MOTIVATIONS FOR APPLICATION OF CO-MANAGEMENT IN PROTECTED AREAS IN VIETNAM: A CASE STUDY IN XUAN THUY NATIONAL PARK

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DECLARATION OF ORIGINAL WORK

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

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ABSTRACT

This thesis builds on previous doctoral research conducted in Xuan Thuy National Park (XTNP) that concluded that there was a high level of co-management with strong vertical and horizontal networks compared with management of other protected areas in Vietnam. The aim of the thesis is to: (1) analyse the levels of involvement of various groups of stakeholders; (2) understand the motivations behind improvements in co-management; and (3) make recommendations for improving the co-management model of the park. In order to investigate these aims, a questionnaire was administered to a stratified random sample of stakeholders. Forty-five completed questionnaires from nine groups of stakeholders were received and analysed. The result of the analysis concludes that the co-management model in Xuan Thuy National Park is an "administration co-management" type model where government players retain power over park governance, despite the fact that local people are legally recognised as resource users. Private sector organisations are absent in all stages of the natural resource management process, while NGOs and education and research institutions play important roles in giving support for operating co-management processes. High importance is attached to eight particular incentives: (1) Introduction of co-management policies; (2) Support from government agencies; (3) Support through specific projects; (4) Financial support; (5) Education and awareness raising programs; (6) Establishment of co-management working groups; (7) Clear co-management guidelines; and (8) Benefit gained from co-management. The three most important motivations for involvement in management were the introduction of co-management policies; support from government agencies; and awareness raising programs. The motivations contribute to the improvement of three dimensions — power, representation and process — in the co-management model adopted by Xuan Thuy National Park through enhancing institutional arrangements and operational processes. However, limitations and challenges to the application of co-management still exist. Potentially there are measures that could be applied to overcome these limitations and barriers to improve the sustainability of co-management such as conducting advocacy strategies, amendments to the proposed co-management policies, and making long-term financial and operational plans.

Keywords: co-management, co-operation management, Xuan Thuy National Park, motivation, protected areas, participation, natural resource management, local community.

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LIST OF ABBREVIATIONS

DARD	Department of Agriculture and Rural Development (Provincial)
IUCN	International Union for Conservation of Nature
MARD	Ministry of Agricultural and Rural Development (National)
MONRE	Ministry of Natural Resources and Environment
MPA(s)	Marine Protected Area(s)
NGO(s)	Non-government Organisation(s)
NP(s)	National Park(s)
NR(s)	Natural resource(s)
PA(s)	Protected area(s)
PPC	Provincial Peoples Committees
SUFs	Special Use Forests
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational Scientific and Cultural Organisation
USAID	United States Agency for International Development
WCMC	World Conservation Monitoring Centre
XTNP	Xuan Thuy National Park
XTNPMB	Xuan Thuy National Park Management Board

CHAPTER 1 INTRODUCTION

1.1. Background

Vietnam, with its many endemic species and unique ecosystems, has the sixteenth highest level of biodiversity of any country in the world (USAID 2013). In order to protect this rich biodiversity, a system of protected areas (PAs) has been established in Vietnam. These include 164 Special Use Forests (SUFs) and 15 proposed Marine Protected Areas (MPAs). There are 30 National Parks (NPs) which are the most important sites of SUFs (IUCN 2016; Ngo et al. 2014; The Prime Minister 2014). However, there remain many challenges for biodiversity protection within Vietnam's PAs; the most important of these are illegal resource exploitation, infrastructure development and land-use changes (MONRE 2011a, 2014, 2015; USAID 2013). In addition, pressures and negative impacts on biodiversity also stem from low levels of knowledge about protection in poor local communities located in the core zones and buffer zones of PAs (Brown 2013). The traditional management model for PAs in Vietnam is centralised, bureaucratic and top-down (Lai & Suriya 2011). This system not only reduces the effectiveness of natural resource (NR) management [1]but also raises the potential for conflicts between government agencies and local residents (Zingerli 2005). As a result, Vietnam's biodiversity continues to be under threat despite an increase in the number of PAs and SUFs over the two last decades (MONRE 2011b; PanNature 2013).

Co-management, or collaborative management, was defined by Berkes et al. (1991) as "the sharing of power and responsibility between the government and local resource users". In other words, it is a decentralised approach to ensure the rights and involvement of primary stakeholders in managing NRs (Singleton 1998; The World Bank 1999). Much research since the 1990s has shown that co-management improves the effectiveness of NR protection by reducing potential conflicts, resolving complex issues and reducing government bureaucracy (Campbell, Kartawijaya, et al. 2013; Carlsson & Berkes 2005; Lai et al. 2015; Zachrisson 2009). Co-management is therefore anticipated to be the mainstream model for NR management in Vietnam (IUCN 2010). Its use in management of PAs was formalised from 2003 in the Management Strategy for Protected Areas System of the Government (Nguyen

[1] Natural resource management refers to the management of natural resources such as land, water, soil, plants and animals.

et al. 2016b), however, it has only been piloted in some areas. Nguyen et al. (2013) showed, in an analysis of 105 SUFs that while the "Administrative Co-management" model encouraged most stakeholders to participate in managing PAs, final management decisions are almost always made by local government. In addition, the application of co-management in Vietnam differs significantly across regions, and many limitations and challenges remain (Brown 2013; Ho et al. 2016b; Nguyen et al. 2013; Vu 2005; Vu 2012).

According to doctoral research by Nguyen (2017), Xuan Thuy National Park (XTNP) has been identified as having a high level of stakeholder participation in managing its NRs, strong vertical and horizontal relationships with stakeholders, and a benefit sharing mechanism as shown in Table 1.1. However, there is a lack of research on the motivations and factors that contribute to the effective co-management mechanism in XTNP and in Vietnam overall.

Table 1.1: Evaluation of co-management in four protected areas in Vietnam

Co-management characteristic	Networked relation	Khau Ca	Nui Chua	Cu Lao Cham	Xuan Thuy
Vertical network	MARD involvement	No	No	Yes	Yes
	Active and facilitating PPC	Yes	No	Yes	Yes
	Devolution to DPC	No	No	No	Yes
	Consulting and learning process among actors in vertical linkages and with local people	No	No	Yes	Yes
Horizontal network	Local people collaboration	Conflicts with local people	Limited collaboration	Good collaboration, but local people complain that outsiders exploit resources. Local people have no rights to stop outsiders.	Good collaboration. Local people have clam exploitation rights. They can prevent others from poaching their areas.
	International involvement	Limited	Limited	Strong financial and technical support	Strong financial and technical support
	Business	No	No	Yes	Yes
Cost and benefit sharing		No	No	Yes	Yes
Overcoming financial and human resource shortages		No	No	No	Yes

Sources: Nguyen et al. (2016b) and Nguyen (2017)

1.2. Research objectives, scope and significance

Due to the advanced participation of stakeholders in managing XTNP, this research is conducted to find out motivations for co-management improvements in this park. This research aims to answer the following questions:

(1) What is the current status of co-management in managing XTNP?

(2) What motivations contribute to improved participation by stakeholders in managing XTNP?

(3) What needs to be done to encourage the better participation of stakeholders in the management of XTNP?

The study will analyse co-management in XTNP in Nam Dinh Province because of the high levels of participation in co-management identified by Nguyen (2017). In addition, the research will evaluate the importance of external influences in motivating stakeholders to become involved in supporting specific projects; introduction of local policies and regulations related to co-management; establishment of working groups; and participation in education and awareness-raising programs. The internal factors, such as the characteristics of local communities (Crawford et al. 2006) and cultural factors (Brown 2013), which may also influence the application of co-management, will not be analysed in this thesis mainly because of time limitations.

This research will contribute to academic scholarship and, by classifying the processes, to improved co-management application in XTNP and therefore other PAs of Vietnam. The research will be a key academic contribution to the research literature in terms of understanding the influences that lead to high levels of successful participation in co-management of PAs. Secondly, the findings of, and recommendations from, this research will be made available to decision makers and stakeholders as a tool that they can apply in other location and improve co-management of PAs in Vietnam.

1.3. Thesis outline

The thesis comprises seven chapters. The next chapter summarises the state-of-knowledge about co-management of PAs. The study area is described in Chapter 3 and the data sources and research methods are introduced in the fourth chapter. The results are presented in Chapter 5. The subsequent chapter analyses and discusses the research findings, while the concluding chapter comprises a series of recommendations based on the findings outlined.

CHAPTER 2 LITERATURE REVIEW

2.1. The protected area's system and governance

2.1.1. Protected areas: definitions, categories and governance

Over the last twenty years, the number of protected areas increased dramatically worldwide to protect natural and cultural values from impacts of global changes (UNEP WCMC & IUCN 2016a). The establishment of PAs is believed to be a pivotal measure to conserve the world's biodiversity and ecosystems (Andam et al. 2008). However, there are different approaches for the management of the PA system that lead to a lack of common standards for its definitions and description of categories. There are international PAs (e.g., World Heritage Sites), regional protected areas (e.g., ASEAN Heritage Sites), and national protected areas (e.g., SUFs in Vietnam). The 1994 definition of PAs by the International Union for Conservation of Nature (IUCN) is currently globally accepted in both international arenas and nations. The IUCN defined PAs as "A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (IUCN & WCMC 1994). In other words, a PA should have a clear physical boundary, recognition and governance by authorities to reach the conservation objectives of natural and cultural values (Dudley & Stolton 2008).

In terms of categories, IUCN and WCMC (1994) divided PAs into six types according to the management objectives including: (Ia) Strict Nature Reserve; (Ib) Wilderness PA; (II) National Park; (III) Natural Monument or Feature; (IV) Habitat/Species Management Area; (V) Protected Landscape/ Seascape; and (VI) Managed Resource PA (IUCN & WCMC 1994). Under these categories, the naturalness of PAs decrease from Category Ia/Ib to Category VI (Dudley & Stolton 2008). In addition, there are different management objectives between the categories. While the primary management objectives of categories Ia/Ib are scientific research or conservation, the major management objectives of categories V and VI are sustainable uses of NRs or tourism development (Eagles et al. 2002; IUCN & WCMC 1994). Those categories are accepted globally and it is an effective tool for approaching management of the world's PAs (IUCN 2008). However, the UNEP WCMC & IUCN (2016a) report that 33% of current PAs do not fit those category because of the complex types across the world.

The governance of PAs is an essential aspect that directly relates to decision-making arrangements and the effectiveness of management (Worboys et al. 2015). The IUCN (2008) classified governance types of PAs into four categories: (1) State governance (PAs are managed by government agencies); (2) Co-management governance (various actors share power and responsibility in managing PAs); (3) Private governance (private owners manage PAs); and (4) Community governance (PAs are managed by local community groups) (Dudley & Stolton 2008). According to UNEP WCMC & IUCN (2016b) database, 84% PAs are managed by government, 4.5% by private owners, 1.8% by shared governance, and 0.6% by local groups. Although the portion of state governed PAs is high, there are failures to achieve the management objectives due to limitations of this management model and challenges which have emerged across the world (Bruner et al. 2001; Naughton-Treves et al. 2005).

2.1.2. Establishment history and protected area system in the world

Despite the fact that protected areas were mainly established over the last 40 years, there is a long history of PA development from a thousand years ago (Eagles et al. 2002). There are arguments from historians that some types of PAs were established in India two thousand years ago and in Europe one thousand years ago (Holdgate 1999). However, the main purpose of those areas was to provide hunting locations for Kings and aristocracy rather than conservation and public access. The first recognised in modern times was Yellowstone NP, established in 1870 in the United States (Nash 1970). In this period, the concept of PAs evolved with two management objectives still seen in modern PAs including conservation and recreation for the public (Runte 1997). Runte (1997) also argued that the US played an important role in the establishment of the system when some NPs were created in other nations after learning from the American model. For example, Royal NP was established in Sydney, Australia in 1879 followed by Banff NP in Canada in 1887 (Eagles et al. 2002; Nash 1970). However, the system of PAs started to quickly expand globally from the 1970s after the First World Conference on National Parks in Seattle, United States in 1962 with the participation of 63 countries (Murray & King 2012; Nash 1970). In addition, the creation of PAs system in this period was believed to be an essential tool to protect natural and cultural values from impacts of global changes such as climate change and population growth

(Andam et al. 2008; Butchart et al. 2012; UNEP 2013). As a result, the total area of PAs in the world increased from approximately 3.2 million km^2 in 1950 to 25 million km^2 in 2014 as shown in Figure 2.1. Figure 2.1 also indicates that the number of PAs in Category II (National Park) and VI (Managed Resource PA) increased noticeably from 1990s, while other categories had slower expansion in terms of cover areas.

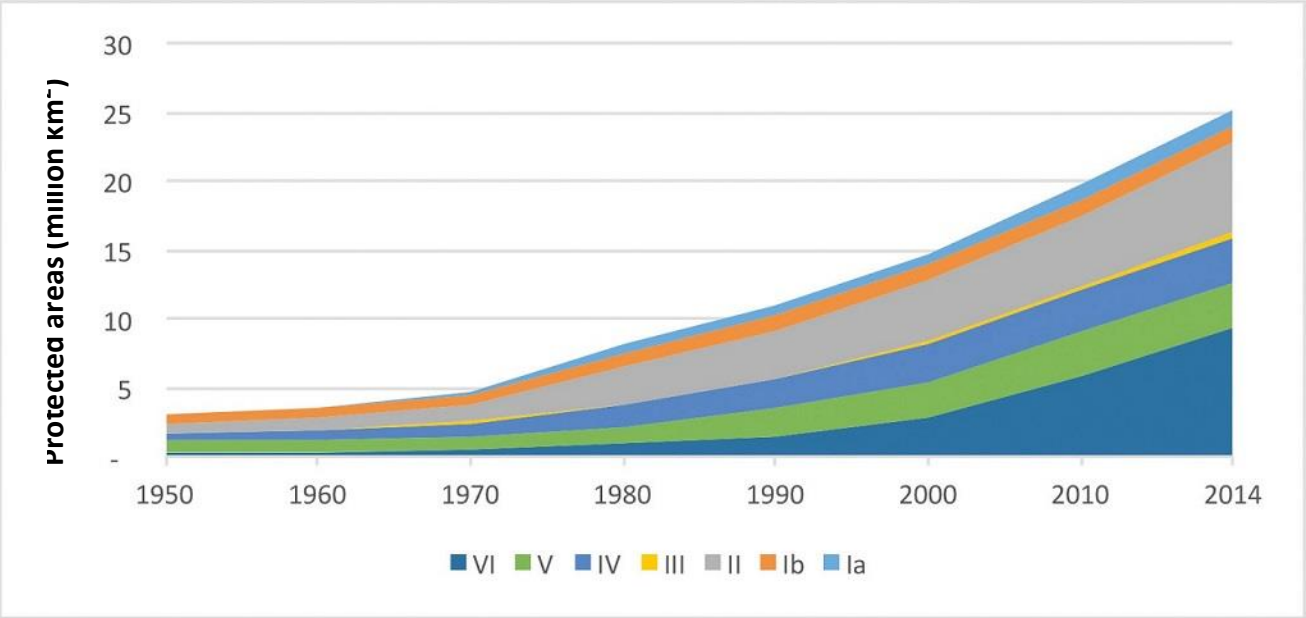


Figure 2.1: Total area of global PAs in km^2 from 1950 to 2014 by IUCN categories

Source: United Nations Environment Programme (UNEP), World Conservation Monitoring Centre (WCMC), and International Union for Conservation of Nature (IUCN) (2016b)

According to UNEP WCMC & IUCN (2016b) database, there are 217,155 PAs globally in 244 countries and territories, but Latin America and the Caribbean regions have extensive coverage area of PAs with 24% of the total natural area (Figure 2.2). However, there are great efforts and investments for creation and management of terrestrial PAs compared with MPAs (Dudley & Stolton 2008). As a result, there are 202,467 terrestrial and inland water PAs covering 14.7% of the terrestrial environment, while MPAs have only 14,688 sites with the coverage of 10.2% of coastal and marine areas (UNEP WCMC & IUCN 2016a, 2016b). In terms of geographic distribution, Latin America and the Caribbean has biggest area of PAs with a total of 4.85 million km^2. Brazil, due to the Amazon basin, is the country that has the highest area of PAs with an area of 2.47 million km^2 (UNEP WCMC & IUCN 2016a).

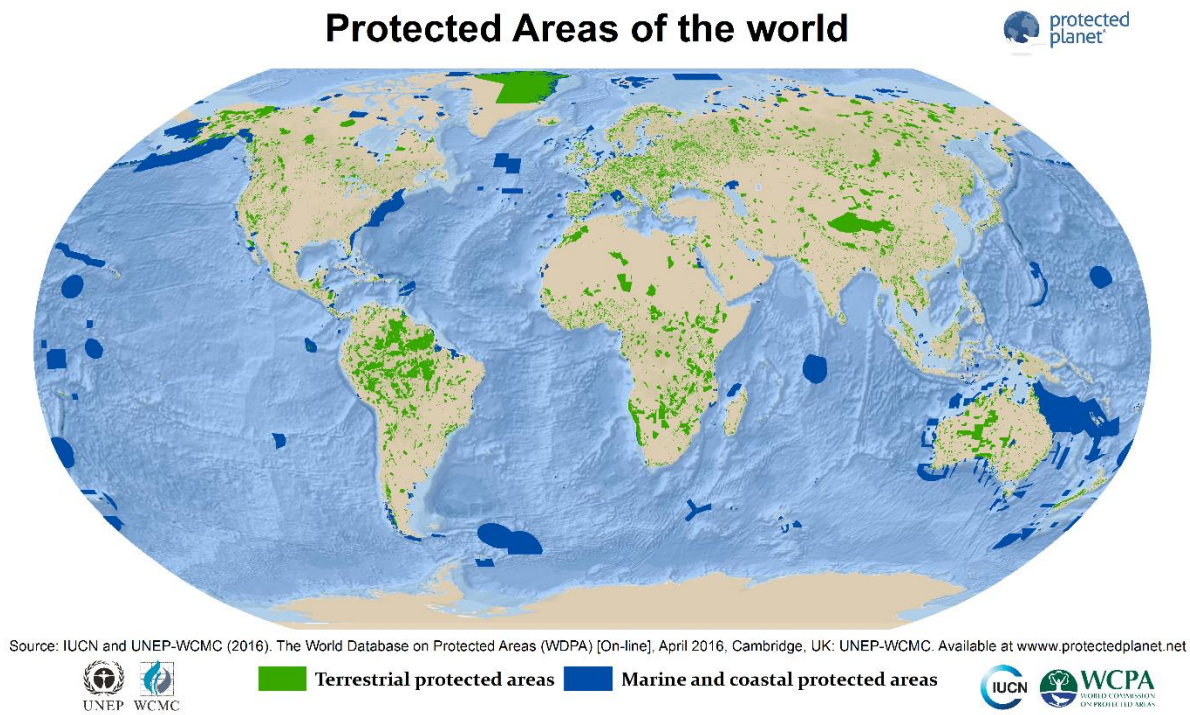


Figure 2.2: Distribution of protected areas in the world

Source: UNEP WCMC & IUCN (2016a)

In Asia, PAs cover only 13.9% of the terrestrial surface and 1.8% of the marine and coastal surface (Juffe-Bignoli, Burgess, et al. 2014). In addition, the Asian region has critically low coverage of MPAs between 12 and 200 nautical miles where only 0.04% of this area is protected. Juffe-Bignoli, Bhatt, et al. (2014) also state that the coverage of PAs in Asia is not adequate to protect the important bird and biodiversity areas with coverage of only 16%, terrestrial ecoregion (the coverage of 35%) and marine ecoregion (the coverage of 15.4%). The distribution of PAs in Southeast Asia mirrors this situation with a low PA coverage, when there are great threats and impacts from human activities on natural resources (Sodhi et al. 2004). There are only two countries (Indonesia and Thailand) that have above 5% PA coverage of coastal and marine areas while four countries have over 17% coverage of terrestrial PAs (Aichi target 11 to 2020[2]) including Brunei, Cambodia, Malaysia and Thailand (UNEP WCMC & IUCN 2016b). As a result, it is predicted that Southeast Asia might lose up to three quarters of its primary forest and 42% of its biodiversity by 2100 because it is not protected (Sodhi et al. 2004).

[2] Aichi Target 11 of Convention on Biological Diversity (CBD): "By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas are conserved".

2.2. Co-management and the governance of common pool

2.2.1. Co-management: an emerging approach for common pool governance

Co-management (also known as collaborative management, joint management, shared management, and participatory management) is a new approach for the governance of NRs. Co-management was first defined by Berkes et al. (1991) as "the sharing of power and responsibility between the government and local resource users". However, recent research argued that co-management does not necessarily weaken the power of the government in managing NRs (Parr et al. 2013; The World Bank 1999). There are other definitions of co-management by other authors that overlap each other or concentrate on different aspects of co-management. For example, Singleton (1998) defined co-management as the combination of control between state and local users to support each other. However, the concept of co-management that is accepted widely is the definition approved by The World Conservation Congress as "a partnership in which government agencies, local communities and resource users, non-governmental organisations (NGOs) and other stakeholders negotiate, as appropriate to each context, the authority and responsibility for the management of a specific area or set of resources" (IUCN 1996). This concept is close to the definition of The World Bank (1999) when multi-actors (the governments, civil society, private sector, local communities, and NGOs) are recognised to share rights and responsibilities in decision-making processes through a decentralised approach as shown in Figure 2.3. Notwithstanding efforts to give clear definitions, almost all definitions have problems capturing the flexible applications and complexities of co-management in natural resource governance worldwide (Carlsson 2000; Carlsson & Berkes 2005). In addition, there is a recent approach named adaptive co-management that incorporates the adaptation and flexibility of the co-management approach in a learning by doing process (Berkes 2009; Berkes et al. 2007; Folke et al. 2005).

