Co-operation and contestation: farmer-state relations in agricultural transformation, An Giang Province, Vietnam

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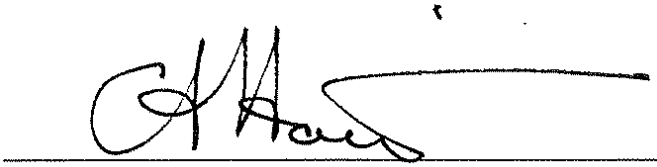
This thesis analyses farmer-state and farmer-farmer relations in the Mekong Delta, Vietnam, focusing on agricultural transformations in An Giang Province. It does so at three levels: first, at the largest scale, farmer-state relations are explored through the building of common dikes of different heights; second, farmer-farmer relations are examined through farmers' management of flood water within common August dikes; and third, at the smallest scale, the scope for interhousehold diversification in the face of common environmental and economic constraints. Case study fieldwork took place between 2002 and 2007 in four communes using a mixture of inductive and deductive methods. Political ecology at the micro-level provides the overarching conceptual framework, and co-operative water management is analysed using Olson's (1965) and Ostrom's (1990) 'collective action' and 'common pool resources' frameworks. The research aims to contribute to a better understanding of farmer-state relations in the South of Vietnam.

Drawing on Kerkvliet's (2005) models of farmer-state relations, an additional model, advocacy relations, existed in the study area, although dialogic and a form of dominant-state relations also existed. Since a period of national food insecurity in the 1980s, related to the failure of state-initiated co-operatives here, farmers retain and exercise leverage against the state by, for example, resisting proposals to raise the height of the dikes. Within common August dikes, farmers act collectively in 'pumping clubs' to manage flood water. August dikes raise production, but reduce the scope for individual decision-making. Common high dikes allow farmers to act more individualistically and this accentuates differences in success between households. Paradoxically however, high dikes have also enabled the state to gain control of water management, although it is not clear if this has been done in order to regain political control or to protect the poor and the landless.

I, Charles Alexander Howie, confirm that the work presented in this thesis is my own. Where information had been derived from other sources, I confirm this has been indicated in the thesis.



DEDICATION

This thesis is dedicated to Sarah Howie (1945-2006) and Erin Howie (born 2008).

I wish they could have met.

ACKNOWLEDGEMENTS

I am grateful to many people who helped me on this long journey. Without the willingness and generosity of farmers, officials and staff at An Giang University, Vietnam, this work could not have taken place, I owe them a debt of gratitude. Professor Vo Tong Xuan, former Rector of the University and his successor, Mr Le Minh Tung, gave me wonderful support, friendship and advice. I enjoyed their company and friendship immensely. Vo Tong Anh, Dean of Agriculture, and his staff, supported me in many ways and taught me much about Vietnam. Miss Pham Huynh Thanh Van and Mr Le Minh Tri were my daily companions in the field, from dawn to dusk, I thank each of them deeply for their hard work, also several others who worked with me in the field. I hope they got as much out of the experience as I did. When not in the field I enjoyed the company of many staff from the university, who invited me to meals and to their homes, they extended my understanding of their country. I appreciated all the attention for my well-being extended by Dr Truong Ba Thao, Vice-Dean. We shared many memorable times together. I also thank the translators of the abstract.

I am most grateful for the tolerance and support of my supervisor and adviser, Professor Tim Unwin and Professor Katie Willis of the Geography Department at Royal Holloway, University of London. This research began at the Royal Agricultural College Cirencester, and I wish to thank staff there as well, in particular Professor Paul Davies, Vice Principal who fostered my early interest in rice. Many students and staff in both institutions have been kind and generous. In particular I want to thank Lucy, Nguyen and Meera.

My family have been tolerant, perhaps bemused by my travels, but always supportive. I thank them deeply for their generosity. I would also like to thank the ESRC/NERC for the generous award for this research, PTA-036-2002-00024. That award enabled me to undertake intensive language training in the UK and in Vietnam. A rudimentary knowledge of the Vietnamese language deepened my enjoyment and understanding of Vietnam.

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GLOSSARY

AGU	An Giang University
ASS	acid sulphate soil
BBC	British Broadcasting Corporation
CIMMYT	International Wheat and Maize Improvement Centre (Mexico)
CMEA	Council for Mutual Economic Assistance
CPR	common pool resources
CPV	Communist Party of Vietnam
DFID	Department for International Development (UK)
ESRC	Economic and Social Research Council
FAO	Food and Agricultural Organisation
GDP	gross domestic product
GOSV	General Office of Statistics of Vietnam
HQ	Headquarters
HYV	high-yielding varieties [of rice]
IRRI	International Rice Research Institute (Philippines)
NERC	Natural Environmental Research Council
PLA	participatory learning and action
SMS	short messaging service
UK	United Kingdom
USA	United States of America
USSR	Union of Socialist Soviet Republics
VFF	Vietnam Fatherland Front
VLSS	Vietnam Living Standards Survey
VND	Vietnam dong

Chapter One

Introduction

1.1 Introduction

> Questions of socioenvironmental sustainability, which has [sic] become of great interest of late, are fundamentally political questions. Urban [and rural] political ecology attempts to tease out who gains from and who pays for, who benefits from and who suffers from particular processes of socioenvironmental change**.** **(**Swyngedouw and Heynen, 2003, p.910)

Socio-environmental changes are political acts (Swyngedouw and Heynen, 2003) and the outcomes reflect the distribution of political power. Lasswell (1936) encapsulated this link between the allocation of resources and politics in the title of his book, '*Politics: Who gets What, When, How*', but his proposition begs the wider question: why does environmental change take place in the first place? Is environmental transformation justified if it is to meet basic human needs and if so, who gains and who loses by that process?

This thesis links agricultural transformation in one area of Vietnam to the exercise of power by two groups of actors: farmers and elites responsible for managing the state. Neither group is homogeneous, nor are they discrete. Each carries memories of former events, and all are connected in one way or another to the Communist Party of Vietnam (CPV). However, this thesis is not about party politics, or about communism as such, but rather it is about the interaction between these actors at the level of the commune and its effects on the environment. It does so by focusing on the building of dikes to manage flood waters in four communes in An Giang Province in southern Vietnam and how their interactions transform the landscape; in some communes it follows transformation over several years.

