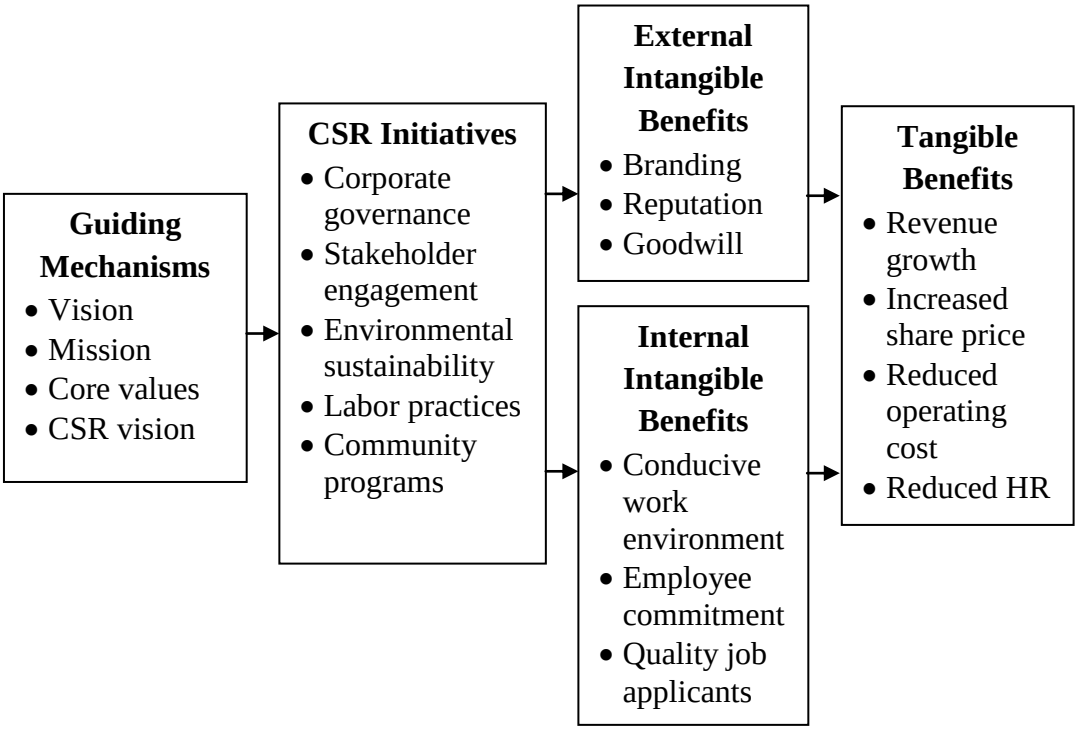

Figure 3.4 Results from Corporate Social Responsibility
Source: Adapted from Wong, 2010.

Dhar studied CSR implementation in India and found that the CSR activities in India are often implemented in the form of donations to community development, which helps reduce the burdens of the Indian government. CSR activities create good relationships between organizations and the community, contributing to good relationships with the public. A case study at Navaratna, a large oil company in the Assam state of India, pays attention to community development as the main CSR activity of the company. It shows that this company focuses not only on financial profit but also social responsiveness (Dhar, 2014, p. 185).

In conclusion, CSR is a concept that organizations should take account of and seriously implement. CSR should be integrated in all operational processes according to the CSR concept of Marrewijk and Were. ISO 26000 and CSR-DIW provide guidelines for organizations to implement CSR in the aspect of community involvement and development. According to the CSR model of Wong, implementing CSR in the form of community projects is interesting because it can bring about

intangible and tangible organizational results. Good community projects should create long-term benefits, strengthen the community, and enhance sustainability development. The community's long-term benefits involve infrastructure construction projects such as roads, water supply systems, and small community power plants, which is the main area of this research. The researcher intends to study this kind of CSR implementation because it helps spread prosperity and boost the life chances of people in the community. Once the community take part in CSR activities, it will help create community unity and be a basis for further development. However, those activities should be implemented with good management approaches since they can have a great impact on the community in many ways; the people's lifestyles and the community's norms may dramatically change, which consequently will affect the way of life of communities.

3.2 Social Capital

When talking about "capital," many people think of a market where money and assets are exchanged for profit. However, social capital is not associated with the market but involves social issues. Social capital is not caused by market interactions but results from social interactions (Collier, 2002, p. 20). The details of social capital are presented below.

3.2.1 Social Capital

Social capital theory explains that individuals will acquire tangible and intangible resources through social interactions and social relationships with others (Bourdieu, 1986). The key assumptions of social capital are that resources are social capital embedded in, received through, and utilized by social networks. Social networks can be individuals, groups of individuals, or ethnic groups that have mutual relationships with each other (Bolino, Turnley, & Bloodgood, 2002).

There are 2 factors associated with the origins of resources. The first factor is social capital generated from perceiving the interest of others, which includes giving resources to others because of ethical responsibility and giving resources to others in order to maintain network unity. The second factor is social capital generated from

tools or methods, which includes exchange between individuals, resource transactions, and resource exchange with the expectation of receiving something in return. Trust will occur when the groups in a network have reliability in exchange (Portes & Landolys, 2000).

3.2.2 Definition and Characteristics of Social Capital

Over the past decades, the concept of social capital has received considerable attention at national and international levels. Halperm has remarked that the concept of social capital has become increasingly popular because policymakers are paying more attention to social issues. There are also a number of research studies aiming to investigate the relationship between forms and quality of social networks and the relationship between forms of social networks and end results such as economic growth, health, crime, and educational capacity (Halpern, 2005, p. 2).

3.2.2.1 Social Capital in the Aspect of Structure and Relationship

Hanifan, an American educationalist, first introduced the idea of social capital in 1916. He defined it as follows: “those tangible substances that count for most in the daily lives of people: namely good will, fellowship, sympathy, and social intercourse among the individuals and families who make up a social unit …If he comes into contact with his neighbor, and they with other neighbors, there will be an accumulation of social capital, which may immediately satisfy his social needs and which may bear a social potentiality sufficient to the substantial improvement of living conditions in the whole community” (Hanifan, 1916, p. 130). Hanifan believes that social capital is comprised of the simple things in people's lives; it is a perception of positive feelings caused by interacting, working, and living with others. The definitions of social capital have been getting more complicated since then.

Social capital has been differently defined by scholars in various fields. Coleman, a sociologist, defined social capital according to its function. He suggested that social capital is not a single entity, but a variety of different entities with two elements in common: social structure and facilitating the actions of individuals that are within the structure (Coleman, 1988, p. 96).

Scholars in political science also use the concept of social capital to analyze the relationship between social capital and governmental performance.

According to Putnam's research called Making Democracy Work, different levels of social capital in two local areas have an effect on the governmental administrations of each area. Putnam stated that social capital is associated with building networks, norms, and social trust that can facilitate coordination and cooperation within and between groups. Social capital in the form of networks can create higher capacity than individuals (Putnam, Leonardi & Nanetti, 1993). In addition, social capital refers to a social way of life that requires participation among individuals to achieve common goals (Putnam, 1995, p. 664). Fukuyama, a Japanese political scientist, studied the relationship among social capital components, including networks, norms, and trust based on the concept of Putnam. He suggested that trust can possibly occur in communities with cooperation and integrity. Trust is an expectation towards common norms perceived by community members, and norms are valuable assets. One example of trust is that patients have trust in doctors because doctors can cure them. It is also generally understood that doctors have professional ethics regarding medical treatment. Social capital is an ability generated by trust. It can be formed in small or large social groups. Trust will occur after each group defines its norms. In a society with high levels of trust as in Japan, there are a lot of social networks that greatly benefit the awareness of news and information (Fukuyama, 1995, pp. 25-26).

Apart from scholars and researchers in various fields, international organizations also recognize the importance of social capital. The World Bank has define social capital as the institutions, relationships, and norms that shape the quality and quantity of a society’s social interactions (Grootaert, 1999, pp. 62-65). The Organization for Economic Co-operation and Development suggests that social capital can be generated in the collaborative networks that share norms, values, and understanding that help foster cooperation within and between groups (OECD, 2000). Thai governmental agencies have opinions similar to those of international organizations. They indicate that trust-based collaboration in the form of a network that consists of people, institutions, cultures, and knowledge can be a source of social capital (Office of the National Economic and Social Development Board, 2008).

3.2.2.2 Social Capital in the Aspect of Network Resources

Social capital can be viewed as a type of capital that is generated by the network. It has been compared with other capital, including economic capital such

as monetary income, assets, and financial resources, and cultural capital such as habits and tradition derived from socialization. Considering the economic perspectives, Bourdieu has suggested that social capital refers to the aggregate of actual and potential resources in a durable network of more or less institutionalized relationships. Social capital also includes a group of investors gathering to accumulate capital in the form of relationships. The network that arises from those relationships is an output resulting from investment strategy that aims to build short-term and long-term social relationship (Bourdieu, 1986, pp. 248-249).

As for the perspectives of sociologists, Lin defined social capital as the resources in a network that can be accessed or driven by purposive actions. This definition suggests that Lin places emphasis on three things: resources, location of resources, and actions (Lin, 2001). In addition, there are also other scholars that have provided additional comments on social. For instance, some of them say that social capital is often defined as the assets arising from social relationships (Luong, 2012, p. 3).

3.2.3 Dimensions of Social Capital

Grootaert and Bastelaer studied the dimensions of social capital by taking account of the characteristics of social capital and the relevance. The characteristics of social capital are examined in the dimension of structure. Relevance is categorized into the macro level and micro level. At the micro level, structural social capital is associated with local organizations and networks, whereas cognitive social capital is related to trust, norms, and values. At the macro level, structural social capital involves government organizations and rule of law, while cognitive social capital concerns organizational governance (Grootaert & Bastelaer, 2002, pp. 342-343).

Table 3.2 Dimensions of Social Capital

	Structural Social Capital	**Cognitive Social Capital**
Macro	Governmental organizations & rule of law	Governance
Micro	Local organizations & networks	Trust, norms & values

Source: Adapted from Grootaert and Bastelaer, 2002.

The definitions of social capital are diverse, with many conceptual consensuses, and as a result the dimensions of social capital have been examined in various ways. Based on the relationship between networks, social capital can be examined in 3 aspects: bonding social capital, bridging social capital, and linking social capital (Putnam, 2000). Bonding social capital has a close relationship within groups such as family members, close friends, and associates. It focuses on identities and looking inside. On the other hand, bridging social capital has a loose relationship between groups with differences. It focuses on open relationships and looking outside (Jochum, 2003, pp. 86-87). In addition to bonding social capital and bridging social capital, there is also linking social capital, which has a vertical relationship. It involves a chain of command and relationships between people and the government or private sector with higher potential (Woolcock, 1998, pp. 156-157).

In order to thoroughly examine all aspects of social capital, Nishude divided social capital into bonding, bridging, and linking social capital based on the definition, scope of relationship, key characteristics, connection and network, trust, and outcome (Nishide, 2009, p. 9).

Moreover, Krishna also categorized social capital into two types: institutional capital and relational capital. Institutional capital is in the form of structures, rules, and procedures determined to guide individual behaviors, while rational capital is in the form of norms and beliefs. As institutional capital and relationship capital are vital for building sustainable social capital, they must be complementary to each other (Krishna, 2000, pp. 76-79).

Table 3.3 Types of Social Capital

	Institutional Capital	**Relational Capital**
Behavioral background	Transactions	Relationships
Sources of motivation	Roles, rules, procedures penalties	Beliefs, shared-values & role model
Characteristics of motivation	Productive behaviors	Appropriate behaviors
Examples	Markets & framework	Family, ethnicity & religion

Source: Adapted from Krishna, 2000.

The above theory is consistent with the concept of Uphoff, who categorized social capital according to 2 dimensions: structural capital and cognitive capital. Structural capital includes forms of organization or society, roles, rules, procedures, and a wide variety of networks that foster cooperation and mutual benefit. Cognitive capital can be caused by mental processes influenced by cultures and role models. It involves norms, shared values, attitudes, and beliefs affecting the collaborative behaviors and benefits of social capital (Uphoff, 2000, pp. 217-221).

Table 3.4 Classification of Social Capital Source

	Structure	**Perception**
Sources and indicators	Roles & rules,	Relationships, values, attitudes & beliefs
Scope	Network and individual relationships & implementation	Cultures
Dynamical factors	Horizontal relationship & vertical relationship	Trust, unity, cooperation & generosity
General components	Expectations that led to cooperation, mutual benefit	

Source: Adapted from Uphoff, 2000.

3.2.4 Measurement of Social Capital

As social capital is considered as a network, Lin summarized the measurement of social capital into 2 approaches. The first approach focuses on measuring network resources. This approach considers the resources embedded in the network as the major component of social capital. The measurement will take account of 2 factors, which are the network resources that partners can access, and the contract resources used as helpers in specific actions. The second approach aims to measure network locations. As access to the relationship is conducive to action, accessibility can indicate the strength of the relationship (Lin, 1999, pp. 38-39).

Table 3.5 Measuring Social Capital according to Lin's Concept

Concept	Measurements	Description
Network resources	Network resources	Diversity of resources & size of resources
	Contract statuses	Contracts' authority & power
	Access to relationship conducive to action	Structural constraints
Network locations	Strength of relationship	Network relationship, intensity, interaction & reciprocity

Source: Adapted from Lin, 1999.

Social capital can be measured using diversity, number of network members, roles that reflect the structure and function of the group, trust inside and outside the network, trust in the public sector, opportunities and barriers to participation in decision-making, mutual actions, and network information and communication, which are all essential for the success of projects (Grootaert, 1999). Putnam proposed to investigate social capital in 5 aspects: 1) the organization's way of life in the community such as serving as a community committee; 2) social activities such as participation in school activities and elections; 3) community volunteers such as

volunteering taking part in community projects; 4) informal social relationship such as visiting neighbors and joining entertaining activities; and, 5) trust such as trust is other people (Putnam, 2000).

In the Thai context, social capital can be considered based on the concept of inputs and outputs. The components of social capital can be determined as follows: 1) groups or networks that comprise structural social capital (input); 2) trust, which is cognitive social capital (input/output); and 3) activity or collaboration (output) and other components that can support social capital such as information and communications, decision-making authority, family, and politics (Office of the National Economics and Social Development Board, 2008). When analyzing social capital at the micro level, its components can be seen to be comprised of the following: 1) group or network that is group or network members; 2) trust and unity, which can occur or change over time; 3) activity or collaboration, including forms of activities and comments on activity participation; 4) information and communications,, including access to and utilization of information in decision-making; 5) integration and coordination associated with causes and problem-solving mechanisms; 6) power and political activity, including political efficiency, happiness, and outcomes (Office of the National Economics and Social Development Board, 2008).

3.2.5 Benefits of Social Capital

In the dimension of networks, social capital can increase work performance, reduce operating costs, promote mutually-supportive culture, develop strong community organizations, enhance trust among network members, and enable rapid communication. The stability of social capital will result in the sustainable success of the network in the future (Putnam, 1993). Social cohesion can contribute to economic development, and therefore, it has an influence on sustainability development at local and national levels (Grootaert, 1999). Social capital is a key factor in economic growth and sustainability development and helps to enhance the well-being of people (Suwannee Khamman et al., 2008). The projects that collaborate with local organizations and determine common norms together have a high tendency to be successful (Grootaert, 1999). Thus, social capital is very important to the development of economic capital (Rotheroe, 2005).

According to the literature review on social capital discussed above, the researcher can conclude that social capital is the benefits that individuals or groups of individuals, as network members, obtain from cooperation. The longevity of the benefit depends on the stability of the network, which can result from mutual agreement, compliance with network norms, and trust among network members. The researcher's opinions are consistent with the concepts of Bourdieu and Putnam. It can be seen that Bourdieu places emphasis on network resources. Similarly, the researcher also focuses on the benefit that members will receive from the network. In addition, the researcher finds that the network is the source of social capital and the norms and trust can strengthen the stability of the network, which is in line with Putnam, who has stated that social capital refers to the features of social organizations such as networks, norms, and social trust. Therefore, in order to investigate the process of social capital development in a more efficient way, the researcher needed to thoroughly study the dynamics of the networks, norms, and trust that arise from the causal factor or CSR implementation. The literature review related to networks, norms and trust is presented below.

3.2.6 Networks

The concept of social capital often refers to a network. Social capital is a value derived from being a member of a network. Membership status enables access to resources. Resources related to social capital are embedded in a network. The key to social capital is social relationships (Golubovic, 2009, p. 218). Therefore, it is important to study social network theory so as to understand the assumptions and to be able to discuss the social capital development process later.

3.2.6.1 Social Network Theory

Social network theory focuses on a specific set of linkages among social actors such as individuals, groups, or organizations and the characteristics of those linkages as a whole that can be used to interpret the social behavior of the social actors involved (Mitchell, 1969). The network linkage can be analyzed at the micro level, as with leadership and teamwork, and at the macro level, as in the relationships between organizations and partners (Miles, 2012, p. 297). According to network theory, it is important to take account of the node, which refers to the social actor and

the tie, which refers to the relationships between social actors. Individuals or groups will receive social capital according to the location in the social structure or social network (Lin, 2002). A social network can be analyzed according to the interaction between members in the network and the social interaction structure (Wasserman & Faust, 1994). The strength of the relationship depends on the time, emotional intensity, trust, and cooperative exchanges between the groups in the social networks (Miles, 2012, p. 298).

The assumptions of social network theory (Kilduff & Brass, 2010) include the following: 1) the relationship between the social actors will link or separate the social actors; 2) the social actors tend to be in the network and expand the long-term relationship; 3) a pattern of the structure, group, and relationships and centrality is created. Centrality involves the way in which all social actors are related to the network (Freeman, 1978). 4) In terms of the social benefit of the network relationship, social actors will play a role in creating opportunities or in the limitations of the benefits.

3.2.6.2 Patterns of Networks

Networking is a form of organizational development. The collaboration of organizations can solve complex problems and difficulties that one organization cannot solve alone (Cummings & Feyerherm, 2010, p. 352). With limited resources, developing partnerships with other organizations in the network based on the available resources and knowledge will cause synergy and knowledge sharing. Further, organizations will benefit from the resources that are assets and the expertise of other organizations in the network. The network relationship structure (Greve, Rowley, & Shipilov, 2014, p. 10-12) has several patterns, as follows.

Pattern 1: The main organization's partners are not connected. The main organization has relationships with all partners in the network but there is no relationship among the partners. The partners' missions are unrelated. Exchange of information and resources cannot be fully formed.

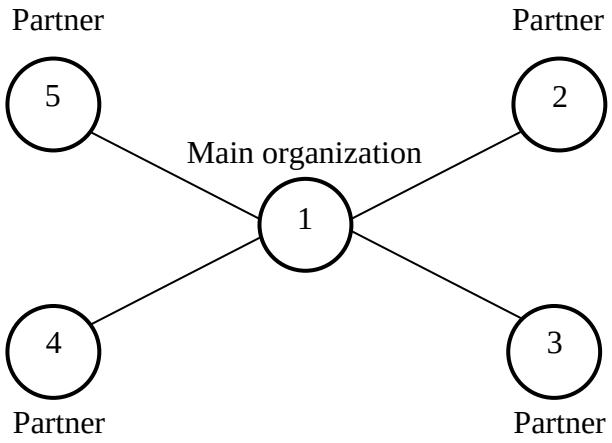

Figure 3.5 Relationship Structure: Partners are not Connected
Source: Adapted from Greve, Rowley, and Shipilov, 2014.

Pattern 2: The partners are all connected. This is considered an integrated structure where the main organization and all partners are interrelated. This kind of collaborative network will enable the main organization and partners to exchange information and resources in a complete way.

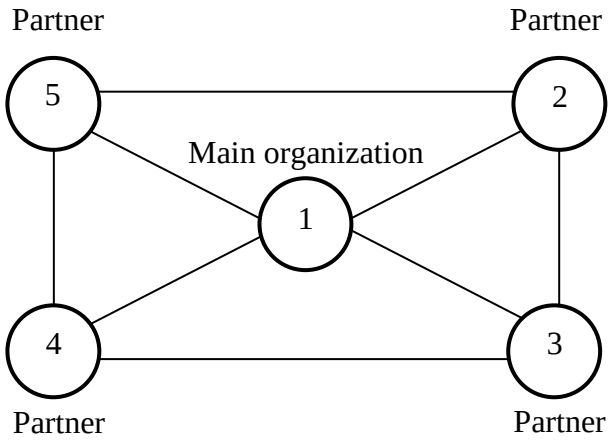

Figure 3.6 Relationship Structure: Partners are all Connected
Source: Adapted from Greve, Rowley, and Shipilov, 2014.

Pattern 3: The partners are partially connected. This is considered a mixed structure where the main organization has relationships with all partners but only some partners are interrelated. Exchange of information and resources can partially occur in the network.

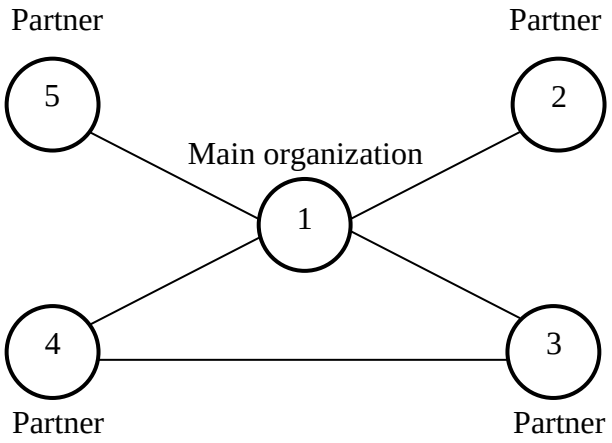

Figure 3.7 Relationship Structure: Partners are Partially Connected
Source: Adapted from Greve, Rowley, and Shipilov, 2014.

Considering the network relationship at the organizational level, organizations that become partners must have resources that are beneficial to the network, and the organizational partners in the network can utilize those resources. In other words, organizations will seek benefits from the partners. Building a network consists of four steps: 1) identifying the objectives and members of the network; 2) establishing mutual agreements and assessing the benefits of being a member; 3) managing the collaborative work structure within the network; and 4) evaluating the consequences of network building so as to provide feedback to the network members (Cummings & Worley, 2005, pp. 467-472).

The network structure in this context refers to an organizational structure consisting of two or more organizations with agreements to carry out a mission. The relationships between the involved organizations are varied; each organization is responsible for the activities that it can perform well. The advantage of the network structure is that it has high flexibility and can effectively respond to the environment.

The organizations in the network are not permanently integrated; their structure can be modified so that the network can carry out its mission efficiently and effectively. One disadvantage is that it is difficult to manage the relationships and conflicts between the organizations in the network, especially regarding conflicts over resource allocation. The independence of each organization resulting from impermanent integration may cause issues related to coordination, collaboration, and quality control (Cummings & Worley, 2005, p. 225).

3.2.7 Norms

Norms are approved standards that determine the behaviors of a particular group. Norms are valuable because they enable a group member to understand the expectations of other group members. Norms have a strong influence on working behaviors. Group norms often involve positive outcomes such as work performance. However, group norms can result in negative outcomes such as causing damage to others. Negative norms strongly affect group members with negative behaviors (Kaur & Kaur, 2015, pp. 310-313). It can be said that norms of cooperation are a part of social norms, which influence human behaviors. Once we are helped by others, we feel indebted and want repay them (Cherry, 2016). Social norms are a set of social practices established to build a peaceful society, which can be categorized into technical norms, folkways, mores, and laws (Nopphorn Phukaphan, 1999). The behaviors of group members are determined by the norms under each circumstance. Therefore, it can be said that norms can determine and predict the behaviors of group members. In terms of benefits, norms help prevent differences in the behavior among group members (Wanchai Meechart, 2005, p. 126).

3.2.8 Trust

Trust is one of the most important components of social capital. It is a key factor that can contribute to network stability. A literature review on trust is presented below.

Trust occurs when one person is confident that another person will treat him or her with honesty, fairness, care, and mutual support (Atchara Limwongthong, 2014, p. 142). It can be considered as a risk. People may have no trust when first meeting

someone. However, trust grows after people become familiar with each other. Trust is also a form of faith. When faith occurs, trust is established (Gitomer, 2008). On the basis of positive expectations towards interdependent behaviors and risks, trust can be considered in terms of beliefs, decision-making, and actions (Davis, Schoorman, Mayer, 2000, p. 563). Trust indicates the expectations of positive results of social interdependence and demonstrates confidence in certain situations. However, trust can also cause risky consequences since unexpected results may possibly occur (Golembiewski & McConkie, 1975, pp. 131-156).

In the dimension of interpersonal relationships, Cook and Wall stated that trust is associated with colleagues. Trust can indicate confidence in one's colleagues' determination and ability (Cook & Wall, 1980, p. 39). Trust is an important determinant of the relationship between two parties (Fox, 1974). Interpersonal trust between two parties will result in positive behaviors beneficial to the other party. Trust can be divided into 5 levels: 1) Unreasonable Trust caused by insufficient information; 2) Manipulative Trust using illegal practices to maintain interpersonal relationships; 3) Provable Trust resulting from trustworthiness assessment; 4) Direct-Experience Trust gained from actual experiences; and 5) Interpersonal Trust where two parties reciprocate to each other (Luhman, 1979).

The degrees of trust vary and are probably associated with the types of trust. Trust can be divided into 2 main types. First is cognitive trust, caused by confidence in being able to perceive the achievements, skills, and reliability of another individual. This kind of trust arises from work collaboration and business interactions. People with satisfactory work performance tend to gain the trust of others. Second is affective trust, caused by intimacy, friendship, and personal relationships. Trust occurs when a person shares love or emotional feelings with another person and receives the same feelings in return (Meyer, 2014). Relationships are based on trust while trust depends on shared values and cultures (Fukuyama, 1995, pp. 25-26). Trust is also associated with speed and cost. If trust in the group decreases, it will take a longer time to finish the work, resulting in higher costs. On the other hand, when trust in the group increases, communication and collaboration will also increase, resulting in lower costs and higher performance. This phenomenon is called a high-trust dividend (Covey, Link, & Merrill, 2012, p. 39). Trust has a tremendous effect on communication. Lack

of trust makes recipients doubt the messages from senders, obstructing the process of communication (Lewis, Goodman Fandt, & Michlitsch, 2007).

Effective ways to build trust include the following: 1) disclosing necessary information so as to show sincerity and attention; 2) making a decision and providing compensation and benefits in a fair and equal manner; 3) expressing appropriate emotional feelings to create closeness; 4) telling the truth without distortion; 5) complying with agreements and keeping promises; 6) keeping secrets and knowing what not to say in a confidential cases; and 7) showing communication and negotiation ability, skills, and techniques and building a relationship with others (Atchara Limwongthong, 2014). In addition, trust is not a short-term action (Mayer, 2012); trust can develop over time based on given values. Those with good work performance and high professional skills that can provide useful guidance to others are likely to gain a high level of trust (Gitomer, 2008).

3.3 Relationship between Corporate Social Responsibility and Social Capital

Good CSR activities will benefit social capital in terms of network, trust, and skills. CSR activities require collaboration between the organization and stakeholders and cooperation among all stakeholders. Although aiming for different goals, each stakeholder needs to have interpersonal trust. Representatives need to use their skills to build relationships and create learning processes from CSR activities (Antoni & Portale, 2010). The relationship between CSR and social capital occurs under the stakeholder process (Rotheroe, 2005). Social activities will enhance cooperation among stakeholders and the cooperation will eventually contribute to organizational growth (Niehm, 2008). According to Sacconi and Antoni, cognitive social capital plays an important role in convincing the organization to conduct social activities that meet the needs of stakeholders. Cognitive social capital and decision making regarding CSR activities can cause structural social capital in the form of long-term relationships between the organization and stakeholders (Sacconi & Antoni, 2008).

CSR and social capital symbolize the acceptance and effectiveness of CSR implementation. It is difficult to measure the success of social capital and human capital associated with CSR. It can be clearly seen that the promotion of CSR activities is a sensitive matter. However, it is better for the organization to implement CSR than to ignore it (Pavlikova & Wacky, 2013). Social capital may help increase the effectiveness and effectiveness of organizations that are members of the CSR implementation network (Bianchi, 2011).

In the study on social capital enhancement and CSR implementation of Wissara Cheewasarth, it was found that the business organization studied, or the resort, carried out its CSR project by establishing an agri-nature learning center in the community, resulting in many positive impacts. For example, a collaborative network was created to produce organic products, the organization and community participated in developing the community, and community development learning was promoted. The project also generated trust between the organization and the community and trust among the villagers (Wissara Cheewasarth, 2012, pp. 53-67).

3.4 Initial Conceptual Framework

Based on the literature review on the concept and theories about CSR and social capital mentioned above, the researcher has set up a conceptual framework to be a guideline for this study. The initial conceptual framework was not permanent and was not used to test the hypotheses. This framework was modified according to the actual situations and facts discovered during the process of data collection and data analysis.

In order to clearly describe the CSR implementation in the community hydropower plant construction project and to illustrate the dynamics of social capital development process, the researcher divided the project into 3 phases: 1) the pre-construction phase, 2) the construction phase, and 3) the post-construction phase. The social capital development occurring in each phase will be thoroughly examined. The components of social capital, consisting of networks, norms, and trust, are also included in the framework. In the dimension of network, it is important to identify the partners and their roles, examine the patterns of relationships, and explore the

characteristics of resources embedded in the network as well as the exchange of resources. Regarding the dimension of norms, the researcher aimed to study the norms and agreements affecting the collaboration between the network partners. As for the dimension of trust, it was necessary to examine trust in the collaborative network and the sources of trust.

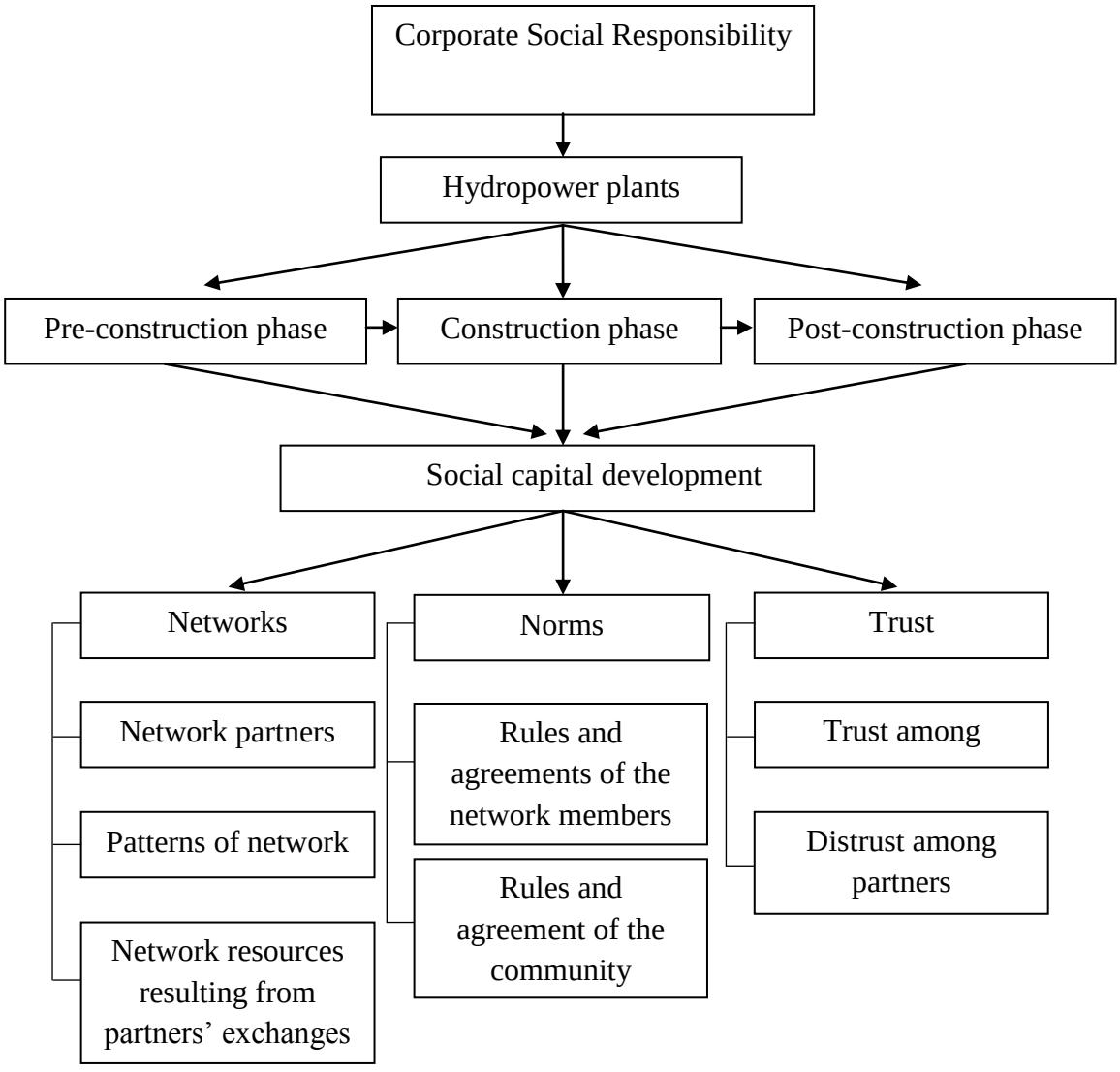

Figure 3.8 Initial Conceptual Framework

3.5 Chapter Summary

Based on the literature review, the researcher developed the initial conceptual framework to be a guideline for the data collection and explained the overall concept of CSR and social capital, including its 3 components: networks, norms, and trust. This conceptual framework was used to study the CSR implementation affecting social capital development and to compare the social capital development process of the two communities.

CHAPTER 4

RESEARCH METHODOLOGY

This chapter describes the key elements of the research methodology of this study, including the research design, the data collection, the research instruments, the data analysis, the measurement of trustworthiness, and the research procedures. The details are as follows.

4.1 Research Design

The qualitative research methodology was applied to study the CSR implementation of the public and private sectors in the community hydropower plant construction project affecting the social capital development in the dimension of networks, norms, and trust during the pre-construction, construction, and post construction phases.

Moreover, the case study method was employed to answer the first and second objectives of this research because case study research is “an in-depth study of instances of a phenomenon in its natural context and from the perspective of the participants involved in the phenomenon” (Gall, 1996, p. 545) and “an empirical inquiry that investigates a contemporary phenomenon within its real-life context especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2013, p. 4). Therefore, it was an appropriate method that enabled the researcher to acknowledge and understand the actual phenomena of CSR, social capital, and the correlation between CSR and social capital in the study areas.

Regarding the third objective, the multiple case study method, which is similar to a comparative case study (Lapan, Quartaroli, & Riemer, 2012, p. 247), was applied to compare the process of social capital development in the two communities. A comparative study examining the context and features of two or more instances of specific phenomena can create new knowledge using causal questions. It involves

analysing, synthesizing, and discussing the differences and similarities until achieving insightful findings and specific conclusions (Goodrick, 2014). Thus, the multiple case study method helped the researcher discover the differences and similarities of the two communities for synthesizing and developing a model of the social capital development process associated with CSR implement in an effective way.

4.1.1 Selection of Case Studies

In order to achieve the objectives of this research, the criteria for the selection of the case studies were determined as follows.

1) The communities had to have a power plant with sufficient potential to generate electricity from natural water.

2) The power plant had to have a total generation capacity of 20-30 kilowatts and use local resources to generate electricity.

3) The construction of the community power plant had to be supported by the involved organizations in the form of corporate social responsibility implementation. The involved organizations in this context excluded the governmental organizations directly responsible for the construction of the community power plant.

4) The involved organizations could variously support the construction of the community power plant through money donations, providing necessary tools and equipment, sending volunteers and employee representatives, and sharing useful knowledge in the fields of civil construction, electricity, mechanical engineer, and accounting.

5) The organizations that initiated the construction project had to take part in all three construction phases: pre-construction, construction, and post construction.

6) The people in the community had to directly and indirectly participate in the construction project. Direct participation included sharing suggestions and opinions and providing physical and financial support. Indirect participation included taking part as paid laborers.

The basic information from various documents and related organizations, including that from the Department of Alternative Energy Development and Efficiency, a public organization directly responsible for the construction of

community water power plant, the Electricity Generating Public Company Limited (EGCO), and the Electricity Generating Authority of Thailand (EGAT), was collected and processed to find the appropriate case studies according to the selection criteria. Finally, Ban San Din Daeng and Ban Klong Rue were selected.

Ban San Din Daeng (Yom Ban Mae Pon) is a community in Ban Luang Sub-District, Chom Thong District, Chiang Mai Province, with an approximate population of 40 households. The small power plant located in this community uses water from Mae Pon River to generate electricity. It has a total electricity generation capacity of 20 kilowatts and has been supported through EGCO's CSR implementation. EGCO has participated in all 3 phases of the construction project by providing financial support and sending its representative to be the project manager. The people in the community have also participated in decision-making processes. The construction mostly employs local laborers.

Ban Klong Rue is a community in Moo 9, Pak Song Sub-District, Phato District, Chumpon Province, with an approximate population of 89 households. The small hydropower plant located in the community uses water from Haew Ta Jan Waterfall to generate electricity. It has a total electricity generation capacity of 20 kilowatts and has been supported through EGAT's CSR implementation. EGAT has participated in all 3 phases of the construction project by providing financial support, supporting tools and equipment, and delegating its employees to supervise the construction. The people in the community have also provided financial support for the project. The construction project mainly employs local laborers.

4.2 Data Collection

The documentary research and field research methods were used to collect the data in this research.

4.2.1 Documentary Research

The researcher collected the secondary data from various sources, such as textbooks, academic articles, theses, research papers, and other relevant documents. The data obtained from textbooks, academic articles, theses, and research papers were

used for the literature review on corporate social responsibility and social capital. The data collected from EGCO's and EGAT's annual reports, CSR reports, and sustainability development reports were used to discuss the organizations' general conditions, CSR implementations, and hydropower plant construction projects in chapter 5. The related books consisting of Ban Klong Rue's Light in the Middle of the Valley, Khon Yoo Pa Yang, Electricity Power in Ban Klong Rue, Chumpon's Phato Watershed Forest, Manual for Community Hydropower Electricians, Work with the Community, EGCO Thai Rak Pa Rak Ton Nam Tharn Chiwit, Khon Yoo Dai Pa Yoo Dai Newspaper, as well as other relevant documents,, including a full report on the pilot project "Knowledge Management for Electric Power Utilities," which aimed to exchange experiences between local power users and industrial operators in the south of Thailand, a final report on the project "Knowledge Management for Electric Power Utilities in the Southern Provinces Phase 2," a proposal for the Ban Klong Rue Hydrower Plant Project with Operational Framework Complying with EGAT's Corporate Governance Principles, a report on the establishment of the learning resource center in Ban Klong Rue Hydropower Plant, a paper on the Community Hydropower Plant Projects of the Department of Alternative Energy Development and Efficiency, a paper entitled "One Forest, One Energy Resource Project in Ban San Din Daeng Community Hydropower Plant," a documentary series about Electricity in Ban Klong Rue Community, Phato Watershed Forest, Chumpon, a documentary video called "One Forest, One Energy Resource," and a documentary video "San Din Daeng: an Upstream Community in the central of Inthanon Forest," were also thoroughly studied.

The information gained from the documentary research was also used to review and verify the data about CSR implementation and social capital obtained using the field research method in order to acquire the most accurate data.

4.2.2 Field Research

The field research can be divided into 2 parts 1) the field research conducted in the involved organizations, which were EGCO and EGAT, and 2) the field research conducted in the involved communities, which were Ban San Din Daeng community and Ban Klong Rue community. The in-depth interview technique was applied to collect data from the key informants using a structured questionnaire.

The historical approach was adopted to collect the data related to the process of social capital development in the dimension of networks, norms, and trust during the pre-construction, construction, and post-construction phases.

4.3 Research Instruments

4.3.1 In-depth Interviews

An in-depth interview is a purposive conversation (Kahn & Cannell, 1957, p. 149). It is more interesting to study a phenomenon from the perspectives of those involved rather than the perspectives of researchers. Capable researchers must be able to draw useful attitudes and valuable opinions from the involved informants. The advantage of in-depth interviews is that they can provide much more detailed information in a short period of time. However, researchers have to take account of the willingness of the informants to cooperate. If they are uncomfortable or are not willing to provide information, research problems may occur (Marshall & Rossman, 2006, pp. 101-102).

