



A Positive Transition for Local People in an Area of Rapid Economic Development: A Case Study of the Ban Pho and Bangkhla Districts, Chachoengsao Province, Thailand

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**A Positive Transition for Local People in an Area of
Rapid Economic Development:
A Case Study of the Ban Pho and Bangkhla Districts,
Chachoengsao Province, Thailand.**



by

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A thesis submitted for the degree of Doctor of Philosophy: Urban Design & Regional Plan

Sustainability Research Centre, School of Law & Society



University of the Sunshine Coast

Queensland, Australia

July 2021

Declaration of Originality

This thesis has not been previously submitted to meet requirement for an award or any other higher degree. To the best of my knowledge and belief, this thesis does not contain any material, previously published or written by another person except where due reference is made.

Pornsiri (Fa) Cheevapattananuwong

July 2021

Abstract

Globally, local communities and governments are challenged to minimise social and environmental impacts while enabling fair distribution of the benefits of rapid economic development. Since 2016, the Thai Government has pursued a twenty-year national economic growth policy, Thailand 4.0, promoting innovation and stimulating international investment through the Eastern Economic Corridor (EEC) plan. The EEC plan involves land acquisition that has resulted in relocation, as well as water and food insecurity in major food production areas.

This research explores how local residents in Chachoengsao Province (part of the EEC areas) have influenced, and benefited from top-down development, while minimizing impacts on local community in terms of water supply and food security.

The research questions are:

RQ 1 What are the potential water and food security impacts of the Eastern Economic Corridor on the local residents?

RQ 2 How are social networks of local communities, including those of young people, responding to the impacts of the Eastern Economic Corridor in relation to water and food security?

RQ 3 What alternative approaches could be used to adapt to ensure more alignment with sustainable development objectives?

This research employs social concepts: social network, social capital and political opportunity structure (POS) for understanding the social context of the case study areas. Three community development practice-theories are used to understand local community action and support social change: Community Organising, Participatory Developmental Practice (PDP) and Assets Based Community Development (ABCD).

This is qualitative research. Data were collected through literature analysis, observation, in-depth interviews of key stakeholders and a consensus conference in a case study of the Ban Pho and Bangkhla Districts, Chachoengsao province, Thailand. The policy was analysed through Bacchi's critical social policy analysis model accompanied by a thematic analysis

using NVivo software. Data from interviews and the consensus conference were also analysed thematically using NVivo.

For research question one (RQ1), the results demonstrate the potential impacts of the EEC in relation to water and food security due to land acquisition and relocation, water shortage and pollution, as well as the risk of environmental degradation, road-safety problems and increasing crime.

For research question two (RQ2), the level of social capital was crucial to the networks to take advantage of the political opportunities and to support the community organising efforts of local people as they sought to protect their land and food production areas.

For research question three (RQ 3), participants identified adaptation and alternative approaches towards sustainable development, including developing community capacity to affect change. They suggested reducing water usage and developing farm water storage to enhance food safety and food security, provide support for tourism in local areas and build environmental protection through water monitoring and management. Alternative governance approaches were suggested for adapting towards achieving sustainable development through:

- Preparing for a new approach to education
- Increasing cooperation among local communities, local government and with policymakers
- Building better comprehension between the government and local residents,
- Enabling science-based approaches to decision making in development,
- Constructing and linking network groups for community development,
- Ensuring effective and fair law enforcement,
- Sharing the benefits equity and thus build unity, and
- Creating ways to sharing power at the local community level.

Thus, the research contributed to knowledge and understanding about the EEC potential impacts and possible solutions to adaptation. By filling a gap in the published research in this area, the results have broader applicability to other developing countries that are

experiencing rapid growth and require communities to transition quickly when there is limited social and human capacity to respond. It demonstrates the necessity of transparent two-way communication and support for capacity-building in a complex developing environment.

Acknowledgements

This PhD could not be achieved if I did not have support from those people who were my inspiration and motivation along the way of this journey.

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I could not succeed in my PhD without social and financial support. I would like to thank my family in Thailand who never gave up on me, despite the economic crisis that occurred during the COVID 19 pandemic. Moreover, many thanks to Calvin Mitchell and his family who were my host family in Australia. All of them still cheer me on and support everything I need while I was studying my PhD. Thank you for your kindness and being my best friends.

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Finally, my PhD research would not have happened if not for the local residents of Chachoengsao province who allowed me to collect data and supported my community activities since 2014. Any benefits of this research are dedicated to the local people in Thailand.

Dedication

My family and the local people in Thailand.

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Publication Overview

The following publication was produced during my candidature.

Cheevapattananuwong, P, Baldwin, C, Lathouras, A & Ike, N. 'Social Capital in Community Organizing for Land Protection and Food Security', *Land*, vol. 9, no. 3, p. 1-19.
(<https://doi.org/10.3390/land9030069>).

Acronyms /Usage of Terms

ABCD -	Asset Based Community Development
ADB -	Asian Development Bank
ASEAN -	Association of Southeast Asia Nations. ASEAN member states have 10 countries in Southeast Asia: Thailand, Indonesia, Malaysia, the Philippines, Singapore, Brunei, Laos, Vietnam, Myanmar, and Cambodia
AEC -	ASEAN Economic Community. AEC establish in 2015, which is a major milestone in the regional economic integration agenda in ASEAN.
AEPF -	Asian Europe People Forum. AEPF is interregional network of progressive civil society organisation across Asia and Europe. It has remained the only continuing network linking Asia and European NGOs and social movement.
CCS -	Chachoengsao Province. Chachoengsao Province is one province of Eastern Economic Corridor target area.
CO -	Community Organising
EEC-	Eastern Economic Corridor. Eastern Economic Corridor is a special economic zone of the three provinces in eastern Thailand (Chachoengsao, Chonburi and Rayong).
EIA -	Environmental Impact Assessment
EHIA -	Environmental and Health Impact Assessment
FAO-	The Food and Agriculture Organisation is a specialized agency of the United Nations that leads international effort to defeat hunger.
GMS -	Greater Mekong Subregion. GMS is group of countries including Cambodia, the People's Republic of China (PRC, specifically Yunnan Province and Guangxi Zhuang Autonomous Region), Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, and Vietnam.
ICD -	Inland Container Depot

PDP -	Participatory Developmental Practice
POS -	Political Opportunity Structure
SDGs -	Sustainable Development Goals
SEZ -	Special Economic Zones
SIA -	Social Impact Assessment
SEA -	Strategic Environment Assessment
SME -	Small-to-Medium Enterprise
VNRs-	The voluntary national reviews (VNRs) aim to facilitate the sharing of experiences, including successes, challenges and lessons learned, with a view to accelerating the implementation of the 2030 Agenda. The VNRs also seek to strengthen policies and institutions of governments and to mobilize multi-stakeholder support and partnerships for the implementation of the Sustainable Development Goals
UN -	The United Nations

Local residents – Local residents are people who live or work in the case study areas.

Nypa - Nypa palm also known as the mangrove palm is a natural material for building traditional roofs in Thailand.

Participants- People who were interviewed by the author or participated in the consensus conference.

Thailand 4.0 - Thailand 4.0 is a twenty-year national policy formed in 2016, which targets economic growth through promoting technology and improving innovation. The Thai government is working hard to promote “Thailand 4.0”, a new economic model aimed at pulling the country out of the middle-income trap, to push Thailand up in the high-income range

CHAPTER 1 - INTRODUCTION

1. Introduction

This chapter introduces the research and includes the background of the study, the research problem, the objective, research questions, significance of the research and thesis structure.

1.1 The Research Problem and Rationale for the Research

Across the world, development is accompanied by social, economic and environmental tensions, frequently resulting in the inequitable distribution of benefits and costs. A disproportionate allocation of costs affects vulnerable people such as those with low education (Argy 2007). Acknowledging this, in 2015, the United Nations (UN) developed 17 Sustainable Development Goals (SDGs). These relate to the long-term stability of the environment and economy through acknowledging and integrating economic, environmental and social concerns (United Nations 2015). The goals set the global direction to 2030 in relation to balanced economic growth for 193 countries. The SDGs aim to effectively manage natural resources and support employment, as well as increase access to clean water and sanitation. The SDGs recognise the need for social justice by supporting the empowerment of local people, environmental protection, democratization, disarmament, respect for human rights and the rules of law (United Nations 2015). Thailand, a UN-member, includes the 17 SDGs in its national social policy.

Thailand 4.0 was developed in 2016. It is a twenty-year national policy that targets economic growth by promoting technology and improving innovation in line with the principle of sustainable development. As a result, the Eastern Economic Corridor (EEC), created in 2017, proposed investment in industrial estates and infrastructure such as roads, dams and power plants to provide economic benefits that contribute to the SDGs. However, documented social and environmental impacts affecting the local people living in rural areas targeted for national development include pollution, water grabbing, health problems and reduced fish stocks. Thai people are aware of these impacts that have occurred in similar developments in other parts of Southeast Asia. In Vietnam, for example, economic globalisation has driven urbanisation and land development which affected fisheries and mangroves and resulted in

the acidification and pollution of surface water (Adger, Kelly & Huu Ninh 2001). Moreover, the Thi Vai Estuary and the Can Goi Mangrove Forest in southern Vietnam were affected by industrial wastewater emission and oil spills (Costa-Böddeker et al. 2017). Fundamental is a concern about water and food insecurity.

The increasing intensity of land use proposed for the current rural area of Chachoengsao province (CCS) under Thailand 4.0 policy is already having similar effects, raising concerns of mainly local rural communities who rely on a clean environment for their livelihoods. A case study methodology was selected for this research to examine in depth the tension between economic development and environmental and social impacts. Hence, understanding existing and potential environmental impacts and capacity of social networks in these communities is necessary to facilitate the exploration of options to minimize negative environmental and consequent social effects of this policy. The case study and justification for its selection are discussed (in Chapter 3).

1.2 The Aim and Objectives of the Research

The aim of this research is to explore how local residents who live near the Bangpakong River in CCS might adapt to find alternatives to top-down development, and to minimize impacts, on water and food security for local communities, which may occur due to the Eastern Economic Corridor (EEC) and Thailand 4.0 economic plans. In essence, the overall research challenge is:

“How can local residents in Chachoengsao Province have more influence on, and benefit from top-down development from the Eastern Economic Corridor planning process?”

Three research questions emerged from the research gaps identified in the literature review:

RQ 1 What are the potential water and food security impacts of the Eastern Economic Corridor on the local residents?

RQ 2 How are social networks of local communities, including those of young people, responding to the impacts of the Eastern Economic Corridor in relation to water and food security?

RQ 3 What alternative approaches could be used to adapt to ensure more alignment with sustainable development objectives?

1.3 Research Framework and Methodology

Two broad categories of social theory are used to inform the methodological approach to this study. To understand the social context of the case study areas, complementary theories of social networks, social capital and political opportunity are applied to provide insight into the way the community is responding to an expected threat to their rural livelihood. Social network assessment helps to clarify relationships among local residents and key stakeholders illustrated through community activities concerning the environment and young people. The bonding, bridging and linking aspects of social capital explain the role of various networks. Political Opportunity Structure (POS) is then used to explain the context of social movements and opportunities for social change in the CCS. While these social theory concepts assist in understanding the context, this research aims to take a proactive approach to understand how the community can respond in a positive way. Hence, three community development practice theories are drawn on to understand local community action that contribute to social change: 1) Community Organising is a process that communities use for building coalitions and empowering people for social change, 2) Participatory Developmental Practice helps people connect; develop purposeful, constructive and trusting relationships, and 3) Assets Based Community Development (ABCD) helps to identify, construct and increase the capacity or assets of a community. The Impact Assessment concept is also used to assess both negative and positive effects, and to stimulate legitimate action about benefit sharing. Impact Assessment is addressed in chapter 4 prior to analysis using social theory and community development outcomes in chapter 5 and 6 as it gives context to the rationale for communities to mobilise mitigation and adaptation action.

Hence, these theories provide a theoretical basis upon which to understand the impact on and responses of local people who rely on natural resources for food production to address the overall research question, “how can local residents in CCS have more influence on, and benefit from top-down development from the Eastern Economic Corridor?” The proposed research framework (Figure 1) shows the relationship between the Economic Development Planning effects, the social context, and the potential for social change.

To answer the research questions, I use a case study approach comparing two communities along the Bangpakong River, Ban Pho and Bangkhla Districts in Chachoengsao Province.

Qualitative research was employed because it allowed people to describe their personal experiences, explore issues, and discuss options for addressing a problem (Creswell 2003; Kumar 2011). Methods of document screening, network analysis, policy analysis and semi-structured interviews contributed to answering RQ1. Network analysis and interviews were used to answer RQ2, and a consensus conference was applied to answer RQ3.

Research Framework

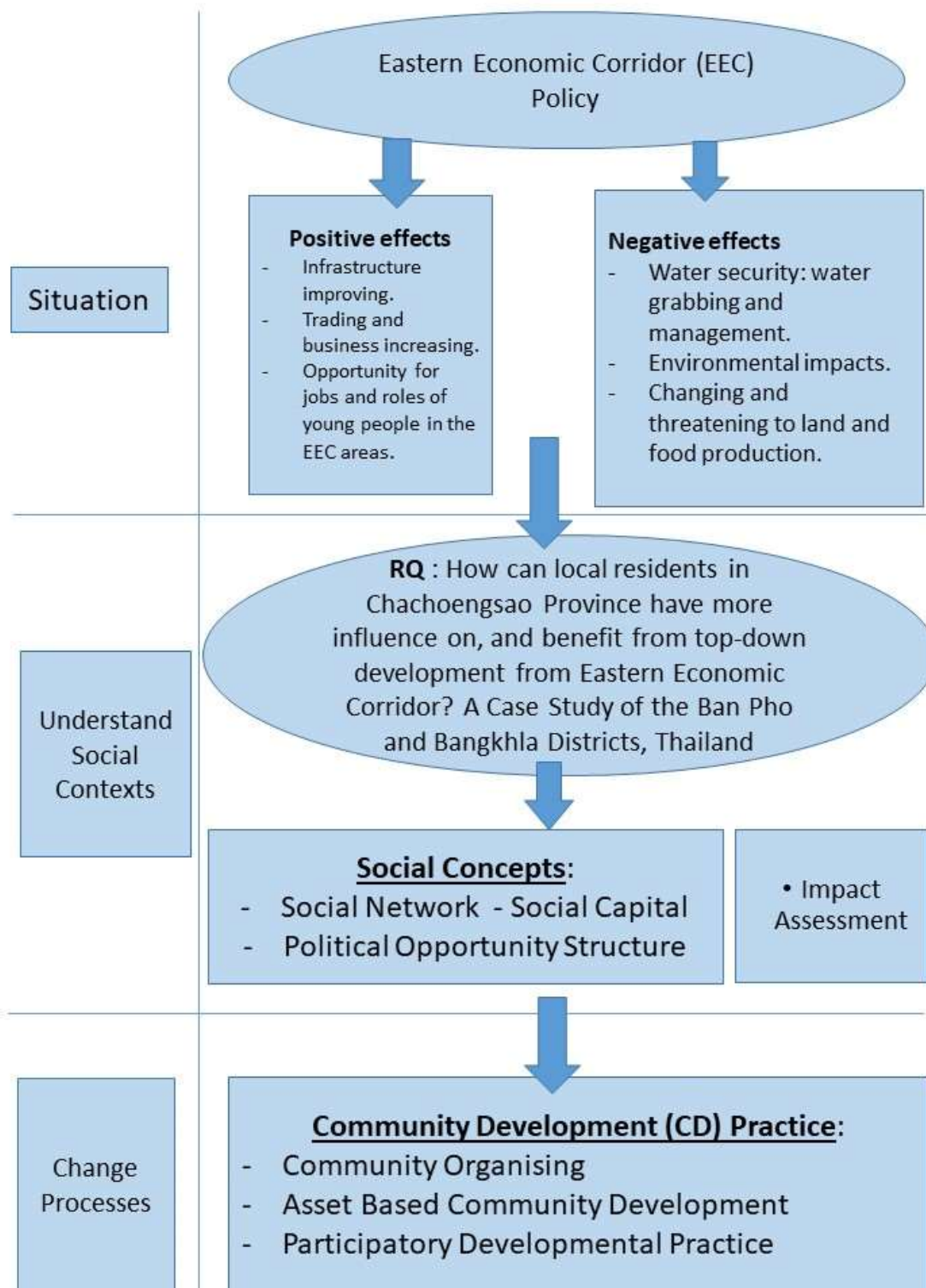


Figure 1: The research framework.

The research framework (Figure 1) shows three components. The first relates to the effects of the EEC policy implementation on the environment, water and land, important because these are the main factors for food production and resident community well-being. Meanwhile, young people may benefit from the change due to job opportunities in technology in the future. The second relates to an understanding of the social contexts (social network, social capital, political opportunity structure) which explain relationships among local residents, who may be affected by the environmental change and thus responded to the EEC potential impacts. The third component is about change processes and uses three contemporary theories to explore and explain the practice of community development.

1.4 Significance and Innovation of the Research

This research builds on and contributes to knowledge in the fields of social networks, community engagement, community development and the interface with rapid economic development. Although many studies have examined the consequence of environment and social change, there has been less focus on preventing negative effects and promoting a more positive transformation through social justice, political regulation and sustainable approaches for improving economic efficiency (Brown & Schafft 2011). This is crucial for local residents and small to medium enterprises that rely on the environment for tourism, food production and goods distribution in areas subject to economic development (Brown, & Schafft 2011; Laoveerakul 2016; Ministry of Commerce 2017; Pisanwanich 2015). The research makes a unique contribution to the development of a conceptual map or framework based on complementary theories that together can inform the fields of community development, impact assessment, and development planning. Figure 1, above, is proposed as a framework to explore the transition of local residents in an area of rapid economic development. Based on the literature review, a conceptual map was created in chapter two (see Figure 3). Then based on findings explained in chapters four to six, the conceptual map is further modified in chapter seven.

This research contributes to knowledge about building positive responses to the negative impact of economic development in Thailand. A systematic literature review found little research on sustainable development that relates to water, food and economic development policy in Thailand, and scant knowledge about the role of young people in development

planning. The rationale for focussing on young people in the study is because they will bear the consequence of undesirable development. Thus, ethically, and simply based on the definition of sustainability, their perspective should be included in direction setting and planning for the future.

This study aims to provide insight into local residents' goals and plans, which may lead to a model of sustainable development planning to achieve the SDGs, especially Goal 2 – Zero Hunger; Goal 3 – Good Health and Well-being; Goal 6 – Clean Water and Sanitation; and Goal 11 – Sustainable Cities and Communities. This research differs from previous studies about sustainable development and planning e.g. (Baofu 2009; Campbell 2017; Krueger & Buckingham 2012; Osborne, Baldwin & Thomsen 2016) by incorporating young people's opinions. In addition, the analysis of local networks and social relationships within those networks illustrates possibilities for participation by affected and influential stakeholders (e.g. business owners, officers, residents, and NGO groups in local areas) when responding to the EEC.

This research approach aims to reduce people's suffering and prevent undesirable long-term impacts while maximising the benefits of the development. It has explored how strong social relationships or ties, receptive institutions and egalitarianism among community members contributes to better outcomes for communities. Such considerations could lead to sustainability through balanced development while maintaining environmental quality in the long term (Brown & Schafft 2011). If the outcomes of this research can be integrated into provincial planning policy, it provides a bottom-up model of policy development that will champion the voice of locals.

1.5 Thesis Structure

Thesis structure has seven chapters (Table 1) and follows the structure common in thesis development and presentation.

Table 1: Thesis structure

Chapter	Contents
Chapter 1: Overview of research topic	An overview of the research topic/problems, research questions, and its significance and innovations.
Chapter 2: Literature review	Research gaps/ Impacts on water and food security from economic development, and the role of impact assessment. Theoretical concepts and critical analysis: to explain social context (social network, social capital, and political opportunity structure-POS), and social change through community development (community organising, the participatory development practice and asset-based community development).
Chapter 3: Research methodology and research timeline	Methodology, methods and data collection and analysis tools and ethical issues.
Chapter 4: Findings- Impacts of the development plans	Analyses the EEC policy impacts in relation to water and food security.
Chapter 5: Findings - The dynamics and key factors for building social networks	Dynamics of the social networks, social capital and POS in the target areas. Published as 'Social Capital in Community Organising for Land protection and Food security'. <i>Land</i> (Cheevapattananuwong et al. 2020).
Chapter 6: Findings – Options for transformation into a sustainable urban area	Presents the findings of alternative ways and adaptation for sustainable development and ideas from the locals.
Chapter 7: Conclusion and recommendations	Synthesis of the key findings of the thesis, theorising for sustainable development and implications for further research and education.

1.6 Chapter Summary

This chapter provides the rationale for the study, the associated research question, an overview of the conceptual framework and methods to answer the research questions addressing how local residents' input can assist in the transformation of their local area to ensure sustainable urban development and continuity of water and food security. This study aims to assist local communities to investigate alternative livelihoods and create benefits from the development. I was familiar with these communities due to supporting student placements in their community development research as part of my previous professional role. As a result, I had previous contacts with local residents in those communities who I approached to recruit participants. These contacts allowed me to collect reliable and informative data for this study. The next chapter is a literature review relevant to the topic under investigation which identifies gaps in understanding and theories useful for building a thesis on sustainable development.

CHAPTER 2

RELEVANT RESEARCH LITERATURE

2. Chapter Overview

This chapter explores the theoretical foundations of this study. The first section outlines the systematic literature search and the gaps found in relation to development planning in Southeast (SE) Asia. It discusses the role of Impact Assessment in economic development (Section 2.1). Following this, social concepts are discussed and applied to the issues associated with economic development in the EEC plan. These affect people's livelihoods, with the focus on access to water and food (Section 2.2). Then, guidance for an action-oriented community development and social science approach to facilitate change is identified based on three main theories (Section 2.3):

- a) Social network theory describes the relationships among members of groups;
- b) Social capital theory, explains the collaboration among actors that facilitates mutual support; and
- c) Political opportunity structure clarifies the prospects for positive change in the case study areas affected by EEC implementation.

Additionally, community development practice theories are used to describe what community-level actions are being undertaken to support the local community (Section 2.4) and this is followed by the conclusion (Section 2.5).

Interrogating the research literature.

A systematic search of the Web of Science database, using the search terms of sustainable, sustainability and urban planning, community planning, community development, urban development and change, impacts, effects, affect or transforms resulted in 3880 articles. To specifically focus on the issues relevant to my study, these articles were then examined for the terms, the environment, water and food, reducing the number to 1770 articles. The

terms: economic development, economic policies or rapid growth were then searched resulting in 112 articles. Of the 112 articles, none specifically focussed on Thailand (Figure 2). This figure shows the number of research articles related to the terms, which includes 25 countries. Previous research has been conducted mostly in Europe and other regions. Articles from countries in Asia are identified and the majority of those are in China. Therefore, there is a gap in academic literature on sustainable development that relates to water, food and economic development policy in Thailand.



Figure 2: Number of relevant articles of research in 25 countries in August 2018 through a Web of Science search.

Because this research involves sustainable development, which includes the concept of intergenerational equity, I also searched the 112 articles for any that included the topics of youth, young people, new generation or adolescent. This resulted in only 21 articles. Of these 21 articles, few than 10 included young people involved in urban planning, economic policy or economic development or youth having influence and their potential for solving issues. A follow up search on the Web of Science in 2021 found similar results. Thus, a major gap in the literature is about young people's roles in development planning.

2.1 The Role of Impact Assessment in Economic Development

Environmental Impact Assessment (EIA) has been used worldwide since 1969 as a tool to protect the environment from the unintended impacts of development (Joseph et al. 2015) by assessing potential development effects, identifying ways to mitigate negative effects, and improving benefit. It aims to 'bring about a more ecologically, socio-culturally and economically sustainable and equitable environment' (Vanclay 2003 p.6). EIAs may refer to ecosystem, socio economic factors, culture and human factors (Hinte, Gunton & Day 2007; Palerm 2000). For example, in Canada, a review of the impact assessment processes of eight major pipelines revealed a lack of clear decision-making criteria and methods, adversarial and inequitable stakeholder involvement, a lack of compensative provision, and inadequate consideration of legal and fiduciary duty to First Nations People. Open communication and collaboration among stakeholders were recommended to improve social, environmental and economic performance (Hinte, Gunton & Day 2007). Vanclay et al. (2015) argues that good impact assessment processes should follow key principles including community consultation. For example, principles of Social Impact Assessment (SIA) include that the community has a right to receive information and the right to be protected by law based on social justice and equality; and people and communities should also have freedom from fear and the right to live in a healthy environment in order to find well-being and quality of life (Vanclay et al. 2015). Importantly for this research, a key concept is that 'local knowledge and experience are valuable and can be used to enhance planned intervention' (Vanclay 2003 p.9). Hence, principled impact assessment processes support community development and building social capital (social networks and trust) which can contribute to economic sustainability and provides equitable access to environmental resources (Vanclay 2003).

Best practice of impact assessment should be expressed through governance and legislation, supported by guidelines that outline or include legal opportunity for stakeholder involvement in the decision-making process, transparency, roles and responsibility of stakeholders as well as monitoring (Hinte, Gunton & Day 2007; Joseph et al. 2015; Palerm 2000). Evaluation of the effectiveness of impact assessment considers factors such as resources, budget and time; methods of impact assessment; communication and transparency of the process, including public involvement (Joseph et al. 2015).

Social impact assessment (SIA) as a part of an EIA process is often executed inadequately because of narrow framing, limited skills, the power relationship among stakeholders or issues of social justice relevant to a development project (Ijabadeniyi & Vanclay 2020; Palerm 2000; Tang, Wong & Lau 2008). This complexity was apparent when an EIA and SIA for a mining project in South Africa was implemented around land use and land reform. Economic and political instability were affected by the land that was a symbol of cultural heritage for local residents, and this impacted on benefit sharing in livelihood restoration and resettlement (Ijabadeniyi & Vanclay 2020; Petersmann 2017).

An integral concept of impact assessment is benefit sharing, whereby a portion of the advantages derived from a development are provided to the local community to achieve fairness and equity, in exchange for disruption, inconvenience and loss. It aims to ensure that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable and they are also not disadvantaged in sharing development benefits (Gunton et al. 2020).

Benefit sharing should be conducted through a dialogic and iterative process with those affected. The range of benefits up for negotiation may include: a community benefit fund to support local projects; additional education and training; social protection, social services, additional law enforcement; transportation infrastructure (including for pedestrians and cyclists); health, education and recreation facilities; affordable energy and clean water; employment with fair working conditions; fair compensation for land acquisition and relocation (Petersmann 2017). These help to reduce poverty and disadvantage of communities associated with the development. For example, land acquisition, land use restrictions and involuntary resettlement can affect indigenous people, vulnerable groups and communities. These groups need to be protected through mandatory human rights laws and international biodiversity laws (Petersmann 2017), approval authority powers and greater commitment to corporate social responsibility. The process of benefit sharing needs to involve negotiation and tactics for gaining power by communities (Gunton et al. 2020). For instance, impacted communities could negotiate to get the financial support for infrastructure construction which offers advantages to local communities; or investors could share benefits by providing economic opportunities to communities in the long term because local people are at risk of losing their livelihoods (Gunton et al. 2020). Agencies such as the

World Bank requires borrowers to provide evidence of negotiation about benefit-sharing as part of financial support they provide (Gunton et al. 2020).

Despite EIA and SIA practices being widely adopted internationally, the outcomes are often ineffective due to inadequate governance (Boyle 1998). Scholars in Thailand have highlighted deficiencies in impact assessment due to inadequate law and regulations of environmental agencies and participation practices (Chompunth 2013; Wangwongwatana & King 2015). However, impact assessment processes with effective public participation can reduce conflict between project owners and communities, and lead to acceptable outcomes (Chompunth 2017).

Important implications for my research are the need for 1) transparent decision-making processes, 2) collaborative and equitable processes for community engagement that allow input based on community-level knowledge, 3) skilled facilitators and negotiators acting on behalf of local communities, and 4) culturally appropriate ways of benefit sharing. In my research, I seek evidence of best practice impact assessment and consultation processes, acknowledging that even in developed countries, these processes can be deficient and ineffective.

2.2 Economic Development Effects on Local Residents and their Livelihoods

In China and ASEAN countries, economic development and industrial expansion (e.g. factories, dams or power plant buildings) are the main factors contributing to environmental change and human insecurity due to pollution, water shortages and agricultural problems (Environmental Justice Atlas 2014; Fearnside 1997; International Rivers 2014; Mitchell 2002). Although economic development contributes to local livelihoods through welfare and employment (Felsenstein & Persky 1999), the consequent environmental change has also led to migration or dislocation of rural people. For example, upstream dam releases and flood pulses into Ton Le Sap Lake, Cambodia affected local food and livelihoods of farmers and fishers resulting in emigration (Meddleton & Thabchumpon 2013). Moreover, between 2004-2014, the construction of dams has decreased biodiversity and water quality in great river basins, such as the Mississippi, Yangtze and Danube between (International Rivers 2014). The

Kadung Ombo dam in Indonesia also demonstrated high conflict and social impacts amongst local residents through displacement and the loss of livelihood and culture (Environmental Justice Atlas 2014), despite the fact this development was unable to generate electricity (World Bank 2016). These examples show that, while economic development might have some benefits, socioeconomic drawbacks for local residents can lead to further socioeconomic challenges and political inequality.

These are discussed below as they relate to water security and governance (2.2.1), Food security and economic development (2.2.2), Transportation (2.2.3) and followed by summary and discussion of the effect of unmitigated economic development on local communities (2.2.4). As a result, people in developing countries such as Thailand and other Southeast Asian countries are at high risk because of their limited ability to influence impacts, thus increasingly becoming victims of climate and environmental change (Brauch 2013).

2.2.1 Water Security and Governance in Economic Development

Many authors argue the need for good governance to ensure water security. Water security provides the basis for economic development and well-being in communities (Cook & Bakker 2012; Lautze & Manthrilake 2012; Sousa Júnior et al. 2016). The United Nations defines water security as

“the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihood, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability” (UN Water 2013).

Similarly, UN Sustainable Development Goal 6 focuses on adequate and equitable access to water, and good quality water, improved if necessary by reducing pollution. SDG 6 also argues that the implementation of integrated water resources management at all levels should support and empower local residents in improving water and sanitation management (United Nations 2020).

Good governance of water includes transparent and well-informed decision-making processes based on good science. In the context of natural resources sharing, decision making

about water is a crucial yet technical process whereby some stakeholders have the authority to access resource while others do not, making it difficult for people who lack negotiating power (Lukasiewicz & Baldwin 2017). Applying a Social Justice Framework (SJF) to water governance can identify inequities and support equality in distributional, procedural, and interactive justice in decision-making processes, which are inter-related (Lukasiewicz & Baldwin 2017). For example, the range of the stakeholders involved in decision-making and that have access to information and knowledge (procedural justice) affect distributive rules (Baldwin & Hamstead 2014; Sousa Júnior et al. 2016). Inequitable processes may lead to conflict among stakeholders about water grabbing (Baldwin 2017), a term that involves powerful actors having access and control over freshwater resources for economic growth, and often private benefit. Moreover, priorities for rapid economic development can affect good water governance. Governance principles for natural resource management include factors such as legitimacy, transparency, accountability, inclusiveness, fairness, integration capability and adaptability (Lockwood et al. 2009).

Access to adequate and good quality water is a human necessity for both rural and urban communities. Water accessibility and shortage, particularly the alienation of water from farmers, is a recurring issue (Birkenholtz 2016; Brown & Schafft 2011; Dalby, Brauch & Spring 2009; Selby 2014). Such access affects food and water security. Water grabbing has been reported throughout Southeast Asia. In Rayong province, Thailand, conflict between agricultural groups and industrial sectors arose because of water grabbing between factories and six communities during the 2015 drought season when local residents could not access fresh water from the canal (ASTV News 2015; Koontanakulvong 2017). In Lombok, Indonesia, rural irrigators were disadvantaged due to prioritization of water allocation for large commercial users and for use in urban areas (Sjah & Baldwin 2014). Likewise, in India, development of a rural dam/reservoir redirected water for commercial and industrial purposes away from irrigated agriculture, affecting farmers' livelihoods (Birkenholtz 2016).

Maintaining access to good quality water should be an underlying principle in economic development because it affects local residents. Unless appropriate measures are put in place, water degradation may originate from urban industrial expansion and rural agricultural activities, which affects a community's ability to use water for different purposes (Perreault

2014). Urban water is often contaminated by industrial chemicals, sewage and solid waste, while rural water can be polluted by agricultural runoff (Perreault 2014). Toxic industrial waste water can also affect ground water quality (Okereke, Ogidi & Obasi 2016).

Water security requires suitable legal systems, organisation, infrastructure and capacity which can facilitate transboundary cooperation, peace and political stability (UN Water 2013). Cook (2012) argued that integrated water resources management, in the holistic sense, is also crucial to water governance. Australia, for example, has four priorities for water security: consuming water wisely; assisting healthy river and wetlands; saving water supplies; and taking account of climate change in catchment management (Cook & Bakker 2012). These priorities are relevant to the current case study area and research, which has the processes for achieving and maintaining access to adequate quality water as a focus.

2.2.2 Food Security and Economic Development

The Food and Agriculture Organisation of the United Nations (FAO) defined food security as “a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (Clay 2002 p.1; FAO 2002). These relate to SDG 1 – No Poverty; SDG 2 - Zero Hunger; SDG 3 - Good Health and Well-being; and SDG 12 - Responsible Consumption and Production (United Nations 2015). In addition to affecting water security, a developing global economy can engage in significant land-use change, resulting in a loss of biodiversity and agricultural production (Reidsma et al. 2006) and thus, food security. Land-use change is significant because land is a main factor in food production. In Vietnam, for example, economic development has resulted in loss of forests, consequently decreasing biodiversity and increasing greenhouse gases (Freedman & Bess 2011), as well as degradation of rice fields and agriculture production (Dijk, Rooij & Hilderink 2014). Such losses have often been facilitated through ‘land grabbing’, resulting in large-scale land acquisitions by domestic and transnational companies. Land grabbing relates to the rapid growth of capital, goods, and the notion of large-scale agriculture and land banks through political power. This affects land use, food, crops and water resources (Margulis, McKeon & Borras 2013; Mehta, Veldwisch & Franco 2012).

Some argue that land grabbing may be a new form of colonization that involves political and social networks (Gasteyer et al. 2012). For instance, in some countries, governments have collaborated with international companies to increase food production, but without consideration of local human rights, freshwater ownership, and social and environmental impacts (Gasteyer et al. 2012; Rulli, Savioli & D'Odorico 2013). Because water access is required for agricultural production, land grabbing can also lead to water grabbing affecting water access. As an example, land grabbing by elites in the Senegal River Basin in west Africa led to conflict because the security forces-controlled access to water (Kipping 2009) affecting food production, and therefore, food security.

Often economic development priorities trump food security priorities. Direct foreign investment in 2017, for example, has continued to increase in Southeast Asian countries (\$50 billion to \$130 billion) showing economic development is growing (Cheok 2017) but associated with increasing food prices and social unrest (Food & Agriculture Organisation 2017). This trend has increased the price of rice, wheat, soybean and other crops which in 2016, affected about 70.5 million people in Eastern and Southeast Asia through severe food insecurity (Food & Agriculture Organisation 2017).

The overall concern is that economic development and rapid industrialization will lead to negative impacts on the food-system and food security (Freedman & Bess 2011; Li et al. 2016). While Deller et al. (2017) argue that there is lack of strong empirical evidence of the benefits of locally produced food, local food systems have been promoted, not just as a tool for local economic development, but for building relationships between the producer and consumer, community capacity and social capital (Christensen & Phillips 2016). For example, local food production in the American town of Hardwick, Vermont USA improved health outcomes for residents (Christensen & Phillips 2016). In Poland, local food system development led to positive economical, environmental and social benefits (Bareja-Wawryszak & Golebiewski 2014). Key to this argument is food safety because food production is at risk of contamination from toxins due to industrialization (Gandhi & Zhou 2014), and thus is important to consumers (Lam et al. 2013). In addition, government policy, population growth and climate change put pressure on land use in Southeast Asia affecting local income, food production and land degradation (Dressler et al. 2017; Valentin et al. 2008). Thus, if economic development

prioritises land for developers while ignoring existing local uses, this could result in farmers losing their agricultural livelihood and local residents no longer having access to locally produced fresh and nutritious food. In relation to my study, development associated with the Government's EEC may affect food security significantly in local areas, unless good management practices are applied.

2.2.3 Transportation and Economic Development

The transport sector is essential to economic development and industrial expansion, yet also has environmental and human impacts. This sector relates to SDG 11 - Sustainable Cities and Communities (United Nations 2015). The transport sector contributes to 24 percent of the worldwide Green House Gas emissions (Maragkogianni, Papaefthimiou & Zopounidis 2016). In 2014, Thailand was a high producer of fossil-fuel CO₂ emissions, being 19th among 220 countries in the world (Boden & Andres 2017). Moreover, the growth of the transport sector's oil demand and greenhouse gas emission in Thailand continues because of rapid economic and population growth. Road transportation contributed to 75.7 percent of greenhouse gas emissions (Pongthanaisawan & Sorapipatana 2013).

Through the Thailand 4.0 policy the Thai government plans to increase shipping and logistic capacity in EEC target areas (Ministry of Industry Thailand 2017). In addition, land-based operations of maritime transport (ports) have the potential to impact human health, air quality and the environment in coastal areas (Maragkogianni, Papaefthimiou & Zopounidis 2016).

Developing roads can intensify traffic congestion leading to increase road accidents. Thailand had the second highest number of fatal road crashes globally during 2014 (Sivak & Schoettle 2014). In 2017, during seven days in the New Year holiday period, the Department of Disaster Prevention and Mitigation in Thailand reported 478 deaths from 3919 road accidents, the highest death toll in 10 years (Suriwong 2017).

Cultural values can also be deeply impacted by traffic and noise as in the case of Map Ta Put industrial estate in Thailand (Pangsapa 2014). In this research, the spiritual elders were worried about walking to the temples because of heavy commercial traffic near the industrial estate. Additionally, monks at the local Buddhist temples currently conduct their daily

meditation inside and in isolation, and some temples have installed glass windows and doors for meditation because of traffic noise, significantly altering the architecture from the traditional style of Buddhist temples (Pangsapa 2014). These Thai transportation examples demonstrate how social and environmental injustices from economic development can affect the environment, safety and well-being of local citizens. The challenge is to accompany industrial expansion with financial investment to minimise negative consequences and ensure a transition to a higher standard of living for everyone.

2.2.4 Effects of Unmitigated Economic Development on Local Community

The previous sub-sections described potential consequences of development on three areas of human well-being (water security, food security and transportation), which affect local residents and their livelihoods. These guide my research on the potential impacts on the rural people in the case study area in relation to water and food security (RQ1). An improved process for achieving just water management during EEC planning seems warranted.

Economic development.

Economic development through urbanization, industrialization, high density agricultural activities, and transportation are factors degrading food production and impacting environmental and social quality in China (Lam et al. 2013), and India (Birkenholtz 2016). In spite of implementation of the SDGs, in 2015, economic development has affected water security and food security through water grabbing, inequitable water access, poor water management and land use change. Although EIA and SIA were created to mitigate impacts (Ijabadeniyi & Vanclay 2020; Lukasiewicz & Baldwin 2017; Palerm 2000; Tang, Wong & Lau 2008; Vanclay et al. 2015), inequities still exist.

Impact assessment law must mandate local participation in impact assessment and identifying solutions, to identify and mitigate pollution and other negative effects. However, law without compliance is meaningless. Therefore, enforcement and compliance with the law are necessary, but often not achieved due to the lower status of environmental agencies and power of economic and politics of industries.

Water security.

Having access to water and food are basic human needs. A just governance process for land and water resource access is crucial. Economic development policies have enabled water grabbing to persist, resulting in reduced access to adequate quality water, a particular inconsistency when many of the SDGs rely on improving this basic right. Although Lukasiewicz and Baldwin (2017) have proposed a social justice framework for understanding inequity, a change relies on cooperation among all stakeholders in the water management process. Dijk (2014), Rulli (2013) and Gasteyer (2012) emphasised that economic-development policy affects land use, water accessibility and water security in local areas, which leads to injustice for local residents. However, local residents need to develop their own alternative plans. This leads to my research question (RQ3), “What alternative approaches could be used to adapt to ensure more alignment with sustainable development objectives?”

Food security

Food security depends on maintaining local food systems and minimising the risk to degradation from industrial pollution and management (Gandhi & Zhou 2014). Industrial and business sectors have better access and, therefore, potential influence on governments supportive of economic development (Boyle 1998; Dijk, Rooij & Hilderink 2014; Rulli, Savioli & D'Odorico 2013). Moreover, local residents often lack the power to negotiate and are at the most risk from environmental change (Rulli, Savioli & D'Odorico 2013; Sjah & Baldwin 2014; Vetrimurugan et al. 2017).

Finally, increased transportation infrastructure due to industrial expansion also affects communities' environment and the lives and safety of its citizens. At the same time, some local residents may receive advantages from improved transport infrastructure such as employment (Felsenstein & Persky 1999) and better access for goods. Therefore, infrastructure improvements have positive and negative impacts on individual and collective wellbeing.

These reasons build an argument that the Eastern Economic Corridor (EEC) economic development has the potential to impact water and food security, livelihoods and community residents, unless accompanied by a just process for decision-making with local residents.

Nonetheless, economic growth is essential, so the question is how to grow economically while mitigating the negative effects of economic development on local residents, thus leading to sustainable economic growth as outlined in the UN's Sustainable Development Goals.

To be effective, impact assessment of economic development would benefit from understanding of social theories and community development practices at the micro and mezzo levels with social network-building, social capital and community organising. The next sections on social theories (2.3) and community development practice (2.4) illustrate how linking people at the local level may lead to negotiation, improved power balance for accessing resources, and consequently improved social justice.

2.3 Social Theories Applicable to This Research

Social theories are used to answer RQ 2, 'How are social networks of local communities, including those of young people, responding to the impacts of the Eastern Economic Corridor in relation to water and food security?' This section examines social theory that relates to social networks, social capital and the political opportunity structure (POS). Social networks explain relationships and potential collaboration among local residents who are facing the same issues. Social capital concepts assist in understanding how connections function and people develop trust. POS considers the political context for social mobilisation and change.

This first section provides a definition of social networks (2.3.1), followed by the functions of social networks (2.3.2). Section 2.3.3 provides a discussion defining social capital and its significance in relation to social networks, followed by the importance of social networks and their associated social capital (2.3.4). Section 2.3.5 discusses the concept of political opportunity structure. Finally, this section concludes with a discussion about the relationship between and the significance of these social theories (2.3.6). These concepts are used to identify the key factors for building social networks among local residents, including young people in the case study area, who are responding to the impacts of the Eastern Economic Corridor (EEC) related to water and food security. Moreover, these theories may illustrate some solutions or alternative ways for local residents to improve their conditions during the EEC plan continuance.

2.3.1 Social Networks

The term “social network” describes the relationships among members of groups and pertains to aspects of their social life, such as their interests in the same issues, their collaboration efforts and the consequences resulting from those efforts (Coutts & Shannon 2010; Neuman 2012). Brown and Schafft (2011) argue that strong relationships, receptive organisations and equality among members, lead to sustainable communities.

Kumbamu (2017) refers to social network – based activities which are used to sensitise and educate civil society organisations and the general public about sustainable agri-food alternatives with the added intention of influencing government agricultural policies through community-based learning.

Social networks can take many forms including formal and informal organisations, face to face meetings, training or physical activities, and relationships on social media, such as Facebook, Twitter, Instagram and Google Plus (Conover et al. 2013; Levkoe 2015). In the USA, for example, Occupy Wall Street participants used network communication technology for political communication and to aid their social movement for political and social change (Conover et al. 2013).

Analysis of social networks can lead to an understanding of a network’s strengths and weaknesses (Blay-Palmer et al. 2013). In this research, social networks were analysed by examining face to face interaction, such as meetings or physical activities, or connections through multiple channels such as newsletters, social media and online technology. These interactions can facilitate collaboration on collective responses to common issues or topics and lead to transformation as members build awareness and trust through regular interaction.

2.3.2 The Functions of a Social Network

Seven functions of social networks are: 1) Sharing information (Boulet, Healey & Helton 2008; Levkoe 2015; Manning & Freeman 2011); 2) Increasing awareness for problem-solving (Freedman & Bess 2011; Hazel et al. 2012); 3) Multi- channel communication (Brown & Schafft 2011; Gilchrist 2007); 4) Building social movements (Boulet, Healey & Helton 2008; Brooks 2009; Conover et al. 2013; Gilchrist 2007; Levkoe 2015; Ojha et al. 2016); 5) Making voices

heard (Freedman & Bess 2011); 6) Social learning; and 7) Fostering innovation (Dedeurwaerdere et al. 2017; Hazel et al. 2012; Kirwan et al. 2013; Kumbamu 2017; Sheil 2007). Moreover, feelings of strong connection and regular contact among local actors helps to develop skills in conflict resolution, and decision making (Broadbent 2010). The following explains the implication of these functions for this research.

Sharing information.

Social networks enable group members to share and inform each other when situations arise (Boulet, Healey & Helton 2008; Levkoe 2015; Manning & Freeman 2011); for example, in agri-food news, data is exchanged more quickly among members within social networks in Australia (Manning & Freeman 2011). In my research, social networks are analysed to explain interactions amongst people and how information is shared to increase awareness for problem-solving. Social networks form because people see benefits in awareness building about common issues and in collaboration respond collectively (Freedman & Bess 2011; Gilchrist 2007; Hazel et al. 2012). Additionally, common interests can be shared for finding solutions to issues through collaboration when the level of trust is high among network members. For example, environmental programs or activities in seven Australian cities contributed to trust in networks involving a range of civic participation, such as volunteering and community building in local areas (Boulet, Healey & Helton 2008).

Increasing awareness and problem solving.

The process of social networking can also protect local communities from unintended negative consequences resulting from economic policies. Hence, social networks enable new ideas to be uncovered within communities through informal communication and discussion, which can lead to solving community issues (Gilchrist 2007). Previous research shows the benefit of social network for raising awareness about food systems and environmental issues that result in collaborative problem solving. For example, coalitions formed in Tennessee, USA, facilitated information sharing and collaboration to improve food security (Freedman & Bess 2011). In Thailand, villagers formed social networks to regain cultural norms for collaborative rice harvesting (Neuman 2012). Social networking among six European Union

cities enabled communities and stakeholders to pool knowledge and collaborate in policy-making processes that improved the environment and the health of local actors (Hazel et al. 2012).

Multi-channel communication.

Social networks are spaces for communication that can take many forms such as newsletters or social media (Brown & Schafft 2011; Gilchrist 2007; Levkoe 2015; Schaffer 2011). Digital technology specifically through websites and blogs, has been a crucial strategy for the formation of relationships among the alternative food movement in Canada (Levkoe 2015). Social media via an online network has shared information about organic farming and linked students to participate in organic farming (Brown & Schafft 2011; Schaffer 2011). Thus, social networks, conceptualized as a space for closed and contained communication, are important spaces for relationship building.

Building social movements.

The functions of social networks also include the building of flexible and robust social movements from micro to macro levels (Gilchrist 2007). Gilchrist (2019) asserted that networks connecting with other networks, or meta-networks, influence each other and are fundamental to community organising processes found in social movements. Conover et al (2013) indicated that political communication among participants in cities who used social media was inspirational and this aided their social movements such as Occupy Wall Street in USA. Likewise, Levkoe (2015) showed that social-movement networks in Canada employed social media as a key organising strategy and tool for sharing information, leading to a movement for good food systems. This relates to trust, connections, and other qualities in social relationships (Boulet, Healey & Helton 2008; Freedman & Bess 2011; Hazel et al. 2012; Levkoe 2015; Sheil 2007). This function emphasises that multi-channel communication contributes to a strong network and influences building social movements.

Making voices heard.

Social networks can also support the voice of affected people to be heard to a greater degree because a consistent message from large numbers is more effective than individuals (Asia Europe People's Forum 2016; Freedman & Bess 2011). For example, local residents' concerns regarding risks and dangerous practices in the trade agenda was conveyed via civil society networks in the international Asia Europe People's Forum, providing perspectives for further actions and collaboration related to economic development in Southeast Asia (Asia Europe People's Forum 2016). Likewise, Freedman and Bess (2011) described formative participatory and collaborative processes of a network along with coalition efficiency and goals of democratic decision-making related to centralization of the network, which supported locally based associations addressing issues from local food security to global climate concerns (Freedman & Bess 2011).

Social learning.

Social networks support dynamic learning among members (Hazel et al. 2012; Sheil 2007). For example, community engagement via a Community College of Technical and Further Education (TAFE) in Victoria, Australia created relevant programs for rural women that led to informed conversation, and shared learning among network members for problem solving, promoted through newsletters and festivals for 16 years (Sheil 2007). A network can also facilitate interaction and social learning among multi-actors to secure closer working relationships such as what occurred between policymakers and researchers in the Health and Environmental Network in Europe (Hazel et al. 2012). Moreover, the social learning benefits of social networking can assist with collaborative actions for positive change (Kumbamu 2017).

Fostering innovation.

Another function of social networks is to create social innovation (Dedeurwaerdere et al. 2017; Kirwan et al. 2013). Social innovation can be defined as new ideas created from social needs to solve problems among members such as new models, systems, processes, services, rules, regulations and new organisation of structures (Moolenaar & Slegers 2010; Nicholls,

Simon & Gabriel 2015). Social innovation helps to increase socio-political capacity, identifying potential for sustainable change. Both Kirwan et al (2013) and Dedeurwaerdere et al (2017) discuss social innovation through local-food networks that facilitate community cohesion, sharing resources and information about sustainable and healthy food, even changing lifestyles.

Social Networks and this study.

Social networks act as channels for sharing information or ideas, enabling social learning or awareness-raising and contributing to members' socio-political capacity. They also function as a strategy for solving issues, building social movements and working towards social justice and political negotiation because there is collaboration among members or organisations, allowing the voice of affected members to be heard to a greater degree, especially as they relate to the negative impacts of development initiatives and social policy in local areas. Social networks also can be a space for multiple actors to learn, interact and develop skills in conflict resolution while creating social innovation for change. In the case study for my research, I will analyse community processes associated with development and the opposition to it in regard to the functions of social networks. The concept helped to identify coalitions of interest in preparation for the consensus conference and guide local residents to engage and collaborate.

2.3.3 Social Capital

Social capital explains the type of collaboration that occurs among social networks, which can facilitate mutual support. Social capital can be defined as relationships and collaboration among actors that leads to engagement, support, and sharing of information and resources in their network (Perkins, Hughey & Speer 2002; Putnam 1993; Woolcock & Manderson 2009) and the achievement of common goals (Islam et al. 2006). This contributes to understanding, trust, respect, values and norms among network members, and represents the quality of networks or groups, and also relates to the enhancement of personal empowerment (Brown & Schafft 2011; Islam et al. 2006; Osborne 2013; Osborne, Baldwin & Thomsen 2016; Putnam 2000).

Social capital was initially articulated by Bourdieu (1991) and expanded on by Putnam (2000). Bourdieu informs that social capital relates to the purpose of self-motivation, which is linked to connections people make in long-lasting networks, and invested in by individuals, such as a friendship network or institutionalised relationships in organisations, schools or group membership (Bourdieu 1991; Siisiainen 2003). These provided individual recognition, such as personal credit, personal trust and personal image (Bebbington 2007; Osborne, Baldwin & Thomsen 2016; Putnam 2000; Siisiainen 2003). Putnam argued social capital from a communitarian or more social perspective (Osborne, Baldwin & Thomsen 2016; Putnam 1993, 2000).

Putnam theorised two forms of social capital. First, bonding social capital is comprised of homogeneous relationships, such as those among families, neighbours or villagers who have similar values, history and interests. These homogenous social relationships are built on bonds of loyalty and reciprocity (Osborne, Baldwin & Thomsen 2016; Putnam 2000). Second, bridging social capital is comprised of heterogeneous relationships across difference, where people may have similar interests but hold different perspectives, such as those among agricultural or fishery group members (Osborne, Baldwin & Thomsen 2016; Putnam 1993). The latter, bridging, is referred to as relationship of thin trust, while the former, bonding, represents relationships of thick trust (Putnam 2000).

Third, Woolcock and Narayan (2000) contributed 'linking' to social capital theory. Linking social capital is where connections are made from the local level to the structures/institutions in society, such as when building relationships with stakeholders outside the local area and with politicians (Jones 2010; Woolcock & Narayan 2000). Linking social capital illustrates the nature of social interactions among agencies, authorities and policy actors at various levels within a society and communities can draw on linking social capital to influence policy development (Jones 2010; Talbot & Walker 2007; Woolcock & Manderson 2009). Hence, social capital contributes to understanding and analysing the roles of social relationships and the degree of influence among participants affected by the EEC plan.

2.3.4 The Importance of Social Networks and their Associated Social Capital

Understanding the types and purposes of social capital within a social network assists in knowing how it operates and how to effectively improve it. There are four essential types of

relations between a social network and social capital. First, social capital is a result of network bonds that can lead to collaboration (Brondizio, Ostrom & Young 2009; Putnam 1993; Woolcock & Manderson 2009) and solutions to personal issues (McMichael & Manderson 2004). Second, social capital is crucial for community processes among networks reacting and adapting to change (Levkoe 2015; Osborne 2013). Third, social networks support access to resources, contributing positive behaviour and attitudes through social capital (Brown & Schafft 2011; Jones 2010). Finally, a network with linking social capital is essential to influence policy change (Casey 2009; Jones 2010; Woolcock & Manderson 2009), possibly increasing influence and power (Perkins, Hughey & Speer 2002).