The research is explicitly cross-disciplinary. It engages with agriculture, environment, politics and economics. The relevance of this approach for understanding environmental change was recognised with a postgraduate studentship award from the Natural Environmental Research Council (NERC) and the Economic and Social Research Council (ESRC), for which I am extremely grateful. That funding allowed time to be spent learning the Vietnamese language at universities in the UK and Vietnam. Knowledge of the language, while rudimentary, proved an invaluable tool for opening doors to interesting conversation. Research of this kind cannot be carried out in isolation; it depends on collaboration and partnership. From the outset, I was determined not to carry out 'extractive research', gathering materials for research purposes only, but to try to 'give something back' (Madge, 1997). I have benefited, and still benefit, immeasurably from working in partnership with the two successive Rectors and the staff of An Giang University (AGU), located in the west of the Mekong Delta. In exchange for my help with curriculum and staff development they have helped me over several years, a situation at odds with experiences cited by others doing research in Vietnam (see Scott *et al*., 2007). Through this partnership I met many farmers and officials and their accounts form the building blocks for this thesis. Without the patient support of teachers and farmers I could not have learned how closely agriculture and politics are interlocked.

1.2 Thesis aims

This thesis has three aims. The first is to investigate and understand at the local level the relationship between farmers and the state in a socialist society. In 2004 I wrote in my research diary that the entire surface of the Mekong Delta appeared now to be 'organised', or transformed:

> As the fieldwork progressed it became increasingly evident that the environmental transformation I could see and was being told about was essentially the product of political actions at different levels, from national to provincial, district and commune and, very occasionally, an individual level. Some of the consequences

> were positive, such as achieving national food security and a larger demand for labour, while others were negative, such as the loss of soil nutrients, leading to rising levels of chemical fertiliser inputs, and the loss of free goods. But whereas the physical transformation could be 'unpicked', explicated, layer by layer, by asking farmers about their technologies and how they interlinked, the political narrative behind it was much less apparent, unspoken when I was in the field, and at the beginning nearly unknown to me.
>
> (Research diary May 2004)

I wanted to know how and why that transformation had come about, and who, in Blaikie and Brookfield's (1987) words, were the 'land managers', who held the power in that process. To answer questions about who holds power I focused on how the decision to raise the height of a common dike was made. The height of the dike determines the length of time between one set of floods and the next, even leading to the complete absence of flooding. Each water regime creates different environmental circumstances and offers different economic possibilities. On the other hand, however, these dikes are used in common by groups of farmers, and everyone with land inside a particular set of dikes experiences a similar environment. Where the regime involves annual flooding, this limits opportunities for individual households to innovate and diversify. Paraphrasing Lasswell's (1936) words, dikes determine 'Who gets What, When, How'. By inference therefore, dike building is political, and the process of decision-making on the height of dikes indicates the allocation of political power between farmers and the state.

The second aim is to investigate relations between farmers themselves. Within a period of just over thirty years, farmers in An Giang have changed from growing one crop of long-duration, low-yielding rice a year, to multiple crops of short-duration, high-yielding varieties (HYV) of rice, with the number of crops depending on the height of the dikes. In 40 years, between 1965 and 2008, rice yields in Vietnam rose by 169% (Figure 1), against 121% in China and 94% in Cuba. This change has taken place almost exclusively within common dikes (see Figure 2). The impact on total production when two or more

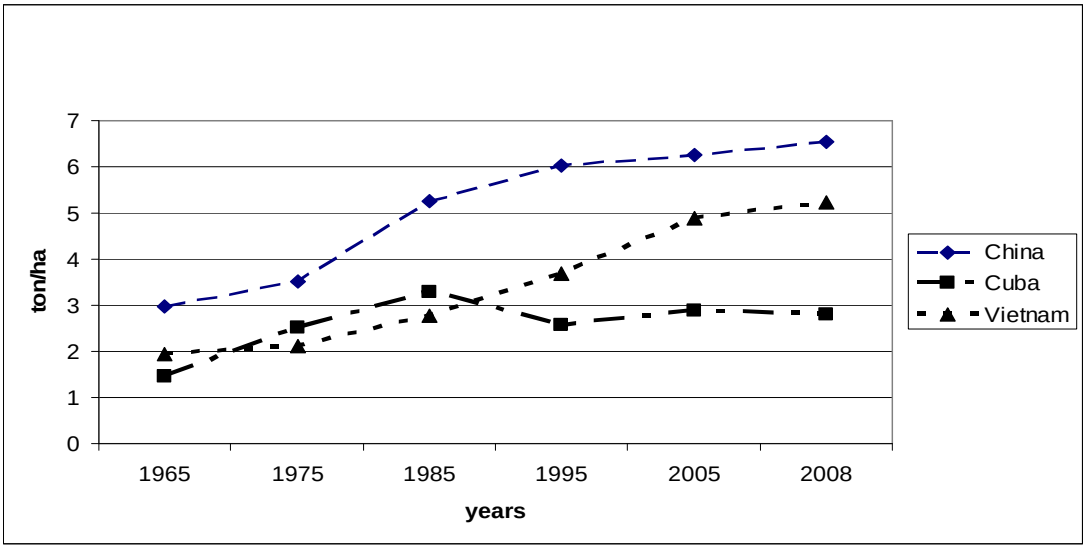

Figure 1 Trends in rice yields in three communist states, 1965-2008.

Cuba (1972-1991) and Vietnam (1978-1991) were members of the Council for Mutual Economic Assistance (CMEA) while China was not. Prior to 1991, Cuba received large amounts of aid from CMEA, Vietnam very little, while China was not a member and did not receive support from CEMA. (Data from FAOSTAT, 2010)

Figure 2 Growing winter-spring rice on an individual field in the compartment of an August Dike

The trees on the skyline mark the far bank, and the dark green line on the left is an irrigation ditch which carries water pumped from the canal to fields in the centre of the compartment (author, February, 2003).

of HYV rice are grown instead of one is very large, annual production rises from about two tons to about ten tonnes in one year. Annual rice production in An Giang has multiplied five-fold since reunification, and in 1995-2007 it rose 65%, compared with 46% for the whole Mekong Delta over those years (Government Office of Statistics (GOSV), 2010). The attempt by the state to impose cooperative agriculture on the farmers in the Mekong Delta in the early 1980s failed, in part because the policy ignored market conditions and separated farmers from their land (Kerkvliet and Porter, 1995, Vo Tong and Matsui, 1998), although macro-level political factors, such as withdrawal of foreign assistance by the United States of America (USA) and China after 1975, conflict with Cambodia (1978-79) and an intrusion by China into Vietnam in 1979, all played into that outcome (Marr and White, 1988). Nevertheless, despite this rejection of cooperatives, farmers do act together cooperatively to control flooding. This thesis investigates why farmers act in this way rather than alone to do this, and how farmer-farmer and farmer-state relations alter as the height of the dikes is raised.