In this study, the researcher used in-depth interviews to collect data from the key informants through purposive conversations with the aim to discover the actual phenomena occurring during their participation in the hydropower plant construction project. The in-depth interviews provided factual information through the informants' interactions, such as tone of voice, gestures, and expressions. In order to encourage the key informants to provide information about their personal attitudes and opinions that would be useful for the research, the topics of the conversations and a series of questions were defined and sequentially arranged. The topics and questions enabled the key informants to freely answer questions without directives. In the present study, the researcher had to be extremely careful when communicating with the informants because most of the villagers in the Ban San Din Daeng were Karen people and the villagers in Ban Klong Rue mostly used dialects (Thai Southern and Isan languages). The researcher needed to ask the questions using very simple language and to avoid academic or technical terms.

Considering the key informants of this research, the researcher determined that they had to be people involved in the hydro power plant construction during the pre-

construction, construction, and post-construction phases. They could be employees in the organizations that initiated the construction projects, those working in the partner organizations, or villagers in the communities that were able to provide factual information resulting from their real experiences in participating in the hydropower plant construction projects.

4.3.1.1 9 Key Informants in the Case Study in the Ban San Din Daeng Community

1) One staff member from the Electricity Generating Public Company Limited: Mr. Sarawuth Mankalasirisap, Project Manager Unit 2. He was involved in the hydropower plant construction project from the beginning to the end and was considered one of the key persons in the project. In the first interview on January 11, 2016, he provided basic information about the construction project, the network partners, and the community. In the second interview on January 18, 2016, he provided further information covering all dimensions,, including the CSR implementation during the pre-construction, construction, and post-construction phases, the mutual agreements of the network, the socialization of the network, the collaborative approach to gaining trust from the community, and the problems and difficulties in collaboration.

2) Two staff members from the Thai Rak Pa Foundation. First was Ms. Mananee Phattayacheewa, Foundation Manager. She was the senior executive of the Thai Rak Pa Foundation, who suggested other key informants to the researcher. In the interview on October 14, 2015, she gave information about the operations of the Thai Rak Pa Foundation, an overview of the construction project, the network partners, and the factors influencing the community trust. Second was Mr. Thawat Khadpab, Project Leader Unit 1. He played a key role in coordinating with all the partners. In the interview on January 19, 2016, he provided in-depth information about the community activities of the Thai Rak Pa Foundation, the general characteristics of the community, the operations of the Thai Rak Pa Foundation during the post-construction period, and the collaboration between the community, the Thai Rak Pa Foundation, and EGCO.

3) One government officer from the Department of Alternative Energy Development and Efficiency (DEDE): Mr. Somchai Sitthibodikul, Senior

Professional Engineer. As one of the network partners, in the interview on January 28, 2016, he provided information about the mutual agreements between EGCO and DEDE, the first site survey, the collaboration of the partners in the first site survey, and the problems and difficulties that might have occurred. This information was used for reviewing the information obtained from the interview with the EGCO's staff.

4) Four community leaders and villagers consisting of 1) Mr. Tulu Kilakulphrai, former assistant village headman and respectable natural leader; 2) Mr. Sunu Sukphraisomboon, assistant village headman; 3) Mr. Phata Sanguansripreecha, chairman of Ban San Din Daeng Electricity Committee; and 4) Ms. Ladda Phraicharoensri, treasurer of Ban San Din Daeng Electricity Committee. In the interview on January 18, 2016, they provided information about the community, the background of the hydropower plant, the roles of the community as the network partner, the norms of the network affecting the norms of the community, the socialization of the community, the problems and difficulties, and the community trust in the network partners.

5) One former teacher at Mae Fah Luang—Ban San Din Daeng Hill Tribe Learning Center: Mr. Wanlop Aphiwongcharoen. He played a key role in local labor management. In the interview on February 20, 2016, he provided basic information about the local labor, the socialization of the community, and the community trust in the operations of EGCO.

Table 4.1 Key Informants in the Ban San Din Daeng Community

Item	List	Position/Roles	Organizations	Interview Date
1.	Ms. Mananee Phatthayachewa	Foundation Manager	Thai Rak Pa Foundation	14 Oct 15
2.	Mr. Sarawuth Mankalasirisap	Project Manager Unit 2	EGCO	11 Jan 16 18 Jan 16
3.	Mr. Thawatchai Khadpab	Project Leader Unit 1	Thai Rak Pa Foundation	19 Jan 16
4.	Mr. Somchai Sitthibodikul	Senior Professional Engineer	DEDE	28 Jan 16

Table 4.1 (Continued)

Item	List	Position/Roles	Organizations	Interview Date
5.	Mr. Tulu Kilakulphrai	Natural Leader	Ban San Din Daeng Community	18 Jan 16
6.	Mr. Sunu Sukphraisomboon	Assistant Village Headman	Ban San Din Daeng Community	18 Jan 16
7.	Mr. Phata Sanguansripreecha	Chairman of Ban San Din Daeng Electricity Committee	Ban San Din Daeng Community	18 Jan 16
8.	Ms. Ladda Phraicharoensri	Treasurer of Ban San Din Daeng Electricity Committee	Ban San Din Daeng Community	18 Jan 16
9.	Mr. Wanlop Aphiwongcharoen	Teacher	Ban San Din Daeng Community	20 Feb 16

4.3.1.2 9 Key Informants in the Case Study at Ban Klong Rue Community, including the following.

1) Three staff members from the Electricity Generating Authority of Thailand consisting of, first, Ms. Warathip Anantanasakul, Chief of Generation and Transmission System Business Communications, Corporate Communications Division. She was considered the key driver of the project. In the first interview on September 22, 2014, she provided basic information about the construction project, the network partners, and the possibility of this research. In the second interview on May 18, 2015, she provided insightful information about the network partners, the mutual agreements of the network, the trust occurring in the network, and EGAT's roles throughout the construction project. Second was Mr. Kornsakol Kittiamphon, Head of Fuel Business Communications Section. He gave the information about the background of the construction project, the community selection process, the selection criteria, the roles of each network partner, the mutual

agreements of the network partners, and the solutions to the conflicts between EGAT and the community, in the interview on June 13, 2016. Third was Mr. Siriphong Rungrueng, former EGAT's staff and current Manger at Delta Construction & Service Company Limited. He played a key role in building trust in the network. In the interview, he provided information about the community's distrust in the operations of EGAT, the problems arising from the collaboration of the network partners, the regression, the approach to restoring and building trust in the construction phase, and EGAT's roles during the post-construction phase.

2) Two academics from the Faculty of Social Administration, Thammasat University consisting of, first, Asst. Prof. Dr. Jitti Mongkolchaiaranya, who played a key role in finding the significant community and solving the conflicts in the network. In the first interview on September 29, 2014, he provided basic information about the community and EGAT's roles in the construction project. In the second interview on August 31, 2015, he gave information about building trust in the community, his roles in the network, the approach to solving conflicts between the network partners, the roles of each network partner, and his opinions of EGAT's CSR practice. Second was Asst. Prof. Parichart Walaisathien, who provided information about the community background, the community identities, and the collaborative process of the network partners in an interview on September 29, 2014.

3) Two community leaders and villagers consisting of, first, Mr. Manas Khlayrung, Village Headman of Ban Moo 9, Pak Song Sub-District, Phato District, Chumpon. He was a key person driving the construction of the community power plant and the collaboration of the villagers. In the interview on June 26, 2015, he provided basic information about the community conditions, the experiences gained from the collaboration with various agencies, the trust in the operations of EGAT, the roles of the community in the network, the mutual agreements of the network partners and the villagers, the conflicts and distrust in the network, the regression, and the approach to building and restoring trust during the construction phase. Second was Mr. Manoon Phromboon, Asscociate Village Headman in Security Division. He was the supporter of the community leader and coordinated with all the villagers. In the interview on June 26, 2015, he gave information about the mutual agreements of the network partners, the socialization of the community, and the

problems arising from the collaboration between the community and EGAT. Third was Mr. Uthai Kerdwan, hydropower plant technician and controller, who had an important role in cooperating with the network partners during the construction and post-construction phases. In the interview on June 27, 2015, he provided information about the mutual agreements of the network partners and the villagers, the socialization of the community, the penalties for failing to comply with the agreements, and communicating with the network partners when there were the problems occurring with the power plant. Fourth was Mr. Niran Ratanachinda, a villager in Ban Klong Rue, who provided information about the community background, the roles of the community as a network partner, the solutions for the community's incompliance with the agreements, and the trust of the villagers in the other network, in an interview on June 28, 2015.

Table 4.2 Key Informants in the Ban Klong Rue Community

Item	List	Position/Roles	Organizations	Interview Date
1.	Ms. Warathip Anantanasakul	Chief of Generation and Transmission System Business Communications	EGAT	22 Sep 14 18 May 15
2.	Mr. Kornsakol Kittiamphon	Head of Fuel Business Communications Section	EGAT	13 Jun 15
3.	Mr. Siriphong Rungrueng	Manager	Delta Construction & Service Co., Ltd.	13 Jun 15
4.	Asst. Prof. Dr. Jitti Mongkolchaiaranya	Lecturer	Thammasat University	29 Sep 14 31 Aug 15
5.	Asst. Prof. Parichart Walaisathien	Lecturer	Thammasat University	29 Sep 14
6.	Mr. Manas Khlayrung	Village Headman	Ban Klong Rue Community	26 Jun 15

Table 4.2 (Continued)

Item	List	Position/Roles	Organizations	Interview Date
7.	Mr. Manoon Phromboon	Asscociate Village Headman in Security Division	Ban Klong Rue Community	26 Jun 15
8.	Mr. Uthai Kerdwan	Hydropower Plant Technician and Controller	Ban Klong Rue Community	27 Jun 15
9.	Mr. Niran Ratanachinda	Villager	Ban Klong Rue Community	28 Jun 15

4.3.2 Voice Recording

In this study, all of the conversations were recorded in MP3 format every time possible so that the interview data were systematically stored to confirm accuracy and reliability. Before recording, the researcher officially informed and asked for permission from the key informants every time.

4.3.3 Photo and Video Recording

The researcher recorded photos and videos of important places, such as the topography, dams, water pipes, power plant buildings, waterways, power poles, and interesting places in the community. The interviews with the relevant people from the organizations involved in the construction of the hydro power plant, such as EGAT's staff, EGCO's staff, community leaders, and villagers in the Ban San Din Daeng community and Ban Klong Rue community, were also recorded. This was to confirm that the researcher really carried out the interviews and collected the data from the key informants. Moreover, the recorded photos could be used to illustrate and describe the incidents in the present research.

4.4 Data Analysis

The data analysis was carried out immediately after the data for each topic were completely collected. Content analysis was selected for use because this technique is “any technique for making inferences by systematically and objectively identifying specified characteristics of messages” (Holsti, 1968, p. 608). The data can be collected through note-taking, photo and video recording, and other methods (Berg, 2009, p. 341). In this research, content analysis was applied to describe the qualitative data by focusing on the findings, which had to be in line with the research questions and capture the key information resulting from the conceptual

The audio, videos, and photos recorded from the in-depth interviews were studied and interpreted according to the conceptual framework in order to find ways to understand the phenomena and behaviors. The inductive approach was used to discover the findings, which needed to be in line with the research questions and research objectives. The data analysis methods employed in the present research are presented below.

4.4.1 Historical Approach

The researcher adhered to the concept that a phenomenon or behavior does not occur independently. It can change, develop, or regress depending on other factors. Therefore, the social capital analysis was divided into 3 phases—pre-construction, construction, and post-construction—so that the social capital development process could be seen clearly.

4.4.2 Comparative Method

A comparative analysis is used to find and summarize the similarities and differences between two or more sets of information (Suphang Chanthawanich, 2016, p. 91). The internal and external factors were taken into account to clarify the similarities and differences (May, 1997, p. 187). Each case study was already complex in itself so there was no need to compare many case studies at the same time (Palmberger & Gingrich, 2014, p. 95).

The social capital development process resulting from the historical approach was reanalyzed with the comparative method so as to find the similarities and differences between the Ban San Din Daeng community and the Ban Klong Rue community.

4.5 Measurement of Trustworthiness

In order to confirm the trustworthiness of the data, the credibility, dependability, and conformability measures were implemented as follows.

4.5.1 Credibility

The triangulation technique was used to measure the credibility in this research. This technique uses multiple data collections together with the traceability method to verify the linkage, consistency, reasonableness, and possibility of the data, whether it can be used to answer the research questions and find the conclusions or not (Lincoln & Guba, 1985).

Considering the case study of Ban San Din Daeng community, the researcher collected the secondary data from the dissemination papers and the operational data sheets of 3 organizations: EGCO, DEDE, and the Thai Rak Pa Foundation. Moreover, the in-depth interviews were applied to collect the data from the informants involved in the construction of the hydropower plant, such as a representative staff member from EGCO, who participated in the construction project from the beginning until the end and is currently providing support and advice to the community, an executive and a field staff member from the Thai Rak Pa Foundation, an engineer from the DEDE conducting a project feasibility study, community leaders, a villager, and a teacher in the Ban San Din Daeng community. All of the data obtained from the documents and interviews were verified in order to confirm the validity.

As for the case study of the Ban Klong Rue community, the researcher collected the secondary data from various sources, such as dissemination papers and operational data sheets of EGAT, dissemination papers of the lecturers from the Faculty of Social Administration, Thammasat University, and dissemination papers of the Ban Klong Rue community. The in-depth interviews were also carried out to

collect information from the relevant informants, including an executive of EGAT involved in and driving the construction of the hydropower plant in a practical way, the coordinator and the supervisor from EGAT that got in touch with the people in the Ban Klong Rue community throughout the project and has provided them with useful advice until the present day, lecturers from Thammasat University responsible for community development tasks, community leaders, a technician, and villagers in the Ban Klong Rue community.

4.5.2 Dependability

An audit trail was used to track the relevance between the research objectives, the research questions, the data obtained from various sources, and the analysis results. The documents specifying the data sources, the data recording, the data analyses, the data interpretation, knowledge creation, and the research conclusion were thoroughly examined.

4.5.3 Conformability

The related documents, audio, videos, photos, and interview transcripts were systematically stored in order to confirm the trustworthiness of the study and to prove that the data in this research were actually collected from the involved informants.

4.6 Research Procedures

In the present study, the research procedures were divided into 3 parts: 1) preparation, 2) data collection and data analysis, and 3) data synthesis and summarization. The details are as follows.

The preparation stage consisted of 5 processes, which were: 1) identifying the importance of the context; 2) defining the research objectives and research questions; 3) reviewing the literature in order to develop the model; 4) studying and finding the case studies complying with the selection criteria; and 5) planning the research design and data collection.

The data collection and data analysis stage comprised 3 processes: 1) collecting information about the general conditions of the organizations and the CSR

implementation of EGAT and EGCO in the hydropower plant construction projects; 2) collecting general information of Ban San Din Daeng community and Ban Klong Rue Community; and 3) analyzing the social capital development process of the case studies in the dimension of networks, norms, and trust.

The data synthesis and summarization stage consisted of 3 processes: 1) comparing the social capital development process of the two case studies; 2) synthesizing the model of social capital development resulting from the CSR implementation and the relevant conditions; and 3) summarizing and developing policy and operational recommendations and suggestions for future studies.

4.7 Chapter Summary

The present research employed the qualitative approach, which is considered an appropriate method for studying social capital development. The case studies were conducted in the Ban San Din Daeng community and Ban Klong Rue community, which were selected according to the technical and participation factors.

Regarding the data collection, in-depth interviews were applied to collect data from the key informants involved in the construction of the hydropower plants. The secondary data related to the CSR implementation in the two communities were analyzed using the historical approach and the comparative technique. The topics that the researcher needed to study comprised the following: 1) the CSR implementation in the hydropower plant construction projects; 2) the information of the communities; 3) the social capital development process; and 4) the similarities and differences in the social capital development processes in the two communities. Then the data were used to synthesize a model for social capital development.

CHAPTER 5

A DISCUSSION OF GENERATION INFORMATION OF CASE STUDIES AND CORPORATE SOCIAL RESPONSIBILITY IMPLEMENTATION

This chapter provides a discussion of the generation information of the case studies, including the community history, relocation, the way of life of the people in the communities, the cultures, the occupations, and the important meeting places. Considering the CSR implementation of EGCO and EGAT in the hydropower plant construction project, information about the background of the construction project and the CSR implementation during the pre-construction, construction, and post-construction phases will be discussed.

In each phase of the construction, the participation process of EGCO and EGAT will be presented in detail. As these two organizations did not just donate money but also took part in all 3 phases of the construction, their participation was considered as one form of CSR implementation. Therefore, this information could appropriately answer the first objective of this research.

5.1 Information on the Ban San Din Daeng Community

5.1.1 History

Two hundred years ago, the Karen people did not originally reside in Ban San Din Daeng. The Luau (Lawa) are assumed to have lived in this area during that period because pieces of pottery were found scattered there. According to studies, beginning with only two families, the Karens have increasingly migrated from Mae Hong Son Province and Ban Pa Village, Chom Thong District, Chiang Mai Province to Huay Suk Village (present-day Ban Klang). As a result, a large number of Karens needed to seek a living and a work place in Ban San Din Daeng and have settled in this area since then.

5.1.2 General Characteristics

Ban San Din Daeng is a community located in Ban Luang Sub-District, Chom Thong District, Chiang Mai Province in Thailand. It is bordered to the north by Ban Mae Kham, to the south by Huay Luang, to the east by Ban Mueng Klang, and to the west by Ban Mae Ya Nong, Ban Luang Sub-District, Chom Thong District, Chiang Mai Province. Surrounded by mountain chains, it is located on a hillside at 920 meters above sea level. Most of the area is steep and sloping, and the landscape is diverse, ranging from high mountain terrain to flat land.

The area is surrounded by abundant mixed evergreen forests. There are many streams, which are the origin of Mae Pon creek, which runs across the Khun Huay area. The temperature can be cold from late October to February. May to October is hot and humid with high rainfall.

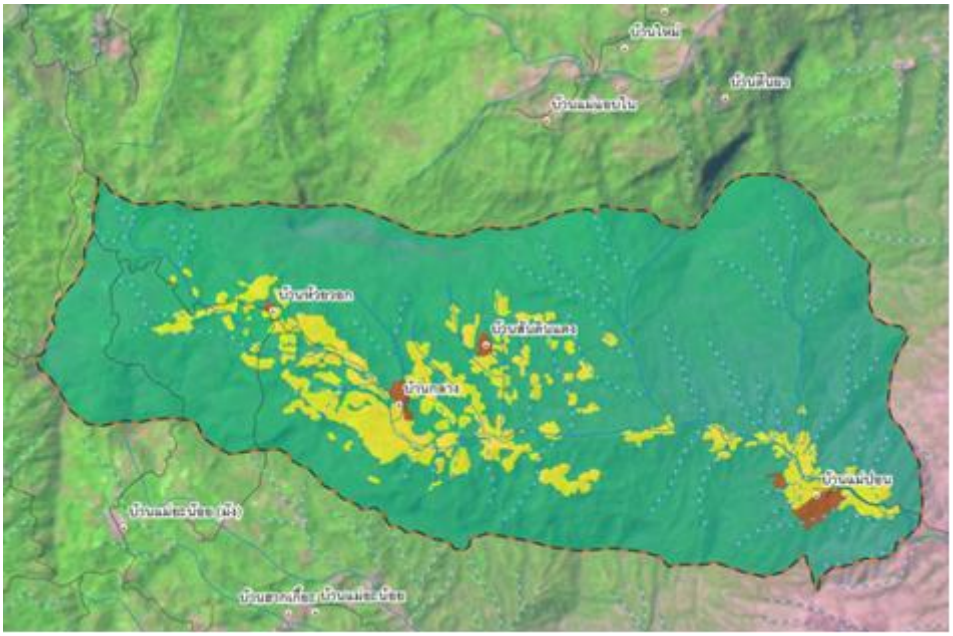

Figure 5.1 Location of Ban San Din Daeng

Ban San Din Daeng has a total area of 23,403.50 rais. The land utilization there can be divided into 3 groups: residential and agricultural areas (2,668.96 rais), conservation forest areas (6,275.70 rais), and utilized forest areas (14,458.84 rais). In the community, there are 3 accessible creeks: 1) Mae Pon creek, which provides water

for farming and generating electricity; 2) Dae Lor Klo creek, situated between the Ban San Din Daeng community and Ban Klang community and provides water for agriculture; and 3) Muen Eh Klo, which provides water for the village water supply system and farming.

The Ban San Din Daeng community has a population of 32 households, which accounted for a total of 135 people. The Karens have a simple way of life. They have had a strong bond with the forests for generations, and their local wisdoms and lifestyles depend heavily on nature. They respect nature and ancestral spirits, and they believe that these ancestral spirits will protect and make them live happily. Their beliefs and rituals about the ancestral spirits and the god of nature have been strictly inherited, which has helped to keep the forests alive. Karen women tend to be shy and quiet. Most of them adhere to the seniority system. The adolescents in the community are obedient to adults.

The customs, traditions, beliefs, and rituals that have been inherited from their ancestors include the wrist-tying ceremony, paying homage to the spirits of the farm/paddy field/weir, tree ordination, and fire breaking. The villagers use the Karen language to converse with each other while using the northern Thai dialect to communicate with people outside the community. The Karen language can be written with 3 different scripts: 1) the lix wa script, which is similar to the Burmese script and is frequently used by the elders; 2) the Roman script, which is used for reading the Roman Catholic bible; and 3) the Thai script, which Karen children have to study. Most of the villagers respect the traditional beliefs of their ancestors.

The community is governed by traditional and formal practices. In terms of traditional practices, in this study there was a respectable spiritual leader, Mr. Tulu Sirikulphrai, educating the Karen children to be good people through self-composed poems and ancestral teachings. As for formal governing practices, a social leader would take care of the villagers using the community rules. Mr. Uthai Sirirojtham and Mr. Sunu Sukphraisomboon, who were the Village Headman and the Assistant Village Headman of Ban Mae Pon, adopted the policy from governmental agencies and conveyed the information to the villagers. An informal meeting was held when a problem occurred, and the spiritual leader would collaborate with the social leader in finding a solution. The villagers were allowed to express their opinions based on

democratic principles. Everyone in the community was involved in dealing with problems.

As Ban San Din Daeng community had 1,285 rais of agricultural area, the main occupation of the villagers was agriculture, including terrace farming and rotational farming. In addition to farming, the villagers also grew vegetables, raised pigs, chickens, and cows, produced handcraft products such as woven fabric, bags, and baskets, sold herbs and small fruits, and worked as general workers.

A community calendar was created to guide the villagers concerning the activities that they should carry out in a year. From January to March, they had to prepare for the farming and improving the farm land after the previous harvesting by getting rid of unwanted trees. From March to April, the wrist-tying ceremony was held to auspiciously enhance the prosperity and happiness of the villagers. In terms of farming, they would get rid of small weeds by burning. From May onwards, the villagers would start farming and continuously take care of their farms. During this period, they usually went into the forest to collect bamboo shoots and wild mushrooms for consumption. In August, the wrist-tying ceremony was held again. The villagers would begin harvesting their corpse in October. From December to next May, the housewives would weave fabric to increase the family income.

Table 5.1 Annual Activities of Ban San Din Daeng Community

Duration	Activities
January - March	Getting rid of unwanted trees/preparing land
March - April	Getting rid of weeds/wrist-tying ceremony
May	Starting farming
June - July	Taking care of farm/mowing grass/plowing field/planting rice/picking mushrooms/digging up bamboo shoots
August	Taking care of farm/mowing grass/collecting herbs/picking mushrooms/digging up bamboo shoots/ wrist-tying ceremony
September	Picking vegetables/mowing grass
October - December	Harvesting crops

Ban San Din Daeng was about 20 kilometers from Chom Thong District. The route to the community was a combination of concrete and dirt road. The steep road led up towards the Inthanon mountains with dense forests on both sides, making it difficult to travel. Apart from walking, the community was accessible by motorcycle and four-wheel drive vehicle. In the dry season the community was easily accessed by car. However, accessibility is very difficult in the rainy season.

5.1.3 Key Places

The important places in Ban San Din Daeng included the Mae Fah Luang Education Center for Highlanders, which provided knowledge to the children, youth, and people in the community, and the Cultural Pavilion, where the villagers carried out activities such as village meetings.

Figure 5.2 Mae Fah Luang Education Center for Highlanders, Ban San Din Daeng

5.2 Information about the Ban Klong Rue Community

5.2.1 History

In 1975, Mr. Lamiad Sawadphakdee persuaded his friends and relatives to settle in Ban Klong Rue in order to begin tin panning and mining. Later, when tin prices significantly decreased and there was less tin left, they turned to growing rice, coffee, and fruit. During 1985-1988, a large number of people migrated to this area from the southern provinces such as Chumpon, Nakhon Si Thammarat, Surat Thani, and Ranong, from the northeastern provinces such as Nakhon Ratchasima, Sisaket, Roi Et, and Surin, from the northern provinces such as Kamphaengphet, Nan, Tak, Phayao, and Phetchabun, and from the central provincessuch as Nakhon Pathom, Petchaburi, Lopburi, and Ratchaburi. All of them have settled there and have created ethnic and cultural diversity in the Ban Klong Rue community until the present day.

5.2.2 General Characteristics

Situated in Moo 9 of Pak Song Sub-District, Phato District, Chum Pon Province, the Ban Klong Rue community had a population of 89 households, which accounted for a total of 306 people. It was located at ML 642707 position no. 4728 on a 1:50,000 topographic map. It was bordered to the north by Moo 4 of Pak Song Sub-District, to the south by Moo 2 of Pak Song Sub-District and Kapoe District, Ranong Province, to the west by Kapoe District, Ranong Province, and to the east by Moo 2 of Pak Song Sub-District. Among the total area of 10,625 rais, 1,508 rais were agricultural land and 1,875 rais were degraded forest area.

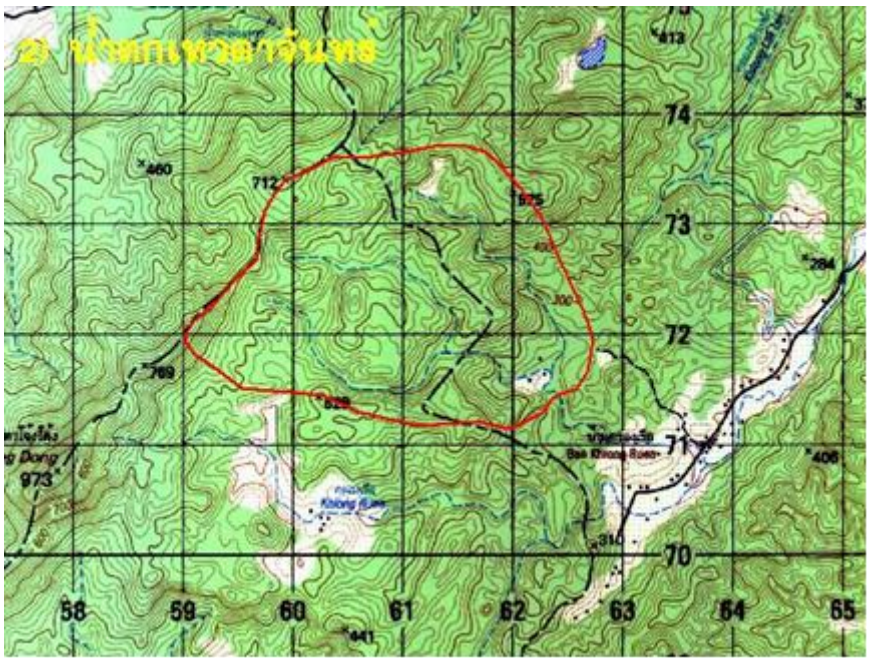

Figure 5.3 Location and Borders of Ban Klong Rue Community

In the past, the villagers had a difficult way of life. They had to live in the forest far away from the civilized world. From the main road in Pak Song Sub-District, the villagers needed to walk almost 20 kilometers to get to the community. Transportation from and to the community was very difficult, especially during the rainy season, which lasted about 8-9 months. The government budget was recently provided to improve the road so that the community could be easily accessed by car.

The villagers used a variety of languages depending on their origin and ethnicity. The villagers migrating from the north used the northern Thai dialect to communicate with each other. The villagers migrating from other regions also used their regional dialect for communication within the group. They usually used the central Thai language for communication between groups.

Considering the community governance, the formal leader or village headman was Mr. Manas Khlayrung. The community also had an informal leader, Mr. Lamiad Sawadphakdee, who was a respectable local philosopher. The village headman would call a village meeting every month. The meeting topic would be related to forest preservation, organic agriculture, and building consciousness about the importance of the soil, water, the forest, and the community's unity.

The main occupation of the villagers was agriculture. In 1980, the villagers adopted the mono-cropping practice to grow coffee, which costs as much as 70 baht per kilogram. As the coffee yield could generate income for the villagers only once a year, relying on the coffee yield alone made the villagers have an uncertain income. Some of them lost money and had debts due to the lower yield of coffee and the falling of coffee prices. Therefore, Mr. Chairat Waenkaew, an assistant village headman, initiated a 4-level farming technique, an integrated farming practice of growing plants according to the level of light. The upper-, middle-, lower-, and underground- level plants as well as climbing plants were grown together in an interdependent way. The first (upper) level plants were plants that grew taller than the others such as sataw, coconut, and betel palm. The second-level plants were plants that grew under the upper-level plants such as lemon, langsat, and mangosteen. The third-level plants were ground plants such as chili, eggplant, cha-om, pak wan, and pak liang. The fourth-level plants were underground plants such as ginger, galangal, turmeric, taro, and cassava. Changing the agricultural practice made the villagers earn a higher income throughout the year. In addition, the villagers carried out a homestay business, inviting tourists to enjoy sightseeing, rafting, and living with local people. The homestay group was created to generate more income for the villagers in the Ban Klong Rue community.

The villagers in Ban Klong Rue were typically generous. Their generosity was reflected in "Tab Rae," an impermanent hut where local hunters or forest walkers could rest. A campfire and food were always maintained and provided for guests. When the Tab Rae was in a worn-out state, the villagers would jointly repair it. Thus, the Tab Rae was considered a public space of all the people in the community. Moreover, the villagers also gathered to conduct various activities such as an arable land management activity. They developed a public land use map, indicating land possession and types of land use so as to preserve the forest area adjacent to the arable land. The mountain water supply project was another activity resulting from community collaboration. The villagers collaborated in connecting and installing water pipes in order to bring the water from the mountain to the community. Consuming water from natural sources made the villagers willing to protect the upstream forests. In terms of forest preservation activities, the villagers initiated a tree

bank project that encouraged everyone in the community to plant trees on his or her own land and to register their trees with a tree bank. The monetary value of each tree was evaluated and deposited into the bank account.

5.2.3 Key Places

The most important place in Ban Klong Rue was the village arena. The villagers usually held the monthly meeting, the Ban Klong Rue community's network meeting, and other significant events requiring decision-making in this arena. It was also used as the residence of EGAT's staff and other partners involved in the hydropower plant construction project.

Figure 5.4 Village Arena, a Venue for Community Meetings

5.3 EGCO's CSR Implementation in the Ban San Din Daeng Hydropower Plant Construction Project

5.3.1 Background of the Construction Project

Based on the CSR policy and the commitment of the executives and employees, EGCO has been dedicated to paying attention to social, natural resources, and environmental development. In 1996, EGCO partnered with the Forestry Department to initiate a project for the conservation of the upstream forest at Doi Inthanon National Park. Initially, EGCO provided financial support for the establishment of the Kanchanapisek Building to serve as an information center providing knowledge about the forest in Doi Inthanon National Park to the tourists and public. Subsequently, a wide variety of activities were conducted,, such as the development of the Kew Mae Pan nature walking trail to be a natural classroom for learning about the ecology of Inthanon watershed forest and the ecological training for the villagers so that they could transfer ecological knowledge to the tourists. Additionally, the EGCO Forest Youth Camp was also carried out to raise awareness of watershed forest conservation and to allow the high school students nationwide to participate in the activity at Doi Inthanon during school holidays. Activities enhancing knowledge about the watershed forest, natural water resources, and living with the environment were also conducted, including the outstanding community forest contest.

In 2002, EGCO donated 10 million baht to Her Majesty Queen Sirikit in order to pay homage to His Majesty King Bhumibol Adulyadej. Then the money was given to establish "the Thai Rak Pa Foundation," which aimed to achieve sustainable watershed forest conservation. The Thai Rak Pa Foundation is public charity foundation no.752 according to the announcement of the Ministry of Finance. Its operations are focused on building awareness of forest preservation and supporting the participation of public, private, and public sectors, which would lead to effective learning, better understanding, and collaboration in forest and natural resource protection. It also is aimed to enhance the quality of life of the people living in the forest and to create immunity against forest invasion.

The Thai Rak Pa Foundation continued the watershed forest conservation project in place of EGCO. Doi Inthanon National Park is an upstream forest on the Ping River and there are a great number of people living in that area, who are vital for forest maintenance and conservation. In 2007, the foundation initiated a project called Thai Rak Pa Village to promote the forest conservation of the villages located in the upstream forests according to the concept "Humans survive, forests sustain." The participating villages were divided into two groups: 1) buffer villages in the risky area were villages located in the upstream forest and had a tendency to expand mono-crop farming into the forest conservation area, including Ban Tin Pha, Chang Kerng Sub-District, Mae Chaem District, Chiang Mai Province; and 2) villages in the forest conservation area were villages located in the upstream forest and the forest conservation area, consisting of Ban Pong Sayaen, Ban Mae Na Chorn Sub-District, Mae Chaem District, Chiang Mai Province and Ban San Din Daeng, Ban Luang Sub-District, Chom Thong District, Chiang Mai Province.

Ban San Din Daeng participated in the Thai Rak Pa Village project of the Thai Rak Pa Foundation, so the community conducted many activities to improve the quality of life of the villagers, including providing equipment and materials to repair damaged roads, promoting the integration of agricultural practice and agroforestry so that the villagers could eat home-grown vegetables and earn more income, and encouraging housewives to produce woven fabric so as to generate additional income. Collaborating with Ban San Din Daeng in many activities, the Thai Rak Pa Foundation recognized that this community had the ability, strength, and lifestyle that strictly adhered to the upstream forest conservation.

5.3.2 CSR Implementation During the Pre-Construction Phase (from 2009 to February 2010)

In 2010, EGCO wanted to expand the Thai Rak Pa Village project to a broader level so it initiated a project called "One watershed forest, one energy resource," with the aims to respond to the royal speech on upstream forest maintenance of His Majesty King Bhumibol Adulyadej and His Majesty Queen Sirikit, to meet the national policy on alternative energy development, to fulfill the commitment of EGCO in watershed forest conservation, to build awareness of energy and

environmental conservation, and to enhance the quality of the life of the community. Mr. Wutthichai Sitthipreedanan, Corporate Communications Manager at EGCO, stated the following in this connection:

> If the origin is good, the end-point is good. It is beneficial to build the national sustainability by letting the people in the remote areas take care of the watershed forest for the well-being of the community, country, and global. As the caretaker of the forest, those people will receive an access to electricity in return. With the electricity generated from the natural resources that they took care of, their quality of life will be developed in all aspects, including education, occupation, and environment (Wutthichai Sitthipreedanan, 2010).

EGCO determined that the target areas had to be communities with water resources, watershed forest, conservation consciousness, the need for electricity, and the ability to sustainably maintain the watershed forest area in the long term. According to the selection criteria, Ban San Din Daeng was found to be an appropriate target community. The opinions of the villagers were also taken into account. They might not have accepted the construction of the power plant if they thought that the power plant would have a negative effect on their lives. Thus, EGCO worked with the Thai Rak Pa Foundation to examine the possibility of the project in the Ban San Din Daeng community. Then the foundation informed the community about the project and its feasibility. EGCO also sent a staff to carry out meetings with the villagers in order to clarify 2 topics of basic information, consisting of 1) the effects that might occur, and 2) technical information about the power plant, as discussed below.

1) The effects that might occur: EGO's power plant development team indicated that the water from Mae Pon creek would be used to generate electricity through the power generator installed in the power plant. After the power generation process, the water would return to Mae Pon creek as usual. The direction of the water would be changed but the amount of water in Mae Pon creek would be the same. The villagers would be able to utilize the water just as had before the construction. However, in the dry season the amount of water in Mae Pond creek

might be insufficient to generate electricity. Therefore, the villagers might have no access or limited access to electricity during that period.

Figure 5.4 Mae Pon Creek

2) Technical information of the power plant: EGO's power plant development team explained that the location of the power plant should be close to the creek. The amount of generated electricity was only sufficient for basic living because it was a small power plant with limited capacity. The villagers needed to establish a committee to manage the power plant. When the construction was completed, the villagers would be able to use basic electrical equipment such as light bulbs and television and EGCO and the Thai Rak Pa Foundation would only provide support and guidance—the villagers needed to manage the power plant on their own.

The villagers in Ban San Din Daeng eventually decided to support the community hydropower plant construction project. One reason was that "The villagers previously used one solar cell per household. A lack of maintenance and management made a solar cell deteriorate over time. They wanted the power plant because they saw the success at Huay Pu Ling community" (Sarawuth Mankalasirisap, 2016, interview). In addition, Wanlop Aphiwongcharoen, a senior teacher in the community, gave further information about that in the following:

> The power plant provided the villagers with the lighting to do additional job, safety, and more comfortable life. There was a broadcasting room to broadcast news, work-related announcement, and meeting invitation. The school provided modern instructional media for young students during day-time. The adult students, including the village headman and the assistant president of the sub-district administrative organization would attend the school during night-time once a week (Wanlop Aphiwongcharoen, 2015, interview).

After receiving consensus from the community, EGCO signed an MOU with the Department of Alternative Energy Development and Efficiency (DEDE), which specialized in the construction of small hydropower plants. The hydropower plant construction at Ban San Din Daeng also complied with the governmental policy on increasing renewable energy consumption. Wannarat Channukul explained the goal of renewable energy consumption in Thailand as follows:

> According to the renewable energy development plan 2008-2022, it is expected that by the end of 2022 Thailand will be able to generate 324 MW of electricity from small power plants. This will make the country nearly achieve the target of renewable energy consumption (25%). Currently, the renewable energy consumption accounts for 14% of the total national energy consumption. (Wannarat Channukul, 2010).

After signing the MOU, DEDE sent a staff to participate in the preliminary site survey with the villagers, the Thai Rak Pa Foundation, and EGCO. Then a preliminary report on the hydropower plant construction project was created and submitted to EGCO. EGCO appointed Mr. Sarawuth Mankalasirisap, project manager 2, to supervise the hydropower plant construction in the Ban San Din Daeng community. The development team revisited the community in order to develop a construction model, to estimate construction cost, and to prepare for the budget approval process with the senior executives. After the site survey, some project details were revised to suit the actual conditions. For example, the amount of water used to generate electricity was changed to 150 liters per second, the electricity generation

capacity was changed to 20 kilowatts, the length of the pipeline was revised to 500 meters, the height of the weir was reduced to 1 meter, and the length of the transmission line was changed to 1.4 kilometers. Then EGCO informed DEDE about the revision. Somchai Sitthibodikul discusses the revision in the following passage:

> EGCO sent me the project plan that was slightly different from the DEDE's plan. The maximum generation capacity was changed from 10 kW to 20 kW. They also increased the amount of water used to generate electricity from 100 to 150 liters so the size of the pipe should be accordingly changed. Then they can proceed the project (Somchai Sitthibodikul, 2016, interview).

After the project plan was revised, the power plant development team estimated the construction cost and prepared a construction cost assessment, consisting of the following: 1) civil work, including the constructions of the weir, the water reception building, the water pipeline system, the power plant, and drainage; 2) hydraulic equipment; 3) electrical and mechanical equipment; and 4) the transmission system. The approximate budget for the Ban San Din Daeng hydropower plant construction was 4,000,000 baht. Sarawuth Mankalasirisap clarified the budget expenditures in the following way:

> The 4,000,000 baht budget covers the direct cost. The machinery and construction equipment cost accounts for 60%. The facilitation cost of the Thai Rak Pa Foundation accounts for 20%. The compensation for the villagers accounts for 20%. We pay 150 baht per person per day. There are 20 workers per day. For an important and hard work, we need up to 30 workers (Sarawuth Mankalasirisap, 2015, interview).