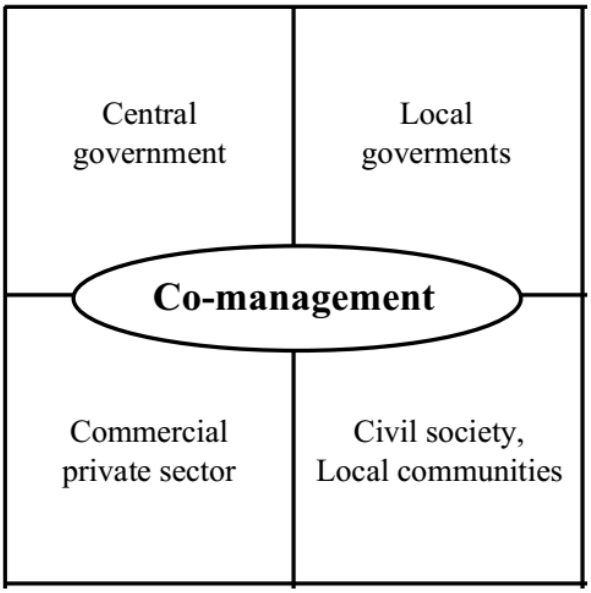


Figure 2.3: Key stakeholder categories and co-management

Source: The World Bank (1999)

The concept of co-management first appeared at the World Conservation Strategy convention in 1980 (Berkes 1997) and it has been applied as a global phenomenon to improve the effectiveness of NR management over the last two decades (Robinson & Wallington 2012). From the 1990s, the governance of the common pool has been transformed from a state-control approach to a co-management approach as a global trend (Pomeroy et al. 2007). There are four main drivers that led to the expansion of the co-management approach in managing NRs. Firstly, there are conflicts and mistrust between the government and local users that show the limitations of the traditional top-down management approach (Bockstael et al. 2016; Mulder & Coppolillo 2005; Murray & King 2012). Secondly, there are increased trends of threats and complexities of common pool management that require a more effective management paradigm (Ervin 2003; Plummer & Fennell 2009). Furthermore, there is the global trend of decentralised reform strategies in managing resources as an important opportunity to improve the application of co-management (Berkes 2009; The World Bank 1999). Finally, the emerging interest of stakeholders in the principle and processes of good governance contributes to the promotion and expansion of co-management theory at both the international and local levels (Dressler et al. 2010). As a result, there are global transforming trends from the state-

control to the co-management approach in the governance of common pools such as biodiversity conservation, agriculture, fisheries and related fields (Folke et al. 1998). This advance is significant for future park management.

2.2.2. Three dimensions and spectrums of a co-management model

Plummer and FitzGibbon (2004) developed the multi-dimensional model of co-management shown in Figure 2.4. This framework is a tool for evaluating the breadth of a co-management model based on three dimensions including power, representation and process. The depth of each dimension in the model describes the range of co-management types and complexities of co-management models in managing NRs throughout the world.

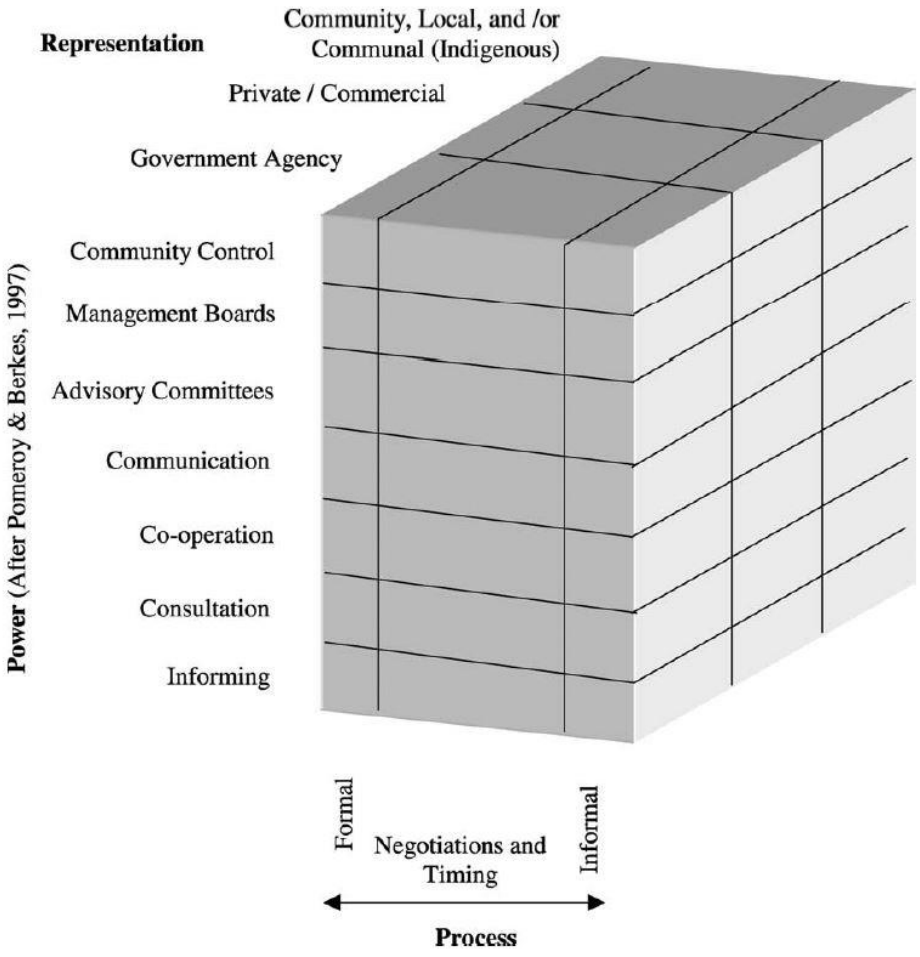


Figure 2.4: A multi-dimensional model of co-management in natural resources

Source: Plummer and FitzGibbon (2004)

The first dimension shown is power sharing between the government and other actors in the management process which is the basis for classifying spectrums of co-management. According to Plummer and FitzGibbon (2004), the power sharing can be arranged through the involvement of resource users in decision-making and management process including planning, implementation, and monitoring. In this framework, Plummer and FitzGibbon (2004) applied seven ladders of co-management spectrums identified by Berkes (1994) and Pomeroy and Berkes (1997) including: Informing, Consultation, Co-operation, Communication, Advisory Committees, Management Boards, and Community Control (Figure 2.4). This classification is based on the transformation level of power or decentralisation from the state to resource users in the governance of NRs.

There is also another classification of co-management spectrums based on the level of power sharing that was developed by Sen and Nielsen (1996) through the adaptation from the categorisation by Berkes (1994). This framework introduces five categories of co-management shifting from government management to user group management (Figure 2.5). The first type of co-management in this framework is instructive, when the government retains all power in the management but they inform local people of their decisions for management processes. Consultative is the second type of co-management when local users are consulted about decision-making, however, all decisions still belong to the government. The co-operative type, which refers to the definition of co-management (Jentoft 1989), is equal power sharing between the government and local users in the management process. The fourth system of co-management in this classification is advisory when users make decisions with advice from the government. The final type of co-management is informative, when user groups make all the decisions concerning management and they have the responsibility to inform the government about their decisions (Sen & Nielsen 1996). This classification is most important when it fits with diversity of co-management systems being used in NR management in different cases worldwide. In addition, this classification is also used widely for evaluating co-management models due to its simplification compared with the classification by Berkes (1994).

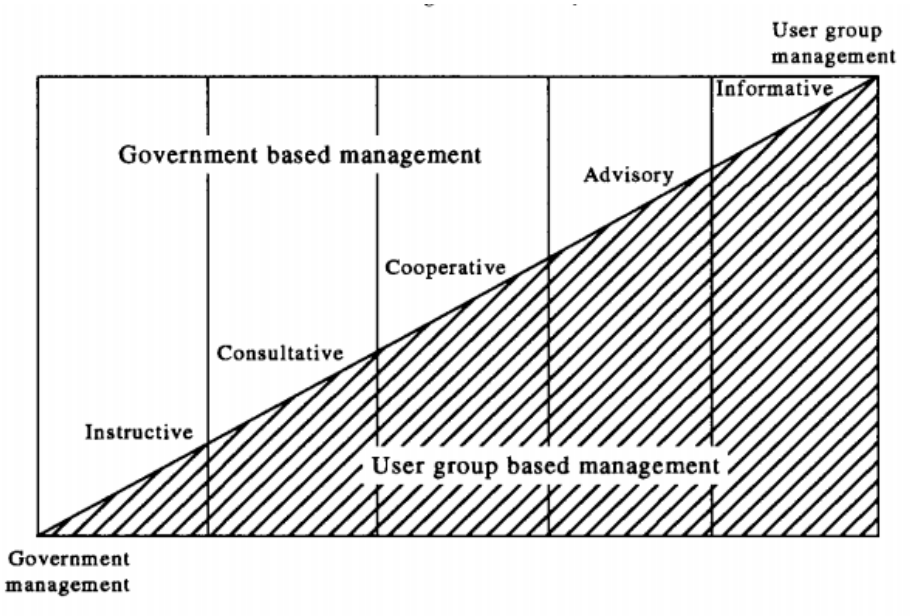


Figure 2.5: Five types of co-management arrangements

Source: Sen and Nielsen (1996)

The second dimension of the Plummer and FitzGibbon model shown in Figure 2.4 is representation, which is the scope of resource users who are involved in the management process of NRs. While the first dimension relates to the level of power sharing, representation specifies the range of stakeholders who will be given the power. Basically, Plummer and FitzGibbon (2004) recommended that the government, private sector, and local people should be involved in the governance of NRs (Figure 2.4). However, Enevoldsen (1998) had previously argued that every legitimate user should have rights to participate in the management of the common pool. Overall it appears that the involvement of diverse actors will not only contribute resources for operating co-management models (Brown 2013; Pomeroy & Ahmed 2006), but also allow for the reduction of potential conflicts between resource users through co-operation and negotiation (Short & Dwyer 2012; Singleton 1998).

The final dimension shown in the model is process, which includes the informal and formal operation of a co-management model through negotiations and timing (Figure 2.4). This dimension has two components including institutional arrangements and operational process (Plummer & FitzGibbon 2004). The institutional arrangements contribute to the formalisation of the rights and participation of local actors through the instigation of

legislation, policies, guidelines, and the governance structure (Mitchell 1989). The operational process refers to the operation of the co-management by time through stages such as planning, implementation and evaluation (Hersoug & Rånes 1997).

The development of this framework not only contributes to improving the understanding and implications concerning co-management, but also is an effective instrument and direction for evaluating, improving co-management policy, and fostering a co-management model (Plummer & FitzGibbon 2004). Hence, this thesis will use this framework to analyse the influences on motivation across three dimensions of the application of the co-management model in Xuan Thuy National Park.

2.2.3. Strengths and benefits of co-management

There are advantages of the co-management approach compared with the traditional state-controlled management model (Pierre & Peters 2000) that can resolve the complex issues in the management of PAs (Lai et al. 2015). Carlsson and Berkes (2005) stated that the core of co-management was the decentralisation from the government to key stakeholders that has five main strengths: bridging function, task and risk sharing, conflict solving, resource exchange, and cost effectiveness. The most important strength of co-management is the linkage and interactions between key actors that improves partnerships and co-operation in managing PAs (Campbell, Kartawijaya, et al. 2013; Kofinas 2009; Plummer & Fennell 2009). In addition, the decentralisation in co-management contributes to the sharing of responsibilities and risks by government agencies with other actors (Carlsson & Berkes 2005). Consequently, it contributes to reducing the overwhelming and vulnerability of government agencies when they have limited resources and capacity for common pool management in many countries (Low et al. 2000; Zachrisson 2009). Moreover, the co-management approach is demonstrated as the best way to resolve complex conflicts between resource users through negotiation to attain suitable decisions for the management process (Short & Dwyer 2012; Singleton 1998). There are also supports and exchanges of resources between stakeholders though the co-management mechanism to deal with PAs management difficulties (Brown 2013; Pomeroy & Ahmed 2006). For example, while local knowledge of the resource can be provided to resource managers by local

stakeholders, communities and government agencies may gain technical, scientific and financial support from the private sector and NGOs for managing PAs (Carlsson & Berkes 2005; Hoffman 2009). Finally, there is a reduction of transaction costs and increase of cost efficiency through consistent governance methods and suitable decisions from the involvement of multi-stakeholders in co-management models (Ianni et al. 2010; Poffenberger 1996).

From the above strengths, it is believed that co-management is a valuable tool to attain sustainable development goals from multi-outcomes of co-management application such as achievements of environmental, social and economic objectives (Buscher & Whande 2007; Nursey-Bray & Rist 2009; Reid et al. 2004). According to De Pourcq et al. (2015) and Zachrisson (2009), co-management is an emerging model that improves the effectiveness of management of PAs compared with a top-down management approach. For example, the co-management mechanism not only contributes to the reduction of the bureaucracy of the government (Zachrisson 2009), but also increases the number of innovative solutions for the management of PAs (Engel et al. 2010). As a result, the local biodiversity was better protected by applying the co-management model in many countries in the world (Baticados & Agbayani 2000; Indrawan et al. 2014; Reid et al. 2004; Thomlinson & Crouch 2012; Vokou et al. 2014). In addition, the local people also get benefits from the application of co-management though direct participation wages (Parr et al. 2013) or by ecosystem services in the long-term (Vu 2012). With regards to the economic aspect, other benefits from co-management are improvements in local welfare and long-term economic development of local communities (Cooper 2008; Reid et al. 2004). In addition, the participation of key actors in managing PAs ensures rights of local users and democratic governance in the common pool (The World Bank 1999).

2.2.4. Co-management: weaknesses and challenges

Despite co-management being expected to become a mainstream governance method for management of PAs, there are limitations of the co-management approach when it is applied in the field. Firstly, there is the increase in potential conflicts between stakeholders from the complicated organising process and complex interactions of stakeholders in the co-

management governance system (Hoffman 2009; Parr et al. 2013). It is indicated by Robinson and Wallington (2012) that each actor has different interests, purposes, knowledge and cultural background that makes it difficult to get consensus in the negotiation and decision-making process. Besides that, the establishment and organising of a co-management system consumes more time and budget compared with single actor management models that require support and effort from government agencies and other actors (Indrawan et al. 2014). In addition, Castro and Nielsen (2001) point out that official managers of PAs might experience more problems and risks from interventions of multi-stakeholders in their plans and management processes. Despite the fact that the co-management mechanism can bring long-term benefits to local communities, it tends to decrease incomes and welfare of local people in the short-term (Chambers et al. 1989; Cooper 2008; Mazunda 2011). Consequently, there are collapses of co-management models when local people break conservation rules and exploit resources for food because of the lack of financial support and alternative livelihoods (Ring 1998; Yusran 2002).

There are also challenges for co-management application that lead to the failure of the co-management approach for PA governance experienced in many countries in the world. The first challenge is the complexity of NR management, while the co-management approach has a short development history over only thirty years (Campbell et al. 2003; Cochrane 2013; Indrawan et al. 2014; Parr et al. 2013). Hence, there is a lack of co-management guidelines such as a coordinating structure, and sustainable financial mechanism that causes limited success of co-management in managing PAs (Hovis 2002). In addition, according to Thomlinson and Crouch (2012), there are also unappropriated co-management policies, and incongruent mechanisms for the management of each category of PAs and for particular social-cultural circumstances that are critical reasons for the collapse of some co-management governance models. More importantly, “gatekeepers” are not willing to share the power that prevents the decentralisation process for co-management arrangements (Brown 2013; Kubo 2008; Mayaka 2002; Mayaka et al. 2005; Rashid 2012). This leads to the result that co-management is applied as a tool of the government to enhance the power of the state in resource allocation and management in some developing countries (Hoffman 2009). Furthermore, the traditional management systems tend to reject negotiation rights

of resource users and innovative recommendations from stakeholders to maintain their pre-established plans and rights (Castro & Nielsen 2001; Zachrisson 2009). A popular difficulty of co-management models is the lack of political and financial support from government agencies and related stakeholders for co-management implementation (Nielsen 2012; Ostrom et al. 1994). In addition, Zachrisson (2009) points out that the corruption and bureaucratic management system are barriers for the success of co-management models. Finally, there are other difficulties for local resource users which prevent them from becoming involved in managing PAs such as barriers from cultural characteristics (differences of language and custom of indigenous people), and the lack of knowledge and skills of local people in managing resources (Chapeskie 1995; Zachrisson 2009). All of the issues identified by these authors need to be understood if co-management is to be successful.

2.2.5. The application of co-management in the management of protected areas

In terms of governance, there are critical threats to resources from human impacts as well as the weak top-down management models that tend to reduce the effective management of PAs throughout the world. On one hand, there are the negative impacts from global change affecting biodiversity inside and outside PAs in both developed and developing countries (Andam et al. 2008). For instance, while 50% of PAs in the United States are under threat from urbanisation, agricultural development, and resource exploitation (Wade et al. 2011), 98 PAs in fifteen countries in Africa have difficulties in protection biodiversity from common illegal activities by local people such as poaching, logging, and illegal agricultural expansion (Ervin 2003; Tranquilli et al. 2014). On the other hand, the traditional state-control management with a “fences and fines” approach is inefficient in solving complex issues in PA’s management (Naughton-Treves et al. 2005). The most common disadvantages of a top-down management approach are the rise in potential conflicts between stakeholders, and the bureaucratic management system that leads to the failure of PAs to overcome management difficulties (Bruner et al. 2001; Feeny et al. 1990). In addition, the research by Ervin (2003) also showed management issues in state-managed PAs comprise the lack of financial resources for protecting and monitoring activities, inadequate capacity of government agencies, and the lack of contributions by stakeholders to conservation

activities (Ervin 2003). Consequently, only 17.5% of countries globally attained 60% assessment targets of PA Management Effectiveness due to the high portion of state-controlled PAs and management difficulties (Coad et al. 2015). Hence, the governance of PAs requires a new approach to deal with multi-challenges and limitations of the traditional management system (Indrawan et al. 2014; Sessin-Dilascio et al. 2015).

Co-management began to be applied from the 1990s as an essential measure to deal with multi-challenges from management (Lane 2001). Despite the strengths of co-management, there is a limited percentage of "real co-management models" in PA's governance globally that requires more time to be applied widely (Dressler et al. 2010). According to the UNEP WCMC & IUCN (2016a), there are approximately 3,908 co-management PAs, equal to 1.8% of the total 217,155 PAs in the world. The reason for this low percentage of "real co-management models" is the inadequate decentralisation and power sharing from the government to other actors in managing PAs (Brown 2013). As a result, stakeholders are encouraged to become involved in managing PAs, however final decisions still belong to state managers (Bockstael et al. 2016; Nguyen et al. 2013). Hence, there are so-called "co-management models" in PAs but those systems do not meet the criteria of co-management definitions, especially in developing countries.

In addition, there are different situations of co-management application between developed and developing countries but there are mixed results in both worlds. Research from literature shows the advanced decentralisation arrangements in co-management models in some developed countries. For example, Nursey-Bray and Rist (2009) evaluate results from five years implementation of a co-management approach in the Great Barrier Reef World Heritage Area, Australia that indicates positive contributions of local user's involvement in the achievement of conservation and management goals. There are shared decision-making responsibilities and strong relationships between government managers and local stakeholders (Nursey-Bray & Rist 2009). However, it is difficult to attain consent in the negotiating process when the government concentrates on conservation goals, and local communities desire to achieve economic benefits from their involvement. The authors argue that there is "a long way to go" for this model to become a successful co-management regime because of the lack of innovations for effective management programs, trust building efforts, and conflict solving (Nursey-Bray & Rist 2009). Importantly

research findings from 221 co-management cases in 50 developing countries shows a common issue of ineffective co-management arrangements when the government retains control in the decision-making process (Evans et al. 2011). In addition, the critical issues of co-management application in Bolivia, for example, are distrust, poor linkage, and unclear rights and responsibilities between actors (Mason et al. 2010), while co-management cases in Brazil and Cameroon have an insufficiency of policies, supports, guidelines, and involvement of local communities in all stages of PA management (Bockstael et al. 2016; Mayaka 2002). Hence, there are numerous challenges that should to be overcome to improve the application of co-management models of PA's governance in both developed and developing countries.

Southeast Asian countries also have different institutions and achieved different outcomes of co-management models in PA governance in each country because of diverse political regimes. The Philippines is ranked as the most successful country in applying a co-management approach with advanced co-management models (Barber et al. 2004). The establishment of Multi-stakeholder PA Management Boards in the Philippines is not only a tool for power sharing but also a measure for the participation of key actors in the decision-making process (The World Bank 2003; White et al. 2002). In addition, there are strong relationships, involvements, and political-financial supports from multi-level stakeholders including government agencies, international and national NGOs and local communities that contribute to attaining success of co-management cases in the Philippines (Wilson et al. 2006). In contrast, the literature shows a range of challenges and failures of co-management models in PAs in Indonesia. Notwithstanding that co-management policies are outlined at national level, there is a shortage of the decentralisation process when government agencies play the main actor in managing PAs (Indrawan et al. 2014; Tolo 2013). In addition, there are common problems in PA governance, such as financing problems, low capacity of government staff, and corruption, that lead to failures of co-management at the field level in Indonesia (Clifton 2003). In other Southeast Asian countries such as Laos, Thailand and Cambodia, there are also limited "de facto" rights of local users, unclear responsibilities between actors and limited involvement of resource users in PA governance (Parr et al. 2013; Phounsavath et al. 1999).

2.3. Co-management in protected areas in Vietnam

2.3.1. Biodiversity and the protected area system in Vietnam

The establishment of a PA system in Vietnam commenced 55 years ago to conserve the unique biodiversity values of the country. In terms of ecosystem diversity, due to its long coastal and terrestrial land mass and shape, and different climate regions, there are 14 terrestrial ecoregions, 20 types of marine ecosystem, and variations of terrestrial wetland areas (MONRE 2005; VEA 2008). Vietnam has 63 Important Bird Areas (equal to 5% of the total natural areas of the country) and 104 key Biodiversity Areas with a total of 3.35 million hectares around the country (BirdLife International 2013; MONRE 2015). In addition, there are 49,200 species in Vietnam with 20,000 species of terrestrial and water plants, 10,500 species of animals, and 11,000 marine species (MONRE 2011a). More importantly, there is high species endemism in Vietnam including 10% of total plants (Pilgrim & Tu 2007), 12 species of mammal, 80 species of fresh water fish, 33 species of amphibian, and 48 species of reptile. For example, they are: Tonkin Snub-Nosed monkey (*Rhinopithecus avunculus*), and white-headed langur (*Trachypithecus poliocephalus*) (Carew-Reid et al. 2010). Vietnam contributed 87 new species to a total of 163 new species that were discovered in the Greater Mekong region in a single year in 2015 (WWF 2016). These included the important newly discovered animals such as Saola (*Pseudoryx nghetinhensis*), Helen's Flying Frog (*Rhacophorus helenae*), and Griffin's leaf-nosed bat (*Hipposideros griffin)* (MONRE 2015). Thus, there were efforts by the government to establish a system of PAs that covered and conserved 85% of the country's biodiversity around Vietnam due to this high number of confirmed species (Figure 2.6) (FAO 2010).