The third aim is to investigate the diversity of wealth displayed by households in apparently similar conditions. Land redistribution between the mid-1960s and the late 1970s theoretically placed all land in the hands of small-scale users (Vo Tong, 1995). Common dikes of any height create similar conditions for all those with land inside them, but this had not resulted in each household achieving the same level of holding. Although a large number of households may share similar conditions, they may have different assets and use them, or are compelled to use them, in different ways, leading to different outcomes. For example, in 2002 I visited two adjacent homes beside the Hau River. The houses looked similar, built of wood, each had a deep veranda at the front, a roof with red tiles, and the floor raised above the ground as a protection from flooding, similar to those shown in Figure 3. They had nearly similar amounts of land nearby but their occupiers were doing different things, with different outcomes. In one household both the husband and wife were

Figure 3 Houses in Vinh Binh Commune raised on stilts beside the river

During the flood season water passes under the houses. Local people viewed roofs as an indicator of household wealth. (author, February 2003)

University graduates, only recently returned to work family lands and growing early rice to sell as seed. They also raised tree seedlings and made and sold yogurt, but they said their greater education and recent return had resulted in hostility from some neighbours. The other household by contrast, had no one educated beyond age ten. They had land at several elevations and grew a range of crops, sometimes with success, sometimes with failure, but they did not seem worried about what happened to them. They appeared to be content just to get by. One household was enterprising, actively seeking additional income streams to develop more wealth. The other household appeared to be content to satisfice, not to take risks by maximising the potential of different income streams (Simon, 1987). This thesis asks why, given a socialist redistribution of land and seemingly common agricultural conditions, some households are wealthier than others

In his seminal work, *The Power of Everyday Politics: How Vietnamese Peasants Transformed National Policy,* Kerkvliet (2005, p.6) notes that 'Collectivisation in southern Vietnam, a topic I only touch on, merits closer investigation'. After my first visit to the Mekong Delta in 1999 and six periods of field research that followed, I become increasingly conscious of that gap. The role played by farmers in the southern delta in Vietnam's bloodless revolution of the 1980s is not as well recorded in the literature as what happened in the north, but its impact was immense. By declining to participate in cooperatives, even to the point of slaughtering water buffaloes to avoid them becoming cooperative property (Marr and White, 1988; Raymond, 2008), farmers in the south hastened the downfall of that system. However, the details and themes of how that happened are not as well recorded as the actions of farmers in the Red River delta in the north of the country. Reasons for that focus might include the north's long history of rice cultivation and village organisation, and as the starting point for Vietnamese culture. The more recent occupation of the Mekong Delta by the Vietnamese is addressed in Chapter Four. This thesis intends to contribute to knowledge and understanding about farmer-state relations in the Mekong Delta.

1.3 Political ecology, common pool resources and household wealth

This section provides an introduction to the overall framework and context of the thesis, highlighting the key issues to be addressed. Political ecology concerns itself with critical examinations of who gains and who loses when the environment is transformed (Blaikie and Brookfield, 1987; Bryant and Bailey, 1997; Robbins, 2004; Neumann, 2005; Escobar, 2006), and is used as the overarching framework for understanding the issues explored in this thesis. Environmental transformations, or 'crises' (Peet and Watts, 2004), take place in response to pressures, which may be local or beyond in origin. Transformations of an environment may be initiated by those placed at a distance from it, and while they reap the benefits, local people experience negative impacts. Political ecology concerns itself with those asymmetries of cause and effect. To understand local change and its consequences, it is necessary to employ a range of approaches (Neumann, 2005) to gather data at different points, in time and space, and use that data to develop a 'chain of explanation' (Blaikie, 1995). Political ecology is concerned also with scale, the relationship of the local to the national or global, in order to make a 'multi-scalar analysis' (Rocheleau, 2008).

Within the overarching framework of political ecology, three strands are developed. The first is how farmers and the state engage each other in the allocation of resources. Everyday politics and informal advocacy have been identified as the tools by which farmers contest the actions and wishes of the state (Scott, 1985, 1989; Kerkvliet, 1999, 2005, 2009). Farmer-state relations in Vietnam have been theorised on the one hand by Thayer (1992) as 'mono-organisational socialism', with all instructions emanating from the centre, to, on the other hand, Kerkvliet's (2001) view of the relationship between farmers and the state as being responsive to the realities of what happens on the ground, what Kerkvliet calls 'dialogic' relations:

> Groups and forces in society beyond the reach of the state not only exist but their activities from time to time influence what authorities decide. (Kerkvliet, 2001, p.269)

The second strand to be developed is how and why individuals act together in the face of a common threat. Olson (1965) postulates that individuals will not give up their individual rational interests to the interests of the group, unless it is in the face of a coercive force or to manage in a collective manner a rivalrous resource from which other users cannot readily be excluded, in which case to be successful the group must be small in numbers. Ostrom, (1990, p.15) takes this further, theorising that in collective action, users enter 'a binding contract…to a cooperative strategy' to manage a resource of limited capacity. Gamson (1992) suggests this kind of arrangement is successful because of 'micromobilizations', social acts which serve to bind the group together, although Agrawal and Gibson (1999, p.629) question the concept of a community as 'a homogeneous social structure, [with] shared norms'. Kaijser, (2002) however, believes that people act together when they face a strong common threat, rather than because they have strong social links. When faced with an overwhelming threat it is in actors' best interests to set aside their individual interests and act collectively, rather than as individuals. This thesis examines the reasons for collective action in this part of Vietnam, and compares it with apparently similar collective activities by farmers elsewhere in South-East Asia.

The third strand to be developed questions why there are very different levels of household wealth in a communist state. Under socialism there is an expectation that all households will have similar-sized holdings of land, and that expectation may be enshrined in law. Reallocation of land, before and after reunification, and farming within a common compartment, where everyone experiences similar growing conditions, suggest that households will have similar assets and this will result in quite similar levels of wealth. However this was not the case, and some households were very poor while others were conspicuously wealthy. Evans and Ilbery (1993), Ellis (2000), Rigg (2001) and Ploeg, (2010) view farm household incomes as composed of many elements, not all of which are

based on agriculture and some may even be generated away from the home, including remittances, making up what has been described as 'pluriactivity'. However, households do not always choose profit maximisation, instead some choose options with lower risk (Dercon and Krishnan, 1996; Simon 1987). Increasingly, education is identified as a positive factor in successful diversification (Anh, *et al*., 1998; Yúnez-Naude and Taylor, 2001, Reardon, *et al.,* 2006). How this differentiation in household wealth has come about is the third conceptual area for exploration, and possible explanation, in this thesis.