Then the power plant development team developed the project and a budget proposal and presented it to the Board of Directors. After approval, the development team determined the master plan of the hydropower plant construction project, specified the details of each activity, and gave the information to the villagers. The Karen villagers would be the workers on this project so simple language needed to be

used in communication. Sarawuth Mankalasirisap stated about the communication approach that “the plan will be written with easy-to-understand language. The location of the village or creek will be clearly explained in details (Sarawuth Mankalasirisap, 2015, interview).

During the pre-construction period, the power plant development team educated the villagers in the community about the hydropower plant and the pre-production process so as to make them understand the basic information, prepare for the construction, and be able to work effectively. This was considered the proactive action of the development team.

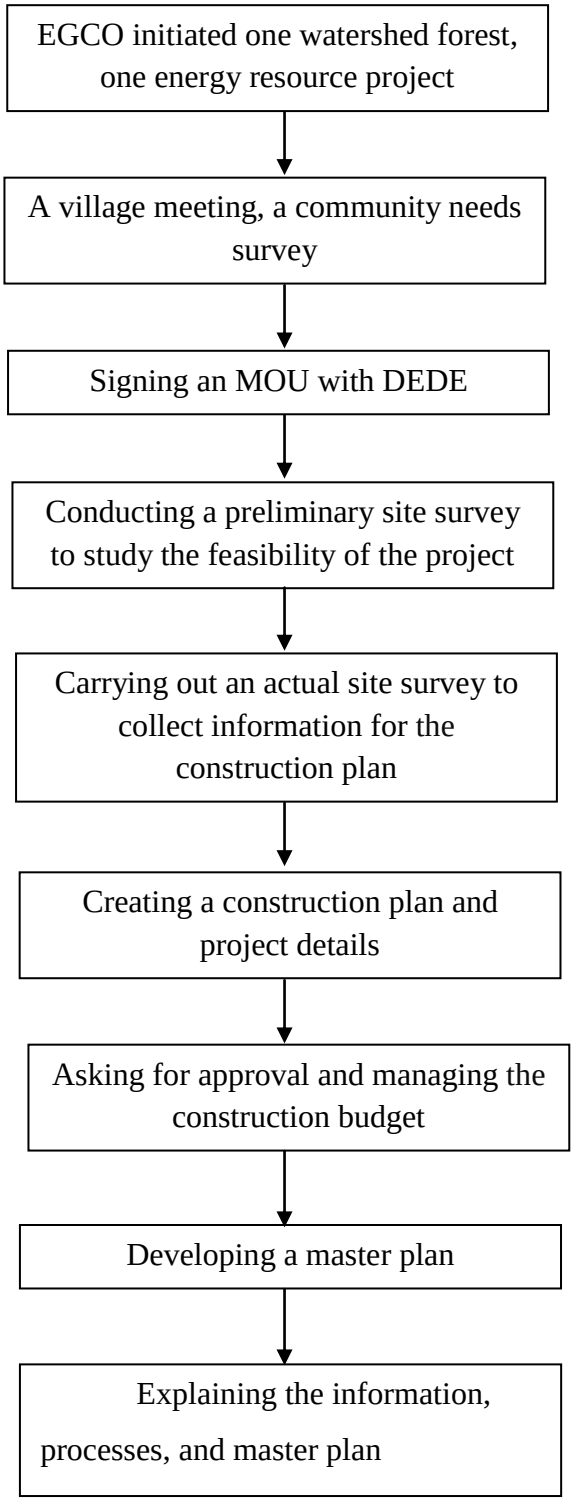

Figure 5.6 CSR Implementation Processes During the Pre-Construction Phase

5.3.3 CSR Implementation During the Construction Phase (From March 2010 to May 2010)

In this construction, Mr. Sarawuth Mankalasirisap was the project leader. He had to live at the construction site until the construction was completed. There were civil, electrical, and mechanical engineers from EGCO's affiliated companies, who volunteered to help with some processes and went back to their company when the job was done. The staff members from the Thai Rak Pa Foundation helped to coordinate between the villagers and the power plant development team. Some villagers were workers on this project and received 150 baht per day. Mr. Wanlop Aphiwongcharoen was the coordinator of the local workers and the power plant development team. The hydropower plant construction can be divided into 5 major parts: 1) weir construction; 2) water pipeline installation; 3) power plant building construction; 4) the transmission system; 5) the street and home lighting system.

The weir in Ban San Din Daeng was not built with concrete like other weirs. This was because the villagers wanted to preserve the environment as much as possible. Dead and fallen trees were used to create the core of the weir. Rocks in the creek were used as build the foundation. Sandbags were used to create the weir crest. The villagers were jointly responsible for the weir construction.

Considering the water pipeline installation, high-density polyethylene (HDPE) pipes were selected because they were flexible and could be bent to fit the area. Therefore, there was no need to cut the trees. The pipes were buried underground to maintain normal circumstances. EGCO purchased the materials for the pipeline installation. The villagers dug, moved, and laid the HDPE pipes. The contractors welded the HDPE pipes. Maejo University was responsible for designing the landscape, which blended in with nature and then sent students to improve the landscape together with the villagers.

Figure 5.7 Natural Weir at Mae Pon Creek Constructed by Villagers

Figure 5.8 HDPE Pipeline Installation Carried out by Villagers

Regarding the construction of the power plant building, the development team worked with the villagers in determining the location of the building. It was planned to be close to the creek and far from big trees in order to avoid the risk of falling trees. The foundation was carefully built to enhance the strength of the building and to enable the building to stand against natural disasters such as wind, rain, and floods that might occur in the future. Natural materials were used as the main components of

the building, such as poles made of wood. EGCO hired a contractor to purchase and install the power generator.

Figure 5.9 Location of Power Plant Building was Close to Creek and Far from Big Trees Based on the Opinions of Network Partners

Concerning the transmission line installation, concrete posts and tree drilling were not allowed in this project. A transmission line was attached to big trees using a wire rope and a rubber tube. In an area without big trees, the transmission line was attached to dead or fallen trees instead of poles. EGCO supplied all of the necessary materials. The power plant development team with electrical expertise provided guidance to the villagers during the implementation process.

Figure 5.10 Transmission Line Installation without Concrete Posts

As for the lighting system, energy-saving lamps were installed on the streets and in the houses. One family was limited to having no more than 8 electric lamps. EGCO provided the villagers with the required materials. The electrical experts on the development team guided the villagers concerning how to install the lighting system. Volunteer students from Chiang Mai University also participated in this process.

Figure 5.11 Electric Lamps Providing Necessary Lighting in the Villager's House

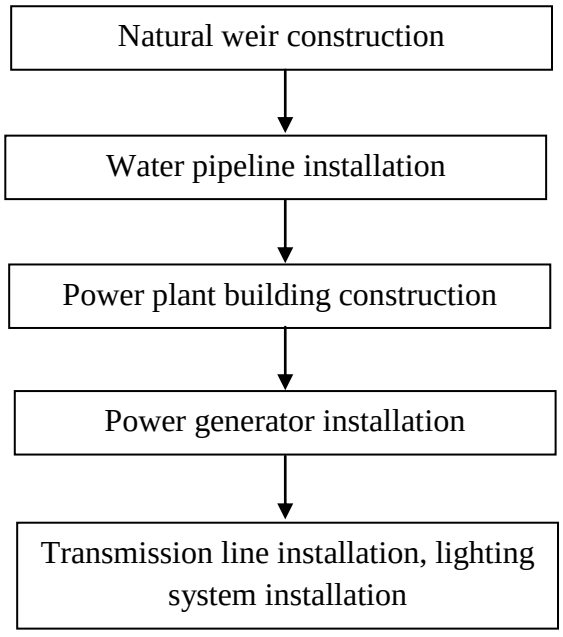

Figure 5.12 CSR Implementation Processes During the Construction Phase

5.3.4 CSR Implementation During the Post-Construction Phase (From June 2010 Onwards)

After the construction was completed and the hydropower plant could generate electricity, the villagers were educated on power plant maintenance. EGCO delivered the hydropower plant to the community in mid-2010. After that, the Thai Rak Pa Foundation continued to provide consultation to the community on various aspects. The weir was regularly maintained. A concrete foundation was additionally built to prevent collapse. Mr. Sarawuth Mankalasirisap visited the community once a month in order to monitor the problems or obstacles and to provide helpful advice to the community and the Thai Rak Pa Foundation.

5.4 EGAT's CSR Implementation in the Ban Klong Rue Hydropower Plant Construction Project

5.4.1 Background of the Construction Project

EGAT placed importance on CSR implementation, including CSR in process and CSR after process, which was considered as one of its visionary goals towards becoming a nation-pride organization. EGAT conducted a broad range of CSR activities for the benefit of society, such as the EGAT reforestation project, the Waen Kaew project, and the Green Classroom project. EGAT also promoted the quality of life of the people in remote communities in economic, social,, and environmental aspects through various activities, such as providing occupational development, scholarships, sport sponsorships, and natural resource and the environmental conservation promotion.

The Ban Klong Rue hydropower plant construction project was considered one of EGAT's CSR activities for rural communities with no access to electricity. EGAT, as the main supporter of the project, had to work with other network partners, such as local governmental agencies, scholars from leading universities, NGOs, and villagers. This project was important because it not only provided the villagers with electricity but also improved their quality of life. The community hydropower plant helped to reduce the electrical consumption burden and strengthen the national energy stability.

5.4.2 CSR Implementation During the Pre-Construction Phase (from 2008 to 2009)

EGAT was involved in the Ban Klong Rue hydropower plant construction project since the very first step, which included the selection of communities with potential for local energy development. In terms of CSR implementation, EGAT would generally focus on the communities located around a 5 km radius of the power plant because they would then be direct stakeholders of EGAT according to the ISO 26000 standard. However, EGAT sometimes supported communities situated outside the 5 km radius, including the Ban Klong Rue community.

EGAT began its CSR implementation in the Ban Klong Rue community in 2008 by conducting a pilot project on electric power knowledge management. The collaborative partners of the pilot project included the Faculty of Social Administration, Thammasat University, the Faculty of Engineering, Prince of Songkla University, and Life University. The project aimed to educate the major electricity consumers and the southern people on various topics such as electricity policy, the current situation of electricity generation and consumption in Thailand, future trends, electricity generation from different fuel sources, and the advantages and disadvantages of each fuel source. It also aimed to encourage opinion sharing on electricity policy and energy management and to inspire the people to explore their local potential for electricity generation at the community level.

The pilot project included opinion sharing activities and site visits. The participants had a chance to visit the community hydropower plant at Ban Mae Kampong, Chiang Mai Province. EGAT found out that the major electricity consumers in the south of Thailand did not have problems about electricity consumption but the retail consumers had. Kornsakol Kittiamphon indicated the important findings in the following:

> Large and small electricity consumers had different perspectives. Large industrial consumers had no electricity problem. They could reuse the energy. Palm oil manufacturers had energy reuse procedures. At first, we thought that large consumers would had a big problem if we could not construct a power plant. Small consumers had problems with power outages and accessibility (Kornsakol Kittiamphon, 2015, interview).

In addition, it was found that the southern provinces had many waterfalls and natural streams with the potential to be able to produce electricity. The Ban Klong Rue community was also found to be a community with a need for a power plant. Therefore, it was possible to construct a power plant in this community, if all involved parties supported the idea. Haew Ta Jan waterfall was a natural water resource in the Ban Klong Rue community and had a sufficient amount of water to generate electricity. The water from the waterfall was currently used for local consumption.

Figure 5.13 Haew Ta Jan Waterfall, Fuel Source of Community Hydropower Plant

The villagers in Ban Klong Rue community were quality people. This was reflected in the community activities that mainly depended on the participation of the villagers, such as arable land management activities, a mountain water supply project, an ecotourism activity, a tree bank project, and 4-level farming. Importantly, the community leader and villagers were eager to participate in the hydropower plant construction. After visiting the power plant at Ban Mae Kampong, Chiang Mai Province, Mr. Manas Khlayrung, the village headman, returned to develop a micro hydropower plant with a capacity of 3-5 kilowatts at Ban Klong Rue using his own money. Manas stated the following:

> EGAT took me to visit Ban Mae Kampong. When retuning, I built a hydropower plant as an example for the villagers because they did not believe that it could really generate electricity. Some people thought that it was too big to build and required a large amount of money. We previously used solar cell but it was not suitable for our community because there were frequent rainfalls in this area. After solar cell installation, the villagers did not know how to maintain and repair it, since there was no one educating them (Manas Khlayrung, 2015, interview).

Manas Khlayrung also provided information about the micro power plant construction process, the sponsors, and the benefits that made the villagers begin to change their minds, as seen in the following passage:

> I used my own money to build it. Phato watershed team came to weld the turbine. The water from the waterfall were used to generate electricity. The villagers thought it was complicated. They had no money and knowledge on how to deal with waterfall and machines. This was the big problem because they did not have any know-how. When I informed and showed them that it was possible. They started to think that they could do it (Manas Khlayrung, 2015, interview).

In 2009, EGAT and the same network partners expanded the pilot project to conduct a electricity knowledge management program in the south of Thailand under the framework of alternative energy development and community power plant studies. As EGAT realized that Thailand demanded a higher amount of electricity each year, it was essential to find and develop alternative energy resources. A hydropower plant was an interesting alternative because it caused less impact on the environment. The results of the pilot project indicated that the south of Thailand had many small and large waterfalls, and there were frequent rainfalls all year round. The watershed forests were abundant and could absorb water well; they were also full of steep terrain suitable for the construction of a hydropower plant.

In order to drive the hydropower plant construction, a hydropower plant technician workshop training was carried out to educate the villages on small power plant information and to enhance their ability and skills in dealing with all hydropower plant construction processes, including surveying, designing, constructing, assessing, managing, and maintaining. The villagers with public consciousness were selected to join the workshop based on the following criteria: 1) having achieved a minimum educational level of high school graduate with basic knowledge in mathematics, geometry, science; 2) having had work experience as a technician. In this training, the guest speakerss included the electrical experts from EGAT, Thammasat University, and Prince of Songkla University. Siriphong Rungrueng discussed the training in the following: “We trained the villagers with technician background. Electricity was not hard to understand. The water used to generate electricity could be reused in farming. The construction of power plant caused no damage to the environment” (Siriphong Rungrueng, 2015, interview).

Later, EGAT carried a site visit with a survey team, the Phato watershed conservation team, a community leader, and the villagers so as to study the physical and social feasibility of the project and to examine the technical feasibility of the construction. The potential of the watershed area and of the Haew Ta Jan waterfall was also investigated. The results were used to create a blueprint for the Ban Klong Rue hydropower plant. EGAT consequently delivered the blueprint to the community on September 19, 2009.

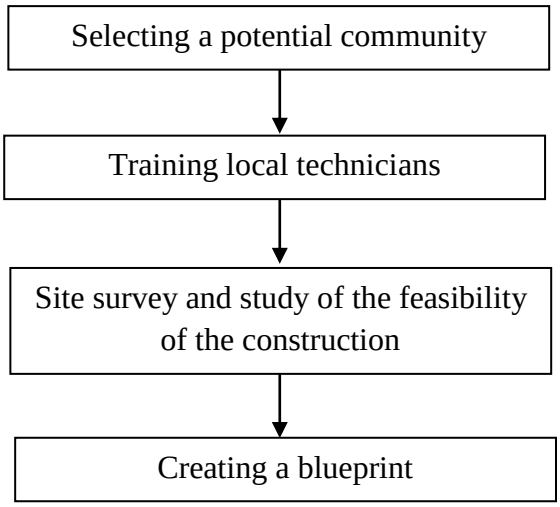

Figure 5.14 CSR Implementation Process During the Pre-Construction Phase

5.4.3 CSR Implementation During the Construction Phase (From 2010 to 2011)

After delivering the blueprint, EGAT still did not have a clear policy for constructing the power plant in the Ban Klong Rue community. However, there was a brainstorm meeting between the representatives from EGAT and the electricity knowledge management project to to find the power plant network partners and to ask local organizations, NGOs, and banks to provide a low-interest loan for the power plant construction. This approach was not successful because local organizations did not have a sufficient budget and the NGOs and banks provided no response.

The community put an effort into driving the hydropower plant construction by implementing the following approaches. First was raising funds for the construction of upstream weirs. In 2010, the Phato watershed conservation center set a 350,000 baht budget to build 70 upstream weirs in the Ban Klong Rue community. The villagers helped to build all 70 weirs without receiving compensation. All of the money was collected to construct the hydropower plant. However, the wage of each villager was recorded and turned into a share in the hydropower plant. Second was raising funds from the construction of the weir in the sufficient community project. The villagers in Ban Klong Rue proposed building a multipurpose weir under the sufficient community project in 2010 and received a budget of 200,000 baht. Third

was raising funds from the villagers in the community. A total amount of 80,000 baht was obtained.

Figure 5.15 Power Plant Building Construction Implemented by Villagers

The villagers conducted the hydropower plant construction according to the blueprint from EGAT. They began by constructing the power plant building in an area close to the Haew Ta Jan waterfall. The villagers used the money obtained from the construction of the watershed weirs to purchase the construction materials. The power plant building was a single-story concrete building. The villagers were responsible for all construction processes. Then the sludge filtration plant was built to filter gravel, stone, and wood chips. If sludge slipped into the generator, it could cause great damage.

The money from the sufficient community project was used to build the concrete weir. It would be raised higher than the water level and used to store a sufficient amount of water for the power plant. The power plant building, the sludge filtration plant, and the weir were constructed separately without an integration plan. The villagers built all of them to support the future projects, which still lacked support

from related organizations, and to drive the power plant construction using community participation. They did not wait for a supportive budget from other organizations alone.

Figure 5.16 Weir Located Close to Haew Ta Jan Waterfall Constructed by Villagers

Figure 5.17 Sludge Filter was Installed in the Weir

During the time that the villagers built the power plant building, the sludge filtration plant, and the weir, EGAT sent representatives to observe the operations. After realizing that the community had a strong determination to proceed with the hydropower plant construction project that was initiated by EGAT, Mr. Banphot Theerawas came to visit the villagers in Ban Klong Rue to discuss the possibility of project support.

After meeting with the villagers, a supportive approach was determined. The initially-estimated construction cost of 25 million baht was changed to 16 million baht. The conclusion from the meeting suggested that if the construction cost could be reduced to 10 million baht, the CSR budget could be provided to the community. The project details and construction cost were revised and submitted for approval. Although the project was formally approved, there were other relevant processes that took so much time to complete before the budget was paid. However, EGAT and the network partners did not just wait for the budget—they started the construction in a parallel fashion.

Since the budget was reduced to 10 million baht, EGAT had to conduct a site survey again and find ways to lower the construction cost, including the following. First, EGAT would provide the power generator that was researched and developed by the Faculty of Engineering, King Mongkut's University of Technology Thonburi. EGAT financially supported this research so as to comply with the research support policy. Second, EGAT's experienced experts would be appointed to supervise all of the construction processes. No contractor would be hired. Third, the villagers had to do labor work without pay. Fourth, all of the important construction equipment and materials such as pipelines, power lines, and power poles would be directly purchased from the manufacturers without intermediaries in order to reduce cost.

In the process of building a foundation for a high-pressure polyethylene pipeline and installing a pipeline, EGAT sent civil engineers and mechanical engineers from the hydropower plant construction division to oversee the implementation. The villagers were the laborers, who constructed 162 reinforced concrete foundations. The construction process was quite difficult and dangerous because the area was very steep, and large machinery could not access the site. The villagers had to do all of the work, including carrying cement, sand, and stones, and pouring concrete. After the construction of the foundation was completed, a high-pressure polyethylene pipeline was installed from the weir to the sludge filtration plant and from the sludge filtration plant to the power plant building. The total length was about 500 meters.

Figure 5.18 Construction of a Foundation for a High-Pressure Polyethylene Pipeline on Steep Slope

Figure 5.19 High-Pressure Polyethylene Pipeline Installation from Weir to Power Plant Building

Figure 5.20 Drainage from Power Plant Building to Stream without Affecting Villagers

The power generator was developed by the Faculty of Engineering, King Mongkut's University of Technology Thonburi and was financially supported by EGAT. Lecturers from the Faculty of Engineering, King Mongkut's University of Technology Thonburi, mechanical engineers from the hydropower plant construction division, and the villagers participated in the installation. This process was important. A villager, who was appointed to be the hydropower plant controller, needed to learn from the lecturers and the engineers in the form of on-site training. In this way, the local technician could feel familiar with and be able to deal with the machine, although he had no experience or know-how.

Figure 5.21 Mr. Manas Khlayrung Explained How to Operate the Electrical Control Cabinet

Considering the installation of the transmission line and lighting system, EGAT sent electrical engineers from the hydropower plant construction division to supervise the work. The transmission line was installed from the power plant to the community, avoiding big trees. If there was a big tree in the area, the direction of the transmission line was shifted. Tree cutting was performed only on small trees and unwanted branches. The transmission line installation was mostly carried out on a narrow dirt road, so power poles could not be moved or installed with large machinery. The villagers applied local wisdom to develop a trailer from a farm tractor and used it to transport the power poles in a more convenient way.

Figure 5.22 Transmission Line Installation Avoiding Big Trees

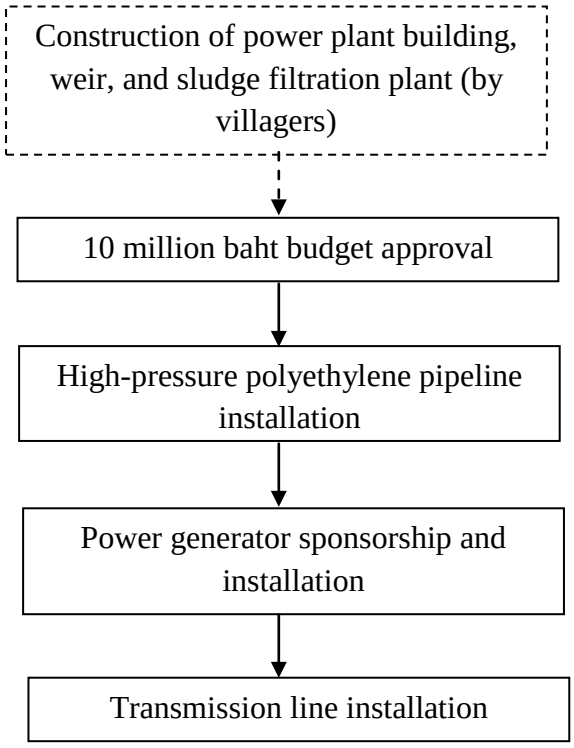

Figure 5.23 CRS Implementation Process During the Construction Phase

5.4.4 CSR Implementation During the Post-Construction Phase (from 2012 onwards)

The hydropower plant construction was completed by the end of 2011 and could supply electricity to the people in the Ban Klong Rue community in early 2012. EGAT continually conducted CSR activities in the form of giving advice in various aspects, including hydropower plant management and maintenance. When the hydropower plant had operated for a while, the villagers thought that the power generator with a capacity of 100 kilowatts might not fit their needs since they used fewer than 20 kilowatts of electricity each month. It would be better to install a new power generator with a capacity of 20 kilowatts and to use the old one as a spare power generator. Then EGAT coordinated with the Faculty of Engineering, King Mongkut's University of Technology Thonburi, to create a new generator with a capacity of 20 kilowatts as the villagers wanted. The money for the new generator came from the villagers and was used to manage the power plant.

In addition, EGAT continued to support and disseminate the operation of the Ban Klong Rue hydropower plant. EGAT supported the community in joining the selection of EGAT outstanding projects in good governance. The Ban Klong Rue hydropower plant received the outstanding project award in 2012. EGAT also sent the Ban Klong Rue hydropower plant project to join many competitions at national and regional levels. It finally received the Outstanding Renewable Energy Award from Thailand Energy Award 2013, which was held by the Department of Alternative Energy and Energy Conservation, and also won the first runner-up award for renewable energy at ASEAN Energy Award 2013.

Apart from the construction of the hydropower plant, EGAT continually provided support to the villagers in the Ban Klong Rue community. EGAT encouraged them to use electricity to promote their occupations, such as preparing for a betel drying machine development project and producing palm oil for consumption and selling. EGAT regularly monitored the Ban Klong Rue community. The Corporate Communications Department visited the community to monitor the operations of the hydropower plant and the living conditions of the villagers and then disseminated the results through EGAT’s public communication channels.

Process: Operate the hydropower plant, give advice on the hydropower plant operation, support and publicize the hydropower plant, enhance the quality of life of the villagers

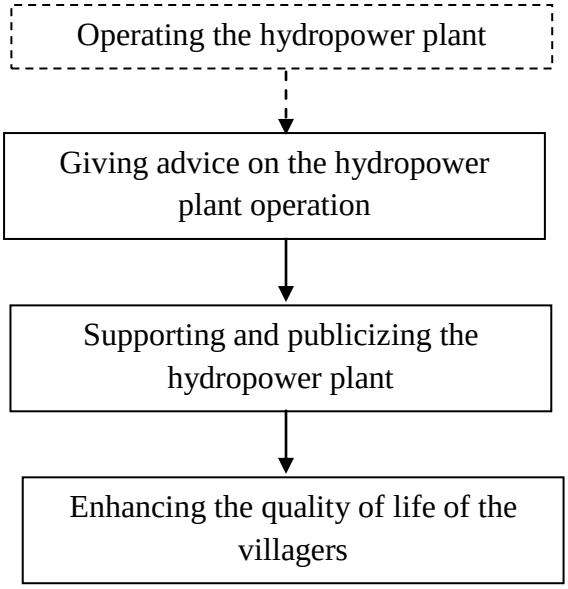

Figure 5.24 CSR Implementation Process During the Post-Construction Phase

5.5 Chapter Summary

EGCO's CSR implementation in the Ban San Din Daeng community consisted of 2 main parts: 1) providing a 4,000,000 baht budget to construct the hydropower plant, and 2) sending a staff to participate in the hydropower plant construction project as the project manager and construction supervisor. During the pre-construction phase (2009–February 2010), the One watershed forest, one energy resource campaign was initiated. The feasibility of the project and the community needs were studied. Potential network building, a site survey, a project plan, a budget approval, and information sharing with the community were carried out. During the construction phase (March–May 2010), EGCO supervised the weir construction, the water pipeline installation, the power plant building construction, the power generator installation, and the transmission line installation. During the post-construction phase (June 2010 onwards), EGCO provided consultation to the community when there were problems or obstacles occurring with the hydropower plant.

EGAT's CSR implementation in the Ban Klong Rue hydropower plant construction project can be categorized according to 2 parts: 1) supporting a 10 million baht budget and a power generator, and 2) sending engineers, technicians, and staff members to coordinate, supervise, and manage the construction project from start to finish. During the pre-construction phase (2008-2009), the community selection, the workshop training on electricity knowledge, the feasibility study, and the blueprint development were carried out. During the construction phase (2010-2011), the budget allocation, the appointment of responsible persons, the pipeline installation, the power generator provision and installation, and the transmission line installation were implemented. During the post-construction phase (2012 onwards), EGAT continued to support and publicize the Ban Klong Rue hydropower plant at national and regional levels. Electricity was also used to enhance the quality of life of the villagers in the Ban Klong Rue community.

According to the CSR model of Carroll, the CSR implementation of EGCO and EGAT was considered to be at the highest level of CSR or philanthropic responsibilities. The two organizations utilized their own resources to support the communities. The hydropower plant construction in Ban San Din Daeng and Ban Klong Rue resulted in a better quality of life for the villagers, and it made the villagers realize and pay attention to the importance of watershed forest conservation. If the forest were destroyed, the amount of natural water would be reduced. If the amount of natural water were reduced, electricity could not be produced, which finally would cause problems for the villagers.

Table 5.2 Summary of CSR Activities Implemented by the Two Organizations

Description	EGCO	EGAT
Goals	Showing philanthropy and generosity through assistance	Showing philanthropy and generosity through assistance
Stakeholders	Ban San Din Daeng	Ban Klong Rue
Project	Community hydropower plant construction	Community hydropower plant construction
Approaches	1. Support a 4 million baht budget 2. Send its staff to be the project manager and the construction supervisor	1. Support a 10 million baht budget and a power generation 2. Send its staff to be the project manager and the construction supervisor
CSR implementation in pre-construction phase	1. Initiate the One watershed forest, one energy resource campaign 2. Survey community needs 3. Find potential partners 4. Conduct site survey and construction plan 5. Allocate budget 6. Educate the villagers	1. Select potential community 2. Conduct electricity training 3. Survey and study the feasibility of the project 4. Develop a blueprint for the hydro power plant
CSR implementation in construction phase	1. Weir construction 2. Pipeline installation 3. Power plant building construction & power generator installation 4. Transmission line installation	1. Budget allocation 2. Pipeline installation 3. Power generator provision and installation 4. Transmission line installation
CSR implementation during post-construction phase	1. Provide advice	1. Provide advice 2. Support and publicize the power plant at national and regional levels 3. Utilize electricity for occupational enhancement

CHAPTER 6

SOCIAL CAPITAL DEVELOPMENT PROCESS

This chapter presents the analysis results of the social capital development in the Ban San Din Daeng community and the Ban Klong Rue community during the pre-construction, construction, and post-construction phases. The social capital development processes resulting from the CSR implementation in the dimension of networks, norms, and trust occurring in each construction phase were thoroughly analyzed using the data obtained from various sources, including related documents and in-depth interviews with the key informants directly involved with the hydropower plant construction, such as the community leaders, the villagers, the main organizations, the intermediary organizations, and the supporting organizations. The validity and credibility of the data were confirmed before the analysis.

6.1 Social Capital Development Process in the Ban San Din Daeng Community

The social capital development process of the Ban San Din Daeng community during the pre-construction, construction, and post-construction phases was analyzed separately in order to be in line with the analysis study of EGCO's CSR implementation and to examine the influences of EGCO's CSR implementation of the social capital development process in the dimension of networks, norms, and trust.

In the dimension of networks, the pattern of the network and the roles and responsibilities of the partners in the Ban San Din Daeng network were analyzed to find out how they affected the resource accumulation within the network. In the dimension of norms, the network collaboration norms and their impact on the existing community norms were analyzed in detail. In the dimension of trust, the phenomena indicating the trust and distrust among the network partners were carefully analyzed.

6.1.1 Social Capital Development Process During the Pre-Construction Phase

6.1.1.1 Ban San Din Daeng Network

The beginning of the network relationship between the Ban San Din Daeng community and other organizations occurred in 2007. The Thai Rak Pa Foundation recognized that the Doi Inthanon watershed forest was an important source of water in the country so the villagers living in that area should be encouraged to not invade or destroy the forest and natural resources. Thus, the Thai Rak Pa Village project was held by the Thai Rak Pa Foundation and joined by the Ban San Din Daeng community. After conducting a community survey to collect data and develop a database of communities, the Thai Rak Pa Foundation found that the villagers in the Ban San Din Daeng community had deep bonds with the trees and forests. Their lifestyles and rituals were also closely related to the forest, such as De Por, a ritual where a baby's umbilical cord is attached to a tree with the belief that the baby and the tree would grow well together. The natural leader of the Ban San Din Daeng community explained the reason as follows: "The umbilical cord is attached to a big tree so that the baby's life and soul will harmoniously combined with the tree" (Tulu Kilakulphrai, 2015, interview). In addition, the villagers believed that they should not destroy the watershed forest and should established rules to prevent deforestation. All of this showed that the villagers lived with and conserved the forest at the same time, which was consistent with Tulu's statement: "We protect the forest for all people and our children. People drink water but they have never seen the water resources. People eat rice but they have never seen rice plants. How are they going to live?" (Tulu Kilakulphrai, 2015, interview).

The Thai Rak Pa Foundation acknowledged this information and started to support the community so as to fulfill the foundation's objectives and to provide the villagers with a better quality of life. This was the beginning of the good relationships between the Ban San Din Daeng community and the Thai Rak Pa Foundation, which had an effect on the social capital development during the pre-construction phase.

Considering the social capital development process of the Ban San Din Daeng community in the dimension of networks, during the pre-construction phase

the “One Watershed Forest, One Energy Resource” project was initiated, and a community meeting was held to survey the community needs, mutual network agreements were determined, a site survey was carried out to study the feasibility of the project, construction drawings were developed, a 4 million baht budget was allocated and approved, the action plan was developed, and the community was informed about the construction plan and information. The results suggested that during the pre-construction phase the partners of the network consisted of the following: 1) the Ban San Din Daeng community, 2) the Thai Rak Pa Foundation, 3) EGCO, and 4) DEDE. All network partners had their own roles and responsibilities, and the resources were exchanged and accumulated in the network. In terms of the pattern of the network, the community had relationships with all network partners and all network partners had relationships with each other. The details are as follows.

The Ban San Din Daeng community was the center of the network because all of the tasks were conducted in the community. The villagers also lived in that area so they were considered the ownerss of the land. As one of the network partners, the community gave information about the community,, such as the number of the community members, living conditions, and occupations. This information was useful for assessing the consumption needs and for estimating the appropriate generation capacity of the hydropower plant. The villagers also participated in the site survey with the network partners because they were familiar with the community terrain and could provide information helpful for determining the location of the weir and the power plant building.

The Thai Rak Pa Foundation was important to the Ban San Din Daeng network because it served as the intermediary organization, which collected information about the Ban San Din Daeng community and gave it to EGCO in order to select a potential community to join the “One Watershed Forest, One Energy Resource” project. Mananee Phattayacheewa, Foundation Manager, described why the Ban San Din Daeng community was selected to join the pilot project as follows:

> We selected the community based on the areas we worked in. The Ban San Din Daeng community was selected because it had readiness. Donating things was not a sustainable way to develop the community. The villagers needed to participate and learn to work so that they could continue to take care of it (Mananee Phattayacheewa, 2015, interview).

Tulu Kilakulphrai explained his feelings when informed about the possibility of the hydropower plant construction in the community in the following: "Having no access to electricity was difficult. We had to light a fire at night. When the foundation told me about the hydropower plant, I really wanted it" (Tulu Kilakulphrai, 2015, interview). The Thai Rak Pa Foundation also served as a coordinator at the worksite so as to help all of the network partners. Moreover, it took part in the site survey to study the feasibility of the project with the community and other partners.

EGCO was the main organization initiating the CSR implementation through the hydropower plant construction. It coordinated with the partners and DEDE to study the feasibility of the construction project, worked with the community and other partners during the community survey, developed the actual construction drawing, held a meeting to inform the villagers about the hydropower plant information, and convinced the villagers to believe that the hydropower plant could produce electricity and improve their quality of life and that the construction would not negatively affect the community. EGCO also provided the 4 million baht budget, covering the cost of construction materials, equipment, labor, and other necessities.

The Department of Alternative Energy Development and Efficiency (DEDE) was the partner that in a practical way contributed to the hydropower plant construction. EGCO signed an MOU with DEDE to conduct a project feasibility study because EGCO had never constructed a small hydropower plant before and DEDE had personnel with ability, knowledge, and experience in hydropower plant construction. DEDE collaborated with the community, the Thai Rak Pa Foundation, and EGCO in studying the feasibility of the project. DEDE sent Mr. Kamol Karunamit, Director of the Academic Group, and Mr. Somchai Sitthibodikul, Senior Professional Engineer from the Office of Alternative Energy Development, to

participate in the survey. Somchai Sitthibodikul explained the details of the survey as follows.

> Before going to the community, we checked a 1:50,000 topographic map to locate the water resources. When arriving at the actual area, we checked the height difference. That area was similar to a waterfall. The head height was about 15-16 meters. The construction seemed to be possible. The village headman told that there were 32 households in the community. The villagers needed only lighting not more than 200 watts per households. The total consumption need was about 6kW so we estimated the generation capacity at 10 kW (Somchai Sitthibodikul, 2016, interview).

After the survey, DEDE created a report on the hydropower plant construction at the Ban San Din Daeng community, Ban Luang Sub-District, Chom Thong District, Chiang Mai Province. The weir on the Mae Pon creek was determined to be located at N 2042800 E 0455380 position no. 4745 IV on a 1:50,000 topographic map. The hydropower plant would supply electricity to a total of 32 households in the Ban San Din Daeng community. The basic information of the hydropower plant was as follows: 1) the catchment area was 12 kilometers; 2) the amount of water used to generate electricity was 100 liters per second; 3) the total head height was 20 meters; 4) the maximum generation capacity was 10 kW; 5) the length of the pipeline was 300 meters; 6) the reinforced concrete weir was 1.50 meters high and 14 meters long; 7) the cross-flow turbine had to be used; and 8) the length of the transmission line was 2 kilometers. The construction details consisted of the following: 1) the weir was 1.50 meters high and 14 meters long together with the power intake; 2) the headrace and penstock system used iron and PVC pipes with a 300 mm diameter and a total length of 300 meters; 3) power house and tailrace; 4) water turbine and power generator with 1 set of 10 kg control devices; 5) a 1.5 km high voltage transmission line and a 0.5 km low voltage transmission line; and 6) other equipment and devices. Then the report was delivered to EGCO for the next step of the operation.

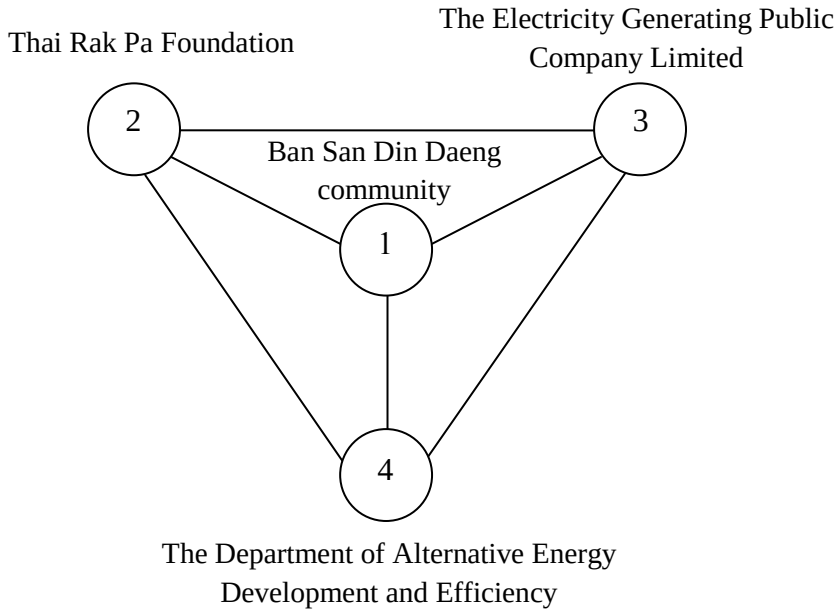

Figure 6.1 Ban San Din Daeng Network During the Pre-Construction Phase

Table 6.1 Summary of the Ban San Din Daeng Network During the Pre-Construction Phase

Pattern of Network	Network Partners	Responsibilities	Network Resources
Community had relationships with network partners and network partners had relationships with each other	1. Ban San Din Daeng community 2. Thai Rak Pa Foundation	1. Provide community information 2. Survey the community 1. Collect community information 2. Coordinate in the worksite 3. Survey the community	1. Community information 2. Labor 1. Community information 2. Facilitation 3. Labor

Table 6.1 (Continued)

Pattern of Network	Network Partners	Responsibilities	Network Resources
	3. EGCO	1. Coordinate in the central area 2. Survey the community 3. Develop a construction drawing 4. Hold a meeting with the villagers 5. Allocate a budget	1. Facilitation 2. Labor 3. Actual construction drawing 4. Information 5. Money
	4. DEDE	1. Survey the community 2. Develop a preliminary construction drawing	1. Labor 2. Preliminary construction drawing

6.1.1.2 Participation Norms

The Karen people place importance on the forest. From birth to death, their ways of life are closely related to the forest. Thus, most of the community norms seemed to focus on the forest, such as the rules for cutting trees and the use of the forest. The details are shown below.