Some authors foreground three forms of social capital (bonding, bridging and linking) as integral to everyday practice in community development, especially necessary when working across difference and increasing participation with closely bonded groups (Howard & Rawsthorne 2019; Rawsthorne & Howard 2011). Networks drawing on *bonding* social capital is crucial because they are built on bonds of loyalty and reciprocity and promote activities that contribute to a shared understanding of issues, mutual trust, and improved mental and physical health and wellbeing (McMichael & Manderson 2004). For example, building network connections among newly migrating women in Australia helped reduce their stress and provide support during their settlement (McMichael & Manderson 2004). Research also showed how bonding social capital in the local community of Xingu Indigenous Park in Brazil was crucial for protecting ecology system (Brondizio, Ostrom & Young 2009). Thus, such collaboration influences the relationships and adaptation between actors and individuals at the community level (Brondizio, Ostrom & Young 2009; Ennis & West 2010; Kirkby-Geddes, King & Bravington 2013; McMichael & Manderson 2004).

The importance of social networks to build *bridging* social capital can foster and sustain collaboration when making linkages to assets external to a community, such as within the local food movement in Canada (Deller, Lamie & Stickel 2017; Levkoe 2015). For example, Levkoe (2015) analysed how provincial network organisations in Canada supported alternative food initiatives for collaborative food systems. They show that the role and structure of collaboration and social network strategies can link across sectors, making their

local food initiatives more successful. Their research demonstrates that social networks contribute to the development of both bonding and bridging social capital.

Linking social capital represents vertical relationships across an entire society that provide greater opportunities for dialogue with those who can influence policy, such as seen in the collaboration between an industrial company and local government in Brazil (Brondizio, Ostrom & Young 2009) or between government and NGOs in Romania (Nita et al. 2017). Other scholars have shown that social capital can influence a policy through empowerment, community activities and development (Casey 2009; Deller, Lamie & Stickel 2017; Stanton-Salazar 2011; White 2002). For example, planners and community development practitioners in Canada, the United States and western Europe play a crucial role in food system design, policy and implementation through social capital for building community and regional wellbeing (Deller, Lamie & Stickel 2017). Likewise, Jones (2010) argues that the knowledge of where to report environmental problems in the city of Mytilene in Greece was highly connected to linking social capital employed by community members because the knowledge of the environmental problems and public policy agenda increased their access to stakeholders with power and authority.

Whether described as bonding, bridging or linking social capital, all types are used by social networks and are crucial for environmental activation in order to gain participation and share information about environmental issues among people and stakeholder groups. Perkins et al. (2002) argue that social networks can bring social cohesion, with 'network-bridging' providing a chance to enhance power, access and learning on a range of issues. Thus, if members understand social network relationships and how these contribute to building social capital, it can lead to a greater sense of empowerment (Brooks 2009).

These examples show that effective community development should consider both social networks and social capital to find solutions to community issues. They have a bearing on how it stimulates and aids the sharing of information among organisations (section 2.3.2). The degree of social capital in networks contributes to social cohesion and support for actors in social change (section 2.3.3). Finally, social capital theory explains relationships which link to political opportunities (section 2.3.4).

In this study, social networks and their associated social capital have been investigated through the analysis of relationships among local actors. These include farm-owners, nypa-roof makers, local business owners and local residents who rely on the natural resources for their livelihoods. As this study is concerned with local water and food issues, analysis applying these concepts will help to fill a gap in knowledge about how rural people can transition to sustainable development in the face of the economic development.

2.3.5 Political Opportunity Structure

This section discusses the concept of Political Opportunity Structure (POS), starting with 1) the definition of a social movement; 2) an explanation of the POS concept; 3) an understanding about how social movements use POS when developing tactics; 4) an explanation of power as a critical component of POS such as in repressive regimes; 5) the relationship of POS to social capital; and 6) the contribution of the POS concept to this study.

Social movement definition.

A social movement is when many people act together to pursue some shared purpose, such as environmentalism (Allaby & Park 2013). Social movements can be understood as people involved in a sustained campaign to achieve some kind of radical change or social change goals. Campaigns such as the women's movement, the peace movement, the green movement, the LGBTIQ rights movement and the human rights and black lives matter power movement, have been responsible not only for providing alternative visions but also for providing people with ways in which activism can lead to the establishment of alternative structures (Ife 2016). In relation to my research, local residents who mobilise to address impacts because of rapid economic development planning in local areas could be considered as involved in a type of social movement or could be seen as having the potential for a social movement, especially if they use bridging and linking social capital. Further, a social movement does not operate in isolation from the environment in which it sits. To better understand the influence of the environment on a movement's success, I refer to the concept of Political Opportunity Structure (POS).

The Political Opportunity Structure.

POS refers to the social and political context of the social-movement building process that either encourages or discourages people from using collective action when aiming for policy change (Engels 2018; Fernandez & Pena 2004; Kirchherr 2017; Koopmans 2003; Wahlstrom & Peterson 2006). POS includes the level of collective action, strategy, courage and imagination of a variety of actors who are involved in conflict situations, and is formed by structural characteristics of the political context in the social movement (Koopmans 2003). It recognises the importance of political influences and political connections in decision-making. It acknowledges that power structures may affect opportunities for resistance, people's willingness to take the risk to resist, and the shape resistance takes (Verkoren & Ngin 2017).

Strategic use of POS.

The POS concept assists in understanding and explaining the emergence, development and influence of social movements that lead to change (Engels 2018; Kirchherr 2017; Zachrisson & Lindahl 2019). Social movements foster their success by making use of insightful tactics in the context of POS (Kirchherr 2017; Koopmans 2003; Wahlstrom & Peterson 2006). For instance, the anti-dam movement against Myitsone Dam in Myanmar was initially framed during the election, as a threat to Kachin ethnic cultural survival, based on environmental and resettlement impacts. With a change towards a more civilian government, tactics changed to gain wider support, emphasising national cultural heritage of the Irrawaddy as a holy river, honouring the river through art and mass prayer ceremonies. These important tactics of the social movement led to the significant achievement to suspend dam construction (Kirchherr, 2017). Thus, POS can be an efficient tactic during community organising and developing a social justice movement to influence environmental and cultural transition.

Cognisance of POS and the role of politics and negotiation should be considered in development of tactics to mobilise people for social justice (Fernandez & Pena 2004; Koopmans 2003; Meyer & Minkoff 2004; Verkoren & Ngin 2017; Wahlstrom & Peterson 2006). A search of the literature found several examples where understanding of the POS was used as a tactic for a social movement: the Nunca Mais movement is especially insightful. Fernandez and Pena (2004) described the swiftness of a social movement, Nunca Mais, in

Spain that effectively mobilised public opinion in response to an oil-spill from a sunken tanker that affected 3000 km of coastline. With devastating environmental and economic impacts, and a tardy deceptive approval by government, the movement mobilised political opportunity and built on existing social discontent and discussion about previous domestic and international oil spills. This was accomplished by gathering disparate stakeholders including fishers, unions, students, environmentalists and those from the arts and culture, with the latter groups mounting innovative means of protest.

Power as a critical component of POS.

It has been argued that taking social action can be challenging when military or repressive regimes have power and authority. Investigation of the implications of autocratic regimes found that military regimes and personality-based dictatorships were more repressive on environmental NGOs than single party regimes and monarchies (Bohmelt 2014). Military governments tend to establish power within, as a right to set rules, primarily in areas of economic growth and national security. Environmental issues are of less importance and repressive behaviour is an organisational norm (Bohmelt 2014). In terms of POS and my research in Thailand, which has a military dictatorship, potential repression of a social movement that expresses concerns about the EEC became an important factor in my research (see Chapter 5).

The relationship of POS to social capital.

While the relationship of POS to linking social capital has not been directly conceptualised previously by researchers, various authors have described situations that reflect the relationship between these theories; for example, through political participation and engagement to influence policy, including among minority groups (Cruz 2016; de Zúñiga, Barnidge & Scherman 2017; Jones 2010; La Due Lake & Huckfeldt 1998; Teney & Hanquinet 2012; Verkoren & Ngin 2017). Social capital (particularly linking social capital) and robust social networks influence political engagement and, can increase political participation through multiple channels. Moreover, social capital was found to be tied by political and personal networks, and produced the essential political circumstances through participation in democratic processes (La Due Lake & Huckfeldt 1998). For example, in USA a young

immigrants group formed a strong network, communicated strategy and distributed information through multiple channels for pushing their policy via informal participation. This group also used formal participation mechanisms with their network in the national process to advance policy change (Cruz 2016; Teney & Hanquinet 2012).

Verkoren and Ngin (2017) argued the importance of social networks and social capital in strengthening people's agency in dealing with political structures in Cambodia. Connections were made by those groups against land grabbing which mobilised community members and partners, including international actors. These groups drew media attention and sought political opportunities to reach their goal. A further factor emphasising social capital links to POS can be seen as affecting indigenous identity about *land*. Indigenous people define the meaning of *land* as a spiritual hereditary sphere and is different from a non-indigenous understanding where *land* is comprehended as an economic resource (Verkoren & Ngin 2017). Hence, land grabbing resistance and movement identity reflected the values of the indigenous culture and beliefs (Verkoren & Ngin 2017).

POS contribution to this study.

Understanding the concept of POS provides an opportunity to bring attention to the role of politics and strategy in voicing issues. It highlights the need for dynamic negotiation amongst the state, citizens, and other stakeholders, such as companies or business investors. This study employs the POS concept to provide insights into the context and tactics of social movement building. Local responses and power relationships within the EEC are explored within POS, helping to explain the social movements in terms of environmental issues in CCS and the likelihood of successful strategies for change. POS theory is useful because it is a concept for gaining an understanding of social movement building and its negotiation processes between local residents and government. POS on its own, has been criticised for its lack of attention to how people organise and interact to build agency (Verkoren & Ngin 2017). This research integrates the concept of social capital as integral to POS and the potential to respond to and address local problems (see Chapter 5).

2.3.6 Social Theories Discussion

The previous sections exploring social networks, social capital and political opportunity structure providing a helpful analytical perspective for my study. Social networks increase awareness, and support people and stakeholder collaboration in policy advocacy that aims to improve the environment and health (Hazel et al. 2012). Social networks function to link people who have common interests, which in this case is social and environmental justice (Boulet, Healey & Helton 2008; Gilchrist 2007; Levkoe 2015). Social networks can support the building of social movements from micro to macro levels (Gilchrist 2007). Additionally, social networks relate to the creation of social capital when the relationships are tied through mutual support among members (Deller, Lamie & Stickel 2017).

In relation to my study, when discussing EEC issues bonding social capital is used to describe the relationships among local residents who might have similar perspectives, and bridging social capital to engage other stakeholders who might hold different perspectives, including other local leaders (who play a communication not decision-making role). In addition, social networks can support linking social capital which is about forming relationships with decision makers (relationships on the vertical plane or at the societal level), with the potential to influence policy (Jones 2010; Woolcock & Manderson 2009). As a result, in rural areas that are transitioning to urban areas, social networks that support linking social capital need to take into account political constraints and opportunities (POS) (Kirchherr 2017; Koopmans 1999; Wahlstrom & Peterson 2006). This can potentially build a channel of good communication with decision-makers and politicians who have authority and influence in EEC planning. POS also assists in understanding the autocratic regime in Thailand resulting from the coup in 2014 and the national election in 2019. POS can explain how local residents can look for opportunities to develop tactics to raise concerns for EEC impacts with politicians and generate alternative solutions that may only be possible around election times or at significant events.

Thus, examined together, this study employs these three complementary concepts to help explain the circumstances and processes of social movement building (addressing RQ2). This will also address an identified gap in the literature by investigating how social networks include young people in responding to the EEC policy impacts on water and food security.

These concepts along with those described in Section (2.4), explain how local residents are engaged to identify alternative approaches and create benefits in the transformation from the rural to urban areas.

2.4 Community Development Practice Theories

Community Development (CD) practice contributes additional foundations for this study. They are important as this study considers how local residents in an area of rapid economic development can push for sustainable development through processes of collective action.

Community development encompasses an array of practice approaches, providing the 'how to' or practice for social change. They outline how people in local communities band together for collective action to bring about transformation in their communities, especially in response to outcomes in the political and socio-economic environment (Ingamells et al. 2010). Community development practice relates to bottom-up processes, such as community-driven participation that enables people's contributions to social change (Ingamells et al. 2010; Lathouras 2016; Mandell 2010).

Of the myriad of community development practice types, this research draws from three main approaches: Community Organising (Section 2.4.1), Participatory Developmental Practice and two of its methods, micro method and mezzo method (Section 2.4.2); and Assets Based Community Development (ABCD) (Section 2.4.3). These practical theories are synthesised and applied to this study in the community development discussion (Section 2.4.4).

These practice approaches have been chosen because they focus on improving local issues by building social capital, creating social networks, developing assets in local areas, and organising when resistance strategies are required. Macleod and Byrne (2012) emphasise that CD practice tends to focus on consensus policies, that are collaboration and community building processes, rather than on areas where people are facing the abuse of state power which negatively affect local communities. They argue that CD practice should focus on conflict politics, where collective action to challenge state power may result in better outcomes for communities. Thus, community development practice is essential for this study because it helps in understanding the practical processes and methods that may lead to a

positive change in the local case study area. Use of these theories includes an analysis of people's awareness of water and food security issues resulting from the EEC plan, for problem-analysing or finding solutions and setting targets for positive transformation, social change, justice and well-being.

2.4.1 Community Organising

Community organising is a process that communities use for building coalitions and empowering people to fight for social change (Alinsky 1989; Brady & O'Connor 2014; Brown 2010; Christens, Inzeo & Faust 2014; Mandell 2010; Okamoto 2017; Skinner 2013). It is the process of mobilising people for alliance-building and increasing people-power for solving a range of local problems (Brady & O'Connor 2014; Brown 2010; Christens, Inzeo & Faust 2014; Laing 2009; Lathouras 2016; Mandell 2010). Further, Brady and O'Connor (2014) define community organising as being related to some degree of personal experience of marginalisation, and is politically progressive as it is a community practice for responding to social justice issues and for social movement building (Alinsky 1989; Brady & O'Connor 2014; Brown 2010; Skinner 2013).

Alinsky first theorised the community organising approach in 1971, and believed in democracy as a means to social justice, encouraging education to build human capacity and empowerment. He developed training tools for community organisers to help people better understand their interests, identify collaborative alliances, and to explain the roles of community organisers. Brady and O'Connor (2014) describe the five-steps process of community organising practices as:

- 1) Motivation: actors will need the motivation to seek a solution when community members suffer injustice.
- 2) Community building: community members will identify the issues and raise awareness to others for understanding their problems and organising processes to gain knowledge about these issues.
- 3) Planning: this stage relates to ideas and theories of organising a plan and setting goals.

4) Mobilising: engaging with community members, building the power of people, using tactics and negotiation with policy makers to achieve their goals.

5) Outcome: reporting the result after the organising is done.

They argue that the success or failure of community organising may be seen in terms of building trust and motivation among members. For instance, if there is high motivation, it has the potential to succeed with people's ongoing commitments to action (Brady & O'Connor 2014).

Brown (2010) indicate that community organisers are essential, playing two main roles:

1) building organisations and developing leaders to take responsibility and become practised in dealing with their issues, rather than relying on others to address them; and

2) searching for and developing the skills of a leadership team that can play multiple roles and function interdependently.

Community organisers enact specific functions during the dynamic processes of community organising (Brown 2010; Okamoto 2017; Skinner 2013). This includes providing knowledge and training, supporting processes of learning, reflecting, action-reflection, and campaigning.

Many scholars assert that community organising processes can build power of civic engagement and empowerment through social networks and social capital which influence political participation and policy change (Christens, Inzeo & Faust 2014; Gittel 1998; Lathouras 2016; MacLeod & Byrne 2012; Mandell 2010; Suarez & Lee 2011; Warren 2009).

Linked to community organising aims, Mayo (2020) discusses a power analysis tool such as power mapping that help to identify the degree of power and influence to support or to block progressive social change while there is community organising process (see Power and sympathy mapping grid in Mayo, 2020). This tool helps to show the position of power and influence among actors and where there is the potential for movement from establish position. Employing a power mapping process helps communities to develop tactical ways of solving problems. The power map is very useful in terms of improving effective campaigning (Mayo 2020).

An Australian example is the Coalition of Community Boards (CoCB), a social network in Queensland comprised of a network of citizens building a type of social movement using critical approaches through the community organising method. It supports people in sharing their analysis of how neoliberal drivers affect their sectors for practice, and it has created relationships through networking, making micro-macro connections that work beyond the level of local geography (Lathouras 2016). The Coalition's networks are responding to two trends in the community services sector. 1) The Australian government's reform agendas are reducing their roles and resourcing, which limit the services that support community-level activity, with over one-billion dollars of funding cuts to the community service sector in 2015 (Lathouras 2016). 2) The trend for the centralization of services where large organisations, disconnected from the local community, gain contracts to partner with the government and deliver generic services, whilst small community-owned and operated services are denied a role and a voice on issues about their community. This Coalition network led to collective action and bottom-up practice governance structures (Lathouras 2016).

In my research, I applied community organising theories and power mapping ideas to understand and analyse organising about the unfair consequences of the EEC policy in the case study areas. Applying these theories helped me to understand the power dynamics and how communities have the potential to resist or respond to those negative impacts at the community level.

2.4.2 Participatory Developmental Practice (PDP)

Kelly and Westoby (2018) proposed a participatory approach to community development, which includes two methods: micro-method and mezzo-method. The purpose of this practice is to help people connect; develop purposeful, constructive and trusting relationships, analyse community-level issues and band together through participatory action groups to achieve benefits for members (Kelly & Westoby 2018).

The micro-method identifies how, through dialogue, development practitioners build purposeful and helpful relationships, essential when responding to issues of concern. Kelly and Westoby (2018) introduces that micro-method has four principles. The first principle requires communicating in a way to "see what the people see" (Kelly & Westoby 2018 p.62) or to understand fully what is going on from the community members' perspectives. The

second principle is to structure dialogue through specific dialogic movement (Kelly & Westoby 2018), ensuring responders are meeting a need that align with the community members' aspirations. The third principle utilises key words or heuristic words to determine what action to focus on improve the situation (Kelly & Westoby 2018). The fourth principle looks for permission to change a person's or community's story, especially if the issue is one of hopelessness to effect change, thus ensuring the potential for positive action is maximised (Kelly & Westoby 2018). These principles are the beginning steps that lead to understanding each other and finding potential in collaborations (Kelly & Westoby 2018).

In community development, dialogic practice leads to a developmental relationship that can evolve into a long-term connection (Owen & Westoby 2012). This is where people have built strong relationships among members who are interested in the same issues, such sustainable connection have the potential to effect change over the long-term.

Naess (2001) asserted that dialogue is used among people and is essential in a planning process for transforming towards sustainable development as it builds understanding among people (Ingamells et al. 2010; Naess 2001). This process supports contextual comprehension about relevant issues and fosters a sense of mutuality (Lathouras 2010).

Kelly and Westoby's (2018) mezzo-method is the process of dialogue among individuals and the creation of participatory action groups that enhance understanding about community aspirations and the solving of community issues through collective action (Ingamells et al. 2010; Kelly & Westoby 2018). They argue that participatory developmental practice through mezzo method has two principles for constructing a network relationship for taking private concerns into public action:

- 1) the first principle is to create groups small enough to be inclusive and large enough to meet wide social issues and
- 2) the second principle is to use a group formation process aims for group empowerment and capacity building (Kelly & Westoby 2018).

They go on to articulate how to move private concerns to public action through seven steps:

- 1) establishing the participatory brief,
- 2) understanding the place and the people, gathering the data,
- 3) organising the resources and framing of work,
- 4) using the framework to shape the work,
- 5) selecting and practising key behaviours,
- 6) linking actions forward, and
- 7) linking back and linking out (Kelly & Westoby 2018).

They describe mezzo work as a process of organising through five stages: the activity stage, the project stage, the people's organisation stage, the community programme stage, and the stage of a people's movement (Kelly & Westoby 2018).

In my research, I looked for situations where people share their ideas or discuss their problems through dialogue, which illustrates how private issues of individuals could become public actions when acted on collectively. I analysed situations, such as land acquisition and water management with the local residents who employed dialogue and two principles for constructing a network relationship and for the transfer of private concerns into public action. These circumstances showed the dynamic of social networks and degree of social capital among local residents as they solved their issues or engaged in negotiation processes with the government.

2.4.3 Asset Based Community Development

First proposed by Kretzmann and McKnight (1993), Asset-Based Community Development (ABCD) is an essential strategy of community development because it helps to identify, construct and increase the capacity or assets of a community. This capacity includes the degree of social capital, resources already available to the community and the gauging of people's ability to act in ways to benefit their communities (Ennis & West 2010; Thomson & Pepperdine 2003). A strengths-based approach, the community cannot rebuild when members only look at their needs, problems and faults (Ennis & West 2010; Kretzmann & McKnight 1993). Community building should commence by looking for the assets of people and through the capacity of people and associations in their communities (Kretzmann & McKnight 1993).

Kretzmann and McKnight (1993) suggested five steps toward whole community mobilisation:

- 1) mapping completely the capacities and assets of individuals, civil associations and institutions;
- 2) building relationships around local asset for problem solving;
- 3) mobilising the community's assets for economic development and sharing purposes;
- 4) convening as broadly representative a group as possible for the purpose of building a community vision and plan; and
- 5) leveraging activities, investments and resources from outside the community to support asset-based, locally- defined development.

The ABCD approach has been applied in many settings. For example, based on the research about an addiction and reintegration program in Victoria, Australia, Best et al. (2017) discuss how ABCD influences social networks and the underlying change in social identity that supported the transition from stigmatised and excluded groups to positive and prosocial groups. The ABCD process enabled people to map and mobilise assets together and helped participants understand their values and connections. An ABCD workshop built hope and energy for participants in the program. Actions included engagement, recreational activities, training, employment, volunteering, mutual aid and peer activities (Best et al. 2017). Best et al. (2017) argues that the recovery-oriented system process used in this program needs not only personal commitment and determination, but also the support and engagement of social network support systems in communities (Best et al. 2017).

Other settings and in the current context, ABCD has also been used as a strategy to recover, build and bridge social capital for vulnerable women who experience HIV or sex trading in Mujeres Unida, Mexico (Urada et al. 2021). In the UK, ABCD principles also support the potential contribution of community sport development and aid practitioners and policymakers in their laudable aspiration to providing and searching of social goals through sport (Bates & Hylton 2021). Moreover, in Aniwa Island, Vanuatu, community assets relate to

sustainable development because changing physical assets in land influences the quality of food resulting in environmental education and local adaptation (Clarke et al. 2019).

ABCD is the way that people assess their community assets for driving and solving problems based on their existing human capacity, physical assets, and associations. It builds trust within social networks and builds social capital through increasing community capacity and understanding how best to mobilise. This concept is useful for my research because both case study areas have valuable assets and the residents are protecting those. The potential loss of their assets can be the basis for mobilisation of communities, constructing new relationships and assisting community activities building on local capacity and other community assets. ABCD complements theories of social network and social capital to illustrate stakeholder relationships for finding resources, mobilising through processes of social network building, stakeholder relationship, and how they are responding to the impacts of the EEC.

2.4.4 Community Development Practice Discussion

This study draws from three community development (CD) practice approaches: community organising, participatory developmental practice, and asset-based community development because of their complementary characteristics.

While participatory developmental practice is an approach to forming participatory action groups, the ABCD is practice method provides a framework for identifying the existence of existing assets in the community and increasing community capacity (Best et al. 2017; Bush, Dower & Mutch 2002; Ennis & West 2010). In this study, ABCD is used to find and develop community capacity to convene and draw on internal or existing resources or assets (RQ2), and to develop future alternative approaches for a sustainable development (RQ3). For example, people may conduct an assets audit of their local areas and iconic fauna such as Irrawaddy dolphins or Lyle's flying foxes. This in turn highlights the need for environmental protection along the Bangpakong River and alerts groups to raise the issue at a macro level, through environmental protection laws or policies, which support or conserve existing assets in the community. Thus, these three CD practice approaches provide a framework for community planning, a process of building social networks and social capital, and an approach for how communities utilise political opportunities in the CCS.

Collectively, these approaches helped me to answer RQ 2 and RQ3. The consensus conference used in this study, aimed to link the community with decision makers, and explore to alternative ways for local levels for adaptation and solutions to impacts from social policy.

2.5 Conclusion

This chapter explored the multiple social approaches of this study, discussing the social justice concepts that can be applied to the issues associated with the economic development plan, which affects people's livelihoods and access to water and food. This chapter showed that while economic development aims to achieve some of the SDGs, it can paradoxically have negative effects on water and food security including livelihoods, necessary to achieve other SDGs. In my research, I identify the documented and potential impacts of the EEC and economic development plans in the case-study areas in relation to water and food security, guided by impact assessment theory (RQ 1). The concepts of social network-building, social capital and political opportunity structure are used as a means of analysing and understanding the current social-political-environmental situation in the case study areas, including understanding the perspectives and roles of young people in these social networks (RQ2). Community development practice theories are used to communicate, mobilise, explore and analyse alternative ways to adapt and transition rural areas towards a more sustainable development where benefits of economic development are shared more equitably (RQ 3).

In summary, figure three was created as a conceptual framework or map to illustrate the relationship of social theories and concepts related to a positive response to EEC policy implementation. Figure three shows that community building can be constructed by community practices, such as ABCD and community organising, which lead to sharing information and engagement among people. Such activities assist in developing a social network and social capital, which provide a foundation for social movements through building relationships with decision makers, analysing power and identifying social justice needs. These approaches complement each other in providing a bottom-up, or community-led understanding and support for transition, acknowledging that transition processes take time. In the next chapter, I describe in detail the case study target areas, the research design, methodology and research methods, which are relevant to this study and which aim to answer the research questions.

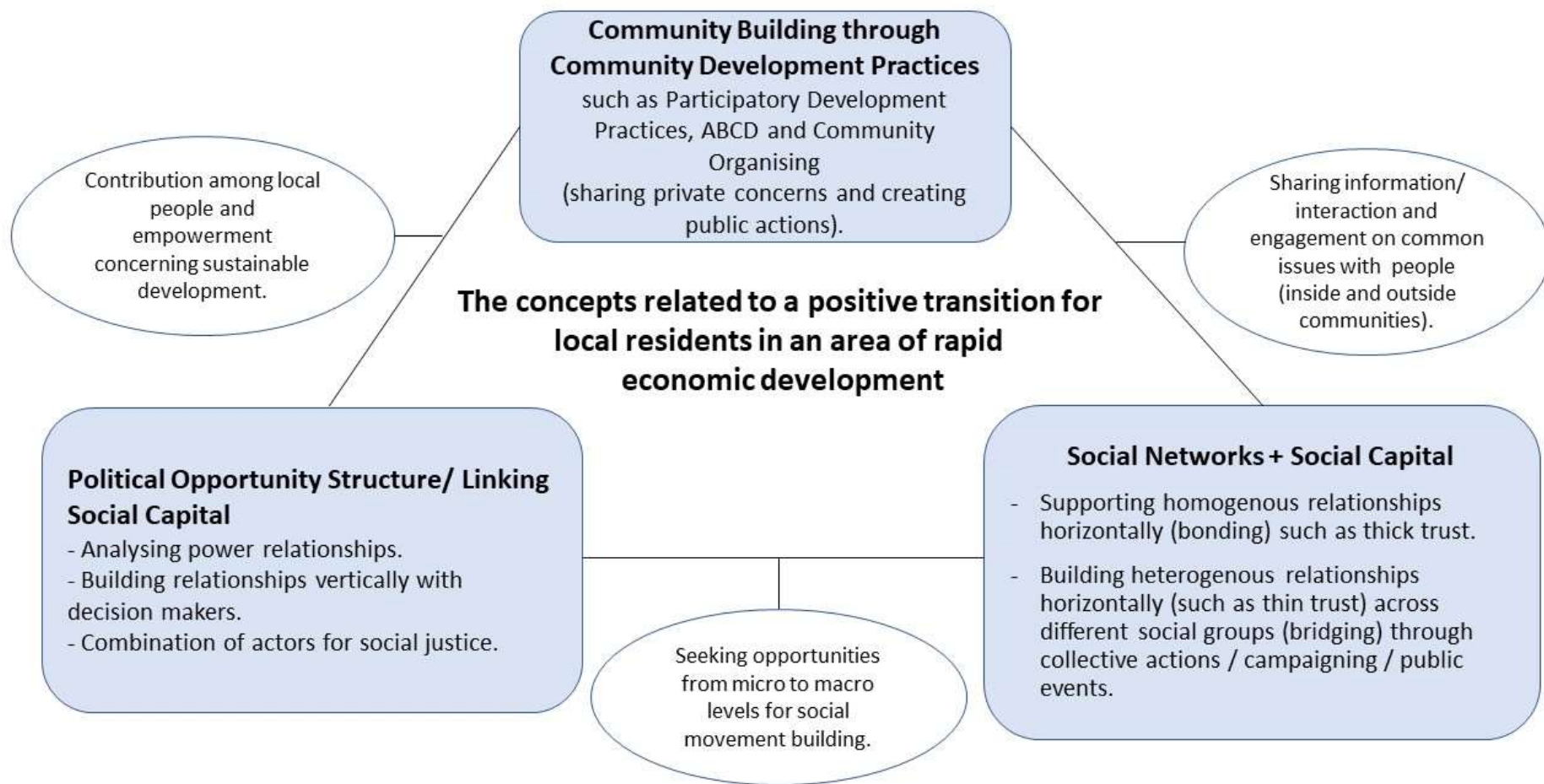


Figure 3: A conceptual map of the concepts related to a positive transition for local residents in an area of rapid economic development.

CHAPTER 3

METHODOLOGY AND METHODS

3. Chapter Overview

This chapter discusses and justifies the methodology and methods of this study. It describes the research processes and the link between the theoretical concepts of impact assessment, social concepts, community development practice theories, and the understanding of these approaches as they relate to stakeholders impacted by the economic policy in Thailand's Eastern Economic Corridor (EEC). To accomplish these approaches, this study focuses on the relationships and complex problems of people in rural areas, and the experiences of rural people whose livelihoods are impacted by the environmental changes in river basins brought about by development of the EEC. This chapter presents the philosophical foundations for the study (Section 3.1), followed by the case study design (Section 3.2), and an overview of the research questions, the methods and the processes for analysis of data (Section 3.3), the research design (Section 3.4), the methods of data collection (Section 3.5) and justification for the recruitment of participants (Section 3.6). The chapter concludes with how the data were analysed (Section 3.7), a discussion of ethical considerations, followed by the study's limitations (Section 3.8) and summary (Section 3.9).

3.1 Methodology – The Philosophical Foundation

Two philosophical assumptions about knowledge production underpin this research. The first is the epistemological approach of social constructivism. Social constructivism is explained as an approach whereby people inquire into another's subjective understanding of the world in which they live and work (Creswell 2013). This process of inquiry improves their subjective meaning drawn from participants' experience (Creswell 2013). Such social knowledge is produced through observation, interpretation, action and conversation with people reflecting on and interpreting their experiences (Neuman 2011). For example, as a researcher, I spent time with participants from the Chachoengsao Province (CCS) and interpreted their experiences through a process of recording and analysing their multiple realities. This has aided the knowledge generation process of my research.

The second epistemological approach relates to the critical theory paradigm of research. This involves a critical process of inquiry that goes deeper than superficial consideration and aims to discover the real world of materialism to help people change conditions and create a better world (Neuman 2011). Critical theory can influence thinking about the world at the micro-level through observing processes of conflict at the macro-level (Garner & Scott 2013). Creswell (2013) asserts that critical theory aides in understanding the realities of social structure, power, domination, control and freedom contributing to research (Creswell 2013). This approach relates to the purpose of my research: about how to transition rural areas into sustainable urban areas in the face of the possible deleterious impacts of rapid economic development plans. The critical theory paradigm suggests that research should support people to change, adapt and uncover their reality that may have been hidden (Creswell 2013; Neuman 2011).

To bring these two epistemological approaches together, my methodology needed to achieve two purposes: research processes for subjective meaning-making, and research processes for critical reflection on social transition. Crotty (1998) pointed out that methodology involves theoretical ways of thinking or research perspectives as strategies that help to design or plan actions resulting from choices. Research methods focus on how to collect data and produce empirical information through interviews, surveys and content analysis of documents (Garner & Scott 2013). The methodology links methods to findings (Crotty 1998) that support meaning-making and has an emancipatory aim. Processes for meaning-making in this study involved in-depth semi-structured interviews and observations. In addition, the processes to enable emancipatory thinking and possible strategies through critical reflection take place through a consensus conference.

New knowledge has been constructed during the research through a mode of enquiry related to the process of asking and answering researcher questions, and subsequent theorising to find the answers to the research questions (Kumar 2011). In this case, qualitative research is used as it enables an exploration of phenomena, including issues or attitudes towards a problem (Kumar 2011). Qualitative research is a way of building knowledge based on constructivism, which relates to perspectives to make meanings of personal experience, and social or historical experience (Creswell 2003). In this research, a case-study approach (Creswell 2013; Woodwell 2014; Yin 2009) has enabled me to explain real-life situations through an in-depth description of a social phenomenon in specific areas and times. This has supported an understanding of the hidden reality that underpins social structures; in this case, impacts of a government social policy,

organisational processes of community associations, group behaviour, and neighbourhood change (Neuman 2011, 2012; Woodwell 2014; Yin 2009). Thus, the qualitative nature of this research and the case-study approach using a critical lens was employed in examining three research questions - RQ1- impacts of the EEC on water and food security; RQ2- the role of social networks; RQ3- alternatives to achieve sustainable development.

These questions aim to explore - How can local residents in Chachoengsao Province have more influence on, and benefit from top-down development, and to minimize impacts on water and food security for local communities.

3.2 Case Study Design

The research has employed a multiple case study approach investigating communities in Ban Pho and Bangkhla Districts within the Bangpakong River basin in Chachoengsao Province, Thailand. By comparing and contrasting circumstances and perspectives, and applying the same procedures to each site, multiple case studies allow theoretical replication (Thomas 2011; Yin 2009) and show different perspectives on an issue (Creswell 2013). A single case would not contain such elements of comparison, although one could be used to show a noticeable change in a situation over time (Thomas 2011).

3.2.1 Rationale of Selection of Chachoengsao as Case Study Area

In 1992, the Greater Mekong Subregion (GMS) in Southeast Asia and Chinese provinces around the Mekong River basin developed economic cooperation programs which were supported by the Asian Development Bank (ADB). The GMS Economic Corridors Development Plan promotes economic development in this region. It aims to provide connectivity among GMS countries and enhance the potential for trade competition through infrastructure investment. It is anticipated that a strong community network will be built through social and environmental programs in the GMS (Asian Development Bank 2015). In 2015, the 10 countries in Southeast Asia formed the ASEAN Economic Community (AEC). The Thai Government was considered by AEC and GMS as one of the most preferred investment destinations in Asia for developing its economy. Thus, Thailand 4.0 policy (2016) was developed as a twenty-year national policy that targeted economic growth by promoting technology and improving innovation (see Figure 4).

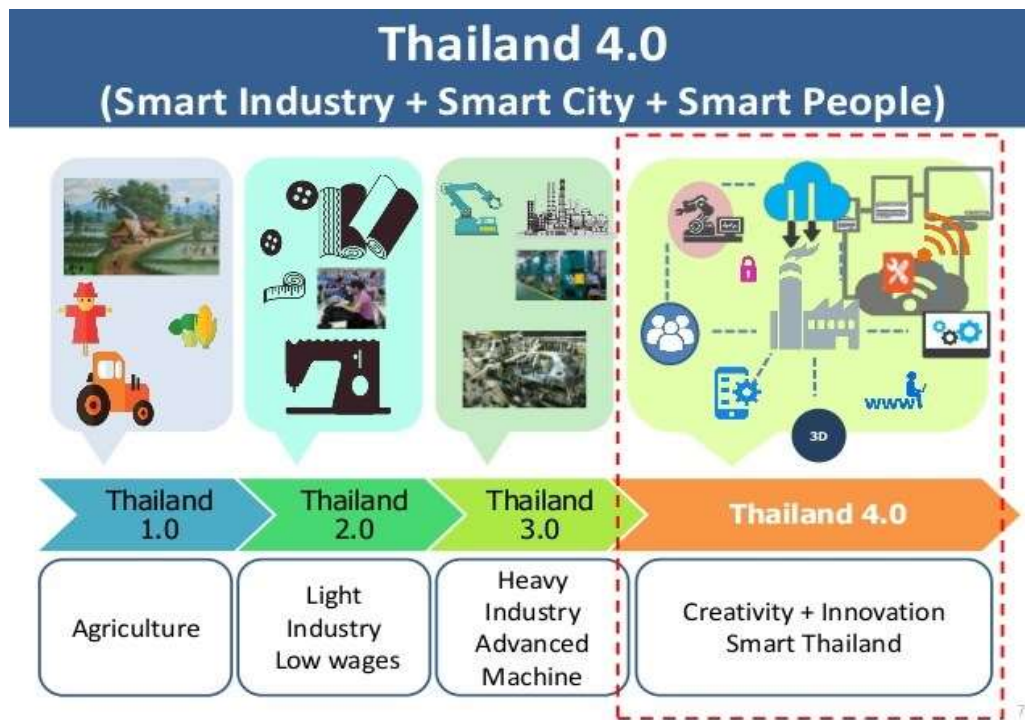


Figure 4: Evolution of Thai economy showing context for Thailand 4.0 policy

Source: Thailand Business News 2017, viewed 30 August 2017, (<https://www.thailand-business-news.com/economics/54286-thailand-4-0-need-know.html>)

The economic policy has evolved: Thailand 1.0 focused on agriculture before 1960; between (1960-1986), Thailand 2.0 emphasised light industries (e.g. consumer electronics and garment industries) with low wages for employees; Thailand 3.0 promoted heavy industry and advanced machinery, related to the iron or coal industries and huge construction from 1987 until now. Currently (in 2021), Thailand 4.0 targets the development of creativity and innovation for a Smart Thailand, which includes the EEC as a part of its development plans (Ministry of Industry Thailand 2017).

As a result of Thailand 4.0 policy, the EEC investments have begun to create industrial estates and infrastructure, including roadway, railway, high-speed rail and airport upgrades to support industrial expansion (BOI 2017). The EEC plan supports industrial sectors in the three provinces of Rayong, Chonburi and Chachoengsao. This area spans 13,285 square kilometres along eastern Thailand (Figure 5) and has a population of 3,029,127 people in 2020 (National Statistical Office 2020). It is envisaged that during the next five years, US\$43 billion will flow into these three provinces through direct foreign investments (Ministry of Industry Thailand 2017; Pugnatorius Ltd 2017).

Figure 5 shows the location of the EEC areas provinces, Chachoengsao, Chonburi and Rayong, in the context of airport and shipping transportation development intended to support economic growth in Thailand and neighbouring countries (ASEAN Economic Community).

Thailand's Eastern Economic Corridor

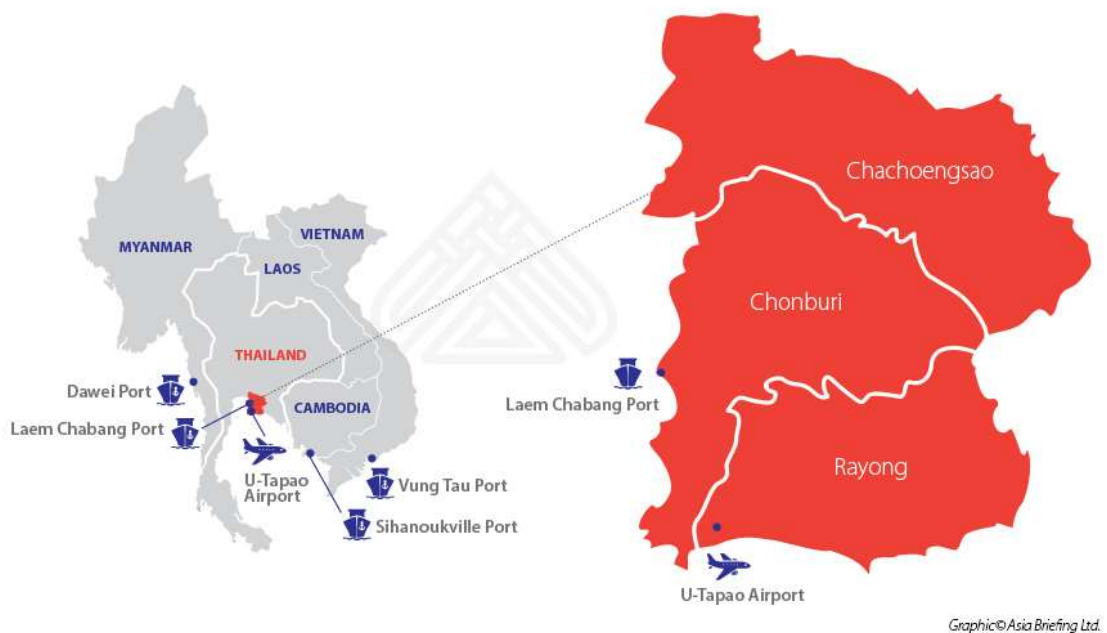


Figure 5: Map illustrating location of Thailand's Eastern Economic Corridor and the EEC target provinces.

Source: Asian Briefing Ltd.2018, viewed 20 November 2018, (<https://www.aseanbriefing.com/news/thailand-eastern-economic-corridor/>)

In Thailand, since 1992, Environmental Impact Assessment (EIA) processes have been required by legislation: *Improvement and Conservation of National Environmental Quality Act of B.E.2535*. After 1997, and *Constitution of the Kingdom of Thailand*, B.E.2540 (1997) section 60 was amended to include the rights of people stating 'A person shall have the right to take legal action against a government agency, State agency, State enterprise, local government organisation or other State authority which is a juristic person to assert liability for an act or omission of government officials, officials or employees of such agencies' (Office of the Council of State 2007 p.15). In 2003, the Thai Office of Natural Resources and Environmental Policy and Planning (ONEP) introduced the Strategic Environmental Assessment (SEA) for major strategic development (ONEP 2011).

EIA or Environmental and Health Impact Assessments (EHIA) must be conducted when there are 35 items of “risky” projects, such as mining projects, industrial estates, infrastructure projects, huge residential construction, irrigation projects and power plants construction, including land development for residents and business (Thai Government 2019a). The EIA or EHIA reports include the social and health potential impacts in local areas (Division of Environmental Impact Assessment Development 2017). EIAs and EHIAs refer to local areas and specific issues while the SEA is a system and process of impact assessment about a policy or at the program level for an entire area, such as a Special Economic Zone including the EEC project (ONEP 2011). SEA was used for the Special Economic Zone in northern Thailand; it includes a cumulative impact assessment which is not always included in an EIA or EHIA process (ONEP 2011).

The Bangpakong River basin location was chosen for the case study because it characterises the tension between economic development and environmental and social impacts. In east of Thailand, a vast amount of pollution and water grabbing already occurs in nearby coastal Rayong Province (ASTV News 2015; Koontanakulvong 2017). If sufficient controls are not in place, industrial estates in EEC areas are expected to produce more industrial waste and water pollution, which present high risks to 18 million people in Eastern Thailand (Ministry of Natural Resources and Environment Thailand 2018). The Bangpakong River is the most essential watershed in Eastern Thailand because it is the main water supply for irrigation for animal farming, agriculture and industries (Bordalo, Nilsumranchi & Chalermwat 2001) (Figure 6). According to the World Resource Institute, rapid economic development associated with the EEC plan is predicted to increase risks to the Bangpakong River basin’s water and food security due to environmental and social change by 2030 (Aksonkij 2018). Because it is similar to other communities affected by the EEC economic development initiative, the findings of this study are expected to have broader applications across the region. This is relevant to the first research question: What are the potential water and food security impacts of the Eastern Economic Corridor on the local residents?

Chachoengsao Province is an appropriate location to study because of the local desire and potential to protect the environment, natural resources, and local livelihoods through community actions (ONEP 2013). The threats to environmental and social change may also prompt collaboration among stakeholders and enable an understanding of dynamic adaptation among local residents. To date, local residents have been challenged to find a more sustainable alternative plan because changes in town planning have already occurred for the improved development of

the Ban Pho district (Figures 7 and 8) (Department of Public Works and Town & Country Planning 2018). Thus, this research focuses on community organising, social network development and the political opportunity structures of local residents who are affected by environmental change along the Bangpakong River in the Chachoengsao Province. This is relevant to the second research question: How are social networks of local communities, including those of young people, responding to the impacts of the Eastern Economic Corridor in relation to water and food security?; and also the third research question: What alternative approaches could be used to ensure more alignment with sustainable development objectives?



Figure 6: Bangpakong River and canals in Chachoengsao Province that connect to the Bangpakong River

Source: Modified from the Royal Irrigation Department (Chachoengsao Province) 2019.

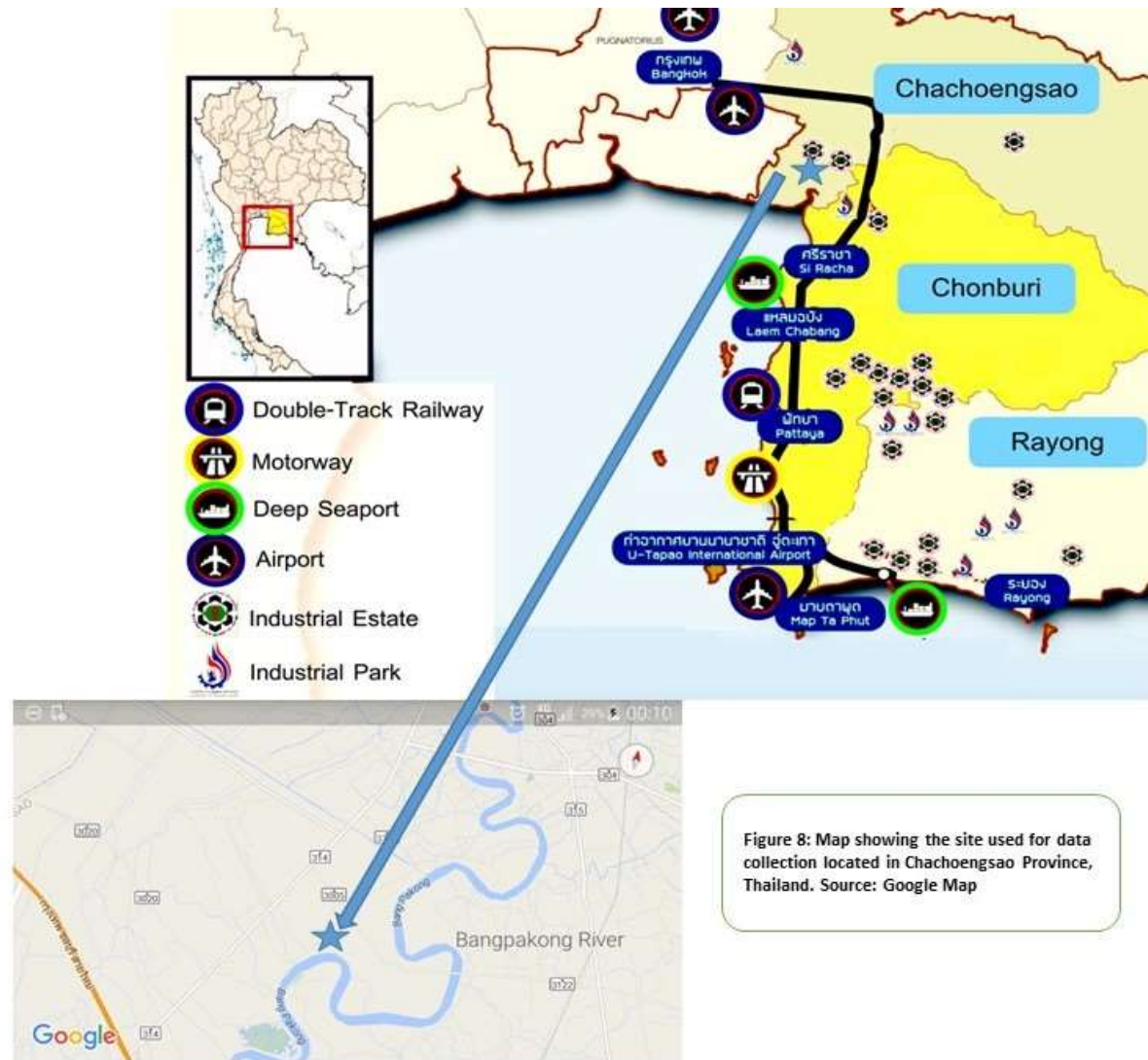


Figure 7: Map showing Eastern Economic Corridor with a study location (Coral Marks). Source: Thailand Board of Investment

Figure 8: Map showing the site used for data collection located in Chachoengsao Province, Thailand. Source: Google Map

Figure 7: Map showing Eastern Economic Corridor with a study location (Coral Marks). Source: Thailand Board of Investment.

Figure 8: Map showing the site used for data collection located in Chachoengsao Province, Thailand. Source: Google Map.

Another advantage of choosing these case study areas is that I have previous experience in community engagement that supports activities with three local groups in the case study area. Thus, I was able to use my contacts in the rural communities and NGO networks, who work closely with those local communities to recruit participants. These contacts allowed me to collect reliable and informative data for this study. My Thai nationality ensured cultural understanding and my ability to speak the local languages allowed me to effectively communicate with people in my study area. To maintain neutrality and/or acknowledge bias, I was reflective as a researcher. Two transcripts were co-coded and analysed with my research supervisors and findings were iteratively questioned by research supervisors.

Two districts, Ban Pho and Bangkhla districts in Chachoengsao Province in the Bangpakong River Basin, were selected as the purposive cases (Figure 9) because they are areas within the EEC where people are facing transformation from rural use (fisheries, rice fields, prawn farms and fruit gardens) to urban areas (factories or storehouses) (Figure 10).

Ban Pho is an EEC policy target area for industrial expansion and was chosen for its water-dependent employment (e.g. prawn farming is prevalent). The Bangkhla district, was chosen as it is the origin of the Jasmine-Rice gene (Division of Rice Research and Development 1954) and sources of other types of agriculture including prawn farming and, according to the EEC, have the potential to become a residential area. This study approach allows for an in-depth examination of these two districts, with one local area in Ban Pho already being affected by the policy and Bangkhla at risk of being impacted, thus providing helpful lessons for other regions facing similar issues.