Each of these conceptual strands is explored further in Chapter 2, which provides the detailed conceptual framework for the thesis. However, it is important here to highlight the wider relevance of such research in contemporary Vietnam.

1.4 Relevance: communism, farmers and the Mekong Delta

This thesis is relevant and timely for three reasons. First, it is important because Vietnam is a communist state of medium size in which poverty is being steadily reduced (Vietnamese Academy of Social Sciences, 2006). This places it in a unique position to offer lessons to other socialist and transition states. Second, less is known about farmer-state relations in the Mekong Delta than is known about relations in the north of Vietnam. Knowledge about farmer-state relations in the south may be of importance for understanding and predicting future relations between these actors as agriculture provides a decreasing share of the country's gross domestic product (GDP). Third, the Mekong Delta is one of Asia's most productive areas for growing rice, therefore its future political, social and environmental well-being is of long-term importance both for Vietnam and those countries which rely on Vietnam to meet their requirements for cereals.

In 2010 the world has four states which describe themselves as communist: China, Cuba, North Korea and Vietnam. In addition, since 1975, Laos has been a one party state, ruled by a communist party. Relatively little has been

published about agriculture and farmer-state relations in North Korea, although Kimura (1999) reports that the state retains strong control over property rights. Considerably more is known about the other countries. Both China (Lin, 1990) and Vietnam (Fforde, 1984; Vo Tong, 1995) went through phases of collectivisation, when farmers were separated from their individual land and were required to work in teams. Subsequently, however, land and responsibility for farming were returned to farmers, since which time both countries have enjoyed food security. The path of land ownership and agriculture in Cuba has been markedly different from that in China and Vietnam. In contrast to Vietnam, the sale of private agricultural produce in Cuba was proscribed between 1967 and 1993 (Deere, 1997), although recent reports suggest the rate of change there is increasing (BBC, 9/9/10). How change in agriculture and land ownership has taken place in Vietnam could play into the rate and destination of agricultural change in Cuba and North Korea (BBC, 30/10/07).

Relations between farmers and the state in the south in the 1980s were a key determinant in Vietnam's transition from a state-controlled economy to a market economy. This transformation, called doi moi (literally 'renovation'), might have happened without farmers' actions in the southern delta, but the resulting food insecurity precipitated a crisis of confidence in the policies of the CPV, one outcome of which was doi moi. Since those events, the state has been careful to maintain support from rural areas, where more than 70% of the population lived in 2008. One consequence of doi moi has been the rapid development of the market economy and the growth of employment opportunities in urban areas. Linked to this has been the fall in the share of the of Vietnam's GDP generated in agriculture, sinking from over 40% in the early 1990s to just 20% in 2009 (General Statistics Office of Vietnam, 2010). One question arising out of that shift is the impact it will have on the state's relationship with rural people. Will the state still take heed of farmers' power, or will power shift from supporting the countryside to the urban population, and if so what dangers might that bring, and to whom? This thesis draws attention to the power of rural people to reset national policies in the past, and suggests the

need for that power not to be overlooked as Vietnam's economic motor moves from agriculture to other sectors.

The Mekong Delta is one of Asia's most productive rice bowls, producing more than half the rice Vietnamese people consume and enabling Vietnam to export four million tonnes per annum to rice-dependent states (Calpe, 2004). An Giang Province is the country's largest producer of rice, therefore the security and sustainability of rice growing here is a key dimension to the maintenance of food security in Vietnam and the region. As HYV rices have replaced low-yielding rices, and dikes of different heights have replaced fields flooded for half the year, crop yields, and the number of crops raised per year, have risen steadily over the past 35 years. However, these increases have required the use of increasing amounts of chemical fertilisers and this has had negative impacts on the environment. As high dikes are built there are negative effects on soil quality and yields of rice per unit of fertiliser have decreased. These trends are of concern for Vietnam, how the country deals with this challenge is important for food security in Vietnam and beyond.

1.5 Personal engagement with Vietnam

I was an undergraduate student in London in the late 1960s. I did not join protests about the 'Vietnam war', but in October 1966 I watched Peter Brook's play *US*, at the Aldwych Theatre in London, in which apparently live butterflies were burned in candle flames to simulate the deaths of protesting monks, immolating themselves in Saigon. Afterwards, I wrote in the college newspaper that if the purpose of theatre is to 'provoke, educate and entertain', this play met the first two criteria, but not the third! (Howie, 1967) During this research I also learned about France's colonial past in Vietnam. I was particularly struck by *Riposte*, a painting by the French socialist realist painter Boris Taslitzky, of dockyard workers on strike fighting with police beside a French ship loading with armaments destined for Indochina (see Figure 4).

Image removed for copyright reason (September 2015). Follow link to view online version http://www.tate.org.uk/art/artworks/taslitzky-riposte-t07431

Figure 4 Riposte (1951) Boris Taslitzky (1911-2005) Dockers in Port de Bouc, a small port near Marseilles, fighting with police in 1953

The dockers were striking in refusal to load a government ship bound for Vietnam, or Indochina as it was then called. Beginning shortly after the end of the Second World War, in September 1945, France was attempting to hold onto its colonial possessions in Indochina. This included Cochinchina, the colony which included the Mekong Delta in the south of Vietnam.

This painting opened a new chapter in European and colonial history for me. It also posed questions about how the British behaved in East Africa in the last years of colonialism, where I spent my teenage years.

Such knowledge as I had about Vietnam at the time of my first visit in 1999 was political, in the broad sense of cold-war politics, but not environmental or social, and I was completely unprepared for what I saw. Flying across the delta from Moscow to Ho Chi Minh City, with sunlight glinting everywhere, as if reflected from a million cut diamonds, each diamond a flooded rice field, the sight below me was spectacular and unforgettable. Little did I realise on that first visit that over the next ten years I would have the opportunity to link the transformation of this landscape to political events, some of which happened in my life time. I would also meet some remarkable people and enjoy great hospitality and warmth.