There were beliefs about cutting firewood that the people in the community had inherited from their ancestors. The types of trees that were forbidden from cutting were as follows. Mai Ser Koh Due was believed to be the house of the dead. Ton Ta Lo was believed to cause itchiness. Ton Pho was respected as a sacred tree. Muen Kha Khler was believed to be the life of all Karens. Trees struck by lightning were believed to cause sickness to the family members. Ton Per Kwi's leaves were used to wrap offerings to the spirits. Moreover, Ton Su Ker Mae, Sor Thu Mae, Se Jor Ba, Ton Koh, and Se Phe Khla were also forbidden.

In addition, the villagers had agreed to not enter the forbidden forest. Invading the restricted areas was considered unacceptable wrongdoing. The villagers had traditional beliefs associated with forests. They were not allowed to interfere or destroy the graveyard forest because the ancestral spirits would be upset. They were not allowed to enter Pa Kiw Long because it was believed to be the passage of ghosts. They were not allowed to cut trees or do farming in the Du Ta area because it was the conserved forest of the community. They would be penalized when invading the Tee Mae Ker La area because it was believed to have a powerful spirit living there. The villagers, especially women, were forbidden to enter, cut trees, do farming, or pick fruit in the ritual forest area because it was a sacred area. They were not allowed to cut trees in the watershed forests because it would affect the water resources and cause problems to the community. The villagers had to take good care of the watershed forests.

The Ban San Din Daeng community was a member of the Mae Ya - Mae Pon watershed network. Therefore, it needed to comply with the agreements of that network, which focused on the residential area, arable land, the forest, wildlife, forest products, wildfire, water, the environment, drugs, and fines. The details are as follows.

The villagers were not allowed to sell and rent out their residential or arable land to people outside the Mae Ya - Mae Pon watershed network. All land selling and renting out had to be approved by the network committee first. In case of violating the rules, the land would be confiscated and given to the government. The villagers were also forbidden to expand their arable land and invade the forest. The fine for arable land expansion and forest invasion was up to 1,000 baht per rai. The network committee would also confiscate the culprits' land and report the case to the governmental officials.

The forest was a natural resource that the network placed importance on and there were rules about the forest conservation that the villagers needed to follow. The villagers were not allowed to cut or destroy trees surrounding their arable land; otherwise they had to pay a fine of 500 baht per tree. They were not allowed to cut trees in the restricted areas of the network or else they needed to pay a fine of up to 5,000 baht per tree. They were not allowed to cut trees for commercial purposes;

otherwise they needed to pay a fine of up to 5,000 baht per tree and would be sent to receive legal penalties. The use of wood had to be approved by the network committee first. All of these were the community norms that the villagers in the Ban San Din Daeng community had to agree and comply with.

The cooperative network in the Ban San Din Daeng community was built during the pre-construction phase. The network partners consisted of the Ban San Din Daeng community, the Thai Rak Pa Foundation, EGCO, and DEDE. Considering the network norms, EGCO determined the agreement that EGCO would build a small hydropower plant for the community while the community had to conserve the watershed forest. The community also set the agreement that the hydropower plant construction had to cause no environmental impact on the community. Moreover, the participation norms were also determined based on the expertise and ability of each partner. Every partner needed to participate in the site survey. The villagers had information about the community, the forest area, and the conditions of the water resources, which were essential for calculating the size and capacity of the hydropower plant and the amount of water needed to generate electricity for the community. There were two groups of coordinators: the coordinator at the worksite and the coordinator in the central area. The Thai Rak Pa Foundation was the coordinator at the worksite while EGCO was the coordinator in the central area. DEDE developed the preliminary construction plan and delivered it to EGCO, which EGCO developed the actual construction plan and allocated the budget for the construction.

The participation norms of the network during the pre-construction phase were consistent and suitable for the resources and the ability of the network partners. The network partners were found to strictly comply with the participation norms. In addition, it was found that the network norms did not affect the existing norms or cause any new norms in the community. The network partners still adhered to the mutual agreements between EGCO and the Ban San Din Daeng community about the forest conservation and taking account of the environmental impacts.

6.1.1.3 Trust

Considering the social capital development process in the dimension of trust, during the pre-construction phase all network partners in the Ban San Din

Daeng had good relationships with each other. This was because in 2007 the Thai Rak Pa Foundation established the Thai Rak Pa Village project to encourage the people in the Doi Inthanon National Park to sustainably live with the forest without deforesting it, which was also consistent with the community norms. According to the EGCO Thai Rak Pa report, the Thai Rak Pa Foundation supported the Ban San Din Daeng community to achieve a better quality of life through various community activities, such as occupational promotion activities and community accessibility improvement (Electricity Generating Public Company Limited, n.d.). The Thai Rak Pa Foundation recognized that the villagers in the Ban San Din Daeng community had a lifestyle that conformed to forest conservation and they had continually maintained good relationships for three years. Mananee Phattayacheewa discussed her trust in the Ban San Din Daeng community in the following: “I already knew the community because we used to attend other project together. We trsut each other” (Mananee Phattayacheewa, 2015, interview). The project manager similarly explained that “the foundation had worked with the community. They saw that the villagers always took good care of the forest so they proposed the project” (Sarawuth Mankalasirisap, 2016, interview). The community activities specified in the report and the information obtained from the interviews with the Thai Rak Pa Foundation and EGCO indicated that the previous work experience with the Ban San Din Daeng community enabled the Thai Rak Pa Foundation to know that the villagers would preserve the forest, which was perfectly in line with the objectives of the project.

EGCO received the information from the Thai Rak Pa Foundation that the Ban San Din Daeng community should be selected to join the pilot project because it harmoniously had lived with the forest, continued to conserve the forest, had community unity, and collaborated in doing work. Giving this information to EGCO demonstrated that the Thai Rak Pa Foundation trusted that the Ban San Din Daeng community had the strength and ability to take care of the forest. The information was reliable because the Thai Rak Pa Foundation was considered a part of EGCO. The Thai Rak Pa Foundation was established with funding from Her Majesty Queen Sirikit, which was provided by EGCO. EGCO had also provided financial support to the foundation. Therefore, it could be said that the information was provided by a credible and trustworthy relative. The information obtained from the Thai Rak Pa

Foundation enabled EGCO to conduct the pilot project at the Ban San Din Daeng community.

Similarly, the Ban San Din Daeng community's trust in the network partners was also caused by prior experiences. The Ban San Din Daeng community used to receive assistance from the community activities of the Thai Rak Pa Foundation so the villagers positively responded to the hydropower plant project. Tulu Kilakulphrai stated the following about the Thai Rak Pa Foundation: "They came to see how we lived. We had lived here and conserved the forest for a long time. I talked to them about our village. When the road was not in a good condition, the foundation took care of it. Once they proposed the hydropower plant project, we wanted it…" (Tulu Kilakulphrai, 2015, interview). The local teacher, who had seen how the Thai Rak Pa Foundation worked, also gave a similar opinion as follows:

> The staff of the foundation frequently came here before starting the power plant project. They saw that the villagers well preserved the forest so they came to help us in many tasks such as weaving fabric, making compost, and improving water supply system. The budget from the Sub-District Administrative Organization was limited. It was mostly used to build the road. The community forum was held to discuss the community needs. If the villagers had readiness, they planned to build it in the community. The villagers wanted it (Wanlop Aphiwongcharoen, 2016, interview).

Trust among the partners of the Ban San Din Daeng network was created because the partners had experience in working together. Their prior relationships were good. During the pre-construction phase, the prior experiences enabled the trust to remain and continue.

6.1.2 Social Capital Development Process during the Construction Phase

6.1.2.1 Ban San Din Daeng Network

There were changes in the network during the construction phase. The network had one more partner—Maejo University. The pattern of network also changed. The community did not have relationships with all network partners. One

partner did not have a relationship with the community but only had one with other partners (DEDE and EGCO).

During the construction phase, the community remained the center of the network. The network partners needed to complete their tasks in the community. The hydropower plant development team, consisting of Mr. Sarawuth Mankalasirisap, Project Manager, and other volunteer engineers from EGCO and its affiliates, came to take full charge of the project. The participation of the volunteer engineers not only contributed to the community development but also benefited EGCO. Sarawuth Mankalasirisap talked about the benefit as follows: "EGCO recruited the volunteers from its affiliates. The staffs voluntarily joined the project. They got to know each other and live together" (Sarawuth Mankalasirisap, 2015, interview).

The development team was responsible for overseeing all of the construction processes, including the weir construction, the polyethylene pipeline installation, the powerhouse construction, the power generator installation, the transmission line installation, and lighting system installation. Apart from that, the development team also transferred knowledge to the villagers, who worked as laborers in the construction, through on-site training providing knowledge related to civil, mechanical, and electrical technicians. Wanlop Aphiwongcharoen, who was responsible for the local labor management, explained what the villagers received from participating in the construction: "Most of the laborers were adolescents. They learned how to connect electrical wires. It was important to train local technicians so that they could work after the company went back. All local technician had to participate, learn, and practice installing ground wires and connecting electrical wires" (Wanlop Aphiwongcharoen, 2016, interview).

The Thai Rak Pa Foundation participated in the construction as the intermediary, coordinating between the villagers in the Ban San Din Daeng community and the development team. It also helped to facilitate the development team during the network meeting.

The hydropower plant construction mainly used laborers from the Ban San Din Daeng community. This was consistent with the objective of the construction, which required the villagers to participate in all construction processes. Wanlop Aphiwongcharoen, the local teacher who could effectively communicate with

Karen people, was responsible for the local labor management. He also helped to coordinate the villagers, the Thai Rak Pa Foundation, and the development team because the villagers spoke the Karen language. The development team could not speak the local language so there might have been miscommunications among the villagers and the development team, which could obstruct the collaboration.

The new network partner was Maejo University. Bamrung Somboonchai, a lecturer at Maejo University, led the volunteer students from the Faculty of Architecture and Environmental Design in designing the construction landscape, which blended well with nature, developed a community route, created signage, and designed a pipeline installation pattern that did not affect the natural circumstances. The pipeline was designed to be buried underground rather than being placed on a foundation post.

Considering the role of DEDE, after conducting the feasibility study and delivering the hydropower plant construction report to EGCO, DEDE had no interaction with the community because it already completed the mission specified in the mutual agreements. However, in practice DEDE still coordinated with EGCO. The representatives from DEDE were invited to attend the progress report meeting held at the head office of EGCO. The progress of the construction at the Ban San Din Daeng community and the summary report were presented, and there was a session to discuss and share ideas between EGCO and DEDE.

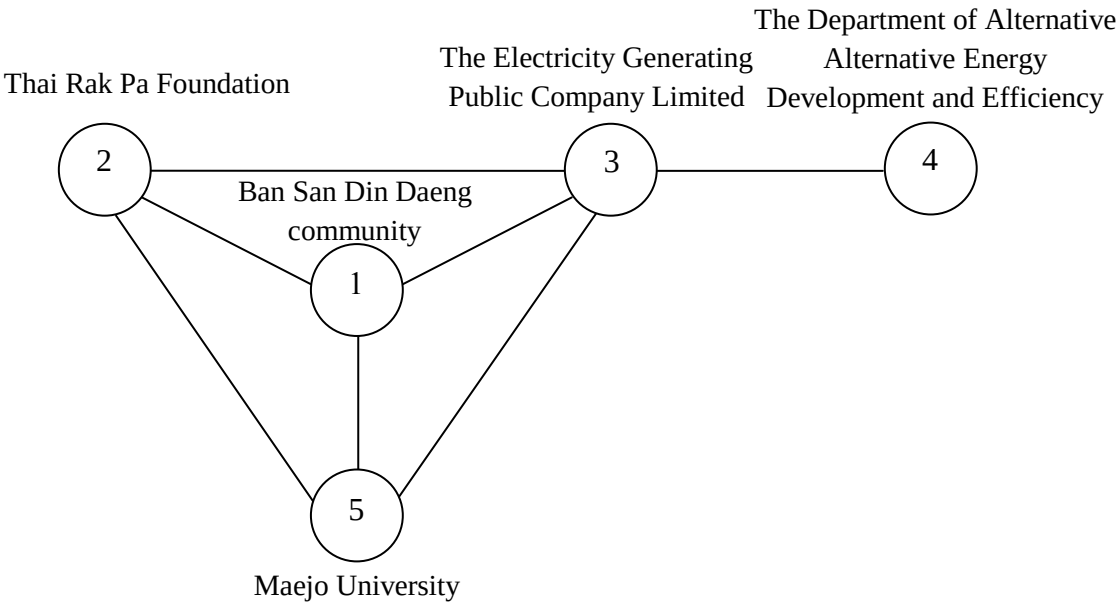

Figure 6.2 Ban San Din Daeng Community During the Construction Phase: Landscape Improvement and Follow-Up Processes

After the powerhouse construction was completed, the villagers had to install the transmission line and lighting system under the supervision of the engineers from the development team. In this process, a new partner joined the network, Chiang Mai University. The students from the Faculty of Electrical Engineering came to help with the process of the transmission line installation and lighting system installation. The students were proud to be able help the community have access to electricity and to achieve a better quality of life. The villagers would continue to have an electricity supply as long as they preserved the watershed forest in a sustainable way.

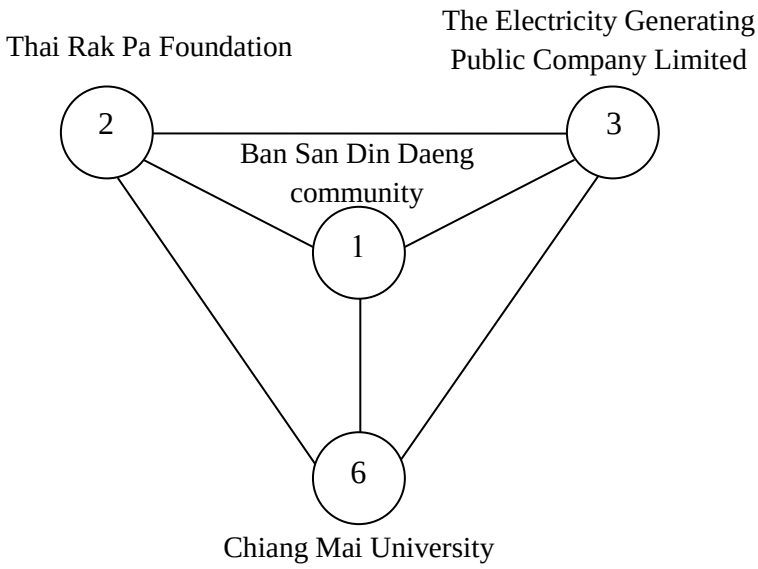

Figure 6.3 Ban San Din Daeng Community During the Construction Phase: Transmission Line and Lighting System Installation Processes

Table 6.2 Summary of the Ban San Din Daeng Network During the Construction Phase

Pattern of Network	Network Partners	Responsibilities	Network Resources
Community had relationships with network partners while some network partners only had relationships with each other	1. Ban San Din Daeng community	1. Construct the power plant	1. Labor
	2. Thai Rak Pa Foundation	1. Coordinate with partners	1. Facilitation
	3. EGCO	1. Supervise the construction	1. Labor 2. Knowledge
	4. DEDE	1. Receive the progress report	1. Suggestion
	5. Maejo University	1. Design and improve the landscape	1. Labor Knowledge
	6. Chiang Mai University	1. Install the transmission line and the lighting system	1. Labor

6.1.2.2 Participation Norms

The participation norms were determined in this period. The development team from EGCO had the responsibility to supervise all of the construction processes. Mr. Sarawuth Mankalasirisap was a leader of the development team and stayed at the construction site all the time. In order to make the villagers participate in the project and feel a sense of owner, they needed to be the laborers in the construction. Mr. Wanlop Aphiwongcharoen played a role in managing the local laborers and coordinating between the villagers, the Thai Rak Pa Foundation, and the development team. The laborers were paid 150 baht per day. Fifty baht would be collected to use in the hydropower plant management. The construction needed about 20 laborers per day. Sunu Sukphraisomboon, the Assistant Village Headman, talked about the agreements made in the community meeting in the following:

> All the villagers had to participate in the construction until finish. Sick persons were allowed to absent themselves from the construction. The rules were defined that sick persons needed to inform the village committee. There was no penalty for the villagers not participating the construction but they would not allowed to use electricity (Sunu Sukphraisomboon, 2016, interview).

This was consistent with the information given by Wanlop, who was responsible for the local labor manageme, as can be seen in the following statement: “The construction needed 10-20 laborers per day. The villagers were not always available but they needed to participate according to the community agreements. They could not be absent” (Wanlop Aphiwongcharoen, 2016, interview). The villagers seemed to strictly adhere to the agreements, as Sarawuth stated: “There was no problem with the laborers. We informed Wanlop in advance what we would do on the next day and how many laborers we needed” (Sarawuth Mankalasirisap, 2016, interview).

Considering the collaboration norms between the network partners, the hydropower plant construction had to cause no environmental effect on the community. In the case of unavoidable incidents, they had to find a solution that

caused the least effect on the environment. Generally, reinforced concrete is used to build a weir because it would make it strong and stable. However, the weir in the Ban San Din Daeng community was made from natural materials. Rocks in the creek were used to build the foundation, and dead trees were used to create the core of the weir. Sandbags were used to create the weir crest and wood was used to create the structure of the power plant building. They used tree leaves to make the roof instead of galvanized iron or roof tiles. The direction of the HDPE pipe installation was carefully designed to avoid cutting trees. Moreover, the HDPE pipe 200 meters long was buried deep underground. When the pipe was installed and covered with the soil, it could not be seen. As for the transmission line installation, concrete or iron posts were not used in this project—a transmission line rather was attached to big trees. In an area without big trees, the transmission line was attached to fallen trees instead of poles.

The collaboration norms between the community and the network partners were important because they helped all of them smoothly work together. After work, a daily meeting was held to discuss the construction progress. Sarawuth Mankalasirisap provided the details about the daily meeting in the following:

> We had a dinner meeting at the cultural center every day. The villagers cooked for us. We spent time discussing what we did today, what we would did tomorrow, and who would join the work tomorrow. The teacher and the assistant village headman regularly attended the meeting. We informed them who should joined the construction….We showed it to the villagers using the notebook (Sarawuth Mankalasirisap, 2015, interview).

When the network norms indicated that the villagers had to participate in the construction, the community needed to set the participation norm that every family had to participate as laborers in the construction. The villagers were not allowed to use electricity if they did not participate in the construction.

6.1.2.3 Trust

Trust was developed when the villagers in the Ban San Din Daeng community saw that the development team had complied with the network norms

during the weir construction, the pipeline installation, the power plant building construction, and the transmission line installation. The daily meeting after work, which allowed the villagers and the development team to share ideas, discuss the progress, and prepare for the next task, also made the villagers feel that they were not just laborers but that they truly contributed to the project. In addition, the development team frequently made a visit to the community members, including the women and the village elders, in order to build good relationships with them. Sarawuth Mankalasirisap stated the following about the relationship building: "We walked to visit the villagers in the evening every day until we managed to meet all local families. We called it Engineers Meet Villagers activity" (Sarawuth Mankalasirisap, 2015, interview). Thus, all of the villagers got to know the development team: "Sarawuth walked around the village. The housewives, who did not join the construction, also got to know him" (Ladda Phraicharoensri, 2016, interview).

Tulu Kilakulphrai explained how the villagers in the Ban San Din Daeng had trust in the development team, stating that "[w]e followed their suggestion. The villagers had no electrical knowledge. We let them do their work. We believed in them" (Tulu Kilakulphrai, 2015, interview). As a local teacher in the Ban San Din Daeng community and a coordinator between the network partners, Wanlop Aphiwongcharoen stated that he "believed and trusted that the project would be definitely success because [he] saw the determination and dedication of the development team. All the villagers also dedicated and participated in the construction" (Wanlop Aphiwongcharoen, 2016, interview). This phenomena suggested that trust could be created from actual perception and experience.

6.1.3 Social Capital Development Process During the Post-Construction Phase

6.1.3.1 Ban San Din Daeng Network

After the construction was completed and the hydropower plant started supplying electricity to the community, the villagers needed to manage the hydropower plant on their own. The electricity committee was responsible for the operation of the power plant, and the partners that already completed their mission needed to leave the network. The Thai Rak Pa Foundation remained in the network so

as to provide useful guidance and to continue to work on community relations. The development team members went back to their organizations after their mission was completed; however, some of them still had relationships with the community network. Mr. Sarawuth Mankalasirisap, who had belonged to the project since the beginning, was appointed to visit the community and to monitor the operation of the power plant in the Ban San Din Daeng every month. The Thai Rak Pa Foundation always served as an intermediary between the villagers and EGCO.

Figure 6.4 The Weir at Mae Pon Creek was Modified after the Hydropower Plant Construction was Completed.

Figure 6.5 Conditions of the Underground Pipeline

Figure 6.6 Transmission Line Attached to a Dead Tree

After the hydropower plant construction was completed, it was found that there some repair work needed to be done. The weir made from natural materials had a leak. When there was heavy rain, the amount of water in the Mae Pon creek would increase. This might have caused a problem if the weir was not strong enough. Therefore, it needed to be replaced with a new concrete weir. In terms of the underground pipeline, some parts of the pipeline needed to be strengthened with cement. As for the transmission line that was attached to big trees, it was shaking and dangerous when the wind heavily blew. These problems were discussed in a meeting in order to find appropriate solutions. The materials cost was supported by the Thai Rak Pa Foundation and local laborers participated in the repairing and maintenance. Considering the transmission line problem, the villages went to find more dead trees in the forest to use as power poles instead of big trees. The laborers needed to spend a long time searching for dead trees because big dead trees were usually deep in the forest. Thus, the Thai Rak Pa Foundation supported the budget to pay for the laborers. EGCO also provided advice for the repairing and maintenance.

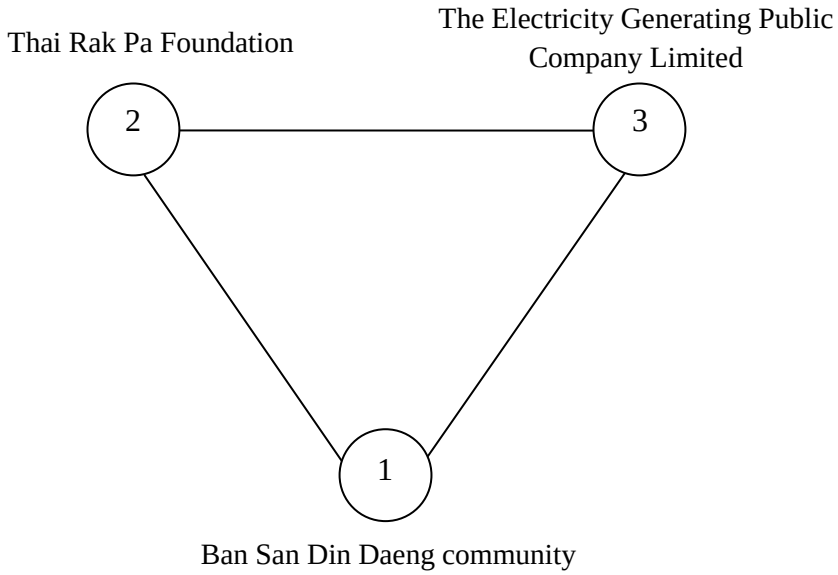

Figure 6.7 Ban San Din Daeng Network During the Post-Construction Phase

Table 6.3 Summary of the Ban San Din Daeng Network During the Post-Construction Phase

Pattern of Network	Network Partners	Responsibilities	Network Resources
Community had relationships with network partners and network partners had relationships with each other	1. Ban San Din Daeng community	1. Manage the hydropower plant 2. Repair and maintain the weir, water pipeline, and power poles	1. Labor 2. Labor
	2. Thai Rak Pa Foundation	1. Coordinate with network partners 2. Provide budget for repairing	1. Facilitation 2. Money
	3. EGCO	1. Provide advice and monitor the operation of the hydropower plant	1. Knowledge

6.1.3.2 Participation Norms

In this period, there was an agreement that the villagers in the Ban San Din Daeng community had to manage the hydropower plant on their own. The Thai Rak Pa Foundation and EGCO served as consultants providing useful advice if there were problems about the hydropower plant management. When the problems actually occurred, the community and the network partners collaborated in finding solutions according to the agreements.

As the network norms stated that the villagers had to be responsible for the power plant management, the electricity committee needed to determine the community norms so as to facilitate the power plant management. According to the relevant documents and the in-depth interviews, the villagers were allowed to use

only basic electrical equipment. The “One Watershed Forest, One Energy Resource” report specified that the electrical equipment that could be used was compact fluorescent bulbs and television. A maximum of 10 compact fluorescent bulbs were allowed per household. The electricity rate was 3 baht per bulb per month. Up to a 21-inch television was allowed with the electricity rate of 10 baht per month. For a 14-inch television, the electricity rate was 5 baht per month (Electricity Generating Public Company Limited, N.D.). Sunu Sukphraisomboon explained the hydropower plant management guidelines related to the use of electrical equipment in the following:

> The electricity rate was 3 baht per bulb. There were 130 light bulbs in the village. Television was also allowed. At the school, there was a refrigerator, a computer, and a photocopier, which the villagers could came to use. The total electricity fee was about 400 baht per month. Sometimes, additional financial support was provided (Sunu Sukphraisomboon, 2016, interview).

In addition, if the villagers needed to use more electricity, they had to ask for permission from the electricity committee first. The money earned was collected in a community fund. Ladda Phraicharoensri, the treasurer taking care of the community fund, discussed using the community fund as follows: “The money was paid to Pramot, a contractor installing the power generator, about 4,000 or 8,000 baht. Big problems rarely occurred. When there were minor problems, we would ask for an advice from the foundation” (Ladda Phraicharoensri, 2016, interview).

As the small hydropower plant needed a sufficient amount of water to generate electricity, sometimes in the dry season the hydropower plant could not produce electricity all day. Therefore, the community norms were determined as follows: “During the 10^{th} month, when there was plenty of water, the power plant would generate electricity all day. When there was not enough water, the villagers were allowed to use electricity at 6 p.m. Each villager would be appointed to turn on the electricity switchboard for one month. It was not difficult. The villagers could take care of it” (Ladda Phraicharoensri, 2016, interview).

The participation norms of the network partners made the villagers determine the community norms concerning the power plant management and the use of electrical equipment.

6.1.3.3 Trust

During the construction phase, the development team led by Sarawuth Mankalasirisap worked closely with the villagers from the beginning until the project was completed. The information obtained from the documents and the in-depth interviews with the community leader, the teacher, and the villagers confirmed that the villagers in the Ban San Din Daeng community accepted the ability, leadership skills, and dedication of the development team, who had to work in a remote community, which finally developed into trust. A statement by Tulu Kilakulphrai, the natural leader, was quoted in the "One Watershed Forest, One Energy Resource" report as follows:

> We felt good that they came to help us. Sarawuth was like one of us. He understood us and did not came to take advantage. It was difficult for him to work here but he had kindness. He kept his words and made the villagers live more comfortably. I was proud in so many things. I did not know how to give back enough… (Electricity Generating Public Company Limited, n.d., 19).

Figure 6.8 Water Drained from the Power Plant Building Flowing Back to the Mae Pon Creek

In an in-depth interview with Tulu Kilakulphrai, he explained his feelings towards Sarawuth Mankalasirisap as follows:

> He was the best. He openly talked and shared knowledge with the villagers. He was diligent, friendly, and reliable. Working together made us better understand each other…When he went back, many villagers cried. They felt attached to him. His wife was also generous. She gave many things to the villagers (Tulu Kilakulphrai, 2016, interview).

Moreover, Wanlop Aphiwongcharoen described the close relationship resulting from the collaboration as follows: "Sarawuth could work well with the villagers. When he was leaving, the villagers held a wrist-tying ceremony so as to comfort his soul and gave him a present" (Wanlop Aphiwongcharoen, 2016: interview). The wrist-tying ceremony that Wanlop referred to was a Karen tradition where villagers in the community tie white strings around the wrists of visitors to show respect and honor. Boiled chicken, boiled rice, and Si, a local rice wine, were served in the ceremony.

Figure 6.9 Friendly Atmosphere between the Community Leader, the Thai Rak Pa Foundation, and EGCO

The Thai Rak Pa Foundation had closely worked with the community since the beginning of the Thai Rak Pa Village project and continually supported the quality of life of the people in the community. Tulu Kilakulphrai talked about the Thai Rak Pa Foundation as follows: "The staff from the foundation often visited us. We drank 2 two bottles of liquor. They had constantly came to visit and educate the villagers. The villagers were trained how to use natural colors. I thought the foundation was good…" (Tulu Kilakulphrai, 2016, interview). When the Thai Rak Pa Foundation joined the hydropower plant construction as the network partner, the trust of the villagers was increasingly developed. The Thai Rak Pa Foundation became a consultant providing guidance and support to the Ban San Din Daeng community when the villagers had problems or needed help. This was reflected in the following statement: "Having electricity was good. We could continue to live like this, as there was someone to help us. The foundation took care of us, when there was a problem… The hydropower plant project in the Ban San Din Daeng was the best" (Sunu Sukphraisomboon, 2016, interview).

The success of the hydropower plant construction made the villagers receive benefits from having an access to electricity. This showed that the network partners had truly contributed to the better quality of life of the villagers throughout the collaboration. Tulu Kilakulphrai talked about the higher quality of life resulting from having an access to electricity, the changes, and the community response in the following:

> Lighting made us have night activities, jobs, and comfortable life. We could weave fabric all night as long as we had strength. There were changes. We could listen to music and songs. The use of firewood was decreased. Someone wanted a rice cooker but it was not allowed. The villagers could receive news and information through a television. Children could watch cartoon and the programs they wanted. Parents had to pay attention of what should not be watched. Power failure could make us suffer because we got used to

comfortable life. But we needed to think of our parents, who lived without electricity (Tulu Kilakulphrai, 2016, interview).

The trust among the network partners in the Ban San Din Daeng community remained stable because of prior working experiences, compliance with the participation norms, and no conflicts in the worksite.

6.1.4 Summary

The analysis of the social capital development process in the Ban San Din Daeng community used the data obtained from the "One Watershed Forest, One Energy Resource" report and the in-depth interviews with the key informants from EGCO, the Thai Rak Pa Foundation, the community leader, the teacher, and the villager in community. The results suggested that during the pre-construction phase, the Ban San Din Daeng network consisted of 4 partners: the Ban San Din Daeng community (No.1), the Thai Rak Pa Foundation (No.2), EGCO (No.3), and DEDE (No.4). As for the pattern of the network, the community had relationships with all network partners and all network partners had relationships with each other. Those relationships resulted in an exchange and accumulation of network resources; namely labor, information, facilitation, money, and preliminary and actual construction plans. During the construction phase (Phase 1), a new partner joined the network, which was Maejo University (No.5). DEDE changed to only have a relationship with EGCO, which affected the pattern of the network. The community had relationships with only some partners and some partners only had relationships with each other. An increase in the number of partners and a change in the partner roles made the network resources, including knowledge and suggestions, increase. In the construction period (Phase 2), Chiang Mai University (No.6) joined the network as a new partner while DEDE and Maejo University left the network before they already completed their mission. The pattern of the network returned to be the same. The community had relationships with all network partners and all network partners had a relationship with each other. During the post-construction phase, the remaining partners of the Ban San Din Daeng network consisted of the Ban San Din Daeng community, the Thai Rak Pa Foundation, and EGCO. The pattern of the network was the same as that

during the pre-construction phase. The accumulated resources comprised knowledge, labor, money, and facilitation.

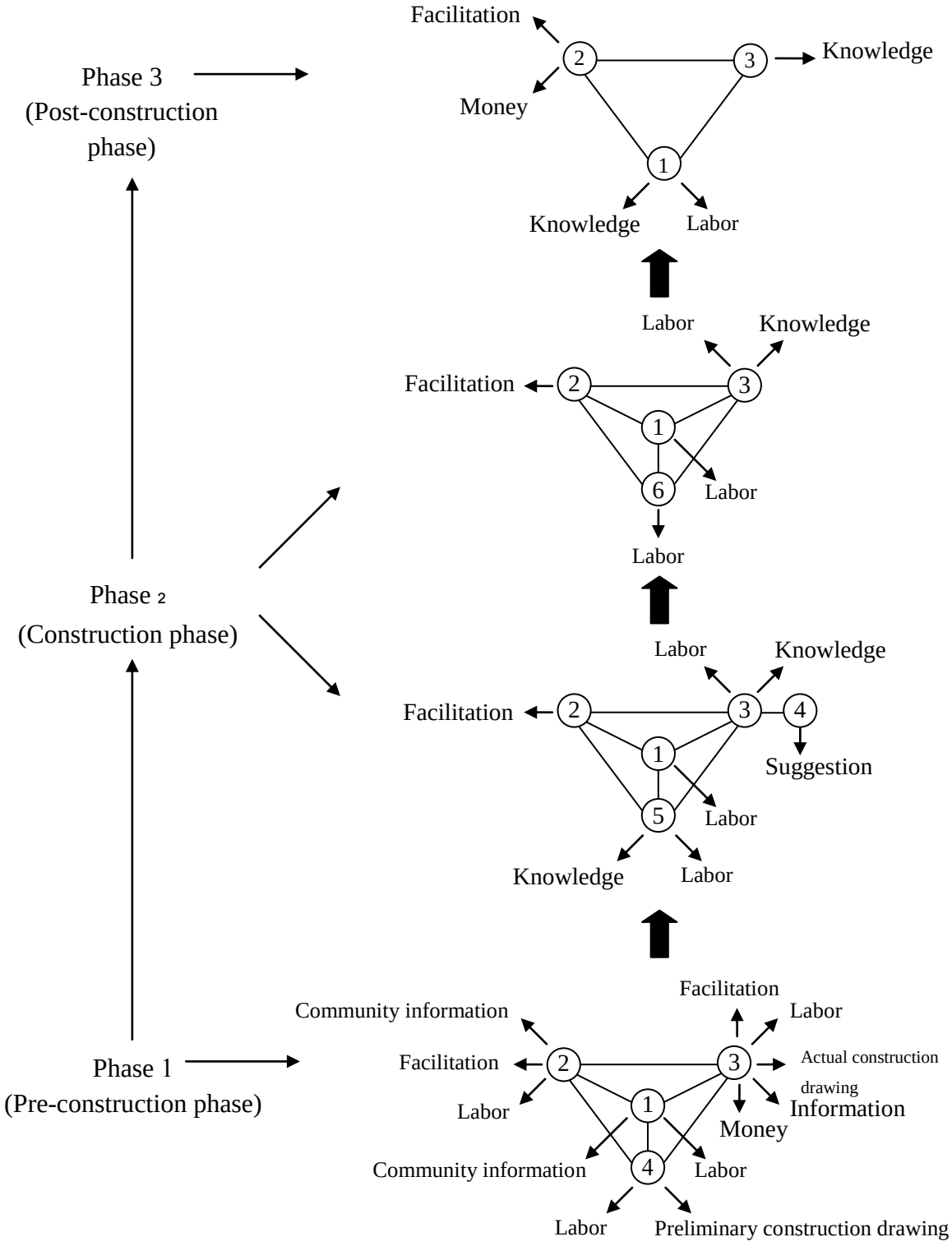

Figure 6.10 Network Development Process in the Ban San Din Daeng Community

The social capital development process in the dimension of norms shown in Figure 6.11 indicated that during the pre-construction phase the collaboration norms or mutual agreements between the partners in the Ban San Din Daeng network (No.1) determined that EGCO would construct the hydropower plant in the community while the community had to conserve the watershed forest and that the construction had to cause no environmental effect on the community. Other mutual agreements of the partners were also defined based on their roles and responsibilities. During the construction phase, the network agreements (No.2) determined that the community had to participate in the construction, which consequently affected the community agreements (No.2.1). All of the families needed to participate in the construction; if not, they were not allowed to use the electricity. During the post-construction phase, the network agreements (No.3) determined that the villagers had to manage the hydropower plant on their own. EGCO and the Thai Rak Pa Foundation needed to provide guidance and support. Those network agreements resulted in new community agreements (No.3.1). The electricity committee was established to be responsible for the power plant management. The agreements on the electricity bills and the use of electrical equipment were also determined. The villagers were appointed to turn the electricity switchboard on and off, and this duty rotated among all families in the community.

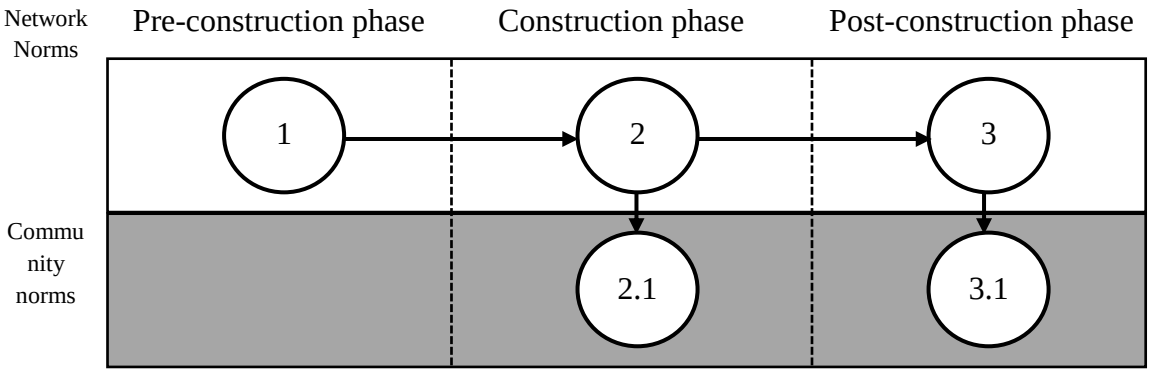

Figure 6.11 Norm Development Process in the Baan San Din Daeng Network

The social capital development process in the dimension of trust shown in Figure 6.12 suggested that the trust among the network partners in the Ban San Din Daeng community occurred during the pre-construction phase (No.1) because the net partners had prior good experience and transferred that experience to other partners. The partners in the Ban San Din Daeng community smoothly worked together according to the agreements. There was no conflict that could reduce or regress the trust. Therefore, the trust remained stable until the construction phase (No.2) and the post-construction phase (No.3).

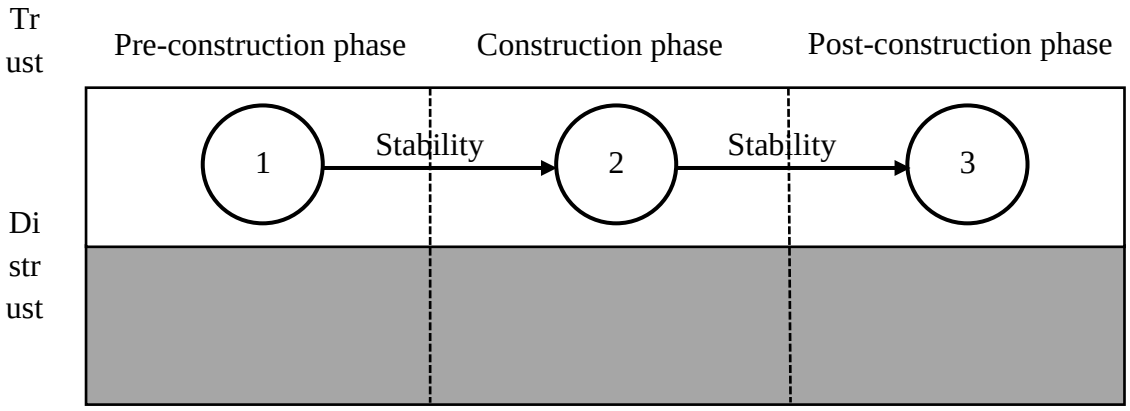

Figure 6.12 Trust Development Process in the Ban San Din Daeng Network

6.2 Social Capital Development Process in the Ban Klong Rue Community

The social capital development process of the Ban Klong Rue community during the pre-construction, construction, and post-construction phases was analyzed in line with the analysis study of EGAT's CSR implementation, which was discussed in chapter 5, so as to examine how the CSR implementation affected the social capital development process in the dimension of networks, norms, and trust.