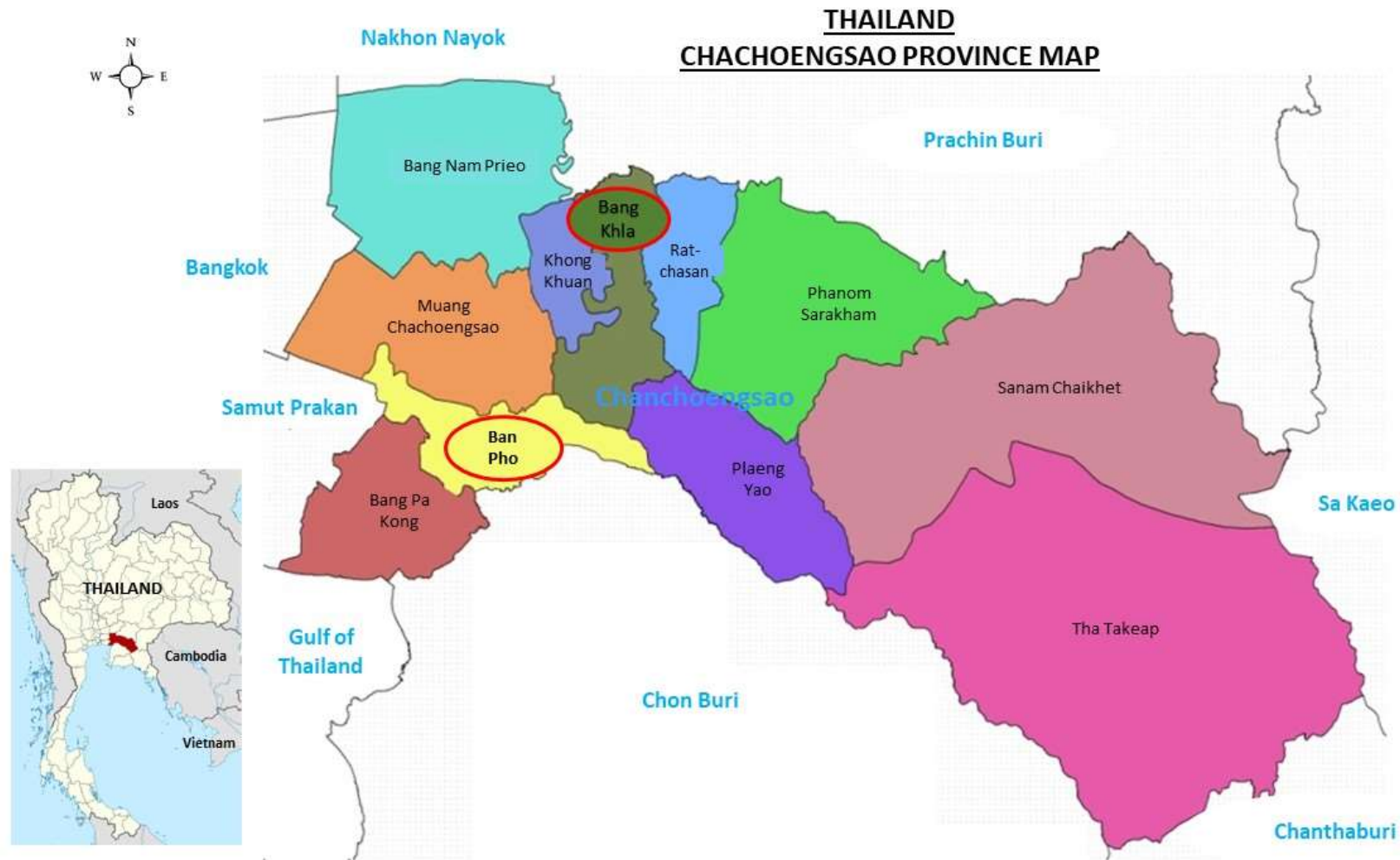


Figure 9: Map showing the two case study areas: Ban Pho District and Bangkhla District, Chachoengsao Province, Thailand

Source: Modified from wikipedia.org and dmcrrh.dmcrrh.go.th

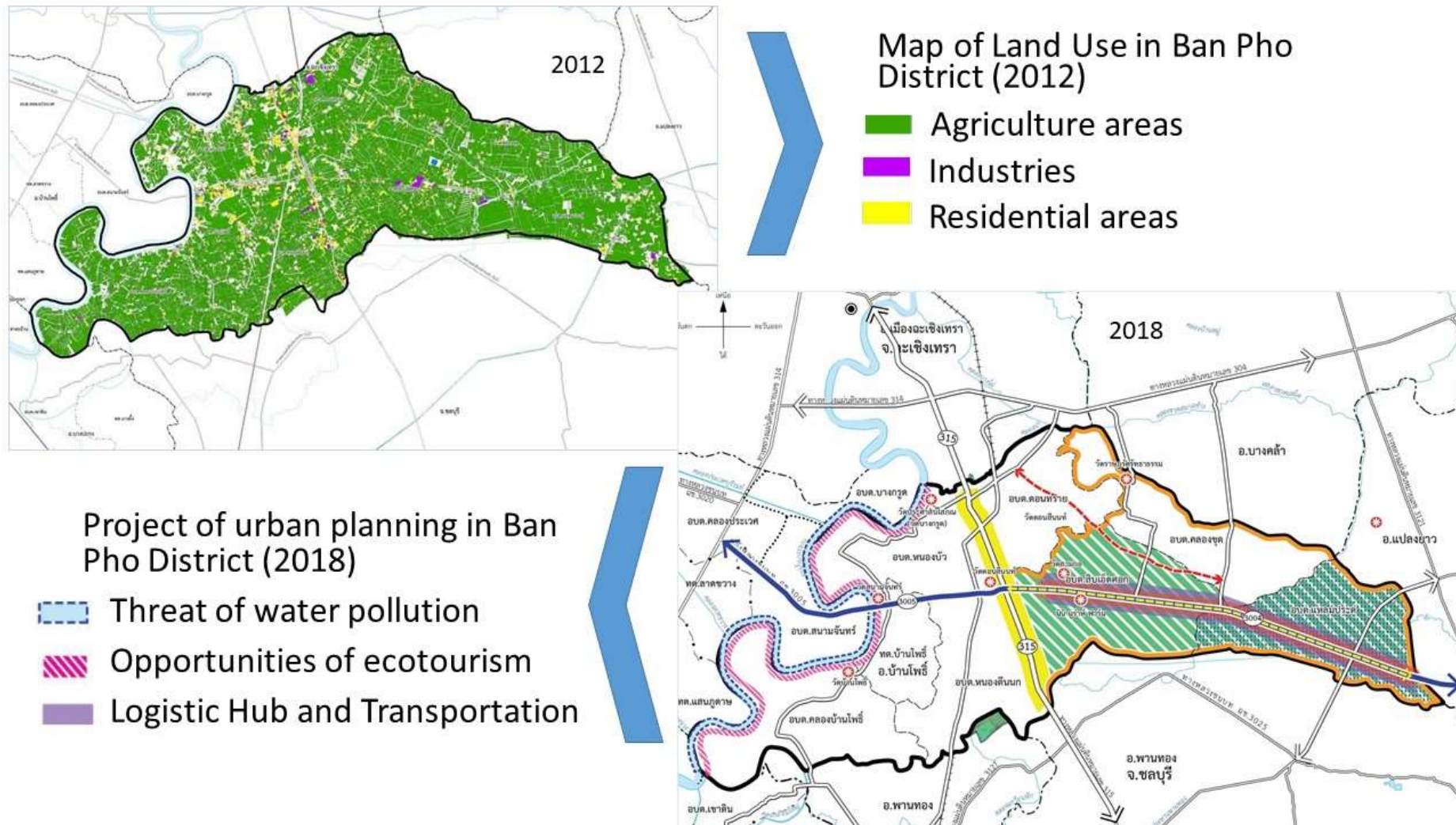


Figure 10: Maps showing the case study area data collection site located in Ban Pho District Chachoengsao Province, Thailand in 2012 and 2018

Source: Modified from the Department of Public Works and Towns & Country Planning (2018)

3.2.2 Background of the Case Study Areas

The Chachoengsao Province (CCS) is important as it is the origin of the Jasmine-Rice gene or Jasmine 105 (Division of Rice Research and Development 1954). In addition, *Nam Dok Maie* (mangoes) and coconuts are also grown. CCS exports the best of *Nam Dok Maie* and produces the largest number of eggs in Thailand (Chachoengsao Industry Office 2017). Of concern, 72.3 per cent of CCS is catchment for the Bangpakong River, which historically has been at high risk of water pollution (Charieanpanyanet 2009).

The pollution resulting from industrial development is problematic in terms of native animal habitat, as the Bangpakong River basin is also an important environmental resource for the Lyle's flying foxes (*Pteropus lylei*) and endangered Irrawaddy dolphins (*Orcaella brevirostris*) (Green world n.d.). The dolphins are already affected by lack of oxygen in the water, due to pollution from huge industrial estates in Rayong Province (Minton et al. 2017). This adds to the existing pressure on the dolphin population from other causes, such as fishing nets in the Mekong River at the Cambodian and Laos borders, dam construction (i.e. the Don Sa Hong dam) in Laos, and from fishing nets in Trat province, Thailand (Minton et al. 2017; Paing 2017; WaewkraiHong 2013).

Infrastructure construction, industrialisation and trade expansion among ASEAN countries are planned in the EEC areas. The advertised benefits of the EEC development project include the increased income and economic growth of Thailand, including transportation routes such as roads, ports, energy supply systems and industrial factories in Thailand (Ministry of Industry Thailand 2017). The CCS is subject to the expansion of the six-port projects and roads for logistical systems, as well as the increase of industrial factories in the areas. Because of this industrial expansion, local farmers and fishers are increasingly faced with economic difficulties in making a living from reduced natural resources. Also, local residents using the river water in everyday life have increased risks to health, such as respiratory problems from air and water pollution (BanPho 2017; Ministry of Natural Resources and Environment Thailand 2018).

Local residents are affected also by road construction supporting industrial estates, evidenced by the considerable increase in traffic accidents at Ban Pho district, Chachoengsao province (Meeta 2014). Moreover, the construction of additional factories and warehouses beside the Bangpakong River took over land already used for fishing and agriculture (Sihan 2015), such as river fish or crabs stocks, shrimp farm production and jobs that relate to Nypa or mangrove palm (*Nypa fruticans*) roofing.

These changes and already experienced environmental impacts provide evidence of the potential consequences facing these rural communities face because of the extreme changes due to the EEC development project. Nevertheless, a driver of economic development is the international commitment to

the SDGs (Kumpa 2016) of which Thailand is a nation that has committed to through the Voluntary National Review (VNRs) (Department of Economic and Social Affairs 2020). The EEC development project prioritises two SDGs (Tangjaisatapat 2018):

- Goal 8 – Decent Work and Economic Growth that promotes sustained, inclusive and sustainable economic growth, and full, productive employment; and
- Goal 9 – Industry, Innovation and Infrastructure that builds a resilient infrastructure, promotes inclusive and sustainable industrialization and fosters innovation.

Yet the unintended consequences, as outlined above, affect the achievement of SDGs:

- Goal 2 – Zero Hunger, that aims to ensure to end hunger, achieve food security and improved nutrition and promote sustainable agriculture;
- Goal 3 – Good Health and Well-being, to ensure healthy lives and promote well-being for all ages;
- Goal 6 – Clean Water and Sanitation, to ensure availability and sustainable management of water and sanitation for all;
- Goal 11 – Sustainable Cities and Communities which aims to make cities and human settlements inclusive, safe, resilient and sustainable; and
- Goal 12 – Responsible Consumption and Production which aims to ensure sustainable consumption and production patterns.

To reach these goals in the face of the outlined challenges, the theoretical foundation presented in Chapter 2 is used to guide the methods and analysis of the case studies and can contribute to a positive transition to sustainable development in CCS province (see section 3.3, which links the research questions with the methods framework).

Statistical information about Chachoengsao Province (CCS).

In 2020, the population of CCS was 723,438 (Chachoengsao Provincial Statistical Office 2020). The average income per household per month was 26,062 THB (868.73 USD)¹, and expenditure per household per month was 21,437 THB (714.57 USD). The average income was 5th in the ranking of the 78 provinces in Thailand (Chachoengsao Provincial Statistical Office 2018).

¹ (1 USD = 30 THB)

In 2018, 30.1 per cent of labour was employed in the industrial sector, while 25.1 per cent was employed in the agricultural sector. This agricultural employment in CCS was the highest among the three provinces of the EEC project (Surapukdee 2018). In 2017, in CCS only 5.8 per cent of the people who were employed in the agricultural sector owned their own land while 94.2 per cent worked for other land owners (Office of Agricultural Economics 2017). The crime rate in CCS between 2001-2017 had declined and was the lowest of the EEC provinces, but was still higher than the average for Thailand (Surapukdee 2018). According to a pollution report in 2018, 48 per cent of garbage in CCS was not appropriately managed (Ministry of Natural Resources and Environment Thailand 2018). There are 1,521 factories under the Department of Industrial Work in the CCS area including Ban Pho and Bangkhla District (Department of Industrial Works 2018) but there is only one air-pollution detector, located in Plang Yao district (Ministry of Natural Resources and Environment Thailand 2018).

Statistical information about Bangkhla and Ban Pho Districts

Ban Pho, with a population of 51,455 is slightly larger in population than Bangkhla (43,291 people) in 2020 (Chachoengsao Provincial Statistical Office 2020). It also had a slightly higher average income in 2018 (Department of Community Development in Chachoengsao Province 2018) (Table 2).

Ban Pho, with 203 factories, is much more industrialised than Bangkhla (51 factories), and has higher waste water levels (Department of Industrial Works 2020) (see Table 2 below).

Table 2: Summary Comparisons of the two districts in CCS Province

Socio-economic Measure	Ban Pho	Bangkhla
Population (2020)	52,945	45,400
Average household-income/month (2018)	23,814 THB (739.8 USD)	21,969 THB (732.3 USD)
Average household expenditure/ month(2018)	12,803 THB (426.77 USD)	15,454 THB (515.13 USD)
Factories (April 2020)	203	51
Highest wastewater levels in cubic metres per day	5,333	2,058

Total wastewater levels in cubic metres per day	3,619	1,988
Drains - in cubic metres per day	345	428
Land total	136,000 Rai (53,755 Acres)	142,437.5 Rai (56,299.4 A)
Land for agriculture (2018)	48,872 Rai (19,317 A)	114,690 Rai (45,332 A)
Land for fisheries farms (April 2018)	5,643.65 Rai (2231 A)	11,955.30 Rai (4,725.42 A)
Production value: Top five of agriculture products (harvest season 2017-2018)	68,948,180 THB (2,298,272 USD)	about 310,481,665 THB (10,349,388 USD)
Production value: fisheries (2018)	725,526,000 THB (24,184,200 USD) through purchases and sales	1,403,640,000 THB (46,788,000 USD) through purchase and sales
Production value: rice, mangoes and coconuts	68,948,180 THB (2,298,272 USD)	310,481,665 THB (10,349,389 USD)

Agricultural and fishery data in Bangkhla and Ban Pho.

Both districts are food production areas with much higher agriculture and fishery production in Bangkhla than Ban Pho (83.7 % compared to 40%). Of this, fisheries are 14.8% and 13% respectively. The Bangkhla District has the highest number of fish farms including sea and fresh prawn production in CCS, while the Ban Pho district is the second highest (Table 2) (Office of the Permanent Secretary for Ministry of Agriculture and Cooperatives in Chachoengsao Province 2019).

According to interviews and documents of the agricultural and fishery office in both districts, the popular prawn business generates significant income for local residents, with Bangkhla producing about twice as much in value as Ban Pho. Moreover, the CCS is one of the best areas for prawn breeding in Thailand with 50% of prawn breeding occurring in the Province and exported abroad. In addition, both districts have high sales of rice, mangoes and coconuts, with Bangkhla's production about four times that of Ban Pho.

Most of the agriculture and fishery farms in both districts rely on the natural water in the Bangpakong River including for irrigation system. The water supply to industry and residences in both districts also comes from the Bangpakong River. Bangkhla District is a hub of water supply to the whole of the province and also to some adjoining provinces. The water supply in Ban Pho District was adapted for irrigation and water management because of new town planning, which results in a water supply problem during the drought seasons in some areas.

3.3 Overview of Research Question, Methods and Analysis Framework

Table 3, immediately below, summaries and links research questions, methods and analysis framework used to answer the research questions. Table 4, further on, demonstrates how the social concepts and methods were applied to answer the research questions.

Table 3: Questions, Methods and Analysis Framework.

Research question	What I want to discover	Data collection method	Analytical tool	Result reported in Chapter
1) What are the potential water and food security impacts of the Eastern Economic Corridor on the local residents?	<ul style="list-style-type: none"> - In what ways does the development plan affect water and food security in target areas? - How do the local government and residents react to the EEC plan? - How is the food and water security situation changing? 	<ul style="list-style-type: none"> a) Documents related to economic and social development policies at international, national and local levels. b) Interviews with key stakeholders such as the local government, head of agriculture groups and the members of Chamber of commerce in Chachoengsao province. c) Interview community leaders and residents about perceived effects. 	<ul style="list-style-type: none"> a) Critical social policy analysis (Bacchi, 2009) b) and c) Thematic analysis of images and text using NVIVO (to illustrate impacts). 	Chapter 4
2) How are social networks of local communities, including those of young people, responding to the impacts of the	<ul style="list-style-type: none"> - Why and how do local residents and stakeholders communicate to collectively adapt and improve outcomes? - What are the key factors for building networks among local residents? 	<ul style="list-style-type: none"> a) Secondary data (such as booklet produced by the local community illustrating networks and their roles. b) In-depth Semi-structured interviews of local residents, leaders, government officers and stakeholders. 	<ul style="list-style-type: none"> a and b) Using documents. a,b,c) Thematic analysis of finding and text using NVIVO. 	Chapter 5 and a published article.

Eastern Economic Corridor in relation to water and food security?	- What are the roles and functions of networking members to negotiate and improve the local consequences, including community organising approaches?	c) observation of local events or meetings.		
3) What alternative approaches could be used to adapt to ensure more alignment with sustainable development objectives?	- What are the perspectives of local residents and other stakeholders (such as business and industries) about possible opportunities to maintain for water and food security and/or for sustainable development?	a) In-depth semi-structured interviews of local residents, leaders, government officers and stakeholders. b) observation of interaction among participants. c) Consensus Conference including key stakeholders.	a,b,c) Thematic analysis of finding and text using NVIVO.	Chapter 6

Table 4: Concepts and Methods for Answering Research Questions.

	Concepts / Theories	Methods	What do I wish to find out?
Analysis of Social Dynamics	Impact assessment – water; food – creating benefits; alternative livelihoods.	Interviews, Document analysis – policy and legislation relate to economic development and impact assessment using Bacchi’s framework.	Relationship of policy to food and water situation- what changes or impacts and how; how to derive benefits.
	Social networks.	Interviews. Observation- meetings, public events. Document analysis – media, newsletters, Consensus conference.	Common goals, who, location, process of sharing information, social learning, themes, awareness building, channel to communication, collaboration.
	Social capital (framework for social networks).	Interviews. Observation- meetings, public events. Document analysis - media, newsletters, campaign, meeting notes.	Bonding – who and how; bridging – who and how; linking - who and how.
	Political opportunity Structure (Linking Social Capital).	Interviews. Observations, meetings, public events. Document analysis - media, newsletters, campaign, meeting notes.	Opportunities to engage policy/politicians, channels to connect to decision-makers.

Practical Social Change/ Adaptation	Community organising	Interviews. Observations, meetings, public events. Document analysis - media, newsletters, campaign, meeting notes.	Shared concerns, vision, campaigns, leadership, skills, building alliance, building power of people and negotiation-how and who.
	Participatory developmental practice	Interviews. Observations, meetings, public events. Document analysis - media, newsletters, campaign, meeting notes. Consensus conference.	Sharing private concerns- who and how; building connection and relationships – how; raising issue to local government – who and how.
	Asset Based Community Development (ABCD)	Interviews. Observations, meetings, public events. Document analysis - media, newsletters, campaign, meeting notes, Consensus conference.	Assessment of existing human and physical capacity and assets- who and what; problem-solving- who and how, building vision and plan- who and how: building networks, partnerships and alliances- who and how.

3.4 Research Design

Multiple methods can be used in a case-study approach to explore the situation in-depth. Data collection can include examining documents, newspaper articles and archival records, as well as examining physical artefacts, conducting interviews, direct and participant observation, or audio recordings and images and field notes (Banks 2007; Bloor & Wood 2006; Creswell 2013; Woodwell 2014; Yin 2009). This study employed four methods in two phases to investigate the research questions. Using a sequential research design approach, the results of phase one guided the design of phase two. An overview is presented below and more detail below.

Phase one focussed on RQs 1 and 2. Document analysis of various sources (e.g. newspaper articles, local booklets, archival records, EEC policy and my field notes) were conducted in order to understand the context of the EEC implementation. Based on this analysis, in-depth audio-recorded semi-structured interviews were conducted with participants. Concurrently, observation of local events such as the “*So Thon Buddha statue*”, annual events and meetings took place. Analysis of data collected in phase one created content to explore in Phase 2.

In Phase 2, a consensus conference meeting took place as the fourth method to collect data. Consensus conferences are action-oriented participatory processes to aid decision-making with groups (Nielsen et al, 2006, Zurita 2006). Preliminary findings from the data collected in Phase 1 were presented to stakeholders at the consensus conference meeting. At this meeting, data were collected as participants discussed and deliberated on what was presented, and emphasis was placed on potential strategies and action for creating alternative livelihoods and creating benefits to aid participants’ responses to the EEC.

These multiple methods were employed because they present an in-depth contemporary understanding of where the participants and the researcher could gain and develop knowledge through reflection on these real-world problems (Creswell 2013). These methods also explain the social phenomenon from an “insider’s” perspective and support critical discoveries that can be complicated for the layperson (Banks 2007; Carey 2012). Thus, using various methods within a case study can inform theories or concepts as a process for understanding the social world (Woodwell 2014). Applying these methods across two case study districts is not only useful for gaining knowledge, but also contributes to the improvement of theories by discussing and comparing interpretations of the theoretical lens found in the research (Woodwell 2014). As a

result, an in-depth understanding supported by evidence are a requirement in the case (Creswell 2013; Yin 2009).

Human ethics approval was sought prior to commencing data collection (USC ethics approval # S191295). As stated in the Research Project Information Sheet (RPIS), participants were able to withdraw at any time without penalty and any information already provided was deleted if requested. Data for the study were collected during eight months in 2019. The raw data (e.g. interview transcripts, pictures and voice recordings) were transferred to the University of the Sunshine Coast's research drive storage as a secure location. Subsequent access for analysis of data took place from that secure data storage location.

3.5 Methods of Data Collection

This study used four methods for collecting data: 1) document analysis; 2) interview; 3) observation; and 4) a consensus conference.

3.5.1 Document Analysis

Documents comprised valid written evidence from various sources, reflecting relevant circumstances about the topic (Yin 2009). Qualitative researchers commonly make use of contextual records and screen documents to gather data from sources such as letters, newspapers articles, books, administrative reports and websites (Bloor & Wood 2006; Gomm 2008; Woodwell 2014). It is argued that valuable data can be obtained from documents, but because the quality of data is essential for analysis, they should be screened for authenticity. The validity of data should be justified by a logical, reasonable, and relevant explanation (Woodwell 2014; Yin 2009). Furthermore, Yin (2009) indicates that the process of document reviews might lead to new questions about communication and the network of organisations.

In Phase 1 analysis of policies, plans and documents that relate to the EEC development project took place by applying Bacchi's (2009) critical social policy analysis model; "What is the problem represented to be? (WPR?)". Bacchi's analysis is that typically governments are seen to be reacting to identifiable 'problems' that are outside the public policy process. The terms in which specific policy problems are understood are left unexamined. In contrast, the WPR? approach offers a different way of thinking about policy and suggests policies constitute or give shape to 'problems'. Rather than reacting to 'problems', governments are active in the production of

problems, a necessary part of making policy. All policies make proposals for change based on implicit representations of 'problems' and carry implications for how the issues are thought about and for how the people involved are treated. The WPR? approach highlights the creative productive roles of government in shaping particular understanding of 'problems' (Bacchi 2009 p.1-2).

The model includes applying six interrelated questions to policy analysis, as follows:

- 1) What is the "problem" represented to be in a specific policy?
- 2) What presuppositions or assumptions underline this representation of the "problem"?
- 3) How has this representation of the "problem" come about?
- 4) What is left unproblematic in this problem representation? Where are the silences?
Can the "problem" be thought about differently?
- 5) What effects are produced by this representation of the "problem"?
- 6) How/Where has this representation of the "problem" been produced, disseminated and defended? How could it be questioned, disrupted and replaced?

The application of this model of social policy analysis helps explain the relationship between policies and activities of the EEC project, and effects and issues in the target area. It gives an insight into views of the Thai government through their EEC policy, and aids the process of answering RQ 1, 'What are the potential water and food security impacts of the Eastern Economic Corridor on the local residents?'.

Documents reviewed using Bacchi's framework included the *Eastern Special Development Zone Act 2018*, the *Thai constitution 2017*, and the *Enhancement and Conservation of National Environment Quality Act (No.2) 2018* to understand the regulation and laws backing the EEC project. In addition, local newsletters, posters, booklets, leaflets, and general communication channels were used to provide insight into the type of information that was distributed to local residents about the EEC projects. Bacchi's framework is useful for this research as a method or technique because the model helps the researcher critically analyses the policy and discuss the policy gaps. This method identifies causes of problems in policies and makes politics visible (Bacchi 2012), while other methods of policy analysis might examine policies through criteria

(such as implementation or cooperation) and comparisons (Knoepfel et al. 2011; Patton, Sawicki & Clark 2015; Wibowo, Race & Curtis 2013). Bacchi's method provides a critical framework for identifying critical views of how policy impacts on the local residents in the rural areas while the policy is implemented.

3.5.2 Interviews

For this research, semi-structured, in-depth interviews were used to collect data. The semi-structured interview is an attractive middle choice between a structured and unstructured interview. It is guided by open-ended questions within the study scope and allows for participants' meaning-making and exploration of views, within an exchange between the interviewee and interviewer. It uses a conversational approach to hear the perspectives and gain inside information from participants (Gomm 2008; Yin 2009). This allows probing and exploring phenomena in-depth where possible (Holanda 2016). The questions lead to effective data revealing participants' understanding of the world in their own ways (Gomm 2008; Yin 2009).

The in-depth interview is a one-on-one interview style designed to build rapport with interviewees using a confidential and non-judgmental atmosphere, to encourage freer communication and expression of one's own opinion (Marvasti 2004; Yin 2009). The in-depth interview opens opportunities for interviewees to feel relaxed and reflect on the content during an interview respected as providing a unique contribution to the research (Antelo 2014; Gomm 2008).

Phase 1, I conducted semi-structured in-depth interviews to explore participants' views and to understand the "how and why" of the phenomenon (Yin, 2009). This approach was suitable to search for current and envisioned impacts and key factors for building community networks and scenario-based EEC policy (See Appendix 1 – Methods and Interview Guide).

During Phase 1, the interviews were conducted with members of civil society organisations, local government officers, representatives of the business sector and residents as key participants for this study in Ban Pho and Bangkhla Districts. Participants were recruited because they possess extensive local knowledge related to the topic, contacts and have the

potential of identifying policy beneficiaries and impacts in these areas. In the main, interviews took place with individuals. However, in five cases, interviews took place with more than one person. For instance, participants who are a couple (husband and wife) participated in one joint interview. At another time, three staff of an organisation were interviewed together because the interview questions related to their roles and they were available at the same time.

Interviews took approximately 45 minutes to one hour. The venue for the interview was organised at a place of convenience for the interviewees. Field notes and audio recordings were employed. Audio recordings were used only when interviewees gave permission, and after I described the ethical terms of my research (e.g. anonymity and that participants could withdraw at any time).

A project information sheet for interviews and the consensus conference explained the topic of research, objectives and steps of the consensus conference in Thai language. The rights of interviewees and conference meeting attendees were explained to all of participants before starting to ensure they understood the project and confidentiality provisions prior to signing the consents forms. The consent forms sought permission for use of the data for research and to allow audio-recording. In the case of interviewing a few participants at the same time, the interviewer explained to all and one of the interviewees signed the consent forms on their behalf. For young people under 18 years of age, the same process applied, ensuring young people and their parents understood and agreed to the interview with the young people; and in most cases their parents were nearby.

Human ethics approval was sought and gained prior to commencing any data collection process (USC ethics approval # S191295). As it could be difficult for local residents to check a transcript due to technology and literacy issues, I summarised the interviewee's points at intervals during the interview to seek their confirmation that I had understood their perspective accurately.

3.5.3 Observation

While there may be multiple perspectives from many people in the same situation (Yin 2009), observation provides an understanding of what the participants actually do rather than what they say they do (Bloor & Wood 2006). Observation, applied in qualitative research, includes

seeing, feeling, hearing and smelling (Flick 2009). As a real-life experience, it provides empirical evidence.

During Phase 1, observation was employed at several events, such as the Environmental Day event. I observed the roles and responsibilities of leaders who organised the events as well as with those who collaborated with other organisations and networks, and the reaction of leaders with alliances and local politicians. Additionally, first-hand observation was also used at eight local activities in Ban Pho and four activities in Bangkhla such as community meetings, a ceremony of the royal coronation of the new king, environmental conservation events, cultural and religious events, youth group activities, and an EEC public hearing in CCS. These meetings provided me with understanding of the roles of participants and the dynamics in the relationship among local stakeholders.

I also observed the interaction among members or leaders to understand and assess relationships and the dynamics of the social network, and the reaction of leaders when they responded to questions about EEC impacts. In addition, observations of the environment in the target areas documented the colour, form and water hyacinth at canals, along the Bangpakong River, and the odour near industrial factories.

These observations were conducted to gather information and understand the relationship among local residents, providing data about social network dynamics and social capital in the local areas (RQ 2). For example, observations uncovered “who are the leaders who organised the event?” and “how do they find resources such as financial or food support for the event?”. In addition, the result of the observations uncovered alternative approaches for achieving their plan in the areas (RQ 3) when the participants discussed this topic during the consensus conference.

3.5.4 Consensus Conference

In Phase 2 after initial data analysis, a consensus conference meeting was held. This process was used for exploring possible alternatives to respond to the negative impacts of the EEC on local communities. This process is an action-oriented participatory method to aid decision-making, providing an opportunity for dialogue between citizens and experts. The consensus

conference method involves bringing together public actors, civil society stakeholders, business actors and/or individual citizens (Van Den Hove 2006).

The consensus conference can be contrasted with a more typical group-based data collection method of a focus group. The focus group method is a small-group interview style with like-minded members who share their opinions about specific questions posed, collecting data from more than one person at the same time (Berg 2004). Mostly, the participants of a focus group share a similar experience in regard to an event or consequence or share the same job, such as a group of farmers, investors and officers, refugees or those with physical disabilities (Bloor & Wood 2006; Kumar 2011). In contrast, the group data collection methods of a consensus conference can be conducted with a larger group (Nielsen et al. 2006) and has the purpose to find a solution or common ideas for negotiation with decision makers and participants and can be a mixture from the public, stakeholders and experts (Nielsen et al. 2006; Van Den Hove 2006; Zurita 2006). Although a consensus conference is seldom mentioned in qualitative research methods and design (Bloor & Wood 2006; Creswell 2003; Davies & Hughes 2014; Garner & Scott 2013; Gomm 2008; Neuman 2011, 2012; Robson 2011; Yin 2009), it has been used in practice situations. It allows people's views, awareness, discussion and evaluation of problems to engage with social issues; and in some cases, it has influenced political decision-making (Nielsen et al. 2006). For instance, this process was employed in Denmark and France to negotiate decisions about environmental policy-making as well as UK radioactive waste management impact on fishing (Nielsen et al. 2006; Van Den Hove 2006; Zurita 2006). The process makes explicit the analysis of the social policy, which affects them and what action they do or could take in response (Nielsen et al. 2006; Zurita 2006).

This phase of the research was expected to facilitate co-operation among local residents who face similar problems and who wished to work with local governments and other stakeholders to meet and explore alternative development plans. The process used was modified from seven stages identified in a consensus-conference handbook created by the Office of the Royal Development Projects Board in Thailand (ORDPB n.p.) (see Appendix 2). I opened the meeting with a presentation of preliminary findings based on analysis of interviews conducted in Phase 1. I posed questions for discussion on various topics (see in Appendix 2- Consensus Conference Process). I concluded the consensus conference using the steps of a Nominal Group Technique

(Hugé & Mukherjee 2018; ORDPB n.p.) where participants prioritised the issues they perceived to be of most importance. With permission from the participants, I sent a summary brief back to the head of district leaders and EEC staff after the consensus conference.

In this study, the consensus conference confirmed and complemented the understanding derived from the stakeholders' interviews undertaken in Phase 1. It helped to identify the issues and negotiation strategies and because of the participants and processes involved, could potentially provide input into the development of the EEC policy.

Of the 47 people invited, 33 participated in the conference, mainly from three stakeholder groups: local residents, government officers and a business person. The heads of both districts, a monk, community development officers, a representative of the irrigation department, business actors, factory representatives and EEC staff did not join the conference although they were invited. For some of these people, the timing on a weekend might have inhibited their attendance as it was not a government event and not required as part of their job. Others may have wished to avoid conflict due to the subject matter.

The data collected at the consensus conference process was analysed in order to understand the potential of impacts, the factors involved in building social networks and the development of possible plans for a sustainable development: findings to answer RQ1, RQ 2 and RQ 3. For instance, at the consensus conference there were ideas about alternative plans to better support the people in transition for sustainable development and to solve water problems. These could be proposed to politicians at the next election.

3.6 Recruitment of Participants

Recruitment of the participants occurred through purposive sampling and the snowball technique for interviews. Purposive sampling is valuable as it targets specialists, experts or someone who has experience in specific cases (Flick 2009; Neuman 2006), and who provides appropriate data for the purpose of the research (Kumar 2011). Thus, for this study, participants were selected for the sample based on three criteria.

- 1) Participants served in local roles or positions that related to the topic issues, such as economic development, industrial expansion, port and road construction or water and food security;
- 2) Additional participants were identified through the document search as those experiencing problems, such as pollution or a change to water usage in the case study areas, or those who raised concerns openly about potential impacts; and
- 3) The length of time living in the area was prioritised because if people have lived in the area for a long time, they were likely to have seen change happening both before the EEC plan was introduced and after its implementation. I limited the sample to people having lived and worked in the areas for three or more years because the EEC was formed in 2016.

Participants were recruited from three main groups, providing a range of stakeholders for three reasons:

- 1) civil society groups represent local residents' voice, who live and are impacted in their local areas;
- 2) local government officers are the ones who implement the EEC plan and are the first to hear of issues as they arise in the local areas. They are crucial because if there are negative impacts, they are among the first group to try to respond.
- 3) Representatives of the business sector such as owners or workers in factories, storehouses or infrastructure construction projects in the area, or are investors or Chamber of Commerce members. The document search identified that some elements of the business sector group may pose a risk to water over-consumption and air pollution, as well as other pollution forms that might influence the local environment. Further, this group is supported by the EEC plan to develop the Thai economy through foreign investment. They are important for planning and visioning processes, which Blanke and Walzer (2013) argue should –but did not- involve the citizens, local government, business leaders and representatives of community-based, non-profit organisations.

As discussed previously, during Phase 2, those people who engaged in a semi-structured in-depth interview in Phase 1 were invited to attend the conference meeting. Hence, the

information from these three groups was useful for reducing bias and increasing collaboration among stakeholders. Participants were recruited from two districts and selected because of their positions and the number of people they associate with due to their roles. However, the snowball technique was applied to access those participants not initially known to the researcher.

Snowball sampling is a multistage technique of selecting a sample group within network chains where one contact recommends others based on a relationship, or their reputation as a leader (Kumar 2011; Neuman 2006). For example, in Kumar's (2011) research, the researcher found the coordinators of a civil society network recommended others, who were the shop-owners or youth leaders in the areas being studied. This helped Kumar's research process with a broader range of data available through those new connections. This method may create challenges when there is a large number of people to study (Kumar 2011; Neuman 2006), and also might be biased if all the data comes from the same group (Kumar 2011). Thus, to address this issue, and in terms of the sample, quotas were put in place and participants recruited from three stakeholder groups to reflect different perspectives and thus, to reduce biases.

The total of 47 people were chosen for interviews, and justified as stakeholders because of their affiliation with various sectors (Table 5). While using a snowball technique to consider participants, the criteria for choosing participants assisted in identifying a number feasible for the purpose of this study. Criteria were divided into priority categories- ('essential', 'desired' and 'non-essential'). Living in the area for three years was a basic criterion because the Thailand 4.0 and EEC project were created three years before collecting the data so the people who have lived longer than three years can report on the change in the target areas. Others who knew the area well but did not live there were selected due to insights they may have about Ban Pho/Bangkhla circumstances (Table 6). The categories and quota were devised because it helps to select a purposive sampling as a strategy to specify people to be included in the sample (Robinson 2014).

Participation from this range of people was particularly useful for answering RQ1 and RQ2 because the participants had knowledge about the EEC impacts on local residents and also knowledge about the social networks in the area.

Of the 47 participants, 25 participants (16 male and 9 female) were interviewed in the Ban Pho District, and 17 participants (13 male and 4 female) were interviewed in Bangkhla. These numbers included four young people in both districts. Additionally, five key persons who worked in both districts were interviewed, one from the irrigation department, a leader of CCS civil society networks and three of the EEC staff.

To retain anonymity of the participants in this thesis, the following acronyms are used for the data sources:

- BP means the participants in Ban Pho district.
- BK means the participants in Bangkhla district.
- BPK means the participants who are not the residents in both districts but work closely with communities in both districts.
- ES means the participants from the EEC office.
- FT means the participants who work in factories
- CC means the participants in consensus conference meeting

Table 5: Justification for Participation

Position / Role	Justification for participation	Quotas Sought and obtained
Civil Society groups.		
A Coordinator of Civil Society network.	Someone who coordinates and supports local community groups in Chachoengsao Province.	1
A Coordinator of Agricultural network.	Someone who coordinates and support the local agriculture, particularly food safety in Chachoengsao Province.	1
Leader of local groups such as the elderly or informal local leaders.	Someone who acts as a consultant in the local area, who can describe changes.	1
Residents who live beside the river.	People impacted by port, road or factory construction.	3
Shop owners (Small business shop).	People impacted by port, road or factory construction, and fishery regulation.	2
Fisher people or Prawn farm-owners.	People impacted by port, road or factory construction, and fishery regulation.	5
Farmers or gardeners.	People impacted by water security.	6
Youth group leaders.	Young people who have experience in local community events. Members of these groups may have potential to be leaders in their areas in the future.	4
Monk	Religious leader.	1

Government officers.		
District Chief Officer in Ban Pho and Bangkhla District.	An official leader in the areas.	2
A Chief Executive of the Sub-district Administrative Organisation.	Leaders of sub-districts where there is port and road expansion.	6
Agricultural officers or Chief of District Agricultural Extension office.	Officers who manage agricultural production and regulations in the areas.	2
Fisheries officers.	Officers who is manage fishery production and regulations in the area.	2
Community Development officers.	Officers who work with the local residents in the community development projects of the government.	2
Irrigation officer.	Officers of the Department of Irrigation.	1
EEC officers.	Officers who are representative of EEC and go to present the EEC information in the EEC areas.	3
Representative of Business sector.		
Chamber of Commerce members (2 persons in Bangkhla and 1 person in Ban Pho.)	Someone who contributes to the business in Chachoengsao Province.	3
Representative of factories in the areas (1 from a big factory in Ban Pho and 1 from a small factory in Bangkhla).	People who work in factories or huge business sectors and are responsible for community relationship such as Corporate Social Responsibility (CSR) Department in Ban Pho and Bangkhla district Chachoengsao Province.	2

Table 6: Criteria for Choosing Participants

Criteria for Choosing Participants		
Priority	Criteria Detail	Quotas Sought
Essential.	Officers, business owners or impacted people living three or more years in the Ban Pho or Bangkhla district.	Participants in the target groups. (Table: 5 above)
Desired.	Officers, business owners or people impacted, with a connection of more than three years but who do not live in the district.	As available.
Non-essential, but may provide insights about Ban Pho/Bangkhla circumstance.	Diverse fields of employment and diverse employees like workers, officers, non-government officers or interns. Officers or business owners of less than three years who are working in Bann Pho or Bangkhla district, but not living in the district.	As available.

3.7 Data Analysis

Data analysis in qualitative research is more concerned with the frequency and pattern of the elements using coding and thematic analysis, rather than numbers and statistics, to generate in-depth meanings (Belotto 2018; Braun & Clarke 2006; Hewitt-Taylor 2001). In this research, NVIVO was used as a tool for coding and thematic analysis. I used selective coding and generated themes from all data based on stories and theories discussed by participants. I reread the transcripts and analysed the data based on the research questions and the conceptual framework (see Appendix 3, example of coding in NVIVO).

Table 7 summaries the six steps of data analysis in this research, modified from Kumar (2011), Flick (2009), Neuman (2006) and Marvasti (2004). Each step explains how it answers the research questions through content, data sources, techniques and interpretation linking to

concepts and theories, allowing comparison. The six steps are: clarifying the research question, framing the data and finding the themes, looking for information from the sources and dividing periods or events, coding, interpretation, comparison and conclusion.

This process helped to focus on the content and find patterns for creating themes in each of the data sources documents, interviews, observations and the consensus conference. It led to data interpretation, theorising according to the concept framework and deriving social knowledge. Social knowledge is constructed while people reflect on and personally interpret their experiences through conversation, action and observation (Neuman 2011). It contributed to subjective meaning-making, and critical reflection on the overall research aim.

Table 7: Steps of data analysis and theories to answer the research questions

Step1	Step2	Step3	Step 4	Step 5	Step 6
Clarify the Research Questions	Framing the data and finding themes of analysis (What am I searching?)	Data sources	Techniques for coding and finding the linkage of themes	Interpretation under the Theories / concepts	Comparison and Conclusion
1) What are the potential water and food security impacts of the Eastern Economic Corridor on the local residents?	Policy analysis (EEC Act 2018).	Websites, Newspapers, Thai government regulations and interview transcripts.	Bacchi's technique through 6 questions of critical analysis.	Impact Assessment.	Comparing between Ban Pho and Bangkokla Districts.
2) How are social networks of local communities, including those of young people, responding to the impacts of the Eastern Economic Corridor in relation to water and food security?	Networking, connections, relationships, dynamics of networks such as figures of connections among group members.	Local history books, Local documentaries, interview transcripts, observation.	Mapping the connection among participants NVIVO (Thematic analysis).	Social Networks / Social Capital.	Comparing between Ban Pho and Bangkokla District.
	Activities in the areas such as cultural activities or problem-solving activities.	Interview transcripts, observation.	NVIVO (Thematic analysis).	Community Organising/ Social capital /Political Opportunity Structure.	

3)What alternative approaches could be used to adapt to ensure more alignment with sustainable development objectives?	New ideas of EEC policy and for solving issues about EEC in the areas, Ideas for adapting and social movement in the EEC.	Local history books, Local documentaries, Interview transcripts, Consensus conference outcome.	Mapping the community assets and capacity / Ideas of alternative approaches through NVIVO (Thematic analysis).	Community Development Practices such as ABCD and Participatory development al practice.	Ideas of alternative approaches for sustainable development .
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When analysing articles, I coded data according to themes and took into account the number of keywords, phrases or theories that were mentioned from the data's various sources (Woodwell 2014) to get an idea of degree of similarity or differences among the participants. This process helped me to identify problems and impacts derived from the implementation of the EEC and Thailand 4.0, which are the relevant policies impacting in the case study areas.

As discussed in Section 3.5.1, this study employed Bacchi's (2009) technique for analysing social policies, through six questions for critical analysis (see Chapter 4). Bacchi's technique supported the process for critical analysis on the content of the EEC policy from the governmental regulations and their implementation. Bacchi's technique assisted in the critical understanding of and the support for community change and adaptation.

Triangulation was employed to validate findings and check accuracy of analysis by comparing observations, interviews, and documents.

Summary of Data Methodology and Methods

Figure 11 below illustrates an overview of methodology and data collection methods and techniques.

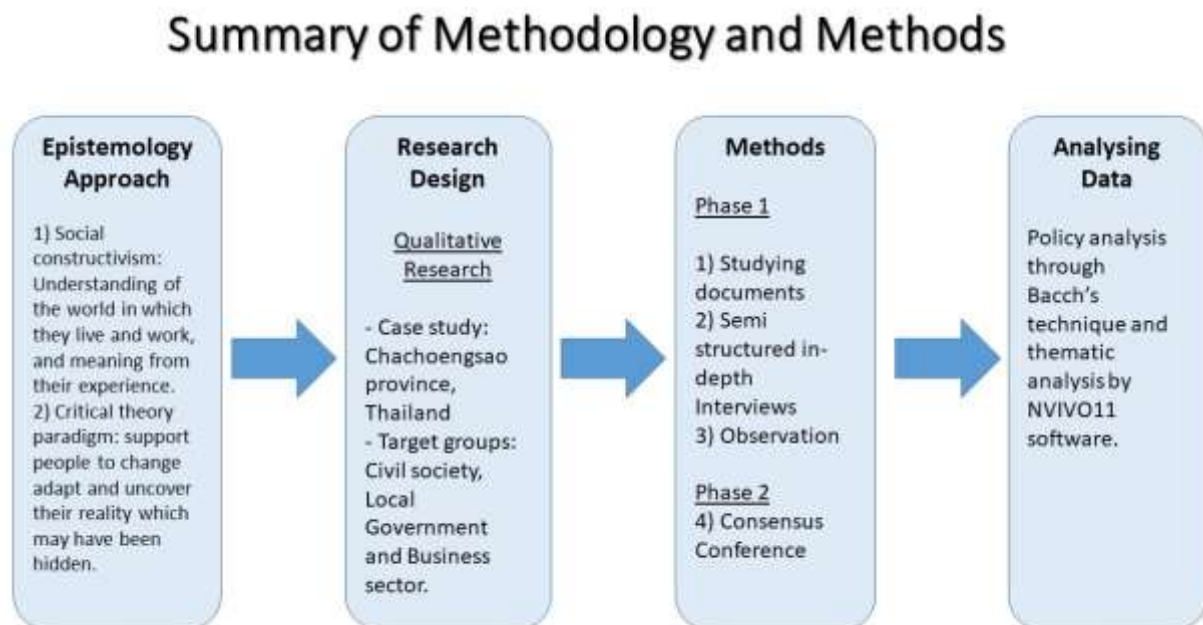


Figure 11: An overview of research methodology and methods

3.8 Managing Limitations of Methods

3.8.1 Limitation of a Case Study

Limitations are inherent in all social research, including some specific to this study. However, this research contributes to increasing knowledge on sustainable development when top-down development impacts water and food security for local communities.

Some scholars have criticised case studies as a valid research approach because they usually do not offer sufficient basis for scientific generalization. However, advocates view it as useful if it employs concepts and practical theories to undertake an in-depth analysis: one that offers evidence and understanding of consequences specific to the case study because it can explain context and specific conceptualisation (Yin 2009). Comparison of two case studies improves generalisability. This study uses the social constructivism approach whereby inquiry about a person's subjective understanding of the world in which they live and work. This process of

inquiry improves their subjective meaning from their experience (Creswell 2013), and in this case, their in-depth knowledge about the impact of the social policy on their lives and communities.

3.8.2 Limitations of Qualitative Methods.

Qualitative research depends on the quality of its questions (Bloor & Wood 2006). A weakness in the interview methods may be the interviewees' bias whereby interviewees only give information that they believe the researcher would like to know (Yin 2009). In addition, some researchers may miss a nuance of meaning. As a result, there may be potential bias, confounding factors and missing information. Thus, triangulation by using three different data sources is applied in this study to validate findings: data from interviews of a wide variety of stakeholders, data from media/websites that can be used to corroborate content spoken at interview, and observation.

3.8.3 Limitation of Theories.

Social network data may not be fully understood because of the limited number of network members (Bloor & Wood 2006). In this case, no specialised social network analysis tool such as Gephi or Ucinet program was used. To mitigate this though, a diverse range of interviewees were selected by their position and other selection the criteria (Table 6) and with triangulation.

3.8.4 Limitation of Timing and Cost.

The data were collected during an eight-month period in 2019. However, the annual activity involving collaboration among network members of *Bringing So Thon Buddha statue up to the Bangpakong River*", a traditional Buddhism event held in March or April was missed. To compensate, I followed these events using online news sources.

Although the EEC plan targets three provinces, budget limitations for this research restricted the number of interviewees and the scope of the target areas to two districts in the Chachoengsao Province.

3.8.5 Limitations in the Research Due to Local Politics.

Regarding the political dynamics in Thailand, the coup d'état in 2014 imposed regulations resulting in some civil society activities being cancelled. Thus, I relied on only a small amount of empirical evidence from civil activities. However, my previous research work with these

communities compensated by providing good channels of communication which revealed that community development and community organising are still occurring and interviews with the key participants of the civil society groups explored what is currently happening in Thailand since the coup d'état.

3.9 Chapter Summary

This chapter described and justified and described the methodology of the research and case study design. The research employed two philosophical assumptions which are the epistemological approach of social constructionism and the critical theory paradigm of research. The chapter argued for the use of a case study approach with two sites in the Ban Pho and Bangkhla districts in the areas of the Bangpakong River basin in Chachoengsao Province, Thailand. The 47 research participants were identified through a snowball technique. To reduce bias participants were recruited from three groups - civil society groups, government officers, and representatives of the business sector. Criteria for choosing participants also included that they lived in the target areas longer than three years. The chapter discussed the methods of data collection which were: policy and other relevant document analysis, in-depth interviews, observations at the events and convening a consensus conference. The six steps of data analysis allowed for robustness: clarifying the research questions, framing the data and finding themes of analysis, a range of data sources, techniques for coding and finding the linkage of themes, interpretation according to concepts and practical theories, and comparison and conclusion. Finally, the limitations inherent within the methods were also discussed. By setting out the methodological processes clearly and systematically, this study should be able to be replicated in other contexts. The rigour employed confirms a high degree of trustworthiness and authenticity, providing credibility.

The following three chapters report the results, with each chapter providing discussion that emerged from analyses.

CHAPTER 4

POTENTIAL IMPACTS OF THE DEVELOPMENT PLANS

4. Chapter Overview

This chapter addresses research question RQ 1, 'What are the potential water and food security impacts of the Eastern Economic Corridor on the local residents?' as a result of the Thailand Eastern Economic Corridor (EEC) development plan (referred here after as the EEC policy).

It uses a thematic analysis within Bacchi's (2009) framework to assist critical understanding of policy and to support community change and adaptation. This framework influences understanding about society at the micro-level through observing processes at the macro-level. From a macro standpoint, the analysis draws on data from policy documents and reports. From the micro standpoint, the analysis draws on interviews, locally-produced books such as *Ban Pho Rak Bangpakong* and the consensus conference.

This chapter is divided into two sections. The first examines the data through the first three questions of Bacchi's critical social policy analysis framework, as well as part one of Bacchi's sixth question. These are:

- Question one: what is the "problem" represented to be in a specific policy? (Section 4.1);
- Question two: what presuppositions or assumptions underlie this representation of the "problem"? (Section 4.2);
- Question three: how has this representation of the "problem" come about? (Section 4.3);
- Question six (part 1) how/where has this representation of the "problem" been produced, disseminated and defended? (Section 4.4), which is divided into - how the policy is implemented through a series of plans and principles (Section 4.4.1); and how the policy is being communicated and how this communication is perceived by the participants (Section 4.4.2).

The questions allow for analyses and critique of the policy and legislation related to the EEC project, including the Thai constitution B.E.2560 (2017), the *Eastern Special Development Zone Act B.E.2561 (2018)*, referred to as the *EEC Act 2018*, various relevant sections of the Twelfth National Economic and Social Development Plan, the 20-year National Strategic documents, and the EEC information leaflets distributed to the public in the local areas. Interview data with government officers responsible for implementing the EEC policy are also analysed and discussed.

The second part of the chapter responds to Bacchi's critical analysis questions four, five and six (part 2).

- Question four: What is left unproblematic in this problem representation? Where are the silences? And, can the "problem" be thought about differently? (Section 4.5)
- Question five: What effects are produced by this representation of the "problem"? (Section 4.6)
- Question six (part 2): 'How could it be questioned, disrupted and replaced?' (Section 4.7)

These clarify the compromised legislation (Section 4.5.1); structure and memberships of the EEC authority committee (Section 4.5.2); concessions for investors that inhibit Thai skill development (Section 4.5.3); the potential for relaxed environmental conditions and safeguards (Section 4.5.4); and lack of information regarding funds for support of the local communities (Section 4.5.5).

Section 4.6 identifies potential positive (Section 4.6.1) and negative (Section 4.6.2) impacts of EEC on the local residents from their perspectives, including changes and threats to land and food production, and their feelings of both hope and loss (Section 4.6.3). These sections draw on the *EEC Act 2018*, civil society information pamphlets, meetings, interviews, local books and the consensus conference including observations made at the Eastern Civil Society Network meeting.

The latter section of the chapter also includes the exploration of Bacchi's question six (part 2), 'How could it be questioned, disrupted and replaced?' (Section 4.7). Here, Bacchi's 'it' relates

to the policy maker's problem representation, and critiques the governance associated with the EEC policy. The final section provides a summary (Section 4.8) of the outcomes of the analysis of all six of Bacchi's questions.

4.1 What is the "problem" represented to be in a specific policy?

The problem being addressed by the Thai government is represented in the EEC's emphasis on economic growth and development. Five specific problem representations are derived from the objectives of the *Eastern Special Development Zone Act B.E. 2561* (2018) (section 6). Firstly, the Thai government is concerned about the economy and its lack of modern and environmentally-friendly economic activities to improve the country's ability to be competitive in a global marketplace (section 6/1). Secondly, limited government services and the costs of business operations (section 6/2) such as document registrations and fees are issues. Thirdly, citizens cannot access infrastructure and public utilities because they are not integrated, such as linking railways and airports. For example, section six paragraph three of the policy document states, "*Provision of infrastructure and public utility systems that are efficient, interconnected, easily accessible by the general public, and fully and systematically linked*". Fourthly, land-use for physical and social infrastructure should be suitable for the [social and environmental] conditions and the potential of the areas consistent with sustainable development principles. For example, in the *EEC Act 2018 section 6* (paragraph 4) "*Identifying land uses suitable to the conditions and potential of the areas in line with the principle of sustainable development*". Fifthly, modern cities globally should be developed for the convenience and safety of its citizens ensuring they have a good quality of life (section 6/5).

4.2 What presuppositions or assumptions underlie this representation of the "problem"?

The problem representations articulated above are based on several presuppositions or assumptions and respond to question two of Bacchi's framework. Despite terms such as 'environmentally-friendly' and 'sustainable development' framed as objectives of the *EEC Act 2018*, the first presupposition features an economic growth paradigm. An interpretation is that, the government's policy orientation is embracing capitalism, defined as "an economic system based on market competition and the pursuit of profit, in which the means of production or

capital are privately owned by individuals or corporations” (Bell 2020 p.1). This form of capitalism is in contrast to trading and industry provided by the state. Moreover, capitalists, that is, companies, investors or owners expect profit, to maximise return on investment and the assumption is that this requires ever-increasing economic growth (Hinton & Maclurcan 2017).

As a result, the Thai Government initiated the Thailand 4.0 policy as a means to increase private investment in the country so it will grow beyond a “middle-income trap” nation (BOI 2017), where citizens’ annual income earnings are in the middle-income range. Thus, the second presupposition is that the private investment stimulated by the policy will ‘trickle down’ to create greater wealth generation for enough citizens that the average annual income will increase. According to the National Science and Technology (NSTDA), to achieve Thailand 4.0 and enhance economic growth, the Thai government is promoting and driving the innovation and industrial sectors (NSTDA 2019) with international investors through the EEC in three provinces: Rayong, Chon Buri and Chachoengsao (NSTDA 2019) (Chapter 3, Figure 5). The third presupposition is that investing in, and attracting ‘technology and innovation’, will grow the economy, much more than alternative additional investment in agriculture and fisheries, or tourism.