1.6 Research Approach

The overall approach adopted in this research was inductive. I began with a general interest in farmer decision-making, but was uncertain how this would be accepted by my hosts in Vietnam and whether it would prove to be feasible methodologically in a communist state, and working in a language I could not speak. At the end of my first visit to AGU in 2001, the Rector and senior staff assured me they would support me and I came away with confidence that fieldwork would indeed be feasible. Moreover, it would be exciting and could potentially yield worthwhile findings. Shortly before I left, my counterpart Truong Ba Thao organised a meeting with a group of farmers over lunch and rice wine on the veranda of a farmer's house. Here I heard about farmers' concerns and perspectives, their issues, and they told me they were willing to let me work in their commune.

I was particularly keen to form long-term relationships with a partner organisation and farmers in a few communes, in order to get to know people and the issues in depth, and avoid 'data-mining', 'extractive' or 'safari research' (Hursh-Cesar and Roy 1976; Madge, 1997). I also wanted to try to 'give something back'. I wanted to hear and try to understand farmers' perceptions of what was happening, to engage with their views, rather than to pose questions about Vietnam's path of development, as seen through Western eyes. As Rigg (2007, p.41) states, 'an appreciation of the historical circumstances and events that preceded it (the retrospective)', are important to understand the events of today. I expected to meet people who had lived through events of history that were remarkable in Western eyes and I was interested in the impact that period might have on the decisions farmers were making today. I wanted my approach to be ethnographic rather than interrogative, so I could hear the voices of the farmers who gave me their time, very often their food and wine, and sometimes a hammock too for a siesta.

Over my visits between 1999 and 2003, I tried to learn how farming was carried out. By March 2003 I had worked out that farmer decision-making appeared to be constrained by the water regime. Whoever made decisions about dikes was, in practice, making decisions about all that followed. I wanted to learn about the process by which the decision to raise the height was made and the impact of that decision. From there the fieldwork moved into a focused approach in three communes, one of which had had a high dike for several years, a second where one had just been completed, and a third where there were plans to build one.

On my return from Vietnam in 2004 I had a mountain of data at my disposal, about farming, collective water management, households, and the impacts or anticipated impacts, of dike building. I also benefited greatly from a short follow-up visit in late 2007. I next moved away from the empirical stance of fieldwork to a

search through the literature for theories and approaches to help me to make sense of what I had seen and heard in the field. This was a difficult and challenging task. I was concerned to maintain the integrity of what farmers had said to me, but on its own that material would only amount to a report on farming and dike building. This thesis is the outcome of that engagement between my rich data from the field and the theoretical literatures.

1.7 Research questions and thesis structure

As noted earlier, this thesis addresses questions around three themes: farmer-state relations; farmer-farmer relations; and differences in household wealth. First, what kind of relations are there between farmers and the state at the micro level, as played out in the contest to build a high dike? Are they 'dialogic', 'dominant state', 'mobilization corporatism' (Kerkvliet, 2005), or some other model? Second, why do farmers act collectively, rather than individually, to manage flood waters? What advantage do they gain from carrying this out in a group, rather than as individuals, and what tensions arise? Third, what factors determine household wealth, why are some households wealthier than others, even within the same water regime in a socialist state? These questions are developed more fully in Chapter Two.

To achieve these goals, the thesis is structured as follows. Chapter Two develops the conceptual basis from which to argue and answer the questions above. The main literature underpinning the thesis draws on political ecology, which is then developed in three strands: first, relations of power between farmers and the state in Vietnam; second, collective action and the 'micromobilizations' that create solidarity in the face of an external threat, in this case flood water; and third, how households in rural areas depend on a range of income streams which includes, but is not confined to, agriculture. Chapter Three then describes the methods used, with some reference to the particular issues faced when carrying out social science

in Vietnam. Chapter Four provides describes the context for the research, with a focus on An Giang Province and the communes where this work took place.

Using material from the process of decision-making for a high dike, and its consequences, in three communes, Chapter Five answers questions about farmer-state relations and how they play out today. Chapter Six uses materials on how farmers work together as a 'pumping club' when faced with a common threat, and how that breaks down after a high dike has been built, to answer questions on farmer-farmer relations. Chapter Seven draws on material from three communes, each with different water regimes, to answer questions about why some households are wealthier than others.

Chapter Eight, the concluding chapter, draws out answers from the previous three chapters. It then highlights what the thesis has contributed to knowledge, about Vietnam and with reference to the wider literature, and indicates some directions for future research in this area. The thesis ends with a short reflection on the research process and concludes with a summary of its main findings.

Chapter Two

Agricultural transformation through relations of co-operation and contestation between farmers and the state

> Central to politics is the distribution of important things—who gets them, in what proportion, when, how the distribution is done, and with what justifications. Politics involves actions, debates, decisions, conflicts, and co-operation by and among individuals, groups and organizations regarding the control, allocation, and use of resources and the values and ideas underlying those activities. It occurs in countless settings and forms. (Kerkvliet, 2005, p.21)

2.1 Introduction

2.1.1 Contesting the control and allocation of resources

Decisions about the use of resources in the physical environment fall within Kerkvliet's (2005) definition of politics. The environment contains resources with potential benefits for people at different levels in society, the state, groups and individuals. Changes to the environment may increase the benefits for some users while reducing them for others (Bryant and Bailey, 1997). Identifying who decides on environmental transformation and why is seminal to understanding who is likely to benefit and who may lose (Robbins, 2004). Power relationships between and within groups may bring asymmetrical distribution of benefits when the environment is developed and for this reason change may be sought by some groups but resisted by others.

In societies where there is little or no space for people to block or modify the state's plans for environmental transformation, some large-scale transformations have proved to be disastrous. For example, in Russia, when the state decided to develop large-scale mechanised 'grain farms' in dry lands in the East and South after 1928 (Volin, 1937) this led to wide-spread soil erosion, while in China 'backyard level' iron making, part of Mao's Cultural Revolution in the late 1950s, led to extensive deforestation (Smil, 1983, 1987). However, in another socialist country, Vietnam, there has been space for resistance at the local level to the state's plans through informal advocacy (O'Rourke, 2004). On occasions, what Scott (1989), Peet and Watts (1993) and Kerkvliet (2005) call 'everyday resistance', has taken place in that country. The overarching subject of this thesis is how and why farmers in one province of Vietnam used that space to influence and modify the policies of the state and in doing so brought about agricultural transformation. Their actions, and those of others at local level, had a significant effect on politics at the national level: actions at the micro-level had a scaled-up impact on happenings at the macro-level.