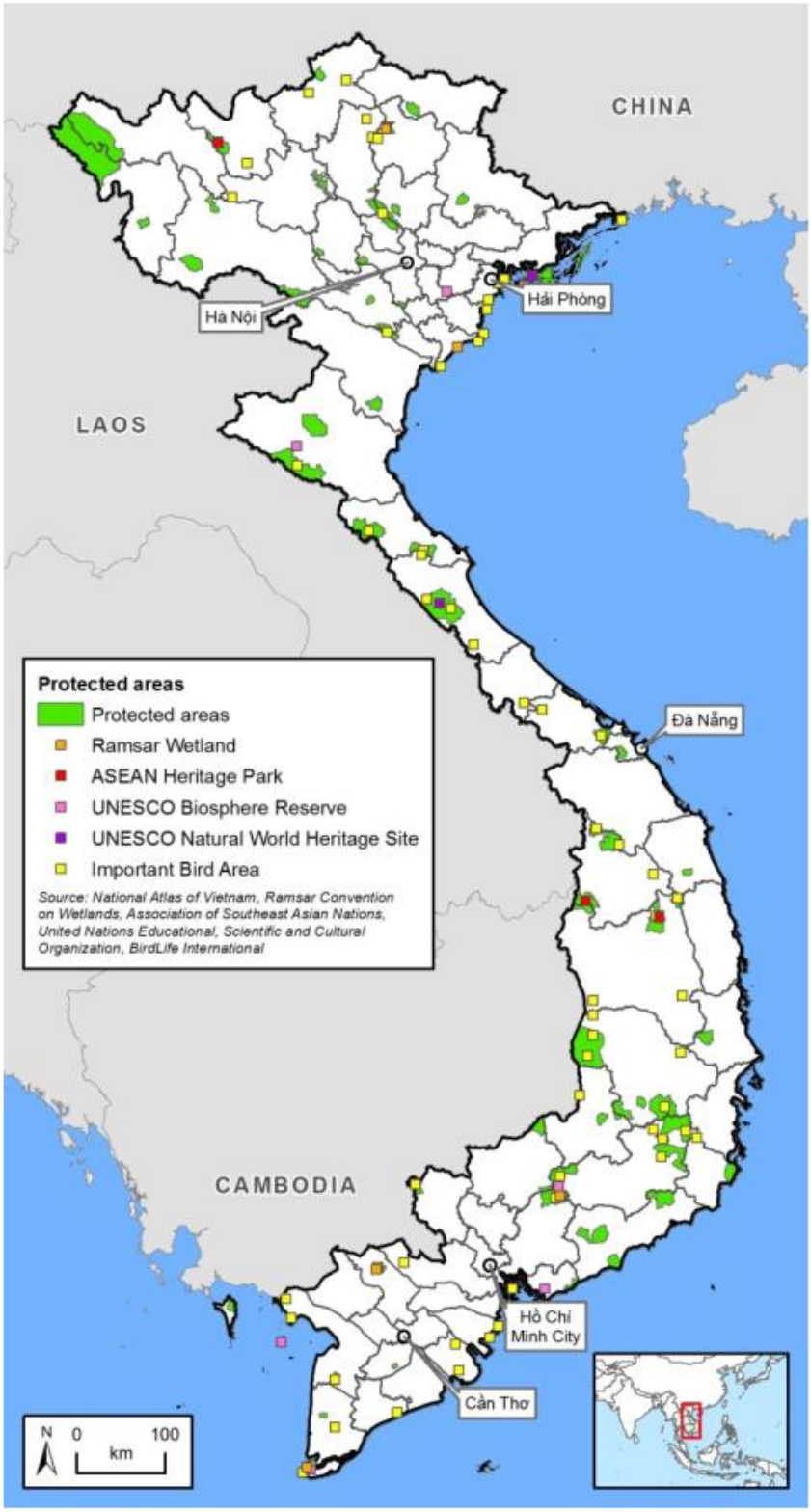


Figure 2.6: Protected areas and internationally recognised conservation areas in Vietnam

Source: Vietnam Tropical Forest and Biodiversity Assessment (2011) and Sun Mountain International and the Cadmus Group (2013)

According to Ngo et al. (2014), the first PA in Vietnam was established in 1962 and named Cuc Phuong Prohibited Forest now known as Cuc Phuong NP. After 55 years of development, Vietnam has a system of PAs including: (1) Special use forest system (SUF); (2) Marine protected area system and, (3) Internationally Recognized PA system (MONRE 2015; USAID 2013). The SUF system is the most important system covering 2,265,754 hectares (accounting for 7.4% of the country's natural area) including: 30 NPs; 58 Nature Reserves; 11 Species/Habitat PAs; 45 Landscape PAs, and 20 Scientific and Experimental Forest Areas (USAID 2013; VNForest 2013). In the SUF system, NPs and Nature Reserves are the most important sites covering up to 94% of the total area of the SUFs in Vietnam (Table 2.1). There are also 17 approved MPAs in Vietnam, however, this system is overlapped by the SUF system (MONRE 2014). In terms of Internationally Recognised PAs, Vietnam has eight Ramsar Areas (117,813 hectare), eight World Heritage Sites, eight Biosphere Reserves, four ASEAN Heritages and 63 Important Bird Areas (Table 2.1). Both national PAs and Internationally Recognized PAs play important roles for conserving the high biodiversity and cultural values of Vietnam.

Table 2.1: Protected area system of Vietnam (both National and International Levels)

Protected area's categories	Total number	Total area (Hectares)
NATIONAL PROTECTED AREAS		
I. Special Use Forests	**164**	**2,265,754**
I.1. National Park	30	1,077,236
I.2. Conservation Areas		
I.2.1. Nature Reserve	58	1,060,959
I.2.2. Species and Habitat Conservation Areas	11	38,777
I.3. Landscape Protected Areas	45	78,129
I.4. Experimental and Scientific Research Areas	20	10,653
II. Marine Protected Areas	**17**	**Included in Special Use Forest system**
INTERNATIONALLY RECOGNIZED PROTECTED AREAS		
Wetlands of International Importance (Ramsar Areas) by Ramsar Convention	8	117,813

Protected area's categories	Total number	Total area (Hectares)
World Heritage Sites by UNESCO	8	Five Cultural sites, two Natural sites and one Mixed site.
MAB Biosphere Reserves by UNESCO, and Man and the Biosphere Program (MBA)	8	3 million
ASEAN Heritages	4	No data
Important Bird Areas	63	1,689,900

Source: BirdLife International (2004), Convention of Wetlands (2017), Ministry of Natural Resources and Environment (MONRE 2014, 2015), United Nations Educational Scientific and Cultural Organisation (UNESCO 2017a, 2017b), United States Agency for International Development (USAID 2013).

2.3.2. Requirements for improvement the management of protected areas in Vietnam

Although the PA system is an effective in-situ measure to protect biodiversity, there are critical threats that lead to biodiversity degradation in Vietnam. The direct impacts on biodiversity in PAs are illegal wildlife hunting and trading by local communities that cause the reduction and extinction of wildlife species such as the extinction of the Lesser one-horned rhinoceros (*Rhinoceros sondaicus*) in Cat Tien in 2011 by hunters (ICEM 2003; MONRE 2008; Nguyen 2008). According to the database of the Forest Protection Department FPD (2016b), 19,132 animals were seized in 2012 by forestry rangers including 1,081 rare animals and the trend increased from 2008 to 2012. In addition, there are also deforestation and illegal logging activities that not only decrease ecosystem diversity but also reduce, and isolate the living habitat of the wildlife (Queiroz et al. 2013). Do and Tran (2016) show that the deforestation rate of Vietnam was approximately 177,000 hectares per year from 2002 to 2013. Deforestation tends to occur in natural forests with the portion of 71% total deforestation area having high biodiversity values (FPD 2016b). There is also a high rate of land-use change that transforms forest areas into agricultural areas, and urban land because of population growth and economic development (USAID 2013). For example, around two thirds of total deforestation areas in Vietnam were used for agricultural

purposes from 2008 to 2012 (FPD 2016a) contributing to the expansion of agricultural areas from 8.8 million hectares in 2007 to 12.7 million hectares in 2014 (GSO 2014). Furthermore, there are harmful impacts on biodiversity from infrastructure projects in the core zone and buffer zone of PAs such as tourism, hydropower and road building (Carew-Reid et al. 2010; MONRE 2011a). Moreover, there are other dangers for PAs in Vietnam such as forest fire, impacts of climate change, and over exploitation of biodiversity by local people (MONRE 2015; USAID 2013). Those threats and pressures cause increasing threats to endangered species in Vietnam with a total of 512 species that require more effort by stakeholders to increase effectiveness of PA management (USAID 2013).

However, there are drawbacks of the current PA governance in Vietnam that require more effort in the application of advanced governance tools to improve management effectiveness such as a co-management approach. At the national level, there are overlapping, fragmenting, and unclear responsibilities of Ministries from the state control approach in managing the system (GIZ 2012b; Nguyen 2017; USAID 2013). While the Ministry of Agriculture and Rural Development (MARD) has responsibility to manage forest resources, the Ministry of Natural Resources and Environment (MONRE) takes part in managing biodiversity resources leading to the overlap of divisions and management objectives of two ministries in managing PAs (GIZ 2012b). As a result, there are different categories of PAs with overlapping mandates of two Ministries in each legislation document including the Law on Forest Protection and Development, the Fisheries Law, and the Law on Biodiversity (GIZ 2012b; USAID 2013). At the local level, the Provincial Peoples Committees (PPC) remain a strong power in governance of PAs when they manage most PAs except six NPs covered by two or three provinces managed by MARD (MONRE 2011a). However, nominated Management Boards of PAs are under the administration of diverse government agencies such as PPCs, Provincial Forest Protection Department, Provincial Department of Agriculture and Rural Development (DARD), Department of Culture, Sports and Tourism, and District Forest Protection Department (Table 2.2). Hence, there are unification and dissimilar management objectives in park management at provincial level that cause unequal budget distributions, management priorities, and supports for activities (Tran & Burgers 2012; USAID 2013). In addition, Nguyen and Bui (2011) show a lack of co-operation and

information exchange among provincial agencies, and between provincial and national governing bodies in managing PAs. At the PA level, the most critical management issue is the absence of management boards or unclear management administration of 22 PAs where there is a lack of management activities (Nguyen & Bui 2011). The evaluation by GIZ (2012a) also indicates the low technical and management skills of staff in PAs. In addition, the management at PA level also displays difficulties such as the lack of human resources, financial resources, and institutional capacity (MONRE 2011a; USAID 2013). Furthermore, there are other issues related to PA management at the local level such as limited co-operation between local agencies, involvement of key local users, and the shortage of management transparency and conflicts between local people and PA management boards (MONRE 2011a; Tran & Burgers 2012).

Table 2.2: Distributions of management mandates of state agencies for 128 Special Use Forests

Organisations directly in charge of SUFs management	Number of SUFs
Vietnam Forestry Administration	6
Provincial People's Committees	24
District People's Committees	2
Provincial Forest Protection Department	43
District Forest Protection Department	4
DARD	19
Department of Culture and Information (today Culture, Sports and Tourist)	4
Department of Forestry Development	1
State Forest Enterprises	3
No/Unclear Management Organizations	22
Total	**128**

Source: Forest Protection Department 2008, cited in MONRE (2011a)

2.3.3. "Administrative co-management" model in protected areas in Vietnam

Despite the piloting of the co-management mechanism in Special Use Forests in Vietnam from 2001, it was first officially recognised from 2003 in government legal documents in the national SUF management strategy (Swan 2010). Recently, local communities have been considered as the legal entities with responsibilities and rights to participate in management

activities of PAs in documentation that supports the application of the co-management approach in Vietnamese PAs. The most important legal document is the decision number 07/2012/QĐ-TTg of the Prime Minister for experimenting with co-management models and proposing co-management policies (The Prime Minister 2012). Following this decision three national parks, Xuan Thuy, Bach Ma, and Hoang Lien, were involved in the experiment of benefit sharing, protection and sustainable development mechanisms. However, no further approved co-management policies were authorised following the completion of the trial period at the end of 2015. In addition, there are other policies that encourage the participation of key actors in managing PAs such as decision numbers 126/2012/QĐ-TTg and 380/2008/QĐ-TTg related to benefit sharing mechanisms and payment for forest environment services. However, there is a difference between the legal policies and the tangible application of co-management in the field that requires a long time for the co-management approach to be effectively applied (IUCN 2010).

Despite the desires for co-management application, the recent literature shows limitations and low level of decentralisation of co-management models (Table 2.3). The Multi-stakeholder PA Management Board is an efficient arrangement for the co-management model (White et al. 2002) introduced in only three PAs in Vietnam. For example, the Multi-stakeholders Management Board was applied in PAs including Khau Ca, Trung Khanh, and Nam Xuan Lac Species and Habitat Conservation Areas under the support from Fauna & Flora International (GIZ 2012b). However, there is a lack of evaluation on the effectiveness of this model, and limited effort to expand the model to other PAs in Vietnam. Therefore, the major governance model in Vietnam is the administration by PA Management Boards who are appointed by provincial governments. Notwithstanding the fact that the local users are encouraged to be involved in PA management, the final decision belongs to the PA Management Boards that are under the control of the provincial government (Nguyen et al. 2013). Additionally, Nguyen et al. (2013) indicated the unequal application of co-management approach in each type of SUFs when important PAs (such as NPs) have more interest from stakeholders, funding resources and projects to support co-management activities than other categories of PAs (Table 2.3). Furthermore, there is inequitable involvement between actors when state forces (such as police and military) are actively

involved in the governance of PAs, while other stakeholders (Civil societies, NGOs, and private sector) have limited rights to participate (Nguyen et al. 2013). In addition, international and national NGOs play a limited role as bridging organisations for promoting co-management mechanisms due to barriers from the political management model of Vietnam (Nguyen et al. 2016a). Finally, public-private partnerships were commenced in tourism development in some PAs, however, this co-operation remains unclear and it tends to achieve economic goals rather than conservation goals (Bui et al. 2013).

Table 2.3: Key research and main findings related to application of co-management in protected areas in Vietnam

Type of PA	Research title	Key findings related to co-management	Type of publication	Sources
Special Use Forest system	Administrative co-management in Special Use Forests of Vietnam	- As published in publications outlined below.	Doctoral thesis	Nguyen (2017)
	Administrative co-management: the case of Special Use forest conservation in Vietnam	- "Administrative co-management model" in SUFs in Vietnam with involvement of stakeholders and remaining control of the government. - NPs have more interest from stakeholders, funding resources and projects to support co-management activities than other categories of PA. - Only state-forces (Police and military) involved in managing NRs actively. - Local people not considered as resource users but as threats for conservation in Pas. - Co-management application in SUFs does not weaken state power.	Peer-reviewed article	Nguyen et al. (2013)
	The Vietnamese state and administrative co-management of Nature Reserves	- Maintaining strong vertical and horizontal networks of PA management boards not only contributes to increasing independence of PAs for applying co-management approach but also increase its capacity. - The involvement of multi-actors can overcome limitations of the administrative co-management model in Vietnam. - The decentralisation should be devolved to commune and district level from provincial and national level to transform to the real "co-management model".	Peer-reviewed article	Nguyen et al. (2016b)

Type of PA	Research title	Key findings related to co-management	Type of publication	Sources
	NGOs as bridging organisations in managing nature protection in Vietnam	- There are limited contributions of NGOs to promote co-management models because of the scope of NGO activities and weak capacity of local actors. - There are also barriers for interventions of NGOs in improving co-management models because of the mono-organisational socialism in Vietnam.	Peer-reviewed article	Nguyen et al. (2016a)
Nui Chua	Evaluating the effectiveness of co-management in Nui Chua Marine Protected Area, Ninh Thuan province, Vietnam	- Co-management in Nui Chua NP is defined as collaborative management with both top-down and bottom-up management approaches with the important role of communities in decision-making, monitoring and enforcement of management plans. - Collaborative management increases effectiveness of biodiversity management, supports local livelihood from tourism development. - Unclear rights and responsibilities of actors in managing Nui Chua that should be addressed in legal documents.	Master thesis	Vu (2012)
Tram Chim	Adaptive co-management for social-ecological: A case study in Tram Chim, Vietnam	- The state-control management model of Tram Chim fails to achieve management goals because of uncertainties and complexities from management process. - Adaptive co-management is proposed from this research to improve management's effectiveness of Tram Chim through participation, partnership and decentralisation. - Co-management should be applied flexibly in Tram Chim that is appropriate with social-ecological dynamics of local context for the best results.	Master thesis	Vu (2005)
Marine	Marine Protected	- Limited changes for improving livelihood of local people from strict biodiversity protection and the lack of alternative livelihood in MPAs. - The decentralisation for co-management approach is not welcomed	Doctoral	Brown (2013)

Type of PA	Research title	Key findings related to co-management	Type of publication	Sources
Protected Area system	Areas, co-management and livelihoods: coastal change in Vietnam	in a centralised country such as Vietnam. - The enhancement of co-management models in MPAs requires support from local government and agencies. - Co-management models should be developed that are appropriate to local context and conditions for better results. - Co-management mechanisms still have a great chance to be applied in managing MPAs but it will take a long time to adapt, and requires efforts from all stakeholders.	thesis	
Trao Reef Marine Reserve	Co-management in Trao Reef marine reserve, Vietnam: a transaction costs approach	- Awareness of local people on conservation and co-management was improved over time through the co-management model. - There is intensive involvement of local communities in the management of Trao Reef. - Fisheries contribute up to 70% of total income of local communities that should have appropriate management approach for sustainable development. - Potential conflicts between key actors are resolved through the co-management regime in Trao Reef. - In terms of transaction cost, the research fails to compare the transaction cost of the co-management regime and the state control regime in Trao Reef due to difficulties. However, the research pointed out that the transaction cost of co-management regime in stage three (monitoring and enforcement stage) is lower than stage one and stage two (establishment of co-management system and capacity building stages).	Master thesis	Nguyen (2010)

Despite inadequate decentralisation, there have been some gains, successes, and influences of co-management models in some PAs of Vietnam. The co-management regime of Nui Chua NP not only contributes to increased efficiency of biodiversity protection by reducing pressures and negative impacts from local users but also supports the increased incomes of local people through ecotourism activities (Vu 2012). Moreover, the co-management mechanism is demonstrated to be a valuable instrument to solve conflicts between the government and local communities in the management of Tram Chim NP and Trao Reef MPA through partnership, involvement and negotiation (Lai & Suriya 2011; Nguyen 2010). Furthermore, the case of Trao Reef MPA also shows over time improvements of awareness on the environment and active participation of local communities in conservation activities through co-management application process (Table 2.3) (Nguyen 2010). Nevertheless, public-private partnerships in an ecotourism operation in Phong Nha–Ke Bang NP, a World Heritage site, also contributed to attaining its management goals including the increase of tourism revenue from the NP, creation of jobs for local people, and supports for conservation activities from tourism profits (Ly & Xiao 2016a, 2016b).

However, there are numerous limitations and challenges for co-management models that should be overcome to improve the application of co-management governance in Vietnam's PAs. The most frequently noted issues of co-management models in Vietnam are the lack of clear co-management policies that assign rights and responsibilities to each actor in PA governance (Brown 2013; Vu 2012). There is also an absence of useful guidelines to establish and implement the co-management models (Nguyen 2017). More importantly, the research by Brown (2013) indicates the unwillingness and shortage of support from the government for the decentralisation and power sharing because of bureaucratic and political issues that are difficult for transforming a top-down management model into a bottom-up management approach. In addition, local communities are traditionally considered as hazards for PAs rather than resources for users by state managers (Nguyen et al. 2013). This issue leads to conflicts and lack of consensus in negotiation and co-operation between the government and local people (Brown 2013). There are other barriers for improving the application of co-management models

in Vietnam such as the low environmental knowledge and limited management skills of local stakeholders, the shortage of financial and human resources, and inadequate promotion of NGOs (Nguyen et al. 2016a; Vu 2012). Moreover, it is very important to find alternative livelihoods for local people, effective state-private co-operation mechanism, and effective co-management operation for the expansion of the co-management regime in Vietnam's protected areas in the future (Brown 2013; Ly & Xiao 2016a, 2016b).

By reviewing the literature, this chapter has described the history of the PA system, the concept of a co-management approach in the management of natural resources, and the application of co-management mechanism in PAs in Vietnam. The next chapter will give the background information about Xuan Thuy National Park which is selected as the case study for this thesis.

CHAPTER 3 STUDY AREA

The previous chapter reviews the literature related to the Protected Area (PA) system, the conception of co-management, and its application process in managing natural resources (NAs). This chapter is going to provide background information about Xuan Thuy National Park (XTNP), the governance regime and relationships between local people and biodiversity of the park.

3.1. Xuan Thuy National Park

Xuan Thuy National Park, which is located in Nam Dinh province of Vietnam (Figure 3.1), was selected as the case study for this research due to the importance of this park in meeting both international and national levels of conservation targets. It is the first officially recognised Ramsar area in Southeast Asia, declared in October 1989 under the Ramsar Convention on Wetlands of UNESCO, and the 50th Ramsar site to be proclaimed worldwide (Ngo et al. 2014). Six years later in 1995, the Ministry of Forestry (known nowadays as MARD) approved a plan to establish the Xuan Thuy Wetland Reserve under the administration of Nam Dinh Forest Protection Department (FPD) (XTNP 2003). On 2nd January 2003, the Prime Minister issued decision number 01/QD-TTg to upgrade Xuan Thuy Wetland Reserve to XTNP under the management of Nam Dinh DARD. In addition, the Red River Delta Biosphere Reserve was recognised by UNESCO in 2004, and XTNP became the core zone and most important element of this biosphere reserve (UNESCO 2017a). The total area of the park is 7,100 hectares, of which 3,100 ha is mangrove forest. In addition, there are a further 4,000 hectares of other types of wetland (Figure 3.1) (Ngo et al. 2014). The buffer zone of XTNP extends for 7,233 hectares. This zone includes 1,700 ha of mixed mangrove forest and shrimp ponds; and natural areas of five communes in Giao Thuy District, Nam Dinh Province (Hoang et al. 2013).