4.3 How has this representation of the “problem” come about?

This section responds to Bacchi’s question three, investigating the drivers for the ‘problem’, by drawing on the background to the EEC project, linking regional economic development policy among Southeast Asian countries.

The Greater Mekong Subregion (GMS) in Southeast Asia aimed to promote economic development in this region and achieve connectivity among GMS countries, including: Cambodia, the People’s Republic of China (specifically Yunnan Province and the Guangxi Zhuang Autonomous Region), Lao People’s Democratic Republic (Lao PDR), Myanmar, Thailand, and Vietnam (see Chapter 3). It enabled potential trade competition through infrastructure investment and intended that a network among nation states would be built through social and environmental programs (Asian Development Bank 2015).

The GMS Economic Corridors' Development Plan focused on infrastructure building, industrial zones, agriculture and trade expansion among six ASEAN countries (Asian Development Bank 2018). This includes transportation routes such as roads, railways, ports and logistics in Southeast Asia Countries in the GMS Southern Corridor (Chapter 3, Figure 5; Figure 12).



Figure 12: Road planning connecting Myanmar to Thailand and other countries in Southeast Asia via the GMS Southern Corridor.

(Source: Modified from Google Images).

With the coup in Thailand in 2014, the military government (2014-2019) aimed to demonstrate productivity and promoted rapid economic development through the EEC policy.

In 2015, Southeast Asian countries (except Timor-Leste) joined to form the Association of Southeast Asia Nations (ASEAN) economic community or AEC. The Thai Government considered the AEC would provide an opportunity for greater international investment in Thailand and a bigger market for Thai products in Southeast Asia. It is assumed that their aim was to increase economic performance to move out of the middle-income trap, towards greater wealth.

In 2016, the Thai Government developed the Thailand 4.0 policy to promote technology and innovation through the EEC. Underlying the economic problem representation is that the Thai Ministry of Industry argues that economic growth is slowing because of industrial investment decline due to market competition from adjacent SE Asian countries, making Thailand uncompetitive for investment. This perspective was confirmed at an interview with an EEC official, who stated:

“...Thailand cannot slow down industrial development ... We have to compete with many countries [in Southeast Asia]... All of them open their countries. ...the countries around us [Vietnam, Cambodia and Myanmar] ... are attractive for investors because of investment conditions and labour costs. Thailand seems like it's bleeding now” (ES 001).

The Gross Domestic Product (GDP) is used as a measure of financial growth and economic achievement in countries (Cernat 2002; Ejike & Nweze 2019). In 2018, the GDP of Thailand grew by 4.1 per cent which is lower than other countries near Thailand (Cambodia 7.5%, Vietnam 7.1%, Myanmar 6.8%, and Malaysia 4.8%) (World Bank 2021). The Thai National Economic and Social Development Council forecasted that the GDP of Thailand would increase by 3-3.5 per cent in 2019, but it was 2.4 per cent; (World Bank 2021), giving further impetus to implementing the EEC policy.

Even so, Thailand has been considered an economic success story, with service sectors comprising 58.6 per cent of Thailand's GDP, with agriculture 8 per cent, and industry 33.4 per cent (O'Neill 2021b). The industrial sector portion of GDP in Thailand decreased during 2017-2019, whereas Vietnam, Cambodia and Myanmar increased (O'Neill 2021a). This explains why the EEC policy focussed on technology and innovation.

In summary, Sections 4.2 and 4.3 have drawn on Bacchi's critical policy analysis framework to illustrate that the Thai government's problem representation is about a desire for greater economic development in Thailand, facilitated by the *EEC Act* on 10th May 2018, applied through the Thailand 4.0 strategy. The underlying assumption is that growth, as measured by GDP, is essential and will increase with infrastructure and industrial development. However, given the rapid development of policy and the *EEC Act 2018*, information was disseminated to Thai citizens through various channels but problematically, was communicated hastily.

4.4 How/where has this representation of the “problem” been produced, disseminated and defended.

In response to Bacchi’s question 6 part 1, there are two main ways the problem representation of Thailand’s economic growth has been produced, disseminated and defended. The first is through a series of plans and implementation of the plans (Section 4.4.1). The second is through communication about the policy and plans through the EEC office with stakeholders (Section 4.4.2); and other types of informal communication about EEC with communities (Section 4.4.3). This has attracted criticisms about a lack of clarity and transparency about the EEC (Section 4.4.4).

4.4.1 A Series of Plans and Implications

With regard to the implementation of economic growth policies, the *EEC Act 2018 (Section 29)* requires:

- an overview development plan of the EEC zone,
- a plan for land use,
- a plan for infrastructure and public utility development, including transport, communication, settlement, environmental systems, water resource management and pollution control systems (EEC Act 2018 Section 29 and 30),
- a plan for implementation, and
- a plan for integrated government services to ‘obtain maximum benefits to the local community and ensure effective land-use.

These plans were approved by the Eastern Special Development Zone Policy Committee (EEC Authority Committee) comprised of the Prime Minister (PM), Deputy PM, senior financial representatives and five relevant experts in the *EEC Act 2018 section 10 and 29* (Eastern Economic Corridor Office 2018). The responsibility for implementation of the policy rests with an appointed state agency. This agency works with relevant departments, such as the Department of Public Works and Town & Country Planning, to complete detailed plans within a year of EEC authority committee approval (EEC Act 2018 section 30). These detailed plans were to be completed on 10 May 2019. They were approved and passed by the Cabinet on 9

December 2019, communicated through an announcement published in the Thai Government Gazette (Thai Government 2019b).

Not only must the plans be aligned, Section 29 requires that there will be ‘protection, respect and a remedy framework for affected persons’ in line with the ‘promotion and protection of human rights’ principles in the context of business and related laws. In terms of land acquired for the purposes of the policy, it includes finding alternative land for an affected person or paying compensation (EEC Act 2018, Section 36). It requires consideration of the health and well-being of people and the environment according to sustainable development principles, and creating community awareness about the policy through public hearings (Section 30). Thus, safeguards for human rights for those impacted exist in the policy, but the ability to fulfil them is constrained due to the only requirement for community consultation is through public hearings. This latter method of communication leads to the second way the Thai government has framed their need for economic growth and how that strategic direction has been disseminated.

4.4.2 Communication by EEC Officers with Stakeholders

Information dissemination about the EEC project is essential for local residents to understand the policy and its implementation and illustrates the type of engagement between the government and its citizens. Owing to rapid policy implementation, the method of communication used by government depends on the position and roles of government staff. For example, local government staff received EEC information from meetings organised by the EEC office or by formal letters. The general population received information about the EEC mainly via television advertising and promotion initiated by the government.

A) Information received by meetings or formal letters.

Four local government officers indicated that they received EEC information from meetings organised by the EEC office (the federal government staff). Moreover, six local leaders indicated that they know about the EEC news from a monthly meeting at the District office. To spread the information more widely, some local officers suggested that local leaders are supposed to share information in their areas via village radio, letters or Line group-chatting (BP 024, BK 014) as BP 024 stated:

“If I have EEC information when I was invited to an EEC meeting, I will share in the Line group chatting which includes staff in my team and head of local leaders. The local leaders will have their networks to communicate among each other such as a head of sub-districts and village head man” (BP 024).

Some participants received the EEC information from the EEC Facebook page but are sceptical that only positive impacts are identified, while they see potential negative impacts in the CCS areas such as land acquisition (BP 014, BK 009).

“If you see the news or EEC Facebook, they tell only good things about the EEC but they do not say all impacts. Now, my house is affected by land acquisition for the ICD project. My parents are worrying” (BP 014).

TV news and newspaper articles are also EEC information communication channels to local residents. Eight participants learned about the EEC from various channels such as TV and newspaper reports (BP 003, BP 004, BP 013, BP 009, BP 010, BK 003, BK 007, BK 008). This is a one-way method of communication and cannot answer inquiries of local residents in the EEC areas. A participant shared the concerns about EEC news that he received from a TV broadcast.

“I know EEC information from TV and villagers. EEC officers have not come to the temple. However, many villagers come here and discuss their suffering [from land expropriation and the ICD project]” (BP 004).

Thus, government information on the EEC was disseminated through many channels such as local leader meetings, letters, TV broadcasts, newspaper articles and social media, but in an impersonal one-way form of communication, which was not always valued by community residents. For example, one participant indicated that he was not sure that EEC policy is even real (BP 003). Moreover, local residents also receive information in informal and indirect ways from people within their communities.

B) Schools.

In line with the perspective of local residents sharing information informally about the policy and action, two participants indicated that information was received in some schools in Ban Pho (BP 014 and BP 022), while another indicated this was not occurring in Bangkhla (BK 002).

“I heard the EEC information from my teacher at school. The principal of the school told students in the morning after ‘respecting the nation’. He said that EEC was related to new industries in three provinces (Rayong, Chon Buri and CCS). He said to prepare ourselves to adapt and change in our areas” (BP 022).

C) Social Media: the Line App and Facebook.

Social media was found to be a popular channel for communication among friends, colleagues and group networks. The online application ‘Line’² and Facebook were used to circulate EEC news and to discuss community issues (BP 001, BP 006, BP 013, BP 019, BP 025, BK 001, BK 004, BK 005, BK 010, BK012, BK 017). However, details were not clear about where different types of EEC development would take place (BK 012).

Some participants in the study highlighted the use of technology for sharing the EEC information through their social network.

“We communicate to the head of the village and their assistants. Not only EEC issues but also other news. The assistants will help to send news through the online-chat group among village committees, then they will tell the villagers in their areas” (BP 019).

D) Family members, neighbours, and friend groups.

Other informal sources of EEC information were disseminated among family, neighbours (BP 009, BP 011, BP 018) and friends (BP 025, BK003, BK 013). Concerns were shared among family members:

“I know EEC information from my dad. He is a community leader. I am close to my dad. If he stresses, we will talk and share together. EEC is an issue that my dad is worrying about because he is thinking to resign and come to fight with the local villagers” (BP 018).

The perspectives of interviewees in this section has shown little evidence of direct dissemination of information about EEC policy from the national government to the

² The Line Application is a name of social-media application similar to Facebook. The Line application is popular in Japan, Thailand and Korea.

community. While some information was passed on by local government officials, local residents relied on multiple informal channels for receiving information, with little opportunity for interaction with government. There was a lack of clarity and confusion, and few opportunities to provide feedback or input into development plans (Section 4.4.3).

4.4.3 A Lack of Clarity and Confusion about the EEC Project

When participants were asked in interviews about the channels of information about the EEC project, several themes emerged. Many participants asserted that information from the EEC was unclear. When they sought clarification, they were not able to get answers about their enquiries (BP 014, BP 017, BP 021, BP 024, BK 009, BK 014, CC).

“...local residents do not know much about EEC information. The consultant company representing the EEC project, came to me [local leader] but they have not talked to local residents. ... Now, the EEC information is unclear. We know only they will control the land use by town planning but it is still not clear where is the industry or agricultural zone. This leads to confusion and concern by local residents” (BP 024).

Confusing and unclear messages about the EEC project, one-way communication, limited time for consultation, and limited authority at the officer level to communicate, were all revealed as factors contributing to poor communication.

A) Unclear messages from EEC project.

Twenty-one participants from the Ban Pho district referred to the land acquisition of government for the high-speed rail line, and for the Inland Container Depot (ICD) relating to the EEC project. They commented that the information provided was insufficient for local residents to understand the project. This issue was raised again in the consensus conference. For example, some of the participants stated that:

“[It] is unclear where is the ICD location or high-speed railway or double-track railway” (BP 017).

“We think, EEC has to listen to all communities and EEC authority committees have to join and listen to us. The previous public hearing is not a fact [the public-hearing result is not the same as what people (at Nong Teen Nok) told the government on that day]. They think

and solve only immediate problems. We cannot see the whole plan of the EEC project and ... how EEC is in CCS. The information is confusing” (CC).

Even EEC staff employed to oversee the implementation of the policy acknowledged this lack of understanding:

“...EEC is an issue for Nong Teen Nok in Ban Pho district ... because the government policy is not clear, local residents are really worried” (ES 001).

While information for many in the target areas information was confusing, this was not the view of a company representative who found EEC information to be clear. This revealed a lack of equity in the dissemination of information. He asserted that:

“We think that the Thai government is very clear because we have talked about the development plan. ... EEC plan is put in the province policy. As I read from the newspaper, our plants are in CCS. My company is an industrial operator and investor so we have plans and timelines for developing our company ...” (FT 001).

Although EEC information was received in various ways, most of the participants indicated they were still confused. This indicates that the lack of direct communication is problematic.

B) One-way communication influences doubt and does not provide answers.

General information about the EEC was provided through documents and multimedia in meetings but residents were unable to discuss it directly with the EEC staff. While communications aimed to promote a positive view of the project, one-way communication raised doubts among local residents (BP 001, BP 005, BP 014, BP 021, BK 009, BK 014). For example:

“As I was invited to the EEC meeting, EEC information is public relations. They tell about what EEC is, more than listen to our opinions and discuss EEC issues. It is not the exchange of data or receiving any opinions” (BK 014).

EEC officers also explained to local officers and community leaders (e.g. village and sub-district heads) the benefits of the project in terms of increasing employment and a high-speed railway.

However, these local leaders could not provide more specific details to local residents and this exacerbated the lack of understanding (BP 005). For example,

“they [EEC staff] said that double-track railways are similar to motorways which will be constructed in CCS but local residents don’t understand how it is different from old railways and no one can answer their concerns which involve a lot of details” (BP 005).

C) Limited authority and time.

Another emergent theme regarding the lack of clarity was the limited authority of EEC officers to formally speak about the policy, and also limited time for two-way forms of communication. The former barrier is because of the governance arrangements and the power structure for policy implementation. Participants indicated that specific line management roles limit decision-making authority at a local level (BP 005, BP 021), and determine how communication can happen. For example, a representative of the Department of Agriculture was invited to join the meeting with EEC staff. However, he could not invite the village head-man and sub-district leaders or organise a meeting for discussion about this issue because of his level of line management (BP 005). That is, he did not have authority to explain the EEC information about agriculture or respond to local demands directly, as this is the role of the District officers and Subdistrict Administrative Organisation officers who work under the Ministry of Interior. Moreover, participants indicated that EEC staff do not understand or cater for local lifestyles and time constraints, limiting meetings to weekdays thus affecting the reach of EEC information directly for those who work. As a local officer stated:

“... the EEC staff come to public relations during the weekday rather than the weekend. The time does not match with the local residents who are working on a weekday, so how will residents know the facts directly from the EEC staff? The staff do not understand the way of life, local residents and areas ... [about how to engage with the local residents]. I cannot tell them. They are from the federal government and in a position higher than me” (BP 021).

The range of information from the multiple channels of land-use for infrastructure and public utility development are other factors for misunderstanding because the EEC staff have limited

time under the *EEC Act 2018* to address the concerns and inquiries of local residents.

“We constructed local networks with local leaders for spreading the EEC information, but it is not direct to local residents because of time limitations and number of staff. We accept that we cannot discuss the EEC issues directly with local residents. We can do only to the level of leader groups” (ES 001).

Such statements show that the appropriate time scheduling for communication and the time limitations of the EEC staff constrained EEC policy comprehension by local residents.

Lessons

EEC policy is problematic because of unclear messages and one-way communication by EEC staff. Rushing policy development and implementation over a one-year period (EEC Act Section 29-30), and indirect information led to incomprehension between residents and the government. Economic Development Planning (EDP) at the macro level impacts the micro-level if there is not good communication and engagement during implementation of social policy in a local area. This has resulted in residents feeling disempowered and constrained in their input into decision-making.

4.5 What is left unproblematic in this problem representation? Where are the silences?

The second section of this chapter analyses the policy and perspectives of participants about the EEC project using Bacchi’s framework - question four: What is left unproblematic in this problem representation? Where are the silences?; and Can the “problem” be thought about differently?.

When examining what is left unproblematic with the problem representation of economic growth, it becomes clear that EEC legislation and associated governance is compromised. Several themes that emerged from the data are discussed below. The legislation is compromised (Section 4.5.1); the structure and membership of the EEC authority committee made it very powerful (Section 4.5.2); it provided concessions for investors, resulting in limited

skills development of local residents (Section 4.5.3); the potential for relaxed environmental conditions or safeguards (Section 4.5.4); and lack of information regarding funds for support of local communities (Section 4.5.5).

Bacchi's question five: What effects are produced by this representation of the "problem"? are also discussed (Section 4.6). The entire analysis draws on the *EEC Act 2018*, pamphlets provided by local residents, interviews, the consensus conference and observation at the Eastern Civil Society Network meeting.

4.5.1 Compromised Legislation

If the goal of a nation state's laws is to protect society and help its citizens, then its policy makers have a duty to hold in tension both the long-term vision for the society and respond to any policy direction causing harm to residents.

To achieve rapid economic development, the *EEC Act 2018* aims to: contribute to the principle of sustainable development, the promotion of engagement of commercial and industrial activities which employ advanced and modern technologies, and to promote innovations that are environmentally-friendly and are consistent with human rights. This is consistent with Section 26 of the *Constitution of the Kingdom of Thailand (2017)*. Nonetheless, by the Thai Government opening opportunities for investors, granting them special privileges (Section 4.5.2 and 4.5.3), the *EEC Act 2018* also creates conditions that restrict the rights and liberties of a person. This implies that the government gives priority to developing the economy and to benefit investors (possibly foreigners) more than the rights and liberties of Thai citizens who may be affected by its implementation. This also suggests that the EEC authority committee has a substantial degree of political power. In addition, it can be argued that impact assessment processes should play an important role in ensuring a healthy environment, and protecting citizens' well-being, equity and quality of life, because a key principle of community consultation is to ensure their views are considered and incorporated in decisions-making (Vanclay 2003; Vanclay et al 2015).

4.5.2 Structure and Memberships of the EEC Authority Committee

In spite of the policy stating the protection of the rights of a person for compensation, it is constrained by the business context and the centralised power of the EEC authority committee.

The EEC authority committee includes the Prime Minister, as head (EEC Act section 10), 14 ministries, trading and investment representatives and industrial sectors as well as persons who possess knowledge or expertise beneficial to the formulation of the EEC zone. This is problematic because the authority committee does not include the Ministry of Social Development and Human Security, whose role is to support and safeguard residents' human rights and quality of life. Likewise, as argued by Jongmewasin (2018), the policy shows a bias toward economic development over residents' human rights.

The structure of the authority committee means that there is no one in a position of power advocating for the local residents; no one can highlight how the policy disadvantages local residents. The lack of information, for example, regarding funds to support community transition by training; and potential impacts of the EEC project in relation to water and food security in the long term depend on information from the authority committee (EEC Act 2018 section 63-64).

The EEC authority committee is the centre of authority and decision-making power for the EEC project. In spite of some caveats about protection of people's rights, the *EEC Act 2018 Section 9* grants considerable power to fulfil economic commitments, and with no other voices on the committee it means these rights can be easily misunderstood or overshadowed.

"If, in undertaking any Act in the interests of the development of the Eastern Special Development Zone, the Policy Committee is of the view that any law, rule, regulation, by-law, notification or order causes inconvenience or delay, is redundant or creates an undue and excess burden, or in case of any other problems or obstacles, the Policy Committee shall propose such matter to the Cabinet for consideration of the amendment of such law, rule, regulation, by-law, notification or order, or for the enactment of a new law to ensure that the development of the Eastern Special Development Zone be carried out efficiently, conveniently, and promptly, provided that such amendment or enactment does not prejudice the equality, rights, and liberties of the people and does not constitute discrimination of any kind" (EEC Act 2018 section 9).

The EEC agency office plays a coordinating role among stakeholders such as local residents, investors, related departments of the Thai government and the EEC authority committee (EEC

Act section 15). They collaborate with 14 ministries and all of the 30 local districts in three provinces, but EEC staff stated that they have no authority for making decisions or solving problems.

“The role [of the EEC staff] is the coordinator. EEC staff cannot do everything. Every department has its main roles. EEC will be a coordinator, and support policymaker to develop the areas but other department or ministries will organise their main roles to follow the EEC project that we call Special Economic Zone” (ES 001).

This shows that the legislation has not provided opportunities for participation among stakeholders in local areas. This is problematic for three reasons. Firstly, the government focuses on the macro economy, which measures government performance by the economic growth rate in the short term, rather than boosting micro economies for local residents in the long term. Secondly, the government prioritises boosting economic investment by offering special conditions for foreign investors. This is intended to quickly demonstrate the government’s economic performance in a few short years. Thirdly, if the government does not provide dialogic opportunities for a variety of stakeholders, it is likely to uncover oppositional opinions to the government’s views, which would slow policy implementation and government performance. Thus, this lack of regulation in *the EEC Act 2018* is a barrier to stakeholder participation and is easier than including a variety of participants in the process. The Thai government’s inadequate governance approach in implementing *the EEC Act 2018* and impact assessment processes means that citizens are not protected from long term problems and a range of negative impacts are likely (Chompunth 2013; Wangwongwatana & King 2015).

4.5.3 Concessions for Investors that Inhibit Thai Skill Development

The previous theme relates to how investment occurs and its impact on the skill development of local Thai community members. To support investment, the Thai government released special conditions for foreigners who have immigrated to Thailand, such as the provision of tax exemptions. These benefit foreign investors, specialists and their families in the EEC zone (EEC Act 2018 Sections 48, 51, 54, 56, 57, 58 and 59). They include land-use conditions, which allow leases from 50 to 99 years (EEC Act 2018 Section 49 and 52).

The government's rationale is that Thailand may not have an adequate skilled human resource supply for the creation of modern and innovative industries. However, this is problematic because it limits the development of Thai people including, Thailand's own specialists and has implications for their future employment even though the EEC includes a skill development plan for Thai people. Additionally, the skill development for old and middle age workers, who will lose their jobs, is unclarified (BP 002. BP 004). Since the *EEC Act 2018* does not specify or put limits on the number of years that foreign specialists can live in Thailand and the proportion of tax they will pay, foreign investors tend to employ specialists from their own countries. Furthermore, the rights of foreign investors and specialists to live in Thailand with long-term land use leases (50-99 years) influences land prices and thus local landholders. This threatens equitable natural-resource sharing and environmental responsibility (e.g. water usage) between local Thai people and foreign investors, similar to situations seen in India (Birkenholtz 2016) and Indonesia (Sjah & Baldwin 2014). Thus, benefit sharing should take account of vulnerable groups (Gunton et al. 2020), and if applied through the *EEC Act 2018*, benefits to Thai local residents would ensue. For example, consideration should be given to those who have informal arrangements based on trust to rent land for prawns or fish farming. Moreover, skills training for using modern technology could be more widely available to improve Thai owned technology, goods production and employment among local residents. As Petersmann (2017) argues, local residents should have access to affordable energy and clean water; employment with fair working conditions; fair compensation for land acquisition and relocation as an essential part of sustainable development programmes.

4.5.4 The Potential for Relaxed Environmental Conditions and Safeguards

Another theme that points to compromised legislation relates to relaxed environmental conditions and safeguards. If there is insufficient regulation (e.g. taxes, pollution rules), then the benefits accrue solely to the investors and are not shared with the wider society. Furthermore, it is the wider society that wears the negative impacts, through lack of funds for public infrastructure and air and water pollution measures. This may result in inequity, with future costs borne by locals and benefits accrued by the foreigners. To mitigate such impacts, Impact Assessment (IA) processes should be enforced very strictly because IA is supposed to deliver environmental protection so that burdens do not fall on vulnerable groups such as local residents and Indigenous peoples (Gunton et al. 2020). The *EEC Act 2018* section 8 requires any

project implementation in the EEC zone to report their assessment of environmental impacts, public, or community health impacts. However, because this may be seen as obstructing investment, *the EEC Act 2018* section 9 indicates that EEC authority committee is given authority to consider and release these conditions.

4.5.5 Lack of Information Regarding Funds for Support of Local Communities

The final theme in this section about what is left unproblematic with the policy relates to funding for local communities. *The EEC Act 2018* (section 61 to 64) proposes to develop the areas where people live or are affected by the EEC project. However, the Act does not specify the proportion of funds nor the timeframes available for funds to support people who are affected by its development projects.

Decision-making authority regarding funding rests with the powerful EEC authority committee. This is significant because if the EEC authority committee does not agree with those who may have different ideas from the government or who are impacted and are in conflict with government, they will not get support. A group that has to relocate might not be told when they will get compensation after moving or how much they will get paid. This inequity and imbalance in power may lead to conflict in the long term.

The *EEC Act 2018* sections 29 and 30 involves land-use and infrastructure planning with a limited-time frame of one year for EEC staff to plan and communicate with local residents in three provinces (30 districts). This has led to confusion (Section 4.4.3). Significantly, the structure of the legislation does not support, nor give time for community consultation, input or any shaping of the policy agenda.

Good practice impact assessment processes provide for community consultation such as roles and responsibility of stakeholders, legal opportunity in decision-making process, transparency and monitoring (Hinte, Gunton & Day 2007; Joseph et al. 2015; Palerm 2000). Good public policy making must have good community consultation processes to be effective (Althaus, Bridgman & Davis 2018).

Lessons

In spite of the policy stating that compensation will be provided to protect the rights of a person, it is constrained by the business context and the centralised power of the EEC authority committee. Compromised legislation in the *EEC Act 2018* is left unproblematic, as is information regarding funds for support of local communities which are silenced in the EEC policy. The structure and memberships of the EEC authority committee does not include the National Human Rights Commission of Thailand or related departments which specifically represent the needs of local residents. Concessions for investors inhibit Thai skill development and additional government income could be used to support various groups particularly local residents in older and middle-aged groups. Costs associated with relaxed environmental conditions have been foregrounded as causing environment degradation. Hence, environmental protection and benefit sharing can be done through comprehensive impact assessment processes because these processes require citizens' rights to be protected by law based on equality, social justice and community consultation for quality of life and well-being (Vanclay et al. 2015). Meanwhile, benefit sharing addresses the benefits for those who are affected by any projects and citizens have the right to receive compensation such as financial support, economic opportunities including a good quality of life and well-being in the long term and especially if local people are at risk losing their livelihoods (Gunton et al. 2020). Lastly, safeguards should be put in place to protect the environment, local communities, industries and the future of Thailand's citizens.

Analysing the impacts of the *EEC Act 2018* will provide greater insight. To do so, the next section responds to Bacchi's question five: What effects are produced by this representation of the "problem"?

4.6 What effects are produced by this representation of the "problem"?

This section discusses both positive and negative impacts of the policy implementation and highlights a fundamental underlying concern about the effect on water and food security for Ban Pho and Bangkhla districts. It discusses the combination of a sense of hope and loss felt by

the local communities. The data are drawn from interviews, the consensus conference, local government documents and locally-produced books.

4.6.1 Positive Impacts

Several themes emerged from the interviews and the consensus conference, predicting economic benefits from the EEC project through improved infrastructure, such as water supply and road construction, which supports business investment and quality of life. Participants expect the EEC project will lead to increased employment and income via tourism, agricultural technology and local trading. Because the EEC focuses on economic enhancement through infrastructure and foreign investment, it is significant that food security was not identified by participants as a positive outcome, especially since Ban Pho district is a centre for agricultural production.

A) Improving infrastructure.

A prominent theme that emerged about the positive benefits of the EEC project is an expectation for improvement in transport infrastructure and water supply for both domestic use and irrigation for agriculture.

Several participants mentioned that more convenient transportation would improve the economy in CCS (BP 001, BP 003, BP 015, BK 001, BK 006). New roads, highways and high-speed trains are expected to pass through the CCS, improving regional transport to Bangkok and other provinces.

Water supply is essential infrastructure to support everyday life. The local government in both Ban Pho and Bangkhla districts and the Department of Irrigation coordinate infrastructure provision to support domestic water supply to residents (BP 010, BP 020, BP 024, BPK 001), so people *“can access tap water”* (BK 008). The irrigation department has collaborated and planned for a linked water supply network (domestic and irrigation) with three to four provinces in the east of Thailand (BPK 001).

One participant lobbied the Provincial Waterworks Authority to *“support our district to improve domestic water supply”* (BP 024). Another shows that the irrigation system is linked *“For instance, CCS had a water shortage in 2018. We brought water from Chon Buri province supply to the CCS. Our irrigation network is linked”* (BPK 001).

Water supply management is crucial in every sector and Bangkhla has an abundant water resource, distributed under an agreement to stakeholders.

“Bangkla district is a source of water in CCS. We have the Provincial Waterworks Authority office here. We developed the water supply system in villages. We pumped the water under an agreement between a company [which has a concession to supply water to factories] and the Provincial Waterworks Authority ... [so] everyone can access water” (BPK 001).

Thus, water supply and transportation are key priorities for the districts to improve health and well-being of local residents. Additionally, participants thought these improvements would improve trading in the CCS.

B) Economic development influences business benefit and positive change.

Participants had positive perceptions about economic development and business. Many indicated that Thailand will be better off when the private industrial sectors run a variety of businesses such as transportation, local employment and real estate (BP 002, BP 023, BP 026, BK 001, BK 003, BK 018). Some indicated that because industrial technology was emphasised, it is time for change in educational trends (BP 002, BK 001, BK 018) towards technical training. For example, students may choose to study in technical education (similar to TAFE in Australia) rather than studying in universities (which are mainstream in Thailand).

“EEC has three benefits: developing our economy, improving transportation, gaining employment. However, the education system has to change the trend from social sciences to specific sciences such as technicians and practices because the EEC trend focuses on industrial development” (BK 018).

Participants also identified increased business for real estate and rental houses needed to support people who migrate to work and live in CCS (BP 001, BP 015, BK 008, BK 006, BK 012). Land brokers benefit from increasing land prices because of land use changes and demand from investors in Ban Pho which will be a logistics hub and feature industrial expansion (BP 012, BP 024), while Bangkhla is identified as a residential area in the EEC project (BK 006, BK 008).

“I think, if EEC come some people will get the benefit because of investors demanding and land use changing. This leads to increasing of land price, and the local administrative office will get more income” (BP 024).

Twelve participants expect that an increasing population in both districts have potential for tourism and developing of agricultural technology which will improve incomes and employment in the local area.

C) Tourism is an opportunity for employment and creating new jobs.

CCS includes many tourism destinations such as temples and river cruises, so many participants perceived transportation improvement will be a good opportunity for increasing tourism, for local residents to gain more income, new jobs and more financial sustainability. CCS has unique natural resources such as fireflies and Irrawaddy dolphins at the Bangpakong River which can build eco-tourism operations (BP 002, BP 017, BP 013, BK 002, BK 008, CC). One person indicated further business opportunities from tourism support services such as motorcycle and car taxi services, and logistical-system employment (BK 002). Potential income can be derived from eco-tourism and farm tourism:

“This area has eco-tourism capacity. We have a small island in the Bangpakong River. Tourists can paddle a kayak to get there. I think it would be better if we train young people to be tourist guides. They will get an income at least 400-500 THB (13-17 USD or 17.40 - 22 AUD) per day. It will be good for them. However, we have to control noise of boat and rubbish” (BP 017).

“In agricultural groups, we should not only sell our agricultural products, but we also have to think more and develop ourselves ... to modify our gardens and farms for tourism” (BK 010).

D) Potential income through local trading and agricultural technology.

The final theme about EEC positive impacts relates to supporting the economy, food technology and digital technology as outlined in *the EEC Act 2018 Section 39*. Participants expect a variety of new or additional trading opportunities, such as local markets near factories, souvenir shops, food and restaurants, diversifying agriculture products and online trading. These will develop

and increase local incomes in CCS (BP 001, BP 004, BP009, BP 013, BK 002, BK 012, BP 019, BP 016). For example, some indicated that the evening market would increase near the factories because many people like to buy food after work (BP 016, BK 012, BK 013). Another suggested the opportunity for local residents who work in other areas to come back to their hometown because Bangkhla is a residential area in the EEC project, so they will be able to both live and work or trade in the area (BK 013).

Diversification of agriculture through technology is supported in the EEC policy. CCS areas produce many food products and Thailand has campaigned that it is a 'kitchen of the world'. Thus, many participants indicated that they can value-add through food processing and promote local food via an online market to increase income (BP 007, BP 025, BK 001, BK010). This point was also supported by participants in the consensus conference from Ban Pho and Bangkhla and aligns with *the EEC Act 2018 Section 39*. Some participants discussed opportunities through the use of technology.

"Our farm has a smart farm system; we use social media such as Facebook and Line application. ... [to] promote online products through many channels. I use a smartphone for supporting my farm operation because I do not have enough staff. I operate the water and fertilizer supply by smartphone on this farm. It reduces cost and increases income" (BP 025).

Lessons

The EEC policy implementation demonstrates the potential benefits of development through improvement in infrastructure and agricultural technology with the expectation that it will lead to more employment and local trading, as well as improved business efficiencies and profits.

This alludes to the need for effective impact assessment processes to ensure benefits that are already occurring, or have the potential to occur, are recorded and replicated in EEC policy implementation areas. Effects produced by policy implementation included inequities that may result because of the difficulties that older people face adapting to technology. The assessment reflects impact assessment principles that indicate benefits should be shared, including among those less privileged.

4.6.2 Negative Impacts

Although some participants are optimistic about the EEC outcomes, other themes emerged illustrating residents' concerns including for water security, environmental impacts, road infrastructure, crime, safety, change and threats in land use that affect on food production in their areas. While some residents have a sense of hope in terms of the policy implementation, others indicated a sense of loss (Section 4.6.3). There is a perception that the agricultural sector is of less interest to the government (BP 002, BK 003 and BK 018) because government receives little taxation income from 'undeveloped' properties (BK 003).

The Bangpakong River is an important water resource for agriculture via the Ban Pho and Bangkhla canals and with fisheries, provides an income source. There is a substantial system of interconnected canals associated with the Bangpakong River in both districts (Figures 13 and 14). Water security is therefore essential for the locals and their livelihoods.

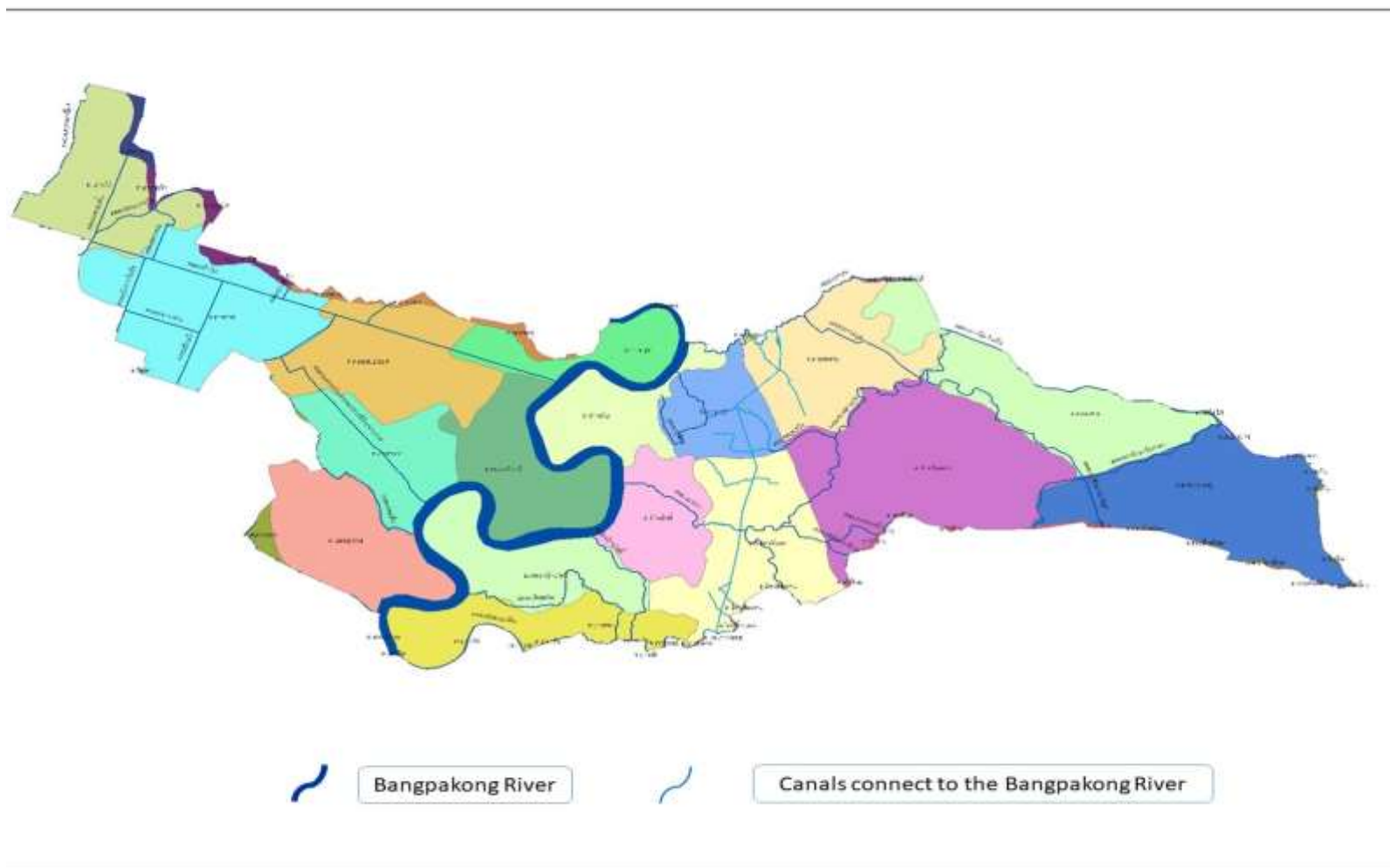


Figure 13: Canals in Ban Pho district connecting to the Bangpakong River.

Source: The Royal Irrigation Department (Chachoengsao Province) 2019.

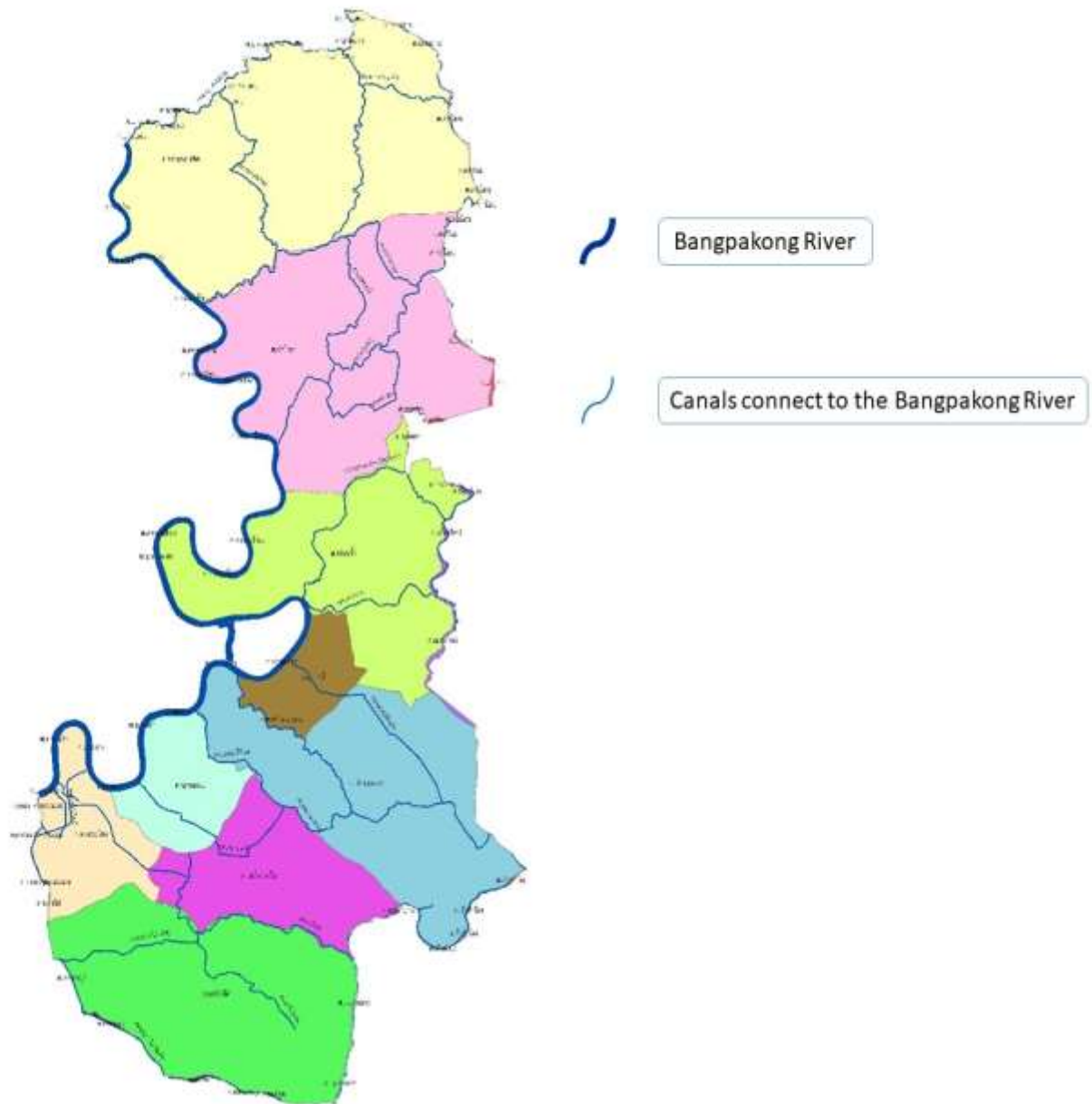


Figure 14: Canals in Bangkhla district connecting to the Bangpakong River.

Source: The Royal Irrigation Department (Chachoengsao Province) 2019

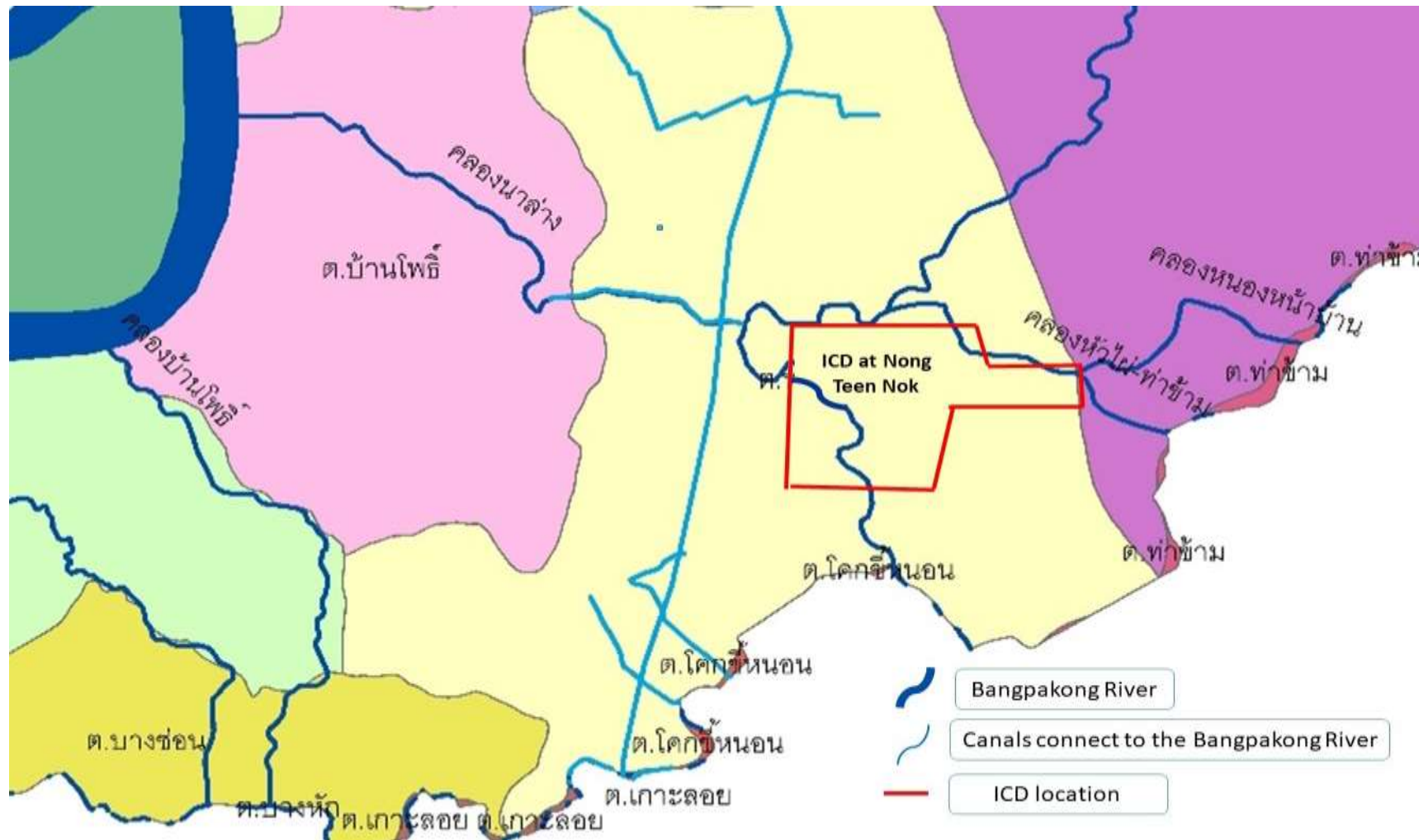


Figure 15: Canals and estimated location of the Inland Container Depot (ICD) at Nong Teen Nok sub-district in Ban Pho District.

Source: modified from a local map from local residents and a map from the Royal Irrigation Department (Chachoengsao Province) 2019.

A) Water security.

As water is a priority for life and income, water security emerged as an important theme. The United Nations (UN Water, 2013) argues that the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water is essential for sustaining livelihood, human well-being, and socio-economic development. Water security is also critical for safeguarding against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability (UN Water 2013). The governance of water management to provide water security involves water quality and quantity, i.e.: supply for agriculture, industrial and domestic use, as well as preparedness for disasters (Baldwin 2017). This section reports on participants' concerns about water quality, water availability and supply, and those aspects that affect it such as water grabbing and deficiencies in water governance and management.

Water quality

In the Ban Pho and Bangkhla districts maintaining water quality is essential for economic sectors such as prawn farms or fisheries, domestic supply and construction. According to a report on water quality data from the Bangpakong River in 2017 and 2019 and confirmed by research interviews, river water quality has already been decreasing since EEC implementation (Table 8).

Table 8: Water testing along the Bangpakong River

Station	Water Quality (2017/2019)										Water Problems	
	Very good		Good		Moderate		Bad		Very bad		2017	2019
	2017	2019	2017	2019	2017	2019	2017	2019	2017	2019		
1) Ban Pho					/		/					DO*, NH3-N*
2) Ta Rua (Bangkhla district)					/		/					DO, NH3-N
3) Hua Sai Temple (Bangkhla district)			/				/					DO, NH3-N
Sources: Regional Environment Office 13 (Chonburi) in 2017 and 2019, Ministry of Natural Resources and Environment												

*Dissolved Oxygen (DO) and Ammonia nitrogen (NH3-N).

Many participants, particularly in Ban Pho, were concerned about water quality because it is a key factor in successful agriculture and fishery sectors that are crucial to their livelihoods (BP 006, BP 009, BP 013). Others were concerned about property development affecting water quality and supply (BP 012, BK 002) which affects the ecosystem (BK 003). Thus, many participants expect increased water problems if the EEC project is fully implemented (BP 012,

BP 014, BK 002, BK 003). Several interviewees indicated a lack of confidence in how government measures water quality (BP 001, BP 004, BP 005, BP 006, BK 004), regarding both the location and the time of the water testing. For example, the government might report good water quality if they measure after rainfall due to dilution effects, or if they measure upstream or far from factories. This hides the real impacts of development. Some also demonstrated a lack of confidence in compliance and whether governance effectively enforces controls to mitigate impacts during development (BP 005, BP 010).

“...impact ... is wastewater risk. Agricultural sectors and civil society groups cannot wait for the government to solve problems. For example, when the water patrol came to check the water quality in the river, no one released polluted water from factories. However, when they have gone, the polluted water was released. Thus, the government should release their plans and clarify the factory zone and pools for wastewater as well as how they will control and manage the polluted water” (BP 005).

Others were concerned that agricultural production might be affected by containers of chemicals if they are stored nearby and leak during a flood, and they asked who will guarantee that it will not happen (CC, BP 006, BP 011). Some were already concerned about the decreasing numbers of fish and water animals because of overfishing and chemicals in the river (BP 009, BP 010):

“I live beside the river. If the river colour seems red, it is not good. Last year (2018), this was three times. This year (2019) it is once. If the river is red, fish will [die and] float....(BP 009)”

“...the number of river prawns has decreased because some fishermen put a chemical in the water when they would like to catch them. This influences crab hatching too” (BP 010).

Other participants worry about existing pollution from factories located upstream or near of the Bangpakong River (BP 006, BP 014, BK 002, BK 003, BK 013).

“I worry about water pollution... from the process of cleaning water from industrial sectors. Most of the industrial factories are upstream. ...We are in Ban Pho downstream. If they release the wastewater to the river, we will get impacts. Some people collect the

water in the glazed, water pottery then use alum. Dregs are much more than in the past. However, we have to use it” (BP 014).

“The Bangpakong River is abundant. I produce fish breed for fish farms. I get the brackish water from the Bangpakong River and cost me only 400 THB (13 USD) to produce fish and breed prawns in the farms and there is a lot of fish and prawn come with water along canals. ...Many farms have to treat and manage water for the fish and prawn breeding on their own. The cost is increasing. Thus, it will be high risk if we have an industrial estate near here” (BP 006).

According to the wastewater forecast for the EEC area, the amount of wastewater was 276.24 million cubic metres, of which 124.66 million cubic metres (45.13%) was treated in 2017. It is forecasted that waste will increase to 614.40 million cubic metres in the next 20 years (Thansettakij 2019). Therefore, if the water treatment system is not upgraded, potentially only 16 per cent of the wastewater will be treated. This shows that water pollution may have an even greater potential impact in the future in the EEC area. This in turn would affect water availability and supply.

Water availability and supply

Participants reported that water grabbing already takes place before the drought season, by both agricultural and industrial sectors, and affects water availability and supply. Consequently, many were concerned that water grabbing will worsen if the EEC project is fully implemented (BP 001, BP 003, BP 014, BP 016, BP 017, BK 004, BK 010). This issue was also raised in the Eastern Civil Society Network meeting. A participant suggested that the new industrial sector in the EEC area must have their own water supply without taking water from the agricultural sector (BK 004) but the interviews did not explain how this would happen. Likewise, according to the interviews, participants suggested that water issues are directly related to the governance of the EEC (BP 017, BK 004).

“When drought happens, water will be grabbed to supply industrial sectors. Also, farmers will grab water leading to more stress on water supply. ... [The government] will approve a budget for disaster solution, drought solution or flooding solution without transparency. ...Our country needs to reorganise. The budget should be spent efficiently and effectively” (BP 017).

Water management was also an issue among 26 participants from both districts who are fishers and farmers. One person was concerned that local residents will have to buy domestic water for everyday life (BP 014). Another indicated that sometimes existing water shortages lead to conflict among people because of drought (BK 013). Others indicated that for some years the irrigation department has released freshwater from the dam upstream into the Bangpakong River affecting prawns and coconut farms, which need brackish water (BP 013, BK 017).

It is expected that water-usage and wastewater will be a greater problem because of competition for good quality water between those who farm fish or prawns and for factory use (CC). Some participants explained that they stated to the EEC office that “*the big question to the EEC is how can they manage the water for all of us*”? (BK 013). because they are not confident of government’s management (BK 002, BK 013, CC) and already wastewater is a problem in Ban Pho district (BP 012, CC).

However, a water manager stated that they are trying to ensure everyone gets water within the capacity of the system.

“The irrigation stakeholders are informed about water management in the area, but some villagers don’t know that a private [water delivery] company has a quota to get the water. If the private company asks for more water than the quota, we would not allow it. If there are problems in some years, we will reduce their water quota. However, we will discuss it with them. We have to organise this for all of them. The water is sent through canals but some people pump too much water to their farms because they think it is their own. However, we have to share with everyone. Our organisation releases water and pumps to distribute to everyone but some people take too much” (BPK 001).

Lessons

Water security is a major issue for every stakeholder because the participants frequently talked about existing problems with water when they discussed community issues. They indicated that this will have even greater implications for food production, employment and income security with increasing development. As a result, if the EEC project cannot sort out water management among stakeholders in the target areas, it will lead to potential conflict and further negative impacts, which will be costly to the government in terms of compensation to stakeholders in the long term.

B) Environmental impacts.

Environmental degradation was another theme that emerged as a concern for participants about the EEC implementation in the CCS. Most concerns were about environmental change including garbage, toxic waste and air pollution, which many reported they are already experiencing (BP 009, BP 010, BP 026, BK 001, BK 002, BK 003, BK 013). This will be of greater concern as the population increases because of urban expansion and immigration (BK 013). While EEC staff told local leaders that they will control environmental degradation, the locals have little trust in this because they saw the negative impacts from air pollution from the Eastern Seaboard Project in Rayong province since 1986 and problems from toxic waste in the CCS in 2018 (BP 006, CC).