2.1.2 Dialogic relations, collective action and diversity

As stated in Chapter One, this thesis engages with three arguments: first, about the nature of farmer-state relations and the space for 'everyday politics' in Vietnam; second, why farmers act together to control floodwaters; and third why, within a socialist country and common environmental resources, some households are conspicuously wealthier than others.

Political ecology particularly Third World political ecology, at the micro, local level has been chosen as the overarching theoretical framework for this research for several reasons. First, it encourages critical explanations of environmental transformation by linking them to political decision-making, and considers who gains and who loses by those transformations (Blaikie and Brookfield, 1987; Bryant and Bailey, 1997; Robbins, 2004; Neumann, 2005; Escobar, 2006). Second, it provides

space for research across the interfaces of social, economic and environmental studies (Turton, 2000), as was required in this research situation. Third, it encourages 'multi-scalar analysis' (Rocheleau, 2008) in order to relate local actions to national decisions, so creating a 'chain of explanation' (Blaikie, 1995). Fourth, it allows for the use of a wide range of materials and methods; as Neumann (2005) points out: there is no one single way of 'doing' political ecology.

The broad space created by political ecology is used to engage with three sets of literatures. First, it engages with arguments about the effectiveness of informal politics at the local level. It addresses literature on everyday politics and informal advocacy (Scott, 1985, 1989; Kerkvliet, 1999, 2005, 2009) in order to question the nature of farmer-state relations in Vietnam and whether they have altered over the last 30 years. Second, it engages with literature on collective action (Gamson, 1991, 1992) and the use of common pool resources (Ostrom, 1990, 2000(b)), particularly the management of floodwaters. Endogenous water users' groups are a further signal about the nature of farmer-state relations in Vietnam. Endogenous water users' groups in the study area are compared with apparently similar organisations elsewhere in Asia, notably Bali (Lansing, 1991), Thailand (Ounvichit, 2008) and the Philippines (Kerkvliet, 1984), in order to identify what may be unique about the 'pumping clubs' in the study area, organisations which are so far undescribed in the literature. Third, empirical materials on household success are used to engage the literature on rural livelihoods, household assets, peasant economics, and diversification (Chayanov, 1966; Carney, 1998; Ellis, 1998; Scoones, 1998; de Haan and Zoomers, 2005; Rigg, 2007). Specifically, the focus is on interhousehold differences in wealth, through such things as developing multiple income streams, or 'pluriactivity', and differences in land holdings.

In order to construct an adequate chain of explanation two 'macro-scale processes' are employed. The first was the development in the late 1960s of HYV

rice which created the potential to achieve food security in Vietnam and meet the food needs of the rapidly-increasing populations of countries in South-East Asia (Kush, 1995; Greenland, 1997; Borlaug, 2000). The second process was the ending of the Union of Soviet Socialist Republics (USSR) and of communism in Eastern Europe in the early 1990s, which initiated a period of economic and political reform, often referred to as 'transition' (Szelényi, 1998; Dunford and Smith, 2004). The way in which transition came about in Vietnam created the political background against which agricultural transformation took place. Again, it forms part of the 'chain of explanation', but because it deals with events specific to Vietnam, rather than generic processes, it has been placed in Chapter Four, the location of other materials which provide the contextual background for the case studies in Chapters Five, Six and Seven.

Structure of this chapter

The rationale for choosing Political Ecology as the theoretical underpinning for this thesis is set out in Section 2.2. Section 2.3 examines literature on 'everyday politics' because that is what farmers in the study area were using, and still use, to influence, modify and reject the plans of the state. Section 2.4 explores arguments concerning collective action in the use of a common pool resource, with a particular focus on the management of irrigation water in South-East Asia. Section 2.5 is concerned with the heterogeneity of choices households make to meet their individual needs, and Section 2.6 brings this literature together to set out the questions that this research seeks to answer.

2.2 Political Ecology

2.2.1 Political ecology

> A key issue within political ecology is the exploration of multi-level connections between global and local phenomena, not only in environmental functions but also in decision-making and hierarchies of power. (Adger *et al*. 2001, p.682)

Political ecology critically examines the links between local actions, and their consequences, and actions at higher levels, national and beyond. It has concerned itself with power inequalities and environmental transformation during periods of colonialism, more recently it has focused on relations between Northern capitalism and Southern environmental degradation (Bryant, 1998). Further, it concerns itself with the unequal distribution of the consequences of environmental transformation and degradation as between men and women (Rocheleau *et al*., 1996; Rocheleau, 2008).

The first use of the term 'political ecology' to describe the link between political economy and environmental transformation is ascribed to Wolf (Neumann, 2005; Biersack, 2006). Wolf (1972, p.203) linked challenges within the mechanism of inheritance and partibility of family land in an Alpine part of Austria to the corrupting influence of the system 'for licensing the export of soldiers', thus the external labour market was reducing the availability of labour for the pursuit of domestic agriculture. This linking of external events to local decision-making was a step forward from the largely apolitical cultural ecology which preceded it, where local actors, detached from a broader global political economy, had been seen as the instigator of change, detached from changes elsewhere. Rappaport's (1984) work in New Guinea on the Tsembaga Maring tribe and their ecosystem as a closed unit for analysis is seen today as failing to make that connection between local actors, and

their environment, and the wider political economy, which drives local change. Referring to the influence of Rappaport, Neumann comments that 'Even the most "primitive" tribes and "isolated" communities have become participants in a global circulation of commodities and labour' (Neumann, 2005, p.20).

The effects of the accelerating rate of human impact on the environment became ever more apparent and conspicuous during the Twentieth Century. The identification of causal links between the depletion of the ozone layer through the release of chlorofluorocarbon gases (Karentz, 1991), the creation of acid rain through the release of sulphurous gasses (Adger *et al*., 2001), and an enhanced rate of climate change possibly linked to the long-term release of green-house gases by agriculture (Ruddiman, 2003), all highlighted the scale of the impact of the political economy on the environment. All these binaries might be categorised as outcomes of what Blaikie and Brookfield referred to in 1987 as 'the constantly shifting dialectic between society and land-based resources, and also within classes and groups within society itself' (Blaikie and Brookfield, 1987, p.17).