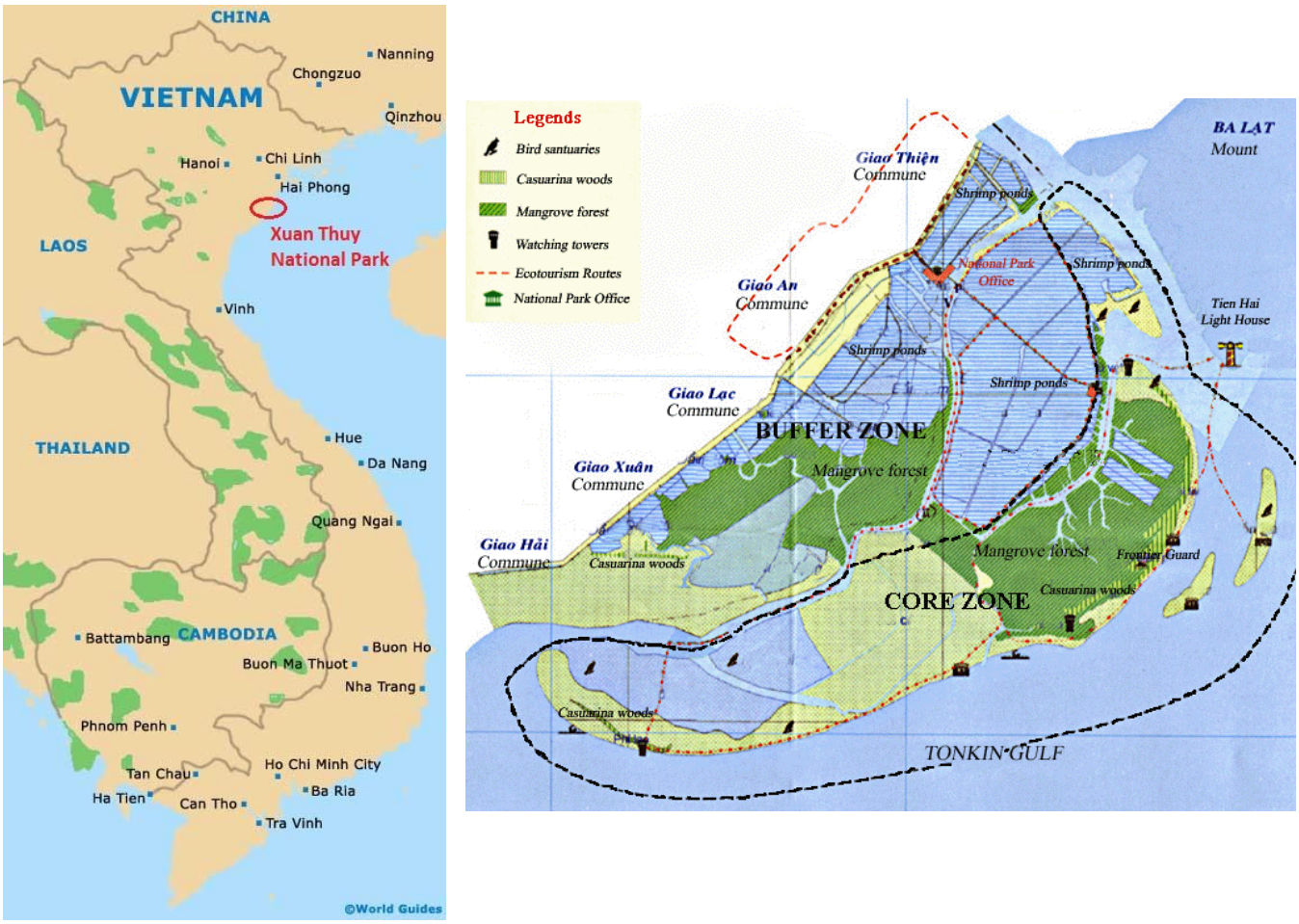


Figure 3.1: Location and functional zones of Xuan Thuy National Park

Source: World Guides; Centre for Marinelife Conservation and Community Development, 2007

3.2. The governance of Xuan Thuy National Park

The governance of Xuan Thuy National Park benefits from a high level of involvement by a series of related actors with both vertical and horizontal linkages (Nguyen et al. 2013). This makes it an appropriate National Park in which to study co-management.

Xuan Thuy National Park Management Board (XTNPMB) has a total of 19 employees that are distributed across four departments, they are divided between the Ecotourism Department; the Technical Department; the General Planning Department; and the Department of Natural Resource Management and Protection (Figure 3.2) (XTNP 2016b). The staff are well educated:

one has a Master's degree, 15 have Bachelors or Engineering degrees, two have college degrees (Pham et al. 2007; XTNP 2016b). However, there is a shortfall in management capacity for biodiversity protection (Hoang et al. 2013; Pham et al. 2007).

XTNP has a director and a deputy director that administer activities in the park. The XTNPMB is administered by Nam Dinh DARD, which is an arm of the provincial government level under the Nam Dinh PPC. In addition, there are indirect official relationships between two ministries, MONRE, and MARD, and XTNP through the provincial DONRE and DARD. All of those links are shown schematically in Figure 3.2.

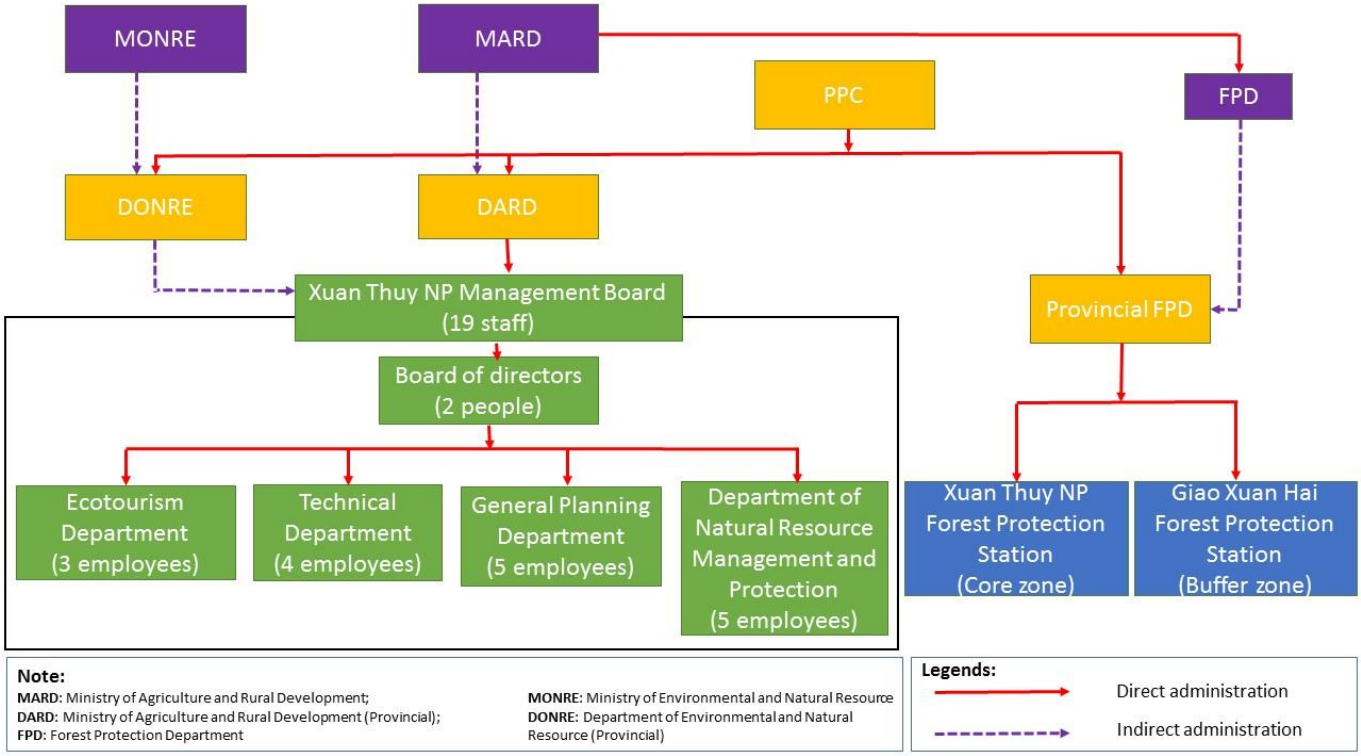


Figure 3.2: Xuan Thuy National Park Management Board and governance relationships

Sources: Pham et al. (2007) and XTNP (2016a, 2016b)

There are two Forest Protection Stations that have responsibilities to protect forest areas in the core and buffer zones. These stations are under the governance of the provincial FPD, and belong to the FPD system of MARD. A governance issue which arises here, is that the forestry protection stations are not under the management of the XTNPMB. This limits co-operation

between the management entities in protecting NRs (XTNP 2003). However, Nguyen et al. (2013) show that XTNPMB generally maintains strong relationships with key stakeholders, e.g., government agencies, and international and national NGOs, when developing management plans to overcome limited financial and human resources. In addition, the park management exploits vertical relationships with local stakeholders with benefit sharing mechanisms and co-management policies to promote the involvement of local users in managing and protecting NRs (Nguyen 2017).

3.3. Biodiversity within Xuan Thuy National Park

Xuan Thuy National Park is located on the estuary of Red River, which flows into the South China Sea which has an impact in terms of the biodiversity. It has eight main ecosystems, the three most important of which include mangrove forest, the Casuarina ecosystem and the grassland ecosystems (Phan, Le, et al. 2007). The mangrove forest, which covers 3,100 hectares of the core zone, is the most important ecosystem (Ngo et al. 2014). There are two types of mangrove, natural and planted, and the natural mangrove forest has higher biodiversity values (Phan, Le, et al. 2007). It ranges between eight to ten metres in height, has three canopies and seven species of mangrove occur here (Hoang et al. 2013). The planted mangrove forest has only two mangrove species, is of lower stature at five metres and only has two canopies. However, both have important functions in the park as living habitats for wetland species, especially for migratory birds (Phan, Le, et al. 2007).

XTNP has a high diversity of species with a total of 1,514 known faunal and floral species. The mangrove trees and migratory birds are the most important for conservation activities (Hoang et al. 2013). According to Phan, Le, et al. (2007), overall there is a total of 192 plant species in 42 families, including 45 species of mangrove trees. The three most common mangroves are *Aegiceras corniculatum, Kandelia candel* and species of *Rhizophoraceae* (Ngo et al. 2014). In addition, there is a diverse fauna with 1,274 species in 39 families. These include nine mammal species, 233 birds, and 107 fish (Ngo et al. 2014). The number of bird species found in XTNP

accounts for 26.5% of the bird species count for Vietnam (XTNP 2003). Of great significance are the 150 species of migratory birds that have been identified in the park. These include nine endangered species according to the IUCN Red Data Book, e.g., the Black-faced Spoonbill (*Platalea minor*), the Asian Dowitcher (*Limodromus semipalmatus*), and Saunder's Gull (*Larus saundersi*) (Phan, Le, et al. 2007). The highest concentration of migratory birds in XTNP is in the winter, when 30 to 40,000 individuals can be found (Figure 3.3) (XTNP 2003). In particular, XTNP is the habitat for over 20% of the global population of Black-faced Spoonbills, which underscores the important role of Xuan Thuy in the PA system of Vietnam and the need to manage the area successfully (Phan, Le, et al. 2007).

Figure 3.3: Birds in mangrove forest of Xuan Thuy National Park

Photo by: Tran Hung

3.4. Local communities and their relationships with natural resources in Xuan Thuy National Park

There are five communes in the buffer zone of XTNP: Giao Thien, Giao An, Giao Xuan, Giao Lac and Giao Hai. The total population of these communes is approximately 50,000 people, who live in 12,000 households. The workforce is about 23,400 people (Ngo et al. 2014). The population density in the five communes ranges from 1,023 to 1,331 people/km^2 and it has

been argued that this leads to the high pressure on natural resources (Phan, Phan, et al. 2007). The communities in XTNP mainly comprise Kinh (the main ethic group in Vietnam) and follow traditional livelihoods which combine rice farming with NR exploitation (Phan, Phan, et al. 2007).

Cultivation accounts for nearly 40% of the total income of local people, fishing and aquaculture 36%, livestock breeding 10%, while all other activities account for 14% (Ngo et al. 2014). Rice cultivation is important and comprises around 85% of total agricultural areas of the communes. However, rice cultivation has a short cropping season and because of this there is a job shortage for two thirds of the workforce in some parts of the year due to the lack of employment and income during this time, there is illegal exploitation of NRs by local people in the park (Figure 3.4). There is a high rate of poverty amongst households in the buffer zone; 9.8% total households are below the poverty threshold for Vietnam, i.e. they have a total income under AUD23.50 a person per month (Ngo et al. 2014), and this poverty also causes them to misuse the resources available in the park.

Figure 3.4: Hand collection of clams in Xuan Thuy National Park by poor local women

Photo by: XTNP (2013b)

The mangrove forests not only provide habitat for wetland species but also ecosystem services for local people (Figure 3.5). Firstly, they provide provisioning services in terms of seafood, genetic resources and traditional medicines (Phan, Le, et al. 2007). The mangrove forests of XTNP provide regulating services by contributing to the maintenance of secure living conditions for local people, e.g. protecting the coast-line and villages from storms, reducing beach erosion by tides and waves, and regulating polluted materials in the water (Phan, Le, et al. 2007). Furthermore, mangroves provide important cultural services in terms of research, education and ecotourism activities. The park is a well-known place for researchers and birders to do research on mangrove forests and to observe endangered birds such as the Black-faced Spoonbill, and the Spoon-billed sandpiper (Ngo et al. 2014). Finally, mangroves have essential functions in the provision of supporting services that contribute to the local region by regulating local climate, sequestering organic carbon, and contributing to nutrient cycles (Phan, Le, et al. 2007).

Provision services	**Regulating services**
- Provide food for local people: seafood from mangrove forest (clam, fish, crab, and shrimp). - Provide natural medicine for local people (*Pluchea pteropoda, Launaea samentosa*). - Provide wood for cooking (in the past). - Provide genetic resources, especially endangered migrating birds (*Platalea minor, Larus saundersi*).	- Protect the coast-line: increase the soil layer and reduce soil erosion from tides and waves. - Reduce negative impacts of wind and storm. - Regulate climate: regulate local climate (temperature, rainfall). - Regulate chemical polluted materials of sea water and waste.
Cultural services	**Supporting services**
- Educational services on mangrove forest, animals, marine for local people, students, and researchers. - Ecotourism activities: bird-watching, discover mangrove forest, discover culture and fishing techniques of local communities.	- Soil creation: keep alluvium and reduce soil erosion to maintain the lives of mangrove forest's ecosystem. - Maintenance of nutrient, carbon cycle, balance amount of O_2/CO_2 in the air. - Living habitat for animals, especially endangered migrating birds.

Figure 3.5: Ecosystem services of mangrove forests in Xuan Thuy National Park

Source: Reproduced from Phan, NH, Le and Phan (2007)

Although mangrove ecosystems provide essential ecosystem services for local people, there are impacts by local communities on biodiversity in the park. In the 1980s there were dangerous threats to biodiversity from the expansion of ponds for aquaculture and illegal bird hunting. These expansions led to a reduction and fragmentation in the area of mangrove forest, and a decrease in species numbers (Haneji, Amemiya, et al. 2014; Phan, Le, et al. 2007; Phan, Phan, et al. 2007). These illegal activities were prevented after the establishment of XTNP; however, there are contemporary pressures on Xuan Thuy from local communities. First, there is high contamination of coliforms and heavy metals (e.g. lead and zinc) from aquaculture ponds that have negative influences on mangrove ecosystems and wildlife species (Haneji, Amemiya, et al. 2014; Haneji, Vu, et al. 2014). In addition, around 500 people (80% of them poor women) regularly take seafood such as fish, crab, and clams from the core zone and buffer zone of XTNP as an important income source for their families (XTNP 2013a). This not only disturbs wildlife but also has harmful impacts on biodiversity (Hoang et al. 2013; XTNP 2013a). In recent years, some local fishermen have used destructive fishing methods (e.g. the use of electric harvesting or small mesh nets) that have contributed to a reduction in marine species numbers in the park (Phan, Phan, et al. 2007; XTNP 2012). However, there are difficulties and conflicts for the XTNPMB in trying to prevent these activities because some are traditional and essential livelihood strategies (Pham et al. 2007). Hence, mechanisms such as co-management and benefit sharing are required to achieve sustainable use of NRs in XTNP, and this in itself suggests involvement of local people in the governance of XTNP is required (XTNP 2013a).

This chapter provides some background information about Xuan Thuy National Park and its governance. The next chapter will describe research methods that were used to answer the research questions.

CHAPTER 4 RESEARCH METHODS AND DATA SOURCES

This chapter describes data collection methods that are used in this research to archieve research objectives. The main source of data for this research was the responses to a questionnaire that was administered to 45 stakeholders in XTNP (Section 4.1). In addition, related documents and reports were provided by the park authorities and these were used as a key source of secondary information (Section 4.2).

4.1. The questionnaire

The questionnaire is an effective research method for social science that is believed to be cost efficient and a suitable way to collect data about opinions, experiences, behaviour, and motivations from respondents (Foddy 1993; McLafferty 2003). In this research, a structured questionnaire was designed and implemented to collect the data from stakeholders of Xuan Thuy National Park. The questionnaire has 11 open-ended questions and four fixed-response questions (see the Appendix). The open-ended questions provide opportunities for respondents to express opinions and ideas, while the fixed-response questions focus on the key actors' participation, and motivation for their involvement in the park management.

In the questionnaire, the list of management activities that actors can participate in the park was adapted from two approaches: the adaptive management cycle (Jones 2005) and the management tasks outlined by Sen and Nielsen (1996). Five main management sections were identified: (1) Information exchange; (2) Participating in management activities; (3) Making management plans; (4) Participating in monitoring and evaluation activities; and (5) Making and modifying management policies. In terms of motivation, the research concentrated on external motivations, thereby excluding internal motivations, e.g. complexities of local communities and cultural aspects due to the limited period of the study. The external motivations were based on guidelines from the The World Bank (1999) and are as follows: (1) Introduction of co-management policies; (2) Support from government agencies; (3) Support through specific projects; (4) Financial support; (5) Education and awareness raising programs; (6) Establishment

of co-management working groups; (7) Clear co-management guidelines; and (8) Benefit gained from co-management. In addition, the author also consulted some questions from other questionnaires used in previous research on co-management in Vietnam by Nguyen et al. (2013), Vu (2012), and Nguyen (2010). Those questionnaires are important for designing this questionnaire because they provide some ideas and classifications for conducting a survey on co-management in PAs, such as the category of the park's stakeholders, the frequency of stakeholder meetings, and groups of management tasks in the park. Furthermore, there are opportunities for respondents to propose more motivations for their involvement in co-management by adding their opinions to the questionnaire.

Human Ethics Approval was granted (project number 7587) on 7th March 2017 by the Social and Behavioural Research Ethics Committee of Flinders University and there were commitments from XTNPMB and stakeholders for this research to be conducted. The questionnaire has five main sections (see the Appendix) and was administered in English (for international NGOs) and Vietnamese (for national and local stakeholders). Simple language and local vernacular terms were used to ensure the questions were understood by local communities. The questionnaire was piloted with five trial interviews (XTNPMB, Vietnam National Park and Protected Area Association, and three local communities) to enable it to be improved and amended.

Nine groups of stakeholders, to whom the questionnaire could be administered were identified using the guidelines of McLafferty (2003). In addition, these nine groups are an adaptation of the stakeholder groups previously identified by Nguyen et al. (2013). They are: (1) International NGOs/Donors; (2) National and Local NGOs/Donors; (3) Government Agencies (DONRE, DARD, and PFPD); (4) Research or Education Institutions; (5) Private and state-owned companies/Cooperatives; (6) Government Forces (police, military); (7) Provincial and Local Governments (Province, and Commune People Committees); (8) Local Civil Organisations; and (9) Working groups of local people. A set of criteria was developed to select stakeholders from each group as follows: they (1) have at least one project/activity with a minimum of one year in the past ten years, or (2) have a management responsibility, or (3) directly participate in management activities, or (4) have a long-term business operation in XTNP. A sample pool of 94

stakeholders across the nine groups was established using the above criteria. Details of these stakeholder groups, sample sizes and questionnaires administered are provided in Table 4.1.

Two approaches were adopted to administer questionnaires: (1) the questionnaire was sent by email to groups one to five who are international and national stakeholders. Those groups are suitable to approach by email because its convenience and time saving. An email was sent to the office of the organisations of these groups. The email included an Introduction Letter, an Information Sheet, a Consent Form and the Questionnaire. Organisations in groups six to nine (local stakeholders) were approached directly by the researcher as the most suitable way to conduct the survey when they have limited computer skills and the lack of internet access. These respondents were also provided with an Introduction letter, an Information Sheet, and a Consent Form. If they agreed to participate in the research, a questionnaire was administered by the researcher in their offices with their nominated representatives.

In order to obtain the most accurate data for the questionnaire, a set of criteria for selecting representatives was provided to organisations/agencies. Representatives of selected stakeholders should have knowledge and experience about management of Xuan Thuy National Park as (1) a manager/leader of the organisation, agency, or company; or (2) be directly managing/participating on projects/activities in XTNP.

The questionnaire was administered from 7th March to 18th April 2017. Eighteen questionnaires were completed by email and 27 were administered directly by researcher. The proportion of completed questionnaires by groups of stakeholders is outlined in Figure 4.1. In terms of characteristics of the 45 respondents, 15 questionnaires were completed by international and national stakeholders, while provincial and local stakeholders contributed 30 completed questionnaires. In addition, the author approached 23 government and 22 non-government entities to administrating questionnaires in this research.

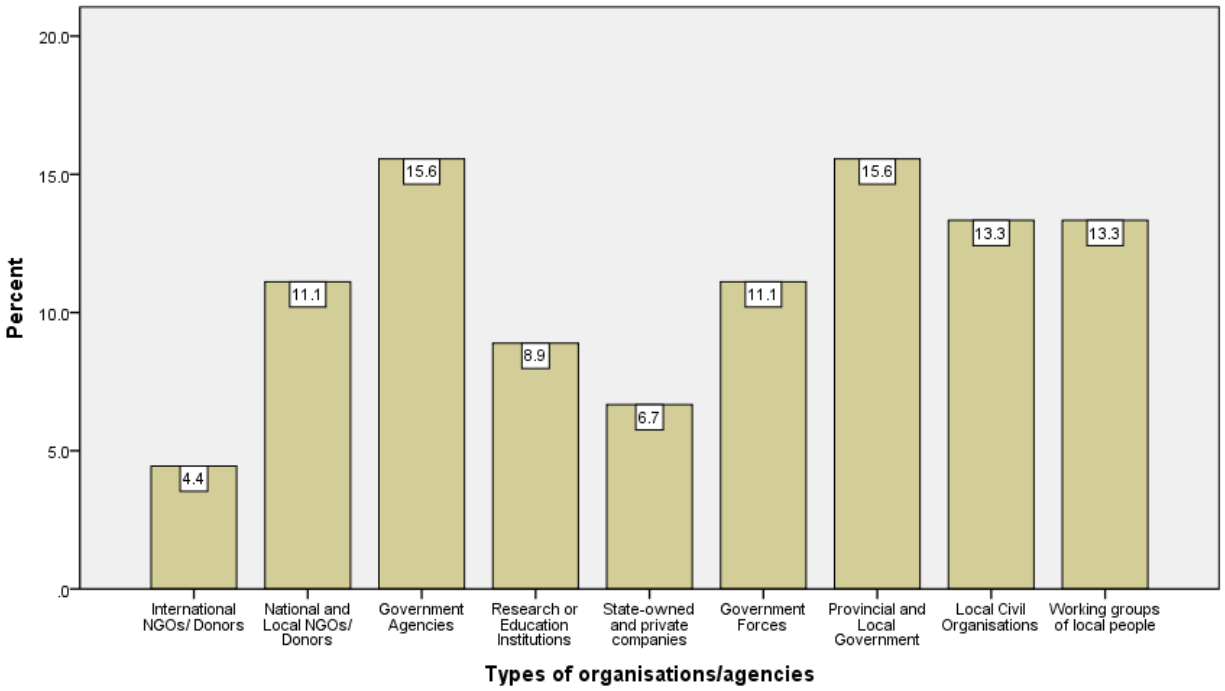


Figure 4.1: Percentage of completed questionnaires by types of organisations/agencies (N=45)

In terms of data analysis, the fixed-response questions were processed using SPSS version 22. In addition, a scoring system was used with the score between one and five (from unimportant to very important) depending on each question. The open-ended questions are coded and analysed by NVivo version 11 for qualitative data and representation. This coding method is used flexibly in this research in order to categorise ideas and opinions of respondents that contribute to answer the research questions of this research (Cope 2003). The codes for each question were developed based on the answers from respondents in the questionnaire. The coded data from open-ended questions were visualised as graphs and figures to present the data in the Chapter 5 of this thesis.