Four main concerns from the participants were confirmed at the consensus conference relating to environmental impact of the EEC policy.

Firstly, concerns regarding filling the land to a higher level than currently exists for the Inland Container Depot (ICD) could block the floodway and increase flood water dispersal onto to lower land. Since the land around the ICD is typically a wetland used for agriculture, participants may be affected. They argued that water should be allowed to spread naturally for agriculture (BP 006, BP 007, CC).

“If ICD is constructed here [Nong Teen Nok sub district], it will obstruct the flood way and canals. One side will flood, and the other side have drought. This area is wetland [which is a habitat of many animals] of the Bangpakong River” (BP 007).

Secondly, in interviews and anecdotally in informal conversations with people living beside the Bangpakong River, there was also a debate about the reason for decreasing food sources such as crabs. Some attribute the loss of productivity to environmental change; others suggest it is the big ships that pass along the river; however, there is no scientific proof of the reasons for crab depletion.

“Crabs in the Bangpakong River have disappeared for two years since big ships have come along this river in Ban Pho. I have not seen Pu Pann (a kind of crab) for two years

because the big ships spin the water very hard and crabs' eggs cannot stay along the river so crabs cannot hatch" (BP 009).

Thirdly, garbage management and toxic waste were also raised in the consensus conference. One participant indicated that general garbage is still a problem because of the increasing population, but toxic waste may become more problematic in the long term (BP 002, BK 002). Another person indicated that the Sanamchaikat District in CCS experienced illegal dumping and burning of toxic waste, and was concerned that industrial expansion would also increase illegal toxic waste practices (BP 006). The evidence shows that the capacity for management of industrial waste was only 44.74% in 2016 (Prachachat News 2018). An additional participant confirmed this concern about waste management capacity, due to the increased population of workers in the district, suggesting it is unclear where and how local government will manage the garbage:

"If EEC is full implementation, ... Another issue is the garbage because the population will increase here [Bangkhla], but we have not done what the garbage management plan yet" (BK 002).

Observation of the eastern network meeting, a meeting of civil society members in seven provinces in the east of Thailand, revealed broader concerns. Local residents in eastern Thailand discussed that garbage management and environmental change will create risks of pollution when the EEC project is implemented.

However, an EEC officer was optimistic when discussing EEC environmental issues:

"The EEC project or industrial factories would not a cause of environmental problems [in CCS] but the growth of town planning in the CCS have been issues before the EEC implementing. The local government do not have enough budget and cannot manage problems such as garbage, water or infrastructure. Thus, we [EEC staff] are trying to organise that we provide areas and control [waste from] the new factories coming into the area [that we can manage and control]" (ES 001).

The fourth concern is air pollution. Participants argued that even if new factories are not constructed in Ban Pho or Bangkhla districts, the air will carry pollution from elsewhere,

because humans cannot build fences or borders to prevent spread of polluted air (CC). Some participants in the consensus conference thought that the government is not sincere in solving the problems based on their experience of the government not addressing the long-term pollution in the Map Ta Put industrial estate. Thus, if the EEC project has industrial expansion in any districts, participants agreed it will affect other districts around the CCS (CC). Not only does dust affect human health, but air pollution from industrial smoke is already a threat to the prawn farms, covering the water with “*black dust or oil stains*” (BK 003).

Lessons

The environmental impacts related to water and food security have already affected, or will impact local residents’ livelihoods and health.

Other negative impacts from the EEC policy include issues relating to road construction and congestion.

C) Road construction impacts.

Several participants commented on the theme of road safety, referring to the lack of an overpass to cross the highway (BP 016, BK 005), no lights along the road at night time (BP 014, BP 024), and associated stress due to transportation noise and accidents (BP 002, BK 005). One participant spoke about the heavy congestion:

“Our society around here is changing during 5 years. In the past, I used to just walk across the road but nowadays I have to drive my car across the road to my farm. The traffic during rush hour (7-8 am and 4-5 pm) is bad. It takes 2 hours from here (Ban Pho) to the city, previously, 20 minutes” (BP 016).

There was a perception that the local government cannot provide the required safety because of a limited budget and population size will not warrant constructing a bridge across the road in some areas (BP 016, BP 024).

A resident in Ban Pho used photos to show the problem of many trucks driving along the road, past houses and making it difficult for pedestrians to cross the road safely (Figures 16 and 17).



Figure 16: A large truck in front of a warehouse-gate in Ban Pho district.

Source: a member of civil-society group in CCS.



Figure 17: A truck is driving from a warehouse through the community area in Ban Pho district.

Source: Pornsiri Cheevapattananuwong.

Another participant was concerned about the dust from road construction which they said has led to a 50 per cent reduction in income for a shop beside the road (BP 003). Some

residential houses have been affected by vibrations and have cracked because of the number of trucks driving through this residential area.

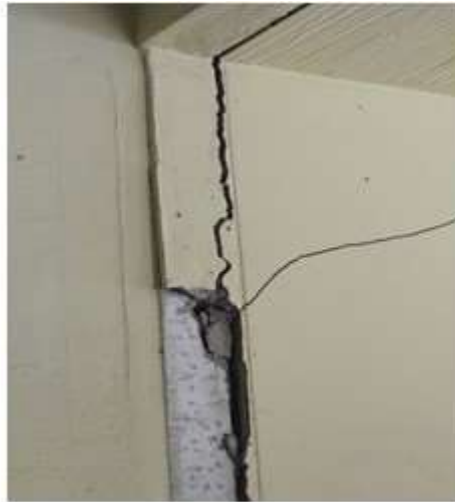


Figure 18: Wall of a house cracked by truck vibrations.

Source: A house owner who lives near the road expansion.

A participant in Bangkhla believed that road construction was reducing food production in the aquaculture farms.

“Recently, there is a lot of road construction around our district [Bangkhla]. I am not sure that the income of local residents in my area is decreasing because of bad economy or environmental change such as vibrations from road construction. It influences fishery and prawn farms. Here, the local residents who work in fishery and agriculture, have never had a deficit. Normally, they have only high or low profit in their production. However, they said they experience a deficit this year for the first time” (BK 005).

The general perception was that road expansion and increased traffic influences residents’ way of life and wellbeing. Moreover, crime and safety were another also seen as a risk in local areas due to the policy implementation.

D) Crime and safety.

Crime and personal safety were raised as potential problems resulting from expanding urbanisation and increased immigration of people gaining employment in the area. Because of the increased cultural diversity of new residents, many participants suggested that people will not know or trust each other. They expect the crime rate to increase (BK 002); *“Some are*

thieves, some not. Who's knows?" (BP 014). Many participants in both districts mentioned crime rates (BP 014, BP 016, BK 002, BK 012) such as rape (BP 014), theft (BP 016) and scammers (BK 002, BK 012).

The worst case is rape. *"A girl, who lives alone in a house, was raped by an immigrant in this area. It is too sad. How we can prevent this problem?"* (BP 014). Solutions were suggested and might include social media, CCTV technology, and additional security personnel.

"Recently, a man on a motorcycle come to sell a fake Buddha to local residents. They share on social media and warn our local residents" (BK 012).

Although local governments have installed some CCTV and coordinates with local security guards and police, some local residents are not reassured (BP 016, BP 024), citing police as not being able to apprehend a thief detected on CCTV (BP 016). Furthermore, participants indicated that increasing population is a threat to land use and food production areas.

E) Changes and threats to land and food production.

According to interviews, locally-produced books and observations, food production and water degradation have not yet changed in any obvious way in both Districts. However land is an emerging issue not only for industrial sectors but also for the agricultural and fishery sectors, with potential effect on food production. Land use and changes to town planning, price and speculation, acquisition and relocation were raised as potential impacts of the EEC. As a result, participants indicated it may affect food production particularly in Ban Pho district. Moreover, during the time of data collection, relocation issues were already occurring.

Several participants discussed land use policy under the EEC project in Ban Pho. The process of land acquisition had commenced but information about new locations, compensation, and community development was not transmitted to the affected locals (BP 002, BP 006, BP 007, BP 011). Despite the public hearing process, local residents could not criticise decisions about land acquisition made by the EEC authority committee (BP 002, BP 006).

"I was hurt by the government. I attended the public hearing of town planning. Local residents showed their opinions and the academic evidence for taking care of our river, canals, and want the CCS to be a food production area.... Finally, our opinions became a threat to EEC development. The Thai government used the Constitution of Thailand

section 44 to restrict liberty in order to maintain the security of the State during coup. Hence, ... it was an opportunity to cancel the previous town planning in Thailand. As a result, the EEC area has been identified. It means if the government wants any areas for an international investor's requirements, it could be used for any purposes. Thus, the town plan that we did together, it has no meaning. Nowadays, if international investors want anything, the government will offer it to them. (BP 002)"

Several participants mentioned land acquisition and land use change to allow industrial expansion in Ban Pho and a residential area in Bangkhla. Thus, the land prices were rising in both districts (BP 002, BP 006, BP 009, BP 012, BK 008, BK 012) and some local residents were already experiencing relocation and loss of farmlands (BP 006, BP 007, BP 011, BP 014, BP 018).

"The first reason is land acquisition which leads to land trading, land speculation and the inflation of land price. Nowadays, this is a change and problem. (BP 012)"

The implementation of the EEC policy has become a hot issue in Ban Pho district because of land expropriation and relocation problems, whereas land expropriation is not such a concern in Bangkhla (BK 007, BK 008, BK 010, BK 012, BK 014). Rather, increasing land prices are the main issue in Bangkhla, because many people are buying land for house or condominium construction (BK 012, BK 018):

"The impact of the EEC in Bangkhla is to increase land prices because this area was planned to be a residential area" (BK 018).

Others indicated that the land use policy may lead to the loss and degradation of land suitable for food production in future (BP 005, BP 006, BP 009, BP 012, BP 017, BK 004, BK 017). The agricultural sector and fishery are the main source of income for the local residents in the CCS. Therefore, the EEC implementation influences agricultural and fisheries production, and has seen the loss of opportunities for many farmers and fishers (BP 005, BP 006, BK 003):

"I heard that there will be land expropriation along the railway in Ban Pho but it has not cleared yet. If yes, the agriculture along the railway may be affected because some parts of those areas are near the irrigation canals. Also, it will connect to the road expansion too. This is a problem for agricultural production" (BP 005).

Most participants involved in the agricultural sector discussed that the land should be protected for food production. One reason is that even if land could receive a high price if sold, good quality agricultural land will be invaluable well into the future for food production and for future generations (BK 010). Another reason for protecting agricultural land is that increased heavy industrial areas can become toxic and affect food safety nearby. Several participants said that if the producers want to increase income through increasing food diversify and exporting organic rice, factories will have to be careful about toxic waste (BP 005, BK 006). Participants indicated that if land-use issue are not clarified and given more certainty, local residents will be worried about family income and the environmental change affecting food production (BP 006, BP 007, BK 005).

The locally-produced ‘Ban Pho Rak Bangpakong’ book, which illustrates the local history, traditional jobs, local cultures and livelihoods, was written by civil society members in Ban Pho, to make clear their concerns. It outlined that building ports, increasing warehouse construction and truck transportation in Ban Pho district, would affect local health, wellbeing and jobs of roof makers, traditional fishers (including prawns), and tourism operators along the Bangpakong River (Samatchapeadriwyangyun 2017). At least 70 families and 60 people in Ban Pho may have to change livelihoods resulting in increased food insecurity, because their jobs relate to fishery, nipa leaves for thatching, and nipa palm for food in the Bangpakong River (Samatchapeadriwyangyun 2017). This reinforces the importance of maintaining the Bangpakong River ecosystem because it supports the livelihoods of local residents.

Moreover, it was suggested that the government will need to put in place clear land-use zoning and law enforcement (BP 024, BK 011).

“We have a town plan but it is not clear where are the industrial, agricultural and residential areas. It should be divided into zones” (BP 024).

Lessons

Land use change is already affecting some residents and is a future threat to livelihoods and food production in the areas. Even though the land use plan has been approved and public hearing organised, there was little opportunity for local input to ensure local voices would be heard by decision makers.

Differences of perspectives on labour and employment epitomise the tension between positive and negative impacts of EEC policy, to create both a sense of hope as well as loss.

4.6.3 A Sense of Hope and Loss: Labour and Employment.

With the litany of negative impacts that have already occurred and described, concerns for labour and employment emerged and provided insights about participants' hopefulness about the EEC policy in terms of opportunities. For example, the employment of neighbouring foreigners has increased in the CCS areas because of the low costs associated with their employment (BP 012, BP 014), and also the ease of use of foreign specialists in the industrial sector facilitated by *the EEC Act 2018 (Sections 48, 51, 54, 56, 57, 58 and 59)*. It seems this situation creates both a sense of hope and loss:

"After opening to ASEAN countries, ... many people employ foreigners from neighbouring countries more than Thai people because the labour cost is lower. [But] this leads to some Thais not having a job in the local area too" (BP 014).

The employment opportunities brought about through the EEC means labour skills will affect the labour market and Thai employees who have adapted themselves to modern society may benefit (BP 012, ES 001). However, others perceived a lack of opportunity for older people, middle-aged groups, or people with low education qualifications who may find it difficult to get jobs in the industrial sector or as a result of innovations promoted by the government (BP 004, BP 005, BP 008, BP 011, BP 012, BP 014, BP 017, BK 013). For example:

"The local residents' skills are agriculture and fishery. If something is new and it does not match with their life, it will difficult for the local residents. ...if it is changed to be a hub of logistics, it will not help the local residents. Yes, new jobs or job demand is increased ... It may be good for young people who are studying but how about the old and middle age groups who have fish and prawn farms here. It is hard for them to change and they will be hurt" (BP 008).

“In my view, if they are more than 40 years old, they may not adapt to the new system. They have to find any opportunities. If they are in the agricultural sector, they have to think ... [about how to] add value or sell more products. ... Everyone has to use his or her own skills or ability to find the opportunity. For instance, in Bangkhla district, there is good mango production. We do not want [land use] to change to be industrial” (ES 001).

An EEC staff member also commented about the labour-skill issue suggesting a loss for local residents. EEC officers have worked with the Burapa University in Chon Buri Province to develop activities and capacity of communities through fruit diversification and tourism but they have not been involved in all areas of the EEC project (ES 001). Another EEC staff member mentioned a plan to develop Thai people skills providing a sense of hope:

“Yes, we prepare the people. It has two groups. The First is 500,000 positions that we forecast ... Our target is young people in our country. They are the first priority. ... We have a network in many universities and educational organisations in the local areas ... at the technical level, high school level or general education, and university level. ... The main plan of the Ministry of Education is to...: reskill, upskill and new-skill. For example, reskill is the people who graduate from the university but their degree does not serve their life. We have short-term courses for them” (ES 002).

Some participants hopefully foreshadowed that implementation of national policies such as AEC among ASEAN countries, and the EEC project will result in an increase in industrial employment and, with a sense of loss, a decline in agriculture which is a source of food production (BP 005, BP 016).

Participants also hoped that development will retain young people locally (BP 022), but they also worried about how older people will cope with the ensuing change (BP 004, BP 016).

“The positive is young local residents will work in factories when they graduate but how about middle age and old people? It is difficult for them” (BP 016).

Although the EEC staff stated that the federal government will provide a skills development plan and support local employment, they indicated that it seemed less concerned with local residents from the middle-aged group. A young participant hopefully believed that the EEC implementation would provide jobs for young people to work in their hometown (BP 022).

These differing views help bind people and contribute to build a social network that elevates the residents' voices (Freedman & Bess 2011) (see Chapter 5). Such network development may lead to addressing some negative aspects of the policy (Gilchrist 2007; Hazel et al. 2012) and enable individuals to be more positive regarding effects produced by the EEC project implementation.

Lessons

Possible negative impacts from the EEC include uncertainty about water quality and quantity and land use; environmental impacts; safety and crime; and employment. Water security is the fundamental factor that every stakeholder was concerned about because it has a direct effect on food and agricultural and industrial production, as well as the ability to attract tourists. In addition, the trend of urbanization raises the possibility for environmental impacts such as wastewater, garbage, toxic waste and air pollution which lead to degradation of ecosystems. Road safety and crime were also seen as threats, as was the increased employment of local residents in industry which they believe will see agriculture decrease. Participants were very concerned that this will affect the middle aged, older people and low education groups who lack industrial and technology skills. Although the EEC office has plans to address these issues, it is difficult to extend these across the entire area because of the limited number of EEC staff and the limited time they have due to the rapid implementation of the policy initiative. As a result, participants experienced a sense of both hope and loss regarding job opportunities for specific age groups.

The EEC policy provides insights into both positive and negative perceptions, which bring a sense of hope and a sense of loss (see Table 9). Overall, positive potential impacts in both districts are infrastructure such as road and water supply systems. The good natural resources for prawn and fish farms in both districts provide opportunities for local residents to increase their income. On the other hand, noise impact, traffic congestion and criminal -rate are negative potential impacts in two areas. Land prices are increasing in both districts but there is more land expropriation in Ban Pho than in Bangkhla. Environmental degradation was a concern in the two districts because of urbanisation as water quality and amount of area for food production decreases. Air pollution and toxic wastes from industrial factories are a

concern for Ban Pho's residents while Bangkhla residents are more concerned about wastewater and garbage due to increasing population. However, people in both districts experience a sense of hope and loss in job opportunities: young people are hopeful for employment in industrial or tourist sectors, whereas middle age people may lose their agricultural jobs.

Table 9: Comparison of potential impacts between Ban Pho and Bangkhla Districts.

Findings	Ban Pho	Bangkhla
Potential positive impacts		
1) Improving Infrastructure (e.g. roads and domestic water supply).	Improved roads and water supply in some areas.	Improved roads in some areas.
2) Economic development.	Trending industrial expansion.	Trend in real estate expansion and increased population providing more consumers.
3) Tourism.	Firefly and Irawadee dolphin watching along the river.	Temples and flying fox watching along the river.
4) Potential income and trading.	Diversified seafood, fish & prawn breeding and coconuts.	Prawns, fishery farm production and mangoes.
Potential negative impacts		
1) Water security: water quality. Water availability and supply.	-Moderate and higher risk. -Improved in some areas and risk of water supply because of industrial expansion.	-Good and moderate. -Some areas have issues during drought.
2) Environmental impact. -Number of fishes, prawns and crabs. -Garbage and waste.	-Decreasing, particularly crabs. -Toxic waste because of industrial expansion.	-Not much. -Garbage increasing in some areas because of population.

-Air pollution.	-Air pollution in some areas.	-Ash impact on prawn farms in some areas.
3) Road construction. -Noise. -Traffic. -Vibration from trucks.	- Road construction creates dust and affects income for food sellers near the road. - Noise affects some areas. - Traffic congestion leads to increased road accidents. - Some houses are cracking.	- Road construction divides the communities into two. - Noise does not affect much. - Traffic congestion affects emergency transportation to a hospital. - reducing prawn-farm production in some areas.
4) Crime and safety.	Worry about thieves.	Worry about scammers.
5) Change and threat to land and food production.	Industrial expansion and increasing land prices. Land grabbing and land expropriation Decrease in areas for food production.	Residential real estate expansion and increasing land prices. Decrease in areas for food production.
A sense of hope and loss: labour and employment.	Some middle and older age residents have lost farm jobs, but young people are gaining job opportunities in factories.	Farming labour may decrease but some jobs may be created: motorcycle-taxi drivers.

These differing views help bind people and contribute to build a social network that elevates the residents' voices (Freedman & Bess 2011) (see Chapter 5). Such network development may lead to addressing some negative aspects of the policy (Gilchrist 2007; Hazel et al. 2012) and enable individuals to be more positive regarding effects produced by the EEC project implementation.

These findings demonstrate that to employ the impact assessment process for mitigating impacts, particularly for specific population groups, is essential to support the well-being and

benefit sharing amongst or across communities. This is particularly important for social justice for vulnerable populations.

In responding to Bacchi's question five on the effect on people, these findings suggest that the government is trying to address the macro-economy through changing land-use by land acquisition and attracting investment. Concern remains that these could lead to a decline in water quality and food production at the micro-level. This is problematic because most local incomes rely on good quality natural resources and agriculture. Particularly the middle and older age groups appear to be more vulnerable to these changes.

4.7 'How could it be questioned, disrupted and replaced'

This section discusses the findings in terms of the exploration of Bacchi's question six (part 2): 'how could it [the problem representation] be questioned, disrupted and replaced?' If economic growth is the desired goal of the Thai government through the Thailand 4.0 and the EEC policy, the use of Bacchi's question points to the need for a holistic approach in the governance of the *EEC Act 2018*.

Principles of good governance are used in reviewing the data to answer Bacchi's question. Lockwood et al (2009) emphasises that rapid implementation of economic policy can affect good governance, which includes factors such as legitimacy, transparency, accountability, inclusiveness, fairness, integration capability and adaptability. Best practice environmental and social impact assessment processes include community consultation, sound data, and open communication of information, including of plans and their potential effects. Such processes can protect the environment, well-being and quality of citizen's lives (Vanclay et al. 2015). Adequate engagement with all stakeholders can reduce conflict and improve sustainable natural resource management (Lockwood et al. 2009).

However, the EEC policy minimises time for community engagement, transparency in communication and gives local residents little time and resource to adapt to the impacts of the policy change. The findings, thus, indicated that the government's macro-economic policy is impacting negatively on the livelihood of local residents at a micro-level. Local farmers whose source of income and livelihood is dependent on the land and river are highly vulnerable to land acquisition and water grabbing. Lack of trust and confidence in government was apparent when participants discussed unresolved pedestrian problems after a road

expansion and poor law enforcement of speed, loading and dust protection from trucks in the area (BP 002). This lack of accountability can be attributed to the lack of good governance processes and was reinforced by the lack of response to questions from the EEC project team about where the Inland Container Depot (ICD) would be located, and how drainage and flooding areas in Ban Pho district would be resolved (BP 007, BP 011). This could be replaced with better and more comprehensive information and two-way communication between the EEC project team and residents.

Water management was also questioned by residents in relation to good governance with a view to disrupting and improving water governance. For example, a civil society group in CCS set up a meeting with the irrigation department to try to compromise and find a solution of irrigation water for everyone (BK 017, BPK 001). The government plans say they will provide water for everyone in the EEC areas (BPK 001) (Prachachat News 2018). However, participants perceived water management by the government to be inequitable (BK 017, BK 004), lacking in transparency and is biased toward the industrial sector because the water distribution company has a contract and quota to receive water while the local community does not. So, the residents aimed to replace the inequitable system with a fair one.

“As we know, water in CCS is distributed to a water-distribution company by quota, ...[which] brings this water supply to the industrial sectors. This led to a big concern in the meeting of Eastern people network and they are worrying that big water grabbing will happen in the Bangpakong River soon because the water-distribution company already got the concession by the government to use water in the Bangpakong River to supply the industrial sectors” (BK 017).

Greater compromise to allow for benefit sharing in government planning is how the problem representations can be disrupted or replaced. Greater transparency by government officials is also warranted. Poor governance in terms of lack of transparency was illustrated by the researcher observing a map and details of water management solutions for the EEC project in the public hearing held in June 2019 at a hotel in Bangkhla district. Information about water management solutions was presented verbally, but was not in distributed public documents. This also shows government’s lack of inclusion of local residents in the water management plan. Another example is where the government had proposed to organise a public hearing

where the locals could ask questions. However, during the public hearing, representatives did not provide much opportunity for questions and answers; mostly local residents listened to the government concerns, and the government representatives provided no clear solutions (BP 007, BP 017). This led some participants to call it a “public relations” event (BP 017, BK 014) (see section 4.4.3).

Another example of poor governance relates to the government’s lack of a holistic approach with the range of stakeholders. They ignored the local fish and prawn farmers’ perspectives about their need for brackish water. The water management plan should provide fresh water to industrial sectors and brackish water to prawn and fish farmers.

“Last year (2018) we did not have brackish water in the river. It might be good from the government’s view, but it was not good for the local residents such as prawn farmers or fishermen who use brackish water. They use the word ‘water management’. It is managed for whom. In CCS, civil society joined and supported just water management (BK 017).

Pounpongkorn (2018) from the government’s Thailand Development Research Institute (TDRI), found that agricultural groups were willing to pay an irrigation fee under the condition of collaboration among water stakeholders in their areas when there is good water management. However, water management of government is still unfair because of poor water governance; there is a lack of confidence in the government (Pounpongkorn 2018).

The capability of local government was also questioned due to its limited ability to solve problems because of lack of authority. For example, one local government participant states that the road construction problem is beyond his authority:

“Mostly, local residents worry about accidents because of road expansion and the increase in large haul vehicles. Pedestrians are at high risk when they cross the roads. We request that the [federal] government constructs bridges at road crossings and I have the local authority to request this from the federal government. However, I do not know when the government will construct these projects for us. It is beyond my authority” (BP 024).

Participants also referred to the limited capability of government to solve problems. Examples include election promises by politicians and heads of sub-districts in villages. Their promises were not fulfilled post-election (BP 002, BP 009, BP 010, BP 017).

It was observed that a potential conflict of interest exists between local government staff and some in the business sectors because of bias favouring businesses over local residents in water management (e.g. water quotas, land use and relocation processes). Some local leaders are land brokers. At the time of collecting data, participants indicated that they did not have much information from official sources.

“They [the local government] have not done anything much [about the EEC issue]. I think they worry about their positions. Some may have a conflict of interest. They will not be in conflict with the Thai government. This is the reason why they [local government] are quiet” (BP 007).

The lack of good governance seems to flow from compromised legislation that allows favours investors who can rent land for 55-99 years (See section 4.5.1), allowing land grabbing and limited restrictions (see Section 4.6.2). Orienting the policy implementation process to reflect values of fairness are required. Lockwood et al. (2009) argues that unfair development processes are a new form of colonisation that involves political and social networks with international companies to increase food production or other business (Gasteyer et al. 2012; Rulli, Savioli & D’Odorico 2013). Consideration of local human rights, freshwater ownership, and social and environmental impacts are not transparent and are imbalanced, which shows lack of benefit sharing (Petersmann 2017).

This analysis has addressed Bacchi’s question six, part two, about how the negative impacts of the policy implementation can be questioned, disrupted and replaced.

Lessons

A more holistic approach is key to good governance processes in impact assessment, land use planning, community consultation, and devolution of more decision-making to local representatives.

4.8 Summary

This chapter answers RQ 1, which shows the potential impacts of policies and development plans on the targeted rural area, in relation to water and food security. Bacchi's (2009) framework was employed for analysing the policy and identifying the policy gaps evidenced in documents, the *EEC Act 2018*, and an EEC information brochure. This method of analysis enables researchers to find what is problematic through the framing of policy problem-representations and making politics visible (Bacchi 2012).

For Thailand to move beyond being a middle-income trap nation and to be competitive with ASEAN neighbours, the Thai Government introduced the Economic Development Plan (EDP) for the EEC project in 2018 to attract international investment infrastructure and industry and move to higher value industry.

In spite of a series of plans for land use, infrastructure and public utility development as well as a plan for implementation, and a plan for integrated government service for maximum benefit for effective land-use and local community, detailed information is not easily accessible or user-friendly for the community.

The participants suggested that there are positive opportunities arising from the EEC project which include improvements in infrastructure, and opportunities in business, tourism, local trading, resulting in potential income. However, this rapid growth challenges the traditional use of natural resources such as water and land for agriculture and fisheries. Given this transition, the change in land use threatens food production and potential outcomes of the EEC project.

Labour and employment opportunities provide both a sense of hope and loss for the local residents because new jobs may suit younger people but not the middle and older-age groups, and the EEC policy opens up opportunities for more employment of immigrants or foreigners rather than the local residents.

Overall, participants are concerned about governance deficiencies illustrated by the implementation of plans and the EEC policy, and this has led to uncertainties and disruption. Better processes for impact assessment and land use policy development could have

highlighted potential impacts and ensured that both benefits and risks were considered towards more equitably sharing.

Participants provided a raft of information about how the Thai government could be more responsive to its residents and how the policy's vision could be enacted without so many negative consequences for its residents (see Chapter 5 and 6).

CHAPTER 5

SOCIAL NETWORKS OF LOCAL COMMUNITY RESPONSES TO THE EEC POLICY

5. Chapter Overview

While the previous chapter discussed the potential impacts of the EEC policy and issues around inequity of cost and benefit sharing, this chapter turns to the practical implications of how the community was responding to the EEC policy. This chapter answers Research Question RQ 2, 'How are social networks of local communities, including those of young people, responding to the impacts of the Eastern Economic Corridor in relation to water and food security?'.

The local residents responded to potential impacts by building on their existing social networks based on established occupation-based interest groups, civil society groups, and friends groups. The researcher analysed data from interviews, observations, and documents, through the framework of social capital combined with the practice theories of community development and community organising, to explain how local residents were mobilising. The analytical device of power-mapping is used to explain the degree of influence by groups on decision-making about the EEC policy and its implementation.

The thematic analysis was drawn from the semi-structured interviews, along with secondary data, such as pictures provided by local residents, local documentary books such as "*Ban Pho Rak Bangpakong*" {i.e. *Ban Pho people love the Bangpakong River*) and "*100 Pi Ban Pho*" (i.e. *100 Years of Ban Pho district*), and observations at the local activities and the consensus conference meeting.

The chapter is divided into four sections:

- Section 5.1 building a social network of local residents through groups and network activities;
- Section 5.2 social capital in community organising (as described in a published article;

- Section 5.3 power mapping of actors relevant to the EEC project in the case study areas; and
- Section 5.4 summary and discussion.

5.1 Building social networks via increased social capital within the local community

This study explored the phenomena of social networks built by the local communities by analysing social capital of three network groupings: among neighbours or villagers, among agricultural and fishery groups, civil society groups and between other stakeholders and politicians (Section 5.1.1). Analysis of social networks provides knowledge about how they operate and function to improve the quality of relationships among residents, and this in turn assists in problem solving (McMichael & Manderson 2004). These processes were revealed, during face-to-face meetings, at training programs, or through various physical activities, all aimed at connecting people and building relationships through collaboration among network members (Perkins, Hughey & Speer 2002; Putnam 1993; Woolcock & Manderson 2009). Thus, network activities (Section 5.1.2) are the ways through which network members communicate with each other (Conover et al. 2013; Levkoe 2015) and respond to the EEC policy.

Three types of social capital are explored:

1. bonding social capital (homogeneous relationships) such as among neighbours or villagers;
2. bridging social capital (heterogeneous relationships), such as those among agricultural or fishery group members (Osborne, Baldwin & Thomsen 2016; Putnam 1993); and
3. linking social capital, where connections are made from the local level to the structures/institutions in society, such as when building relationships with stakeholders outside the local area and with politicians (Jones 2010; Woolcock & Narayan 2000).

The political opportunity structure (POS) concept was used to examine the context of the social movement building process for policy change (Engels 2018; Kirchherr 2017; Koopmans 2003; Wahlstrom & Peterson 2006), with particular relevance to linking social capital. These theories support understanding community-driven change and the process for problem solving in the CCS areas.

Sections 5.1.1. and 5.1.2. show that local groups and networks can contribute to solutions and respond to and prepare for potential impacts of the EEC by communicating and supporting each other through knowledge sharing and other network building activities.

5.1.1 Groups

Both existing and new groups played important roles in response to the EEC policy. A new group was formed as a community enterprise in Nong Teen Nok Sub district with the objective of protecting land against the ICD proposal. Some existing fishers, agricultural and YSF group members (alias) from both case study areas, disagree with the EEC policy. The interactions of group members, including neighbours, villagers, and farmers led to increased social relationships. Analysing such interactions through social capital theory contributed to understanding the role of social relationships among participants and the influence that group members can have, if or when, negatively affected by the EEC plan. Increased social capital among participants led to the sharing of information and resources and collaboration within these networks. The power of the response was increased with greater numbers of people thinking, strategizing and planning together.

A) Bonding social capital.

Networks among neighbours or villagers who are facing EEC issues in Nong Teen Nok Sub district can be analysed through the lens of *bonding* social capital. One participant notes that if the government allows opportunities for local residents to share ideas, it would provide for self-responsibility, and the information and ideas created would support greater cohesiveness among citizens (BK 017).

“...nowadays, local government have to wait for the federal government decision such as the EEC issues. If the federal government allow people to sharing ideas and provide authority in the local areas. It would be better for self-responsibility and management because we know our problems. The solution process will not be complicated. Thus, we have to find a space for sharing and consulting together no need structure [leaders, secretary or members] on the first stage. We can talk and help each other...”(BK 017).

However, because of the existing Thai “coup law” which prevents the assembly of more than five persons, this sharing of information, that is political in nature, or a critique the government is limited and is thus, stymies the development of bonding social capital (BP 002,

BP 011). Participants believed that allowing a greater number of people to assemble in community spaces, such as temples and schools, would help children and adults in the local areas in the long-term (BP 002). Furthermore, this participant highlighted the ability to bond across multi-generations, believing that young people are the hope for their community's future. It was of concern that currently younger and older local residents cannot openly share their views in larger groups (BP 002) because of the coup law. Another participant highlighted that even among homogenous relationships, people can play various roles or hold various positions. For example, a village monk is a person who listens to information and seeks to help with community problems, such as solving mental health concerns among local residents. They play this role, but do not have the authority to act in a political capacity:

"I was invited to join the local activities, and many people told me about the EEC problems. I listened and suggested that we must calm down and not encourage violence. In addition to the local residents coming and consulting about EEC problems and conflict, the head of the sub-district, who is [a relative], also came to consult. However, my role does not do much. I just exhort them to speak with reason" (BP 004).

However, some participants who are experiencing negative impacts talked about the EEC implementation as a village crisis. While they do not have formal roles in the village, they would like help and thus invite a wide variety of people into their communities to share ideas and solve the problems they face together (BP 007, BP 011):

"This is a crisis. I volunteer to help, although I have not had a position in the village. I invited my neighbours to share ideas and solve problems together... when a person starts, some people will follow" (BP 007).

These statements represent bonding social capital through social networks, when ideas are shared about alleviating mental health concerns of their neighbours. Emphasised was their community or temple is a space to connect with people to discuss and seek solutions. Being able to utilise physical space seems to enhance their ability to bond.

In addition, residents may receive additional information to support their deliberations from outside their local area, which can be better explained through the lens of *bridging* social capital theory.

B) Bridging social capital.

Agricultural and fishery networks are good examples of *bridging* social capital. Local community members with dissimilar backgrounds and careers can band together to support each other despite some differing perspectives and opinions. For example, participants in the YSF group (alias) in CCS (BP 005, BP 025, BK 010, BK 013), other agricultural groups, and fishery groups (BP 001, BP 006, BP 008, BP 010, BP 017, BK 001, BK 003, BK 004), were in contact with each other for support in their careers, livelihood, and relevant skill development. One participant stated:

“I am a member of an agricultural group seeking to find new markets in other areas to support our members and connect with other communities. Sometimes I organised a workshop for teaching online-marketing techniques, as well as how to reduce the chemical use on their farms. I also was invited to be a speaker for the Office of the Non-Formal and Informal Education and community development activities. If I have time, I will go and support all of them” (BK 010).

At a public event of agricultural farmers, it was seen that the agricultural staff invited their agricultural members from the Bangkhla District and guests from other districts in CCS to share their farming and fishing experiences. This observation suggests that most of the farmers came to exchange their techniques for producing and selling their food products: an agricultural officer distributed fish breeds and plants to attendees; an agricultural-vehicle company sponsored lunch or soft drinks at the event and promoted the new model of vehicles. This implies that some staff had a close connection with this company which demonstrates bridging social capital.

A fishery group participant in the Ban Pho shows advised he is trying to connect people and empower residents across the villages to protect their homeland.

“I would like to help our communities and monitor any issues. I emphasise that I will work [with local residents] with 3-4 Tambons [Sub-districts] near my community around

the areas. However, at times I join other organisations. I do not expect other people from outside [community] to help us much. I empower and cheer up local residents. I believe in them because if our community is strong, we can live here [no need to relocate]" (BP 006).

BP 006 reported that villagers joined in local groups because they are suffering from the EEC policy. Likewise, the observation supported the view that group members, affected by EEC policy, played various roles in the community. For instance, a villager at Nong Teen Nok, who was a member of the Subdistrict Administrative Organisation (SAO) had his land expropriated by the Inland Container Depot (ICD) project, and relayed the EEC information to the local residents, including details about regulations and EEC news. He volunteered to work on EEC issues with the impacted villagers because they are experiencing similar problems. He said in the meeting that he was ready to resign from the SAO if forced to because he would like to protect his homeland.

These examples from the residents demonstrate Brook's (2009) bridging concept where residents are contributing to each other's knowledge and development. This can be beneficial to more than one EEC area. Further, the policy implementation has stimulated opportunities for communities to increase their power and capacity, through the potential of community development (Brooks 2009).

C) Linking Social Capital.

Linking social capital can be seen when connections are made from the local level to the structures/institutions or decision makers in society. Network building in CCS was seen with one civil society group that coordinates with international NGOs, Thai NGOs, government organisations and others to support and conserve the Bangpakong River. One participant commented:

"My role is a coordinator of the network and trying to facilitate communities where there is a problem within the movement. For example, I support the local group in Ban Pho where they have a lot of port construction because of the new urban town planning policy. We help them do Health Impact Assessment (HIA) in the community beside the Bangpakong River and support them to learn about the town planning policy that relates to logistic hub [which was supported by the NHCO (alias) and the ENT Foundation (alias)]"

along the river in those areas. If it does not suit the Ban Pho area, what and how they should do... I also support the people at Nong Teen Nok, but I have not set up the group there. My friend [BP 006] and a lecturer are the main actors who help local residents with the ICD issue. In our networks, we are doing the Ramsar site project with an international organisation along the Bangpakong River and working with some lecturers at universities, some local groups in Ban Pho and other districts” (BK 017).

Such linking social capital can also be seen when community networks make explicit and purposeful links to politicians, EEC policy makers and other decision-makers. They are thus forming links between the horizontal or community plane and the vertical or societal structures plane, with the view that through these connections among actors and stakeholders they may generate greater influence or power. These are important processes because the EEC policy development is a top-down process requiring rapid implementation.

The findings show that participants are using agricultural and fishery groups to build social networks of neighbours, and with local politicians who may assist local residents who are trying to connect with other government officials regarding the EEC issues. They were able to connect to the policy makers and decision makers through written communication, such as sending a letter to the head of district, the CCS Mayor, the head of EEC office and the Prime Minister when he came to the CCS (BP 007, BP 011, BP 014). Other participants who used oral communications, such as talking to a university lecturer who could converse with the Deputy Minister of Agricultural and Cooperatives were more successful (BP 007). One participant tried to raise the EEC issue with the CCS candidate in Ban Pho District, during the Thailand general election campaign, specifically to address the need for changes to the EEC policy in parliament:

“A candidate of the Future Forward Party came to talk with us, and I told him about the EEC problems, such as relocation and land expropriation here...Now, we have a Member of Parliament [which is in the opposing party of the government and he has the same opinion as local residents]. He promises us that he will help people who suffer from EEC impacts...This is an opportunity to fight with the unfair system [military government] at this time” (BP 006).

These statements show that linking social capital is useful to explain the local response and the processes used to effect change in policy development and implementation, through increased community empowerment (Casey 2009; Deller, Lamie & Stickel 2017; Jones 2010; Stanton-Salazar 2011; White 2002; Woolcock & Narayan 2000). Although politicians in the government opposition may not be able to stop the EEC project directly, local residents anticipate that community connections to these politicians may benefit if/when there is a political transition. This is consistent with the POS concept (Engels 2018), that they can mobilise to take advantage of political opportunities as they arise. For example, if the regime changes, civil society liberties will open more widely. This is a potential opportunity for mobilisation in those areas.

These three groups responded to the EEC impacts relating to water and food security (RQ 2) by building social networks through various activities, demonstrating the use of three types of social capital: bonding, bridging and linking, the latter of which explicitly utilises political opportunities to effect change.

5.1.2 Network Building Activities

This section is divided into three types of activities performed within the social networks found in the study: environmental activities, educational activities, and activities for sharing information with the public. Activities are one mechanism for building a social network whereby members build bonds through communicating and interacting with each other (Conover et al. 2013; Kumbamu 2017; Levkoe 2015). It emerged during the research that participants relate to, or participate in many activities, some of which were created by the government or a company, and some by the local residents. Most, the activities related to water and food, essential to the local way of life. While they may not be directly responding to the EEC project, they are a part of raising awareness of land use and water of the Bangpakong River, and they are channels for villagers' interaction.

A) Environmental activities

Environmental activities comprise many activities undertaken by networks in the local areas. Participants referred to environmental and agricultural activities, such as YSF project (alias) that the government formed to engage local young people who are interested in agricultural issues (e.g. food diversification, organic farming, eco-friendly activities). The YSF project also

contributes to King Rama 9th's concept of the "Sufficiency Economy" (BP 001, BP 005, BK 010, BK 013). Meanwhile, a company facilitated formation of student groups for river and canal conservation in the CCS, such as WIP clubs (alias), which do water quality testing. A related activity, "*Wan Ka Tan Yu Sai Nam*" or "Being grateful for the Bangpakong River" occurs on the 20th September every year since 2003 to express thanks for the river's resources and to promote river conservation (BP 002, BP012, BK 017, FT 002). One participant stated:

"I am a leader of the "Wan Ka Tan Yu Sai Nam" [Be grateful for the river or Thank you for the Bangpakong River] event for more than 10 years. It is an annual activity of the environmental clubs in the CCS. Many students in our network and other people will clean up our river or canals... A large company in Ban Pho district supports this event and provides T-shirts, caps and so on" (BP 012).

Some who are facing EEC issues responded to the EEC project and promoted the "Sufficiency Economy", which is a concept developed by King Rama 9th. For example, local residents at Nong Teen Nok in Ban Pho District, affected by the Inland Container Depot (ICD) project in the village, formed a group to save the environment, supported each other and found funds to organise activities, including the planting of trees and the selling of local food produce.

"We created a network, such as a community enterprise. This network will produce food for people, and increase income for our members through food processing, which is one factor to improve village production. For example, we produce fresh prawns, fish, and bananas, then add value in our products and sell ... I invited my neighbour. We set up our group. We have a principle, registration and follow the law. We have a group structure such as manager, secretary, and treasurer... We work under the concept of the sufficiency economy" (BP 007).

Young people in the Ban Pho area also formed a group supported by their parents. They made connections with university students in Bangkok and the Chon Buri Province. Witnessing the suffering of local residents because of the EEC policy, many of the young people are helping through the development of community enterprise activities (BP 007, BP 011). One participant confirmed that there were young people in the Ban Pho district interested in a fishery career similar to their parents, so the young people came to help and ask questions about the development of fishery farms (BP 008). Other young participants state that they do

not agree with the EEC policy because they are attached to their livelihoods and do not want to relocate (BP 014, BP 018).

“They [the government] will come to expropriate our land and tell us to relocate and live with the industrial environment. How will this impact our mental health? Local residents and I love here because this is our home. I was born here, eat the fish and prawns here, and get the income from this land here. I do not want to move out. (BP 018)”

Young people in Ban Pho District are joining local environmental groups and participating in environmental activities, such as community enterprises, showing that social networks can be dynamic and encompass a range of activities and interests. These local residents are trying to provide environmental education activities to inform young people about farming and fishing activities that will collectively help their communities. Additionally, some participants demonstrated social innovation by creating local groups that assist residents with food buying and tree planting. This shows a function of social networks, articulated by Dedeurwaerdere et al (2017), which leads to social innovation because there are socially innovative food buying collectives and local food networks. These activities facilitate community cohesion through the sharing of resources and the distribution of information about sustainable food production (Dedeurwaerdere et al. 2017). In addition, environmental education network activities address some of the adverse effects of the EEC project.

B) Educational and communication activities.

The CCS plan has a variety of activities related to canals and river conservation, which a large company in Ban Pho has supported over 10 years, including with educational activities. These include a youth group network in WIP group (alias) which conducts water quality testing along the river under the instruction of their teachers. They report and share their results alongside the many educational activities in schools at annual events (BP 012, BP 022, FT 002). A staff member of the company stated:

“First, our company joined with local residents and worked with school networks and students. We set up the club in Ban Pho at Ladkwang [sub-district] in the network of entrepreneurs in Ban Pho and we invited others to join us as a club member. It will be a network in the CCS automatically...” (FT 002).

It was also observed that a large international company at its Ban Pho plant also has some environmental education programs. The environmental education program of the company works with other organisations for native-species conservation [Eco-forest project] (FT 002) and has developed an environmental education program for every school and university as extracurricular activities.

In addition, a civil society group has organised environmental education for students at schools in the CCS, which includes bird watching and saving the Bangpakong River. The objective of these activities is to support students and young people in understand the local ecosystem and biodiversity of bird species along the Bangpakong River (BK 017, BK 008).

“Four to five years ago [around 2014-2015], we had a port construction in Ban Pho district [which is a part of logistic-hub in town development planning]. My friends [in Bangkhla] and I went to work and collected the local data very often with networks in Ban Pho and along the Bangpakong River. We found that the river was abundant [with biodiversity], and we proposed the river to be a Ramsar site. We have worked with an international NGO, local groups in Bangkhla and Ban Pho districts, as well as had activities with schools such as bird watching for education and raising awareness” (BK 017).

This group is not explicitly against the EEC project but the leader in the education program is a member of civil society in the CCS and helps local residents who suffer from the negative impacts of the EEC project (BP 009, BP 014).

Young people in Ban Pho, too, are facing the EEC issues in their hometowns. They invited friends to an educational camp to exchange and learn more deeply about their problems with other young people at a university in Bangkok and in the Bangkhla district:

“...the youth activity on 19th -20th this month. The fee to join this activity is 100 THB (3.33 USD). We will buy food such as fish and prawns from the local fisher-people to support those who come to join our activity. ...I created this activity to raise awareness and inform people about Nong Teen Nok’s situation and educate young people about EEC in our village” (BP 014).

After the camp, the young leaders of Nong Teen Nok were invited to join activities with other students at a university in Chon Buri Province. This activity links to university students across Thailand. Those students share and update their problems specific to their local areas. They discuss topics of concern such as labour, education, environment, and other injustices that they are experiencing due to the policy implementation in the local areas. They use song, drama and performance to tell their stories including stage presentations. This particular event was organised by the “YM” network (alias), which had members from across Thailand and was supported by lecturers in universities, NGOs, and philanthropic foundations in Bangkok.

Through a network coordinator, the young people divided into groups to consider different social issues. They worked together to find solutions and sent their recommendations to the policymakers. As a result, six demands from the young people in the network meeting are reported on Facebook live and on television news and programs for reforming Thai development:

- 1) The local community should participate in and design local history aspects for the educational curriculum.
- 2) Young people should have the right to participate and discuss any projects which relate to their hometown.
- 3) The social security system should change to provide social welfare for all.
- 4) School curriculum should be reviewed such as a subject relating to civil roles (or 12 Core values of Thai citizens promulgated by the military government after the coup).
- 5) Cancel all the Commands [rules] of the National Council for Peace and Order which were issued during the coup.
- 6) Cancel the *EEC Act 2018*.

At the same event, a Member of Parliament of the CCS was in attendance. He was in the government opposition party and told the young people that he would raise their concerns in the Parliament and would support the local residents as much as he could.

Thus, the young people saw that by using educational activities, they are increasing awareness for problem-solving within their social networks (Freedman & Bess 2011; Gilchrist 2007; Hazel et al. 2012). This analysis demonstrates how they are responding to the EEC policy

implementation in terms of water and food security, and aim to have a greater impact by sharing information with the wider public and by connecting with stakeholders who have influence over the policy implementation process.

C) Activities for sharing information with the public.

From observations and interviews it was found that the young people in Ban Pho formed a group and invited friends and parents in the village, school, and some civil society members from the Bangkhla District and also some university students in Bangkok to learn the worth of land along the Bangpakong River. Around 25 people came to learn about the EEC problems in Ban Pho area for two days. The group leader brought their friends and friends' parents to learn about the Nong Teen Nok village location, which is targeted for development by the ICD project at Ban Pho District. They then shared information about the way of life, historical places, cultures, and livelihood of the local residents such as prawn farms and belief in two religions. As well, they visited a village in Bangpakong District, which is facing relocation similar to Nong Teen Nok, to learn about the ecosystem and how to plant rice in the three types of water (fresh, salt and brackish) throughout the year.

Group leaders invited the press and journalists, which came from two TV programs, a documentary magazine, and the TV channel of a Bangkok university. After that, the youth leader created a Line chat-group for communicating among the activity-participants and continued to use TV and magazines too. As a young leader in Nong Teen Nok stated:

"I was inspired when I joined an activity with my uncle ... Then, I had talked to a producer of a TV program and I created this activity in my hometown. I invited friends from my school and the village. Also, I invited some university students in Bangkok who I met in a network activity with my uncle. I would like to tell about the EEC problem, that it is not as good as they [the government] promote it to the public" (BP 014).

When applying participatory development practice theory to the findings, social capital has increased and the networks of adults and young people are engaging in dialogue with friends and participants who join their activities. The analysis shows that this practice aids constructive and trusting relationships and enables people to collaborate through participatory action groups, to achieve outcomes of benefit to the members of those groups.

This takes their private concerns into the public arena and through collaboration there is a greater chance to effect change (Kelly & Westoby 2018).

This section discussed the significance of network building of local groups which were constructed by the government, a company, and the local residents themselves.

Lessons

Building the social network of people who are facing the EEC project implementation has increased all three types of their social capital (Section 5.1.1). The type of network activities - environmental and educational, shared with the wider public (Section 5.1.2) demonstrate how concerned and affected citizens are responding to the EEC project in relation to water and food security, by honouring the river and improving food marketing. This shows how the residents are trying to solve their problems through the creation of new groups such as community enterprises and young people groups in the Nong Teen Nok area, which have led to social innovation.

5.2 Publication

Social Capital in Community Organising for Land Protection and Food Security

This section is comprised of an article published from the research findings and answers research question two about how communities are responding to the impacts of the EEC policy.

In response to RQ2, 'How are social networks of local communities, including those of young people, responding to the impacts of the Eastern Economic Corridor in relation to water and food security?', the researcher focused on the actions taken by residents in community organising and how building of social capital enhanced their ability to protect their land and water resources.

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DECLARATION
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Social Capital in Community Organizing for Land Protection and Food Security

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Abstract: Since 2016, the Thai Government has pursued a twenty-year national economic growth policy, Thailand 4.0, promoting innovation and stimulating international investment through the Eastern Economic Corridor (EEC) project. The EEC project involves significant land acquisition resulting in the need to relocate villagers with potential impact on food security in a major food production area. This research explored the concerns of a local farming community regarding the potential loss of their farmland and means of livelihood under the EEC project using a case study in Ban Pho District of Chachoengsao (CCS) province. It described their resulting action to protect their farmland using community organizing. Data was collected through documents, observation and semi-structured interviews of key stakeholders. The results demonstrate the role of social capital in community organizing. We contend that high social capital stock is a necessary precursor to create conditions for community members to take steps to defend and protect their interests. This paper contributes to a deeper understanding of the role of social capital in community organizing in cases involving natural resource management.

Keywords: land use; food security; social capital; community organizing; EEC Thailand; land protection; economic development

1. Introduction

Globally, national governments implement policies to generate and sustain economic growth and development by increasing productivity and improving the social and political wellbeing of their nation. One measure employed by government to promote economic growth is through infrastructure spending as a catalyst to boost productivity and enable businesses to operate as efficiently as possible and thus, stimulate the economy. For example, in 2009, the United States provided federal government spending exceeding \$80 billion for highways, bridges, and roads to spur economic growth and help create construction jobs impacted from the Great Recession [1]. A dilemma exists when such development has significant impacts on local communities. Support is required to ensure a just transition occurs, one that protects the environment and essential resources for communities.

Likewise, to increase economic performance and growth [2] of the country, the Thai Government has, since 2016, pursued a national economic growth policy aimed at stimulating international investments by promoting technology and innovation expected to provide economic benefits to the Thai economy through the construction of infrastructure such as roads, high-speed railway, and power plants in the Eastern Economic Corridor (EEC). These projects involve significant land

acquisitions, which often result in the relocation of villagers and impact on their means of livelihood and social wellbeing.

Inequitable economic development policies enable negative practices such as ‘land and/or water grabbing’ resulting in rapid urban settlement and changing land uses including industrial pollution and reduced access to adequate quality water. Land and water degradation are incompatible with agricultural production and food security [3–5]. Small-holder agriculture is essential to a healthy diversified economy [4].

The Food and Agriculture Organization (FAO) define food security as “a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (n.p) [6]. Food production can also be disturbed by large-scale land acquisition by domestic and transnational companies investing in plantation estates. In fact, some scholars have argued that land or water grabbing is a new form of colonization, where governments collaborate with international companies to control food production without consideration of the land rights or freshwater ownership of the local communities or the social and environmental impacts of their activities to the community [7,8].

Given the importance of food for sustenance and food security, a just governance process for land and water resource access and security is crucial, as well as the need to implement “processes that work directly with the community and allow for greater community input to decision-making” [9]. Moreover, a just transition is one where communities work to make their own needs known using techniques such as community organizing.

Therefore, this study explores concerns of a local farming community regarding the potential loss of their farmland under the Thai government’s Eastern Economic Corridor (EEC) project, and analyses the resulting action to protect their farmland through the lens of community organizing. Our unique contribution is in identifying the role and importance of social capital networks in community organizing.