In the dimension of networks, the roles and responsibilities, resources, and relationships of the network partners were analyzed. In the dimension of norms, the network norms occurring in each phase of the construction were analyzed in order to find out their effect on the community norms. In the dimension of trust, the

phenomena indicating the trust and distrust among the network partners were thoroughly analyzed.

6.2.1 Social Capital Development Process During the Pre-Construction Phase

6.2.1.1 Ban Klong Rue Network

Ban Klong Rue is a community located in remote area, and transportation to and from the community was difficult. The dirt roads made it hard to access the community. The community was situated far away from other villages. It only had relationships with the Phato Watershed Conservation and Management Center, a governmental organization located in the same area. The relationships, which had begun in 1994, were an important foundation promoting the community strength and integration. At that time the villagers still were invading and destroying the watershed forest. In order to prevent the watershed forest invasion and to preserve the watershed forest, the Phato Watershed Conservation and Management Center initiated the Humans Survive, Forests Sustain project and began to build relationships with all families in the community and to conduct an economic and social survey in the community. A Humans Survive, Forests Sustain committee was also established to determine the mutual agreements on forest conservation with the community. The villagers responded to the project in a positive way, which effectively reduced the problem of watershed forest invasion. The community was consequently selected to receive the "Guard Forest to Save Lives Flag" from Her Majesty the Queen in 1998. A unanimous goal in striving to protect the forest and natural resources united the villagers and enabled the community to have strength in natural resource preservation. This was considered an important foundation for driving other community activities.

The social capital development in the network dimension resulting from EGAT's CSR implementation in the Ban Klong Rue community during the pre-construction phase consisted of the following processes: selecting potential communities, training local technicians, surveying the community to study the feasibility of the project, and developing a blueprint for the hydropower plant. The network partners comprised the following: 1) the Ban Klong Rue community; 2) EGAT; 3) Faculty of Social Administration, Thammasat University; 4) Faculty of

Engineering, Prince of Songkla University; and 5) Life University. The details about their roles and resources are described below.

The Ban Klong Rue community was considered the center of the network. Every network task and activity was associated with the community. The actions of the network partners directly affected the villagers in the community. As one of the network partners, the Ban Klong Rue community also had its role in the network. In the process of selecting potential communities, the Ban Klong Rue community needed to join the pilot project on electricity knowledge management and attend the activities held by the pilot project such as meetings and a site visit at the Mae Kampong hydropower plant in Chiang Mai Province. Those activities provided the community leader with opportunities to express opinions, provide basic information as a small electricity consumer, share problems about having no access to electricity, and present previous community activities in terms of economic, social, and environmental aspects.

The pilot project that the Ban Klong Rue had attended was an action research project, which was conducted according to EGAT's CSR policy. EGAT provided financial support to the project with the aim to educate electricity consumers in the south of Thailand and to find a potential community for alternative energy development. The implementation of the project would not be complete without capable partners. EGAT found that appropriate partners from the governmental sector should be educational institutions with knowledge and ability in community development and community activity because they were likely to find the answers that EGAT needed.

The Faculty of Social Administration, Thammasat University, an educational institution with community development knowledge and ability in conducting community activities, was responsible for the pilot project. Jitti Mongkolchaiaranya, a project manager, talked about the objectives of the project as follows: "We wanted to find out solutions. When there was an electricity crisis, it could trouble many consumers. We focused on the south because it was EGAT's strategy" (Jitti Mongkolchaiaranya, 2015, interview). Activities conducted under the pilot project made the involved parties realize that small consumers living in an upstream area could use water from a waterfall to generate electricity. The concept of

a community hydropower plant construction was inspired by these activities, as discussed in the following:

> I received information of communities from the network. Many people told me to visit them…There were 400 potential waterfalls. It was interesting… There was one interesting area at the Haew Ta Jan waterfall in Phato. The villagers there had unique identity stronger than others…They were given an unofficial right to take care of the forest with an approximate area of 10,000 rai… The villagers proved that they were great conservationists. They were good at conservation but unable to utilize the forest (Jitti Mongkolchaiaranya, 2015, interview).

A site visit at the Mae Kampong hydropower plant in Chiang Mai Province was one of activities inspiring the communities in the pilot project to develop a hydropower plant. Jitti Mongkolchaiaranya explained the benefits that the Ban Klong Rue received from the visit as follows:

> It resulted in lesson learning. Knowledge was vital to problem-solving…We made a trip to visit the Mae Kampong hydropower plant. He thought that a waterfall at Mae Kampong was not big but electricity could be produced. A waterfall at his village might be able to produce electricity as well (Jitti Mongkolchaiaranya, 2015, interview).

The pilot project also aimed to provide electricity knowledge to the participating communities so it needed a partner to help in this area. This partner should be an educational institution with expertise in engineering and located in the south of Thailand. Therefore, the Faculty of Engineering, Prince of Songkla University, joined the network and served as an "Academic Unit" carrying out academic activities and transferring knowledge to the communities. Additionally, EGAT, a state-owned enterprise operating business in the field of electric power, was also involved in the project. EGAT sent its experienced electrical personnel to be lecturers in the academic activities.

The pilot project had carried out various community activities in the south of Thailand involving multiple sectors such as villagers, communities, local politicians, local governmental agencies, and NGOs. It was not easy to complete those activities in a smooth way, especially activities that were not initiated by local organizations. Acquiring partners with the ability to provide information and communicate well with multiple sectors was very essential. Thus, Life University was another new partner that joined the network during the pre-construction phase. Jitti Mongkolchaiaranya talked about acquiring a partner with academic potential and community engagement ability in the following:

> We were neither locals nor engineers so we needed to invite them. We had never known them before. We heard about them from word of mouth. In this project we needed to meet local politicians so we needed someone knowing about local politics. Life University team had a strength in political dimension. The Faculty of Engineering, Prince of Songkla University, was responsible for an Academic Unit. The Faculty of Social Administration, Thammasat University, was a project driver with skilled field crews focusing on community development (Jitti Mongkolchaiaranya, 2015, interview).

When the pilot project was completed, Jitti Mongkolchaiaranya suggested the next approach as follows: “We should find ways to develop alternative energy for small electricity consumers. Once they had alternative energy sources as an immunity, they would not need mainstream electricity. This could benefit large electricity consumers as well” (Jitti Mongkolchaiaranya, 2015, interview). This approach inspired the involved parties to expand the pilot project.

In this way, the electricity knowledge management project (phase 2) was established. The network consisted of the same partners. However, the purposes of the project were different. The main purpose of this project was to study the feasibility of the hydropower plant construction project in the Ban Klong Rue community (Thammasat University, 2011). The findings from the pilot project were further examined. The Faculty of Engineering, Prince of Songkla University, conducted an engineering survey on the physical potential of the waterfall such as the

amount of water, the water use system, the potentials of the watershed area, the weir location, the pipeline direction, and the power plant building location. Other partners in the network played the same roles. EGAT provided financial support and monitored the progress of the project, while the Faculty of Social Administration, Thammasat University, managed the project. Life University served as a supporter, providing suggestions for the implementation of the project.

During the pre-construction phase, all of the network partners in the Ban Klong Rue community effectively cooperated with each other. The community had relationships with all network partners and all network partners had relationships with each other. Each partner had a role and responsibility suitable for its capacity. The resources exchanged among the partners in the network included money, information, facilitation, and knowledge. This contributed to an accumulation of various resources conducive to the hydropower plant construction project, and the network partners could utilize those resources to propel the construction project into the future.

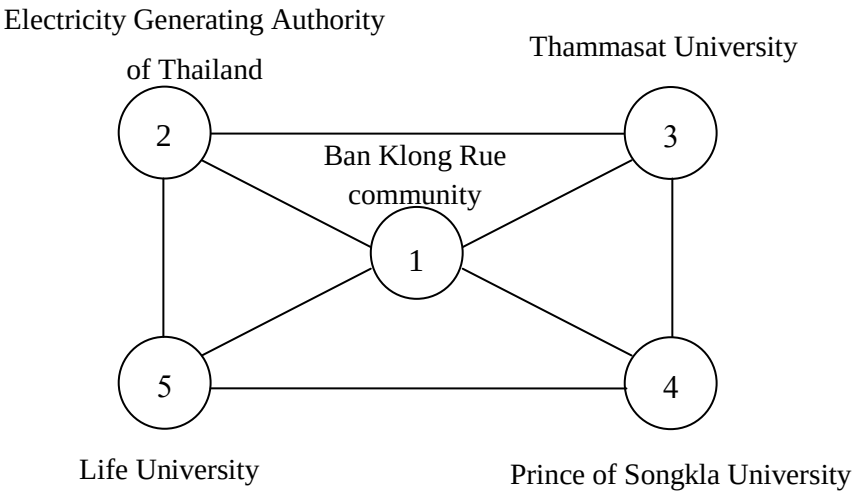

Figure 6.13 Ban Klong Rue Network During the Pre-Construction Phase

Table 6.4 Summary of the Ban Klong Rue Network During the Pre-Construction Phase

Pattern of Network	Network Partners	Responsibilities	Network Resources
Community had relationships with network partners and network partners had relationships with each other	1. Ban Klong Rue community	1. Join the pilot project and the knowledge management project 2. Provide community information 3. Survey the area	1. Electricity problems 2. Community information 3. Labor
	2. EGAT	1. Allocate budget 2. Conduct the electricity training 3. Survey the area	1. Budget 2. Knowledge 3. Labor
	3. Thammasat University	1. Coordinate with all network partners 2. Conduct community activities 3. Survey the area	1. Facilitation 2. Knowledge 3. Labor
	4. Prince of Songkla University	1. Conduct the electricity training 2. Survey the feasibility of the project 3. Develop the blueprint	1. Knowledge 2. Labor, community information, engineering information, and geographical information 3. Blueprint
	5. Life University	1. Provide local	1. Local political

	political information	information
2.	Coordinate with local politicians	2. Facilitation

6.2.1.2 Participation Norms

The villagers in the Ban Klong Rue community had agreements related to arable land and forest areas, forest conservation, and community activities. A monthly meeting was held to discuss community issues such as forest maintenance and organic farming, to raise awareness on the importance of natural resources, soil, and water, and to build community unity. The villagers needed to strictly adhere to the mutual agreements. EGAT discussed the mutual agreements of the villagers in the book entitled "Ban Klong Rue's Light in the Middle of the Valley" as follows:

In terms of the rules about conservation area, the villagers were not allowed to deforest trees in the conservation area, otherwise they needed to pay a fine of 150,000 baht per rai. Those who caused deforestation larger than 1 rai, would be expelled from the community. Woods were not allowed to be removed out of the community. The community forest committee had to notify relevant officials as soon as they saw external persons secretly cutting trees. External persons were not allowed to seek and pick forest products, unless they received permission from the committee. The villagers were not allowed to set a fire in the conservation area, otherwise they needed to pay a fine of 5,000 baht. Those who set a fire in their arable land but the fire spread out to damage other people's property, had to pay a fine according to an agreement with the other party.

Rules about land use were also determined. The villagers had to be authorized to possess the arable land needed to have a house registration in Moo 2, Pak Son Sub-District, Phato District, Chumphon Province before 1993. Those that had arable land adjacent to the conservation area had to preserve the conserved forest. The villagers were not allowed to sell, buy, or give arable land to people outside the community without a blood relationship. Each family was allowed to possess up to 50 rai of arable land. Each family had to have at least 25 perennial trees such as coconut, betel palm, durian, mangosteen, rambutan, sataw, and langsat. The villagers were not allowed to spray herbicides near streams or roads in the community. Cutting trees or burning weeds on arable land required written permission from the committee.

The villagers established agreements on forest utilization as well. All trees cut within the community needed to be examined by the community forest committee. The villagers were not allowed to pick some types of plants, such as Bua Phut, Krathonruasi or plants in the same family, or any kind of wild orchids. External persons were not allowed to pick Phak Kut in the community.

In addition, catching aquatic animals using poison or electric shock was prohibited. Those that violated the rules had to pay a fine of 500-5,000 Baht. Their equipment might be confiscated or they might be reported to governmental officials. The villagers were allowed to catch aquatic animals such as Hoy Hok and Kob Tut only for consumption purposes.

All of the above showed that the mutual agreements in the Ban Klong Rue Community were mostly associated with resource management and the maximum benefit of the villagers. They were also helpful for watershed forest conservation and environmental preservation. When the construction of the hydropower plant began, the mutual agreements of the partners in the Ban Klong Rue network were also determined.

The pre-construction phase of the Ban Klong Rue network can be divided into 2 parts: the pilot project and the knowledge management project phase 2. The participation norms of the Ban Klong Rue network determined that the community had to participate in the activities held under those two projects, especially a community survey, because the community had the most information. According to the collected information, it was found that the villagers had firmly complied with the agreements. Jitti Mongkolchaiaranya provided information as follows: “The villagers accompanied the working team to Haew Ta Jan waterfall in Phato District. This community was unique. The villagers had strong bond and tended to help each other” (Jitti Mongkolchaiaranya, 2015, interview). The community leader also provided more information in the following: “We offered that they should visit our village. Other villages also needed a power plant but we wanted them to help our village first. We took Jitti and EGAT staff to the waterfall in order to find a potential location” (Manas Khlayrung, 2015, interview) Kornsakol Kittiamphon also talked about the survey as follows: “We sent our staff members to survey the community.

The obtained information was useful for EGAT. The villagers had no electricity. They wanted us to build a hydropower plant" (Kornsakol Kittiamphon, 2015, interview)

During the pre-construction phase, the partners of the Ban Klong Rue network collaborated with each other in all work processes. They were found to comply with all of the participation norms. The network norms did not affect the existing norms of the villagers regarding the forest conservation, natural resource preservation, and daily living.

6.2.1.3 Trust

During this period, EGAT conducted the pilot project on electricity knowledge management. Manas Khlayrung, the village headman, explained about an initial participation in the project in the following. "They invited us to join. I had never thought that I would visit a hydropower plant. The teachers from Prince Songkla University came to visit the villagers in the forest. We did not thought much" (Manas Khlayrung, 2015, interview). This showed that the community dutifully joined the activity without expecting to have an access to electricity. Therefore, there was no trust in the beginning.

This might be because in the past many organizations came to conduct activities in the community but they did not match the community needs. Some organizations held activities in order to educate the community without researching the community background. It turned out that the villagers had more knowledge and experience than guest speakers because they used to implement an introduced concept such as sufficiency economy principles in a practical way.

In addition, some organizations provided only knowledge without making practical contribution to the community. The villagers did not need just knowledge. They needed them to help create tangible benefit. Some organizations conducted community activities only for public relations purpose. The villagers thought that those community activities did not make their life better and that only the organizations were benefited from those activities. The villagers unavoidably attended those activities due to their duties. Manas Khlayrung reflected the views of the villagers in the following:

> They [an energy-related company] came to conduct a project. When asked what the community would get after the project was completed, they said we would receive a summary report. It was a waste of budget…They only provided knowledge and project plan. What they said could not answer our needs. We wanted something tangible. Some of them went to provide sufficiency economy knowledge. The villagers actually knew more than the staff. If we were not forced, we would never participated…They did not let us talk. When we asked questions, they wrapped up a meeting and changed the topic. It was disappointing. Please make a tangible project (Manas Khlayrung, 2015, interview).

Moreover, Manas Khlayrung stated that he shared his feelings and experience with the involved parties in the following:

> During a community survey, Jitti, Pi Aey [Warathip from EGAT], and Prince of Songkla University came to carry out a research seminar so we had a chance to know each other. I told them that the villagers had joined many activities and research studies such as tourism research. However, those studies had never benefited the community. The villagers also thought that this research would be the same. Researchers might came to ask information and then went back (Manas Khlayrung, 2015, interview).

Siriphong Rungrueng, a staff member from EGAT, talked about the feelings of the villagers in the following: “During a seminar break, the villagers asked us if this project could be practically implemented” (Siriphong Rungrueng, 2015, interview). This question was consistent with the information obtained from a representative of Thammasat University, who provided information as follows:

> The villagers did not believe in the project due to prior experience. They mockingly said about it in the meeting. The village headman did not say anything because he knew how to deal with governmental

> agencies. The villagers teased us when we talked to them… This time it would be the same (Jitti Mongkolchaiaranya, 2015, interview).

According to the context of the community, the Ban Klong Rue community was not located in a 5 km radius of a power plant so the community was not a direct stakeholder of EGAT. They had never had a relationship or worked together before. Therefore, the villagers believed that they would not receive any tangible benefit from this project and that a hydropower plant might not be built in the community. The villagers still had to live in a darkened community. From this phenomenon, it could be induced that during the pre-construction phase the villagers had no trust in EGAT or other partners.

Convincing the community to believe that a hydropower plant could be possibly constructed and that the villagers could participate in the construction was very important. Once the community thought that a hydropower plant construction was a difficult task and the villagers did not have enough ability to implement it, the community would only wait for assistance from a responsible organization and the hydropower plant would never be constructed in the community. It was important then to provide basic information about hydropower plant construction to the community so that the villagers could find alternative solutions such as getting a loan from financial institutes or NGOs. An approach to convince the community included a site visit at the Mae Kampong hydropower plant in Chiang Mai and participation in a local technician training.

The village headman of the Ban Klong Rue visited the Mae Kampong hydropower plant together with representatives from several watershed communities. This activity was considered very beneficial for the hydropower plant construction, as Jitti Mongkolchaiaranya stated as follows:

> It was a learning process. Once people had knowledge, they could solve a problem. I accompanied them to visit the Mae Kampong hydropower plant. Then he thought that a waterfall at Mae Kampong was not big but could generate electricity. A waterfall at his village might be able to produce electricity as well (Jitti Mongkolchaiaranya, 2015, interview).

The site visit at the Mae Kampong hydropower plant was another important factor driving the villagers to believe that water could be used to generate electricity. Manas Khlayrung explained the site visit in the following:

> EGAT conducted a site visit. Jitti explained things for us. We went to take pictures of the Mae Kampong hydropower plant including a power generator…I would show the pictures to the villagers and convince them that electricity could be generated by water. The pictures made it easy to understand. Some villagers thought that it was too big, too difficult, and required a lot of money (Manas Khlayrung, 2015, interview).

The actual experience at the Mae Kampong hydropower plant made Manas Khlayrung believe that a waterfall could produce electricity. However, it was difficult to convince the villagers, who had not seen the Mae Kampong hydropower plant with their own eyes. Jitti Mongkolchaiaranya, one of the staff members taking the community leader and other representatives to the Mae Kampong hydropower plant provided more information in the following:

> Manas, who actually saw it with his eyes, almost disbelieved. After returning, he spent 20,000 baht buying a generator made in China and installed it at his farm. He really tried using it and could generate electricity to turn on 2 light bulbs. Then he gained confidence and dared to convince the villagers (Jitti Mongkolchaiaranya, 2015, interview).

The community leader did the right thing because the villagers began to change their attitudes and believed that the hydropower plant construction could be implemented in a practical way. Another way to convince the villagers was carrying out a local technician training in order to make the villagers understand the basic

principles of hydropower generation. This activity helped to prepare the villagers for the hydropower plant construction in the Ban Klong Rue community.

The network partners collaborated in implementing the project until it was completed. Two copies of a hydropower plant blueprint were delivered to the provincial governor and the Ban Klong Rue community for future use. On the day that the blueprint was delivered, Manas Khlayrung provided further information as follows:

> That night we talked to each other. There were suggestions that the research results should be practically implemented. We discuss to find out appropriate approach. The community had laborers. How should we find a budget? The District Chief wanted to help…We had a problem about the budget (Manas Khlayrung, 2015, interview).

EGAT still had no clear direction whether to support the community or not: "After the survey, we developed the blueprint and delivered it to the villagers. Once they received support from governmental organizations, they could immediately use it" (Siriphong Rungrueng, 2015, interview). This was consistent with a final report summarizing the progress of the project, including other related programs and activities without suggestions for future implementation (Thammasat University, 2011). This document could make the community disappointed because tangible results were not taken into account.

From the above information, it can be concluded that during the pre-construction phase there was no trust among the network partners. The villagers had no trust due to prior experiences with other organizations. They did not obtain a continuity plan or tangible results. Further, they had no prior relationships with EGAT because the community was not located in a 5 km radius of EGAT's power plant, so the community was not one of the stakeholders that EGAT provided special care for.

6.2.2 Social Capital Development Process During the Construction Phase

6.2.2.1 Ban Klong Rue Network

During this period the Ban Klong Rue network was expanded to be a full-scale development. The network partners consisted of the community, EGAT, Thammasat University, Prince of Songkla University, Life University, King Mongkut's University of Technology Thonburi, the Phato Watershed Conservation and Management Center, the Phato Sub-District Administrative Organization, and the Ban Sai Khao community. Each partner joining the network had roles and resources essential to the hydropower plant construction, which contributed to smooth collaboration and effective construction.

The Ban Klong Rue community was the center of the network because the hydropower plant was constructed in the community. The community had more roles and responsibilities during this period. During the pre-construction phase, the community only attended the two projects, shared electricity problems, provided community information, and participated in a community survey. During the construction period, the community used a blueprint developed by EGAT as a guideline for the construction. The villagers used the money obtained from building 70 check dams and the budget for the weir construction under the Sufficient Community project to purchase construction materials and worked as laborers in the construction of the power plant building, the weir, and the sludge filtration plant. They used their own capacity before receiving support from EGAT. Moreover, the villagers also truly participated as the laborers in all other construction processes, namely the foundation construction, the HDPE pipeline installation, the power generator installation, and the transmission line installation. This enabled the villagers to feel that they were owners of the hydropower plant. In the future, the community also needed to manage and maintain the hydropower plant on their own. Participating in all of the construction processes made the community learn about all of the implementation details and it helped to ensure the villagers that the hydropower plant construction was not too difficult to implement.

Figure 6.14 Foundation Construction and Pipeline Installation Implemented by the Villagers

EGAT was another organization that played many important roles in the network. In terms of budget allocation, EGAT used a 1 million baht CSR budget to purchase construction materials such as cement, sand, stone, HDPE pipe, power poles, and power lines. The rest of the money was used as a spare budget for power plant management. Moreover, EGAT also provided an innovative power generator with a 100 kW capacity that was researched and developed by the Faculty of Engineering, King Mongkut's University of Technology Thonburi. This innovative research was financially supported by EGAT. This was considered an effective approach to promoting innovation development and to research utilization and community development at the same time. Most importantly, it also supported governmental policy on fostering research and technology development that could empower the nation.

In addition, EGAT sent its volunteer staff to participate in the construction with the Ban Klong Rue community and other network partners. The main missions of the volunteer staff consisted of the following: directly negotiating with manufacturers in order to purchase construction materials at cheap prices and supervising the hydropower plant construction. As for the first mission, EGAT's volunteer staff had information about the manufacturers due to prior work experience so they acted as the main negotiators. The community leader also joined the negotiation. Siriphong Rungrueng, responsible for directly purchasing HDPE pipe from the manufacturer, talked about his experience as follows: "We went to meet the manufacturer at Petchburi Province. The price was lowered by 50%. If we bought it from retailers, the maximum discount would be only 25%. We directly contacted this company. They delivered the pipe to the village as well. It was very comfortable" (Siriphong Rungrueng, 2015, interview).

The price was cut by 50% because the construction estimator normally estimated the cost according to market prices. However, when the actual purchase occurred, sellers or manufacturers generally offered discounts depending on the order volume or business relationship; the larger the order, the bigger the discount. They tended to give a huge discount to previous customers with whom they had good relationships. In addition, Manas Khlayrung explained the role of EGAT's staff in negotiating and purchasing power poles and power lines in the following:

> We already checked the prices with local sellers. They were not much different. Standard-sized power poles could not be installed. We asked the company to specifically make the poles smaller and more endurable. For low-voltage lines, we bought it from Aphichart Power Shop in Lang Suan District. The prices were similar to those in Bangkok. Unused lines could be returned. We bought them on credit. The community was responsible for all the costs. Siriphong was a negotiator (Manas Khlayrung, 2015, interview).

As for the second mission, EGAT's volunteer staff productively supervised the hydropower plant construction project during the process of foundation construction, the HDPE pipeline installation, the power generator installation, and the

transmission line installation. Most of the volunteer staff members were from EGAT's Hydropower Plant Division. Civil engineers and construction technicians supervised the foundation construction. Mechanical engineers, electrical engineers, and skillful technicians supervised the installation of the power generator and the transmission line. All of the volunteer staff members stayed with the villagers in the Ban Klong Rue community until the project was completed.

Thammasat University still coordinated and monitored the hydropower plant construction. Jitti Mongkolchaiaranya also provided the community with an additional assistance, as he lent the community money to purchase power poles. Although EGAT had already approved the budget, the payment process was complicated and took along time. The villagers had no money to purchase the construction materials, which could have interrupted the construction. Manas Khlayrung explained why the community needed to borrow the money from Jitti Mongkolchaiaranya, a scholar from Thammasat University, in the following:

> During that time, we had so many debts. We borrowed money from the Savings Cooperative and the Village Fund. I consulted with Siriphong about borrowing money from Jitti. Jitti asked what we would use the money for. I told him that we needed to repay Home Mart, a construction materials shop, so that we could order a new lot of materials (Manas Khlayrung, 2015, interview).

As Jitti Mongkolchaiaranya lent 300,000 baht to the community, the construction could continuously proceed. After receiving money from EGAT, the community repaid the money to Jitti. Moreover, Thammasat University also acted as a consultant for other partners in the Ban Klong Rue network. When there were conflicts, Jitti Mongkolchaiaranya played an important role in building a peaceful atmosphere. He provided further information as follows: "One time I had to stop them from quarrelling. The villagers and EGAT worked together in pouring concrete. The villagers felt like they were bullied…Talk to them with theoretical terms…They could not accept that" (Jitti Mongkolchaiaranya, 2015, interview). Sometimes there were

conflicts between the villagers, and Jitti Mongkolchaiaranya gave suggestions for community relationship building in the following:

> This community was like other normal communities. It was possible for the villagers to have same opinions all the time. In my perspective, Ban Klong Rue was a strong community. The villagers here had diverse backgrounds since they had migrated from different provinces. When communicating with each other, they needed to be optimistic. Misunderstandings should not be allowed to fester. Conflicts had to be solved (Jitti Mongkolchaiaranya, 2015, interview).

In addition to developing the blueprint of the hydropower plant during the implementation of the electricity knowledge management project, Prince of Songkla University also collaborated with King Mongkut's University of Technology Thonburi in installing a power generator. This was because the specifications of the machinery specified in the blueprint were changed. Initially, two sets of 50 kW generators were specified in the blueprint. Later, EGAT changed this to a 100 kW generator developed by King Mongkut's University of Technology Thonburi. Therefore, in order to successfully install the power generator, cooperation and brainstorming among the two partners were required.

During this period Life University had fewer responsibilities because the Ban Klong Rue network had been driven by itself for a while and there were few tasks relevant to the political sector. During the construction phase, most of the tasks were associated with construction processes. However, Life University still paid a regular visit and periodically monitored the progress of the hydropower plant construction.

The Phato Watershed Conservation and Management Center and the Phato Sub-District Administrative Organization (Phato SAO) were involved in a practical way in the hydropower plant construction during the construction phase. They provided support in terms of labor and vehicles. The Phato Sub-District Administrative Organization let the community borrow a small 4WD truck to transport the construction materials. The community only paid for the fuel. This

enabled the community to directly access and purchase construction materials at cheap prices, which significantly reduced costs. Manas Khlayrung discussed the support received from the Phato Watershed Conservation and Management Center and the Phato Sub-District Administrative Organization in the following:

> Phato Watershed Conservation and Management Center supported us everything. They lent us a car and sent laborers to help in the construction of the weir and the sludge filtration plant… I called the Chief of Phato SAO and submitted a formal request to borrow a truck. We used it to directly purchase and transport stone from a stone mill in Lang Suan District. The price was lowered from 7-8 thousand to only 4 thousand baht (Manas Khlayrung, 2015, interview).

In addition, the Ban Sai Khao community was another partner that had joined the network during the construction phase. The Ban Sai Khao community sent laborers to participate in the weir construction. Ban Sai Khao was a close neighboring community that used to collaborate with Ban Klong Rue in other community activities such as the Tree Bank project and the Knowledge Sharing activity.

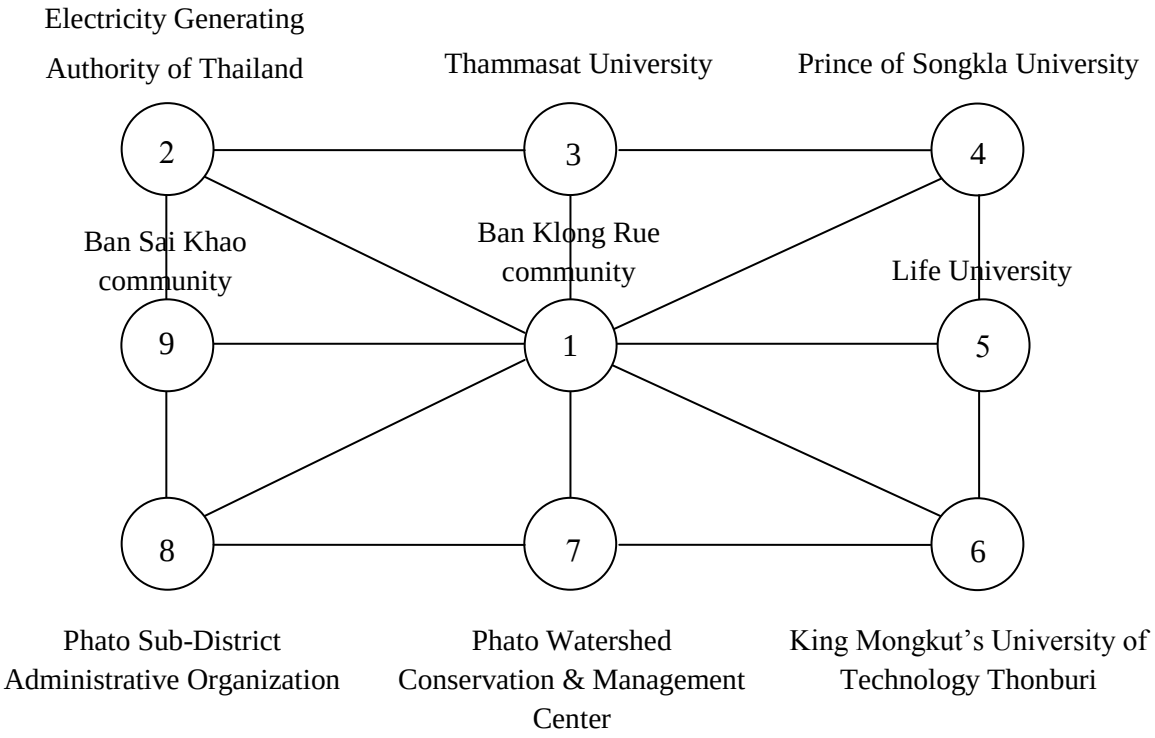

Figure 6.15 Ban Klong Rue Network During the Construction Phase

Table 6.5 Summary of the Ban Klong Rue Network During the Construction Phase

Pattern of Network	Network Partners	Responsibilities	Network Resources
Community had relationships with network partners and network partners had relationships with each other	1. Ban Klong Rue community	1. Build weir, sludge filtration plant, and power plant building	1. Money, labor
	2. EGAT	1. Allocate budget 2. Provide power generator 3. Supervise construction	1. Money 2. Equipment 3. Labor, knowledge
	3. Thammasat University	1. Coordinate with network partners 2. Lend the money to purchase construction materials	1. Facilitation 2. Money (lending)
	4. Prince of Songkla University	1. Help to install power generator	1. Knowledge
	5. Life University	1. Follow up and monitor the progress	1. Suggestions
	6. King Mongkut's University of Technology Thonburi	1. Install power generator	1. Labor, knowledge
	7. Phato	1. Build weir and	1. Labor

	Watershed Conservation & Management Center	sludge filtration plant 2. Support vehicle	2. Vehicle

Table 6.5 (Continued)

Pattern of Network	Network Partners	Responsibilities	Network Resources
	8. Phato Sub-District Administrative Organization	1. Support vehicle	1. Vehicles
	9. Ban Sai Khao community	1. Build weir	1. Labor

6.2.2.2 Network Norms

During the construction phase, there were collaboration norms between the villagers and EGAT. EGAT needed to supervise all of the construction processes and did not hire a contractor to participate in the project. EGAT had to provide a budget covering the cost of the necessary construction materials and equipment and sent volunteer engineers and technicians with civil, mechanical, and electrical knowledge to supervise the construction. The community had to send local laborers to learn from and work with EGAT and other partners in all of the construction processes.

As the community needed to provide laborers for the construction, the community agreements were determined such that all of the families in the community had to participate in the hydropower plant construction. Manoon Phromboon explained the agreements as follows: “Some villagers refused to join. Therefore, we determined that the villagers were allowed to use electricity only when they participated in the construction at least 80 percent of the total working days” (Manoon Phromboon, 2015, interview). Manas Khlayrung gave more information in the following:

> People could think differently. It was beneficial. We needed to find a moderate point. There were 3 types of people: highly obedient, moderately obedient, and disobedient. We should find ways to achieve a mission. There were only few disobedient people. Moderately obedient people participated but doubted why they had to join every day. Highly obedient people might work 100 days. Other people had to work at least 80 days (Manas Khlayrung, 2015, interview).

Uthai Kerdwan explained what happened with the villagers who failed to comply with the community norms as follows: “Those who did not participate in the construction felt embarrassed and avoided facing others. They could not join a conversation as usual because other 3 villagers mostly talked about the construction” (Uthai Kerdwan, 2015, interview). Some villagers had reasons for not participating in the construction, such as having no intention to do hard work, having to do other jobs, and having to harvest agricultural products. However, they needed to hire other laborers to participate in the construction in order to comply with the community norms.

6.2.2.3 Trust

During the construction phase, the trust among network partners in the Ban Klong Rue community was extremely dynamic. During this period, the villagers started to do construction work such as weir construction and power plant building construction and purchasing construction materials such as HDPE pipes, power lines, and power poles. EGAT’s volunteer staff helped to serve as an intermediary between the villagers and the construction material manufacturers. The villagers received benefits and believed that EGAT was sincerely helping them. This made the villagers trust in EGAT. Manas Khlayrung provided information as follows in this regard: “The community paid for everything. We let Siriphong negotiated with the manufacturers. We could save a lot of money” (Manas Khlayrung, 2015, interview).

The trust began to regress and turn into distrust when they were constructing a HDPE pipeline foundation. EGAT’s construction supervisor had a

conflict with the villagers during the concrete-pouring process for the transformer base installation. The construction supervisor obtained engineering knowledge from textbooks and from learning in educational institutions while the villagers obtained technician knowledge from prior work experience, and their different sources of knowledge caused problems in cooperation. The construction plan specified that the concrete transformer base had to be 25 cm thick but the villagers did not want to follow this restriction. They did not want to carry loads of construction materials so they refused to do the work. Manas Khlayrung explained his feelings about this as follows: "Why the transformer base had to be that thick, we had different views. The villagers wanted to quickly finish their job. There was no need to carry a lot of sand, cement, and stone" (Manas Khlayrung, 2015, interview). However, what the villagers wanted was impractical. The transformer base was an important structure because it needed to withstand huge water pressure, and Siriphong Rungrueng talked about the conflict in the following:

> The personality of EGAT's staff was like a foreman. The villagers felt tired. They did not understand why they needed to carry so much cement. Water tank base was only 10 cm thick. They doubted why this time EGAT determined it had to be 25 cm thick. A problem arose. Kornsakol received the news from the villager headman that the villagers could not stand anymore. They started to argue. The villagers did not cooperate (Siriphong Rungrueng, 2015, interview).

Figure 6.16 Reinforced Concrete Floor Construction Implemented by the Villagers

The network partners were aware of the conflict and tried to find a solution to revive the trust. Once the trust regressed and became distrust, the project might have been interrupted or cancelled. Jitti Mongkolchaiaranya, a network partner playing a key role in community relations, explained that this conflict could be solved at an informal dinner meeting, which was different from previous major decision-making that was done at the worksite. He provided information about reconciliation and trust revival in the following:

> Thick cement pouring was rejected. The villagers felt like they were bullied…They did not want to do it. The construction supervisor found ways to convince the villagers. He asked those who had been hired to work in an airport why an airport runway had to be thick and then explained that it was thick because it had to stand impact of big airplanes. Similarly, the transformer base had to stand impact of water flowing from 80 meters height. The villagers started to believe and accept the idea. At first, he used theoretical terms to explain about water pressure, which made the villagers neither understand nor accept. They only felt tired (Jitti Mongkolchaiaranya, 2015, interview).

Figure 6.17 Informal Meeting between Partners in the Ban Klong Rue Network

The conflict between EGAT and the villagers was caused by stress. In 2011, there were big floods in many provinces of Thailand, and EGAT's staff had to work in the Ban Klong Rue community and was not allowed to return to take care of their family and property. On the other hand, the villagers wanted to stop working because they needed to harvest their agricultural products, such as mangosteen. Siriphong Rungrueng stated the following in this connection: "We had an honest talk and apologized to each other. Everyone was dedicated. EGAT's staffs were allowed to rest for 7 days while the villagers were allowed to harvest mangosteen 2 days per family. Taking a break made an atmosphere get better. After that, there were too many laborers came to the worksite until we needed to send some of them back" (Siriphong Rungrueng, 2015, interview).

The villagers accepted and understood EGAT's staff better because of the above incident and what the construction supervisor sincerely said to the community. Manas Khlayrung conveyed those words in the following: "EGAT would not bring back what we had built. We contributed all of them to the community" (Manas Khlayrung, 2015, interview). This phenomenon suggested that the construction

supervisor was strict and worked hard because he wanted to do quality work that could benefit the community for a long-term period. Jitti Mongkolchaiaranya explained the villagers' acceptance and perception as follows: "The villagers loved what they had built, too. They did not want them to be ruined" (Jitti Mongkolchaiaranya, 2015, interview).

Although collaboration could cause some conflicts, honest talk, mutual understanding, and logical explanation possibly turned the conflicts into trust. Collaboration also contributed to knowledge sharing. The construction plan specified the use of 20 mm. diameter reinforcement bars in the construction. The villagers bought the bars from a local retailer according to the specification but it turned out that they were non-standard reinforcement bars, which could not be used in the construction. The construction supervisor suggested using them as stirrups that did not have to withstand heavy pressure. Manas Khlayrung provided further information as follows: "I had never known the difference between standard and non-standard reinforcement bars. I just bought and used them like that. This time I was enlightened. It was my fault for not knowing" (Manas Khlayrung, 2015, interview).

Another incident indicating that there was trust in the Ban Klong Rue network was when Jitti Mongkolchaiaranya lent money to the community. After EGAT approved the provision of a 10 million baht budget to the community, the money could not be immediately paid due to complicated document processes. Therefore, the villagers implemented some construction work in advance with their own money and purchased construction materials on credit. They were not allowed to purchase a lot of new materials unless they paid for the previous debt. At that time the villagers did not want the construction to be delayed or interrupted. The community leader consulted with the construction supervisor about repaying the debt and proceeding with the construction. Finally, the community leader decided to borrow 300,000 baht from Jitti Mongkolchaiaranya, one of the partners from Thammasat University, to pay for the debt. Jitti Mongkolchaiaranya accordingly agreed. He explained why he lent the money to the villagers in the following:

> Before receiving money from EGAT, the villagers were enthusiastic about working. If that was interrupted, the construction might be hard to complete. I was willing to help. They were not inert people, who just asked for money from anyone. They were desperate. I broke the rule. As a community developer, I should not lend them money. But this was an exception…I trusted them. I believed that they would wisely use the money because I had seen them working. When I set a plan, they complied with it. They had to carry cement, stone, and sand for almost a year. If they were inactive, they could never complete a mission (Jitti Mongkolchaiaranya, 2015, interview).