Table 4.1: Groups of stakeholders in Xuan Thuy National Park, population pool, and methods for questionnaire administration

Groups of stakeholders	Sample selection criteria for targeted organisations/agencies and representatives	Population Pool	Numbers to be approached	Approaching methods	Received responses	Percentage of population pool
Group 1: International NGOs/Donors	**A. To be selected organisations/agencies must meet these criteria:** (1) Have at least one project or activity with minimum one year period in Xuan Thuy National Park in past 10 years. (2) **OR** Have a management responsibility for Xuan Thuy National Park. (3) **OR** Directly participate in management activities in Xuan Thuy National Park. (4) **OR** Have a long-term business operation that involves Xuan Thuy National Park (e.g. a company that takes tourists to the park, a company that markets products obtained from the park, such as mushrooms or honey). **B. Representatives nominated to complete the questionnaire by the above organisation should meet one of the following criteria:** (1) Have a management role in their organisation, agency, company, group, or national park authority. (2) **OR** be directly managing projects or organising activities in Xuan Thuy National Park.	6	6	Email	2	33.3
Group 2: National and Local NGOs/Donors		8	8	Email	5	62.5
Group 3: Government Agency related to the park		10	10	Email	7	70.0
Group 4: Research or Education Institutions		11	11	Email	4	36.3
Group 5: Private and state-owned companies/Cooperatives		9	9	Email	3	33.3
Group 6: Government Forces (police, military)		5	5	Directly by researcher	5	100.0
Group 7: Provincial and Local Government (Province, district, communes and hamlet leaders)		21	10	Directly by researcher	7	33.3
Group 8: Local Civil Organisations (3 communes in buffer zone)		18	9	Directly by researcher	6	33.3
Group 9: Working groups of local people (5 communes in buffer zone)		6	6	Directly by researcher	6	100.0
	Total:	**94**	**74**		**45**	**47.9**

4.2. Secondary data collection

Secondary data related to the management of XTNP were collected and synthesed. This had the advantage of obtaining information that could not be gathered by the questionnaire (Hakim 1982; White 2003). Two types of secondary data were used: (1) XTNP research/activity reports, and (2) policies/regulations related to co-management in XTNP (Table 4.2). Data were collected from XTNPMB and related organisations and agencies directly or from their web pages. The secondary data collection was conducted at the early stage of this research from November 2016 (research design stage) to the end of May 2017.

Table 4.2: Secondary data sources and usages

Secondary data types	Secondary data usages	Data sources	Data collection methods
Research/activity reports in XTNP (e.g. co-management, community development project, and management reports)	- Research design - Research outputs	- XTNPMB - Related stakeholders	- Direct collection - Online research
Policies/regulations related to co-management in XTNP (e.g. management regulations of XTNPMB, benefit sharing mechanism, and proposal of co-management policies)		- XTNPMB	- Direct collection

The secondary data play vital roles in this research not only to support the research design process, but also to contribute important findings to the research results. Secondary data plays the role of "secondary data as context" (White 2003) by providing a background framework for designing research questions, questionnaire, and sampling methods. In addition, the role of "secondary data as the basis for analysis" was used effectively in this research when secondary data were analysed and synthesised to present the results of this research. In particular, the author analysed current co-management policies and regulations of the NP, support for projects, and involvements of stakeholders in managing XTNP. The secondary data used for analysis gives support where there was a lack of information available from the questionnaire.

This chapter describes methods applied in this research to collect primary and secondary data for investigation. The next chapter will present the result from the questionnaire and secondary data collection to answer the research questions.

CHAPTER 5 RESULTS

This chapter provides the results of responses to the questionnaire in four sections. The first, illustrates the levels of involvement of different stakeholders in current management of Xuan Thuy National Park; the second considers how co-management has changed in the last decade and the benefits stakeholder consider they derived from co-management, while the third section presents results regarding the motivations behind improving co-management. The concluding section considers limitations and challenges, and stakeholders recommendations to promote the participation of stakeholders in the Park's governance.

5.1. Stakeholder involvement in the management of the park

Figure 5.1 shows that there is a high concentration of participants undertaking activities in XTNP. Twenty-one stakeholders who completed the questionnaire have their own distinct activities inside the park. Thirteen government stakeholders have management responsibilities in the park, while seven organisations have projects and four research institutions have active programs. On the one hand, there are common fields of activities that overlap between stakeholders including ecotourism development, enhancement of livelihoods, awareness raising for local people, and biodiversity conservation (Figure 5.1). Conversely, some activities are only implemented by stakeholders involved in park management. For example, law enforcement and patrols are the responsibility of government agencies. In addition, there are private-public (government) partnerships around business activities with the park.

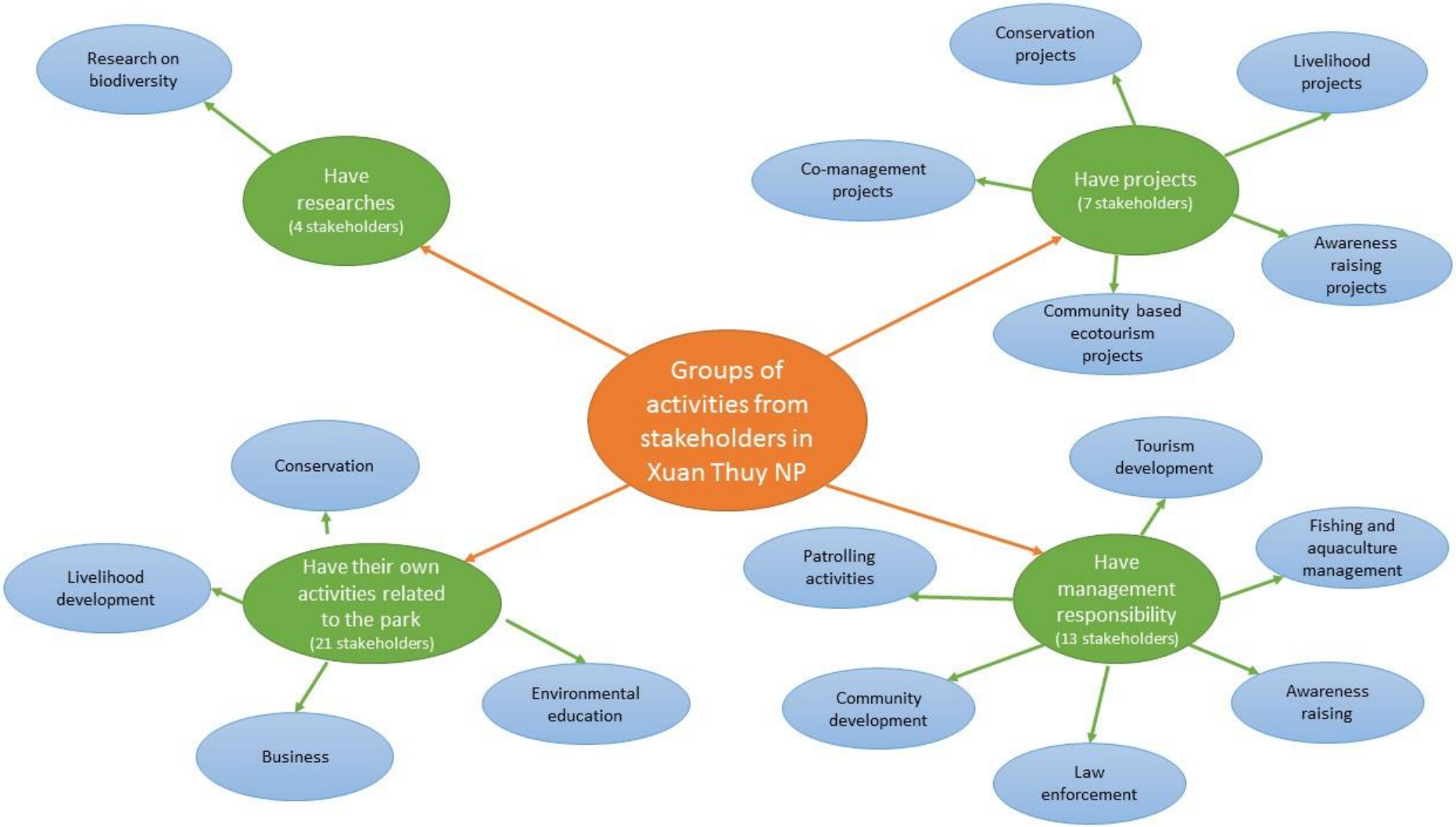


Figure 5.1: Activities of interviewed stakeholders in Xuan Thuy National Park

The result also shows that stakeholders have different priorities and interests. Twenty-one of a total of 45 organisations approached stated that providing opportunities for local people to achieve sustainable livelihoods is one of the five most important objectives of their activities in XTNP. Biodiversity conservation and environmental education for local people are two other important objectives according to a third of stakeholders. Other groups of activities in the park that are significant according to 25% of stakeholders include: ecotourism development, the application of co-management, law enforcement, and the sustainable use of NRs. Finally, there are specific activities, each of which only concerns a small group of stakeholders such as conducting research, biodiversity monitoring, improving the transparency of the park management, and reducing conflicts between stakeholders.

The questionnaire responses also revealed that many stakeholders had a long record of being involved in management of XTNP. The average length of "partnership" of all stakeholders was 12.5 years for 36 respondents, with a standard deviation of 8.2 years. This long record of relationship is very important in understanding the current and possible management of the park and its resources. However, there is an imbalance of the partnership period reported by the interviewed stakeholders with the park with the minimum partnership being only one year, while the maximum period is 30 years.

Table 5.1 illustrates the frequency of meetings that different stakeholders have with XTNP officials in the management process. Meetings were scored on a scale of one (casual meetings only) to five (monthly or more frequent meetings) (Table 5.1). The mean score was 2.8 with the standard deviation of 1.6. The score for international NGOs, 4.5, is the highest of all stakeholders. Government forces and local government officers have the second highest frequency of meetings with scores of 3.8 and 3.6 respectively. Research and education institutions (1.0), and private and state-owned companies (1.3) only have casual meetings with XTNP about specific events and issues. Other participants also have a limited number of meetings with the park managers with scores ranging from 2.0 to 2.8. This means that NGOs and governmental stakeholders have higher communication levels with the park, while there is a lack of frequent communication between the park officials and private sector, and research institutions.

Table 5.1: Frequency of meetings between stakeholder groups and the park officials (N=40) [3]

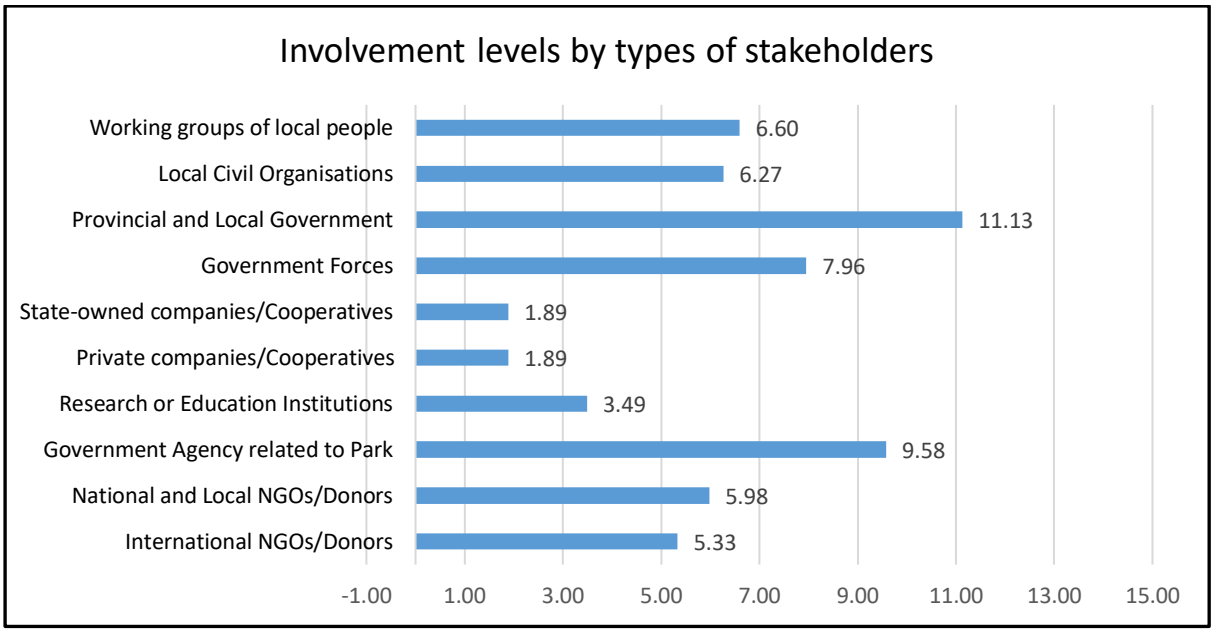
Type of organisation	N	Mean score	Std. Deviation
International NGOs/ Donors	2	4.5	0.7
National and Local NGOs/ Donors	4	2.0	2.0
Government Agencies	5	2.8	2.0
Research or Education Institutions	2	1.0	0.1
State-owned and Private Companies	3	1.3	0.6
Government Forces	5	3.8	1.3
Provincial and Local Government	7	3.6	1.3
Local Civil Organisations	6	2.8	1.5
Working Groups of Local People	6	2.2	1.0
Total	40	2.8	1.6

The scoring system for the frequency of stakeholder's meetings was: 1=casual meetings only; 2=an annual meeting; 3=twice-yearly meetings; 4=quarterly meetings; 5=monthly or more frequent meetings.

The involvement levels of stakeholder groups in the management of the park are evaluated by: (1) the number of managing stages that they participate in, and (2) the importance of each managing stage they involve. The scoring scale is judged from zero to 15 (from low involvement level to high involvement level) with detailed scoring system outlined under Figure 5.2. The result from questionnaire responses highlights the importance of governmental stakeholders and the low involvement level of private sector in the management of XTNP. There are four clusters of stakeholder involvements which can be identified. They are: (1) Very low involvement group: private and state-owned companies/cooperatives; (2) Low involvement group: research/education institutions, national and international NGOs; (3) Medium involvement group: working groups of local people, local civil organisations, and government forces; (4) High involvement group:

[3] There were five people who did not answer this question.

provincial/local governments, and government agencies (Figure 5.2). It is especially noteworthy that there is no stakeholder in the very high involvement group using these scoring and grouping methods.



Scoring system: Scores are judged from 0 to 15 based on: (1) The type of management activities they are involved in (e.g. involvement in making policy has higher score (5 points) than involvement in information exchange (1 point); (2) the number of activities the group is involved in (The maximum total score from all activities is 15).

Stakeholder grouping method by involvement level: (1) Very low involvement group (from 0-2.99 points); (2) Low involvement group (3-5.99 points); (3) Medium involvement group (6-8.99 points); (4) High involvement group (9-11.99 points); (5) Very high involvement group (12-15 points).

Figure 5.2: Levels of involvement of actors in managing Xuan Thuy National Park by stakeholder type (N=45)

Table 5.2 illustrates how stakeholders perceive participation in different types of management activities. The information shows that government stakeholders are more likely to have high levels of participation in all categories of management activities, but they have low communication levels with park authorities. For example, only a quarter of respondents believe that government agencies have information exchange with the park; while 70.5% of respondents think they participate in implementing management plans; 68.2% in making management plans, in monitoring and evaluating plans (81.2%); and in modifying plans and policies (75%). Local civil organisations and local working groups are considered to have medium levels of involvement, but their participation in the decision-making processes is limited: only 28.9% and 26.7% of stakeholders interviewed think that

they are involved in modifying management policies and plans respectively. International and national NGOs are thought to have little involvement in decision-making, and in implementing management plans; but are highly involved in information exchange and in making management plans through the implementation of their projects. Research and education institutions have the highest levels communication with the park (63.6% of respondents thought that they exchanged information with Xuan Thuy), but they are unlikely to be involved in management activities (Table 5.2). Finally, both private and state-owned companies are categorised in the very low involvement group. Respondents thought that they were in contact with the park but did not participate in any management activities. Only 9.1% of the interviewed organisations felt that state-owned companies were involved in implementing management plans, monitoring and evaluation of management plans, and policy modifications, while only 6.8% thought private companies participate in monitoring and evaluation of management plans, and in policy modifications.

Table 5.2: Participation of stakeholder groups perceived as participating in each category of management in Xuan Thuy National Park by all stakeholders (%), (N=45)

Involvement level	Stakeholders groups	Information exchange	Implementing management plans	Making management plans	Monitoring and evaluation of management plans	Management policy and planning modifications
High involvement group	Provincial and Local Government	38.6	77.3	84.1	79.5	75.0
	Government Agencies related to park	25.0	70.5	68.2	81.2	75.0
Medium involvement group	Government Forces	29.5	68.2	61.4	50.0	47.7
	Working groups of local people	46.7	64.4	62.2	42.2	26.7
	Local Civil Organisations	62.2	44.4	60.0	37.8	28.9
Low involvement group	National NGOs/Donors	60.0	28.9	60.0	40.0	24.4
	International NGOs/Donors	53.3	28.9	55.6	35.6	20.0
	Research or Education Institutions	63.6	13.6	27.3	20.5	13.6

Involvement level	Stakeholders groups	Information exchange	Implementing management plans	Making management plans	Monitoring and evaluation of management plans	Management policy and planning modifications
Very low involvement group	Private companies/ Cooperatives	43.2	9.1	22.7	6.8	6.8
	State-owned companies/ Cooperatives	45.5	9.1	13.6	9.1	9.1

Figure 5.3 demonstrates the importance of different stakeholder groups in the implementation of co-management mechanisms in XTNP. The basis of this is that interviewed stakeholders were asked to select three most important groups of stakeholders. Two thirds of respondents stated that government (central, provincial and local People's Committees) is one of the three most important groups of stakeholders for the application of co-management mechanisms. Government forces, government agencies (such as DONRE and DARD), and local communities are also considered important groups according to approximately half of the respondents. NGOs, both international and national, were noted as important groups of stakeholders by only a few interviewed organisations. Crucially for co-management no respondents thought that the private sector is an important stakeholder group in this context.

Figure 5.3: Stakeholder groups involved in the application of co-management application in Xuan Thuy National Park. The size of the oval indicates relative importance

From the opinion of respondents, it can be deduced that although resource users have some involvement in managing Xuan Thuy National Park, government stakeholders remain the power in the park governance. This result indicates that the co-management model in Xuan Thuy National Park is likely to be similar to that referred to as "administrative co-management" type in PAs of Vietnam as identified by Nguyen et al. (2013).

5.2. Co-management improvements and benefits

Stakeholders were interviewed about how co-management had improved in Xuan Thuy National Park between 2007 and 2017 (Figure 5.4). Almost two-thirds (63.6%) of respondents thought that there has been a large measure of improvement in the application of co-management in the park, in that over the last decade stakeholders have participated to a greater extent in park management. A much lower proportion of respondents (15.9%) believed that there has been moderate improvement, 15.9% of respondents felt there was little importance, and 4.5% think there has been no change. However, some people who took part in the survey from research institutions argued that the model adopted by the park is a benefit sharing model rather than a co-management model. This is because regulations concentrate on sharing benefits of the seafood resources rather than encouraging the involvement of local people in managing the park.

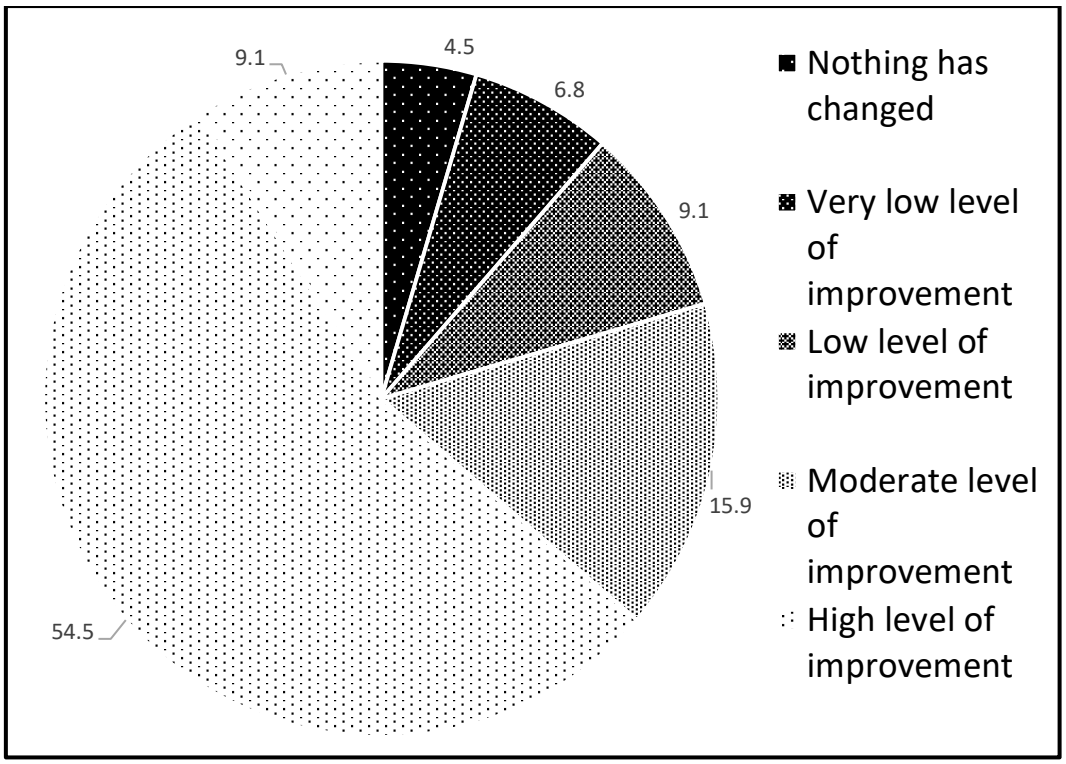


Figure 5.4: Stakeholder evaluation of the level of improvement of co-management model in Xuan Thuy National Park between 2007 and 2017 (N=45)

The way that improvements in co-management were perceived by different groups of stakeholders were evaluated using a Likert scale scoring system (Figure 5.5). Private and state-owned companies, provincial and local governments and local civil society organisations rate improvements in co-management in the park in the last ten years highly (score >4.0). At the other end of the spectrum, research and education institutions only scored improvements as one point, i.e., very low level of improvements. The other groups of stakeholders scored the improvements between 2.5 and 3.8 points. Working groups of local people, who scored 2.5 on average, had a very wide range of evaluation scores for the improvement level which may relate to the different types of working groups and their different locations within the park.