2. Conceptual Framework

This research uses the community development method of community organizing to describe the community-initiated process to protect valuable farmland in the Ban Pho district of Chachoengsao province in Eastern Thailand. Community organizing is the process of people mobilizing and increasing their people and political power to solve a range of local problems [10–14]. It is a process used for political action when people confront injustice or seek economic and social opportunities [15–17]. It is also considered a process of power building and political education for people [17]. This research further draws on social capital theory to provide insight into relationships that are beneficial to supporting and sharing resources and information [18]. Drawing on social capital theory and using community organizing processes helps to explain the proactive and positive approach local residents in the case study are using to address perceived injustice by the government’s social policy initiative.

2.1. Social Capital

Understanding the way that social capital functions in a community can provide a basis for identifying where and how to invest in community organizing. Social capital explains types of collaboration among actors and facilitates mutual support. Social capital was initially articulated by Bourdieu (1992) and expanded on by Putnam (2000). It is defined as relationships and collaboration among actors, which lead to trust, engagement, support, sharing of information and resources in their network [18–22], and achievement of common goals [23]. It relates to the norms and networks that enable people to act collectively [24]. Bourdieu believed social capital relates to self-motivated purposes invested by an individual such as a friendship network or institutionalized relationships such as in organizations or schools [18,20]. In contrast, Putnam argued the social capital from a communitarian or social perspective [18,19], introducing concepts of bridging and bonding social capital. Woolcock and Narayan (2000), further contributed ‘linking’ to social capital theory [24]. The

bridging dimension denotes the relationships among heterogeneous social groups such as those found amongst colleagues and acquaintances, while the bonding dimension is described as homogenous social relationships like those found amongst family, friends, and neighbors [18,20]. The former is referred to as thin trust, while the latter represents thick trust [18]. Linking social capital illustrates the nature of social interactions between agencies and communities or authorities and policy actors at various levels, which influence policy development [21,24–26].

Many scholars argue that social capital contributes to understanding, trust, respect, values, and norms among network members, and affects the quality of networks or groups, which in turn affects members' sense of empowerment and collaboration [21–23,25–28]. Information sharing among neighbors, for instance, is a measure of social capital and can lead to constructive neighborhood alliances [29]. Positive social capital can also influence behavior and attitudes of individuals in communities as they respond to environmental problems and assist in environmental or co-management policies [21].

In summary, social capital is a theory that aids collaboration and the building of trusting relationships among community members, who can influence positive outcomes in their communities. One might argue that having various forms of social capital is a necessary precursor to create conditions for community members to take steps to defend and protect their interests.

2.2. Community Organizing

Alinsky (1989), the founder of community organizing, believed in democracy as a means to social justice. He encouraged education to build human capacity and empowerment. He developed training tools for community organizers to help people understand their interests and identify collaborative alliances [17]. Alinsky also explains the roles that community organizers have to learn — how to assist people to understand their interests and how to build alliances for collaboration [15,17]. Further, Brown (2010) argues that community organizers play two main roles: firstly, to build organizations and develop leaders to take responsibility, be accountable, and practise dealing with issues rather than relying on someone else. Secondly, to search for and develop leadership skills in the team to play multiple roles and function interdependently. In addition, Brady and O'Connor (2014) underline that the process of community organizing has five stages of practice. These include:

- Motivation: actors need the motivation to seek a solution when community members suffer injustice;
- Community building: community members identify the issues and raise awareness, so others understand and gain knowledge about their problems;
- Planning: members organize a plan and set a goal;
- Mobilizing: organizers engage with community members, build the power of people, using various tactics including negotiation with policymakers in order to achieve their goal; and
- Outcome: members report the result.

Community organizing can be applied to a bottom-up community action to address collective issues that impact on a community. A recent example of community organizing as a bottom-up approach relating to food security occurred in Graceville, a suburb of Brisbane, Australia, where a local group was stymied in their efforts to establish a community garden where residents could come together to grow food to eat [30]. In this instance, the community built an alliance with a local government councilor and using the councilor's power base, they employed the tactics of confrontation as well as partnership building to achieve a socially just outcome for the local community [30]. Furthermore, the concepts of linking social capital can be seen in this example, where local government policy was changed as a result of the community organizing process. When people are highly motivated, it can improve the success of community organizing and its ability to influence people.

These processes and activities of facilitation are targeted to build trust among participants and can provide them with a sense of empowerment [11]. Community organizing is most successful if it

builds on and strengthens existing social capital and social networks. Moreover, understanding where strong social capital exists in an area provides a foundation for community organizing to build upon [31]. It can also reveal where organizers need to direct more attention [32]. Social networks play an important role for organizers to use in organizing and empowering people for social change [11,13,33]

Land-use changes that affect food security provide a strong motivating factor for organizing communities to seek fairer solutions especially in the context of rapid economic development leading to a potential loss of land and livelihood.

Through the conceptual framework of social capital and community organizing, this study explored how local communities in the Ban Pho district of Chachoengsao province in Thailand, mobilized to protect the likely loss of their farmland and means of livelihood, as well as maintain their existing social networks and relationships.

3. The Case Study and Methods

3.1. An Overview of the Eastern Economic Corridor Project

According to the Bank of Thailand, between 2012 and 2016, the average economic growth rate in Thailand was 3.5%, and its projected that the Thai economy will remain in the middle-income bracket for the next 30 years [34]. As such, to boost economic performance [2] and move towards greater wealth, the Thai Government developed the Thailand 4.0 policy, a twenty-year strategy targeted at economic growth by promoting technology and improving innovation in the Eastern Economic Corridor (EEC). The EEC plan supports industrial sectors in three provinces: (i) Rayong, (ii) Chon Buri, and (iii) Chachoengsao (CCS) in Eastern Thailand (Figure 1, below).



Figure 1. Map showing the three provinces in Eastern Thailand designated for the delivery of the Eastern Economic Corridor (EEC) project. Source: Thailand Board of Investment.

Thailand 4.0 is expected to provide economic benefits to the EEC provinces and the Thai economy in general through the construction of infrastructure such as roads, high-speed railway, and power plants [35].

Although the EEC project is yet to be implemented in CCS, local residents of the province are concerned about the potential impact of the project on their community considering the economic,

social, and environmental impacts already being experienced in other areas where Eastern Seaboard Industrial Estate projects have been implemented. Some of the outcomes include: pollution and water grabbing in the Rayong province, resulting in health problems and reduced means of livelihood [36–40]; and impact on cultural values due to heavy commercial traffic and noise from Map Ta Put industrial estate, which affects people walking to temples and monks conducting their daily meditation. The need to install glass windows and doors to reduce traffic noise significantly alters the traditional architecture of local Buddhist temples [36].

Another example of economic reform policy in Southeast Asia that had significant economic, social and environmental impacts is the Doi Moi policy in Vietnam [40]. In a country where 70% of the population live in rural areas and are dependent on small-holder agriculture, large land acquisition in ThuaThien Hue province affected food security and livelihood, with consequent outmigration of men to urban areas to earn an income [41]. Further, land development resulted in the degradation of rice fields, fisheries and mangroves, and the loss of forests which consequently decreased biodiversity and increased greenhouse gas emissions [42]. The Thi Vai Estuary and the Can Goi Mangrove Forest in Vietnam were also affected by industrial wastewater emission and oil spills as a result of the project [40].

3.2. Case Study Area—An Overview of Ban Pho District of Chachoengsao Province

Ban Pho is one of the 11 districts in the CCS province. The district is located about 40 km east of Bangkok in Eastern Thailand (see Figure 2, below). The population of CCS in 2017 was 709,889 persons with Ban Pho having a population of 37,749 (5.3% of CCS) [43].



Figure 2. Map showing Chachoengsao (CCS) province including the districts of Ban Pho for context (source: modified from https://en.wikipedia.org/wiki/Chachoengsao_Province and <https://dmcrth.dmcr.go.th/mcra2/aboutus/444/>).

CCS's favorable weather and fertile soil support large commercial production of prawns, coconut, and a variety of fruits consumed in Thailand. In the western part of the CCS province lies the low river plain of the Bangpakong River, which is used extensively for rice farming. The Bangpakong River is the most essential watershed in Eastern Thailand because it is the main water supply for irrigation for agriculture, animal farming, and industries [44,45]. According to the World Resource Institute (WRI), the EEC project will increase risks to the Bangpakong River basin's water and food security due to environmental and social change by 2030 [46], which will have broader,

and far-reaching consequences across the region. The industrial estates to be constructed in the EEC areas are likely to produce significant industrial waste and risk of pollution, which will affect over 709,889 people in the CCS province if insufficient controls are in place. There is already evidence of pollution and water grabbing occurring in the Rayong province, one of the three EEC target areas [47], where work is being carried out on the Eastern Seaboard Industrial Estate project.

The CCS province is also widely known for its abundant fish species (barramundi [48]), and the origin of the Jasmine-Rice gene or Jasmine 105 [49]. Further, the best of Nam Dok Maie (mangoes) grown in this province are exported to many countries, as well as eggs produced in the CCS are the greatest number in Thailand [50]. Hence, the livelihood of many local people in the CCS province depends on farming, fishing, and related agricultural jobs. In a nutshell, the CCS province is important to the Eastern Thailand regional economy and the country in general.

Nonetheless, the CCS region was chosen by the Thai government for the EEC project because of its strategic location. The province is close to existing airports, port, railways, and industrial estates, such as vehicle industries, providing a logistical transportation system to support economic development among the Southeast Asia countries [45]. Under the EEC project, the Nong Teen Nok area within Ban Pho was targeted to be an inland container depot (ICD), forming a part of the logistic and transportation hub as the province provides vital land, air, sea, and railway connectivity to other Southeast Asian countries of Cambodia, Laos, and Vietnam.

In 2012 the Nong Teen Nok local area was zoned for agriculture and fishing in the city plan. However, in 2018 it was changed to become a vital transportation hub (Figure 3, below).

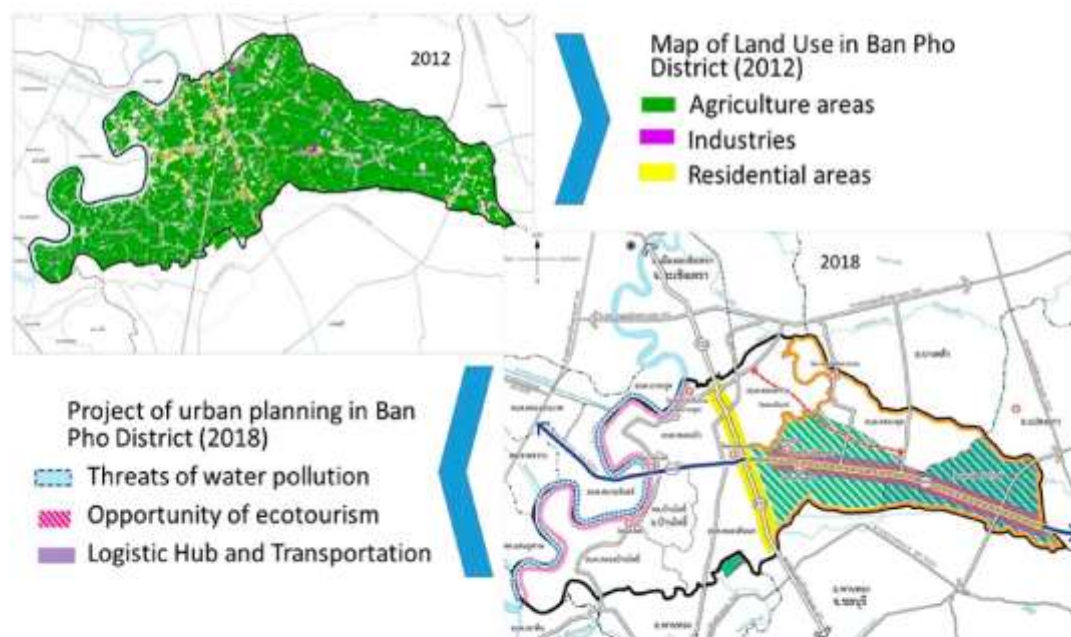


Figure 3. Map of land use in Ban Pho district in 2012 and 2018. Source: Department of Public works and Towns and Country Planning.

This change in zoning from 2012 to 2018 was brought about when the government enacted the Eastern Special Development Zone Act on 10 May 2018 (during the coup from 2014 to 2019). This allowed the Department of Public Works and Towns and Country Planning to change the city zoning plan from rural land use to industrial land use to accommodate the implementation of the EEC project within one year [51]. This land use zoning change will have significant environmental impacts and transform the community, which depends on agriculture and fishing for their livelihood.

These environmental concerns would be raised by the community during the EEC's request for Environmental and Health Impact Assessment (EHIA) approval, normally before commencement of any of the construction projects (such as the ICD). However, the EHIA had not begun at the time of

data collection, although land acquisition and a search for investors were already underway. This indicates that the government is forging ahead with its plans without a thorough impact assessment.

It also reveals the government's plan to vigorously pursue the actualization of the EEC projects, despite any impact assessment. Notably the Policy Committee can override recommendations made in an impact assessment. Section 9 of the Eastern Special Development Zone Act states:

"If, in undertaking any act in the interests of the development of the Eastern Special Development Zone, the Policy Committee is of the view that any law, rule, regulation, by-law, notification or order causes inconvenience or delay, is redundant or creates an undue and excess burden, or in case of any other problems or obstacles, the Policy Committee shall propose such matter to the Cabinet for consideration of the amendment of such law, rule, regulation, by-law, notification or order, or for the enactment of a new law to ensure that the development of the Eastern Special Development Zone be carried out efficiently, conveniently, and promptly..."

Following the quick implementation of the policy in November 2018, the consultant company, (contracted to deliver the project) alongside EEC officials began acquisition of land at Nong Teen Nok. A public hearing was held in late 2018 to engage with local residents relating to land acquisition. However, little information or clarity on the government's land compensation or relocation plans was provided to local residents.

A significant parcel of land will be required by the government to construct the new ICD at Nong Teen Nok (around 700 rai or 112 hectares) [52,53] and will result in around 7%–10% of good food production at this area lost to infrastructure and industry. This raises concerns about potential impacts of this project on the economic and social wellbeing of villagers who are likely to lose their farmland, means of livelihood, as well as their existing social networks by being relocated to another site.

Not only does the Thai government aim to lift Thailand out of its middle income trap, as a member of the United Nations (UN) it is working to achieve the UN Sustainable Development Goals (SDGs). The EEC development project priorities align with two key relevant SDGs: Goal 8—promoting sustainable economic growth, and full, productive employment; and Goal 9—building resilient infrastructure, promoting inclusive and sustainable industrialization, and foster innovation [54,55]. Rapid growth, though, can have unintended consequences that affect the achievement of other SDGs [7,8,42]. As food is a basic human need, a just governance process for land and water resource access and security is crucial.

Whilst Southeast Asian countries, including Thailand, are trying to improve their economic growth at the macro-level through rapid economic development policy, an inadvertent consequence is that land acquisition, and land and water grabbing affects local food security at the micro-level. It thus affects a country's ability to attain other SDGs, such as: Goal 2—reduce hunger and achieve food security; Goal 3—healthy lives; Goal 6—sustainable management of water and water and sanitation access; Goal 11—inclusive, safe, resilient, and sustainable human settlements; and Goal 12—sustainable consumption and production.

In summary, the economic policy implementation is a threat to the community's economic, environmental, and social conditions. We explored how local communities in the Ban Pho district used community organizing to address their concerns. We drew on social capital concepts to explain the positive contribution that networks of community relationships can have for a community.

3.3. Methods of Research

This qualitative research is a part of a larger doctoral project that studied several case study locations. This article presents findings from one of the case study locations, Ban Pho district. The research used mixed methods including document reviews, observation, and semi-structured interviews [56] to cross-validate information.

Documents reviewed included the Eastern Special Development Zone Act 2018 (to understand the regulation and laws backing the EEC project), local newsletters, posters, leaflets, and general communication channels used to provide information to local residents about the EEC projects.

First hand observation was also used at eight local activities in Ban Pho, such as community meetings, a ceremony of the royal coronation of the new King, environmental conservation events, cultural and religious events, youth group activities, and an EEC public hearing in CCS. These meetings provided the researcher with understanding of the roles of participants and the dynamics in the relationship of local stakeholders.

Semi-structured interviews allowed the researcher (first author), a native Thai speaker to ask guided open-end questions [57] to 25 participants (16 males and 9 females) in the Ban Pho district. Participants were identified for their role and ability using the snowball technique, to provide insight into the issues, policy, and practical context for the study. Participants were recruited from diverse groups: civil society groups, local government officers, and members of the business sector. This enabled a variety of perspectives and limited researcher bias. In addition, the participants were recruited based on three criteria. Firstly, participants were in local roles or positions, relating to the topic, such as economic development, industrial expansion, or water and food security. Secondly, participants were impacted or likely to be impacted by the EEC projects, such as experiencing problems like pollution or land acquisition in the case study area. Thirdly, the sample was limited to people who had lived in the area for three or more years because the EEC was formed in 2016, and people who lived and worked in the area for that length of time were able to offer detailed perspectives to the changes occurring in the community due to the policy.

Participants gave their consent and were interviewed for approximately 45 minutes in a place comfortable to them. The information collected from the interview was audio-recorded, transcribed, and results were analyzed via NVivo software using categories derived from the themes relating to the issues of land protection for food security. Each participant was de-identified and given a unique identifier. Triangulation was employed to validate results and check accuracy of analysis by comparing observations, interviews, and documents. Data for the study was collected in mid-2019, which also coincided with the appointment of a new Thai cabinet after the election on 24 March 2019.

4. Results and Discussion

Overall, some participants acknowledged the potential benefits of the project in the Ban Pho district, including the ease of transportation and efficient mode of travel if high speed rails and new highways are built; opportunities for job creation in CCS; and the project signifying change/or growth for the community.

For example, one participant stated:

“The positive aspect of the EEC projects is that people in CCS will not need look for work far away from home such as Bangkok because the industrial sectors will come here. It is close to our home” (BP 022).

Other participants provided both positive and negative commentary. For example, one participant stated that while the EEC projects might be beneficial to young adults and those with education, this might not be the case for older adults and persons with no training. There were opinions that tourism, which currently exists in CCS would provide more sustainable employment creation rather than construction.

“EEC helps the economy to grow. This is positive for young local people to gain work in factories when they graduate but how about middle age and old people? It is difficult for them” (BP 016).

“If we talk about EEC, heavy industries will be good in the short term. It is not sustainable. I think, if we are looking for sustainability, tourism will be an opportunity. Currently, many people come here because they want to see rural areas and nature such as fireflies and Irrawaddy dolphins at the Bangpakong River more than any materials or modern buildings. Tourism helps local people get jobs too” (BP 002).

Although the EEC project can lead to job creation and economic growth, many residents who rely on the environment for their livelihood expressed concerns about the potential impact of these projects for themselves, family, and the community. As such, through the process of social capital and community organizing these residents mobilized together to seek solutions to their common issues.

4.1. Social Capital in Community Organizing

4.1.1. Motivation

Due to the ICD in the Nong Teen Nok area, participants in this area were motivated by the potential loss of their source of livelihood and had a shared concern about relocating to a new area that may be different from their current environment, and may not suit their livelihoods. They had also lost trust in the public hearing process due to its rapid speed, and this too fueled their motivation to act.

Concern About the EEC Project at Nong Teen Nok, Ban Pho District

Most of the villagers lease the land, which they use for prawn farming and agricultural purposes (see Figure 4). During the minimal engagement process carried out with the local community (following the quick enactment of the Eastern Special Development Zone Act), the EEC representatives, rather than listening to the local people, informed them that Nong Teen Nok would be an ICD area to support the EEC project. As such, some villagers were told they had to move to alternative settlements provided by the government. They worried about their livelihood and were confused about relocating to a new settlement. During the public hearing, the villagers were asked to sign their names to indicate attendance at the public hearing but they later found out that their signature was used instead to indicate the villagers' agreement to the ICD project. One of the participants (BP007) stated:

"They asked that everyone raise their hand if in the agreement of the ICD, during the public hearing every time. We recorded in the meeting that we do not agree but they reported that we agree. They told us that this is a good area to locate an ICD. I asked, why? They answered that it is near a railway station. Only a kilometer, it is easy to connect to the logistic system. I said the local people would make trouble, what should we do? However, they did not listen and provided no answers."



Figure 4. The local people at Nong Teen Nok are collecting prawns for sales and some crabs for personal use in the pond. Source: first author.

Another motivating factor was the lack of proper communication and poor governance structure between the government and local people, as reflected by one participant (BP011):

"I rented the land here for a long time with trust. My husband just passed away, I am a single mom and taking care of my children... who will help me...? They have not told us any solutions. They

only told us the ICD project has to finish in 2024 and they have to provide the land and it should be cleared in 2021 for starting the project. However, they have not told us about compensation. If this area is ICD project, I will not get anything because of no documents”.

Other participants were motivated by concerns relating to the approach that was adopted in the implementation of the EEC project. One participant (BP006, below) commented about the process employed by the Department of Public Works and Town and Country Planning to change the land use zone after the EEC project had well commenced. The department was able to make these changes as the EEC policy committee under the Eastern Special Development Zone Act has the authority to make decisions on the EEC project.

“The previous report of the Department of Public Works and Town and Country Planning is clear, this area is good for food production and it will not suit an industrial estate. This report was done as an academic report. However, the department structure has been changed and now relies on the EEC policy committee once the EEC project is started. As a result, the city plan has a new process in EEC areas. If the EEC policy committee points to any areas, the department must listen to them. This process may lead to injustice because they do not participate in civil society and lose the academic research in the city plan”.

Finally, participants were motivated by concerns about a land takeover by the government and having to relocate to a new area. Their concern stems mostly from the loss of around 600–900 Rai (237–356 acres) of fertile agricultural land and abundant fish in the current area, which they will lose if they move (BP 008). Likewise, information about the EEC project was unclear about the floodway, which may impact on surface water and groundwater used for local people’s livelihood (BP 017).

Particularly, participants from the middle and older age groups with low education and no technical skills were worried that they do not have the required skills to work in an industrial factory (BP 004).

“I would like to tell them that I finished grade 6 at school and am over 40 years, what can I do in a factory? I am unqualified to work there” (BP011).

The community organizing stage of motivation was evidenced in the data by the shared sense of injustice about the haste with which the policy was implemented; the idea of losing their source of livelihood, community, relationships, and identity; a sense of helplessness about not being adequately consulted or being part of the decision making process; as well as receiving confusing information from EEC officials. Bonding social capital is useful here to explain that in communities comprised of homogeneous relationships, that is, those with similar experience, people can have relations of thick trust [19]. This sense of thick trust is typical amongst families, or those with very close relations. Strong bonds enable people to band together to take collective action against perceived injustice impacting on their communities.

4.1.2. Community Building

Community building occurred when members identified the issues and raised awareness of those, so others understood and gained knowledge about their shared problems. Due to a lack of answers or clarity from the EEC officials about the government’s relocation plan, residents of Nong Teen Nok in the Ban Pho district formed a group (a community enterprise) to address their collective issues. Their community enterprise is a small business that shares its profits among its members, for the group’s purpose.

Sharing and Gaining Information

Following their disagreement with the outcome of the public hearing process, members of Nong Teen Nok community, who were impacted by the government’s decision to relocate them to a new area, began to share information and discuss amongst family members, work colleagues, neighbors, and friends in the community. The villagers shared knowledge, ideas, and information amongst themselves and other groups who were opposed to the construction of the industrial estate. Further, some villagers voiced their concerns through letters sent to the head of the district, the mayor and the head of the EEC office to gain more information and clarity about the government’s plans.

Participants demonstrated a commitment to community building when they commented that they lived in this area for a long time and their relationships are like relatives. While villagers were facing the same problems, they helped each other by volunteering to send the letters to the mayor or by donating money to group activities that enabled them to be more equipped to take action (BP 007).

“... For sharing EEC information... For example, today we have 50 participants in this meeting. I tell them directly...I had documents for distribution and some volunteers from Bangkok came to help us... I share to Facebook, online and every channel as much as I can” (BP006).

Raising Awareness and Gaining Shared Knowledge About Agriculture and the EEC

Another theme of community building was demonstrated by the need to raise awareness and gain knowledge about agriculture and the EEC. Members of one civil society group met and discussed informally amongst themselves, seeking a solution to their problems. They then met and shared experiences with other social groups inside and outside of the village, which helped create solutions to improve sales of their products and increase group members' income as well. For example, some of the members sought advice from the Natural Agriculture Centre in Chonburi province, which supports the Sufficiency Economy Philosophy (SEP) of the former King. The Centre formally provided the group from Nong Teen Nok with information on agricultural best practice knowledge, training, and ideas on shifting away from the use of chemicals in agriculture to sustainable agriculture. In addition, this process provided members of the relocation group with the opportunity to meet and share their experiences with other groups in an informal setting and encouraged engagement with youths.

“The activities of our community enterprise group is to diversify our products to various uses. We (community enterprise) provide a meeting point for our members and the opportunity to gain income through selling our products such as fish and prawns. These are produced by our members...next month, we plan a youth activity to tell people about our problems and protecting our food land. We will invite young people in the community and university students from Bangkok will join us” (BP007).

“The youth activity this month... I created to build up awareness and inform people about Nong Teen Nok's situation and educate young people about EEC in our village” (BP014).

The community organizing stage of community building was evidenced in the data through the gaining of, and sharing of information and knowledge amongst members of the group, as well as processes to raise awareness and collaborate. Collaboration with the group from Nong Teen Nok shows that they recognize the issues they face and are willing to find solutions by engaging with other groups across the wider community. This can be explained as bridging social capital. This is significant because building relationships with people without close pre-existing ties (such as homogeneous relationships in a family), and from diverse backgrounds or diverse geographical areas have the potential to lead to greater collaboration and impact with increased numbers. Putnam (2000) theorized that thin trust relationships are those that assist with community development processes. Given that the Nong Teen Nok is a significant food production region for Thailand and through export, the world, a greater number of people involved in collective action has the potential to influence power holders such as the EEC policy makers. Additionally, the local group not only communicated through physical or face-to-face meetings but also connected online to share EEC information and organize planning meetings to resist the EEC project in their area.

4.1.3. Planning

The planning stage of community organizing involves members developing plans and setting goals. One civil society group that is a community enterprise formed a common goal to remain united and refused to be relocated to a new area given the uncertainty of whether the new settlement being offered by the government would be fertile enough for food production. The villagers met for about three months planning and strategizing, gaining the support of others and then coming up with the idea of setting up a community enterprise as a means of protecting their land and food security.

Gaining Allies

The group sought ideas about how to engage in their resistance strategy from various external sources such as academic institutions, as well as liaising with other civil society groups in the Bangkhla district, who in the past, had experienced and led a successful movement against the construction of a coal power-plant in their district. The group also developed connections and exchanged learnings and shared experience with the people in Chonburi province (another target area for the EEC projects) who were experiencing similar issues (BP 011).

Participants described their ways to gain allies, which also included an invitation to the researcher:

“Next week, we will have a meeting for a ceremony of the royal coronation of King Maha Vajiralong Kone (the new king since 2016). I invited Mr K (alias) he is a CCS civil society member from Bang khla. Do you know him? If you have time, I will invite you too” (BP007).

The data has shown that the community organizing stage of planning has been evidenced in this example from the community enterprise members who came together to develop an action plan to resolve their concerns with a united commitment to refuse relocation. To achieve this goal, the group became an active voice/contributor in seeking solutions to the problems they face rather than being passive recipients of the government’s relocation plan. Through their collective alliance, the group’s actions can also be seen as drawing on bridging social capital where they built relationships across other geographical regions and connected with a range of sectors to gain knowledge, support, and information in the hope of achieving a positive outcome for their community.

4.1.4. Mobilizing

At the mobilizing stage of community organizing, community members build their power using various tactics, including negotiation with policymakers to achieve their goal. The community enterprise group discussed in the previous section was formed as a response to the land acquisition carried out under the EEC project. The group mobilized members to engage with the wider community and sympathetic groups through symbolic activities such as tree planting exercises during the royal coronation of King Rama X, showing their alignment with the SEP of the late King Bhumibol’s initiative, which was still supported by the current government. Members also gained support by using tactics of engaging with politicians, such as a Member of Parliament (MP) from an opposing party as well as the Deputy Minister of Agriculture and Cooperatives (who was born in Ban Pho district).

Linking to Decision-Makers for Protecting the Land

The villagers sought solutions through engaging with decision-makers. For instance, when the Prime Minister (PM) came to visit CCS on 20 March 2019 some members of a community enterprise in Nong Teen Nok area presented a letter of concern about EEC impacts in their area. Although the PM received the letter, the villagers were not confident that he would read it or listen to them. The community enterprise group organized meetings and provided regular updates to members to keep up the momentum.

The community enterprise group also had a member of a civil society group knowledgeable about the EEC Act consult with a Human Rights group to provide support to the villagers impacted by the EEC project.

A few months later, the community enterprise group organized a World Environmental Day activity and invited the Deputy Minister of Agriculture and Cooperatives (at that time) to the opening ceremony of the community enterprise centre at Nong Teen Nok, Ban Pho. This was a significant event for the people of Nong Teen Nok as the representative of EEC, the head of the district, many journalists and press were in attendance. The Deputy Minister during the media interview publicly emphasized that Ban Pho is one of the best areas to plant rice and have a fishery, demonstrating his local knowledge. He was also empathetic to the community’s concerns.

“I consulted a lecturer who is supporting us. He has worked with the Deputy Minister of Agricultural and Cooperatives. I invited him to open our centre today (World Environmental Day).

He asserts that our land is abundant and it should not become an industrial area. ... I believe that this message will help us...." (BP007).

The data shows that the community organizing stage of mobilizing is evidenced by the people of Nong Teen Nok who increased and mobilized their networks. They sought to protect their land by linking with policy actors and the decision-makers. The impact of their actions can be explained through linking social capital, illustrated by the nature of social interactions between the community and other agencies, authorities, and policy actors at various levels. For example, the election of a local MP to parliament during the general election (March 2019) can serve as a powerful voice to represent the Ban Pho community at policy levels. In addition, the Deputy Minister of Agriculture and Cooperatives is a key person who can use his influence to contact directly with the EEC policy committee. By mobilizing in the way they did, they sought to influence policy development so that potential negative impacts on their communities could be ameliorated.

4.1.5. Outcome Report

The final stage of the community organizing process is where members report the results of their actions. During community enterprise meetings, members were given updates on income and expenditure, and new updates on the EEC projects. The financial report shows the transparency and multiple functions of members as below.

"I am a volunteer accountant in this group; I report on the expenditure of our group. For example, if we get donation around 14,000 THB (467 USD) for hiring vans to go to EEC office or demonstration, I have to make enquiries on how much does it cost to hire vans and fuel it to and from, and then report back to our members when we come back" (BP014).

Furthermore, members who had sought assistance from a knowledgeable lawyer informed other members how to legally and carefully protest to the government. Information was shared by members, who attended events and groups within other districts. Through the sharing of these updates, members brainstormed and developed a plan for the next course of action such as peaceful activities and share information from the lawyer (BP 011). In June 2019, the community enterprise group was informed by a member who attended a public hearing of EEC, that the ICD project in the Nong Teen Nok area had stalled as a result of their action. However, as this is only temporary the group continues to plan and organize activities to unify and connect members through events such as the sale of their products in the village and at a food festival at the university. The strategy is to promote CCS as a province of food, to increase its involvement with the university; and to share information online with their members.

The data has shown that the community organizing stage of reporting outcomes among network members is crucial for monitoring and evaluating strategies. Reporting helps group members to keep abreast of evolving and dynamic situations, to seek new ideas and can help instill in members a sense of togetherness or purpose towards the collective goal. Effective reporting requires transparency in all areas that relate to group activity and fosters accountability and trust in the group.

4.2. Discussion

This research demonstrates the role social capital plays in the process of community organizing in the context of natural resource management. Land is a prized asset (whether in an economic, physical, or cultural sense) for many people around the world and the loss or fear of losing this asset without free, informed, prior consent can be perceived as an injustice. More so, many communities do not have legal title to their land although they may have customary or informal land rights.

In our study, the residents of Ban Pho district are highly motivated to band together and form alliances due to the potential loss of their land considering that some of the villagers lease the land based on trust with no documented proof. As such, if they are to lose the land, they are not eligible for compensation. Their only option is to band together and fight to protect the land. This resulted in the affected villagers connecting to others with similar experiences to build trusting relationships and collective power. This is significant given that not every community takes this stance, to band together to fight economic policy implementation.

Through bonding, bridging, and linking forms of social capital, residents of Ban Pho district took proactive steps to make known their concerns to policy actors and decision makers about potential impacts that the implementation of the EEC project will have for the residents and their community. Whilst their community organizing efforts might not lead to a favorable outcome from their perspective such as the government rescinding its plan to build an ICD in Nong Teen Nok area, the stalling of the ICD project at this stage is testament to the community's influence. The local community group understood that to affect change, or slow down the process of change, they needed to band together with other groups and build relationships beyond just those they were close to (bonding capital). Thus, they grew their bridging and linking social capital relationships [18] with other social groups, political actors, and decision makers with agency/power to support their cause and influence policy. The results demonstrate evidence of the integration between 'trust' in social capital concepts developed by Putnam [18] and 'power' in people as articulated by Alinsky in community organizing processes [15,17], which has led to the protection of land and food production.

The Thai Government Economic policy made without due consideration for, and in consultation with its citizens, can have negative impact on local people, such as the loss of livelihood and reduced social connections and networks. From our study, we found that rapid economic policy can impact on land use and food security and create the loss of trust amongst the citizenry. Our results show that the local farmers whose source of income and livelihood is dependent on the land and river are highly vulnerable to losing their land to EEC projects [41]. Rapid policy changes can lead to poor governance, such that effective community engagement and transparent communication is reduced or even, non-existent. This gives the people little time and/or resources to adapt. A better approach is administering principles of good governance through legitimacy, transparency, accountability, inclusiveness, fairness, integration capability, and adaptability [58].

However, one possible reason for the minimal engagement and effective communication between the government and the community members may be due to the rapid development and implementation of the EEC policy (the EEC project and Eastern Special Development Zone Act were created during a military coup), which did not allow room for civil-society representatives on the EEC policy committees nor opportunity for enquiry or investigations from the civil society.

Another key finding from this study, is the minimal engagement and involvement of Ban Pho residents in the decision-making process despite potential impact if the EEC projects are implemented. One reason for this minimal engagement, according to the EEC officials, is due to the rapid implementation of the policy in the EEC targeted areas, which provided the officials with little time to organize appropriate levels of community engagement. This suggests a limited understanding of the benefits of participatory community engagement: effective community engagement can often reduce opposition and prevent delays in development over the long term. Bottom-up community engagement by government could shift a coercive approach to more of a partnership approach to achieve complementary goals with citizens [59–63]. Fisher (2012) suggests that the key to successful community participation is through trust-building by parties involved and devolution of power from the top (decision-makers) to the bottom (local community). Although the method, form, or level of community engagement can differ based on the context (cultural, political, social, and economic setting), a key criteria is the extent to which a community has equality in the exchange of information, power, and/or shared responsibility [59].

Finally, food is a basic human need and the fear of losing access to the region's abundant agricultural land and fisheries led to a community organizing response, i.e., the use of people power to seek a solution to an issue by protecting their land [11]. This fear was justifiable because of the knowledge of land acquisition [64], water grabbing, and pollution associated with development of other industrial estates [47]. It resulted in a lack of confidence in the EEC project. In this case study, a key tactic used by the villagers was to organize various activities, such as planting trees that support the SEP (aligned with the National Economic Development Plan); the SDGs; as well as the role of food security and agriculture in national economic development [65]. The tactic of showing alignment to government policy assisted their negotiations.

The Thai government perceives that economic growth through EEC project is essential, and focuses on SDG Goals 8 and 9. However, the project has the potential to negatively impact land use, food production, livelihoods, and community residents, with implications for achieving other SDG Targets. Specifically, the EEC project can affect the achievement of SDG Goals 2, 3, 6, 11, and 12 [66]. Thus, minimizing negative economic impacts will require supporting the agricultural sector whilst seeking alternative solutions to drive the country's economic development agenda over a longer term.

To protect land and food security, the SDGs provide a good basis for educating people and building awareness through social capital in community organizing activities at multiple levels.

5. Conclusions

The government's lack of engagement and involvement of local community members in the decision-making process in the twenty-year national economic growth policy, Thailand 4.0, to promote innovation and stimulate international investment through the Eastern Economic Corridor (EEC) project led to a lack of support by the affected communities. To address the potential impact of the EEC project, including loss of their farmland and means of livelihood, environmental (water, air, and noise pollution), socio-cultural (lifestyle, networks and relationships, and value system), the residents of Ban Pho responded by using the five stages of community organizing (motivation, community building, planning, mobilizing, and reporting) to protect their land and achieve food security. Meanwhile, they built three types of social capital (bonding, bridging, and linking) to strengthen their networks of relationships and increase their power to affect change.

This study shows that a high level of motivation (such as the potential loss of one's income/livelihood) is vital for motivating community organizing processes, which require an ongoing commitment from members to influence decision-makers. The research shows the benefit of building on existing social capital for effective community organizing.

The agricultural sector is an essential source of livelihood, employing 30.9% of labor in Thailand [67]. The sector is highly vulnerable and experiences a significant wealth gap compared to other sectors [67]. Thus, based on the results and findings from this research, adequate engagement with all stakeholders is necessary in managing natural resources [58] and can help to build trust, gain citizen's support, and reduce conflicts. As such, policymakers and those involved in decision-making at the macro level need to consider positive approaches to participatory community engagement, good governance, and trust-building in the development and implementation of economic policies.

Further, rapid development processes can impact local communities negatively. They provide little time and resources to allow for adaptation and minimize the negative impacts of the policy. We argue that the government should slow down its policy implementation process, engage better with the local communities to investigate, and understand their concerns and fears, and put in place transition strategies. One way the government can achieve this is to create feedback loops, such as involving members of civil society groups in the EEC committees at the policy level and engaging with members of the community at the grassroots level. Additionally, listening to the concerns of youth, who will inherit problems, would be a good start to a more just process aligned with the SDGs.

Finally, this research contributes to both community development practice and academic knowledge: a) the motivation and tactics used to stall a large project in the context of a lack of participatory engagement by government provide lessons for others in similar situations; and b) the unique deconstruction of community actions through the analysis of the role and benefits of social capital provides deeper understanding and insight into community organizing.

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Lessons

The findings illustrate three components of effective policy mobilisation:

- 1) Building social networks through social capital;
- 2) Constructing a community organising process and;
- 3) Using POS for effective change at the macro level.

These components can be used to address community problems at a policy level. In this case, slowing down the relocation and land expropriation for local residents at Nong Teen Nok, Ban Pho District was useful. The research suggests that similar components could be adapted and contribute to other areas under threat.

To enhance reporting and its value, a useful tool that could be used by organisers is a power map to develop an understanding of influential stakeholders across a network.

5.3 Power Mapping

A Power Map is a tool to analyse the degree to which actors have power in a given context, and, the degree of influence they might have over decisions. The process of mapping helps community members understand the connection of actors who make the decision, how they can influence the decision, and who might be against the decision (The Change Agency 2020). Power maps are also employed as a tool in community building processes when there is a power-based struggle (MacLeod & Byrne 2012; Mayo 2020). I created a power map for this research, drawing on observations and interviews. This helped me to analyse whether a stakeholder supports the community or not and who has power and influence, and who does not (Figure 19).

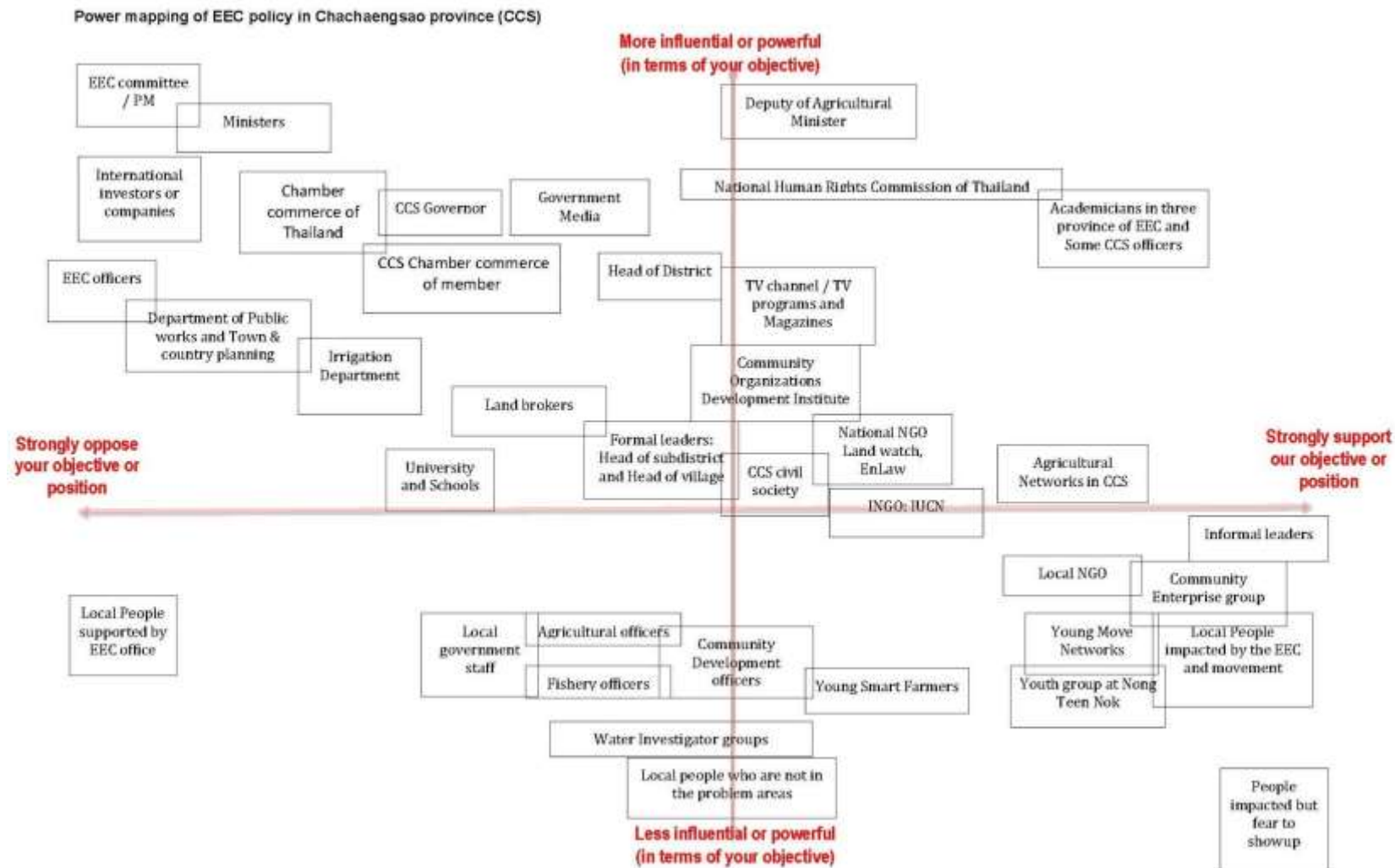


Figure 19: The power mapping of actors in the EEC project in the target areas.

The power map helps to explain the relationship among actors who strongly support local residents' objectives (e.g. against the EEC policy/ right side of Figure 19) and those who strongly oppose local residents' objectives (e.g. are not against the EEC policy/ left side). This power map also represents those who have influence and are powerful in terms of the policy decision and implementation (top half of map), and those who have less influence (bottom half of map). It also shows the various positions among local actors, such as local residents who were supported by EEC office versus people affected by EEC policy. The power analysis illustrates that there was little support by powerful decision-makers for local people's needs.

As a result of community organising at Nong Teen Nok, Ban Pho district (Section 5.2), the Deputy of Agricultural Minister was seen as a primary target for their collective advocacy because he had influence with decision makers and had previously supported the local residents. Based on participants' comments, another of their assumptions was proven correct, in that he supported them because Ban Pho is his hometown (BP 002). The second targets actors were the National Human Rights Commission of Thailand, academics in three provinces of EEC, and some CCS officers with whom the CCS civil society has had a connection. Participants reported that these people helped local residents find the solutions to potential impacts of the EEC (BP 007, BK 017). Gaining such alliances (Section 5.2) in this power-based struggle has built the power of local residents to negotiate and make demands of the government.

Under Section 44 of the Constitution of Thailand, the National Council for Peace and Order commanded during the coup that people cannot argue with political issues such as EEC policy and restricted the activities of local action (BP 002, BP 006, BP 007, BP 011, BK 017, BPK 002). Participants reported that this resulted in impacted people fearing joining the community organisers. Such silencing has resulted in the group having less influence. For example:

"Some local residents fear joining our group because they do not have formal contracts for their prawn farms with their landlords although they pay the rental fee every year same as me. They worry that they will be arrested, particularly under the martial government. We have not had a new government yet. However, we have the right to live and farm the land, right?" (BP 011).

Likewise, participants perceived that local government staff, such as agricultural and fishery officers or community development officers, could not act to a great degree because of the regulation and roles of officers (see Section 4.4.3 and Figure 19). As employees, they must support government policy, and did not have authority to support the local residents during the time of the military-led government.

The fear of losing access to the region's abundant agricultural land and fisheries can propel communities into processes of community organising and the use of people power to seek a solution to an issue. The villagers of Nong Teen Nok, Ban Pho were afraid of losing their community and the relationships they have built over the years, which would result in a decline of their social capital. They were concerned about relocating to a new area with little or no clear direction and communication from the government. This fear was exacerbated by the previous problems at Map Ta Put industrial estate, such as water grabbing and pollution (ASTVNews 2015; Koontanakulvong 2017). Consequently, the local residents indicated a lack of confidence in the new government project (EEC project) being implemented in the area.

Lessons

Employing the power mapping process informed my analysis of the community organising process and would be of benefit to local residents in addressing their EEC issues. The analysis of power through the power mapping process shows which actors and stakeholders are driving or being impacted by the EEC policy in CCS. It can be used where local residents are facing land use and relocation problems and can sharpen the focus of community organisers and the effectiveness of their actions by building relationships with, or by targeting people with greater power and influence (Figure 19).

5.4 Summary and discussion of social capital and land protection for food security

This chapter explored how social networks are being used to respond to the EEC policy and answered research question RQ2, about how social networks of local communities, including those of young people, are responding to the impacts of the EEC project in relation to water and food security.

The findings show the processes of building social networks in both new and existing local community groups (Section 5.1.1) and the importance of network activities for raising awareness regarding the environment and enabling social innovation (Section 5.1.2). Network activities are crucial for sharing information, generating ideas, building alliances, and consolidating social capital to respond to the EEC implementation in both districts, but particularly in Ban Pho where the threats to community well-being seem greater. Although the policy has not yet been fully implemented, the local residents still see a possibility of policy modification and mitigation of negative impacts in that region. Local young people whose families are experiencing negative impacts (income/livelihoods), are trying to support their parents, and some young people are looking for connections and engaging in activities to save their homeland by joining with other younger people's groups in Chon Buri Province. Social capital development was enabled by exploring common issues among local people, shared in social networks, and maintained by social media such as Facebook, the Line application for group chatting and local activities.

The concept of social capital was usefully applied to understand how the five steps of community organising functioned (Section 5.2). These steps help to understand the dynamics of the social networks in community organising and the response of young people to the policy in relation to natural resource and human right in the local areas.

The significant findings demonstrate that linking social capital and political opportunity structure (POS) is useful for informing community organising (Section 5.1 and 5.2). The political influence and political connection in decision-making (Verkoren & Ngin 2017) are evident in the case study. For instance, the connection to both sides of politics during the national election campaign was useful for advocating and negotiating policy change. The findings confirm that meta-networking (networks connecting with other networks) is an essential element of the community organising process (Gilchrist 2019).

The power of decision makers via the EEC Act 2018 committees has a major influence on land use change and relocation issues in some areas of the CCS, such as Nong Teen Nok in Ban Pho district. Therefore, the other significant contribution to answer the research question relates to the value of power mapping of the EEC project at Ban Pho district (Figure 19) which identifies influential and non-influential actors and relationships among them (Section 5.3).

Integrating the theories of social networks and social capital illustrates the process of construction and negotiation of power between lower-power groups (such as local people) and a higher-power groups (such as the military government). This process of community building and community organising to find a solution to their problems (MacLeod & Byrne 2012), means they are trying to influence policy from the bottom up.

Overall, building social networks in Ban Pho increased more than Bangkhla because of land expropriation problems. This led to more activities and community organising in the Ban Pho area. This comparison of social networks and social capital in the two areas responds to research question two about the impacts of the EEC project in relation to water and food security in both districts (see Table 10, below).

Table 10: Comparison of social network and social capital between local communities in both districts

Finding	Ban Pho	Bangkhla
Building social networks via increased groups and network building activities.	Very much during the data collection period.	Not as much during the data collection period, but a history of strong networks that relate to protesting against the power-plant construction.
1) Group: -Bonding Social Capital.	-Two new groups were formed because of the ICD project.	- Not as much during the data collection period but seen through civil society networks in Bangkhla.
-Bridging Social Capital.	-Trying to connect to other groups who have similar issues.	-Supporting other districts.
-Linking Social Capital.	- Linking to politicians and decision-makers.	-Not found, but a history of strong networks that relate to protesting against the power-plant construction.

Finding	Ban Pho	Bangkhla
2) Network Building Activities -Environmental Activities. -Educational and communication Activities. -Activities for sharing information with public and media.	-Picking up garbage, water testing and planting trees - Environmental education program by a company and a learning culture at the old market beside the river. - Very often because of ICD project.	-Bird watching. -Campaigning for a Ramsar site. -Not much.
Social Capital in Community Organising.	Active.	Not found but it was discussed through their history of protesting the power-plant construction.
Power Map.	Using politicians and personal connection linking to decision makers.	N/A

The findings demonstrate that social networks with high degrees of social capital are assisting local residents to modify the policy through community organising processes. In the next chapter, the discussion is about how residents are coping with and adapting to policy implementation when they cannot influence or modify the policy directly. It explores alternative ways to adaptation focusing on residents' assets and capacities to progress sustainable development.

CHAPTER 6

OPTIONS FOR ADAPTING TOWARDS MORE SUSTAINABLE DEVELOPMENT

6. Chapter Overview

This chapter addresses Research Question RQ3, 'What alternative approaches could be used to ensure more alignment with sustainable development objective'. Chapter 5 explored how social networks of local communities are responding to the impacts of the EEC policy, and specifically considered livelihood relationships with water and food security. It drew on community development practice-based theories and social capital in community organising and political opportunity structure, as affected residents sought to influence and modify the policy at the macro level. This highlighted how residents are responding to a perceived conflict between government and themselves and if the policy can be modified.

This chapter focusses on alternative approaches for adaptation based on perspectives of people in both districts. Drawing on two community development theories, asset-based community development (ABCD) (Kretzmann & McKnight 1996) and participatory development practice (Kelly & Westoby 2018), this chapter analyses and explores what new ideas emerged from the data, for solving issues, including ideas of adaptation for transition to sustainable development as communities prepare for the implementation of the EEC in their areas.

To answer RQ3, a thematic analysis of interview transcripts, local documents such as a local history book, observations and the consensus conference outcomes found patterns emerging from each data source. This led to data interpretation, and further theorising.

This chapter is divided into five sections. Section 6.1 discusses ideas for individual adaptation, coping and alternative approaches to improve sustainable development (Section 6.1.1). The centrality of food safety security (Section 6.1.2) and facilitating tourism (Section 6.1.3). These are all ideas from local residents they consider will contribute to sustainable development.

Further, building environmental capacity through water monitoring and management and environmental conservation (Section 6.1.4) are considered crucial to mitigate negative impacts on the food system and food security in the vein of theorising by Freedman & Bress (2011) and Li et al (2016).

Section 6.2, community capacity, describes capacities of local communities in the two districts as assets. This section reports on participants' perceptions and assessment of strengths in their physical resources and capacity (Section 6.2.1); and social capacity (Section 6.2.2) that will support local residents in adapting and solving problems in their communities that stem from the EEC.

Section 6.3 further explores the theme of participatory development practice for adaptation, which relates to collaboration and planning for sustainable development at the micro level through sharing, raising awareness and learning about local assets (Section 6.3.1). This section shows the process of building relationships to developing an entire community (Kretzmann & McKnight 1993) and the process of participatory developmental practice through good dialogic practice that responds to development issues (Kelly and Westoby 2018). Moreover, the processes for encouraging youth groups for building a community vision and planning is deemed crucial to the community's future (Kretzmann & McKnight 1993) (Section 6.3.2). Collaboration amongst stakeholders in the local areas are discussed as a component of community development (Section 6.3.3).

Section 6.4 discusses limitations of communities' efforts and makes suggestions and alternative approaches for sustainable development to improve the efficacy of the communities' adaptation under the EEC policy. Finally, Section 6.5 provides a discussion and conclusion.

6.1 Adaptation for Sustainable Development

Emas (2015) discusses that "the overall goal of sustainable development (SD) is the long-term stability of the economy and environment; this is only achievable through the integration and acknowledgement of economic, environmental, and social concerns throughout the decision-making process". In response to the 'sustainable development' terms used in government policy, participants provided ideas about what they can do to achieve sustainable development as they individually adapt and cope during transition of the EEC implementation

(Section 6.1.1). These included themes about the centrality of food safety and food security (Section 6.1.2) and tourism in the local areas (Section 6.1.3). Building their environmental capacity was also discussed and shows their concern and efforts to collaborate to protect the environment in the long-term (Section 6.1.4).