The supportive collaboration between the network partners in the Ban Klong Rue community made the construction continually proceed. It also helped to promote trust among the network partners. Jitti Mongkolchaiaranya did not need to lend his money to the villagers but as he recognized their determination and wanted a final result, and because the community wanted the access to the electricity to occur more quickly, he agreed. After this incident, the villagers looked up to him with great respect. He was regarded as a benefactor of the community. This was beneficial to the Ban Klong Rue network in many aspects. Jitti Mongkolchaiaranya became an intermediary coordinating between the people in the Ban Klong Rue community and between the community and EGAT. From this incident, it can be summarized that trust can create trust. Once a partner had trust in another partner, that partner tended to receive trust in return. When all partners had trust in each other, it would lead to effective collaboration and success.

6.2.3 Social Capital Development During the Post-Construction Phase

6.2.3.1 Ban Klong Rue Network

According to the analysis results of the social capital development in the dimension of networks, it was found that during this period there were partners that had already completed their missions and had no interaction with the other partners left in the network. The remaining partners consisted of 1) the Ban Klong Rue community, 2) EGAT, 3) Thammasat University, and 4) King Mongkut's University of Technology Thonburi. The roles and resources that the network partners exchanged and accumulated in the network are described below.

After the construction was completed, the Ban Klong Rue community was responsible for the hydropower plant management, including operating, maintaining, repairing, electricity billing, and income management.

EGAT had to act as a consultant for the community by monitoring the operations of the hydropower plant, providing guidance when there were problems with the hydropower plant, and coordinating with other partners in the Ban Klong Rue network when there were requests from the community. For instance, the villagers wanted to change a 100 kW generator into a new one. Then EGAT coordinated with King Mongkut's University of Technology Thonburi to develop a 20 kW generator that suited the community environment. Manas Khlayrung explained why the community needed to change the power generator in the following:

> The turbine was changed from 100 kW into 20 kW. There was small amount of water in the first year so I consulted with Pi Aey (Warathip Anantanasakul). The community paid for it. The old one was used as a spare generator. The villagers used electricity only 17-18 kW. A 100 kW generator could operate up to only 2-3 hours because it used a large amount of water. We decided to use a smaller turbine instead. The new one was designed by King Mongkut's University of Technology Thonburi (Manas Khlayrung, 2015, interview).

In addition, EGAT's Deputy Governor of Corporate Social Affairs also supported the community by using its information to develop the Ban Klong Rue Hydropower Plant Project. This project was selected as one of the role model projects in line with EGAT's good corporate governance principles for the year 2012. Later, EGAT presented this project in the Thailand Energy Award Forum 2013, organized by the Department of Alternative Energy Development and Efficiency (DEDE), Ministry of Energy. The project received the Outstanding Renewable Energy Award in the category of off-grid renewable energy projects. It also won the first runner-up award in the category of off-grid renewable energy projects at ASEAN Energy Award 2013, which was held in Bali, Indonesia.

Moreover, EGAT acted as a consultant for the community focusing on integrating electricity with the agricultural products of the villagers. Siriphong Rungrueng explained EGAT's development approach as follows: "The area of Ban Klong Rue community was full of oil palms. Once oil palms were processed, there would be a lot of waste. That waste could be used as biomass fuel. Therefore, it was possible to build a biomass power plant. Palm oil could also be used to generate electricity in the dry season" (Siriphong Rungrueng, 2015: interview). EGAT attempted to implement this idea in a practical way, as Kornsakol Kittiamphon discusses in the following:

> We coordinated with the Institute of Renewable Energy Development of Asia Pacific in Kanchanaburi. Yutthana Makphan was a chairman of the institute. The topic we focused was agricultural career development using betel palm and oil palm. We educated the villagers on how to tie palm and extract oil (Kornsakol Kittiamphon, 2015, interview).

Although the hydropower plant construction project was completed, Thammasat University was another partner that was still interacting with the community and following up with the villagers on a regular basis. The villagers from the Ban Klong Rue community also attended the 4th National Community Development Academic Forum: "Energy, Merit Power, Thai Community," which was held on September 26th, 2014 at the Buddhadasa Indapanno Archives, Vachirabenjatas Park, Bangkok. The retirement party of Asst. Prof. Dr. Jitti Mongkolchaiaranya was also carried out on the same day and at the same place. The villagers participated in the event by organizing an exhibition board to disseminate information about the Ban Klong Rue Hydropower Plant Project. They also set up a booth to serve their famous local coffee to the participants. In the event, a Lesson Learned Visualizing activity was held on the topic "Energy and Environment for a Sustainable World." The information about the hydropower plant construction at the Ban Klong Rue community was used as content in this activity. EGAT's Deputy Governor of Corporate Social Affairs and the staff members participating in the hydropower plant construction in the Ban Klong Rue community also joined the

event. As for the relationships between the community and Thammasat University, Jitti Mongkolchaiaranya encouraged graduate students from Thammasat University to conduct research in the community, and the community helped and took good care of the students throughout the research period.

Another important partner during this period was King Mongkut's University of Technology Thonburi, which designed a 20 kW generator for the community. When there was a problem with the hydropower plant, a local technician would make a call to ask for guidance from King Mongkut's University of Technology Thonburi. Each of them had one set of a hydropower plant construction plan and a cross-flow turbine installation and maintenance manual so they could explain a problem and find basic solutions together. Uthai Kerdwan, a technician responsible for operating the hydropower plant, explained the problem-solving approach in the following:

> The teacher said that the power plant was like a motorcycle. We should learn together. He got to know new things, too. Each part was hard to deteriorate. I called him when there was a problem. Some part cost only 7 baht. There were a few problems. The AVR equipment in a cabinet could be adjusted. The VAR equipment in the generator had to be replaced because it could not be fixed. Most of the problems were minor such as broken reduction gear. I could fix it myself unless it was not a serious problem. The same problem had never occurred at the same point (Uthai Kerdwan, 2015, interview).

Figure 6.18 Equipment Installation and Maintenance Manual

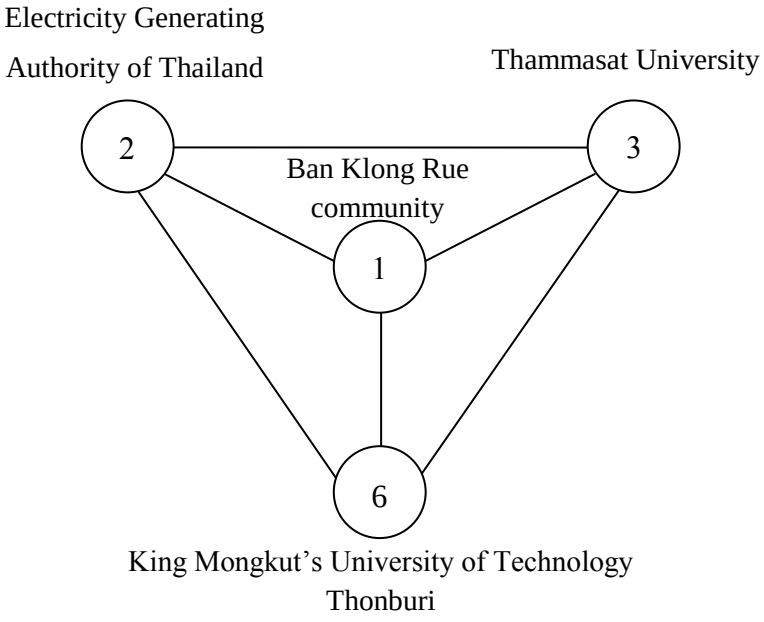

Figure 6.19 Ban Klong Rue Network During the Post-Construction Phase

Table 6.6 Summary of the Ban Klong Rue Network During the Post-Construction Phase

Pattern of Network	Network Partners	Responsibilities	Network Resources
Community had relationships with network partners and network partners had relationships with each other	1. Ban Klong Rue community	1. Manage the hydropower plant 2. Support activities of the network partners	1. Labor 2. Information
	2. EGAT	1. Provide advice for the hydropower plant management 2. Coordinate within the network 3. Publicize the hydropower plant project	1. Knowledge 2. Facilitation 3. Information dissemination
	3. Thammasat University	1. Publicize information about the hydropower plant project	1. Information dissemination
	4. King Mongkut's University of Technology Thonburi	1. Provide guidance for repairing	1. Knowledge

6.2.3.2 Participation Norms

During the post-construction phase, the network norms determined that the villagers had to manage the hydropower plant on their own. EGAT, Thammasat University, and King Mongkut's University of Technology Thonburi needed to

provide guidance when there were problems about repairs and maintenance. After the participation norms were determined, the community could effectively manage the hydropower plant. When there were problems, the community contacted the network partners to ask for suggestions. For instance, when the villagers needed to change the power generator because its capacity did not match the electricity consumption of the community or the amount of water in the Haew Ta Jan waterfall, they contacted EGAT. Then EGAT requested King Mongkut's University of Technology Thonburi to design and install a new generator for them.

As the network norms determined that the villagers had to be responsible for the hydropower plant management, the community defined the participation norms to facilitate the hydropower plant management. An electricity committee was established to manage the electricity billing system. Manas Khlayrung explained the electricity billing system and agreements on the use of electrical equipment in the following:

> The villagers were not allowed to have a fridge and air conditioner. If they used 1 to 50 units per month, the electricity rate was 3 baht per unit. If they used 50 to 100 units, it cost 4 baht per unit. If they used more than 100 units, it cost 5 baht per unit. Payment needed to be made on the 10th of every month at the community meeting. Elderly people were allowed to skip paying an electricity bill. They could pay it when they had enough money. 30% of a total income would be used for administration and 70% would be used for maintenance (Manas Khlayrung, 2015, interview).

6.2.3.3 Trust

The trust among the network partners of the Ban Klong Rue community occurred during the construction phase and remained until the post-construction phase, after reconciliation and sharing both good times and bad times. Manas Khlayrung described his feelings when electricity was supplied to the community for the first time as follows: "On the first day I was very proud. EGAT and I shared good times and bad times to produce lighting for the people in need" (Manas Khlayrung, 2015, interview).

The villagers in the Ban Klong Rue community had trust in EGAT. The researcher perceived this when conducting the data collection in the community. Manas Khlayrung told the researcher the following: “If you come to Ban Klong Rue, just tell the villagers that you are Pi Aey (Warathip Anantanasakul)’s brother. Then you are allowed to pick the fruit you want.” Moreover, the development of trust was reflected when EGAT was entrusted to be a consultant on agricultural product development such as palm oil extraction.

6.2.4 Summary

According to the social capital development process in the dimension of networks shown in Figure 6.20, it can be summarized that during the pre-construction phase, there were 5 partners in the Ban Klong Rue network: the Ban Klong Rue community (No.1), EGAT (No.2), Thammasat University (No.3), Prince of Songkla University (No.4), and Life University Naknon Si Thammarat (No.5). In terms of the pattern of the network, the community was the center of the network and had relationships with all network partners, and all of the network partners had relationships with each other. Those relationships caused an exchange and accumulation of network resources; namely, information, knowledge, money, and facilitation. During the construction phase, the Ban Klong Rue network had 4 new partners: King Mongkut’s University of Technology Thonburi (No.6), the Phato Watershed Conservation and Management Center (No.7), the Phato Sub-District Administrative Organization (No.8), and the Ban Sai Khao community (No.9), which contributed to higher resource accumulation. The network resources during this period comprised money, labor, equipment and machinery, knowledge, facilitation, suggestions, and vehicles. The pattern of the network was the same as that during the pre-construction phase. During the post-construction phase, the remaining partners were the community, EGAT, Thammasat University, and King Mongkut’s University of Technology Thonburi. The pattern of the network did not change, and the network resources consisted of labor, information, knowledge, facilitation, and information dissemination.

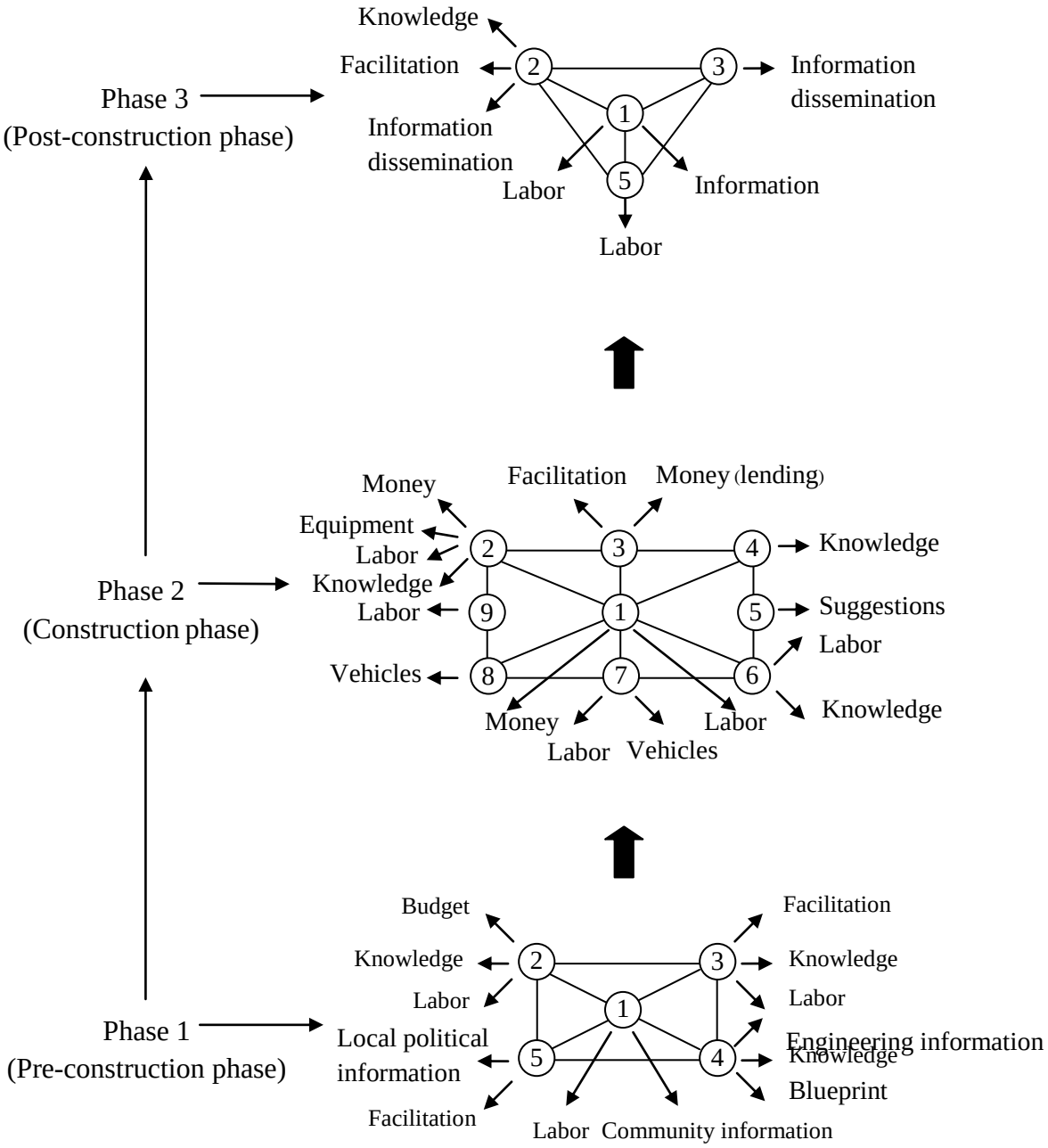

Figure 6.20 Network Development Process in the Ban Klong Rue Community

The social capital development process in the dimension of norms shown in Figure 6.21 suggested that during the pre-construction phase there were collaboration norms or network agreements between the partners of the Ban Klong Rue network (No.1). The villagers in the Ban Klong Rue community had to provide relevant information to the network partners while the other partners explored the community

potentials and drove the construction of the hydropower plant in the community. During the construction phase, the network partners defined the mutual agreements (No.2)—that EGAT had to support the budget, provide equipment, and supervise the construction. The villagers participated by working as laborers in the construction. Other partners helped in coordination and facilitation. The network norms determining that the villagers had to participate in the construction caused new community norms (No.2.1). All of the families in the community had to participate in the construction at least 80% of the total working days. During the post-construction phase, the network norms (No.3) determined that the villagers had to manage the hydropower plant on their own. Therefore, in order to effectively manage the hydropower plant, the villagers needed to define new community norms. An electricity committee was established to determine the agreements on the electricity billing and the use of the electric equipment.

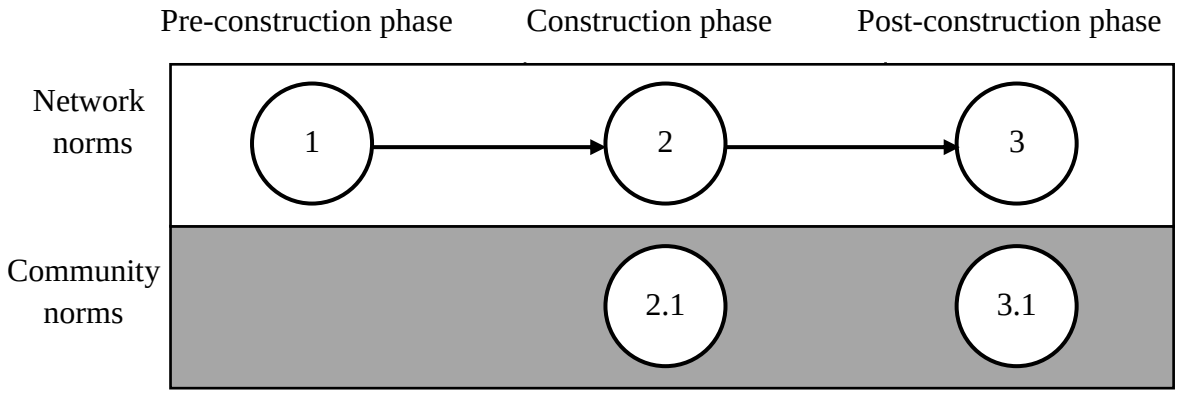

Figure 6.21 Norm Development Process in the Ban Klong Rue Network

The analysis results of the social capital development process in the dimension of trust shown in Figure 6.22 indicated that the trust among the network partners in the Ban Klong Rue community was dynamic. During the pre-construction phase, there was distrust among the network partners (No.1). The villagers had no trust in EGAT. They did not believe that EGAT would sincerely help them because they had a prior negative experience from working with other organizations, and they felt that they had not obtained concrete results from participation. During the construction

phase, trust began to occur when the partners began working together (No.2), and the villagers began to recognize that EGAT had strong determination to help the community. EGAT supported the budget, provided equipment, and negotiated with construction materials manufacturers for cheaper prices. A scholar from Thammasat University also lent money to the community in order to prevent work interruption, which reflected that both of them had trust in each other. Consequently, the trust started to regress. There was distrust among the network partners (No.3), as the villagers had conflicts with EGAT due to mismatched opinions. The trust was finally revived by logical exemplification and easy-to-understand explanations (No.4). After that, the trust remained stable until the post-construction phase (No.5).

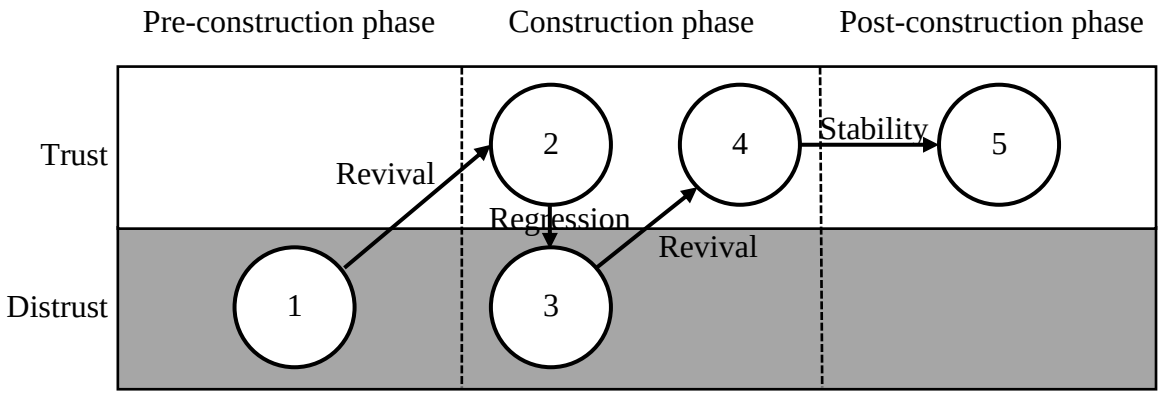

Figure 6.22 Trust Development Process in the Ban Klong Rue Network

CHAPTER 7

COMPARATIVE STUDY OF THE SOCIAL CAPITAL DEVELOPMENT PROCESS

In order to explain the relationship between CSR implementation and social capital development, this chapter presents the social capital development process in the dimension of networks, norms, and trust resulting from CSR implementation in the Ban San Din Daeng community and Ban Klong Rue community. The findings on the social capital development process shown in chapter 6 will be compared in order to find the similarities and differences between the two case studies.

7.1 Comparison of Social Capital Development Process

The social capital development process in the dimension of networks, norms, and trust was analyzed based on the conceptual framework shown in chapter 3. The nature of the network partners and the relationship between the network partners and the community were taken into account. The different forms of the relationships between the community and the network partners and among the network partners were discussed in detail. In addition, the resources that were embedded and exchanged within the network were also analyzed. The norms of collaboration were analyzed to find out whether they had an impact on the network's agreement and the community's agreement. The trust among the network partners was also thoroughly studied.

The findings obtained from the case studies in the Ban San Din Daeng and Ban Klong Rue community were compared and analyzed in Table 7.1 to Table 7.4. The pre-construction phase was determined as phase 1, the construction phase was phase 2, and the post-construction phase was phase 3.

7.1.1 Social Capital Development Process in the Dimension of Networks

7.1.1.1 Network Partners

The first similarity between the two case studies was that the main organizations conducted CSR implementation and coordinated with the villagers in Ban San Din Daeng community and Ban Klong Rue community through an intermediary organization. Considering the Ban San Din Daeng community's network, EGCO coordinated with the villagers through the Thai Rak Pa Foundation. As for the Ban Klong Rue community's network, EGAT implemented CSR activities in the community through Thammasat University. This approach was appropriate because the intermediary organizations had higher abilities and better skills in coordinating with the communities than the main organizations. The Thai Rak Pa Foundation was familiar with and already had a good relationship with the Ban San Din Daeng community. In terms of Thammasat University, although it did not have a previous relationship with the Ban Klong Rue community, it had credibility as an educational institute. The academics from Thammasat University had the ability to smoothly communicate and cooperate with communities as a "Professional Community Developer." Utilizing the abilities of the network partners to foster cooperation was considered an ingenious strategy. The Ban Klong Rue community's network also had a non-governmental organization, Life University, as one of the network partners. This was beneficial because most energy operators tended to be criticized for exploiting natural resources and causing negative effects on the environment and communities. Having a non-governmental organization as a partner made the network gain different perspectives and interesting suggestions helpful for conducting activities in the community. During the pre-construction phase, the Ban Klong Rue community's network had 5 partners while Ban San Din Daeng had 4 partners.

Regarding the social capital development in the dimension of networks during the construction phase, the network partners were mobilized to participate in the project. The Ban San Din Daeng community and Ban Klong Rue community reported the highest number of partners during this period because the construction period required the highest amount of network resources. A high number of partners helped to diversify resource exchanges. Therefore, the network needed to seek

partners with the resources that the network needed in order to fulfill and propel the mission. The educational institutes additionally that joined the Ban San Din Daeng community network during this period were Chiang Mai University and Maejo University. As for Ban Klong Rue community's network, the new partners were mostly governmental organizations, including the Phato Sub-District Administration Organization, P the hato Watershed Conservation and Management Center, and King Mongkut's University of Technology Thonburi. During the pre-construction phase, the Ban Klong Rue community had more partners than Ban San Din Daeng because the Ban Klong Rue community needed extensive resources from different partners. On the other hand, the Ban San Din Daeng community's partners had monetary capital that could be changed into other resources so it had fewer partners than the Ban Klong Rue community.

Considering the social capital development in the dimension of networks during the post-construction phase, the partners remaining in the network were the main partners that had joined the project in the beginning. The similarity between the two case studies was that the main organizations and the intermediary organizations continued to remain in the network. Regarding the Ban San Din Daeng community's network, the partners during this period consisted of the Ban San Din Daeng community, EGCO, and the Thai Rak Pa Foundation. The partners in the Ban Klong Rue community's network comprised the Ban Klong Rue community, EGAT, and Thammasat University. The difference between the two case studies was that during this period the Ban Klong Rue community had King Mongkut's University of Technology Thonburi as a partner providing advice to the community if there was a problem with the hydropower plant. In the Ban San Din Daeng community's network, EGCO was the main organization that gave useful advice to the villagers during the post-construction period.

Table 7.1 Comparison of the Social Capital Development Process in the Network Dimension Focusing on the Network Partners of the Ban San Din Daeng Community and Ban Klong Rue Community

Network Partners	Ban San Din Daeng			Ban Klong Rue		
	Phase 1	Phase 2	Phase 3	Phase 1	Phase 2	Phase 3
1. Community	Yes	No	Yes	Yes	Yes	Yes
2. Government agencies	Yes	Yes	No	No	Yes	No
3. State enterprises	No	No	No	Yes	Yes	Yes
4. Private organizations	Yes	Yes	Yes	No	No	No
5. Foundation	Yes	Yes	Yes	No	No	No
6. NGOs	No	No	No	Yes	Yes	No
7. Educational institutes	No	Yes	No	Yes	Yes	Yes

7.1.1.2 Patterns of Networks

The patterns of the networks in the two case studies were mostly similar. The two communities were found to have a relationship with all network partners, and the network partners also had a relationship with each other. The communities had a relationship with all partners because the hydropower plants were located in the communities, and the villagers participated in all of the construction processes as land owners. Therefore, the communities were inevitably involved with all partners.

However, during the construction phase, the Department of Alternative Energy Development and Efficiency (DEDE) was a partner in the Ban San Din Daeng's network, which had no relationship with the community. After finishing the site survey and the preliminary construction plan, DEDE did not have any involvement with the community but still had a relationship with EGCO. There was communication and collaboration in terms of project progress reports and meetings. EGCO reported the progress of the construction and shared opinions with DEDE. Meanwhile, EGAT still had a relationship with the community and other partners in Ban San Din Daeng's network.

This was different from the relationships in the Ban Klong Rue's network, where the community had a relationship with all network partners and all partners had a relationship with each other. Prince of Songkla University was responsible only for creating a blueprint of the Ban Klong Rue hydropower plant during the pre-construction phase but it continued to monitor the project with the villagers and other network partners in the construction phase.

In the post-construction phase, the relationships between the community and the network partners were fewer than during the previous phase. The number of partners during this period was similar to that during the pre-construction phase. The remaining partners had a strong relationship with each other and the patterns of relationship in the two communities were also similar. The communities had a relationship with all partners and all partners had a relationship with each other.

Table 7.2 Comparison of the Social Capital Development Process in the Network Dimension Focusing on the Patterns of Networks in the Ban San Din Daeng Community and Ban Klong Rue Community

Patterns of Network	Ban San Din Daeng			Ban Klong Rue		
	Phase 1	**Phase 2**	**Phase 3**	**Phase 1**	**Phase 2**	**Phase 3**
1. Community has relationship with all partners	Yes	Yes	Yes	Yes	Yes	Yes
2. All partners have relationship with each other	Yes	Yes	Yes	Yes	Yes	Yes
3. Some partners have no relationship with community but have relationships with each other	No	Yes	No	No	No	No

7.1.1.3 Network Resources

It was found that the resources that the network partners possessed and exchanged within the network during the pre-construction phase of the two case studies were similar. During this period the accumulative resources consisted of the operating fund, the labor for the site survey and the feasibility study, and information regarding for example community background, physical information about the community, information about streams, and hydropower plant knowledge. The information could be transferred *via* formal training, experience sharing, and power plant visits.

During the construction phase, the accumulative resources comprised the fund, the labor of the villagers, the power generator, the hydropower plant knowledge, and partner facilitation. Considering the resource accumulation in the two case studies, there was a difference in terms of the source of resources. The Ban San Din Daeng community used the money supported by EGCO to purchase the power generator. It could be said that the monetary resource was directly changed to machinery. On the other hand, the Ban Klong Rue community did not need to purchase a power generator because it was provided by EGAT. As EGAT supported King Mongkut's University of Technology Thonburi in terms of researching and developing the power generator, the power generator was considered as EGAT's resource. This form of resource accumulation was helpful because it helped to create more network partners. In terms of vehicles used to transport equipment and materials to the worksite, the Ban Klong Rue community used a truck provided by the Phato Sub-District Administrative Organization; the community only paid for the fuel. The truck was used to directly purchase and transport stone from a stone mill, which significantly reduced costs. Accumulating resources from multiple partners was an effective approach. The network resources could be effectively accumulated, exchanged, and transformed, for instance, and the money was transformed into the machinery and vehicles. The resource accumulation of the Ban Klong Rue community was found to be more effective than that of the Ban San Din Daeng community.

During the post-construction phase, there was a difference in terms of financial support. In the case of the Ban San Din Daeng community, when there were problems with the weir and the pipeline, EGCO and the Thai Rak Pa Foundation

provided a budget for repair and maintenance. As for the Ban Klong Rue community, if there were problems occurring with the power plant, EGAT did not provide any financial support to the community—the community had to pay for the maintenance cost itself. Another difference was that after the construction was completed, the Ban Klong Rue community had an important resource, which was the know-how about hydropower plant construction resulting from the strength of the community and the participation of the network partners. The community presented this resource to the public and then received recognition awards at national and international levels. Thus, the know-how concerning hydropower plant construction was considered an important resource accumulated in the Ban Klong Rue community's network.

Table 7.3 Comparison of the Social Capital Development Process in the Network Dimension Focusing on the Network Resources in the Ban San Din Daeng Community and Ban Klong Rue Community

Network Resources	Ban San Din Daeng			Ban Klong Rue		
	Phase 1	Phase 2	Phase 3	Phase 1	Phase 2	Phase 3
1. Fund	Yes	Yes	Yes	Yes	Yes	No
2. Labor	Yes	Yes	Yes	Yes	Yes	Yes
3. Equipment, Machine	No	Yes	Yes	Yes	Yes	No
4. Vehicle	No	No	No	No	Yes	No
5. Information	Yes	Yes	Yes	Yes	No	Yes
6. Knowledge	Yes	Yes	Yes	Yes	Yes	Yes
7. Facilitation	Yes	Yes	Yes	Yes	Yes	Yes

7.1.2 Social Capital Development Process in the Dimension of Participation Norms

According to the comparative study of the social capital development in the dimension of the norms in the Ban San Din Daeng community and Ban Klong Rue community, it was found that during the three phases of the hydropower plant construction the network norms were caused by the formation of rules and agreements

regarding the responsibilities of each partner and the compliance with the rules and agreements.

During the pre-construction phase, the rules and mutual agreements of the network partners were determined but they had no effect on the rules and agreements of the community members. The community was involved in providing information about the community background and location and sharing opinions. During the construction phase, the rules and mutual agreements of the network partners clearly affected the rules and agreements of the community. In both the Ban San Din Daeng community and Ban Klong Rue community, the network partners had an agreement that the communities had to participate in the hydropower plant construction and had to manage the hydropower plant on their own after the construction was completed.

Considering the participation in the hydropower plant construction, there was a network agreement that the communities had to participate in the construction so the network norms were determined such that the villagers had to be the labor in the construction. However, there was a difference between the two case studies. In the Ban San Din Daeng community, the villagers working in the construction project were paid on a daily basis. On the other hand, the villagers in the Ban Klong Rue community had to work without pay; their wages were recorded in the form of shareholding value. If the power plant could create a profit, the dividends would be paid to the villagers. As the villagers had to be the labor in the construction, labor management and agreements on labor were needed. In both case studies, the participation norms were determined by the villagers—every family had to be involved in the construction of a power plant, and the role varied according to ability of each individual. Men had to do heavy jobs while women helped in lighter tasks such as carrying materials or equipment. In the case of the Ban Klong Rue community, the norm was clearly defined that each family needed to participate in the community network at least 80 percent of the working days. In the Ban San Din Daeng community, the norm was vaguely defined in terms of how the family had to be involved. This might have been because the villagers in Ban San Din Daeng would be paid so all of them were willing to participate in the construction. The villagers in Ban Klong Rue needed to work without pay so they wanted to do other jobs that could earn money.

As for the responsibilities in the power plant management after the construction was completed, the norms or rules and agreements of the two communities were similar. The communities had to manage the power plant on their own so they defined the community agreements in order to smoothly manage the power plant. Both communities established a power plant management committee. The Ban San Din Daeng community established the Ban San Din Daeng Electricity Board while Ban Klong Rue set up a committee to operate and manage the Ban Klong Rue Hydropower Plant Learning Center. The responsible persons as well as the roles and duties of the committee were clearly defined. In addition, as the power plants in the Ban San Din Daeng community and Ban Klong Rue community were small hydropower plants with low capacity, both communities determined the agreements according to the types of electrical equipment that could be used. Only necessary electrical equipment such as light bulbs and TVs were allowed. The agreements on the electricity bills were also determined in order to obtain money for the power plant management.

Table 7.4 Comparison of the Social Capital Development Process in the Norms Dimension in the Ban San Din Daeng Community and Ban Klong Rue Community

Participation Norms	Ban San Din Daeng			Ban Klong Rue		
	Phase 1	Phase 2	Phase 3	Phase 1	Phase 2	Phase 3
Rules and agreements of network partners	Yes	Yes	Yes	Yes	Yes	Yes
Rules and agreements of community members	No	Yes	Yes	No	Yes	Yes

7.1.3 The Social Capital Development Process in the Dimension of Trust

The comparative study of the social capital development in the dimension of trust in the Ban San Din Daeng community and Ban Klong Rue community suggested that the trust among the network partners of these two communities was different. In

terms of the Ban San Din Daeng community, the trust was created during the pre-construction phase. EGCO was informed by the Thai Rak Pa Foundation that Ban San Din Daeng was a strong community with potential water resources and was capable of watershed forest conservation. At the same time, the Ban San Din Daeng community also had trust in EGCO because some villagers had joined the Thai Rak Pa Village project carried out by the Thai Rak Pa Foundation, a foundation established by EGCO. When the community received a proposal from the Thai Rak Pa Foundation that EGAT intended to build a power plant in the Ban San Din Daeng community, the villagers voluntarily participated in the project and believed that EGCO and the Thai Rak Pa Foundation did not want to take advantage of the community. The trust among the partners in Ban San Din Daeng community's network continued to be stable until the construction phase. This might have been because there was no conflict in working. The project leader was knowledgeable, reliable, and friendly. He frequently visited the villagers in the community and also had high expertise in engineering. All of this made the villagers trust the project leader, who was the representative of EGAT. During the post-construction phase, the project leader also monitored the progress, provided guidance, and regularly visited the villagers, which led to stability among the partners.

The social capital development in the dimension of trust occurring in the Ban San Din Daeng community was different from the same phenomenon in the Ban Klong Rue community. The trust among the partners in the Bang Klong Rue community's network was dynamic. The change depended on the partners' participation circumstances. During the pre-construction phase, the network partners, especially the community and EGAT, did not trust each other—the villagers had a negative experience with other organizations and did not receive concrete results from the previous activities so they thought that EGAT might be the same. After receiving the blueprint of the power plant from EGAT, the villagers began building the power plant building, the weir, and the sludge filtration plant with their own money. This phenomenon made the related parties and the executives of EGAT feel confident and have trust in the potential of the Ban Klong Rue community. EGAT consequently provided the budget and equipment for the power plant construction and sent staff members with high expertise to oversee the hydropower plant project in the Ban Klong Rue community.

During the construction phase, the community began to trust EGAT because the construction supervisor from EGAT directly purchased construction materials from the manufacturers and managed to get a good price. However, during the concrete-pouring process for the transformer base installation, a conflict occurred and caused distrust among the partners. The villagers thought that the construction supervisor bullied them. Later, Thammasat University acted as an intermediary to solve the conflict and maintain the relationship with honest talk and logical explanations. The trust among the network partners was revived and remained stable until the post-construction phase.

Table 7.5 Comparison of the Social Capital Development Process in the Trust Dimension in the Ban San Din Daeng Community and Ban Klong Rue Community

Trust Among Network Partners	Ban San Din Daeng			Ban Klong Rue		
	Phase 1	Phase 2	Phase 3	Phase 1	Phase 2	Phase 3
Trust	Yes	Yes	Yes	No	Yes	Yes
Distrust	No	No	No	Yes	Yes	No

7.2 Chapter Summary

The results of the comparative study of the social capital development in the dimension of networks, norms, and trust in the Ban San Din Daeng community and Ban Klong Rue community during the pre-construction, construction, and post-construction phases can be summarized as follows.

Considering the social capital development process in the dimension of networks, the number of network partners was dynamic, depending on the phases of the CSR implementation during the hydropower plant construction. Both community networks reported having the highest number of partners during the construction phase. After the construction was completed, the remaining network partners with strong mutual relationships consisted of the main organization initiating the construction project, the community, the intermediary organization, and the organization providing advice on the operation of the power plant. The intermediary

organizations in the two communities were different. The intermediary organization in Ban San Din Daeng community's network was a foundation (the Thai Rak Pa Foundation), whereas the intermediary organization in Ban Klong Rue community's network was an educational institute (Thammasat University). Ban Klong Rue community's network was found to have more partners than Ban San Din Daeng community's network, which resulted in better distribution of resources. In other words, the provision of various resources in the network was supported by multiple partners.

As for the network patterns, it was found that the two communities had similar patterns of network during the pre-construction and post-construction phases. The community had relationships with all network partners and all network partners had relationships with each other. However, during the construction phase, their network patterns were different. There were 2 patterns of network found in Ban San Din Daeng community. The first pattern was that the community had relationships with some network partners and those network partners had relationships with each other. The second pattern was that the community had relationships with all network partners and all network partners had relationships with each other. On the other hand, the Ban Klong Rue community had the same pattern of networks during all three phases of construction.

The two communities had similar social capital development processes in the dimension of norms during all three phases of construction. The norms were determined by the roles and duties in the network. In addition, the participation norms of the two communities were also created during the pre-construction phase and the post-construction phase.

The network trust in the two communities was different. The trust in Ban San Din Daeng community's network was stable during all three phases while the trust in the Ban Klong Rue community was dynamic. During the pre-construction phase, the partners had distrust. Trust occurred during the beginning of the construction phase because the villagers received support from the construction supervisor of EGAT. However, there was a conflict during the construction phase because the role of the construction supervisor and the villagers was not in the form of leader-follower—they seemed to be equal partners, who could possibly fight. After reconciliation, trust was revived and it remained stable until the post-construction phase.

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the conclusions and discusses the findings of the study based on the theories and concepts relevant to CSR, social capital development, and social networks. The synthesis of the social capital development model resulting from CSR implementation is also explained. Then the experiences and lessons learned from the fieldwork in the Ban San Din Daeng community and the Ban Klong Rue community are provided. Finally, recommendations for enhancing social capital development and suggestions for further research are offered.

8.1 Conclusions

The present research aimed to study the CSR implementation of EGCO and EGAT in the community hydropower plant construction, to investigate and compare the social capital development process resulting from CSR implementation in the community hydropower plant construction of the two case studies, and to develop a model of social capital development resulting from the CSR implementation.

In order to set a clear research direction, the research questions were determined as follows: 1) what is the CSR implementation process of EGCO and EGAT in the community hydropower plant construction projects?; 2) how does the CSR implementation in the community hydropower plant construction projects affect the community's social capital development process?; 3) what are the differences in the social capital development process of the Ban San Din Daeng community and Ban Klong Rue community?; and 4) what are the characteristics of the model of social capital development resulting from the CSR implementation?

The qualitative research method was employed to examine the social capital development process in the two case studies. The criteria for the selection of the case studies consisted of the following: 1) the communities had to have a power plant with

a total generation capacity of 20-30 kilowatts; 2) the main organizations initiating the project had to support the construction through monetary donations, providing tools and equipment, sending volunteers and representatives, and sharing useful knowledge; 3) the main organizations had to provide the support in all three construction phases: pre-construction, construction, and post-construction; and 4) the villagers in the communities had to participate in all three construction phases.