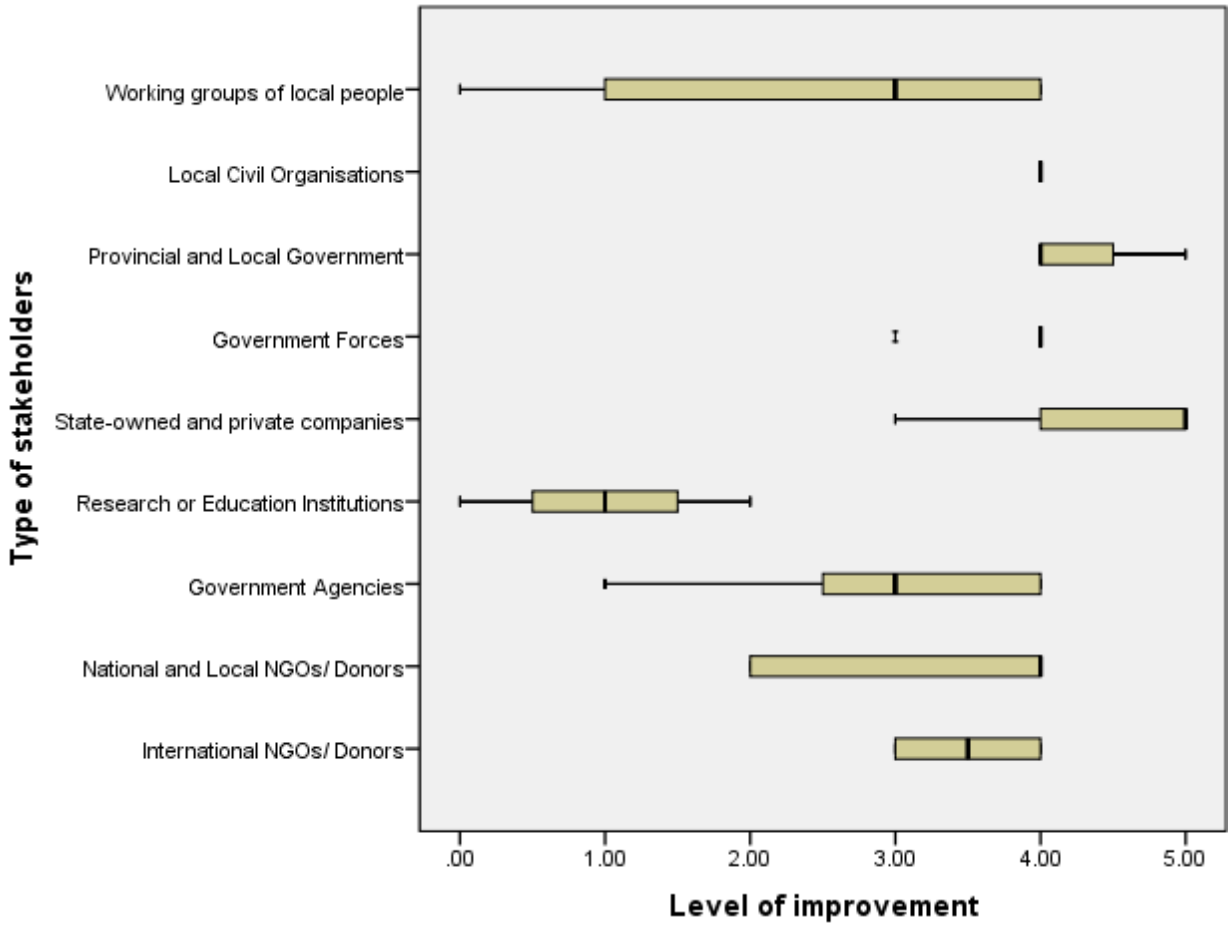


Figure 5.5: Evaluation of improvement in effective co-management in Xuan Thuy National Park between 2007 and 2017 by stakeholder groups. The scoring system is: 1=very low level of improvement; 2=low level of improvement; 3=moderate level of improvement; 4=high level of improvement; 5=very high level of improvement.

Figure 5.6 illustrates the benefits of co-management for biodiversity and local communities based on the opinions of stakeholders. Two thirds of organisations interviewed believed that the application of co-management mechanisms in XTNP has contributed to increased success of biodiversity conservation. A third of respondents claim that illegal actions of local people have decreased in the park in recent years due to the local people's understanding of the importance of biodiversity and the benefits that they might gain from their involvement in conservation activities. Secondly, stakeholders expend more effort in conservation and reforestation when co-management agreements and commitments are in place and enforced during the co-management piloting process. In addition, the sustainable policies for seafood exploitation that are enforced in the park have contributed to a decline in negative impacts on mangroves and wildlife species that inhabit this ecosystem. For example, there are rules and agreements between the XTNP and local people to reduce

impacts on biodiversity caused by seafood exploitation with different reasons for each kind of seafood, daily catch limits, and minimum size limits. However, four respondents stated that there is a lack of evidence to support these opinions from either academic research or evaluation methods because of the short period over which the experiment has been conducted.

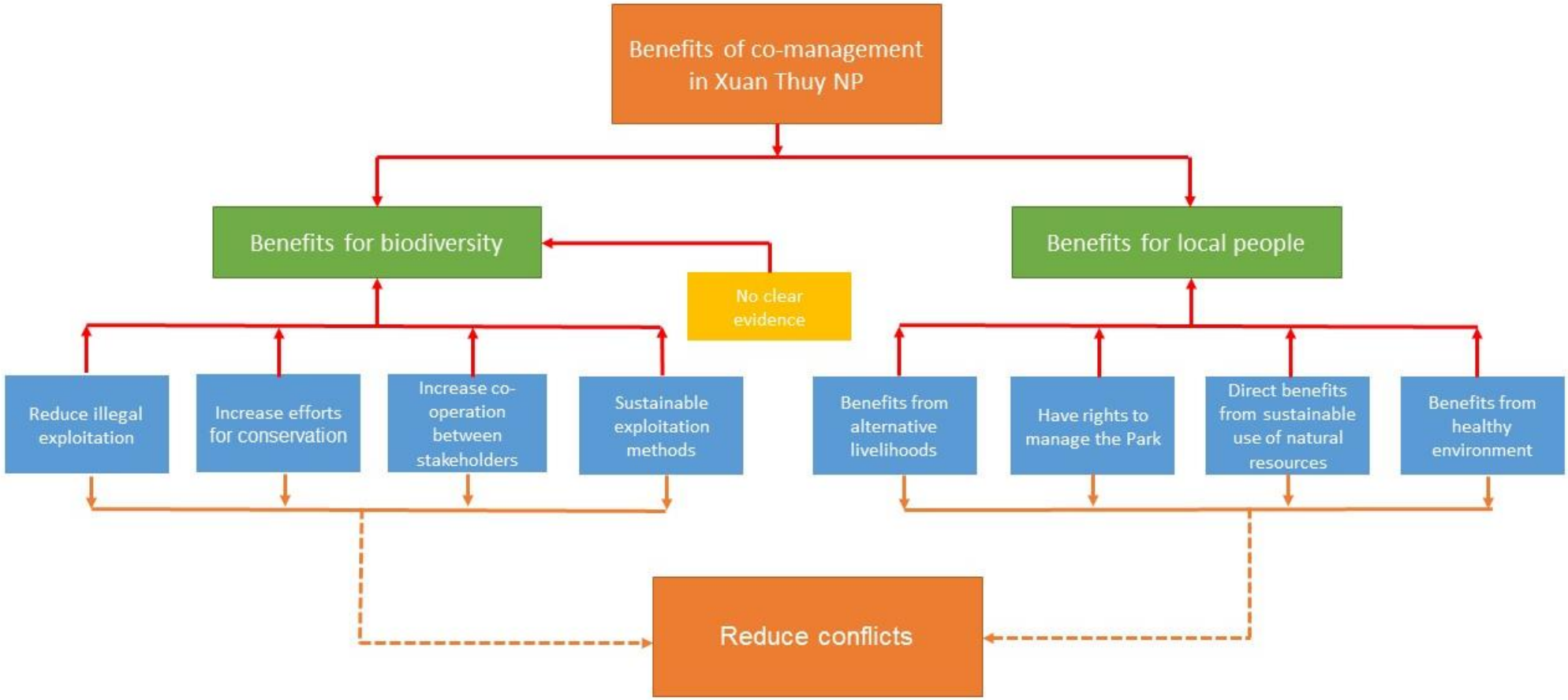


Figure 5.6: Benefits of co-management for biodiversity and local people

Local communities experience direct and indirect benefits from their involvement in co-managing the park. Many respondents (33) stated that allowing seafood collection by hand in the park maintains important incomes streams for thousands of poor households in the buffer zone of XTNP and also contributes to the sustainable use of aquatic resources in the park's core zone. In addition, local people also have opportunities to develop alternative livelihoods such as ecotourism, and mushroom and beekeeping from projects in XTNP. Most importantly, local people are ensured of their rights to manage natural resources through co-management mechanisms. Moreover, the interviewed stakeholders also emphasised the potential benefits from ecosystem services provided by mangroves for local people when the biodiversity is protected through the co-management mechanism. In particular, respondents highlighted the important roles of co-management in XTNP in reducing conflicts, and increasing co-operation between actors in resource management.

The questionnaire survey responses show the improvement of co-management application in Xuan Thuy National Park in the last decade. In addition, there are identified benefits from the co-management model for local communities in the buffer zone and biodiversity in the park.

5.3. Motivations for improving co-management in the park

Figure 5.7 shows how the people in the organisations interviewed ranked the importance of eight different motivations behind improvements to co-management in the park using a Likert scale ranging from 1 (unimportant) to 5 (very important). The research generally shows high importance attached to these eight motivations with mean scores ranging from 4.23 to 4.73. The introduction of co-management policies was evaluated as the most important influence on co-management with a score of 4.73. Support from government agencies scored 4.68 points making it the second most important just ahead of awareness raising programs for local people at 4.53 points. The lowest scores were establishment of local working groups and clear co-management guidelines with scores of 4.23 and 4.39, while other motivations were ranked from 4.4 points. The high ranking of these motivations in the opinion of the respondents shows important influences of predicted motivations in improving co-management application in the park that will be discussed in the next chapter of the thesis.

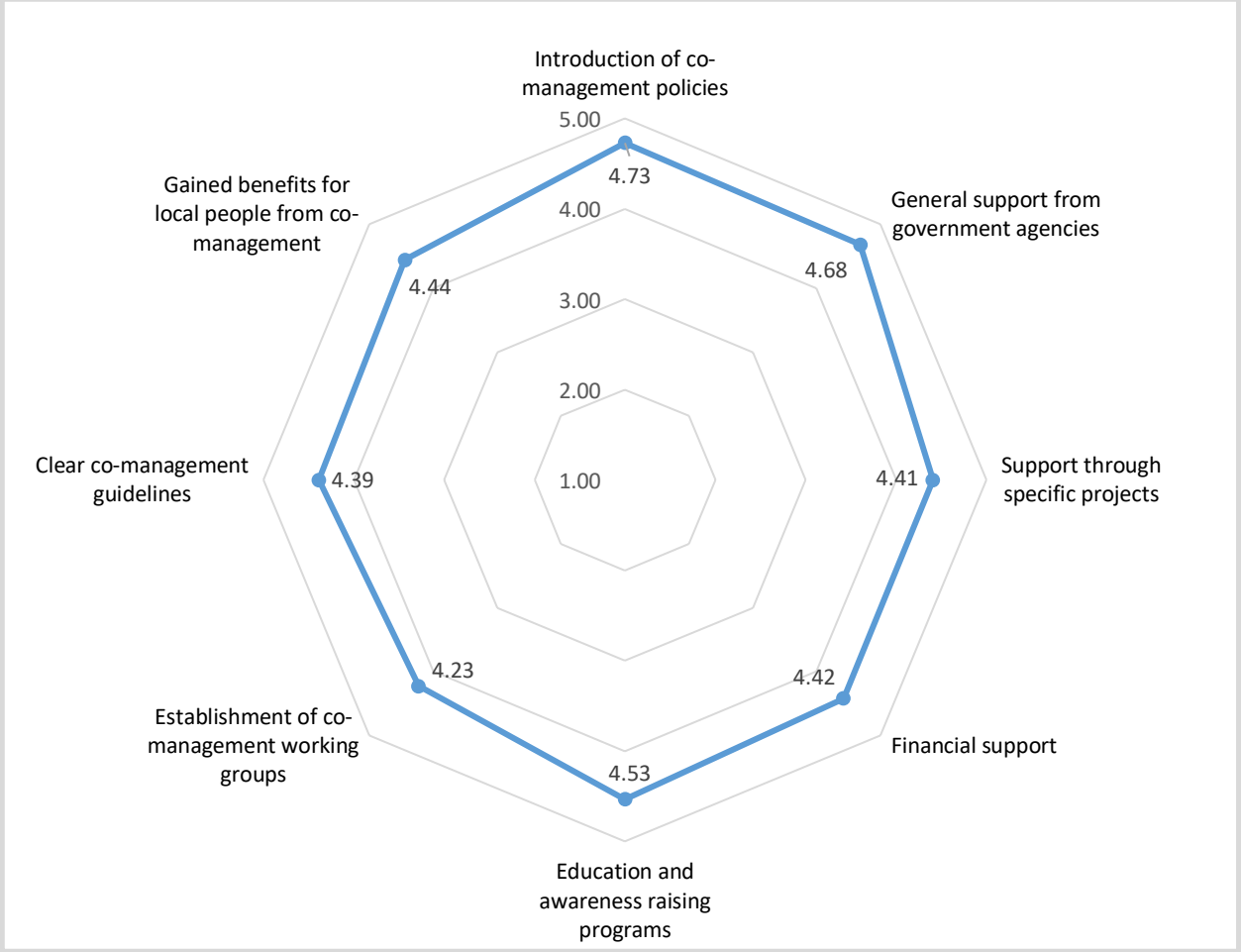


Figure 5.7: Importance of different motivations for improving co-management in Xuan Thuy National Park (N=45). The scoring system is 1=unimportant; 2=marginally important; 3=moderately important; 4=important; 5=very Important.

The mean rankings of two groups of national actors (N=15) and provincial/local actors (N=30) concerning the importance of the eight motivations for improving co-management is shown in Figure 5.8. While provincial and local stakeholders emphasised the importance of awareness raising programs for local people with a score of 4.75, the mean score for national stakeholders for this motivation was 4.13. In addition, local and provincial participants also highlighted project support (4.55), financial support (4.57), and the introduction of co-management policies (4.76), whereas for national participants these were seen as less important. In contrast, national stakeholders ranked support from government (4.87), the establishment of working groups of local people (4.33), issuing clear co-management guidelines (4.6), and benefits for local people through co-management (4.53) more highly than local and provincial participants. This shows different points of view between national and local stakeholders in evaluating important levels of each motivation.

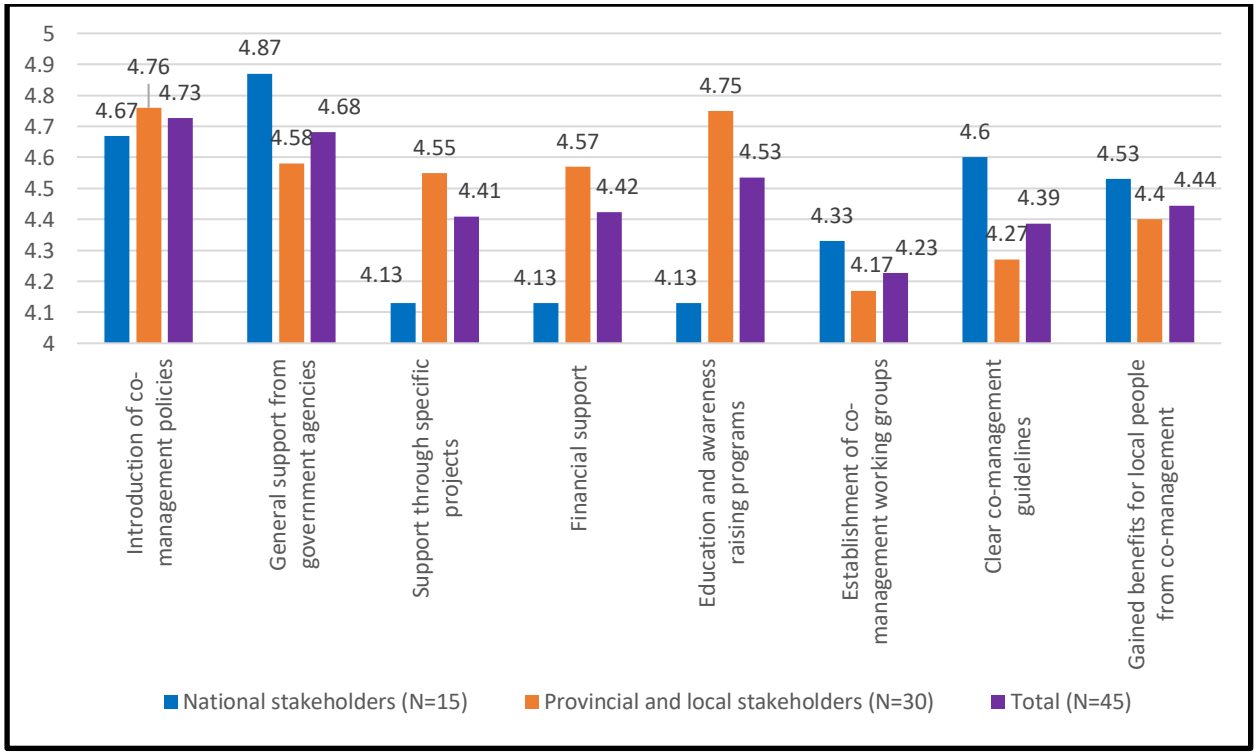


Figure 5.8: Importance of different motivations for improving co-management in Xuan Thuy National Park by national and local stakeholders. The scoring system is 1=unimportant; 2=marginally important; 3=moderately important; 4=important; 5=very Important.

Another way of grouping stakeholders is shown in Figure 5.9 where the importance of motivations for improving co-management by government stakeholders (N=23) and non-government stakeholders (N=22) is illustrated. Although both groups rank issuing co-management policies, support from government and projects, more-or-less the same, there are differences amongst the other motivations. For example, non-government stakeholders highlight the importance of awareness raising programs (4.68) and benefits for local people (4.55), while government stakeholders only score 4.38 and 4.35 respectively for these motivations. In contrast, government actors ranked financial support for co-management as a very important factor with a score of 4.61 points when non-government participants only scored it at 4.23. This reveals the unequal evaluation of two groups on the importance for each motivation in improving co-management applications in Xuan Thuy National Park.

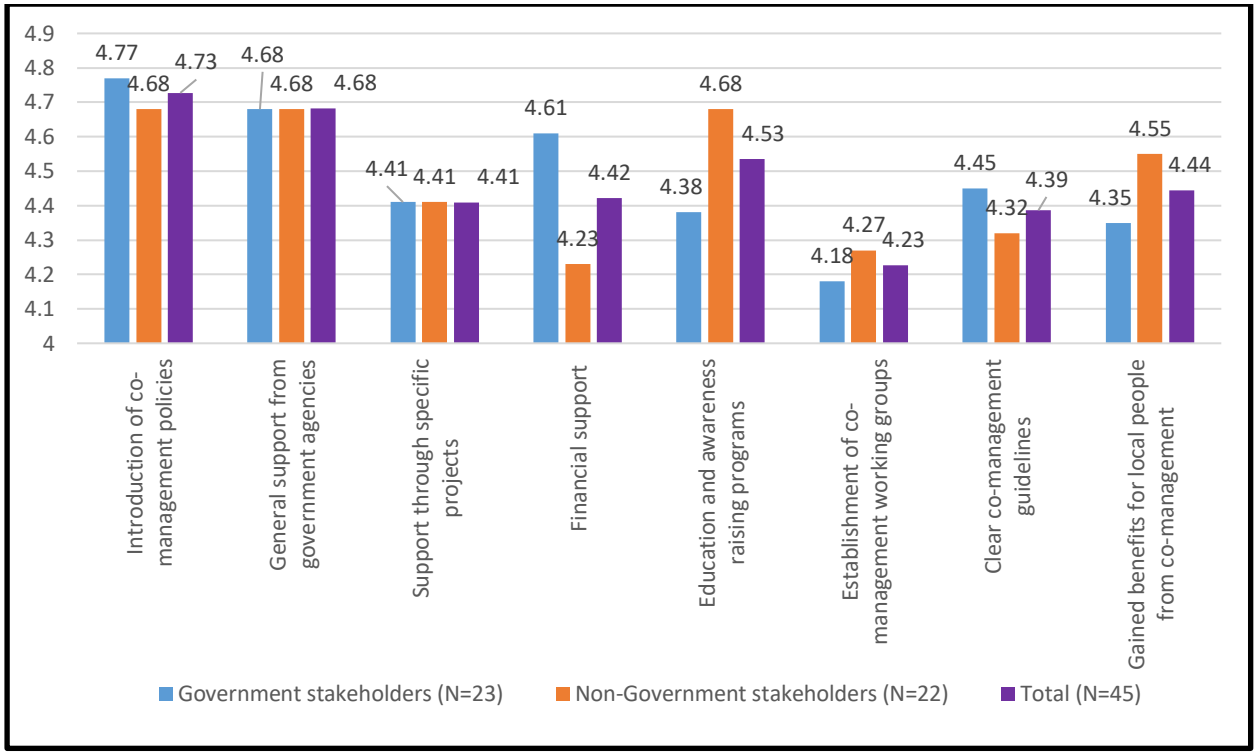


Figure 5.9: Importance of different motivations for improving co-management in Xuan Thuy National Park by government and non-government stakeholders. The scoring system is 1=unimportant; 2=marginally important; 3=moderately important; 4=important; 5=very Important.

Despite the fact that respondents ranked all motivations for co-management as important in XTNP, differences became even clearer when they were asked to select the three most important motivations. The most frequently selected motivations are issuing co-management policies (ranked by two thirds of stakeholders); conducting awareness raising programs for local people (half of the stakeholders); and bringing benefits to local people (selected by 42% of respondents). Support from government agencies is considered a slightly less important motivation. Four other motivations are ranked as even less important.

I could have carried out rank order analysis on the data in Figures 5.8 and 5.9, but it is clear from a visual inspection that at least some mod the stakeholders display different behaviour other groups. Moreover, there are limitation to the use of quantitative techniques with Likert scale-generated data, which have been discussed, and in light of these I felt it was inappropriate to conduct rank order significance tests.