6.1.1 Ideas for Adapting and Coping

In the interviews, participants identified ideas for adapting and coping to improve their livelihoods and income during EEC project implementation. Farmers in Ban Pho and Bangkhla suggested the need for storing water, annual rice planting and reducing water usage to improve agriculture. They said that food product diversification, finding markets, and using smartphones to sell the products are opportunities to improve their income. Changing jobs was also seen as a way to adapt. For example, BP 001 shared an experience about farm adaptation. She had talked to other farmers in her village when they heard about Inland Container Depot (ICD) issues (see Section 5.1). Although all farms are not yet facing potential impacts, many discussed how to adapt individually.

A) Adaptation through water storage and reducing water usage.

Water storage was seen as participants' first choice for their farms; something about which they can do by themselves (BP 001, BP 017, BP 020, BK 010, BK 013). Another idea was to reduce the cost of production, planting rice only once a year is an option to reduce the risk of losing the crop because of lack of water (BP 001). Likewise, a fruit farmer suggested decreasing water usage by reducing vegetable planting and maintaining melon plants for sale (BK 010).

B) Adaptation through food diversification and collaborative marketing.

These concepts were mentioned by nine participants from both districts to provide income out of season and to sell products to tourists (BP 005, BP 007, BP 011, BP 019, BK 004, BK 005, BK 006, BK 010, BK 013). Some referred to cooperation and community enterprises being developed by local residents for selling their products, sharing ideas and benefits among members of agricultural and fishery-related groups (BP 007, BP 011, BP 020, BP 025). Others indicated that food distribution and accessing markets are essential to provide a benefit to producers (BP 008, BP 016, BK 010). As one participant stated:

“I had trained local residents to find a market for selling products...We think that we can send our products to other districts and provinces near here easier [because of road improvements]. As well, we tell residents to consume our products in our area too. It will help the producers to get more income” (BK 010).

EEC implementation requires adaptation to reduce potential impacts on agriculture. Locals are increasingly using technology showing they are adapting to increase their income.

C) Adaptation by using smartphones.

Smartphones are tending to be used to exchange knowledge among friends. For example, one participant referred to sharing information about best practice for organic fertilizer use through the Line Application (BK 010). Others suggested they can increase income by cutting out the middle-man in trading so customers can receive fresh products direct from the producers. For example, online selling through Facebook and the Line Application builds the agricultural market networks and tends to be increasing in popularity (BP 025, BK 010, BK 013).

“Our farm has an online market on Facebook and Line Application. Some TV programs come and help us to promote our farms. I also use a smartphone to control the water system on my farm because I do not have much staff, fertiliser or water. I use my mobile phone to control. We adapt to using technology here” (BP 025).

While the local residents suggested that using technology for adaptation is helping them to gain income, changing jobs or creating alternative jobs was also discussed.

D) Alternative jobs and changing jobs.

The policy implementation, associated land acquisition and industry development has meant that some participants have had to adapt their jobs to ensure their livelihoods (BK 003, BK 021, BK 013, and BP 009). BK 003 explained that industries have led to environmental changes. Much dust falls on his prawn farm and impacts his production; therefore, because the production is at a high risk from pollution, he is adapting to plant a variety of vegetables and rubber trees.

Others are taking advantage of being able to further develop their land by adding a shop or rental accommodation, because under the EEC policy, agricultural land can also now be used

for residential purposes. Those with land nearer the main road hope to increase income if they sell direct to passing markets or develop (BK 012).

Also related to the change of land use, another participant lost her job because the farm she was renting was sold:

"I changed my job as a nipa-roof maker because the landlord sells her land to an investor. I do not have an area to cut the nipa leaf for making the roof. [Nowadays she does not make the nipa- roof]. I have to drive a boat longer than in the past to find some palm seeds and make as a dessert for sale. I do not blame the property owner because the price of land increases was very high. If I was her, I would do the same" (BP 009).

Community members were aware of their need to adapt and proposed ways of doing so sustainably through changing or supplementing livelihoods. Meanwhile, members of food production groups had ideas that the CCS areas should be central to food safety and food security.

6.1.2 Adaptation by Focussing on Food Safety and Security.

Participants highlighted that the Thai eastern provinces, including CCS, are agriculturally productive areas and famous for fruit farms (BP 006, BK 018). They were concerned about maintaining food safety and ensuring that processes of food production do not harm people who eat the food grown. This concept covers the use of chemical fertilisers and chemical contamination in food products, which were raised as issues at the eastern network meeting. The food production members were concerned, because they get the majority of their income from food production (prawn farms, coconuts, mangoes and melon farms).

In a network meeting, an alliance was observed between a civil society network and a food network committed to support residents. It has advisors, and education assists farmers to adapt to organic farming and reduce use of chemicals to improve food safety. Their mission is to support and work with residents who are interested in food safety. They identified that this would help reduce the risk of health problems in children and patients. They emphasised that hospital patients should have safe food, not contaminated by chemicals. This network is also campaigning so that younger generations will come back to work on organic farms with their parents, rather than taking jobs in cities. The members educate farmers in farm

management and certified food safety. The food safety members have requested that safety food processes are included in local government and town planning documents and demands that the government clarifies its organic food policy.

To prepare for long-term development of food safety, members of this network are communicating via social media. They have set up a database of organic farm groups identifying what they produce and sell. Members are updated with news and information, about food production development in the EEC areas.

This discussion has shown that the food-safety network, as it connects to wider civil society, is crucial for generating adaptation to sustainability by enhancing food production and economic development. This is significant owing to direct foreign investments and growing economic development in the Southeast Asian countries (Cheok 2017). It shows that local residents, in looking for a long-term solution for food security, are preparing to contribute to an economy based on sustainable development. This can be seen as supporting the SDG 1 No Poverty; Goal 2 - Zero Hunger; Goal 3 - Good Health and Well-being; and Goal 12 - Responsible Consumption and Production, (United Nations 2015).

These concerns and remedial approaches are supported in the literature. Economic development and rapid industrialisation will lead to negative impacts on the food system and food security (Freedman & Bess 2011; Li et al. 2016), as seen in farms in the eastern provinces at high risk of food contamination. Rapid development in China, for example, has found that food safety and food production are at risk of contamination from toxins due to industrialisation (Gandhi & Zhou 2014).

Other ideas about adaptation which provide opportunities for supporting local incomes include tourism.

6.1.3 Adaptation by Supporting Tourism in Local Areas

Participants suggested that tourism is a good idea for sustainable development because of the attractiveness of the area with many beautiful mountains, beaches, a variety of fruits and food are produced, as well as cultural places such as temples. Many participants and the eastern network meeting referred to tourism groups for developing the local economy, and stressed the importance of protecting the environment (BP 002, BP 017, BP 019, BP 020, BK 003, BK 007, BK 009, BK 010, BK 012, ES 001 and CC).

“In terms of economic development, people come to Ban Pho to watch fireflies and travelling in nature. They do not come to see buildings. Thus, we must protect our environment and the river rather than constructing warehouses or ports. Tourism is an opportunity for income and jobs to local residents...” (BP 002).

Supporting tourism entrepreneurs to have freedom to design programs by themselves was also seen as important. However, they also acknowledged they cannot develop tourism opportunities in isolation, and suggested they must collaborate with local governments, governors, and universities in their provinces. The eastern network meeting formed a tourism interest group, so they can support each other (BP 002, BP 017), communicate and update information among seven provinces in the east of Thailand. They agreed to do so through Line group chatting, and to create a web page.

Tourism is seen as crucial for adaptation to sustainable development as supporting Sustainable Development Goal 1 – No Poverty. Also identified was the need for building environmental capacity and knowledge through water monitoring and management.

6.1.4 Adaptation by Building Environmental Capacity through Water Monitoring and Management

Participants stressed that water is crucial for everyday life and food production from agriculture and fisheries. They acknowledged the importance of access to water, its quality assessment, and its management as imperative for sustainability. Providing good quality accessible water to everyone leads to the sustainable livelihood of residents and is a part of Sustainable Development Goal 6 (United Nations 2020). Typically, local residents used local knowledge for water monitoring through appropriate biological indicators with butterflies, fireflies, birds and aquatic animals (BP 006, BP 013, BP 013), and some people found the technical support in environmental monitoring from the government helpful (BP 001). Other participants suggested that local residents and civil society are collaborating with the irrigation department in the CCS (BK 017, BPK 001) through water monitoring by local volunteers along the Bangpakong River (BK 005). This implies that collaboration among communities is needed for water-monitoring activities because the water in the river flows through many communities in the CCS.

A) Water monitoring.

Contributions by local residents who do water monitoring along the Bangpakong River showed how this work helps to build their capacity and to maintain the water resource for sustainability. They said that although they have not participated in water monitoring with any organisations directly, they examine the colour of the water to assess its water quality (BP 001, BP 003, BP 007, BP 009, BP 010, BP 013). Employment of local knowledge and use of appropriate biological indicators was seen as useful because the residents do not need to buy any equipment for testing the water, which means lower costs for food production. For instance, some water monitors look at animals and the environment around the areas (BP 006, BP 018, BK 013):

“If we look at the environment around my house, there are butterflies, fireflies and some animals come near my pond and canals. It means the weather is ready [for fish breeding]. That’s when we can start pumping water and do fishery in our farms” (BP 006).

When they do their water monitoring, they follow the water reports from the irrigation department at the Line Group Application, which is updated every day (BP 017, BK 005, BK 006).

“The irrigation department reports the water quality every day through the Line App. For example, they tell the salty water level, the percentage of acidity and alkalinity in the water. It shows where are the brackish water and salty level in the Bangpakong River or Ban Pho [district]. Sometimes they report as a graph. This information is reported to the provincial office. Then, the office sends to the districts which have the local leaders such as a head of sub-districts or villagers in that group” (BK 006).

Typically, the irrigation department monitors the water and reports. However, to assist with the adaptation process, volunteer civil society groups and local residents are engaging in water quality monitoring with the irrigation department. This ensures their views are being heard.

Other participants have joined with government or environmental clubs to do water assessment activities in their community. Most of them were invited to participate in the

assessment activities because their jobs relate to water quality assessment, and they have to report to their organisations (BP 012, BP 008, BP 022, BK 001, BK 002, BK 008, BK 009, FT 002). This is significant because the water quality assessments are reported to the watershed committee of the CCS provincial office and demonstrates transparency of water testing from local residents, business sectors and local government.

Non-water monitoring participants (15) report that they follow the water monitoring information from the irrigation department very often, because it is crucial for their livelihoods (BP 002, BP 005, BP 009, BP 016, BP 017, BP 019, BP 021, BP 024, BK 003, BK 004). Other participants attend meetings of the watershed committee of the CCS provincial office to ensure their views are heard (BK 003). These meetings are attended by civil society, local business and local government representatives.

Formal water quality monitoring and local knowledge (citizen science) for environmental assessment are important and builds the environmental capacity of the communities.

B) Water management.

Good water management is crucial to food production in agriculture and fisheries, and water supply is vital for all as the CCS is a main food production area. Thirteen participants suggested that water management is the most essential issue for long-term development because it is a crucial factor for their livelihoods. A participant who has a role to implement government policy for distributing water suggested some reasons for changing water management.

“The economic change leads to a changed irrigation system too, because we have to manage for various purposes and demand of water users, such as using in households, agriculture and industrial factories. Industrial demand in CCS is not much compared to other provinces in EEC areas. However, the type of water is different in user groups. Our priority is water production for consuming and drinking. Nowadays, we have to adapt for supporting EEC project too and CCS is focussed on being a food production centre and education, so we have to change some things” (BPK 001).

Other participants suggested that recycled water should be done for water management in the long term (FT 003, BP 008, BP 025). Another idea proposed was that the government

needs to listen more to the local residents in terms of water management (BP 009, BK 002, BK 004) because they have local knowledge about what will work best.

Many issues were raised by local residents where they believe they have to negotiate more with the irrigation department. For example, some argued the water system has to connect and distribute to everyone equally (BP 021, BK 013). Other participants suggested that residents should monitor water quality (formally or by knowledgeable observations) and engage with local government, because they play a crucial role communicating across residents and factory owners in area (ES 002, BK 001). One participant said water management should be integrated with a range of processes:

“The Office of the National Water Resources cannot do much in the local area. Thus, I think, the local governments should have more participation in this issue because they have a budget and human resources at the local level. In addition, they understand local contexts and problems which will be a benefit to everyone” (BK 008).

Participants all recognised the importance of an integrated water management system and engagement with a range of stakeholders who can monitor water supply through the irrigation systems in the CCS. It was suggested that as the EEC policy is enacted, local government should support a transition to sustainability through supporting communities with water monitoring and management for food production in the long term. The monitoring can be seen as supporting the SDG Goal 6- Clean Water and Sanitation (United Nations 2020). These viewpoints seem to emphasise that if there is good water management, it will tend to be positive for well-being in communities (Cook & Bakker 2012; Lautze & Manthritilake 2012; Sousa Júnior et al. 2016) and also to work towards SDG Goal 3 - Good Health and Well-being (United Nations 2015).

Lessons

Working independently or in alliances, adaptation and alternative approaches are being undertaken by CSS residents in the CCS. The participants shared ideas for adaptation of farming practice and coping with EEC implementation (Section 6.1.1); preparing for the centrality of food safety and food security (Section 6.1.2); and tourism in the local areas to support economic development (Section 6.1.3). Building local environmental capacity is essential for supporting the ideas of adaptation and alternative approaches to sustainability in relation to food and water security (Section 6.1.4).

Overall, ideas about adaptation and sustainable development were shown to be related to concerns about the environment. Furthermore, concerns were raised about livelihood and careers. The local residents believe they can rely on and build on their assets, showing community capacity for adapting.

6.2 Adaptation through the Lens of Community Capacity Building as Assets

Assessing community capacity helps people to realise their assets and capacity to respond to emerging issues. This section discusses how residents are adapting by mapping their physical resources and capacity as assets (Section 6.2.1), and specifically in terms of agriculture (Section 6.2.1A.), fisheries (Section 6.2.1B.), tourism (Section 6.2.1C.) and other infrastructure (Section 6.2.1D.). These mapping processes demonstrate that residents are utilizing their capacities and assets as individuals, civil society associations and institutions (Kretzmann & McKnight 1993).

Section 6.2.2 discusses residents' social capacity as assets, and how residents are building relationships for mutually beneficial problem solving within the community (Kretzmann & McKnight 1993) This social capacity building is conducted through social support (Section 6.2.2A.) and by drawing on the social institution of religion and faith beliefs (Section 6.2.2B.).

6.2.1 Physical Resources and Capacity as Assets

The theme of physical capacity was referred to as a strength of resident communities. Participants from both districts assessed strengths (or potential opportunities) to progressing

ideas. Twenty-two interview participants in both the Ban Pho and Bangkhla Districts confirmed that the strengths of CCS areas included abundant food production from agriculture, fishery and the environmental amenity for tourism. The so-called “comfortable” infrastructure, such as roads and water-supply development are physical assets, viewed as another apparent strength in the districts.

For example, an informant commenting on both districts stated that:

“If we talk about community capacity, I can say that both districts are abundant in natural resources because they are nearby the Bangpakong River. Our land has a lot of water for agriculture. Both districts are in the good watershed areas of the Bangpakong River, which are important for conservation. Bangkhla [has] a variety of agriculture while Ban Pho [has] the fishery. It is a shame that they [the government] have not seen these strong points. I do not deny the developed project [EEC project] but the project must not destroy any areas particularly the best areas of food production because it is limited” (BK 017).

A) Agricultural assets.

Interview participants confirmed that the CCS is one of the best areas for food production in Thailand because a diversity of crops can be produced throughout the year, and provide the local residents with a variety of jobs for paid employment. Agriculture was deemed to be a strong asset of both Ban Pho and Bangkhla (BP 001, BP 002, BP 005, BK004, BK 005, BK 006, BK 007, BK 008, BPK 001). Participants referred to *Nam Dok Mai* (mangoes) from the CCS as being famous for their taste because of the good soil and the natural resources around the Bangpakong River (BP 001, BP 002, BK 004, BK 006, BK 010, BK 017).

“The strong point of our communities [is that the CCS] is abundant. We can do a variety of agriculture. We can plant many things. For example, mangoes (Nam Dok Mai) are good and famous here as we know. Not only agriculture but also fishery is good too. These help farmers do many things in the whole year and they have alternative jobs. We have no need to do only one thing on a farm and get an annual production similar to other provinces but we can do both (farm and fishery). Oh! We can do livestock too. It is completely in one area” (BK 010).

Because of the special growing conditions not found elsewhere, participants emphasised that CCS agricultural land should be seen as a unique and a valuable hub for food production and opportunities for local residents to develop and own their businesses. Improved use of this asset is how some participants believe sustainable development can be achieved. Moreover, the income generated can be distributed amongst a variety of local groups, offering employment opportunities beyond the industrial sectors (BK 017).

B) Fisheries as assets.

Interview participants also explained that fisheries are big business in both districts due to the many fishery farms (see Chapter 3, Table 2). The fishing and prawn industries are crucial to local residents' livelihoods. For example, fisheries with good natural water sources support the farming of barramundi, snapper, crabs and prawns (BP 002, BP 006, BP 007, BP 010, BP 017, BK 003, BK 005, BK 010), as well as breeding of barramundi and the tilapia (BK 017, BP 006, BP 017), supplying 20 per cent of fish products across Thailand (BP 017). Additionally, participants reported that because of its brackish water, the taste of river prawns in the Bangpakong River is special and more delicious than other areas:

"The taste of prawn in the CCS is special because of water. The taste of river prawns in freshwater is not too good. If you go to Ayutthaya province and have prawns there, the river prawns from the Chao Phraya River is not the same as here [the Bangpakong River] because of the freshwater through the whole year. However, the taste of river prawns here is stickier because of brackish water. It is more delicious. No doubt, why many prawn farms are in the CCS" (BK 004).

A good clean environment is an asset that contributes to fishery sustainability, which is a main source of income for local residents, but it also has implications for tourism-generating income.

C) Tourism as an asset.

The natural, production and cultural resources of the Districts were identified by interview participants as enabling tourism (BP 002, BP 013, BP 017, BP 019, BK 008, BK 011, BK 012) within a peaceful environment (BP 019). One asset is the many Lyle flying foxes at the Wat Pho, a temple in the Bangkhla District, which is a tourist attraction providing local job

opportunities and income for taxi drivers, restaurateurs and souvenir shop owners near the temple (BK 011). Fireflies and a variety of birds are other environmental assets in Ban Pho along the Bangpakong River that could also be of interest to tourists. Fireflies are not seen in many places in Thailand, and that they exist demonstrates the existence of a good environment.

“You come here [Ban Pho]. At night, you can take a boat along the river to watch the fireflies at Bangkrod [sub-district in Ban Pho]. You will see birds and some can eat crabs. We call ‘Nok IE JAS’ [local name for bird]. You can see many birds here. This area is still abundant” (BP 013).

In addition to agriculture, fisheries and a good environment for tourism being considered strong assets for CCS residents, participants indicated that infrastructure is improving enabling better use of the assets.

D) Infrastructure as assets.

In interviews, participants considered the current level of road and water supply infrastructure in some areas of the districts as a community asset because people benefit from the convenience of transportation and water supply. Residents also perceive that infrastructure in the Ban Pho and Bangkhla Districts will be better in the future, supporting the people and local economy (BP 012 and BPK 001). For example, BP 012 commented that infrastructure will influence the local economy well into the future.

“Now, roads in Ban Pho are good and we can go anywhere very easily. As well as canals were linked with the river [Bangpakong River] as a network. These are good for our livelihood” (BP 012).

In terms of community assets, this discussion can be seen through physical assets lens highlighting crucial assets. The communities’ environment and the location being a wetland, means the mangroves are abundant and a good habitat for a variety of animals. This is what Kretzmann and McKnight discuss as “mapping assets” (1993) and can be seen as participants mapping their physical capacity based on assets. They are showing a commitment to mapping their entire community’s assets, which is a way toward community mobilization (Kretzmann

& McKnight 1993). In addition to the areas' physical capacity, many participants highlighted the importance of the social capacity of community members as assets.

6.2.2 Social Capacity as Assets.

Interview participants discussed social capacity in terms of social support, religious beliefs and faith. Social support became a matter of importance when local residents faced common concerns and they indicated they will help each other to solve problems. They also highlighted their religious beliefs, which provide guidance for their actions to create relationships of reciprocity and generosity, which result in a peaceful society.

A) Social support as assets.

Social support became an important topic for participants as they referred to their communities as the place in which they live, help and look after each other and their relatives for long lengths of time (BP 006, BP 012, BP 014, BP 017, BP 021, BK 005, BK 008, BK 017, BPK 001, FT 002). The cultural norm of helping and supporting each other when they are facing difficult times fosters their bravery to fight injustice and to protect their lands if they need to (BP 012, BP 006). This social norm of mutual social support is an asset characterised by understanding, compassion and sympathy among people. Participants believe this leads to peace in communities, when commenting that local residents in the CCS take care of each other and have loving, peaceful relationships (BK 005, BK 008, BP 014).

"Our community has volunteer activities for taking care of each other. We did many projects and received a reward last year. For example, we have local groups for developing quality of life such as taking care children and bedridden patients in our villages...We also have a funding for supporting our villagers for education and patients...This is a strong point of our community. We take care each other" (BK 005).

These points indicate that the social capacity of community is viewed as a strong asset and linked to their social support of each other and reinforced by religious institutions. There is an inextricable link between behaviours and people's beliefs and faith.

B) Religious beliefs and faith as assets.

Interview participants reported on the perceived strength that their faith brings in encouraging people to work together because they believe they are the sons and daughters

of the Buddha So Thon. Despite some community leaders having conflict and not talking with each other, participants stated they would work together for the annual Buddha So Thon event as this leads to the unity of their communities. Their perception is that local residents benefit when they work together (BK 005). “The Buddha So Thon” temple is the centre of a strong spiritual belief system among people in the CCS (BP 012, BP 017, BP 018, BK 005, BK 012). Because community events are held in the temple, they support each other by making merit with Buddhist monks.

Culturally, Buddhism is a strong belief for Thai people. A monk can be an emotional and social support of people in Ban Pho, especially during conflict among local residents because of ICD issues and some people wanting the development and others not wanting it (BP 002, BP 004). Further, there are many temples providing avenues for public worship and the Buddha So Thon statue is a symbol of the CCS province and the Bangpakong River. Residents believe that the Buddha So Thon floated along the Bangpakong River before stopping near the location of the temple. They believe that the Buddha will protect them, will lead them to happiness and success. The Buddha So Thon is at the centre of people’s faith and many people pray that their wishes will come true (BP 018, BP 017).

“If you are not bad, the Buddha So Thon will give you [anything that you pray for]. I have prayed for my business of selling fish and bringing them to a truck while it rains. If it rains, all of the fish will die because the weather and water temperature changes too quickly. Thus, I prayed while I was transferring the fish to the truck. Then, the cloud was gone and I finished transferring. After the truck had gone, it started bucketing down. I have to give 1000 eggs to the Buddha So Thon. He gave me good business so now I must give him back. I am a representative of bringing the Buddha So Thon from the river every year in the cultural annual event of the CCS” (BP 017).

These comments suggest that Buddhism provides the foundation for the social capacities of people in their communities, which leads them to work together and do things that will benefit themselves and their communities. This can be interpreted through Kretzmann and McKnight’s (1993) assertion of the importance of building relationships. They argued that when communities discover a new set of expectations taking root, people come to believe they are capable of being effective problem-solvers. In this case, the social support and

religious beliefs and customs are helping local residents to develop their capacities and adapt to the changing conditions in their local areas. The idea of building relationships using participatory development methods was also seen as important processes for adaptation.

Lessons

Social capacity, that is, the social support, beliefs and faith, is an asset of communities and relates to physical capacity as seen through people's cultural activities in temples and at the river. These lead to adaptation about the environment, the way of life and taking care of communities to be peaceful areas.

6.3 Participatory Development Practice for Adaptation

The aim of sustainable development relates to the effective management of natural resources, balancing economic growth, and the ability to recognise cultures and societies in the pursuit of improved quality of life in the long term, without compromising the ability of future generations to meet their own needs (United Nations, 2015). Sustainable development was a topic for discussion amongst participants because they care deeply about where they live and its future. Adapting to sustainable development can take many forms, and how communities are adapting can be seen through the lens of participatory development practice (Kelly & Westoby 2018). This was manifest when residents employed dialogical conversations with others to learn about each other's perspectives, and especially in response to their vision for sustainable development.

When referring to adapting for sustainable development, three areas emerged including: raising awareness about community concerns (Section 6.3.1); engaging young people for developing community (Section 6.3.2); and collaboration among stakeholders for greater sustainability (Section 6.3.3).

6.3.1 Raising Awareness about Community Concerns

To develop an understanding about sustainable development communities needs to engage in awareness-raising processes. This starts with good communication so they learn together about the issues they face, and then can plan to respond to these together.

Raising awareness about sustainable development is a role for everyone. Participants highlighted (BP025, BK 013) how this was important for family members (BP 018, BP 014), neighbours (BP 009), local leaders (BP 001, BK 013) and teachers at schools (BP 022), and use of communication through a variety channels such as social media (BP 006) and TV programs (BP 010). Participants stated this can take many forms and across many subject matters, for example:

"I gave them about fishery information to TV programs such as Thai PBS and CH3. They come here and report news that what happen in this area [of the Bangpakong River]. I do not use Facebook for sharing any problems...." (BP 010).

Other participants raised awareness in many different ways, such as employing the arts and portraying local history of the river through a book and school performance activities (BK 007, BP 025). Building and encouraging community awareness was also done through volunteer activities to plant trees and deal responsibly with garbage (BP 018, BK 007, BK 014). It starts within the family, and expands to neighbourhood and beyond.

"We have to raise awareness ourselves for taking care of community in the long term. Family is the starting point that we will do. If I have a family, I will tell my family members such as keeping clean and garbage issue in my village. I do at my house first and help neighbours taking care and keeping clean around our areas and help each other" (BP 018).

A) Communicating community issues.

Participants highlighted that communicating for comprehension is important when there are issues of collective concern (BP 022, FT 002) because the community cannot be taken care of by only one person (BP 022). This participant stressed that it takes a collective, including residents across the generations, to affect change.

"...Only one person cannot take care of the whole community, so good communication for increasing public awareness in various groups is important in the long term because they have to think to the next generation in the future" (BP 022).

Social Media, for instance, is a channel for sharing community issues. One participant highlighted that journalists are following them on social media to monitor the local problems (BP 006). This suggests they are an important ally to raise awareness of issues more widely.

“I share the community problems on social media such as issues of Nong Teen Nok. If you go to my Facebook, you will see some journalist follow me. They are monitoring the local issue” (BP 006).

B) Learning about local communities.

According to interviews and observations, learning about local areas aims to increase the sharing of historical and heritage-related subject matter such as food, culture, farming and animal husbandry practice. Enabling a learning culture by harnessing local wisdom links to cultural tourism and potentially more sustainable development. For example, the local residents created an historical account in a book of 100 years of the Ban Pho District for education in the local schools and communities (BP 002). Connecting the older and younger generations to understand each other more was also seen as a crucial activity. For example, these processes enabled younger people to learn about the history of the old market and the way of life in Ban Pho. The book showed the mixed cultures of Chinese and Thai people who trade along the river in the CCS. Moreover, some local residents in Ban Pho bring young people to learn and talk to older people who teach about growing, harvesting and preparing traditional food, harvesting prawn, catching fish or animal husbandry in the farms near the old market areas beside the river (BP 002, BP 007).

The potential for cultural and eco activities was proposed by a civil society member in the CCS as a campaign initiated via Bangpakong River conservation. Through performance about its history and beauty, they campaigned for the river to be a Ramsar site (an internationally heritage listed wetland). If the river is listed, it will be protected. Likewise, bird watching activities with students are a part of this campaign in many schools and seen as important for the education of the younger generation. Because the CCS has a variety of birds along the Bangpakong River, this helps the young generation know its history and generates appreciation as a crucial natural resource for local communities.

Another example about community learning processes was provided by a youth group in the Nong Teen Nok area showing the history and culture of Christians and Buddhists. Because

Thailand is a multi-faith society, people need to be able to live together and understand each other.

Communities are communicating with each other increasing cultural and religious understanding and their shared history, in the hope that by raising awareness they will be able to protect and sustain their communities. Kelly and Westoby (2018, p. 59) argue that at the heart of participatory development practice is the core principle of 'being in solidarity with'. This takes place through dialogical processes that enable reciprocal connections (Kelly & Westoby 2018) and offers hope for adaptation to more sustainable development as per SDG Goal 11 - Sustainable Cities and Communities (United Nation 2015).

Much of the dialogue amongst the locals is related to the environment, water quality and management for food production in the CCS areas. The sharing of ideas in public forums shows a critical function of communities as they share information when new and emerging situations arise (Levkoe 2015; Manning & Freeman 2011).

Sustainable development in communities can be supported by communication that increases understanding and raises awareness among family members, friends, and teachers at schools. Social media and TV programs were proposed as channels for sharing community issues with the wider public. These processes are crucial for increasing community capacity because such communication connects people and develops relationships of trust (Kelly & Westoby 2018). This could lead to adaptation for sustainability in the community and to mitigate the impact of the EEC.

Processes of learning through activities are contributing to and encouraging young people to understand their local areas. Engaging young people in participatory developmental processes also helps with sustainable development.

6.3.2 Engaging Young People as the Future

The following sub-sections discuss the role of young people and ideas about young people in terms of their significant contributions to adaptation and sustainable development. Kretzmann and McKnight (1993) argue that when mobilizing communities, it is important to convene as broadly representative a group as possible for community visioning and planning. They suggest this because all perspectives are important when considering a community's

commonly held identity, and without it the hard work of regenerating community is difficult to sustain. In this case, Thai young people can play a vital role in such processes.

This was supported specifically by eleven participants who referred to encouraging young people when developing a vision and plans for the long term. There was concern that in the future young people may not be able to continue farming or fishing in the same way as their parents have done. Additionally, participants were concerned that young people tend to work in the industrial sectors rather than agriculture (BP 012, BP 016, BK 005, BK 011, BK 013) and this will have implications for the future of farming. Thus, raising awareness and working with young people, such as the young farmer's group (YSF, see Chapter 5) or other environmental groups in communities or schools was seen as important by participants and should be supported for longer-term development. This was emphasised particularly in terms of the environmental issues in the CCS, because of the implications for water and food security and livelihoods (BP 011, CC). Another participant stated that engaging the youth is important for sustainable development because the younger people will find the need increasingly to respond to a complex society (BP 002).

A) Young people's roles and ideas in the community.

Some participants referred to a time when a few students wrote letters to the Prime Minister about EEC issues prior to his visit to the CCS because they were facing relocation problems and their parents were suffering. However, the principal of their school complained that it is not an appropriate role of a student and may lead to the school losing face in the media (BP 007, BP 011, BP 014).

"A few days after we sent the letter to the Prime Minister someone called to the head of the district and the principal of my sister's school. A teacher called my sister to ask what the issues were. She told the teacher what she did because she saw our parents stressed and she does not want to move away from here. We went to send the letter together. Finally, our parents talked to the teacher" (BP 014).

While there was agreement that young people should play a leadership role, BP 004 thinks that there are currently no young leaders. Some adults do not value young people's contributions at all. Some younger participants said that if the adults were open to provide opportunities for students to share ideas and actions, they are more likely to join in the

community's activities to respond to the EEC. Participants reported that due to Thai culture, such as honouring seniority, the ideas of young people have not been accepted in local meetings because the older people still think that young people have not much experience. Thus, it is difficult for the younger generation to share new ideas to develop their communities (BP 022, BK 009, BK 012, BK 013). For example, this young participant stated:

"It is hard. I had talked about and raised ideas in the local meeting. They always think that I have not experienced much in the area because of my age. Although the ideas are good, it is difficult to get respect from the old people who are conservative. This may be a weak point to development too. Thus, I have to adapt myself" (BK 013).

In Thai culture, if young people do not agree with older people, their seniors, they should not critique in public. Remaining quiet is how they adapt themselves.

Although some participants agreed that engaging with young people in the local community is the key to a sustainable future, respecting young people ideas and finding ways to support their contributions is necessary, especially if adopting the concepts of a commonly held community identity and regeneration as suggested by Kretzmann and McKnight (1993). Nonetheless, other participants highlighted the need for stakeholders to collaborate as they are adapting for a sustainable future.

6.3.3 Collaboration among Stakeholders for Greater Sustainability

So far, the discussion has highlighted the roles of local residents in terms of adaptation and sustainable development. At interview, 21 participants discussed the vital role of collaboration and an aim for greater sustainability. They believe it is essential because it leads to sharing and understanding amongst groups. Collaboration among stakeholders contributes to building greater unity through a range of activities; for example, network activities discussed in Chapter 5. Participants also foregrounded that collaboration should be occurring across various sectors, including local government.

A) Local government's role in collaboration and adaptation.

Participants advised that local governments should take the main role in providing oversight of issues impacting communities (BP 004, BP 019, BK 008, BK 018, FT 002), because it has the appropriate authority and responsibility in the local areas. For example, the local government

should be modelling good practice with regards to their policies, such as solving garbage management issues (BP 004, BP 022). Participants also believed that local government leaders should be role models to support and solve problems for the local residents (BP 021), and support community services by providing agricultural markets for trading in the community (BP 025). There are three factors that the local government should be concerned about:

“Yes, the local government and leaders should be the main organisation in the local areas because they work and live near the locals. The local leaders close up and can represent the local problems. Thus, it would be great if they can collaborate with other organisations such as business sectors for helping and solving together. The factors of problem-solving combine with 1) human resources 2) budget 3) a system for the work and organising” (BK 018).

In terms of adaptation, local government is using social media as a tool to solve problems impacting on communities. This mechanism of communication is a fast and efficient way to adapt (BP 005, BP 021, BP 024, BK 014).

“....In the future, the population will increase.... However, I believe that if we seriously control the issues, factories and people we can live together...Nowadays, we adapt to use technology and social media such as the Line groups-chatting to engage people and they can inform about water issues in their areas” (BP 024).

These ideas confirm that local governments play the main role in communities because they are close to the local residents and they can solve problems in their contexts because they have the authority to do so. However, development has significant costs and participants also emphasised that processes should be supported by the business sector.

B) Business sectors and support in sustainable development.

Many participants agreed that because business sectors have money for investment, and can organise any events and research that will be of benefit to communities, they can solve problems faster than the government (BP 004, BP 005, BK 001, BK 004, BK 006, BK 010). Particularly, participants believed that nature conservation should be researched and business sectors can play the role of investing in research such as saving the river project (BP 004, BK 010). Likewise, some participants asserted that the business sector could work with

local residents in partnership, and because of their corporate social responsibility (CSR), they would get the benefits such as reducing the taxation companies pay to the government (BK 001, BK 010).

“The business sector can involve in community development projects such as saving the river. It is a part of their CSR. They can reduce the tax from CSR activities, and business sector can work and evaluate situations faster than the government. People also can get the benefits” (BK 010).

However, another participant argued that business sectors only engage in CSR activities for their company’s image or promoting their company, rather than action seriously for sustainable development (BK 008).

“I think that a company do not participate in community activities as sincere work. The company staff work as promotion for their company. I do not want to be a tool of them [companies]...they ask me to join as a consultant in their projects but I do not join because they work for their positions and promote the company” (BK 008).

These sub-sections of Section 6.3.3 suggest that participants regard collaboration as an important concept in terms of adaptation to sustainable development. Local government’s role was seen as crucial, whereas there was some ambivalence in terms of the business sector’s role if they are not genuinely committed to sustainable development. However, financial contribution from the business sector to activities that would support adaptation and sustainable development would be a viable approach.

Lessons

Participatory development practice is a process to help people’s dialogical communication and sharing ideas to collaborate on community-led actions.

Collaboration leads on to a range of ideas about the topic and draws on participants’ ideas to further answer the research question about alternative approaches for more sustainable development.

6.4 Barriers and Alternative Approaches for Sustainable Development in Community

From the participants' perspectives, the social assets and strengths identified from an assessment of their communities were discussed in Sections 6.1 to 6.3. These included ideas about community development, adaptation, community capacity and encouraging local residents to work for greater sustainability. However, these ideas have limitations, or can be seen as weak points or barriers for sustainable development. There are many factors that inhibit the community's ability to respond to problems they face associated with EEC impacts. Identifying the barriers is crucial to improve the chances for sustainable development in their communities. Some barriers were discussed in previous chapters and are summarised here, to then make arguments about alternative approaches to these barriers.

6.4.1 Limitations

The limitations emerging from interviews and the consensus conference are associated with various dimensions of community development across two main themes: government systems capacity and personal participation capacity.

A) The government systems capacity.

The government systems capacity relates to the structure of the management systems and the associated levels of authority. For example, this was referred to by participants as unclear communication between the government and local people, particularly in terms of accessing government information (BP 002, BP 018, BP 019, BK 017, BPK 002) (see Sections 4.5 and 5.2), which included online information and internet connection (BP 018, BK 007). Communication was also a factor in terms of time and opportunity for officers to work with local residents (BK 017, BPK 002). Another communication issue related to the local officers often changing their corporate positions (BP 007, BP 010, BP 019, BP 012, BK 003).

Participants spoke of the capacity of the government systems to respond when local residents raise issues. Because of inadequate government resources for incentives or support, there are insufficient resources to share equally among all farmers and fishers, resulting in priority allocation and apparent inequitable distribution of benefits. This is amplified by the low number of local officers who work in the areas, poor land use management and the inadequate water supply system (BP 014, BP 018, BK 004, BK 013, BK 024). Governance issues

were also raised because of gaps in laws and regulations (BP 012, BK 003), law enforcement (BK 009, BK 011, FT 002), inappropriate and disadvantageous land swaps (BP 004, BP 005, BP 006), inequity of water supply between agricultural and industrial sectors (BP 011, BP 016, BK 017), and transparency for preventing corruption (BP 007, BP 012, BPK 002) (see Sections 4.5 and 4.7).

The lack of educational facilities and health services were also raised as a capacity issue in the government system. Participants spoke about the lack of educational facilities and medical equipment as well as inadequate road infrastructure for travel to schools and hospitals (BP 002, BP 015, BK 005, BK 017, BK 018, BPK 002). Lack of community consultation by local authorities was also considered a barrier that impacts on the community's capacity for solving problems that are directly out of their control (see Section 4.5.5).

B) Personal participation capacity.

Limitations associated with personal participation capacity included misunderstanding and conflict owing to rapid development (BP 021, BK 008, BPK 002) and the personal interest and motivation of young people, as well as time and ability for participatory action. Young people felt that their contribution to visioning statements and planning for sustainable development was not respected by people with more traditional or conservative viewpoints (see Section 6.3.2). Nonetheless, participants suggested many alternative approaches that could be used to adapt to more sustainable development in both districts.

6.4.2 Alternatives for Adapting to a More Sustainable Development

Participants raised alternative approaches during the interviews and consensus conference for a positive transition in the long term. Thematic analysis highlighted eight aims: a) to prepare a new approach to education, b) to increase cooperation among local communities, local government and policymakers, c) to build better comprehension processes between government and local residents, d) to enable science-based approaches to decision making, e) to construct and link network groups (see Chapter 5 regarding social networks), f) to ensure law enforcement, g) to ensure communities share the benefits equitably and thus build unity, and h) to create ways to decentralise power to the local community level.

A) Preparing for a new approach to education.

Participants agreed that a new approach to education is crucial in the long term and would help younger generations understand the EEC policy (BP 002, BP 014, BK 002, BK 012, BK 018, BPK 001). Participants argued that formal education of local residents should support technical skills for jobs, such as trade skills or mechanical skills (or the same as TAFE education in Australia), rather than more academic skills such those taught in the political or economic sciences (BK 012, BK 018). However, BP 014 suggested that the government should provide education skills for agriculture because Thai people have a background as an agricultural nation and do not own or relate to those technologies (BP 014). Moreover, teachers should educate students in schools by building an environmental club (BP 002, FT 002). BP 002 emphasised the importance of teaching young people for better understanding of the context, to be sensible and to see when someone or when the regulations are akin to trickery. Such critical thinking will lead young people to understand the changes taking place and enable them to care for their communities rather than agree with top-down government policy or plans, which negatively affect their communities (BP 002, BK 005).

“Schools have to talk about EEC with students for understanding. Students also have to think about what is good and bad. They should know the truth or likely results of what EEC and what they will do to protect their communities. For example, if EEC is implemented, how about garbage management or natural resources or their health impact, they should know. I think education is important and we have to prepare in our community” (BP 002).

B) Increasing cooperation among local communities, local government and with policymakers.

Some participants highlighted that it would seem that local government staff play a crucial role in working between residents and policymakers (BP 002, BP 005, BP 020, BK 014). For example, using Line group chatting to communicate among stakeholders (local government staff, local leaders and agricultural members) can help to explore issues such as agricultural problems and news (BP 005). This activity helps local officers communicate and receive information directly from the local residents, whereas in the past the mechanism was letter writing to the federal government to make decisions. This is faster than in the past (BP 005).

The concept of cooperation was also raised. In the past, and in some areas currently, communities cooperate through “house”, “temple” and “school” or in Thai “*Bann/Wat/Rongreain*”. “House” relates to how one cooperates with family and community. “Temple” relates to how one cooperates in terms of moral teachings by monks. “School” relates to how one cooperates in terms of education and knowledge development. These three notions of cooperation help people to create a sense of balance and thus more peaceful lives and peaceful communities (BP 002, BK 013).

These examples show that participants are concerned about cooperation among residents, institutions and organisations in their communities. Analysis indicates that adaptation for sustainable development should be built through the development of greater comprehension of issues among local residents and government.

C) Building better comprehension between the government and local residents.

Participants foregrounded that the integration between policymakers and the operational teams in local areas should be initiated and maintained more effectively because this will lead to better comprehension between local residents and government. In the past, government policy has been seen as a command, in a top-down fashion. However, participants highlighted that the government needs to acknowledge how policy is being implemented in local areas, its impact, and to ensure information can be accessed easily (BK 008, BK 011, BK 017, CC). Thus, building comprehension is important:

“Understanding is the most important issue for sustainable development. The government has to open its mind and listen to the local residents. If they think and implement the policy immediately, there will not be any benefits. We [local residents and local government staff] have to live together so we have to understand each other” (BK 008).

Such comprehension and understanding of the local residents tend to reduce conflict among stakeholders because the lack of communication between local residents, local governments and the federal government are obstacles for agreement (Baldwin 2017; Lockwood et al. 2009). However, science-based approaches to decision-making were also raised in terms of alternative approaches for sustainable development.

D) Enabling science-based approaches to decision making in development.

Science-based approaches to decision making should be an aim of the policy many participants argued (BP 004, BP 006, BP 017, BK 005).

“The land management should be researched. We should know where land is suited for agriculture and where it should be suited for industrial. For example, for good water management we need to know where the land is high and where it is low. It should be planned. They have some research for draining water. Factories or any constructions should not be close to the floodway because it will affect the local residents. Nowadays, they [the government] just planned and implemented. Then, they solve problems later” (BP 017).

This illustrates that if there is good evidence, backed by sound scientific research, this will increase the confidence of local residents to aim for sustainable development. This was also found in research by Paudel and Tapa (2004). This helped with problem solving, in the case of issues of land management in Nepal (Paudel & Thapa 2004). Because economic development policy affects land use and water security, this can lead to injustices for local residents (Dijk, Rooij & Hilderink 2014; Gasteyer et al. 2012; Rulli, Savori & D'Odorico 2013). It follows that local residents need to develop their own alternative plans that suit their contexts and increase their livelihoods, which rely on good environmental practices. To this end, the aim is to construct and build networks that can help local communities share ideas, learn, apply and adapt together.

E) Constructing and linking network groups for community development.

Social networks were discussed in Chapter 5, and here are raised as crucial for alternative approaches for adaptation to sustainable development. It was considered an important aim because the lack of knowledge and awareness about the EEC implementation was seen as a weak point of local residents in some areas (BPK 002, CC), so building unity is important among local residents in the long-term (BPK 002). This issue was also discussed in the civil society networks meeting, which has met more often since the EEC plan has been implemented in three provinces.

Another aim for alternative approaches proposed by participants is that effective and fair law enforcement should be conducted to control polluters and protect the environment.

F) Ensuring effective and fair law enforcement.

Many participants in the consensus conference were concerned that federal and local governments should ensure fair law enforcement to ensure development is sustainable. Participants discussed their experiences of an alliance in Rayong Province that is monitoring pollution where the law is not effective. Similarly, water pollution is an issue near a social housing project for people on lower incomes. The local government cannot manage the high degree of pollution (BP 012). The laws relating to these development plans apply for five years after their implementation, suggesting that no one in government is concerned with their impact in the long term (BP 016, BP 024, BP 025, BK 002, BK 004, BK 011, CC). One participant said it clearly:

“If the law was enforced seriously, the urban development would be good” (BP 025).

The findings show that the local residents are not confident in law enforcement and fairness due to their past experiences with Thai development plans. This indicates the governance of the policy is problematic. This suggests that in terms of legislation, an opportunity for residents’ participation, and responsibility of stakeholders should be in monitoring legislation in the long term, as argued by Palerm (2000) and Hinte, Gunton and Day (2012). Such demands or aims by communities speak to justice, sharing equal benefits and fairness among stakeholders.

G) Sharing benefits equitably

This aim for adaptation was pointed out in various ways and discussed in the consensus conference (BP 012, BP 020, BP 024, BK 004, BK 007, BK 003, BK 013, BK 017, CC). For example, because the current policy implementation processes mean communities are experiencing the benefits of the policy unevenly, such as new job opportunities or access to newly gazetted land usage, participants argued for negotiation in terms of the proportion of viable employment opportunities for local residents (BP 012, BP 024).

This aim was discussed at the consensus conference in terms of government sharing and opening opportunities for local residents to gain incomes, investigating land use

management, accessing information about how the EEC is generating income, and water usage of industrial sectors (CC). Accessing EEC benefits such as funding to local communities was also seen as important (BK 011, CC) as well as creating markets (BP 020, BP 024), which will lead to job creation for local residents.

“Local trading and livelihood development are good for local residents in the long term. For instance, providing a local market or construction of rice mills are opportunities of local business including local participation because they [local residents] do not have a huge budget for investment in anything big. The local residents will have jobs and income” (BP 020).

Participants were also concerned about inconsistent implementation of land use zoning and an inadequate framework (criteria) for determining agricultural and industrial areas (BP 017, BP 024). Nowadays, the government solves problems on a case by case basis in terms of geographic location. Others highlighted that it is a shame a good location for food production with good water supply is becoming a site for industries because of the policy (BP 017, BK 017) (see Section 4.6.2).

H) Creating ways to decentralise power to the local community level.

The final aim discussed by participants for approaches to adaptation are that power should be decentralised to the local community level. This was discussed in Section 4.7 in terms of the poor processes for public hearings and town planning engagement, lack of transparency and poor inclusiveness. Participants argued that the federal government should delegate power and authority to local government to ensure local residents have input into and manage development ideas to better benefit from the policy (BP 002, BP 012, BK 017). At present, the government system does not appropriately enact its special zone status:

“Many sectors should work together with local government and achieve local management rather than receiving a command from the [federal] government. The special power and authority are centralised and shared with investors rather than local residents. Here [CCS] is in a special economic zone. The benefit should be for the local residents in special zone areas” (BK 017).

The distribution of power and authority were pointed to because if there is a good system of communication and collaboration, it is easier to solve problems because local residents understand their problems and local government better understands the community context (BK 013).

Lessons

The government system and participation capacity were identified as barriers to achieving the SDGs in the EEC areas. Eight alternative approaches emerged as potential ways to achieve positive change.

6.5 Summary and Discussion

This chapter addressed research question RQ3 about alternative approaches for adaptation and coping which could be used to ensure more alignment with sustainable development objectives. A summary of the alternative approaches for adaptation and sustainable development in both districts are similar such as to build water storage and reduce water usage, undertake environmental activities, and build social and physical capacity. However, there are slightly different approaches based on capacity such as food production in Ban Pho which focus on fish and prawn breeding, while Bangkhla has prawn farming. Likewise, the types of tourism proposed for Ban Pho is environmental tourism whereas Bangkhla is cultural tourism. Social capacity in Ban Pho focus on education and youth activities, while Bangkhla aims to support social wellbeing in the village. These can be seen in the Table 11, below.

Table 11: Comparison of alternative approaches and adaptation between Ban Pho and Bangkhla districts.

Finding	Ban Pho	Bangkhla
Ideas for adaptation and coping.		
-Water storage and reducing water usage. -Food diversification and collaborative marketing. - Using smartphones. -Finding alternative jobs and change jobs.	-Discussed in depth. -Discussed to some extent. -Discussed to some extent. -A roof maker changed to be a food seller.	-Discussed to some extent. -Discussed to a small extent. -Discussed to some extent. -A Prawn farmer adapted to plant more vegetable and rubber trees.
Preparing for the centrality of food safety/food security.	-Discussed to some extent.	-Discussed to a small extent.
Supporting tourism in local areas	-Discussed in depth	-Discussed to some extent
Building environment capacity through water monitoring and management.	-Active through youth groups which were supported by a company.	-Active through canals committee which were supported by local governments.
Physical resources and capacity as assets:		
-Agriculture	-Coconut and Rice.	-Mangoes and Rice.
-Fisheries	-River Prawns, crabs and fish-breeding sell.	- Farmed prawns.
-Tourism	-Dolphin and firefly watching.	-Temples along the river.

Finding	Ban Pho	Bangkhla
-Convenient transportation.	-Some areas.	-Some areas.
Social Capacity as Assets e.g. understanding, compassion, sympathy, religious beliefs and faith.	-Discussed to some extent in history education and youth activities.	-Discussed to some extent in social wellbeing support of old people and disability in communities.
Raising awareness: -Communicating community issues. -Learning about local communities.	- Discussed to some extent. - Discussed to some extent.	-Discussed to a small extent. - Discussed to a small extent.
Engaging young people as the future.	- A new youth group formed because of EEC implementation.	- Discussed to a small extent. because few impacts from EEC implementation.
Collaboration among stakeholders for greater sustainability: -Local Government's roles in collaboration and adaptation. - Business sectors and support in sustainable development.	-Discussed to some extent. - Discussed to some extent.	- Discussed to some extent. - Discussed to some extent.
Alternative Approaches for the future:		
1) New approach to education.	-Discussed to some extent.	-Discussed to some extent.

Finding	Ban Pho	Bangkhla
2) Increasing cooperation and building better understanding among local communities.	-Discussed to some extent.	-Discussed to some extent.
3) Building better comprehension between government and local residents.	-No, because of conflict about ICD project and expropriation.	-Discussed to some extent.
4) Science based approaches used by decision makers.	-No, town plan changes to expand industrial areas not based on science.	-Discussed to a small extent.
5) Constructing and linking network groups to participate in community development.	-Discussed to some extent.	-Discussed to some extent.
6) Ensuring effective and fair law enforcement.	-Discussed in depth because of wastewater problems in some areas.	-Discussed to a small extent.
7) Sharing benefits equally.	-No, because of conflict about ICD project.	-Discussed to a small extent.
8) Creating way to decentralise power to the local residents.	-No, because of conflict about ICD project.	-Discussed to some extent by water monitoring activities and canals committee.

Participants discussed enabling environmental and nature conservation for water security for agricultural and fishery sectors, planning for the centrality of food safety and food security areas in the CCS and creating opportunities for tourism that will mobilise the local economy. These provide ideas for potential income for local residents when the EEC plan is implemented and suggest that water security is fundamental to take advantage of economic development opportunities. As a result, building environmental capacity through water monitoring and management is essential. Building environmental capacity would enable CCS communities to contribute to water management, the SDG 6 (Sharing and Accessing Water),

crucial to their lives and livelihoods. This would improve equality and collaboration among stakeholders (Hölscher et al. 2019; Loorbach, Frantzeskaki & Huffenreuter 2015).

Section 6.2 discussed community capacity as assets, described as both physical capacity and social capacity in the communities. The strong points highlighted as physical resources and capacity include agriculture and fisheries, a clean environment, and infrastructure. Assets of social capacity were social support systems, common beliefs, and faith. These were seen as strong points in terms of communities' capacity to solve issues in their areas.

Section 6.3 identified how processes for participatory development practice can encourage dialogue between local residents and other stakeholders to communicate about local issues and ideas. Engaging young people to be the next generation of leaders was discussed, as well as the importance of collaboration among stakeholders showing that local residents are trying to build relationships for solving issues in the long term.

Section 6.4 described participants' views of the limitations or barriers to achieving sustainable development, as the government systems and personal participation capacity. This led on to eight aims for alternative approaches to solving the issues: preparing new approaches for education; increasing cooperation among local community, government and policy makers; building understanding between local residents and government; using science-based research to inform decision making; constructing and linking networks for community development; ensuring effective and fair laws are enforced; sharing benefits equality; and finally, creating ways to decentralise power.

Together, these ideas would help local communities prepare for more sustainable development and reduce the conflict that the EEC policy is generating. By creating avenues for effective communication, such as through dialogic practices (Kelly & Westoby 2018). It can be seen that people will be able to hear each other's concerns, be able to educate each other about issues, and plan together for action.