The present research applied the documentary research and field research methods to collect the data. Considering the document research method, the data were collected from EGCO's and EGAT's papers and reports, the documents about the Ban San Din Daeng community and the Ban Klong Rue community, and other related literature. As for the field research method, the data were collected using in-depth interviews with the key informants, namely the staff members of the two main organizations, the community leaders, the villagers, and other network partners. Regarding the data analysis, the historical approach was applied to analyze the social capital development during the pre-construction phase, construction phase, and post-construction phase. The comparative method was used to compare the social capital development process in the Ban San Din Daeng community and the Ban Klong Rue community. The analysis results were used to synthesize the model of social capital development resulting from the CSR implementation.

Considering EGCO's and EGAT's CSR implementation process in the community hydropower plant construction, the results showed that the Ban San Din Daeng hydropower plant construction project was established under the One Forest, One Energy Resource campaign, which was one of EGCO's CSR activities. EGCO supported the community with a 4 million baht budget, covering the cost of the construction materials, equipment, and labor, and also sent staff members to be the construction supervisor. During the pre-construction phase (from 2009 to February 2010), EGCO surveyed the community needs, signed an MOU with the Department of Alternative Energy Development and Efficiency (DEDE), conducted the site survey to study the feasibility of the project, prepared the preliminary and actual construction drawings, developed the construction plan, estimated the construction cost, and allocated the budget. During the construction phase (from March to May 2010), EGCO carried out the weir construction, water pipeline installation, power

plant building construction, power generator installation, transmission line installation, and lighting system installation. During the post-construction phase (from June 2010 onwards), EGCO provided advice on the hydropower plant management and monitored the operations of the hydropower plant every month.

As for the Ban Klong Rue community, EGAT supported a 10 million baht budget, provided the power generator researched and developed by King Mongkut's University of Technology Thonburi with EGAT's financial aid, and sent an experienced staff member to be the construction supervisor and to work with the villagers and other network partners. During the pre-construction phase (from 2008 to 2009), EGAT built a network with the intermediary organization, sought potential communities through the pilot project and the electricity knowledge management project, carried out local technician training, and conducted a site survey. After the Ban Klong Rue community was found to have enough potential, EGAT carried out the actual site survey and developed a blueprint of the hydropower plant for the community. During the construction phase (from 2010 to 2011), EGAT allocated the budget, sent a staff member to supervise the foundation-post construction and the high-pressure polyethylene pipeline installation, provided the power generator, built a concrete foundation for the power generator, and carried out the installation of the power poles, the transmission line, and the lighting system. During the post-construction phase (from 2012 onwards), EGAT provided advice on the hydropower plant management, publicized the Ban Klong Rue community hydropower plant, encouraged the community to join competitions until receiving national and international awards, and provided guidance on how to utilize electricity for occupational development.

Considering the social capital development process resulting from the CSR implementation in the dimension of networks, the results suggested that during the pre-construction phase the Ban San Din Daeng community's network consisted of 4 partners: the community, the Thai Rak Pa Foundation, EGCO, and DEDE. Regarding the pattern of the network, all network partners had relationships with each other, resulting in an exchange and accumulation of network resources, namely money, labor, information, facilitation, and construction drawing. During the construction phase, the Ban San Din Daeng community's network had two new partners: Maejo

University and Chiang Mai University. In terms of the pattern of the network, only some network partners had relationships with each other. DEDE only had a relationships with EGCO. This indicated that some partners started to leave the network because their mission was completed. During this period, the network resources (knowledge) increased because there were more network partners (educational institutions). During the post-construction phase, the number of network partners decreased because the mission was already completed. The remaining partners, which were the community, the Thai Rak Pa Foundation, and EGCO, had a strong bond because they had belonged to the network since the beginning. The pattern of the network during this period was the same as that during the pre-construction phase. All network partners had relationships with each other. There was an exchange of information and network resources such as money, labor, and knowledge among the network partners. The strategies used to build the Ban San Din Daeng community's network comprised the following: 1) MOU signing between DEDE and EGCO and 2) trust building through informal persuasion. Other network partners were sincerely persuaded to join the community network and were informed about the objectives of the project without a written invitation.

Concerning the social capital development process of the Ban San Din Daeng community in the dimension of norms, the results suggested that during the pre-construction phase the cooperation norms were defined so that the community had to conserve the watershed forest and the hydropower plant construction and so that it would not negatively affect the community. The norms were determined based on the roles and responsibilities of each network partner. There was a socialization process encouraging all network partners to adhere to the norms. A meeting was held to inform the partners about their roles and responsibilities and the penalties for not complying with the norms. For instance, if the villagers did not conserve the watershed forest, the hydropower plant construction needed to be stopped and if the construction caused a negative effect on the community, the hydropower plant was not allowed to be constructed. During the construction phase, the norms were also defined based on the roles and responsibilities of the network partners, for example, EGCO had to be the supervisor and the villagers needed to participate in the construction as paid laborers. The socialization process was conducted in the form of

meetings. EGAT's construction supervisor held an informal meeting after work every day so as to summarize the progress and to explain the operating procedure for the next day. The network norms seemed to have an effect on the community norms. As the community was determined to participate in the construction, all of the families in the community had to send their family members to be laborers. A community meeting was held to explain the participation details and the penalties; for example, if villagers did not participate in the construction, their family was not allowed to use the electricity. A teacher from the learning center was responsible for the labor management. He had to match each laborer with a suitable job, prepared a list of day laborers, and paid the wages to the laborers. During the post-construction phase, the network partners had the agreement that the villagers had to manage the hydropower plant on their own and the other partners were helpers and consultants. Thus, the villagers accordingly determined the community norms for the hydropower plant management, established a community committee, and settled agreements on the electricity billing and the use of electrical equipment. Compliance with the agreements was monitored by the community committee.

As for the social capital development process of the Ban San Din Daeng community in the dimension of trust, the results suggested that the trust among the network partners was stable from the beginning until the end of the project. During the pre-construction phase, the Thai Rak Pa Foundation, which had continually conducted the Thai Rak Pa Village project since 2007, had a good relationship with the community and had an affiliate relationship with EGAT. The previous relationship helped to foster trust among the network partners. During the construction phase, the project manager, who was one of EGAT's highly-experienced engineers, worked with the villagers every day and also played an important role in leading the construction. The community leader and the villagers had no engineering knowledge so they acted as followers and provided support in terms of labor and opinions. The teacher had a role in dealing with the labor management. All of this helped to create trust and enabled the network partners to smoothly work together according to the agreements without conflicts. During the post-construction phase, the project manager from EGAT and the project leader from the Thai Rak Pa Foundation still obtained trust from the villagers because they visited the community

every month to monitor the operation of the hydropower plant and to give useful advice when there was a problem with the hydropower plant. Therefore, the network trust in the Ban San Din Daeng community was always stable.

Considering the social capital development process in the Ban Klong Rue community resulting from EGAT's CSR implementation in the dimension of networks, the results suggested that the trust among the network partners was dynamic. During the pre-construction phase, the network consisted of 5 partners: the community, EGAT, Thammasat University, Prince of Songkla University, and Life University. In terms of the pattern of the network, all partners had relationships with each other, which resulted in an exchange of network resources, namely money, labor, information, knowledge, a blueprint of the hydropower plant, and facilitation. During the construction phase, there were 4 more partners joining the network: King Mongkut's University of Technology Thonburi, Phato Watershed Conservation and Management Center, Phato Sub-District Administrative Organization, and the Ban Sai Khao community. The pattern of the network was still the same. All partners had good relationships with each other. The increase in network partners resulted in more accumulated resources, including vehicle and equipment. During the post-construction phase, some partners left the network because their mission was completed. The 4 remaining partners consisted of the community, EGAT, Thammasat University, and King Mongkut's University of Technology Thonburi. The first 3 partners belonged to the network from the beginning, while the fourth one joined the network later. Although the number of partner decreased, the pattern of the network was still the same. All network partners had strong relationships with each other. The network resources were accumulated in the form of labor, knowledge, information, and facilitation. The strategies used to build the Ban Klong Rue community's network comprised the following: 1) MOU signing between EGAT and Thammasat University and 2) trust building through informal persuasion. The network partners with a common goal towards the community development were persuaded to join the network.

Regarding the social capital development process of the Ban Klong Rue community in the dimension of norms, the results suggested that the participation norms were determined among the network partners and among the community

members. During the pre-construction phase, EGAT provided basic information to the community. All partners collaboratively provided knowledge, sought the community's potential, and developed a blueprint of the hydropower plant for the community. A meeting was held to determine and explain the network norms. Then the norms were implemented. Thammasat University was the intermediary organization coordinating with all partners. The community leaders clarified the details to the villagers. An electrical technician training was conducted to educate the villagers on electricity and the possibility of the hydropower plant construction. This helped to motivate the villagers to comply with the norms. During the construction phase, a meeting was held to define the mutual agreements and to provide practical guidelines for all network partners. EGAT provided funding, equipment, knowledge, and personnel to supervise the construction. The villagers had to work as laborers without pay. Other partners provided support in other areas such as labor and facilitation. As the villagers in the Ban Klong Rue community had to work without pay, they mutually agreed that each family needed to participate in the construction not less than 80% of the total working days. A list of laborers and the participation tracking record was developed and monitored. The penalties for noncompliance were also determined. If the villagers did not follow the rules, their families were not allowed to use the electricity. In addition, there was an informal penalty for those that failed to participate in the construction. They seemed to be ignored and could not join the conversations because most villagers tended to talk about the hydropower plant construction. Therefore, the villagers, who could not participate in the construction, had to hire other laborers to work on their behalf so as to comply with the agreements. During the post-construction phase, a meeting was also held to define the network norms and agreements—that the community had to manage the hydropower plant on their own. The other partners provided guidance and support if there were problems with the hydropower plant management. As the villagers needed to manage the hydropower plant, the community norms were accordingly determined. A power plant management committee was established to define the role and responsibility of each villager in the hydropower plant management. The types of electrical equipment that could be used and the electricity billing agreements were also determined. The obtained money would be used for the hydropower plant management. The payment was set to be made during the village meeting every month.

As for the social capital development process of the Ban Klong Rue community in the dimension of trust, the results suggested that the trust among the network partners was dynamic. During the pre-construction phase, there was no trust in the network. The villagers did not think that EGAT was sincere in helping them because they had a negative experience in collaborating with other organizations—they only obtained knowledge but did not achieve tangible results. Moreover, a hydropower plant was considered an innovation in the community. The villagers had no engineering knowledge so they did not believe that it could possibly be built. However, the community leader had visited the hydropower plant at Mae Kampong and returned to build a micro hydropower plant in the community in order to convince the villagers that water from the mountain could really generate electricity. This made the villagers join the network. Interactions between the partners periodically occurred based on the mission. During the construction phase, the community leader united the villagers to participate in the construction of the weir, the sludge filtration plant, and the power plant building. This phenomenon made EGAT believe in the community's strength and willingness to build a hydropower plant. Therefore, EGAT decided to support the project and appointed a construction supervisor to interact with the villagers and other network partners every day. Meanwhile, the villagers also recognized that the construction supervisor had a willingness to help the community in many aspects, such as negotiating prices with the water pipeline manufacturer and the power pole manufacturer in order to reduce costs. However, when working together, conflicts arose from the mismatched opinions between the construction supervisor and the villagers. Mr. Jitti Mongkolchaiaranya, a representative leader from Thammasat University, played a key role in solving the conflict, maintaining a good relationship, and reviving the trust among the network partners with informal meetings, honest talk, and logical explanations. He previously lent money to the community so that the villagers could pay the materials bill and proceed with the construction. This helped to promote his creditability and made the villagers respect and trust him. His role as an intermediary was effectively fulfilled. During the post-construction phase, the network partners periodically interacted with each other according to their roles, such as collaborating in improving the hydropower plant and encouraging the villagers to utilize electricity

in occupational development. The network trust was stable. When there was a mission to do something together, all of the partners still participated and productively fulfilled their roles.

According to the results of the study, it can be summarized that there were 4 factors that could cause conflicts and lead to distrust among the network partners. One, prior experiences: if the villagers had prior negative experience with organizations conducting CSR activities in the community, they tended to distrust other organizations as well (distrust is likely to occur in the beginning of a collaboration). Two, difficulty of the task: technical and engineering tasks require specific knowledge and have a high chance to cause problems that can lead to conflicts. Three, knowledge of network partners: if their knowledge base was different, a conflict may have occurred, especially when they needed to cooperate in solving problems together. They were likely to believe in their own knowledge and to reject the knowledge of the other party, which would lead to work conflicts. Four, the role and status of the partner: if the network partners had an equal role and status, a conflict could have resulted more easily because each party had the right to express his or her opinions freely and equally. On the other hand, if network partners had an unequal role and status, the partners with higher leadership could persuade the other party to agree with them, resulting in no conflict. Five, the behavior of the partner: if all network partners stuck to the role and position in their organization, they tried to overcome each other with no compromise, eventually causing conflicts.

The similarities and differences in the social capital development process resulting from the CSR implementation in the Ban San Din Daeng and Ban Klong Rue community are presented as follows.

1) Social capital development in the dimension of networks: it was found that both case studies exhibited diverse network partners from various sectors. The intermediary organization in the Ban San Din Daeng community was the Thai Rak Pa Foundation, which had worked with the community before and could smoothly coordinate with the villagers. Thammasat University, a credible educational institution with knowledge and quality personnel in the field of community development, served as the intermediary organization in the Ban Klong Rue community. The Ban Klong Rue community was found to have more network

partners than the Ban San Din Daeng community, which contributed to better resource exchanges and accumulation. In terms of community participation, the villagers in the Ban Klong Rue community participated in the network more than the villagers in the Ban San Din Daeng community. They proactively conducted some activities on their own, such as raising funds within the community to build the weir, the power plant building, and the sludge filtration plant. They also worked at the construction site without pay while the villagers in the Ban San Din Daeng community received money from participating in the construction. The difference in participation seemed to result from the history and cultures of the two communities. The villagers in Ban San Din Daeng were mostly Karen people living in Doi Inthanon with a simple lifestyle. They had a close relationship with nature and the forest and were familiar with living without electricity. Although electricity could make their lives more comfortable, they did not strongly need it. On the other hand, the villagers in the Ban Klong Rue community did not originally inhabit this area. They were a combination of people that used to live in urban areas of different provinces and then migrated to this community. Thus, having no access to electricity was considered a barrier to life. This was the reason why the two communities had different levels of participation. EGCO proposed to build a hydropower plant in the Ban San Din Daeng community while the Ban Klong Rue community had to make every effort to have access to electricity, including filing a request to several local government agencies and asking for support from various foundations. The Ban Klong Rue community had been supported by the government to install a solar cell but it could not generate electricity anymore. In order to make the hydropower plant construction project happen, the community had to proactively make EGAT recognize its potential and support the construction. As for the network building strategy, both case studies applied the mixed method, using MOU signing and trust building. In the Ban San Din Daeng network, EGCO signed the MOU with DEDE while the other partners joined the network because of trust. In the Ban Klong Rue network, EGAT signed an MOU with Thammasat University in terms of research funding, while the other partners joined the network because of trust. The mixed method made the network become stable and finally achieve the mission. The two case studies were found to have similar patterns of networks, that is, the community had relationships with all network partners and all partners also had relationships with each other. For the Ban

San Din Daeng community, during the construction phase there was one partner that had no relationship with the community, although it still had a relationship with another partner. This phenomenon did not significantly affect the stability of the network because that partner had already completed its mission.

2) Social capital development in the dimension of norms: it was found that during the pre-construction, construction, and post-construction phases the network norms were determined based on the role and responsibility of each network partner, which consequently affected the norms of the two communities. In terms of the socialization process, both case studies implemented the socialization process through a network meeting. The mutual agreements and participation guidelines were determined and explained in the meeting. Then the leader of each network transferred the details to the involved persons. The compliance with the agreements was regularly monitored. In the Ban San Din Daeng community, there were network penalties for noncompliance; for example, if the community did not conserve the watershed forest, the hydropower plant construction needed to be stopped and if the construction caused a negative effect on the community, the hydropower plant was not allowed to be constructed. However, there was no clear network penalty in the Ban Klong Rue community. In the Ban San Din Daeng community, the villagers were told to participate in the construction and the participation of each villager was monitored by the teacher from the learning center. For the Ban Klong Rue community, the community leader monitored all of the participation. Both communities defined the community penalty—that the villagers that did not comply with the agreements were not allowed to use the electricity. In the Ban Klong Rue community, there was an informal penalty for those that failed to participate in the construction. They seemed to be ignored and could not join the conversations because most villagers tended to talk about the hydropower plant construction. Therefore, the villagers, who could not participate in the construction, had to hire other laborers to work on their behalf so as to comply with the agreements.

The role of the leader of each partner in the case studies was similar. The leader of each partner attended the meeting to define the agreements and then clarified them to the persons involved. In the Ban Klong Rue community, the community leader monitored whether the villagers complied with the norms.

3) Social capital development in the dimension of trust: it was found that there were differences in network trust among the two case studies. As for the Ban San Din Daeng community, the trust among the network partners started to occur since the pre-construction phase and remained stable until the construction was completed. On the other hand, the trust among the network partners in the Ban Klong Rue community was dynamic. During the pre-construction phase, there was no trust. The trust started to occur during the construction of the foundation post and the power generator foundation. The trust decreased when there was a conflict. Then the trust was revived and remained stable until the post-construction phase. The differences in trust of the two case studies resulted from 4 main factors. One, prior experience: during the pre-construction phase, the villagers in Ban San Din Daeng community had a prior good experience with the network partner so they trusted in each other. The villagers in Ban Klong Rue community had a prior negative experience from working with other organizations in the community so they tended to distrust EGAT and thought that they would not gain tangible benefits. Two, the role and status of each network partner: EGCO acted as a leader while the villagers in the Ban San Din Daeng community acted as a supporter. The villagers received money from participation so they followed the leader, resulting in no conflict. In the case of the Ban Kling Rue community, the villagers had to work without pay so EGAT and the villagers had equal status. When they had different opinions, they argued with each other, leading to conflicts. Three, difficulty of the task: the construction in the Ban San Din Daeng community was not complicated. They did not need to build a pipeline foundation because the pipeline was buried underground. The construction in the Ban Klong Rue was more complicated; the pipeline had to be installed from the dam on a steep mountain down to the power plant, and they needed to build a foundation so as to securely support the pipeline. This complicated task caused work conflicts. The villagers wanted to finish the work quickly while the construction supervisor from EGAT wanted quality work at the same standard as working with contractors. Four, the behavior of the network partner: the construction supervisor from EGCO was friendly and well-accepted by the villagers while the construction supervisor from EGAT acted as a contractor. He strictly followed the construction plan and did not accept substandard work. The villagers thought they were being

bullied so he received distrust from the villagers during the beginning of the collaboration.

Considering the leadership role, the construction supervisor from EGCO, who worked in the Ban San Din Daeng community, had strong leadership skills. After work, he held an informal meeting to summarize the daily progress, showed photos taken during the construction, and explained the next task, which helped to confirm compliance with the agreements. As for the Ban Klong Rue community, the community leader was the center of the community; he convinced the villagers to believe that water could generate electricity. As a result, the villagers started to believe in and support the construction of the hydropower plant. In terms of conflict management, the representative leader from Thammasat University played a key role in uniting all network partners and solving the conflict between EGAT and the villagers before distrust developed.

8.2 Discussion

The findings regarding corporate social responsibility, social capital, social network, and the complexity of working with network partners are discussed based on the relevant international concepts and theories in order to find the differences and similarities beneficial to academic knowledge development.

8.2.1 Corporate Social Responsibility

According to EGCO's and EGAT's CSR implementation in the hydropower plant construction in the Ban San Din Daeng and the Ban Klong Rue community, it was found that EGCO supported a 4 million baht budget and sent a staff member to serve as the project manager and the construction supervisor until the construction was completed. EGAT supported a 10 million baht budget, provided a power generator, and sent a staff member to manage and supervise the construction as well. The two hydropower plants had an approximate generation capacity of 20 kilowatts, which was sufficient for the agreed amount of electricity consumption. In terms of the construction budget, EGAT provided a higher budget than EGCO because there were 100 households living in the Ban Klong Rue community while there were only 40

households in the Ban San Din Daeng community. Moreover, the villagers in the Ban San Din Daeng community were concentrated in one central area while the villagers in the Ban Klong Rue community lived in a scattered settlement with the farthest distance of 15 kilometers. The hydropower plant in the Ban Klong Rue community was located on the mountain peak close to Haew Ta Jan waterfall. In order to cover all households in the transmission system, EGAT needed to provide a higher budget for the transmission line installation.

Considering the forms of CSR implementation, both organizations supported a budget and sent staff members to take part in the hydropower plant construction. When comparing to Carroll's Pyramid of CSR stating that CSR needed to start at the organizational level and then develop to legal, ethical, and charitable levels (Carroll, 1979), as shown in Figure 3.1, the CSR implementation of EGCO and EGAT was considered to be a philanthropic responsibility, which was the highest level of CSR. This was because EGCO and EGAT supported the community hydropower plant construction without expecting anything in return. Neither community was located within a 5 kilometer radius so they were not direct organizational stakeholders. EGCO and EGAT acted as a good citizen, using the CSR activities to promote social capital development, which finally made the villagers have access to electricity and achieve a better quality of life.

Regarding the objectives of CSR implementation, both organizations not only aimed at business efficiency and effectiveness but also placed importance on the society. They already specified this in their organizational vision. EGCO had a clear vision to be “a major sustainable Thai power company doing business in Thailand and the Asia Pacific region, with full commitment to environmental protection and social development support.” EGAT set an organizational goal to become “one of the trustworthy and national-pride organizations.” In order to fulfill their vision and goal, both organizations demonstrated their attention and concern for the society through CSR implementation. They initiated a community hydropower plant construction project to help remote communities with no access to electricity. They provided a budget, supported equipment, and sent staff members with public consciousness to participate in the project. Their CSR implementation is consistent with Visser’s CSR model, which focuses on the needs of stakeholders and organizational purposes, as shown in Table 3.1.

Thus, initiating social activities or projects is considered a form of corporate social responsibility that an organization can implement in the communities. Those communities can be directly or indirectly affected or unaffected by CSR implementation. Finally, not only will the communities receive benefits but the organization will also be regarded as a socially-responsible one.

8.2.2 Social Capital

The main purpose of a hydropower plant construction project was to provide remote communities with access to electricity and a better quality of life. The key success driver of the construction project was the network. In the process of seeking communities with sufficient potential, network partners were needed to specify which community was appropriate. In the case of EGCO and EGAT, the Thai Rak Pa Foundation helped inform EGCO that the Ban San Din Daeng was an appropriate community because it had worked with this community before, whereas Thammasat University conducted a survey and found that the Ban Klong Rue community had high potential. After that, participation norms were determined based on role and responsibility of each network partner. During this period, there might have been trust or distrust among the network partners depending on their prior relationships.

During the construction phase, the social capital was dynamic. In the dimension of networks, it was found that the number of partners had increased. This was because there were more tasks during this period, and the network needed to acquire new partners so as to obtain sufficient network resources to complete all of the tasks. When there were more tasks, the network needed to determine the participation norms accordingly. The trust among the network partners was also dynamic. In the first case, the trust regressed due to work conflicts but it was finally revived. In the second case, the trust was stable. During the post-construction phase, the number of network partners decreased to be the same as that during the pre-construction phase. The network norms were also decreased according to the number of tasks. However, there were more community norms during this period because the villagers in the community needed to manage the hydropower plant on their own. The trust among the network partners remained stable due to the network unity. The hydropower plant could be completely constructed and supply electricity to the

community. Thus, it can be concluded that the CSR implementation was able to contribute to social capital development in three aspects—network, norms, and trust. The arisen social capital enabled the network to achieve its goal in supplying electricity to the community.

According to Putnam's social capital theory, which was formed in the western context, social capital is associated with building networks, norms, and trust that can facilitate cooperation within and between groups and lead to work efficiency and achievement. When comparing this theory with the two case studies in the Thai context, it was found that the 3 components of social capital—networks, norms, and trust—actually occurred in the two case studies. However, trust was the key factor that could regress the social capital because it had an effect on the integrity of the network. Some partners left the network because they had already completed their mission, which did not affect work efficiency or effectiveness. It the network partners had strength and strictly complied with the participation norms until trust was formed, it would actually result in work efficiency and effectiveness. The results of this research thus can be used to confirm and support the social capital concept of Putnam. The social capital assumption of Putnam can be used not only to describe western phenomena but also to explain situations in the Thai context. Actually, Thailand has a tradition called "Long Khaek," which is similar to the above phenomenon. In the past, it was impossible for one family that owned a large piece of land to do all of the work in the field by themselves. However, they did not need to hire laborers; they just needed to inform their neighbors about their harvest day and let the news spread by word of mouth. When the harvest day arrived, their friends and neighbors would gather to help them with the harvest. Men normally helped in harvesting while women and children helped to prepare food. The act of helping their farmer friends in the field was a common practice, which was implemented without written contract. It created trust and bonded the people in the community. This phenomenon has taken place in Thai society for a long time but it has never been called social capital, as defined by western scholars.

Putnam's theory however does not clearly explain the structural relationship of the 3 components or the evolution of the components of the social capital. According to the two case studies, it was found that a social capital structure began to form with

the networks. After that, norms and trust would be gradually developed. Then there would be interactions and integrations among the 3 components, resulting in efficiency and effectiveness. It is difficult to create trust because it is dynamic and takes time to prove. When network partners have conflicts, it can affect the components of the network and the relationships between the network partners. Sometimes the partners might have to leave the network.

The social capital concept mentioned above focuses on the structural relationship of the social capital components. Considering the social capital development in the aspect of network resources, the results from the two case studies suggested that the network partners possessed different resources. EGCO had money, personnel, and knowledge but lacked laborers, whereas the Ban San Din Daeng community had laborers but lacked money and engineering knowledge for hydropower plant construction. The Thai Rak Pa Foundation had personnel with ability in community development and coordination but lacked budget and power plant knowledge. As for the Ban Klong Rue network, EGAT had budget, personnel, and power plant knowledge but lacked community development knowledge and community information. Thammasat University had community development knowledge and the ability to seek potential communities. The Ban Klong Rue community had laborers. King Mongkut's University of Technology Thonburi had specialists in mechanical engineering, the ability to produce a power generator, and knowledge-transferring skills. All of this shows that the ability of each partner contributes to an accumulation of resources in the community network, such as money, equipment, and machinery, which are economic capital, and knowledge, experience, and expertise, which are human capital, and facilitation.

According to the social capital concept of Bolino, Turnley, and Bloodgood, which focuses on network resources, social capital is a resource embedded in, received through, and utilized by social networks. Social networks can be individuals, groups of individuals, or ethnic groups that have relationships with each other (Bolino, Turnley, & Bloodgood, 2002). Bourdieu also had the assumption regarding social capital that individuals can receive tangible and intangible resources through social interactions and social relationships with others (Bourdieu, 1986). When comparing these concepts with the findings of this research, it was found that during

the hydropower plant construction the network partners actually possessed the resources. The main organization initiating the project had money, equipment, personnel, and engineering knowledge. The community had laborers, community wisdom, and local knowledge. Other network partners had knowledge and ability in community development, coordination, and facilitation. Those resources were considered necessary network resources that could be exchanged among the network partners in order to complete the construction of the hydropower plant. Therefore, the findings of this study are consistent and can be used to support the social capital assumptions focusing on network resources of Bourdieu and Bolino, Turnley and Bloodgood. Moreover, the findings indicated that economic capital and human capital were accumulated in the hydropower plant construction network and each network partner could utilize them. This is consistent with Bolino, Turnley, and Bloodgood's suggestion that social capital is comprised of resources embedded in social networks. Therefore, it can be inferred that economic capital and human capital are social capital. On the other hand, Bourdieu clearly classified capital into distinct groups, including social capital, economic capital referring to money, property, and assets with financial value, and cultural capital referring to ways of living and habits derived from socialization (Bourdieu, 1986).

From the study of social capital in the aspect of the structural relationship and network resources mentioned above, it can be summarized that the findings from the two case studies in the Thai context are consistent and can be used to support the social capital theories proposed by western scholars, including the social capital concept in the aspect of the structural relationship of Putnam and the social capital theory in the aspect of network resources of Bolino, Turnley, and Bloodgood. The findings concerning the social capital development process resulting from CSR implementation also indicated that the social capital structure begins to form with networks, followed by norms and trust. After that, there will be interactions and integrations between the 3 components, which contributes to work efficiency and effectiveness.

8.2.3 Social Networks

According to the results of the social capital development process in the dimension of networks, it was found that the Ban San Din Daeng and Ban Klong Rue community built a network at the macro level. The network partners or social actors consisted of the communities, public and private organizations, and NGOs. Once the network was built, the structural relationship occurred. The community was the center of the network because it had relationships with all network partners. As the hydropower plant was constructed in the community, all of the partners needed to interact with the community all the time. The community was like a house foundation, while the partners were other house components such as the pillars, beams, the lintel, the floor, and rafters. The house foundation was an important structure that needed to support the weight of the other components. The relationships between the network partners contributed to the achievement of the construction project. Each network partner had significant resources such as money, machinery, equipment, knowledge, information, and facilitation. The network resources were completely accumulated. Although the network partners had some conflicts during the hydropower plant construction, the conflicts were consequently solved. Therefore, there was no network partner that left the network before completing their mission. This was considered beneficial because the network might inevitably lose some resources when some partners left. Once the network could not find alternative resources from the existing partners or new partners, it might cause problems and obstacles in the hydropower plant construction and management.

The above findings were found to be consistent with the social networks theory, stating that the strength of the relationship depends on the time, trust, and cooperative exchanges between the groups in the social networks (Miles, 2012, p. 298). Social interactions occurred in the two case studies. The strength of the Ban San Din Daeng community resulted from prior good experience, trust, and exchange of collaboration until the construction was completed. As for the Ban Klong Rue community, the network partners had no prior relationship so there was a barrier in the beginning of the construction. When working together for quite a while, trust was developed, resulting in a stronger relationship. Therefore, time, trust, and exchange have an impact on the strength of the network relationship. The results of the present research can be used to support this assumption.

In addition, it was found that the relationships between the network partners in the two case studies were determined by the role of each partner in the network. EGCO supported the budget and appointed its staff member to be the construction supervisor while the villagers worked as the laborers. When they worked together, the network relationship occurred. This phenomenon is consistent with the social network assumption, suggesting that the relationship between the social actors will link or separate the social actors (Killduff & Brass, 2010). In terms of the affinity between the network partners, the results revealed the network partners could be divided into two groups: 1) partners that had relationships with other partners in all 3 phases of the construction, and 2) partners that had relationships with other partners during some phases of the construction and left the network after their mission was completed. In the Ban San Din Daeng network, the community, EGCO, and the Thai Rak Pa Foundation were in the first group of partners, while the Department of Alternative Energy Development and Efficiency, Maejo University, and Chiang Mai University were in the second group of partners. For the Ban Klong Rue network, the community, EGAT, Thammasat University were in the first group of partners, whereas Prince of Songkla University, Life University, the Ban Sai Khao community, and King Mongkut's University of Technology Thonburi were in the second group of partners. This phenomenon is not consistent with the social network assumption of Kilduff and Brass, which stated that social actors tend to be in the network and expand the long-term relationship (Kilduff and Brass, 2010). The findings revealed that not all network partners had a long-term relationship. The network partners that maintained such a relationship with each other were the partners that belonged to the network from the beginning, including the community, the organization implementing CSR activities, and the intermediary organization. Other partners related to the network based on their mission were found to not expand the relationship.

8.2.4 Complexity of Partner Collaboration

The network partners in both case studies were well aware that the main objective of the collaboration was to construct the hydropower plant for the community. All partners needed to play their role according to the participation agreements. Each partner had sub-objectives to fulfill. When that partner achieved its

sub-objectives, the other partners would proceed to fulfill their sub-objectives in a continuous manner. Once all sub-objectives were fulfilled, the main objective would be ultimately achieved. However, if some partners did not achieve their sub-objectives, it would affect the operations of other partners. The network partners in the two case studies were found to have successfully achieved all of their tasks because the partners with the appropriate ability and necessary resources were selected to join the network. Each network partner also had the readiness to participate in the project. As for the Ban San Din Daeng network, DEDE was appointed to conduct a site survey and to study the feasibility of the project. It was able to quickly accomplish all of its tasks, which enabled EGCO to obtain the needed information and to begin the next task immediately. EGCO appointed a staff member to supervise only this project from the beginning until the end without having to do other work. This helped to complete the Ban San Din Daeng hydropower plant construction in a smooth way. In terms of the Ban Klong Rue network, EGAT developed and delivered a blueprint of the hydropower plant to the community and the community could immediately use it as the guideline for the construction of the power plant building, the weir, and the sludge filtration plant. EGAT's staff members were also appointed to work in the Ban Klong Rue community without having to take care of other projects. The collaboration among network the partners contributed to the achievement of the sub-objectives and the main objective. From the results of this research, it can be summarized that all of the network partners had the ability to fulfill their sub-objectives, which resulted in the achievement of the main objective.

The findings of this research are different from the findings of Pressman and Wildavsky, who conducted a case study research on a project called Economic Development Agency (EDA), which was established to stimulate the economy in Oakland, California, and to create jobs for the unemployed minority. The EAD project consisted of 4 subprojects: aircraft parking and infrastructure, sea freight terminal and entrance gate, 30-acre industrial area, and main stadium entrance. During the beginning of the project, all of the involved parties agreed with the policies and objectives of the project. However, during the construction project a lot of problems occurred and the project was delayed due to many factors, including the partners having mismatched opinions about the agreements and the partner needing to

complete other projects first. This indicated that although all of the partners agreed with the main objectives, they might not have agreed with some other partners. The partners also lacked the resources and authority to enforce cooperation.

Another important cause of the failure of this project was the decision-making process. In the collaboration project, there were multiple parties involved in this process. If the decision makers only thought of their own needs and ignored other parties' objectives, the common goal could not be achieved. Once the decision resulted in an unclear conclusion or disagreements, it would take time to find a mutual conclusion, leading to the delay (Pressman and Wildavsky, 1973).

The decision-making process in the EDA project was different from that in the Ban San Din Daeng community. As for the Ban San Din Daeng network, all of the important decisions and agreements had been made from the beginning. During the construction phase, the project manager made all minor decisions. Other partners tended to agree, respect, and support him because he was knowledgeable and had high leadership skills. This enabled the Ban San Din Daeng hydropower plant construction project to quickly proceed. In terms of the Ban Klong Rue network, the construction policy had not been determined since the beginning. The work was done step by step. There were many important decisions to make, which resulted in the delay during the construction phase. After EGAT delivered the blueprint to the community, the senior executives of EGAT did not decide how to support the Ban Klong Rue community so its staff members could not take any action at the worksite. The villagers needed to carry out some work in advance. However, after the senior executives took some time to approve the project, the personnel and resources were immediately sent to the Ban Klong Rue community. Based on the results of the two case studies in Thailand and the case study in the US, it was found that the complexity of partner collaboration had an effect on the effectiveness of the project. In order to achieve the main objective, all sub-objectives of each partner had to be fulfilled first. All partners needed to be ready and agree with the main objective and the sub-objectives of other partners so that the project could be achieved. The decision-making process was also important—it was better to have a few major decision-making processes in the project. Quick decision-making ability was required in order to make the collaboration achieve efficiency and effectiveness.

8.3 Social Capital Development Model Synthesis

Considering the model synthesis, the findings on the CSR implementation from chapter 5 and the analysis results from chapter 6 were used to develop the model of social capital development resulting from CSR implementation shown in Figure 8.1. In general, since organizations have social responsibility towards stakeholders, building a power plant for communities is considered one of the CSR implementations that aims at the betterment of communities. Electricity enabled the people in the communities to have access to useful knowledge and information and to earn additional income from working at night.

CSR is generally implemented through scholarships provision, occupational promotion, and knowledge-sharing in the communities, which are their stakeholders and are located near the organizational operation sites. However, a hydropower plant needs to use natural water as a fuel source and water resources are usually in remote areas, so it is difficult to identify which community has enough potential and is appropriate for building a power plant in.

In terms of the capacity of organizations propelling the construction of a power plant, each organization has different levels of capacity and resources. Some organizations may have stable financial status to support a budget but lack knowledge and sufficient personnel. There are many organizations wanting to support a hydro power plant construction. Some of them have money but still lack experienced personnel and information about communities with enough potential for such a construction. It is difficult work to conduct a survey and to seek information themselves so many organizations need to change their direction and implement their CSR in other forms of activities.

Thus, organizations willing to build a community hydro power plant need to begin by finding a partner responsible for seeking communities with appropriate potential and acting as an intermediary between the organization and the community. Intermediaries should specialize in community development, potential community selection, and community relationship development. It will be an advantage if they have experience in conducting community activities, especially in the area where the power plant will be built in, because they can share insightful information. Intermediaries with a good image help to ensure the reliability of CSR implementation.

Intermediary organizations should be educational institutes or foundations because educational institutes have capable personnel with credibility, knowledge, and experience in community development. When carrying out a community survey, scholars from educational institutes will be respected and they will make the process of information gathering and building awareness of the power plant run smoothly. In terms of environmental and community development foundations, they hold information about the communities and have a network to exchange information. Foundations tend to have knowledgeable staff members with experience in cooperating with communities. Having a foundation as an intermediary organization will make a project become more credible. If that foundation used to work with the target community, it will be beneficial and conducive to cooperation. Letting intermediary organizations seek information and build a relationship with communities before a project begins is considered a community-led approach

The essential factors for appropriate communities are comprised of the following: 1) the physical factor, which focuses on an area with rivers or waterfalls nearby; 2) the technical factor, which takes account of a sufficient amount of water in potential water resources; and 3) the community factor, which places importance on the strength and unity of the communities. A hydropower plant construction requires the participation of villagers; if the villagers are not united and do not participate in the construction, social capital development will not occur.

After the selection of appropriate communities is completed, the social capital development process will be continuously developed in 3 aspects, which are networks (seeking network partners), norms (determining responsibility), and trust (trust among network partners). Network partners can be organizations in various sectors such as educational institutions and local organizations. A community network should be built to gather, exchange, and accumulate resources within the network. Network resources include money, labor, equipment, machines, vehicles, knowledge, and facilitation, which are necessary for hydropower plant construction and management.

The social capital development in the dimension of responsibility assignment is considered a network norm. Network norms are determined to make a community network, consisting of a community, a main organization, an intermediary organization, and partners, have a clear collaborative direction and to achieve its mission in an

effective way. Mutual agreements between network partners may have an effect on community agreements. Network agreements will define the roles and responsibilities of the villagers in the community. The villagers, as a part of the community network, need to comply with the agreements in order to accomplish their goals.

Trust is vital for collaborative work. It can be built and it can regress. Trust is dynamic. Initially, distrust among network partners can be developed into trust. The factors that can develop and maintain stable trust consist of the following: 1) a network leader that has an important role in coordinating with network partners and community so as to build network relationships, reduce conflicts, and prevent distrust from happening; 2) experience or lessons learned from the past or partners' behaviors acknowledgement; 3) compliance with agreements that can lead to trust among network partners and 4) communication that can cause conflicts. When there are conflicts, trust will be reduced. Senders must select a suitable form of communication that can effectively make receivers understand a message and prevent misunderstanding. For instance, in order to avoid conflict and misunderstanding, a construction supervisor should communicate with villagers using simple language and clear exemplifications. Fifth is informal meetings, which will help to create a friendly working atmosphere and dissolve formal and organizational behaviors. This will enable network partners to share opinions on both work-related and trivial topics. Friendly and informal communication can mitigate conflicts.

Considering the social capital development in the dimension of the network, a community, a main organization initiating a project, and an intermediary form the first ring of the network. Then social capital development in the dimension of network partners, norms, and trust will be formed in an unknown order. In some networks, network partners, norms, and trust are respectively formed. In other networks, trust is initially formed, followed by norms and network partners.

In summary, the model of social capital development in the present study was synthesized from the findings about the CSR implementation and the analysis results of the social capital development process in the two case studies: the Ban San Din Daeng community and the Ban Klong Rue community. The model aims to show the processes of social capital development in the dimension of networks, norms, and trust. It also shows the conditions and supporting factors essential to social capital development and maintenance.