Overall the responses from the questionnaire indicate the importance of all motivations for improving co-management application in Xuan Thuy National Park. However, the issuing of

co-management policies, the support from government agencies, and awareness raising programs are the three most important motivations cited to enhance the co-management model in the park. In addition, there are different points of view between government and non-government stakeholders, national and local stakeholders on the importance of each motivation for improving co-management in the park. These findings are fundamentally important for development of further co-management policies and the applicability of this model to other locations in Vietnam and other nations with similar programs.

5.4. Limitations, challenges and potential recommendations

Although XTNP has created opportunities for improving co-management, there are weaknesses as shown in Figure 5.10. The most significant limitations for co-management in the park that were identified by approximately a third of respondents were as follows:

(1) Unsuitable co-management policies. An experimental co-management model was in place between 2010 and 2013. This model proposed some co-management policies, but these have not been adopted by the government.

(2) Unfeasible benefit sharing mechanisms. A number of stakeholders indicated that the benefit sharing mechanisms are inadequate and that there is unequal distribution of the benefits from seafood exploitation for different groups of local communities, and that this raises the potential for conflicts between local seafood gatherers.

(3) A lack of co-operation between stakeholders. Almost 20% of respondents stated that there was a lack of co-operation between government agencies, and limited involvement of local communities in park management.

In addition, there are other issues that emerged in the experiment in co-management in Xuan Thuy National Park. These concerns include conflicts between the park management board and local communities, unequal rights between local communities, unsuitable co-management arrangements, the lack of power sharing and transparency. Furthermore, the rights and responsibilities of each participant in co-management leads to an overlap between the missions for participants in the management process (Figure 5.10).

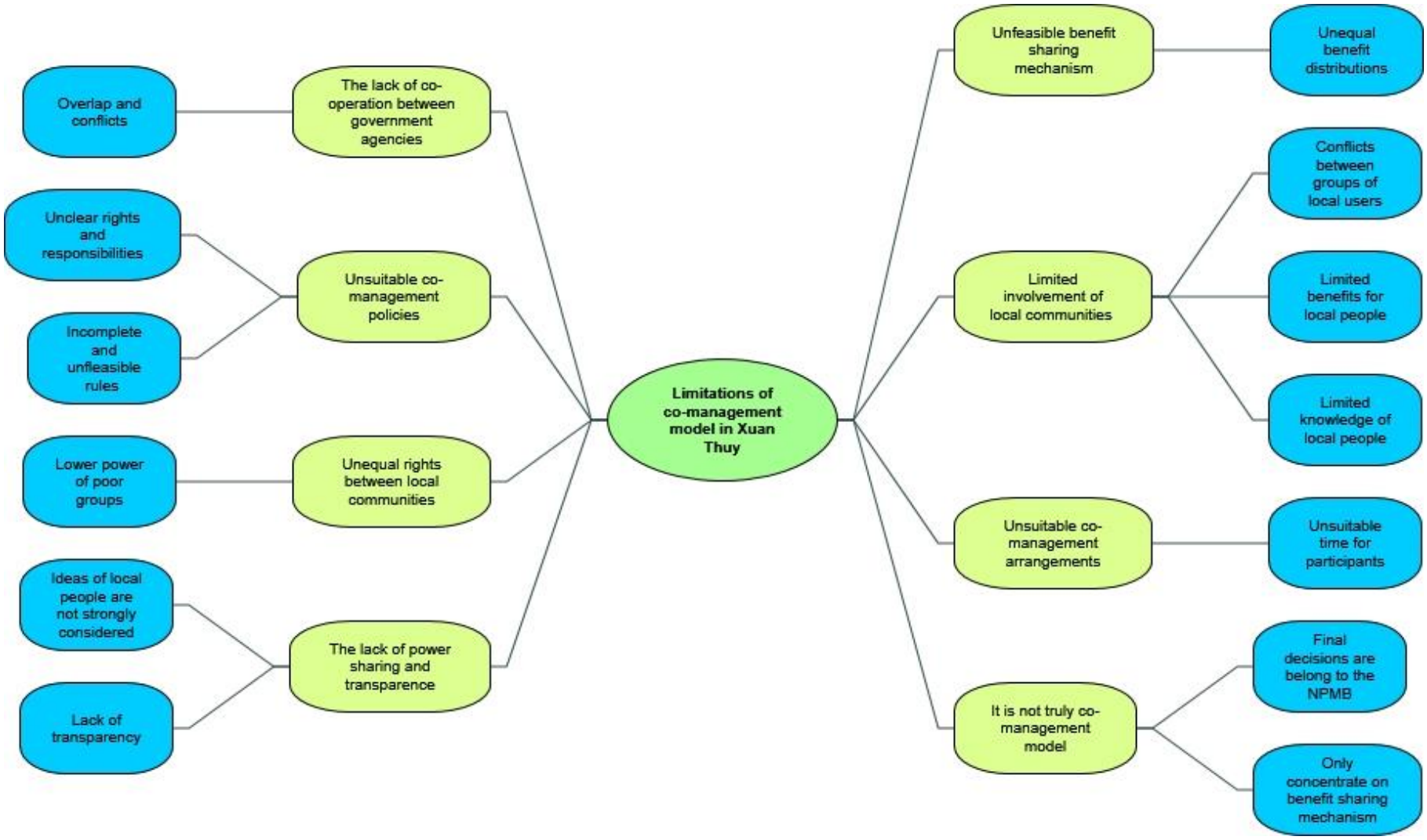
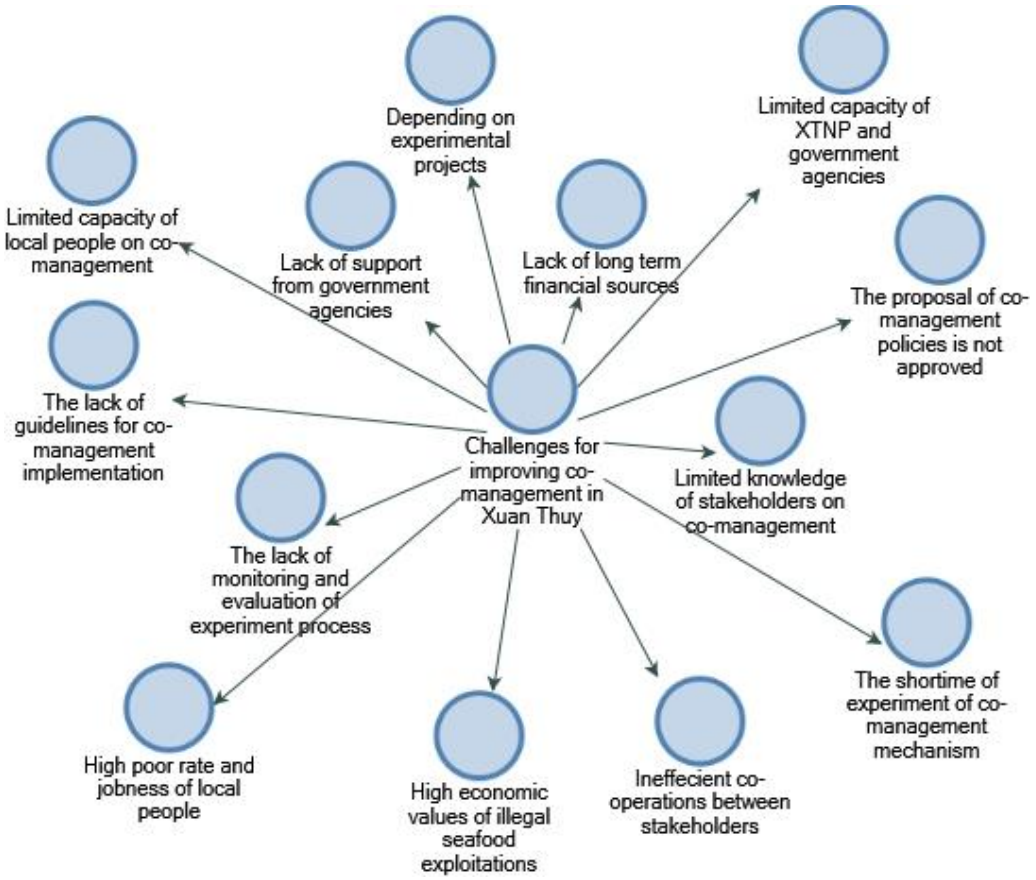


Figure 5.10: Limitations of the co-management model in Xuan Thuy National Park

There are also barriers to long-term sustainable co-management model in the park (Figure 5.11). Firstly, a third of respondents stated that there is lack of financial resources for implementing co-management in the long-term due to dependence on financial support from short-term projects. Thirteen organisations indicated that stakeholders had a limited understanding of co-management and that this reduces active involvement in management. Approximately 40% of respondents asserted that there was lack of support from government agencies for the application of co-management in XTNP, and that there was also a shortage of monitoring and evaluation during the period of the experimental model. Furthermore, there are high rates of poverty in communities in the park which when combined with the high value of seafood products, leads to increased levels of illegal activities and overexploitation of seafood by local people. Finally, about 13% of respondents claimed that the capacity of the XTNP Management Board and local actors was limited, and 11% of interviewed stakeholders mentioned a lack of guidelines for co-management arrangements in the park.



Legend: Challenges which are closer to the centre are more important

Figure 5.11: Challenges for co-management implementation in Xuan Thuy National Park

In order to improve the efficiency of the co-management model in XTNP, some potential solutions were proposed by the people and organisations interviewed. The most important of these, all of which were recommended by over one third of stakeholders, were:

(i) The completion of suitable co-management policies with clear rights and responsibilities for each actor, and rules that are suitable for the local context.

(ii) Improving local stakeholder's knowledge of co-management and biodiversity conservation which would encourage their participation in management activities (Figure 5.12).

Beyond this, a third of respondents stated that the park should integrate benefit sharing mechanisms in co-management policies to deliver benefit sharing equally between participants. In addition, stakeholders noted that sustainable, long-term financial resources for co-management in XTNP are required when short-term projects are completed. Slightly over 10% of respondents proposed three other measures: conducting capacity building training courses for local stakeholders on co-management implementation; developing long-term co-management plans for the park; and improving lobbying to obtain support from government agencies and approval for proposed co-management policies. Other solutions proposed were publishing guidelines for co-management, developing clear compliance and punishment regulations, and greater concentration on adapting the co-management model to the specific characteristics of the park.

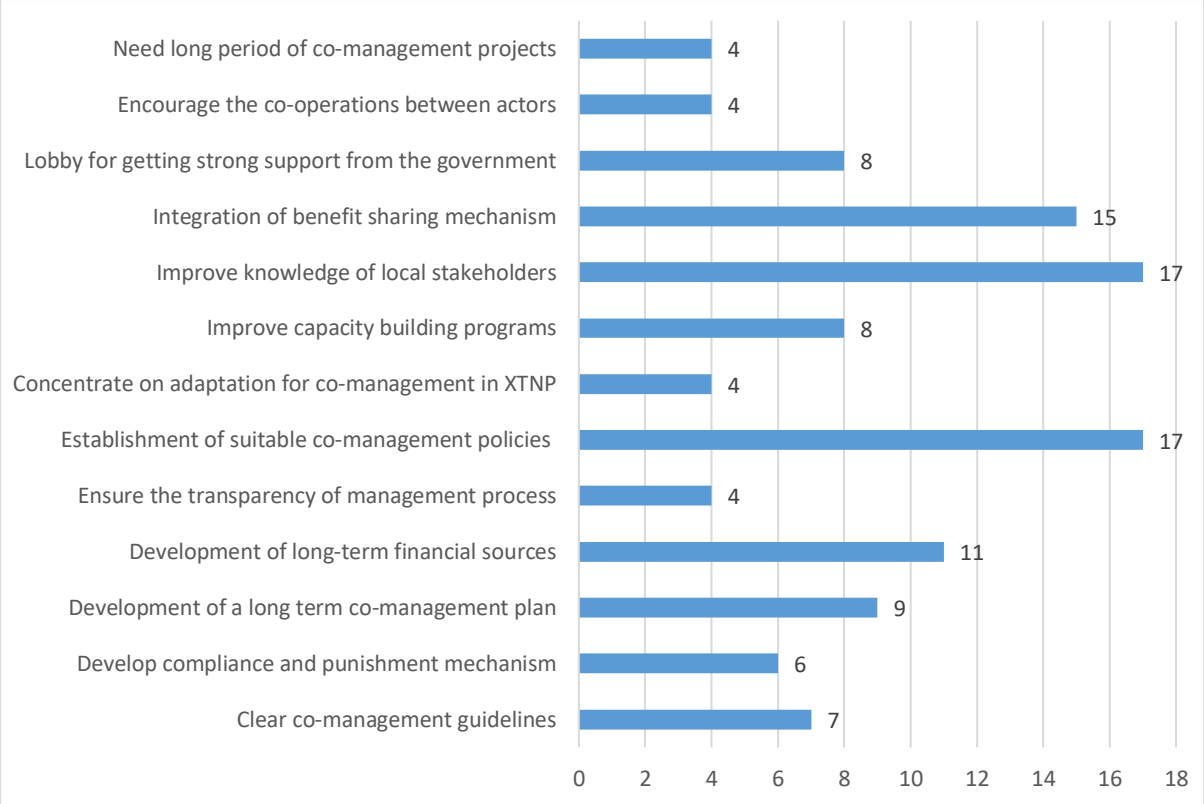


Figure 5.12: Number of recommendations from stakeholders to improve co-management in Xuan Thuy National Park (N=45)

This chapter presents key findings from responses to the questionnaire related to the involvement levels of stakeholder groups in the management process, the improvement level of the model, importance of motivations, limitations, challenges and recommendations for improving the co-management model for Xuan Thuy National Park. The next chapter is going to discuss the implications of those findings based on the three dimensions model (Plummer and FitzGibbon 2004) of co-management in Xuan Thuy National Park.

CHAPTER 6 DISCUSSION

The previous chapter presented the results of the questionnaire administrated to 45 respondents who are involved in co-management of Xuan Thuy National Park. The analysis of the responses observed the importance and value of inclusive management of the park. This chapter sets out to discuss the implications of these results using the co-management model devised Plummer and FitzGibbon (2004) as its basis. As mentioned in Chapter 2, this is an appropriate way to discuss the influences of motivation on co-management improvements through three dimensions that the authors assert are important: "the implementation of co-management can be facilitated or fostered through program design consistent with the three dimensions" (Plummer & FitzGibbon 2004). This chapter is structured around these three dimensions, i.e., power, representation, and process. Using this structure, the motivations will be analysed to show they contribute to enhance the multi-dimensional model of co-management in XTNP.

6.1. The power dimension and motivation

The first dimension of the Plummer and FitzGibbon (2004) co-management model, power sharing or decentralisation, is the linchpin by which to classify the category of a co-management model when the government and user groups share their roles in the decision-making process (Borrini-Feyerabend et al. 2013; Borrini-Feyerabend & Hill 2015; Borrini-Feyerabend et al. 2004; Pomeroy & Berkes 1997; Sen & Nielsen 1996). In Xuan Thuy National Park, the research shows that the application of co-management does not weaken the power of the government in managing the park. The final management decisions still belong to the provincial government through XTNPMB which is the management entity under the administration of the Nam Dinh People's Committee (Figure 3.2). This finding gives support to previous research on co-management, e.g., Brown (2013) in Marine Protected Areas; Nguyen et al. (2013) on Special Use Forests; and Parr et al. (2013) in some other PAs of Vietnam. The survey also shows unequal power distribution between groups of participants in the park. Local government, government agencies, and government forces have higher levels of power in the management of XTNP when they share their influence with XTNPMB in making management policies and plans (Table 5.2). Consequently, non-

government stakeholders (local people, private sector, and NGOs) have limited power when they are encouraged to become involved in implementing the management plan, but have very limited involvement in the decision-making stages (Table 5.2). One respondent argued "despite the fact that local partners are consulted in making management plans, their suggestions are not seriously considered by government officers for application". In addition, another interviewed stakeholder asserted that "even within a community, stronger groups tend to have more influence and get more benefits from their involvement in managing XTNP than poorer groups". Questions emerge from comments like these regarding the actual power of local actors, and equal rights between groups of local users in the co-management model of XTNP.

Despite that, the research reveals advanced levels of participation of local users in managing XTNP compared with other PAs in Vietnam. Firstly, the research shows that local people are recognised as resource users, and when registered local people have legal rights to exploit natural resources in the core zone of the park: "Everything has changed, we now have rights to exploit NRs and can contribute ideas and actions to protect the park", a local partner stated. This finding differs from other PAs where local people are considered as threats to biodiversity and the exploitation of NRs in PAs is not permitted (Nguyen et al. 2013). There are four categories of NRs in XTNP that local people can exploit legally following sustainable rules including: oriental medicine plants, aquaculture areas for clams, baby clams for breeding, and other seafood in mangroves (XTNP 2013b). The exploitation of seafood from registered local people is strictly managed by Monitoring Groups that follows regulations of the Park and signed agreements. Secondly, there are representatives from local people on three Resource Management Committees and the Monitoring Group that provide opportunities for local people to be involved in the decision-making process. In terms of shared actions, local people share the management cost with the government when they contribute 10% of their incomes from seafood exploitation through an administration fee (XTNP 2013b). This fee will be used for management purposes that increase the roles and contributions of local users in managing NRs.

However, although the survey was not designed to evaluate the type of co-management in XTNP with detailed indicators, the analysis using criteria within the framework of Nguyen et al. (2013) shows that the co-management model in XTNP achieves mixed criteria of

"consultative" and "co-operative" in five co-management spectrums developed by Sen and Nielsen (1996). Although the local actors have legal rights as resource users and shared power in decision-making, they are still very far from equal roles with government agencies in managing XTNP to become a co-operative co-management model. Hence, the co-management model of XTNP is still likely to be referred to "administrative co-management" as defined by Nguyen et al. (2013), although it has advanced involvement of local users in the management process. In addition, a respondent claimed that "the co-management model in XTNP refers to benefit sharing mechanisms because the power is only transferred to local partners in managing and benefit sharing for four types of NRs rather than the whole management process of the park". In order to enhance the application of co-management in XTNP, further power relocation from PPC to lower government (district and commune) and local user's groups is required (Dalton et al. 2010; Iwasaki-Goodman 2005; Nguyen et al. 2016b; Weigel & De Monbrison 2013).

In terms of motivations, respondents voted for the release of co-management policies as the most essential factor for co-management improvements in XTNP with the score of 4.7 out of 5 on the Likert scale. At national level, there are two legal documents that support the application of co-management in XTNP including the decision number 126/QĐ-TTg of the Prime Minister in 2012 to experiment on benefit sharing, protection and sustainable development of PAs in three NPs including Xuan Thuy, Bach Ma, and Xuan Thuy; and the legal document number 124/TCLN of the Vietnam Forestry Administration in 2012 to provide guidelines for implementing decision number 126/QĐ-TTg. At the local level, four regulations were issued by Giao Xuan Peoples Committee in sustainable management for four types of natural resources in XTNP including oriental medicine plants, aquaculture areas for clam, baby clams for breeding, and other seafood in mangroves. While other PAs in Vietnam are facing a lack of clear co-management policies (Brown 2013; Nguyen et al. 2013; Vu 2012), XTNP has been allowed to propose and experiment with their own co-management policies in the experimental period. The review of co-management policies of XTNP shows clear institutional arrangements for conducting the co-management model with detailed legislation, administrative structure, and operational procedures. Those co-management policies formalise power for local participants to be involved in the governance of the park (Berkes 2009; Plummer & FitzGibbon 2007; Pomeroy et al. 2004;

Pomeroy & Rivera-Guieb 2005). Nevertheless, co-management policies also contribute to clearly defined rights and responsibilities of each actor in operating the co-management model (Hovis 2002; Mason et al. 2010; Pomeroy et al. 2001; Weigel & De Monbrison 2013). In addition, the clear co-management policy of XTNP also contributes to encouraging and facilitating the participation of stakeholders in the management process, especially in decision-making (Brown et al. 2005; Hovis 2002; Thomlinson & Crouch 2012).

Nevertheless, there are limitations to the co-management policies in XTNP which become clear in this research and need to be overcome. One interviewed stakeholder asserted that "co-management policies of XTNP were designed by external consultants in a short period with the lack of local knowledge and research leading to unsuitable and unfeasible rules in the local context". This limitation is very important as it indicates that the method through which co-management was adopted by the park, was not in itself a co-operative action but to some extent was imposed on the park users. As a result of the lack of consultation at the design stage there have been conflicts and a lack of co-operation between some groups of stakeholders in the experimental period due to the unequal distribution of benefits and power (Figure 5.10). Hence, the current co-management policy of Xuan Thuy National Park should be revised and adapted to ensure understanding of the local conditions are in place, so that appropriate rules become effective legal instruments for improved co-management (Brown 2013; Hovis 2002; Vokou et al. 2014; Vu 2005). In addition, local knowledge and lessons learned from the experimental process should be considered and integrated in future policy making processes to increase sustainability of co-management policies for XTNP (Berkes 2009; Chowdhury et al. 2014; Wollenberg et al. 2000).

The support from government agencies is another important motivation for the application of co-management in XTNP that was identified from the responses of interviewed stakeholders (score=4.68). One respondent claimed that "The support from the government, especially from leaders, is a significantly important condition for the application of co-management because they can decide to what extent each actor can, who and at what stage, can be involved in the management of the park". In the case of XTNP, the leader identified by this respondent can be seen as a gatekeeper.[4] Brown (2013) suggests that the unwillingness of gatekeepers to support decentralisation and power sharing is the

[4] They are leaders of provincial government and related agencies such as PPCs, DONRE and DARD.

major barrier to transform state control of management and transition to co-management in PAs in Vietnam. However, the permission of the national government to carry out the experiment on co-management in XTNP required related government agencies to facilitate the process. The first support of government agencies required was the approval of proposed co-management regulations for XTNP that recognised the rights of local people in decision-making for the management of the park. In addition, there is administrative and financial support from the government, especially from XTNPMB, to conduct co-management components in the experimental process. Such support is essential for improvements in co-management to be a success (Ho et al. 2016a; Larsen 2012; Pomeroy 2007; Pomeroy et al. 2004). However, the support needs to be maintained in the long-term (Gilmour 2013; Pomeroy 2007); the co-management model of XTNP only received this support for the experimental process and it was terminated at the end of 2015. As a result, the essential conditions (legal arrangements and support from the government) for the operation of the co-management model after the experimental period in XTNP are not in place. Hence, advocacy needs to be conducted to get approval for legal legislation and support from the government for the application of co-management mechanisms in XTNP and other PAs in Vietnam (Brown 2013). In particular, the lobbying progress should be conducted at multiple levels of government (local and national) with the involvement of all actors (Pomeroy & Rivera-Guieb 2005), especially NGOs, to achieve commitments from the state for application of co-management model in the Vietnamese PA system, and thereby ensure the gatekeepers are unable to prevent the co-management from being an enduring legacy of the XTNP experiment.