According to the five steps of Kretzmann & McKnight's (1993) ABCD, the first step is to take an assets-based approach to community development starting the dialogue processes by mapping capacities and assets of individuals, civil associations and institutions in communities. This provides the community with a good understanding of who and what are the strengths of their community. Secondly, if stakeholders commit to building relationships,

they will be in a good position to critically think and come up with ideas to address private concerns. The third step enables mobilization of community assets for economic development and shared purpose. This leads to step four, which is to convene the community to develop a community vision and plan. Lastly, when employing this model, the community can leverage activities, investments and resources from outside the community to support asset-based, locally-defined development. The EEC policy will provide a range of resources and has access to investment that can both help local communities and generate greater economic benefits for the nation. Local residents can inform these processes, especially by highlighting its impact at the local level, and sharing ideas for the future.

The next chapter demonstrates how each research question was addressed in Chapters 4 to 6 and compares the findings in relation to the two case study districts of the EEC planning process. It provides a revised conceptual framework that could be useful for the positive transition of local communities in the face of rapid economic development in Thailand and countries in similar situations.

CHAPTER 7

DISCUSSION AND CONCLUSION

7. Chapter Overview

This chapter demonstrates how this research addressed the overall aim, ‘How can local residents in Chachoengsao Province have more influence on, and benefit from top-down development from the Eastern Economic Corridor planning process?’. The research project drew from the literature to explain the rationale for local residents’ concerns about water and food security in two case study areas, Ban Pho (population 51,455) and Bangkhla (population 43,291). It used theories social network-building, social capital and political opportunity structure (POS) to investigate the response to the development of local residents, including young people. Three community development practice theories were utilised to examine local community action and support for social change: Community Organising (CO), Participatory Developmental Practice (PDP) and Assets Based Community Development (ABCD), as well as the social concepts of impact assessment and benefit sharing. Together, these contribute to knowledge-generation about building positive responses to mitigate the negative impacts of economic development in Thailand, finding alternative approaches with greater alignment with the Sustainable Development Goals (SDGs). It thus fills a research gap about sustainable development in Southeast Asian Countries.

To conduct the research, qualitative research methods were applied through analysing documents (Thai government legislation and policy, websites, newspapers, community-authored booklets and pamphlets); semi-structured, in-depth interviews of participants in the case study areas; observations at community meetings and events; and a consensus conference with participants. Bacchi’s (2009) technique was used for critical analysis of policy. Themes were distilled from the data and the NVIVO® program was used for coding, classifying and showing patterns in the data.

The purpose of this chapter is to synthesize the main findings of the thesis as they relate to each research question comparing Ban Pho and Bangkhla districts, discuss the contribution

to theoretical knowledge, and highlight implications for policy and practice. Additionally, this chapter concludes with limitations of the research and suggestions for future research.

7.1 Summary of Findings from Three Research Questions

This section summarises findings in relation to the three research questions (RQ) as they relate to the Ban Pho and Bangkhla Districts. Firstly, the potential impacts of policies and development plans on water and food security in the targeted areas are reported (Section 7.1.1). Secondly, the research shows how social networks of local communities, including those of young people, respond to these potential impacts (Section 7.1.2). Finally, alternative approaches and adaptation to a sustainable future are discussed (Section 7.1.3).

7.1.1 Potential Impacts as They Relate to the Two Districts

To understand the potential impacts of the EEC policy, the *EEC Act 2018*, local documents, interviews and observation were the data sources used in analysis. Impact assessment and governance concepts were used to explain the circumstances in both case study areas through the application of Bacchi's framework for analysing policy and its implementation, and to answer 'What are the potential water and food security impacts of the Eastern Economic Corridor on the local residents?' (RQ1). The policy was primarily developed to encourage investment and growth in technology and infrastructure, to improve the Gross Domestic Product (GDP) and increase Thai living standards above the middle-income trap (discussed in Chapter 4, Section 4.2-4.3).

In spite of benefits to infrastructure, public utilities, and potential employment opportunities in industries, tourism and local trading, it was found that land use changes might affect the livelihood and food production in both districts. The Ban Pho area will gain new industrial factories due to the Inland Container Depot (ICD) project while Bangkhla will become a new residential area. In both cases, valuable land for food production will be lost, affecting income and food security for local residents. Unless industrial pollution is better managed, as examples of similar industrialised locations show, water quality, water availability and supply on which farming and fisheries rely, will be impacted. In addition, residents' well-being is affected by relocation, road construction and the poor matching of skills of middle-aged and older people to new employment opportunities.

The application of Bacchi's framework revealed governance concerns. While Thailand does have environmental impact assessment and human rights enshrined in the Thai Constitution, the *EEC Act 2018* overrides existing policies and plans and gives far-reaching power to the economic development-oriented authority committee to develop plans with little community input. The example of the misuse of the public hearing on the ICD project in Ban Pho illustrated a lack of transparency, fairness, and legitimacy, all principles of good governance (discussed in Chapter 4, Section 4.4). Participants emphasised a lack of access to information and an inability to get answers to questions concerning compensation and water management issues.

Significantly, although the EEC policy aims to achieve economic development goals of SDGs - Goal 8 - Decent Work and Economic Growth and Goal 9 - Industry, Innovation and Infrastructure, the policy puts environmental and social goals of the SDGs Goals 1 - No Poverty; Goal 2 - Zero Hunger; Goal 3 - Good Health and Well-being; Goal 6 - Clean Water and Sanitation; Goal 11 - Sustainable Cities and Communities; and Goal 12 - Responsible Consumption and Production at risk in these case study areas.

A summary of the potential positive and negative impacts of the EEC policy implementation according to participants (Table 9 in Chapter 4), explains the motivation for residents' response resulting in community organising in the Ban Pho District, and was explored to answer RQ 2. Each district has different concerns about potential impacts as they relate to water management, food production areas and livelihoods. For example, toxic waste was of greater concern to Ban Pho residents than Bangkhla because of industrial expansion. Meanwhile, Bangkhla residents were more concerned about garbage management because residential real estate and population is increasing more than it is in Ban Pho. Moreover, Ban Pho residents experienced land expropriation, but this was not seen as a problem in Bangkhla.

Significantly, these issues illustrate the unequal effects of development policy. Governments need to consider how development affects each community differently, and therefore be prepared to assess impacts as policy is implemented, and importantly, do that assessment with the community's input. This will ensure feedback loops provide accurate information upon which Governments can undertake planning.

7.1.2 Social Networks of Local Communities, Including Those of Young People, Responding to the Potential Impacts of the EEC Policy

This section summarises the answer to RQ 2 ‘How are social networks of local communities, including those of young people, responding to the impacts of the Eastern Economic Corridor in relation to water and food security?’. Social network-building, social capital in community organising and political opportunity structure were used to explain the social context and response of local residents to the policy in the case study areas. Significantly, strong networked communities can influence the social impacts of policy.

This research was particularly interested in whether young people, as future ‘owners’ of the land use and environmental legacy, had a voice in changes about where they will live. Ban Pho has two types of youth networks. The first youth network is expressed as a club in many schools with support from a large company located in Ban Pho. This network works on environmental issues such as garbage collection in the Bangpakong River and testing water quality in canals. The second network was created by local residents at Nong Teen Nok to protect their land after the EEC implementation. This second network collaborates with a range of civil-society groups in the CCS and other youth groups in the EEC areas, as well as joining with the community enterprises group for promoting food production areas. In Bangkhla, the youth network is an environmental group that promotes bird watching at schools as part of its campaign for the Bangpakong River to become a Ramsar site.

Significantly, networks have the potential to influence human rights, environmental and social justice such as the right of land use (as discussed in Chapter 5, Section 5.2). The findings show that networked communities exemplifying bridging social capital among young people and civil society groups are seeking greater democracy, aiming in a more democratic constitution. This also shows that social network building creates dynamic processes for social change, and in terms of this research it has foreshadowed a positive transition can occur for local residents in an area of rapid economic development.

After the coup, during 2015-17, residents in the Ban Pho district initiated a court case and attempted to stop the development of six shipping piers. They lost this case because of a gap in the law about the environment impact assessment process. Despite this loss, they learned important lessons about how to community organise and in 2018-19 local residents in the

Ban Pho District were active building social networks and their social capital in response to common concerns about impacts on farming and fisheries, land expropriation and relocation in response to the ICD project and industrial expansion. They used political opportunities to stop the ICD project through linking social capital with the Deputy Minister of Agriculture. Looking at their work through the lens of linking social capital and POS revealed the benefits of tactics at Nong Teen Nok subdistrict in Ban Pho, discussed in the section 5.2, Chapter 5.

Bangkhla residents were less active with community organising because there were less detrimental effects. Bangkhla is not on the route of the main roads connecting to the national border and not the target area of industrial estate but planned for residential expansion. Moreover, the Bangkhla residents had previously built a network in 2008-2009 when they investigated the unjust process to construct a natural gas power-plant because of concerns with water and air pollution. Their community mobilising actions were successful in stopping the power plant construction because they could prove that the project approval process was not transparent and there would be detrimental effects on food production and flying fox habitat. The Minister of Energy ordered a stop to the construction. Although linking social capital and political opportunity structure were not overt in Bangkhla during this research on EEC impacts, a significant factor for their previous successful social action was that many members of civil society groups and networks live in the Bangkhla District. Even though their social action was more than 10 years ago, the Bangkhla residents still have strong connections today. They continue to share information through network meetings or social media group-chatting (e.g. among agriculture and young smart farmer groups), monitoring the area in case of future power-plant proposals and unjust policy, with updates to farmer and fisher networks on impacts. Moreover, because Bangkhla has a history of such community organising, if the EEC was to impact them they would be able to mobilise their communities readily. Maintaining such networks built and nourished bridging social capital, meaning they are still ready to mobilise if need be.

A comparison between Bangkhla and Ban Pho's social networks of local communities (Table 10 in Chapter 5) illustrates the influencers among actors relevant to the EEC project in both districts. The power map (discussed in Chapter 5, Section 5.3) helps to illustrate network dynamics and how to develop relationships with influential people to aide their ability to negotiate for protecting their food production areas.

Significantly, the findings in Chapter 5 showed that if communities establish well-connected networks (Gilchrist, 2007), they can resist or take-action against unfairness. Drawing on bonding, bridging and linking social capital and utilising community organising approaches, they will look for political opportunities to effect change. Moreover, potential greater influence of networks can contribute to human rights, environmental and social justice because people want to have confidence that their livelihood is secure, and especially in terms of water management and food production. This could ensure fairness of economic development in relation to SDGs: Goal 1- No Poverty, Goal 2- Zero Hunger, Goal 3- Good Health and Well-Being and Goal 6- Clean Water and Sanitation. This finding also signposts helpful processes for greater community or citizen improvements in Thailand, and beyond just those associated with the Thailand 4.0 policy, where they are seeking alternative ways to advance sustainable development, especially when facing unjust processes, projects and plans.

7.1.3 Alternative Approaches and Adaptation to Sustainable Development

The analysis regarding the RQ3 ‘What alternative approaches could be used to ensure more alignment with sustainable development objectives?’, applied two community development theories: Assets Based Community Development (ABCD) and Participatory Development Practice (PDP). Data sources analysed were interviews, observation, local documents and the consensus conference.

In both districts, adaptation and coping in terms of storing water, food diversification and looking for alternative jobs, were seen to be needed. Bangkhla has a greater productive capacity with the highest number of fisheries in CCS followed by Ban Pho, with agriculture providing significant income for local residents in both districts. Both districts drew on their good environment, aiming to build capacity in food safety and tourism. Social capacity in terms of social support, beliefs, and faith assisted the local residents in taking care of each other. These were shown to be a strong foundation for the development of environmental, social and economic sustainability in both districts.

Participants in both districts agree that water management in CCS is crucial for sustainable development. The adaptation can be seen through building environmental capacity through water monitoring along the Bangpakong River, which was discussed more in the Bangkhla

District compared to Ban Pho. Owing to EEC implementation, however, Ban Pho has a higher risk of water shortage than Bangkhla because of the increasing industrial use of water.

The participatory development practices of local residents for adaptation can be seen through their efforts of encouraging young people and other stakeholders. This occurred by dialogical communication (Kelly & Westoby, 2018) about community issues, sharing understanding about local areas among young people and older people in Ban Pho District and learning about the environmental assets through bird watching in Bangkhla. Both districts communicated individual concerns via social media, sharing ideas about public action in communities. Moreover, engaging young people and collaboration among stakeholders (e.g. local governments and business sectors) occurred in both districts. As the results showed, participants from both districts made suggestions that align with eight aims of alternative approaches to transition for sustainable development (see Table 11 in Chapter 6).

In summary, local residents in Chachoengsao province, Thailand, are starting to adapt to top-down development through analysing the EEC policy, building negotiation processes via social networks and increasing their social capital, and in some cases utilising community organising to find political opportunities that will influence policy makers and other stakeholders, such as business owners, local residents and local government. Moreover, the local residents can adapt and work towards more environmentally sound alternatives through the application of community development practice theories which feature dialogical communication processes to deeply listen and gain consensus about issues and to build social capital. Dialogue enables people to hear each other's private concerns and take those into public action, raising awareness with more and more people. Significantly, Thailand already is a collectivist culture (Komolsevin 2010), which means people may be more willing to take responsibility for fellow members of their group. For societies where individualism is more the cultural norm, community development practices can be used to build social networks, and these networks and processes assist self-empowerment as well as building trust among members to take collective actions. The research findings in chapters 5 and 6 showed that not every community or culture can initiate or sustain community organising processes because of social contexts and circumstance of politics.

7.2 Contribution to Theoretical Knowledge

This section discusses how the research contributes to theoretical knowledge to explain a potential process for positive transition and to gain sustainable development for local residents.

The conceptual map or framework (see Chapter 2) was a tentative model posed at the commencement of the research to explain the researcher's understanding of the relationships between Social Networks, Social Capital, Political Opportunity Structure and the community development practices. Along with Assets Based Community Development (ABCD) and Community Organising (CO), (see Figure 3 in Chapter 2), these concepts provided insight into community processes in response to the EEC. Further theoretical concepts such as impact assessment and benefit sharing were introduced to help guide analysis and address the overarching research question.

The findings indicated that not just one community development theory explained the range of adaptation in which residents were engaging, but that a combination of theories and concepts can be useful for answering the research questions. This research analysis added other concepts which influence each other and are fundamental to progress towards sustainable development. As a result, a new conceptual map (Figure 20) shows the centrality of social capital (Section 7.2.1), and the social network building and connections made through the lens of PDP (Section 7.2.2). Furthermore, Asset Based Community Development (ABCD) assisted in understanding what assets and resources the community could offer processes, and impact assessment identified issues that motivated the community to take-action (Section 7.2.3). A Community Organising approach can facilitate structural change (Section 7.2.4) when political opportunities (POS) are examined and harnessed by the community (Section 7.2.5). Finally, the concept of benefit-sharing, a component of impact assessment theory and practice, helps to explain how communities can negotiate with government to assist in the achievement of all SDGs (see Section 7.3). These concepts, drawn visually, illuminate the interconnectedness of social theories employed in the research and a process for transition of local residents in an area of rapid economic development.



Figure 20: The new conceptual map of the process of positive transition for local residents in an area of rapid economic development.

7.2.1 Centrality of Social Capital

This research found that social capital is central to the community development theories for addressing community concerns. Social capital is not a new concept to community development, although it is often given tangential treatment in the literature. Some authors

foreground the theory and its three forms of social capital (bonding, bridging and linking) as integral to everyday practice, and especially necessary when working across difference and increasing participation with closely bonded groups (Howard & Rawsthorne, 2019; Rawsthorne & Howard, 2011).

The findings show that all types of social capital are fundamental to building trust among different stakeholders: those who have common interests (bonding – Ban Pho residents who face land-expropriation), those with different interests (bridging – Ban Pho farmers, fishermen and youth, with an agricultural college) and with those in positions of power (linking – government officers). Bonding and bridging social capital benefit from dialogue, as characterised by PDP (Kelly & Westoby 2018), which builds trust among members of group (Putnam 2000). In bonding, the groups built an understanding of their own assets, built motivation, and strengthened capacity. Bridging social capital was evident in youth and resident networks as they increased their networks across diverse groups and better understood the combined assets that they had, as analysed by the researcher through the lens of ABCD. The centrality of bridging (Putnam 2000) and linking social capital (Woolcock & Narayan 2000) was evident when residents built relationships with government officials and business owners, when communities looked for political opportunities, as discussed in chapter 5.

7.2.2 Social Network Building, PDP and Social Capital

Social network building refers to the relationships among members of groups and their interactions. These interactions can facilitate collaboration for collective responses to common issues or topics and leads to transformation as members build awareness and trust through regular interaction. Building social networks helps people connect to others with common concerns and provide support to each other. The common interests of groups assist with the bonding process (see Chapter 5, Section 5.1). PDP plays the significant role to raise awareness of private concerns leading to public action (Chapter 5, Section 5.2). PDP features dialogue among social networks (e.g. among villagers at Nong Teen Nok sub-district in Ban Pho), and helps local residents to ‘see what the people see’ (Kelly & Westoby 2018 p.62), that is, to gain a deep appreciation of what others in their communities are facing. In turn, the PDP processes support residents to recognise and agree on actions providing motivation and empowerment to protect land. Such dialogue also helps residents to recognise and appreciate

assets in the community as well as assessing the potential impacts in their communities, motivating them to protect their land (see Chapter 4, Section 4.6 and Chapter 5, Section 5.2).

7.2.3 Assets Based Community Development, Impact Assessment and Social Capital

ABCD facilitates community-led assessments of individual and organisational capacities inside communities, focusing on the strengths or benefits as a basis for solving issues. For example, both districts are located in food production areas of the CCS, providing food security, a positive asset.

Significantly, the analysis of findings drew from impact assessment concepts to complement ABCD which focuses on positive strengths, to also understand the disbenefits of EEC policy such as potential pollution, and barriers to local problem-solving capacity, such as the lack of authority of local government which limits local problem-solving capacity (Chapter 4.4.3). This resulted from a lack of community involvement in development decision-making, a key principle of impact assessment - 'local knowledge and experience are valuable and can be used to enhance planned intervention' (Vanclay 2003 p.9). To gain an appreciation of local knowledge and experience, bridging social capital where disparate community experience is heard and understood, is crucial (Levkoe 2015; Howard & Rawsthorne 2019). Such differences might include 'colour, race, physical abilities, gender or class' (Howard & Rawsthorne, 2019 p. 76). In this research this concept can also be between different sectors: urban rural fishing agriculture, occupations, as well as different socio-economic situations. Moreover, impact assessment relates to ABCD in terms of assets among local residents and assessment of the resources within communities, which can lead to negotiation processes for benefit sharing (discussed further on in section 7.3.).

The limitations of ABCD primarily focusses on strong points in local communities that residents can enhance or enable by themselves so ABCD means that it may not be suitable for solving problems across multiple areas, such as provinces or regions. Meanwhile, impact assessment can explain a range of both negative and positive aspects about developments but the concept does not focus on seeking the solutions in the same way as ABCD. Thus, understanding potential impacts from the perspective of local residents (Chapter 4, Section 4.6) in tandem with ABCD re-focussed negative issues into a positive direction for adaptation and alternative approaches (Sections 6.1 and 6.4).

Significantly, evaluating their capacity during EEC policy implementation through an ABCD process showed local residents needed to adapt themselves rather than waiting for government support (see Chapter 6 section 6.1 and 6.2).

Furthermore, community development literature (MacLeod & Bryne, 2012; Lathouras, 2016) is critical of community-building processes, like ABCD, with its gentle, non-conflictual, inclusive developmental processes especially where residents need to confront abuses of corporate or state power. This is when community organising processes can be used to mobilise across localities.

7.2.4 Community Organising and Social Capital

Community organising can be used in a wide array of areas among networks (see Chapter 5, Section 5.2) because it can influence the policy level. Community organising processes enable residents to respond to actions at the structural or macro level originating outside the local community, such as in this case, with or against government in terms of the EEC policy.

Both linking social capital and community organising are concepts or processes where local residents connect structurally with decision-makers who have power or influence. The centrality of bonding, bridging (Putnam 2000) and linking social capital remains key (Woolcock 2000). As residents build trust amongst members of their networks, they collectively link out to form relationships with people or institutions with decision-making power (Howard & Rawsthorne, 2019 p. 77). However, when their interests are not heard or met, they collectively take the risks associated with oppositional tactics. The application of community organising aims for macro scale actions that are politically progressive, bringing about positive change and enabling social justice during the EEC policy implementation.

Given that the intention of social networks and social capital is to connect through trust, there are limitations when there is low trust because of conflict or deceit (Putnam 2000). Thus, using another concept such as dialogue and POS can support and build social trust during community organising. However, this depends on the willingness for dialogue and to find solutions to a common problem.

Several authors build on Alinsky's (1989) community organising theory by suggesting that community organising processes occur in three steps.

- Step one is the process for internal organising such as within a group or a community. It relates to people who have the same interests or self-interests (bonding social capital).
- Step two is coordination, which relates to collectives of people or alliances supporting the ideas or purposes of the groups or communities (bridging social capital).
- Step three relates to organising for change, employing tactics for negotiating with decision-makers, contributing in some ways to social justice (Braddy and O' Conner 2014; Brown 2010; Craig 2016) (linking social capital).

These steps show how the communities and groups can be organised and supported to collaborate. Significantly, this research draws on the power mapping tool (Chapter 5, Section 5.3) to analyse the relationship between actors for responding to the potential impacts of the EEC policy and to understand how to negotiate the demands of people through community organising. Ideally, if local residents do their own power mapping and adapt this process to their contexts, this is likely to support them to analyse stakeholders in positions of power who are aligned with their interests and can support negotiation processes to reform policy (Mayo, 2020).

It is of significance that the analysis of findings showed the complementary nature of concepts in the conceptual map, highlighting five points of alignment between ABCD and community organising, all of which rely on social capital to assist action by:

- 1) empowering people to initiate change;
- 2) motivating people through personal experience;
- 3) seeking alliances through social networks;
- 4) finding support from inside and outside the group members; and
- 5) planning for change among alliances.

Meanwhile, ABCD support understanding the strong points of communities and can be explained in adaptation and coping the EEC issues. Deciding how to use community organising to influence decision-makers, a power map can be used to identify power structures, but POS can provide additional insight into tactics for dealing with that power.

7.2.5 Political Opportunity Structure (POS) and Social Capital

POS refers to the social context of the social-movement building process aiming for policy change (Engels 2018; Kirchherr 2017; Koopmans 2003; Wahlstrom & Peterson 2006). It recognises the importance of political influences and political connections in decision-making. It acknowledges that power structures may affect opportunities for resistance, people's willingness to take the risk to resist, and the shape resistance takes (Verkoren & Ngin 2017). POS and linking social capital together help to show how community organising processes can connect to and influence the decision-makers (e.g. the case study at Nong Teen Nok sub-district in Ban Pho, Chapter 5 Section 5.2) (Jones 2010; Talbot & Walker 2007; Woolcock & Manderson 2009). This case shows that POS, linking social capital and community organising approaches are conceptually related because they focus structurally, making connections with decision-makers who can affect change at the local community level (Chapter 5.2 and Figure 20). Making links or connections with decision makers enhance movement-building as people gain a sense that they can affect positive change, and this is a promising avenue for social change (Ife 2016). This process means assessing their own assets before planning, seeking opportunities, and alliance-building for protecting their land. Thus, all these practice approaches are needed (or can contribute) to the effectiveness of communities' actions, and their leaders can benefit from knowing which approaches might be beneficial given the particular circumstances.

In summary, the findings confirm that social capital is central to social network building. Dialogical processes, utilised by PDP, are useful in community-building endeavours or in community organising processes where political opportunities support movement-building. These concepts support positive social change (as discussed in Chapter 5, Section 5.2). Significantly, linking social capital can be seen as integrated into POS which is useful because it helps negotiation processes between local residents and decision makers in terms of policy change. Moreover, the findings also show that impact assessment and ABCD are useful concepts to view together (as discussed in Chapter 6.4). This is because impact assessment fills a gap where utilising ABCD only, may mean residents do not examine the potential negative impacts, those that they cannot solve without outside support or intervention. It was confirmed that ABCD supports community organising for actions at the vertical level because local residents know their assets through the ABCD process and can seek alliances

with stakeholders with common interests in community organising (as discussed in Chapter 5.2 and Chapter 6.1-6.3). Significantly, community development processes cannot leave the political behind, because a politically progressive stance makes a commitment to questioning our current society, seeking to identify harmful divisions and unequal power relations, pursuing human rights and social justice (Lathouras, 2016:32). Together, the theories of ABCD, community organising and POS can complement each other to clarify the positive actions being taken local residents.

Therefore, a range of social theories and practices are needed to understand different contexts and circumstances of different locations, especially when it is understood that one policy does not ensure equity across areas and where some communities are disaffected. The conceptual map (figure 20) illustrates the relationships among social concepts that could be applied to practice in the long term. Hence, combining multiple approaches for long term community development while government policy is implemented, could be seen as useful because each approach fills a particular gap of knowledge (as shown in figure 20). These approaches complement each other and provide a bottom-up, or community-led understanding to support transition, acknowledging that transition processes take time and significantly, this integrated framework for analysis and practice can be applied in any areas wherever policy is implemented. Moreover, it would be better if the social theories and practices such as building social networks, support for dialogue and social activities could put in to the local and national plan for reducing the conflict among local residents and government rather than focus just on the economic development in the areas.

7.3 Contribution to Policy and Practice

This section addresses the contribution to policy and practice by examining concepts which inform possible actions by community (Section 7.3.1) and how to solve the policy challenges of Thailand's government (Section 7.3.2). Significance of the research is summarised in Section 7.3.3.

7.3.1 Implications for Community Action

This section applies concepts in a practical way to support local communities. The conceptual map (Figure 20) illustrates the centrality of social capital and the importance of impact assessment and benefit-sharing to support community actions in the long term.

First, local residents need to work across multiple levels and sectors (vertical and horizontal coordination) to build bonding, bridging and linking social capital in the long term to understand policy, regulations and laws when they are not clearly communicated. Inviting local government staff and EEC officers to discuss issues would empower Ban Pho residents who lost confidence in community organising processes. This may commence a bottom up policy process.

Secondly, communities can take the initiative to undertake their own impact assessment with some support. Although Thailand has a Strategic Environmental Assessment (SEA) process, which is conducted at the regional level for mitigating negative policy impacts, the participation process and SEA implementation of the EEC project was limited because the project was created during the military regime and the legislation over-rode the process. However, people should have freedom from fear and the right to live in a healthy environment which supports well-being and quality of life (Vanclay et al 2015). In this study, the resident water-monitoring in collaboration with government was found to partially fulfil the function of assessing some impacts. A similar process can be adopted with air pollution and toxic waste monitoring in the future. Because local residents' livelihood depends on the local environment, Environmental Impact Assessment (EIA) and Environmental and Health Impact Assessment (EHIA) processes need to include local residents' collaboration. By engaging with academics and with access to the EEC fund, residents could help with long term monitoring and community capacity-building. The EIA and EHIA can act as a tool providing evidence for local residents to negotiate if environmental issues occur in the future. Communities have a right to receive information and the right to be protected by law based on human rights, social justice and benefit-sharing equality (Petersmann 2017).

Thirdly, there is a challenge to collaborate across generations as the *EEC Act 2018* affects land use for a period of 50-99 years. A key component of sustainable development is intergenerational equity - that decisions which meet present needs should not compromise

the ability of future generations to meet their own needs (UN Brundtland Commission 1987). Thus, the community organising processes need to remain active, to build and maintain networks among persons and community organisations that have the same objectives, such as protecting the environment and coping with societal change, in spite of age. The mindset in Thai society privileges seniors. This is a barrier for the younger generation who would like to engage with community plans and policy for sustainable development but feel their ideas are not accepted by older community members because of their age and experience (discussed in Chapter 6, Section 6.3.3). To reduce the age gap and support social capital building across generations, young people might support digital literacy of older people to use the internet, access online trading and online education, especially in the rural areas. This will help people of all ages to communicate more easily, maintain their network relationships during times when face-to-face communication is limited (such as during the global pandemic), and collaborate especially if older people are challenged by digital technologies. This may also assist in regaining cultural norms for collaboration (Neuman 2012) and reduce inter-generational conflict.

A fourth implication of the findings for community action is to base community organising on local culture and tradition. The powerful tactics of reinforcing beliefs of Buddha So Thon and the Bangpakong River supported existing networks and assisted people to mobilise to protect the river and land for water security and food production. Drawing on such cultural, faith-based, or traditional belief systems can help with building and maintaining community connections.

A fifth challenge relates to the negative effect of the current global Coronavirus pandemic on economic growth and income from international tourism (Marwah and Ramanayake 2021). Local residents could improve their local economy by using community development processes of ABCD and PDP to help local people find the strong points of their communities, particularly those that can be harnessed for income generation. For example, local residents can create plans for recovering their local economies through training opportunities or creating new business ventures, such as new food processing techniques and online food selling among domestic consumers.

To steer the EEC policy towards a positive transition to sustainable development for local residents and Thailand as a whole, community development processes could support local residents to negotiate about sharing the benefits from the EEC development. Benefit-sharing is a way that the most deleterious impacts of the policy implementation can be disrupted, questioned, and most importantly, replaced. Benefit sharing aims to ensure that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable and they are also not disadvantaged in sharing development benefits (Genton et al 2020). Petersmann (2017) argues that local rights in natural resources should be shared equitably such as sufficient good quality water being accessible to all local residents.

In the case studies, local farmers whose source of income and livelihood is dependent on the land and river are highly vulnerable to losing their land to EEC projects. Particularly, a high percentage of farmers and fishers are vulnerable because they do not own the land they cultivate, and no compensation measures have been identified for them. Rapid policy changes without adequate governance structures and processes, mean that effective community engagement and transparent communication is reduced or non-existent. This gives residents little time and/or resources to adapt. Monitoring impacts could provide evidence as a basis for negotiation in a benefit-sharing approach.

Although a development fund to assist local communities was announced in the *EEC Act 2018*, it is not clear what portion of funds would be provided to local communities to help them adjust and to minimise negative impacts. A benefit sharing committee could be established with a range of stakeholders including local residents, youth, and social scientists to identify priorities to support local livelihood and wellbeing such as road safety and pollution monitoring. It would need to model good governance through transparent and accountable decision-making. Local networks could negotiate for funds for monitoring and, more importantly, for minimising environmental impacts (e.g. enforced pollution controls on industry). They may seek further assistance for development and technology to support fisheries, agriculture, and tourism. Essential services such as education and training, social welfare, and healthcare will be needed as the population grows. The benefit sharing committee should model good governance, be transparent and take a long-term perspective; important because the EEC plan will have an effect for at least five to nine decades. Thus,

benefit sharing can be incorporated into community organising and POS processes to support moving towards a positive transition.

7.3.2 Implications for Thai Policy

The study identified that the policy did not consider the unequal effects of development policy on the economic and social wellbeing of local residents. It has been argued that governments need to take into account that development affects each community and sector differently, and therefore be prepared to assess impacts as the policy is developed and implemented with the community's input. It was shown that as a result of the EEC policy, regulations and laws are presenting challenges for local residents in the EEC areas.

There are five issues that local residents experience which need to be addressed to meet their demands to protect livelihood, land and food production areas.

First, a pervasive issue is that the *EEC Act 2018* and timeframe for implementation did not give opportunities for civil-society representatives to be appointed to the EEC policy committees nor for communication, inquiry, and engagement about the policy with civil society groups and residents, resulting in conflict. Best practice policy processes follow an appropriate policy cycle process including consultation about issues and options that feed into informed decision-making and implementation, and importantly, policy evaluation after implementation (Althaus, Bridgman and Davis 2018). Adequate engagement with all stakeholders is good governance and can reduce conflict and improve sustainable natural resource management (Lockwood et al 2009).

Secondly, to partially compensate for lack of community engagement, planning processes for the EEC policy could have included various specialists on EEC authority committees such as sociologists and social workers from the Ministry of Social Development and Human Security and environmentalists from the Ministry of Natural Resources and Environment.

Consequently, and third, the fast pace of the EEC implementation and lack of engagement did not consider, or enable, a sound impact assessment process which would identify ways to mitigate negative effects and improve benefits for local residents. With impact assessment aiming to 'bring about a more ecologically, socio-culturally and economically sustainable and equitable environment' (Vanclay 2003 p.6), the EEC development fund could be used to

employ local people to undertake environmental assessment and monitoring over the long term. Application of sound governance principles such as inclusiveness, capability and transparency would enable negotiations for benefit sharing in practice. In practical terms, these might include compensation processes for those unequally impacted, investment in waste treatment, or a budget to support areas affected negatively by pollution or toxic waste from industrial expansion in the long term.

Fourth, participants were concerned about environmental impacts such as water management, water grabbing, air and water pollution, garbage and toxic waste, many of which were problems that existed before the EEC project started, and will likely get worse. The finding is consistent with outcomes of research conducted by SUPER POLL and the Research Institute for Community Happiness and Leadership Foundation in June 2018 (Thai Post 2018). The survey found that 76.6% of people in the EEC areas were worried about toxic waste, and 71.5% about environmental problems. A good quality environment is essential for food production and secure livelihoods, yet lack of communication means these issues are unresolved.

Fifth, the findings represent the inequality in Thai society, particularly in relation to education and employment. The SUPER POLL results indicated that 66.9% of those in EEC areas were also concerned about outsourcing employment that would create unemployment for local residents.

Thus, based on results from this research, the long-term EEC plan with little local input, threatens local employment and environmental quality. It is concerning that the Thai government is aiming to meet the economic indicators of SDGs 8 and 9, but the more social and environmental SDGs 2, 3, 6, 11 and 12 are put at risk.

7.3.3 Significance of the Research

This research contributes to filling a gap identified in the systematic literature review (Chapter 2), about how local residents could have more influence on, and benefit from top-down development (e.g. EEC planning process) in Thailand and other Southeast Asian countries. The pressures driving economic development and SDGs, the nature of government, and the socio-economic situation of the Thai population have much in common with other countries in

Southeast Asia and beyond. Thus, the research approach and findings may be applicable to other developing countries.

This study also contributes to social science knowledge by drawing on social concepts and community development practice theories as a guide for achieving social justice and progressing towards the SDGs. It also shows the relationship between linking social capital and POS, which typically are not linked, thus providing insight into how to build community capacity to influence policy. Complementing the community development theories with concepts such as impact assessment help point towards sustainable development and the sharing of benefits in the long term.

The research demonstrates how complementary methods of interviews, observation, policy analysis and consensus conferencing can be used to provide deeper insight to explain a policy process and uncover participants' motivations. As a research process the consensus conference, modified to be compatible with Thai culture, played a role in opening up a channel among policy operators, community leaders, local and youth residents for dialogue. It commenced a process to encourage various generations to exchange views on policy.

As good research practice, preliminary research findings were provided to not only to the participants, but also to local leaders and EEC officers. I optimistically envision that this research will facilitate meaningful conversations at various levels of the government and across sectors, to enhance EEC policy implementation, and provide useful lessons for other countries in transition.



Figure 21: The researcher sent preliminary research findings to the EEC officers in Bangkok.

Source: Rawiwan Wanniwad

In summary, the interconnected social and community development theories and concepts (Section 7.2 and 7.3) demonstrated in this research, when used appropriately, can support each other to enhance the community development efforts of residents. The new conceptual map shows that social capital is central to every approach. When combined with social network building and dialogical processes, supported with community development theories and practical concepts of impact assessment and benefit sharing, these can contribute towards achievement of the SDGs.

7.4 Limitations of the Research and Suggestions for Future Research

Due to budget and time constraints of a PhD, this research focussed on two case study districts in CCS province where it was clear that residents were concerned with the EEC policy and implementation. Additional case studies using similar methods, in areas proposed for industrial expansion within Thailand (e.g. Bangpakong and Plang Yao Districts in the CCS) and within the broader Southeast Asian economic corridor (e.g. Myanmar, Cambodia and

Vietnam) could further test the utility and benefits of the conceptual framework and provide greater evidence to support a long-term positive transition process.

A most significant limitation was that some residents were cautious about participating due to the political situation, as data collection occurred after the transition to the military-backed government. Despite assurances of anonymity, some believed they could not offer their opinion, worrying about their positions and jobs.

Little post-implementation research is done after development to assess impacts. Because the comprehensive land-use plan was not approved for public release at the time the data were collected, the researcher was not able to verify participants' speculation about potential effects of the comprehensive land-use plan and town plan regulations. Future research on the EEC impacts would benefit from assessing impacts and community reaction after the new land-use plan is approved and shared, to better inform and refine EEC implementation. In addition, future research could study employment resulting from the EEC project of both highly skilled workers, foreign workers with technology skills and less skilled farm workers. The aim would be to learn about the impact on local employment and how Thai people develop human resources to support the local and national economy.

7.5 Conclusion

This research commenced in July 2017 while the EEC policy was created which proposed investment in industrial estates and infrastructure to provide economic benefits, and contribute to the SDGs. As a Thai resident and an academic collaborating with local groups, I was aware of the introduction of the EEC policy, and residents' growing concerns. These were also confirmed in the literature review which identified the potential for social and environmental impacts affecting residents living in rural areas targeted for national development to include pollution, water grabbing, health problems and reduced fish stocks. This research aimed to explore how local residents in CCS province, Thailand, were adapting to the top-down development from the EEC planning process and the associated impacts. The research questions and approach were refined and guided by the in-depth literature review. The research assessed perceptions of impact in two case study districts, Ban Pho and Bangkhla, with a focus on water and food security and how the local communities were responding to these issues.

Review of local documents, such as local history books, and databases of both districts in January 2019 confirmed the number of people and sectors with potential livelihood impacts caused by the development. Bacchi's critical policy analysis technique helped me to critique and question the policy, making transparent the viewpoints on positive and negative impacts that would otherwise be silenced. Interviews of residents (including young people) of both districts and government officers revealed highly developed social networks. In Ban Pho, social capital and community organising enabled opportunities for residents to have influence politically. Observation of public events and meetings during phase one was used to verify data collected in interviews. In mid-2019, and at phase two, a consensus conference brought together key stakeholders and results were presented to EEC officers. This process led me to conceive a new conceptual framework, (outlined in figure 20) where social capital is central to all the development processes in communities.

The research used complementary concepts and practical theories in community development to inform options for the community to adapt and processes government could use to better achieve all the Sustainable Development Goals. It thus fills a knowledge gap about sustainable development as a means for economic development in Southeast Asian Countries.

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Appendix 1 - Methods and Interview Guide

Methods	What do I want to find out?	What do I need to ask?
Documents		
Documents – public media (website, web page or Facebook page)	<ul style="list-style-type: none"> -Food and water situations/ impacts in the target areas. -Shared concerns, vision, campaigns -Awareness building, channel to communication, collaboration 	
Documents – campaign/organisation newsletter, poster	<ul style="list-style-type: none"> -EEC situation (industrial expansion and road construction) -EEC benefit and impacts in the areas -Themes of campaign which relate to water and food in the areas -Water and food situation are shown in the poster/maps/newsletter 	

	-Role of leaders about EEC situation (water and food) such as vision or solution	
Documents – policy, government-documents	-Impacts are supposed to be – Bacchi's technique	(Looking for what is there and what is missing)
Observation		
Observation in the meeting	<ul style="list-style-type: none"> -Interaction between leaders and people -Reaction of leaders when people ask about EEC impacts -Interaction between leaders and leaders when they meet together such as community meeting 	
Observation in the traditional/annual events	<ul style="list-style-type: none"> -How do they organize the events and receive the collaborations (Roles and responsibilities), and connect to other organisations and networks. -Interaction of between leaders and people -Reaction of leaders with alliance or local politicians. 	

Observation the environment in the target areas	<ul style="list-style-type: none"> -Watching colour water form dams, bubble and water hyacinth at canals and the Bangpakong River during seasons. -Smelling near the industrial factories, canal water and river -Hearing about impacts/alternative? 	What are they the potential impacts and alternative?
Methods	What do I want to find out?	What do I need to ask?
Interviews		
(Potential Impacts from three groups)	<p>EEC situation (industrial expansion and road construction)</p> <p>EEC benefit and impacts in the areas</p>	<ul style="list-style-type: none"> - What are the changes and impacts after there has been industrial expansion and road construction from the Eastern Economic Corridor (EEC) Plan in Ban Pho / Bamgkhla district - What is positive or negative about this and why? - How do advantages or disadvantages arise from industrial expansion / road construction / Bangpakong River? Example

(Potential Impacts from three groups)	<p>Food and water situations/ impacts</p> <p>Themes of campaign which relate to water and food in the areas</p>	<p>-How does water and food-security impact communities (such as food and agricultural production/water supply for agriculture in the farm)?</p> <p>- Do you have water quality assessment process in the river/ how?</p> <p>- Do you have campaign about water/ food conservation in your areas/ What / When/ Where?</p>
(Social Networks among three groups)	<p>Common goals, who, location, process of sharing information, social learning, themes, awareness building, channel to communication, collaboration</p>	<p>-What are the activities (relate to water and food) when you have common concern/ theme / where / how?</p> <p>-What are key factors for building networks among local residents?</p> <p>- How do you communicate with your network?</p> <p>- How do you build the people awareness about the theme that</p> <p>- How should you adapt to solve these problems after networks activities?</p>

		<ul style="list-style-type: none"> - Have you attended local network activities such as <i>“Be Grateful Bangpakong River”</i> Why did you join them? - What are the roles and functions of networking members in negotiating and improving the local consequences of the agricultural production and water at the Bangpakong River, including community activities?
(Social Capital among three groups)	Bonding – who and how; bridging – who and how; linking who and how.	<ul style="list-style-type: none"> -Have you supported or contributed to the local networks, if so, why? -What are the reasons people decide to network? - According to your position or roles, how do you build or engage the network to improve the Economic policy or solving the EEC impacts? - Have you contact with other networks to find any supports to solve network problems/ who? - How do local leaders / officers communicate between local members and others to receive the resources for solving the problems?

		<ul style="list-style-type: none"> - Have you contact with policy maker/decision-makers /religion leader / who / how?
(Political Opportunity Structure among three groups)	<p>Opportunities to engage policy/politicians,</p> <p>Channel to connect to decision-makers.</p>	<ul style="list-style-type: none"> - Have you contact with policy maker/decision-makers /religion leader / who / how? -Does the political situation relate to network activities in these areas and how? - What do you think about the political opportunity structure for improving the EEC plan, which affects local residents?
(Community Organising from three groups)	<p>Shared concerns, vision, campaigns, leadership, skills, building alliance, building power of people and negotiation-how and who.</p>	<ul style="list-style-type: none"> -How do local residents and stakeholders communicate to collectively adapt and improve outcomes and why do they work together? -What are the issues which networks of people would like to negotiate or improve in the EEC plan, which relate to agricultural production and water at the Bangpakong River? -What are your perspectives about possible opportunities to maintain for agricultural production and water quality/security at the Bangpakong River for the sustainable community?

		<p>-Do you have any ideas to engage and contribute to other groups such as youth group, businesspersons to conserve the river, if so what?</p> <p>Have you share information about EEC policy to members and local residents/ how?</p> <p>- Do you have community consultant process (discussion plan/ public hearing, etc.)?</p> <p>- Have you thought about sustainable solution?</p> <p>- Have you work with many groups such as local residents, NGOs, educational organisations and policy makers/ how?</p>
(Community Developmental methods from three groups)	Sharing private concern- who and how; building connection and relationship - how, raising issue to local government – who and how.	<p>-Have you share your problems (water or food production) to your friends/neighbourhood/ how?</p> <p>- Have you built these issues to be public such as village / local government/ TV channel/ For example?</p> <p>- How do you contact and communicate with them?</p>

(Asset Based Community Development from three groups)	Existing human and physical capacity- who and what; Solving issues- who and how, building vision and plan- who and how, building networks, partnerships and alliances- who and how; Supporting asset-based- who and how.	<p>-Have you assessed community capacity (strong/weak points, human and physical capacity)?</p> <p>- What do they have?</p> <p>- Do you think, those capacity will help to solve the problems?</p> <p>- Have you share idea or vision about those capacity to solve problems / who and how?</p> <p>- Have you built your network members to solve those issues/ who/how?</p> <p>- Do you have partnership/ How do you find them?</p> <p>- Have you gotten support from the partnership?</p> <p>- Why do you get support from partnership?</p>
Methods	What do I want to find out?	What do I need to ask?
Consensus conference		
Social networks	Common goals	<p>-What do the people know about EEC?</p> <p>-What do they want to see in the future after EEC plan act.</p>

Appendix 2- Consensus Conference Process

Stage 1) Introducing the participants, researcher and facilitators who attend the event.

Stage 2) Explaining the objective of the consensus conference, which is explore the potential for alternative plans for transformation into a sustainable urban area.

Stage 3) Informing attendees of the preliminary findings of the interviews, observation at local events according to:

- What do the people know about EEC?
- What is the local experience the advantages and disadvantages after EEC has occurred in 2016 regarding water and food security?
- What would they like to see in the future regarding water and food security and how to get there?
- Who will have a role in action?

Stage 4) Represent VDO during fieldwork / Represent how to collect and test water quality by youth group.

Stage 5) Group discussion to disseminate among participants.

Stage 6) Undertake a nominal group technique where people allocate preference to potential actions.

Stage 7) Summarising their ideas in a draft and report to the participants.

Appendix 3 - Example of Coding in NVIVO

Chapter 4

(1 st Step) Clarify the Research Questions	(2 nd Step) Framing the data and finding themes of analysis (What am I searching?)	(3 rd Step) Data sources	(4 th Step) Techniques for coding and finding the linkage of themes	(5 th Step) Interpretation under the Theories / concepts	(6 th Step) Comparison and Conclusion
1)What are the potential impacts of the EEC on the local people, in relation to water and food security?	Policy analysis (EEC and Thailand 4.0) using Bacchi's technique of policy analysis	Websites, Newspapers, Thai government regulations, Local history books, Local documentaries, interview transcripts and consensus conference	Bacchi's technique, NVIVO (Thematic analysis through six questions of Bacchi)	Impact Assessment	Comparing between Ban Pho and Bangkhla Districts
	Finding the theme		Coding and finding the linkage of theme		
Bacchi's Q1	What is the "problem" represented to be in a specific policy?	EEC ACT, 2018 P.3 https://eng.eeco.or.th/en	Problems, solution, solving, improving, solution, develop, development		

Bacchi's Q2	What presuppositions or assumptions underline this representation of the "problem"?	EEC ACT, 2018 P.1-5 - website www.nesdb.go.th	Problems, solution, solving, improving, solution, develop, development		
Bacchi's Q3	How has this representation of the "problem" come about?	-EEC ACT, 2018 P.3 -website www.adb.org/documents/gms-ha-noi-action-plan-2018-2022	Problems, solution, solving, improving, solution, develop, development		
Bacchi's Q 6 Part 1	How/where has this representation of the "problem" been produced, disseminated and defended.	-EEC ACT, 2018 ACT Section 10, 29, 30, 36) -interview	<u>Sub-theme1:</u> A series of plans <u>Sub-theme 2:</u> Communication by EEC_ (<u>Coding:</u> Social media, TV and Newspaper, meeting). Sub theme 3: Informal communication (Coding: Social media, Family member and friend group, Schools). <u>Sub-theme 3:</u> Lack of clearing of information from EEC (<u>coding:</u> unclear messages, confusion, one way communication, limited authority and time)		
Bacchi's Q4	What is left unproblematic in this problem representation? Where are the silences? And Can	EEC ACT, 2018 Section 9, 48, 51, 54, 56, 57, 58 and 59	<u>Sub-theme 1</u> Compromised legislation (Coding clarify limitation, conditions, solution). Sub theme 2 Structure and member of the EEC authority (Coding: authority, power, position, roles).		

	the “problem” be thought about differently?	-interview	<p><u>Sub theme 3</u> Concessions for investors (Coding: reduce tax; skills, immigrations, specialists, foreigner, investors, investment).</p> <p><u>Sub theme 4</u> Relaxed environmental conditions (Coding: protection, safeguards, environmental impacts)</p> <p><u>Sub theme 5</u> support of local communities (Coding: local support, funding, compensation, impacts)</p>		
Bacchi’s Q5	What effects are produced by this representation of the “problem”?	- Local history books, Local documentaries, interview and consensus conference	<p><u>Sub-theme 1:</u> Positive impacts (Coding: infrastructure improving, economic development, opportunity of tourism, potential income and agriculture technology.</p> <p><u>Sub-theme 2:</u> Negative impact (Coding: water quality, water supply, water availability, environmental impacts, road safety and transportation, crime and safety, land use change, food production drop)</p> <p><u>Sub-theme 3:</u> Sense of hope and loss (Coding: labour and lose employment, change job, treats to land and food production</p>		
Bacchi’s Q6 Part 2	How could it be questioned, disrupted and replaced’	EEC ACT P.6, Section 52 -interview	<u>Sub-theme 1:</u> Governance of EEC projects (Coding: transparency, fairness, trust, accountability.		

Chapter 5

(1 st Step)	(2 nd Step)	(3 rd Step)	(4 th Step)	(5 th Step)	(6 th Step)
Clarify the Research Questions	Framing the data and finding themes of analysis (What am I searching?)	Data sources	Techniques for coding and finding the linkage of themes	Interpretation under the Theories / concepts	Comparison and Conclusion
2) How are social networks of local communities include young people responding to the impacts of EEC in relation to water and food security?	Networking, connections, relationships, dynamics of networks such as figures of connections among group members Activities in the areas. Patterns of activities in the community such as cultural activities or	Local history books, Local documentaries, interview transcripts, observations	NVIVO (Thematic analysis through three levels of social capital, groups and network activities and campaigning)	Social Networks / Social Capital Community Development Practice (Community Organising).	Comparing between Ban Pho and Bangkhla Districts

	problem- solving activities				
	Finding the theme		Coding and finding the linkage of theme		
Building social network of local people	<p>-Social capital</p> <p>-Network activities / campaigning</p>	interview transcripts, observations	<p><u>Sub theme 1</u> Bounding network (Coding: family, neighbours, community friends, friends in the village)</p> <p><u>Sub theme 2</u> Bridging network (Coding: other villagers, organizations, NGO, other communities, connection)</p> <p><u>Sub theme 3</u> Linking network (Coding: connection, politician, minister, head of district)</p> <p><u>Sub theme 4</u> Environmental Activities</p> <p><u>Sub theme 5</u> Educational and communication activities (Coding: schools, children, activities,</p>		

			<p>educate, conservation, young people, teachers, camps, training)</p> <p><u>Sub theme 6</u> Activities for sharing information with the public (Coding: media, press, TV programs, social media, networks)</p>		
<p>The role and functions of network through community development practice such as community organising</p>	<p>-Social capital in Community organizing</p> <p>- Reaction to EEC</p>	<p>interview transcripts, observations</p>	<p><u>Sub theme1</u> Motivation: common issues (Coding: inspiration, passion, problems)</p> <p><u>Sub theme 2</u> Community Building: sympathy, understanding (Coding: relation, collaboration, sharing information, knowledge, engagement).</p> <p><u>Sub theme 3</u> Planning: opportunity, objective (Coding: meeting, plan, chance, alliance, ideas, friends).</p> <p><u>Sub Theme 4</u> Mobilising: negotiation, communication, collective and link to movement (Coding: social media, technology, activities, negotiation, move, change, fair, power, protection).</p> <p><u>Sub Theme 5</u> Report: Outcome (Coding: outcome, results, meeting, solutions, solving).</p>		

Chapter 6

(1 st Step) Clarify the Research Questions	(2 nd Step) Framing the data and finding themes of analysis (What am I searching?)	(3 rd Step) Data sources	(4 th Step) Techniques for coding and finding the linkage of themes	(5 th Step) Interpretation under the Theories / concepts	(6 th Step) Comparison and Conclusion
3) What alternative approaches could be used to adapt to more sustainable development ?	Ideas for adaptation and coping Community Capacity and Assets Alternative Approach	Local history books, Local documentaries, interview transcripts, observations, consensus conference.	NVIVO (Thematic analysis through local asset, community capacities, human capacity and ideas for the development in the long term)	Community Development Practice (ABCD and PDP).	Comparing between Ban Pho and Bangkhla Districts
	Finding the theme		Coding and finding the linkage of theme		
Adaptation for sustainable development	Ideas of adaptation and coping about jobs, food and water security	interview transcripts, observations, consensus conference.	<u>Sub theme 1</u> : adaptation, coping (Coding: learning adapt, solve, review, adjust, food production, water, jobs, preparing, plan, set up)		

	Building and preparing for long term				
Community Capacity	Strong points of communities	Local history books, Local documentaries, interview transcripts, observations, consensus conference	<p><u>Sub theme 1</u> physical capacity (Coding: land, agriculture, locations, resources, agriculture, fishery, industries, tourism)</p> <p><u>Sub theme 2</u> social capacity (Coding: culture, human, believe, religion, relationship)</p>		
Participatory Development Practice	Participation among people in communities and others for community development	interview transcripts, observations.	<p><u>Sub theme 1</u>: participation (Coding: raising awareness,</p> <p>engaging, collaboration, communication, involve, sharing information).</p>		
Alternative Approaches	<p>Limitation of development</p> <p>Plan and ideas of community development in the future</p>	Interviews / consensus conference.	<p><u>Sub them 1</u>: limitation (Coding: condition, unclear, weakness, restrict, impacts, control, barrier, policy, government, public hearing, conflict, law enforcement).</p> <p><u>Sub theme 2</u>: idea for futures (Coding: education, skills collaboration, understanding, sharing benefit, governance).</p>		