This link between political economy and the use of resources frequently results in asymmetrical consequences, with those who carry out the actions often not being the ones who bear the consequences, but receive the benefits. This leads to inequalities and injustices between rich and poor, with the rich mainly located in the Global North and the poor in the Global South. A complicating factor is that actions and outcomes may be separated by time as well as by space, further distancing cause from effect. For these reasons, political ecology has to concern itself with separations of cause and effect by space and by time, and by links between local conditions and larger-scale processes.

Robbins (2004) calls for a broader definition of political ecology, a move away from seeking linear chains of cause and effect towards a definition that

includes the social production of nature by asking who constructs, or reconstructs, the environment, and who gains and who loses by those productions. Robbins (2004, p.5) (re)defines political ecology as 'a field of critical research predicated on the assumption that any tug on the strands of the global web of human-environment linkages reverberates throughout the system as a whole'. In order to achieve this a broad range of methodological tools and an integration of knowledge across several disciplines is required in order to develop a narrative that will link cause and effect in environmental transformation. 'As we shall see, there is no single method for political ecology research, though multiscalar analysis has been a hallmark of political ecology, making it distinguishable from other approaches to human-environment relations' (Neumann, 2005, p.6).

2.2.2 Third World political ecology

Third World political ecology grew out of a rising awareness of the environmental and social counter-effects that so-called 'development' was having on poor, generally tropical, countries. This had been happening during colonialism but continued afterwards as international institutions, such as the World Bank and the Asian Development Bank, became involved in funding developments such as hydro-electric dams and irrigation projects and the deleterious social and environmental consequences and injustices became more obvious and more widely known.

In the Nineteenth and Twentieth Centuries, and before, large-scale environmental transformations had occurred in many 'Southern countries' when those countries were coupled to the political economies of Northern countries. During the colonial period the removal of raw materials and the creation and removal of surplus production in many cases led to environmental degradation (Blaikie and Brookfield, 1987; Bryant, 1997; Bryant and Bailey, 1997). More recently, the actions of some multinational companies, and states, to create resource-based

export growth has paid little attention to social and environmental costs. According to Gellert (2005), the Asian economic crisis of the 1990s has led to more neoliberal policies to stimulate economic growth and these have exacerbated the social and environmental costs of resource-based enterprises.

In socialist and non-socialist countries alike the pressure to satisfy centrally-determined targets for production or to raise national incomes, led to large-scale environmental transformation and degradation, for example in the Soviet Union (Volin, 1937; Blaikie and Brookfield, 1987) and China (Smil, 1987; Judith, 2001). Frequently, degradation was read as the outcome of 'mismanagement' by local land managers (Watts, 1983; Neumann, 2005), or as abuse of 'the commons' (Hardin, 1968), thereby uncoupling local degradation from the wider political economy and neglecting the scalar links between the local, the national and the international.

In capitalist and socialist countries alike, management decisions about land use had often been taken out of the hands of local land managers, a principal concern for Blaikie (1985). Local land managers were seen to be responding to external pressures and in doing so were demanding more of their natural resource base than it could sustain. This uncoupling of cause and effect created a disconnection between land capability and production decisions, a situation which is seen as having led to soil deterioration (Blaikie, 1985) and wider environmental degradation (Watts, 1983; Blaikie, 1985; Blaikie and Brookfield, 1987; Bryant and Bailey, 1997; Neumann, 2005; Forsyth, 2008). Blaikie (1985), and Blaikie and Brookfield (1987), focused on soil erosion both as symbol and symptom of the deleterious results that occurred when local environments in developing countries became engaged with the wider international political economy in an unequal way. Blaikie and Brookfield's focus on soil is important because local events are at a micro-level, a field, a village, a water course, a woodland or local forest, the habitat of a rare species of plant or insect, whereas the international political economy

could be described as macro-level in terms of its size, it involves international corporations and the economies and well-being of whole states. Yet what happens at the macro-level has an impact at the micro-level, through pressures to produce more, extract more, grow more than can be done sustainably, and this pressure manifests itself in the condition of the soil. A further benefit of their focus on micro-level events is that it demonstrates that events at different scales are closely related, they are not partitioned off from each other, rather they part of the same continuum, part of the same stream of existence and one affects the other, despite inequalities in size. Blaikie's two books, the second written in conjunction with Brookfield, (Blaikie, 1985; Blaikie and Brookfield, 1987) have become foundation texts in the study of what is now called 'Third World political ecology'.

2.2.3 Political ecology and scale

Scale is important in political ecology in order to develop a 'chain of explanation' to account for human-induced environmental transformation and its consequences. Bryant (1998) argues that political ecology must concern itself with analysis at both the micro and macro-levels in order to relate local actions to global change and the effect of the global economy on the local environment (Blaikie and Brookfield, 1987; Bryant and Bailey, 1997; Zimmerer and Bassett, 2003(a); Brown and Purcell, 2005; Purcell and Brown, 2005; Neumann, 2009; Rangan and Kull, 2009). One challenge posed by scale however, is that 'There is seldom a neat one-to-one correspondence of geographical scale and "level" of decision-making' (Blaikie and Brookfield, 1987, p.64), thus it is not possible to 'read off' and account for environmental transformations solely by a consideration of the decision-making apparatus which functions at that level. Local environmental transformations may be instigated by policies made elsewhere, or be a reflection of the impact of market forces operating beyond the local level.

On one hand, scale may be been seen as an incontestable 'given', an ontological entity, while on another it may be described as 'socially-constructed' (Brenner, 2001; Mauro, 2009; Neumann, 2009). Delaney and Leitner (1997, p.93) highlight the distinction between ontological and social construction of scale. If scale is related to social, and therefore political, processes, then scale is likely also to be a reflection of power relations: 'the geographic scales constructed are themselves implicated in the constitution of social, economic and political processes'. While Marston *et al.* (2005) argue that scale has no ontological existence of its own Leitner and Miller (2007, p.121), in response, argue that scale is important in order to understand political hierarchies: 'Scale is one important dimension of strategies of social action'.