6.2. The representation dimension and motivations

The second dimension of the Plummer and FitzGibbon (2004) co-management model is representation. This dimension identifies the range of actors who are involved in the management process. It is an essential element of co-management as it is related to the distribution of power, progression and property. Essentially, there are three core groups of stakeholders that should be involved in the co-management process including the government, local communities, and the private sector (Plummer & FitzGibbon 2004). However, it is believed that every legitimate actor should have the opportunity to

participate with equal rights and responsibilities in the management activities of public goods such as PAs (Enevoldsen 1998).

The research on Xuan Thuy National Park shows that government stakeholders remain the key players, while there is an absence of private sector involvement in the governance of the park (Figure 5.2). Firstly, the PPC, government agencies and government forces with XTNPMB are the key actors. They have the highest representation in all stages of the management process. The reason is that the ownership of NPs lies with the national government and they appoint the provincial governments to manage PAs through a number of laws. As a result, government stakeholders are the traditional managers of NPs in the state-control management model. In addition, the research findings are that government actors are evaluated as highly important in any improvement in the co-management in XTNP (Figure 5.3); thereby underlining the significant role and power of the government in co-management (Brown 2013; Nguyen et al. 2013). Secondly, local actors (local communities and local civil organisations) have moderate levels of participation in the management of XTNP, despite having legal rights and being supported in their involvement in the co-management model during the experiment period (Figure 5.2). Local people are likely to be involved in implementing the management plans, but they have limited influence on the decision-making process. Local users have the opportunity to be involved in decision-making for the management of NRs in XTNP through representatives on three Resource Management Committees. However, a review of the membership of these committees shows a limited number of representatives from local communities, only 11% to 15% of total members. These are a very low proportional representation of local users in the institutional arrangements, despite the fact they are rated as the third most important group for operating the co-management model of XTNP by interviewed stakeholders. Thirdly, when other PAs have a lack of support for the management operation from bridging organisations (Nguyen et al. 2016a), there is active involvement of NGOs and other institutions that contribute resources for the co-management improvements in XTNP. This finding supports the research of Nguyen et al. (2016b) that highlights the importance of technical and financial support from NGOs to overcome difficulties in the application of co-management in PAs in Vietnam. Finally, the survey responses indicate an absence of the private sector at all stage of management in the park. For example. There is no

representative from the private sector on any of the three Resource Management Committees. In addition, there is also a lack of legislation to facilitate the participation of the private sector in the management of XTNP in terms of national-level decisions and local co-management policies. The case study by Nguyen et al. (2016b) showed partnerships between XTNPMB and private companies, but these may refer to tourism and other business relationships rather than public-private partnership in the park's governance.

The responses to the survey used in this research suggest that benefits gained from the co-management model contribute to the high level of participation of local users in managing XTNP (score=4.44). According to McConney et al. (2003), economic benefits are an important driver to foster the participation of stakeholders that should devolve equally among participants. In XTNP, the research shows a range of direct and indirect benefits for local users from co-management model such as: (1) direct income from seafood exploitation; (2) benefits from livelihood development models (e.g. mushroom planting, community based tourism, and beekeeping; and (3) various ecosystem services from XTNP's mangrove forests (Figure 5.6). Brown (2013) suggests that "…households are motivated by their own household financial goals, not by the biodiversity conservation goals". An interviewed stakeholder stated that "Local people will not participate in the management activities of XTNP if they cannot see direct benefits from their participation". Hence, natural resources in PAs should be considered as something that has to be used sustainably: i.e., through an approach known as sustainable management of Natural resources (Castro & Nielsen 2001; Lai & Suriya 2011). In addition, Murray and King (2012) assert that direct benefit for local users is the key rationale for the success of co-management models. Alternative livelihoods not only contribute to reducing pressures on biodiversity (Crawford 2009; Reid et al. 2004), but also improve the application of co-management through interactions between stakeholders (Brown 2013; Ly & Xiao 2016a, 2016b). However, in reviewing the benefit sharing plans of XTNP, private companies are not considered to be legal users of NRs which leads to the non-appearance of business actors in the co-management model. However, when the research concentrates on identifying direct economic benefits as a motivation it exposed limitations because the investigation of other motivations for the participation of stakeholders in managing nature, such as political and cultural motivations, is downplayed (Pomeroy et al. 2001).

The establishment of local working groups in XTNP contributes to the facilitation of participation and representation of local actors in the management process (score=4.23). In addition to the three Resource Management Committees and the Monitoring Groups, there are 415 individuals from local communities registered to exploit four types of natural resources in XTNP. They are divided into five self-management groups in five hamlets[5] (XTNP 2013a, 2013b). Each group has leaders to manage the exploitation process of their members ensuring they follow the harvesting regulations and rules of XTNP. In addition, their members also have responsibilities to protect the biodiversity in the park, including identifying and preventing illegal activities (XTNP 2013b). There are also other groups of local people that have relationships and co-operation with XTNP such as the Forest Protection Group, and local livelihood clubs. Such working groups bring opportunities for local users to be represented and involved in the decision-making, monitoring and managing of the park through co-operation with XTNPMB (Huynh et al. 2016; Pomeroy 2007; Rashid 2012). In addition, local working groups also run forums for social learning and conflict resolution through interaction and negotiation (Gilmour 2013; Sessin-Dilascio et al. 2015; Uddin et al. 2007). Hence, Parr et al. (2013) have suggested that there are six types of working groups that PAs should establish to increase opportunities for local people to be involved in the management such as Advisory Committees, Law Enforcement Working Groups, and Livestock Working Groups. The groups currently in place in XTNP are aligned with these.

Furthermore, awareness raising and education programs are also rated by respondents (score of 4.53) as important actions of XTNP to reduce illegal activities and encourage the participation of local people in management activities. XTNPMB affirms that environmental education for local people is an important obligation of the park through both formal training (lectures and workshops) and informal education (exchange visits and peer-to-peer discussions). Those actions have been conducted in the park since its foundation and have contributed to increasing the knowledge and improving the attitudes of local people toward environmentally-friendly behaviour. Research by Baticados and Agbayani (2000) concluded that there was a positive correlation between ecological knowledge of local people and the

[5] In Vietnam, the governance structure is from the National Government (as the highest administration level), through to Province, District, Communes, and Hamlet (as the lowest administration level).

effort of their participation in conservation activities. The advanced understanding of local people on the environment contributes to encouraging their participation in management activities (Brown et al. 2005; Lockwood 2010; McConney et al. 2003). Educational programs also contribute to improving the management skills and capacity of local actors, so that they can be actively involved in management (Campbell, Townsley, et al. 2013; Mason et al. 2010; Pomeroy & Rivera-Guieb 2005). Involvement in NR management requires local actors to have social–ecological knowledge to deal with difficulties and complexities in decision-making processes (Begossi 2008; Berkes et al. 2008). Therefore, it is suggested that education and capacity building on co-management should also be carried out for government staff so that they can effectively engage in co-management (Parr et al. 2013; Pomeroy et al. 2004). Furthermore, knowledge generation through the co-management experimental process in XTNP was another opportunity for local actors to improve their knowledge and skills of the co-management operation (Olsson et al. 2004).

6.3. The progress dimension and motivations

The third dimension of a co-management model is the progress relating to institutional arrangements and operational procedures that formalise the participation of local users in the management practice (Plummer & FitzGibbon 2004). The research undertaken in Xuan Thuy National Park identified formal involvement of local users in the management process during the experimental period (Figure 5.2). There are institutional arrangements, outlined by Mitchell (1989), for operating the co-management model of Xuan Thuy National Park such as legislation and regulations, administrative structure, and financial arrangements. In addition, those institutional arrangements were approved by the Prime Minister and Nam Dinh PPC to implement a co-management model in XTNP. However, the operational process of the co-management model was planned and conducted formally with support from related actors through experimental projects. As a result, 95.5% of respondents asserted that there have been improvements in the co-management of the park over the last ten years (Figure 5.4). One third of respondents stated that there are improvements in active participation from local people that have contributed to the increased success of conservation activities. The case study in Xuan Thuy National Park by Nguyen et al. (2016b) also shows the strong vertical and horizontal relationships between actors in the

management that contributes to overcoming difficulties in co-management compared with three other case studies: Khau Ca, Nui Chua and Cu Lam Cham PAs (Table 1.1).

One important factor, which has contributed to enhancing co-management in the park, was the financial support for implementing the model in the early stage in XTNP (score is 4.42) (Figure 5.7). Decision 126/QĐ-TTg of the Prime Minister in 2012 allows XTNP to use the state budget for implementing co-management. In addition, the decision also calls for investments from NGOs to conduct co-management projects in XTNP. For example, Mangroves for the Future (MFF) provided a fund of USD$20,000, while the Global Environmental Facility (GEF) funded USD$180,400 for piloting co-management components from 2012 to 2013. In addition, there was financial support for other management activities in the park from Vietnam Conservation Funds (VCF), MONRE, UNDP, Wetlands Alliance Programme (WAP), and the Centre for Marinelife Conservation and Community Development (MCD). The research by Brown et al. (2005) observed a shortfall in the budget for co-management costs in national budget and revenues, particularly resource rents and fees in co-management. In this case, external funds are essential sources for co-management operations (Cooper 2008; Pomeroy & Rivera-Guieb 2005). The external funding is especially important in the early stages of co-management when it contributes to covering the expenditure on planning, implementation and monitoring (Pomeroy et al. 2001; Sessin-Dilascio et al. 2015). In addition, economic support for alternative livelihoods also has crucial influences on the success of co-management, especially when it contributes to reducing the dependence of local people on natural resources (Aswani et al. 2007; Campbell, Kartawijaya, et al. 2013). However, respondents also stated that financial support for co-management in XTNP from donors would not be sustainable after the experiment period concluded at the end of 2015. This is borne out by the fact that the operation of the co-management model of XTNP is currently facing financial shortages. Hence, a long-term financial plan for co-management of XTNP needs to be established with a diversity of funding sources and fees from users (Dhungel 2008; Vokou et al. 2014).

Support from projects also contributed to the success of the co-management experiment in XTNP and this is recognised by respondents (score=4.41). Crawford (2009) indicated that "The amount and type of project interventions provided was also positively correlated with faster progress of co-management". Seven of 45 interviewed stakeholders have projects in

XTNP in different fields such as co-management, conservation, livelihood development, and awareness raising (Figure 5.1). A respondent stated that "The support from projects is essential for applying the co-management model in XTNP as providing consultants and technical supports for designing co-management policies and operational plans that are difficult to carry out by XTNP and local people without external supports". Research by Pomeroy et al. (2001) also points out that independent support of projects (e.g. consultations, technical support, training, and operational support) are necessary for expediting the progression of co-management. These types of support not only contribute to facilitation of co-management (Parr et al. 2013), but it also plays an important role as a bridging function to increase co-operation between stakeholders in the co-management model (Berkes 2009; Nguyen et al. 2016a; Pomeroy et al. 2004). However, there are limitations to the support for projects to any co-management model: unsustainability of support mechanisms, the diversity of a project's objectives, and the range of donor's interests (Brown 2013). Hence, while external support from projects is important in the early stages of co-management operations, measures for self-operation of the co-management model in XTNP should be considered by all actors for long-term operations.

Finally, co-management guidelines contribute to facilitating co-management in XTNP according to the respondents (score=4.39). According to Nguyen (2017), there is a lack of guidelines for establishing and operating co-management models in Vietnamese PAs. However, guidelines for co-management arrangements and operations in XTNP were designed and published to support the model. Firstly, co-management legislation is clearly simplified in co-management plans, rules, and agreements that were approved for the experimental phase. In those plans, guidance for institutional structures and operational arrangements are identified. In addition, guidelines are interpreted in brochures and handbooks to be provided to local people and participants that contribute to increase the understanding of stakeholders on co-management procedures. As a result, local people clearly understand their rights and benefits, which probably contributed to their increased involvement in the management process (Brown et al. 2005). In addition, guidelines for a new governance approach, such as co-management, contributed to facilitating the implementation process as stakeholders were able to understand the co-management processes, arrangements and procedures.

Although Xuan Thuy National Park has advanced the application of co-management, there have been limitations and challenges that raise the question as to whether the model is sustainable. Firstly, application of co-management in XTNP was only an experiment and the related policies were only approved for the experimental period from February 2012 to December 2015. Nam Dinh PPC has announced the decision 119/QD-UBND on 23 January 2015 to continue the experiment in terms of benefit sharing for clam harvesting in areas zoned as aquaculture to the end of 2020. Nevertheless, this only focuses on managing one type of natural resources, rather than the whole co-management process. Currently, there are no further approvals in the pipeline for proposed co-management policies for XTNP. Hence, management of the park has more-or-less returned to the former state control model with power vested in XTNPMB and PPC. Secondly, co-management implementation in XTNP depended on external supports for experimental projects to the end of 2015. This is another challenge for the model's operation in the park. Finally, respondents claim that the evaluation and monitoring process in the co-management model was lacking in that it was not adapted to the local context for long-term co-management implementation.

This chapter has discussed the implications of the key findings of this research in the context of previous studies following three dimensions of co-management identified by Plummer and FitzGibbon (2004). By following this scheme, the chapter not only successfully described the current situation of the co-management in Xuan Thuy National Park, but also analysed the influences of motivation on the co-management in the park.

CHAPTER 7 CONCLUSIONS AND RECOMMENDATIONS

The previous chapter discussed how the research findings are linked with the three dimensions of a co-management model. This chapter is going to conclude the thesis, outline the research limitations, and give recommendations for future research.

7.1. Conclusions and recommendations

The research concludes that the co-management model in Xuan Thuy National Park is of the "administration co-management" paradigm identified by Nguyen et al. (2013), in which government actors remain in power in terms of the park's governance. This occurs despite the fact that local people are legally recognised as resource users. Their legal recognition facilitates the active involvement of these local actors in exploiting and managing NRs; however, they have limited influences in the decision-making process. NGOs and educational and research institutions also play important roles in providing support for operating the co-management process in Xuan Thuy National Park as bridging organisations through their projects. There is the absence of private sector organisations at all stages of the NR management process, notwithstanding the fact that they have information exchanges with Xuan Thuy National Park. In terms of processes, there is a formal operating procedure for the co-management model in the park with clear institutional arrangements and operational guidelines during the experimental period. However, there are limitations to, and challenges for, co-management in Xuan Thuy National Park in the long-term after the experimental period (e.g. the approval of co-management policies for the experiment period only, dependence on external supports, the shortage of financial resources, and some unsuitable rules of proposed co-management policies for Xuan Thuy National Park).

I argue that there were essential motivations that contributed to fostering improvements in co-management in the park during the experimental period. Firstly, approved co-management policies not only contribute to formalising the power and rights of local users but also facilitate their participation as actors in the park's governance. Secondly, the application of co-management requires considerable support from government agencies as gatekeepers to enable the decentralisation processes and to provide the necessary administrative support. Thirdly, the direct and indirect benefits to local people from the co-

management model are the principal motivations in encouraging the involvement of these people in managing the NRs. In addition, the establishment of working groups of local communities in Xuan Thuy National Park involves local people in co-management and facilitates the potential for forums for future conflict resolution and social learning through negotiation and co-operation. Awareness raising and capacity building programs are necessary to increase the knowledge, experience and skills of local actors in areas like ecology and co-management. Such programs would make local people better informed co-managers. Furthermore, there are the issues of financial support from the state and non-government organisations, these often accompany technical support from projects. Together these actions would enhance and promote the progress of co-management. Finally, the release of detailed guidelines will assist the model's operation when it cements institutional arrangements and operational procedures into clear instructions for implementation.

There are potential measures that could be applied to overcome barriers and to improve the sustainability of the co-management model in Xuan Thuy National Park after the experimental period. The most important action is to review and adapt the proposed co-management policies for the park by using local knowledge and social learning from the experimental period. This would allow the policies to fit the local context better. In addition, a multi-level advocacy strategy should be carried out by multiple stakeholders to get approval for the proposed co-management policies and to gain support from the government for the long-term application of co-management in Xuan Thuy National Park and other PAs in Vietnam. In addition, while short-term support from projects is meaningful for establishing the model in the early stages, it is important that a long-term financial and operational plan for driving co-management implementation in Xuan Thuy National Park be developed, with funding and commitment from multiple stakeholders.

I also recommend that for the system to work more effectively co-management Working Groups should have more representation from local communities (e.g. local civic organisations, hamlet leaders, and private companies). Additionally, the leadership of the working groups should have a minimum of one person from the local people to facilitate local user participation in all decision-making.

The research undertaken here makes a key academic contribution to the research literature in terms of understanding the influences that lead to high levels of successful participation in co-management of PAs. In addition, and very importantly, the findings of, and recommendations from, this research will be made available to decision makers and stakeholders as a tool that they can apply in other locations and improve co-management of PAs in Vietnam and other locations facing similar complex co-management issues.

7.2. Research limitations

The research methods used in this research may have led to some biases in the results and conclusions. The initial survey responses depended on the honest opinions, memory and local knowledge of respondents. These responses may not reflect the "actual situation" and certainly will influence the levels of motivation felt about improvements in the co-management of Xuan Thuy National Park. In addition, questionnaires were administered by both approaches (email and directly researcher) that may lead to the differences of the result of the questionnaire survey. Furthermore, the scoring method used will have led to some bias in the results, especially when the scoring system does not fit with the actual importance of each indicator in real life (e.g. the scoring system for the participation level of stakeholders is evaluated based on the management level they are involved in as shown in Figure 5.2). Furthermore, the research question three (recommendations for improving co-management application in XTNP) were not full-fill answered because of limited research period and word limitations when it was presented in the Chapter 5 (result) but was not discussed in the Chapter 6.

In addition, there are other economic, political and cultural motivations that may have an influence on improvements in co-management in Xuan Thuy National Park that are not analysed by this research due to the scope of the study. For instance, the level of participation by local actors could be motivated by a punishment and rewards system, economic changes, the trust local people have in the model and government agencies, characteristics of local communities, the significant value of the biodiversity in the park, and the transparency of co-management operations. Such limitations need to be acknowledged when interpreting the results of this research and its wider application.

7.3. Suggestions for further research

Further research should be conducted to evaluate motivations that are not covered by this research that may also foster the application of co-management models to parks in Vietnam and other similar environments. Specifically, future research should concentrate on evaluating the influence of cultural features on the participation levels of different ethnic minorities in managing PAs. In Vietnam, there are many diverse ethnic groups living in the core zones of PAs and understanding the similarities and differences between the attitudes of these groups to co-management would give greater insight into the adoption of a successful management model.

This thesis has explored a very important approach for investigating influences and implications of motivations on three dimensions of a co-management model in Xuan Thuy National Park. This method not only contributes to the success of the thesis in answering the research questions but also emphasises the importance of motivation for improving the participation of stakeholders in managing natural resources in protected areas of Vietnam in the future.

APPENDIX: THE QUESTIONNAIRE

Survey Ref No:…….

QUESTIONNAIRE FOR STAKEHOLDERS

(For stakeholders of Xuan Thuy National Park)

This questionnaire is a part of the Master's degree research on "*Motivations for the application of co-management in protected areas in Vietnam: A case study of Xuan Thuy National Park*". This questionnaire takes approximately 30 minutes to complete and has 15 questions. For more information, please see attached Information Sheet and Letter of Introduction. Thank you very much!

I. Information about respondent's organisations

Question 1: What is the name of your organisation?

Question 2: Please list **all activities** that your organisation, company or agency undertakes or participates in Xuan Thuy National Park?

Question 3: How many years has your organisation been a partner or stakeholders of Xuan Thuy National Park?.....Years.

II. Questionnaire

Part 1: Current status of stakeholder's involvement in the management of Xuan Thuy National Park

Question 4: In your opinion, what groups of stakeholders are involved in managing Xuan Thuy National Park and what management activities do they do? (*You can select more than one activity for one stakeholders by putting an X in the table below*)

Group of stakeholders		Management activities					
		No participation (0)	**Information exchange only (1)**	**Involvement in management plans (2)**	**Making management plans (3)**	**Monitoring and evaluation (4)**	**Management policy and planning modifications (5)**
1.	International NGOs/ Donors						
2.	National and Local NGOs/ Donors						
3.	Government Agency related to park						
4.	Research or Education Institutions						
5.	Private companies/ cooperatives						
6.	State-owned companies/ cooperatives						
7.	Government Forces (Military, Police, Border Defence Force and Forestry Rangers)						
8.	Central or Local Government						
9.	Local Civil Organisations						
10.	Working groups of local people						
11.	Others (*please specify*): …….						
12.	Others (*please specify*): …….						

Question 5: In your opinion, what are the **three** most important groups of stakeholders in managing Xuan Thuy National Park (*not including National Park Management Board*)? And **Why**?

Question 6: How often do you have meetings with other stakeholders of Xuan Thuy National Park?

5+. Every week	☐	5. Every month	☐
4. Every three months	☐	3. Every six months	☐
2. Every year	☐	1. Casual meetings only	☐

Part 2: Evaluation of co-management in Xuan Thuy National Park

Question 7: How effective do you think co-management is in Xuan Thuy National Park now compared to 2007?

0. Nothing has changed	☐	1. Very low level of improvement	☐
2. Low level of improvement	☐	3. Moderate level of improvement	☐
4. High level of improvement	☐	5. Very high level of improvement	☐

Explain in what ways it has changed?

Question 8: In your opinion, what are the benefits for biodiversity from co-management in Xuan Thuy National Park?

Question 9: In your opinion, what are the benefits for local communities from co-management in Xuan Thuy National Park?

Part 3: Factors that might improve participation of stakeholders

Question 10: In your opinion, what things could improve stakeholder participation in the management of Xuan Thuy National Park? (*Please choose one important level for one factor)*

Factors		Very Important (5)	Important (4)	Moderately important (3)	Marginally important (2)	Unimportant (1)
1.	Introduction of co-management policies					
2.	General support from government agencies					
3.	Support through specific projects					
4.	Financial support					
5.	Education and awareness raising programs					
6.	Establishment of co-management working groups that include local people					
7.	Clear co-management guidelines					
8.	Processes that allow local people to receive their share benefits from co-management					
9.	Other:					
10.	Other:					
11.	Other:					

Question 11: In your opinion, what are the **three** most important factors for successful co-management in Xuan Thuy National Park? Please explain **why** they are important?

Question 12: In your opinion, what are **five** most important objectives or interests of your organisation when participating in the management of Xuan Thuy National Park?

Part 4: Challenges and issues related to co-management in Xuan Thuy National Park

Question 13: Please list up to **five** issues arising from co-management in Xuan Thuy National Park?

Question 14: In your opinion, what are **five** main challenges that stakeholders experience in co-managing Xuan Thuy National Park? And **Why?**

Part 5: Recommendations for improvements

Question 15: In your opinion, what could to be done to improve the application and effectiveness of co-management in Xuan Thuy National Park in the future (*please list with priority level from high to low*)?

THANK YOU VERY MUCH FOR COMPLETING THIS SURVEY!

Would you like to receive a summary of the survey results? Yes/ No

If yes, please provide your email or phone number:

…….

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