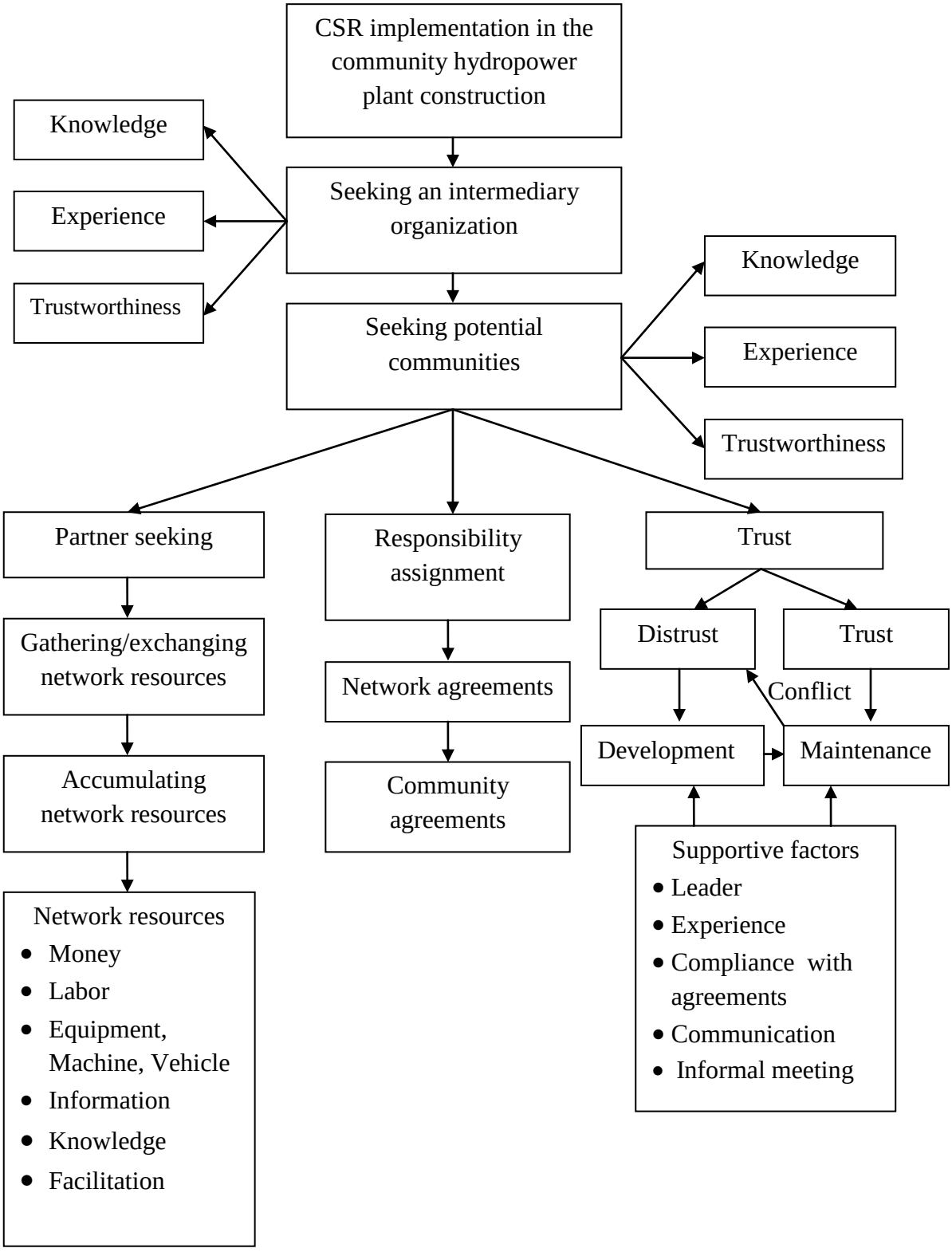

Figure 8.1 Model of Social Capital Development in the Dimension of Networks, Norms, and Trust Resulting from CSR Implementation

8.4 Findings Helpful for Organizational Theory Development

The results of this research present the social capital development process in the Ban San Din Daeng community and the Ban Klong Rue community. They were used to synthesize a model of social capital development resulting from the CSR implementation, as demonstrated earlier. The present research can also create new knowledge on organizational theory. Social capital is important to the community. Strong networks, norms, and trust are conducive to effective collaboration. Therefore, social capital is of the greatest utility to the community members. It enables the community to achieve its objectives. Each community has its own objectives, which is not different from other forms of organizations. Public organizations have an objective to serve and satisfy people in a thorough and equal manner. Private organizations have an objective to seek a profit and benefit shareholders. The objective of the two communities in the case studies was to have access to electricity.

Most organizational theories focus on organizational strategic management and human resource management in the organization. They tend to overlook the importance of the community. Communication also has its objectives to fulfill. It is possible to seek an appropriate community development approach using organizational theories. The community is an important fundamental unit in society. It has been established and integrated from the past and also has a long traditional culture. The community is a source of many public benefits. Thus, it is considered as an organization. The findings of this study revealed a relationship between organizations and communities, which are connected through social capital. The present research inspired the idea that community-based knowledge can be used to create new organizational theory. Organizational scholars may need to include community social capital as one of the objectives of organizational theories in order to develop a new organizational concept focusing on communities. Scholars and researchers should conduct in a practical way in-depth studies and create new theoretical concepts in the future so as to benefit the education industry.

8.5 Lessons Learned from the Fieldwork

8.5.1 Giving What They Want to Receive, Not What They Want to Give

There are many forms of CSR activities. Some of them are predetermined by short-term and some by long-term plans. Some of them are carried out to fulfill the needs of organizational executives and to respond to the government's policies. Some of them are asked to conduct for the benefit of communities, groups, or society. The responsible persons in each organization have the authority to decide whether or not to implement an activity. Building a balance between the organization and stakeholders is important and requires careful consideration. Many organizations do not want to implement CSR in the form of donations but aim to conduct activities beneficial to communities and society as a whole. They also want villagers to participate in community activities so that they can learn for the advancement of themselves and their community in the future.

In this research, the researcher found many interesting interactions of the villagers in the Ban Klong Rue community. First, the villagers collaborated with the organization in doing an activity that did not serve the needs of the villagers so they hesitantly participated in the activity and only gained knowledge in return. They had the attitude that they would not receive tangible results from participation in a community activity. However, the organization organizing that activity seemed to have achieved its target. This showed that there was no balance between the sender and the receiver. When this kind of situation repeatedly occurred, the villagers made an induction that every organization that invited them to participate in the activity would obtain achievement while the community would gain nothing tangible. Secondly, the villagers participated in a project that they needed, which was the hydropower plant construction project. EGAT initiated the project with the support from the network partners, and the villagers were found to be enthusiastic and get involved actively—they used their own resources such as money and labor to start some of the work in advance without waiting for support. Considering the Ban San Din Daeng community, the villagers wanted the hydropower plant. When EGCO set the conditions that the villagers had to conserve the forest and participate in the construction, they were willing to comply with the conditions. Both sender and

receiver were satisfied. Determining activities that could balance the needs of the community and the needs of the organization would make the CSR implementation smoothly proceed with a high chance of success.

8.5.2 Success from Practical Learning

If a CSR activity had never been conducted in the community before, it was considered an innovation. Most of the villagers might have thought that it was impossible and hesitated to participate in the activity. Therefore, it was necessary to show them that the activity could be successfully carried out with the villagers' ability. In the case of the Ban Klong Rue community, before the hydropower plant construction EGAT accompanied the community leader to the community hydropower plants at Mae Moh and Mae Kampong. There, the community leader learned from actual experience that water could be used to produce electricity. When returning to the community, he built a prototype of a micro power plant using agricultural water to generate electricity and informed the villagers that a hydropower plant could be practically built in the community. Then the villagers with no engineering knowledge began to believe that water could generate electricity. The community leader attempted to do it with his own hands and the villagers saw it with their own eyes. The villagers in the Ban San Din Daeng community and Ban Klong Rue community had a chance to learn from working with the construction supervisor to ensure that the maintenance was not difficult. Some repairs could be made by the villagers. The equipment could not be easily damaged if there was good maintenance.

What could contribute to the effectiveness of the CSR activities was motivating the people in the community to get involved. When the villagers saw the chance of success, they would participate in the CSR activities more. They expected that they would be rewarded from the success of the activities and that it would not waste their time and effort. This phenomenon helped to create a community network and to develop trust among the network partners, which were considered the components of social capital development.

8.5.3 Sincerity Is Reciprocated

Based on the two case studies, the researcher learned that there was trust among the network partners, especially trust in the main organization conducting the CSR activity. Considering the organizational background, both EGCO and EGAT had the capacity to construct a hydropower plant on their own without having to rely on resources from other partners. Both organizations could allocate a budget and hire contractors to handle the construction. However, they put an effort into seeking potential partners that had valuable resources for the construction and collaborating with multiple parties with sincerity. They wanted to achieve the common goal without aiming at money.

During the data collection, the researcher learned about the sincerity of the staff members from EGCO and EGAT, who had to leave their families to live in the rural communities with no access to electricity. Particularly, the staff members from EGAT had to work at the construction site during the big flood event in Thailand. Many of them could not abandon their duties appointed by EGAT to take care of their families and property possibly affected by the big flood. Moreover, they had to work under pressure and conflict. It could be said that what EGAT did for the community was a long-term contribution that continuously benefited the community. The scholars specializing in community development had to go against the principles and lend money to the community so as to drive the continuous construction. This showed that necessity was beyond principles.

The sincerity that arose among the partners in the network could be perceived when the researcher went to collect the data in the Ban San Din Daeng community. The project manager, who had a key role in supervising the construction, and the manager of the Thai Rak Pa Foundation,, accompanied the researcher to interview the natural leader and the villagers. It was found that the villagers admired and respected the project manager. Some of them jokingly said that they wanted him to be their son in law. During an interview, the researcher noticed that the project manager walked around and familiarly talked with both the male and female villagers. Although the project was completed within several years, the good relationship between the community and the representative of EGAT was continually maintained. After an interview, the project manager spent time talking and drinking “Si,” a liquor made of

rice, with the villagers. It was a Karen tradition to serve “Si” when close friends or important persons visited their house. Throughout the get-together, many other villagers gradually joined the conversations.

As for the experience in Ban Klong Rue community, the researcher drove to the community alone. When visiting the villagers living along the way, the village headman said to the villagers that the researcher was Pi Aey’s brother, although the researcher had no blood relationship with her. Pi Aey was an interviewee and intermediary, who introduced the researcher to the village headman. The villagers welcomed the researcher with smiles and friendly manners. They also jokingly recommended that “If you come to Ban Klong Rue and want to eat mangosteen and durian, just tell the villagers that you are Pi Aey’s brother. Then you are allowed to pick anything you want” (Manas Khlayrung, 2015: interview). This phenomenon showed that the community loved and trusted the staff member from EGAT just like one of their family members.

In addition, the researcher had an opportunity to attend a retirement party for Mr. Jitti Mongkolchaiaranya, a scholar from Thammasat University and one of the partners in the Ban Klong Rue community’s network who lent money to the community during the construction period. The village headman and some villagers of the Ban Klong Rue community came to the party from Chumpon Province and also brought the coffee, a famous product of the Ban Klong Rue community, to distribute to the participants. This showed that the villagers recognized what the network partner had done and wanted to reciprocate the sincerity that had been shown to them. This was considered a two-way interaction.

8.6 Policy Recommendations

The results of this research show that CSR implementation can create value for many related parties. The CSR implementation in the community hydropower plant construction project not only made the villagers in remote areas have electricity and achieve a better quality of life but also enabled the community to develop social capital in the dimension of networks, norms, and trust, which are the foundation of other areas of development. The development of the community, a small social unit,

definitely affects the development of the larger social units such as the province, region, and country. The policy recommendations consist of the following:

8.6.1 Inclusion of CSR Implementation and Power Plant Construction in Corporate Strategy

According to studies on the corporate strategy of many organizations, especially in the business sector and energy-related industry, it has been found that most organizations already have a CSR policy in place. However, their CSR policy mainly focuses on their stakeholders and overall society; there is still a lack of clear guidelines on community-based CSR. From a basic research, the researcher found that there were only a few organizations carrying out CSR activities through hydropower plant construction in needed communities, while there were more potential communities that had readiness in terms of community strength and water resources. This might be due to a number of causes, such as lack of information about geographical areas and potential communities, the prioritization of CSR activities, limited CSR budgets, and a lack of knowledge and competent personnel in hydropower plant construction.

EGAT is an organization with high competence and capacity in many aspects, including budget, machinery, personnel, and experiences in the construction of various types of power plants. It was able to complete the hydropower plant construction project at the Ban Klong Rue community and made it become a successful prototype project. Thus, EGAT should pay attention to other high potential communities and support the construction of more power plants using the blueprint and information obtained when conducting the electricity knowledge management project in the south of Thailand. This should be determined as an indicator in EGAT's CSR master plan in order to make the implementation of CSR in power plant construction take place in a more practical way. EGAT has not carried out any power plant construction project since the construction of the Ban Klong Rue community hydropower plant was completed in 2012. On the other hand, EGCO has already determined the CSR policy to construct 3 power plants in northern Thailand and 3 more power plants in the southern provinces.

8.6.2 CSR Integration between EGAT and EGCO in Community Hydropower Plant Construction

Both EGAT and EGO are organizations in the energy business in Thailand. They also have an affiliated relationship as EGAT is the major shareholder of EGCO. Moreover, they have similar CSR practices in building a power plant for a community with no access to electricity. Their completed projects include the Ban Klong Rue community hydropower plant construction project and the Ban San Din Daeng hydropower plant construction project. In the future, if the management executives of the two organizations can jointly establish a policy aiming for an integration of CSR activities, it would result in a clear direction of CSR implementation at the national level and help to promote the construction of more small power plants using local resources. Other organizations can also use EGAT's and EGO's projects as prototype projects for CSR implementation. In the future there may be integration and collaboration between large power producers, small power producers, and construction companies in building more hydropower plants beneficial to the community, society, and the country.

8.7 Operational Recommendations

CSR implementation in community hydropower plant construction is a complicated task because it has to involve many different sectors with or without previous relationships. In order to ensure that CSR implementation fully contributes to the development of social capital, the following approaches were determined.

8.7.1 Determining Partners to Build Cooperative Networks

An intermediary organization should be determined in order to serve as a coordinator between the community, the main organization, and other network partners during the construction of a hydropower plant. Another important role of the intermediary organization is to suppress the conflicts caused by different opinions that may occur when working together. An intermediary organization should be a non-profit one that does not have a direct stake in a hydropower plant construction. It should be a reliable organization that has personnel with knowledge, ability, and easy

access to communities. Educational institutions or community development foundations are appropriate to serve as intermediary organizations. If they have previous relationships with the target communities, it will be easy to build network trust and carry out construction in a smooth and effective way.

8.7.2 Dissolving Organizational Behavior of Network Partners

An operation that relies on the participation of multiple sectors needs to focus on the behavior embedded in individuals according to the organizational context because it is a key factor that can cause problems. When working together, all parties tend to think that they are capable and have expertise in their field, and their behaviors and decision-making may affect the stability of the network. In a network, each partner seems to have equal authority and there is no specific chain of command like an organizational structure. Therefore, excessive self-confidence and commanding behaviors may not be accepted by other network partners and eventually lead to conflicts and the collapse of the network. Representatives from each organization, especially those with senior positions, should adapt themselves or dissolve their organizational behavior in order to smoothly work with other network partners and to achieve collaboration.

8.7.3 Communication Among Partners

Collaboration in a network with diverse partners requires good coordination. The important factor in effective coordination is clear, accurate, and easy-to-understand information. Network partners come from different sectors and they may have communication problems because each of them has unequal human capital. For example, a miscommunication between an engineering supervisor and villagers can cause work interruption, delays, and unintentional loss of resources. Therefore, network partners must be careful when communicating with each other. Senders must send a clear, appropriate, and easy-to-understand message to receivers so as to create mutual understanding, enhance smooth operations, and to prevent conflict.

8.7.4 Informal Meetings

Informal meetings are considered vital to the social capital development process. This is because some agreements cannot be made in a formal meeting but can be easily concluded in an informal one. This is consistent with the statement, “Businessmen finish a deal at a golf course. Thugs close a deal at a liquor shop.” Considering the cooperation of the network partners in the hydropower plant construction, when there were conflicts between the network partners at the worksite, they seriously argued with each other and insisted that their reasons were correct. However, when the same issues were discussed in informal meetings, for instance, an informal dinner meeting after work, with the coordination of the intermediary organization, the conflicts could be mitigated and solutions could be formed in a smooth way.

8.7.5 Maintaining the Stability of Trust

Establishing trust among network partners is a difficult task but maintaining the stability of trust is more difficult. Network partners have different knowledge, thoughts, and habits so they can have conflicts that eventually lead to distrust during the work process. Effective ways to build trust include complying with cooperation norms, showing sincerity in helping or working together, and getting recognition for skills and expertise. After network trust is built, network partners must strive to maintain the stability of trust. Preventing a situation that will trigger a conflict, integrating collaboration to assign an intermediary organization in a network, dissolving organizational behavior, communication among partners, and informal meetings are required to reduce the conflicts that can diminish the stability of network trust.

8.8 Suggestions for Future Research

The present research aimed to study the CSR implementation in the hydropower plant construction that had an effect on the social capital development process and to develop more knowledge associated with social capital. Based on the findings of this study, the following recommendations are made for further research.

8.8.1 Topics

8.8.1.1 Different Forms of CSR implementation

In this research, the process of social capital development in the dimension of network, norms, and trust resulting from the CSR implementation in the community hydropower plant construction project is presented. However, there are still many forms of CSR activities that rely on the participation of multiple sectors, such as reforestation projects, biological way of life projects, and occupation enhancement programs. These activities can benefit the communities and the society as a whole. Thus, it will be beneficial to study whether other forms of CSR activities have an influence on social capital development and in what way.

8.8.1.2 Origin of Community Hydropower Plant Construction

According to a document research on community hydropower plant construction, it can be concluded that there were 3 main reasons behind the construction of a community hydropower plant. First, the communities had no access to electricity because they were located in areas where the Provincial Electricity Authority's (PEA) transmission system was accessible. The daily life of the people in these communities was less comfortable than that of the people in the communities with electricity. Second, the communities had access to electricity but there were problems with power stability, power outages, and power failure that negatively affected the condition and lifetime of the electrical equipment. Third, the communities had access to electricity and there was no electricity problem. The community hydropower plants were constructed because the communities wanted to generate electricity and sold it to EGAT and PEA. The obtained income would be used to develop the communities.

When analyzing the 3 main reasons based on the community needs, it was found that regarding the first reason the communities suffered from having no access to electricity, regarding the second reason the communities wanted stable electricity, and in terms of the third reason the communities wanted monetary benefit. The present research focused on the community needs with reference to the first reason. The external organizations built the hydropower plant for the communities in need of electricity, resulting in the social capital development process. It would be interesting to find out how the community needs regarding the second and third

reasons and the construction of the hydropower plant affected the social capital development in the communities. It would be more interesting to conduct a comparatives study in order to discover new knowledge associated with social capital development.

8.8.2 Analysis Approach

8.8.2.1 Results of Social Capital Development

In this research, social capital was a consequential factor while CSR implementation was a causal factor. Actually, social capital can be further studied in various aspects, such as defining social capital as a causal factor and finding the relationship between the causal and consequential factor in different dimensions, including economic, social, environmental, and integrated sustainability development. Finally, it may be possible to discover new social capital knowledge associated that will contribute to sustainable community development.

8.9 Chapter Summary

Social responsibility is “a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis” (The European Commission, 2009). This definition reflects that organizations are committed to taking good care of their stakeholders regardless of governmental enforcement or compulsion from the civil sector. If every organization strictly adheres to this practice, the researcher believes that all of the elements of the ecosystem on earth can be strongly sustained. However, in the real world, many organizations still have a business goal of building wealth for themselves. Although there are some organizations that put effort into integrating business profit maximization with corporate social responsibility, most of them are large organizations and listed companies. It is important for the public, private, and civil sectors to encourage all organizations to recognize the importance of CSR and to implement CSR activities in a practical way.

The present research about the CSR implementation and social capital development in the Ban San Din Daeng community and Ban Klong Rue community

was conducted with the aim to promote the importance of CSR. The researcher focused on community-based CSR because the community is a fundamental social unit. If CSR implementation can contribute to community development, the larger social units, including the society and the country, must be accordingly developed. When the country achieves successful development, all of the people as well as the public and private sectors will certainly receive direct and indirect benefits. The levels of benefits may vary based on the context.

BIBLIOGRAPHY

Atchara Limwongthong. (2014). *Kan borihan khwamkhatyaeng nai ongkan* [Organizational conflict management]. Bangkok: Books2U.

Berg, B. L. (2009). *Qualitative research methods.* Boston: Allyn & Bacon.

Bianchi, L. (2011). *The influence of social capital in the use and promotion of corporate social responsibility.* Doctoral dissertation, Scuola Superiore Sant'Anna.

Blau, P. M. (1964). *Exchange and power in social life.* Hoboken: Wiley.

Blau, P. M. (1968). Interaction: Social exchange. In D.L. Sills (Ed.), *International encyclopedia of the social sciences* (Vol 7, Pp. 452-458). New York: MacMillan.

Bolino, M. C., Turnley, W. H., & Bloodgood, J. M. (2002). Citizenship behavior and the creation of social capital in organization. *Academy of Management Review, 27*(4), 505-522. https://doi.org/10.5465/AMR.2002.7566023

Bourdieu, P. (1986). *The form of capital.* New York: Greenwood Press.

Bourdieu, P., & Wacquant, L. (1992). *An invitation of reflexive sociology.* Chicago: University of Chicago Press.

Carroll, A. B. (1991). The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders, *Business Horizons, 34*(4), 39-48.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94*, S95–S120.

Coleman, J. S. (1990). *Foundation of social theory.* Cambridge: Havard University Press.

Collier, P. (2002). Social capital and poverty: A microeconomic perspective. In C. Grootaert, T. Van Bastelaer, & R. D. Putnam (Eds.), *The role of social capital in development: An empirical assessmen*t (pp. 19-41). Cambridge: The Press Syndicate of the University of Cambridge.

Cook, J., & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of Occupational Psychology*, *53*(1), 39–52. https://doi.org/10.1111/j.2044-8325.1980.tb00005.x

Cooms, T. W., & Holladay, S. J. (2012). *Managing corporate social responsibility: A communication approach.* West Sussex, UK: Wiley-Blackwell.

Covey, S. R., Link, G., & Merril R. R. (2012). *The speed trust.* New York: Free Press.

Cumming, Y. G., & Christopher, G. (2005). *Organization development and change.* Ohio: South-Western.

Cummings, W., & Feyerherm, A. E. (2010). *Practicing organization development.* San Francisco, CA: Pfeiffer.

Daft, R. L. (1992). *Organization theory and design* (4th ed.). Singapore: West.

Davis, J. H., Schoorman, F. D., Mayer, R. C., & Tan, H. H. (2000). The trusted general manager and business unit performance: empirical evidence of a competitive advantage. *Strategic Management Journal*, *21*(5), 563–576. https://doi.org/10.1002/(SICI)1097-0266(200005)21:5<563::AID-SMJ99>3.0.CO;2-0

Degli Antoni, G., & Portale, E. (2010). The effect of corporate social responsibility on social capital creation in social cooperatives. *Nonprofit and Voluntary Sector Quarterly*, *40*(3), 566–582. https://doi.org/10.1177/0899764010362568

Department of Industrial Works. (2008). *Mattrathan CSR-DIW* [CSR-DIW standards]. Bangkok: Department of Industrial Works.

Dhar, P. (2014). *Implementing corporate social responsibility: Indian perspectives.* New Delhi, India: Springer.

Dwivedi, D. (1997). *India's environmental policies, programmes and stewardship*. London: Macmillan Press.

Electricity Generating Authority of Thailand. (2011). *Corporate social responsibility practice ISO* 26000/2553. Nonthaburi: Department of Social Affairs.

Electricity Generating Authority of Thailand. (n.d.). *Ban khlong rue saengsawang klang hupkhao* [Ban klong rue's light in the middle of the valley]. Nonthaburi: Electricity Generating Authority of Thailand.

Electricity Generating Public Company Limited. (n.d.). *EGCO Thai rak pa rak ton nam tharn chiwit*. [EGCO Thai rak pa's upstream conservation]. Bangkok: Electricity Generating Public Company Limited.

European Commission. (2013). *What is corporate social responsibility (CSR)?. corporate social responsibility (CSR).* Retrieved April 23, 2013 from http://europa.eu/rapid/press-release_MEMO-09-109_en.htm

Fafchamps, M., & Minten, B. (2002). Social capital and the firm: Evidence from agricultural trader in Madagascar. In C. Grootaert, T. Van Bastelaer & R. D. Putnam (Eds.), *The role of social capital in development: An empirical assessment* (pp. 125-154). Cambridge: The Press Syndicate of the University of Cambridge.

Foundation of Education for Life and Society. (n.d.). *Rongfaifa ban klong rue pa tonnam phato chumpon* [Electricity power in ban klong rue, chumpon's phato watershed forest]. Bangkok: Foundation of Education for Life and Society.

Fox, A. (1974). *Beyond contract: Work, power and trust relations*. London: Faber and Faber.

Freeman, L. C. (1978). Centrality in social networks conceptual clarification. *Social Networks, 1*(3), 215–239. https://doi.org/10.1016/0378-8733(78)90021-7

Fukuyama, F. (1995). *Trust: The social values and the creation of prosperity*. New York: Free Press.

Gall, M. D., Borg, W. R., & Gall, J. P. (1996). *Educational research: An introduction*. New York: Longman.

Gitomer, J. (2008). *Little teal book of trust*. New Jersey: FT Press.

Golembiewski, R. T., & Conkie, M. (1975). *The centrality of interpersonal trust in group processes*. New York: John Wiley & Sons.

Golubovic, N. (2009). Network structure of social capital. *Economics and Organization, 6*(3), 211-219.

Goodrick, D. (2014). *Comparative case studies*. Florence: UNICEF.

Greve, H., Rowley, T., & Shipilov, A. (2014). *Network advantage: How to unlock value from your alliances and partnerships*. West Sussex: John Wiley & Sons.

Grootaert, C. (1999). *Social Capital, Household Welfare, and Poverty in Indonesia* (Working Paper No.6). The World Bank. https://doi.org/10.1596/1813-9450-2148

Grootaert, C., & Bastelaer, T. V. (2002). Measuring impact and drawing policy implication. In C. Grootaert, T. Van Bastelaer & R D. Putnam (Eds), *The role of social capital in development: An empirical assessment* (pp. 341-349). Cambridge. The Press Syndicate of the University of Cambridge.

Growth, J., & Gareth, J. R. (1995). *Organizational theory text and cases*. USA: Addison-Wesley.

Halpern, D. (2005). *Social capital*. Cambridge: Polity Press.

Hanifan, L. J. (1916). The rural school community center. *The Annals of the American Academy of Political and Social Science, 67*(1), 130–138. https://doi.org/10.1177/000271621606700118

Isham, J., & Kahkonen, S. (2002). How do participation and social capital affect community-based water projects? evidence from central java, Indonesia. In C. Grootaert, T. Van Bastelaer & R. D. Putnam (Eds.), *The role of social capital in development: An empirical assessment* (pp. 155-187). Cambridge: The Press Syndicate of the University of Cambridge.

Jitti Mongkolchaiaranya & Parichart Walaisathien. (2013). *Khon yoo pa yang* [Human and forest life]. Bangkok: Quality Print.

Jochum, V. (2003). *Social capital: Beyond the theory.* London: NCVO.

Johns, G., & Sak, A. M. (1991). *Organization behavior: Understanding and managing life at work.* Toronto: Addison Wesley Longman.

Jones, G. R. (1995). *Organizational theory: Text and cases.* Reading, MA: Addison-Wesley.

Kahn, R. L., & Cannell, C. F. (1957). *The dynamics of interviewing.* New York: John Wiley.

Kaur, A., & Kaur, H. (2015). Norms in artificial agents society: A review. *International Journal of Advanced Research in Computer and Communication Engineering, 4*(4), 310-313.

Kilduff, M., & Brass, D. J. (2010). Organizational social network research: Core ideas and key debates. *Academy of Management Annals*, *4*(1), 317–357. https://doi.org/10.1080/19416520.2010.494827

Kolter, P., & Lee, N. (2005). *Corporate social responsibility: Doing the most good for your company and your cause.* Hoboken, NJ: John Wiley & Son.

Krishna, C. (2000). Creating and harnessing social capital. In P. Dasgupta &I. Serageldin (Eds.), *Social capital: A Multifaceted Perspective* (pp. 76-79). Washington, D.C., The World Bank.

Lapan, S. D., Quartaroli, M. T., & Riemer, F. J. (2012). *Qualitative research: An introduction to methods and designs.* San Francisco, CA: Jossey-Bass.

Lewis, P. S., Goodman, S. H., Fandt, P. M., & Michitsch, J. M. (Eds.). (2007). *Management: Challenges for tomorrow's leader* (5th ed.). Mason, OH: Thomson/South-Western.

Lin, N. (1999). Building a network theory of social capital. *Connections, 22*(1), 28-51.

Lin, N. (2002). *Social capital.* New York: Cambridge University Press.

Lincoin, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry.* Beverly Hill: Sage.

Luhman, N. (1979). *Trust and power: Two works by Niklas Luhman.* New York: John Wiley & Sons.

Luong, H. V. (2012). *The dynamics of social capital and civic engagement in Asia.* New York: Routledge.

Malaska, P. (1991). *Economic and social evolution. The transformational dynamics approach.* New York: Gordon & Breach Science.

Management System Certification Institute (Thailand). (2014). *Lead verifier for ISO 26000.* Bangkok: Management System Certification Institute (Thailand).

Marrewijk, M. V., & Were, M. (2003). Multiple levels of corporate sustainability. *Journal of Business Ethics, 44*(2-3), 107-119.

Marshall, C., & Rossman, G. B. (2006). *Designing qualitative research*. Thousands Oaks, CA: Sage.

May, T. (1997). *Social research: Issues, methods and process* (2nd ed.). Buckingham: Open University Press.

Mazmaninan, D. A., & Sabatier, P. A. (1981). *The implementation of public policy: A framework of analysis.* Massachusetts: D.C. Health.

Meyer, E. (2014). *The cult map.* New York: Public Affairs.

Miles, J. (2012). *Management and organization theory.* San Francisco, CA: Jossey-Bass.

Minzberg, H. (1993). *Structure in fives designing effective organization* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Mitchell, H. J. (1969). *The concept and use of social network.* Manchester: University of Manchester Press.

Moratis, L., & Cochius, T. (2012). *ISO 26000 The business guide to the new standard on social responsibility.* Sheffield, UK: Greenleaf.

Moratis, L., & Cochius, T. (2012). *ISO 26000 the business guide to the new standard on social responsibility.* Sheffield: Greenleaf.

Narayan, P. (1999). Social capital and state: Complementarity and substitution. *Policy Research Working Paper 2167*. Washington: World Bank.

Narayan, P. R., Schafft K., Rademacher, A., & Koch, S. S. (2000). *Voices of the poor: Can anyone hear us?*. Oxford: Oxford University Press.

Narayanan, V. K., & Nath, R. (1993). *Organization theory: A strategic approach*. Homewood, IL: Irwin.

Niehm, L. S., Swinney, J., & Miller, N. J. (2008). Community social responsibility and its consequences for family business performance. *Journal of Small Business Management, 46*(3), 331–350. https://doi.org/10.1111/j.1540-627X.2008.00247.x

Nishide, Y. (2009). *Social capital and civil society in Japan*. Sendai: Tohoku University Press.

Nopphorn Phukapan. (1999). *Kan borihan khwamkhatyaeng* [Conflict management]. Bangkok: W. Petchsakul.

OECD. (2000). *The OECD guideline for multinational enterprises*. Paris: OECD.

Office of the National Economic and Social Development Board. (2011). *Phaen phatthana setthakit lae sangkhom haeng chat chabap thi sip et pi song phan sip song thueng song phan sip hok* [National economic and social development plan No.11 2012-2016]. Bangkok: Office of the National Economic and Social Development Board.

Oliver, C. (1991). Strategic responses to institutional processes. *The Academy of Management Review, 16*(1), 145–179. https://doi.org/10.2307/258610

Palmberger, M., & Gingrich, A. (2014). *Qualitative data analysis*. London: Henry Ling.

Parichart Walaisathien & Phiphat Yodphreutikarn. (2013). *Ruam ngan kap chumchon si es a a di em* [Work with communities: CSR RDM]. Bangkok: Quality Print.

Pavlíková, E. A., & Wacey, K. S. (2013). Social capital theory related to corporate social responsibility. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 61*(2), 267–272. https://doi.org/10.11118/actaun201361020267

Phiphat Nonthanathorn. (2010). *Kan chatkan khwamrapphitchop to sangkhom khong ongkon kan sang kho daipriap nai kan khaengkhan yang yangyuen* [Corporate social responsibility management creating a sustainable competitive advantage]. Nonthaburi: Thinking Beyond Book.

Phiphat Yodphreutikarn. (2012). *Si es a kap kan phatthana thi yangyuen* [CSR and sustainable development]. Sukhothai Thammathirat Journal of Economics. Bangkok. Sukhothai Thammathirat University. 6th Year 2nd Issue August 2012.

Phoomtham Wejayachai. (1984). *Ruam botkhwam dan kan phatthana sangkhom khong ongkonphatthana ekkachon* [Articles on social development of non-governmental organizations]. Bangkok: Social Development. (In Thai)

Poper, K. (1959). *The logic of scientific discovery.* New York: Harper & Row.

Portes, A., & Landolt, P. (2000). Social capital: Promise and pitfalls of its role in development. *Journal of Latin American Studies*, *32*(2), 529–547.

Pressman, J. L., & Wildavsky, A. (1973). *Implementation: How great expectations in Washington are dashed in Oakland: Or, why It's amazing that federal programs work at all, this being a saga of the economic development administration as told by two sympathetic observers who seek to build morals on a foundation of ruined hopes.* Berkeley: University of California Press.

Pulchala, D. J. (1995). *The ethics of globalism.* Providence. RI. Academic Council of the United Nations System.

Putnam, R. (1993, Spring). The prosperous community: Social capital and public life. *The American Prospect*. Retrieved from http://prospect.org/article/prosperous-community-social-capital-and-public-life

Putnam, R. (2000). *Bowling alone: The collapse and revival of America community.* New York: Simon & Schuster.

Putnam, R. D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy*, *6*(1), 65–78. https://doi.org/10.1353/jod.1995.0002

Putnam, R. D., Leonardi, R., & Nanetti, R. (1993). *Making democracy work*: *Civic traditions in modern Italy*. Princeton, NJ: Princeton University Press..

Rahman, S. (2011). Evaluation of definitions: Ten dimensions of corporate social responsibility. *World Review of Business Research*, *1*(1), 166-176.

Rotheroe, N. (2005). The relationship between CSR and social capital occurs under the stakeholder process. In *Business Strategy and the Environment Conference 2005*. University of Leeds, West Yorkshire, England.

Sacconi, L., & Antoni, G. D. (2008). *A theoretical analysis of the relationship between social capital and corporate social responsibility: Concepts and definitions* (SSRN Scholarly Paper No. ID 1182982). Rochester, NY: Social Science Research Network. Retrieved from https://papers.ssrn.com/abstract=1182982

Schreier, M. (2014). *Qualitative data analysis*. London: Henry Ling.

Suphang Chantawanich. (2016). *Kan wikhro khomun nai kan wichai choeng khunnaphap* [Data analysis in qualitative research]. Bangkok: Chulalongkorn University Press.

Suwannee Khamman. (2008). *Thun thang sangkhom kap kan phatthana thun manut* [Social capital and human capital development]. Annual Seminar on Sustainable Quality and Sustainable Growth. Bangkok: Chaipattana Foundation, Office of the National Economic and Social Development Board and Thailand Development Research Institute Foundation.

Thaipat Institute. (2009). *Hok thitthang si es a pi song phan ha roi ha sip song* [6 CSR trends in 2009]. Bangkok: Foundation for Thailand Rural Reconstruction Movement under the Royal Patronage.

Thammasat University. (2011). *Final Progress Report*. Bangkok: Thammasat University.

Tippawan Lorsuwannarat. (2011). *Thritsadi ongkan samaimai* [Modern organizational theories]. Bangkok: DK Printing World.

Turner, J. H. (2006). *Handbook of sociological theory*. New York: Springer.

Uphoff, N. (2000). *Social capital: A multifaceted perspective*. Washington: World Bank.

Visser, W. (2011). *The age of responsibility: CSR 2.0 and the new DNA of business*. West Sussex, UK: John Wiley & Sons.

Wanchai Meechart. (2005). *Pharuetikam kan borihan ongkan satharana* [Public organization management behaviors]. Bangkok: Active Print.

Wasserman, S., & Faust, K. (1994). *Social network analysis: Method and applications*. Cambridge: Cambridge University Press.

Werther, W. B., & Chandler, D. (2006). *Strategic corporate social responsibility: Stakeholders in a global environment*. Thousand Oaks, CA: Sage.

Whitmore, E. (1999). *Understanding and practicing participatory*. San Francisco, CA: Jossey-Bass.

Williams, R. J. (2003). Women on corporate boards of directors and their influence on corporate philanthropy. *Journal of Business Ethics*, *42*(1), 1–10. https://doi.org/10.1023/A:1021626024014

Wissara Cheewasarth. (2012). *Khwamrapphitchop to sangkhom khong chumphon kha ba na riso kap kan phoem thun thang sangkhom khong chumchon sa phli* [Corporate social responsibility of chumphon cabana resort and social capital development of role of saplee subdistrict]. *Journal of Social Research, 35*(December), 53-67.

Wittaya Chewarunothai. (2011). *CSR mission possible: Phantha thurakit pharakit ongkon thai* [CSR mission possible: Business commitment, mission of thai organizations]. Bangkok: Love and Live.

Wong, E. (2010). *Corporate social responsibility for sustainability and success*. Singapore: Marshall Cavendish Editions.

Woolcock, M. (1998). Social capital and economic development: Toward a Theoretical Synthesis and Policy Framework. *Theory and Society*, *27*(2), 151-208.

Yin, R. K. (2003). *Applications of case study research* (2nd ed.). Thousand Oaks, CA: Sage.

APPENDIX

INTERVIEW QUESTIONS

The questions used in the in-depth interviews can be divided into three main parts. The first part aimed to elicit general information about the informants from the main organizations conducting CSR implementation, the communities, and other partner organizations. The obtained information is presented in chapter 4 and in the bibliography. The second part aimed to obtain information about CSR implementation from the staff members of the main organizations conducting CSR implementation. The obtained information was used to describe vgeneral conditions of the relevant organizations in chapter 2 and to explain corporate social responsibility implementation in chapter 5. The third part acquired information about the social social capital development process. The information obtained from the informants is shown in chapter 6.

Part 1 General information about the informants: the questions in this part deal with the following details.

1) Name, position, and responsibility of the informant
2) Interview date, time, and place

Part 2 Corporate social responsibility implementation: the questions are as follows.

1) What is the CSR concept and practice in your organization?
2) What are the key CSR activities of your organization?
3) What is the background of the community hydropower plant construction?
4) How did your organization support the community hydropower plant construction?

Part 3 Social capital development: the questions are listed below.

1) What were your/your organization's roles and responsibilities in the community hydropower plant construction during the pre-construction, construction, and post-construction phases?

2) Who were the partners joining the network during the pre-construction, construction, and post-construction phases? What were their roles and responsibilities in the community hydropower plant construction?

3) Were there any mutual agreements on the collobartion between the partners? What are the details of the mutual agreements?

4) How did the partner comply with the mutual agreements? What was the measure of non-compliance?

5) Were there any collaboration problems between you/your organization and other partners? What are the details of the problems?

6) Did you find any collaboration problems and obstacles among the network partners? What are the details of the problems and obstacles?

7) What were the soultions of those problems and obstacles?

8) How do you feel about other network partners? Why do you feel that way?

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