One problem arising from the social construction of scale is that a socially-constructed unit may not match the boundaries of a physical unit. For example, one physical and biological entity, such as a body of water, may lie within more than one administrative jurisdiction (Blaikie and Brookfield, 1987). This discontinuity, what Cumming *et al*. (2006) calls 'scale mismatches', gives rise to challenges in decision-making on widely-spread resources, such as river basins (Lebel *et al.,* 2005) and deltas. Certain phenomena, such as seasonal water bodies on flood plains, have annual cycles of change, exhibiting what Mauro (2009) refers to as 'space-time conjuncture'. At one time of the year an ontological unit such as a pond or canal may have a clear physical boundary that fits into one socially-constructed administrative unit, but at other times this pond or canal may extend across several administrative units, raising questions about the relevance of the socially-constructed scale of administrative units. When this happens, the ontological unit of scale no longer coincides with the social unit of scale. This phenomenon may lead to tensions between the users, who are concerned with the physical entity, and local officials, who are concerned about the socially-constructed unit of administration for which they have certain responsibilities.

The relationship between different-sized units creates a 'nested' effect, for example from village or hamlet at the lowest, or innermost, layer to the province or national state at the highest or outermost layer. This nesting may be reflected in relations of power, and may limit or reduce the ability of local actors to make decisions based on their local knowledge and their needs: 'the parameters of choice are generally controlled by others' (Blaikie and Brookfield, 1987, p.69). This nested effect often places weaker actors at a disadvantage to more powerful actors: 'Yet much work in Third World political ecology supports this argument that costs fall mainly on poorer and weaker actors while benefits accrue mainly to wealthy and more powerful actors' (Bryant and Bailey, 1997, p.34). Zimmerer and Bassett (2003(a), p.3) argue that the 'chains of explanation' method reinforces the conceptualisation of geographic scales as "pregiven sociospatial containers" and, in the words of Rangan and Kull (2009, p.32), offer little scope for recognising the 'varying time-space scales of environmental and social change'. Zimmerer and Bassett (2003 (b), p.288) also call for a 'break out of these pregiven, scalar containers (local, regional, national, global) to examine human-environment dynamics that occur at other socially produced and ecological scales'. The concept of nested relationships implies a gradation of power and worth, at least of leverage, with the smaller inner elements of the relationship being relatively powerless and the outer, larger elements being the determinants of what happens to the smaller ones. In Chapter Five, this thesis challenges the implicit assumption that the inner elements have only limited leverage in their relationship with the outer elements. Instead, in the context of farmer-state relations in Vietnam, it will argue that smaller units do, on occasions, have sufficient leverage to change the policy of larger units.

2.2.4 Political ecology and the green-revolution

From one perspective, the green-revolution was a not unsuccessful attempt to confer the benefits of higher yielding staple crops, already experienced in the Global

North particularly after World War Two, to the Global South (Greenland, 1997; Borlaug, 2000). Viewed from a different perspective (Watts and Peet, 1996; Shiva, 1989) however, the green-revolution was another manifestation of North-South power relations, one with dire social and environmental consequences for the South. The improved seeds of the green-revolution were not simply a transfer of agricultural technologies but were also social and cultural implants into the Global South 'insofar as they bear the imprint of the hegemonic culture of capitalist modern science' (Watts and Peet, 1996, p.262). Shiva (1989, p.1) sees this as part of development, 'a post colonial project' which destroyed the environment, decreased genetic diversity and marginalised women in developing countries. Yapa (1996, p.69) also finds the promise of 'development' as a solution to poverty problematic, but goes on to say that 'still leaves the question unresolved of how one should address issues of hunger, malnutrition and poverty'. Viewing the green-revolution from that second perspective, particularly Yapa's (1996) position, and acknowledging unequivocally that there are important questions over food supplies as much as North-South power relations, to be addressed, this thesis places the green-revolution within political ecology. It does so however, observing Robbins' (2004, p.193) caveat, in reference to Shiva's 1991 book *The Violence of the Green-revolution,* which denounces the green-revolution for its political, environmental and social consequences, to 'wield political ecology's heavy political hatchet with care, and see to it that the analytical blade remains sharp'.

The step-change created by the green-revolution was to breed varieties of staple crops which maintained a linear response to the application of chemical fertilisers, a process that had been going on in Europe since the mid-Eighteenth Century (Grigg, 1984), and so generate significant increases in yield through the application of artificial fertilisers. For wheat and maize this was achieved at the International Wheat and Maize Improvement Centre (CIMMYT) in Mexico beginning in the late 1940s (Borlaug, 2000) and for rice at the International Rice Research

Institute (IRRI) in the Philippines (Hall *et al.,* 2000) in the 1960s. A driver of this green-revolution was an attempt to 'assuage agrarian unrest, and with it the danger of *Red* Revolution' (Farmer, 1986, p. 176). To counter that danger, an international team of plant breeders working in the Philippines were successful in creating varieties of short-duration, high-yielding varieties (HYV) of rice with yield potentials of six to ten tonnes per hectare (Kush, 1995; Greenland, 1997; Peng and Kush, 2003), where formerly two tonnes from varieties taking up to six months to reach maturity were the norm. However, as Baker (1984, p.49) pointed out, in India by 1947: 'The green-revolution itself was not really an imported variety, but more like a cross between a foreign concoction and some hardy local plants'. So for each environment further adaptation was necessary.

Baker's (1984) reference to the technical adaptation needed to achieve success omits to mention the social adaptation that was also required if that technical potential was to be achieved. In Chapter Six of this thesis, I argue that in Vietnam the creation of higher yielding technologies alone was insufficient to achieve the goals plant breeders had reached in their experimental plots. In order to reap the benefits, social changes were also required. Whereas formerly farmers could work on their own, now they needed to work together to manage the hydrology to their common benefit. Swyngedouw (2003, p.95) has argued, with reference to the waterscape of Spain, that 'not a single form of social change can be understood without simultaneously addressing and understanding the transformations of and in the hydrological process', and I will advance a similar argument, namely that technical, hydrological and social changes are interlocked.

The introduction of HYV rice initiated a redistribution of land and heightened inequalities between households. The 'package' of seed, fertiliser and pesticides, favoured richer rural elites over poorer farmers (Chambers, 1984), leaving some landless who then worked as tenant farmers or labourers for richer farmers.

However, where it was introduced without regard to local conditions and knowledge, its success was not assured. In Bali, Indonesia for instance, the failure to understand fully the role played by the social system of water distribution associated with the 'water temples' destroyed the system of 'co-ordinated fallows' which formerly had controlled insect predation (Lansing, 1991). This led in the first years of HYV rice to severe crop losses due to insect damage. Overall, as Bayliss-Smith (1982, p.69) states: 'A few [rice bowls] are now overflowing, it is true, but many are no fuller than before and some are becoming emptier'.

A major shortcoming of the technical change was the general ignoring and attempt to supersede farmers' own knowledge, rendering them dependent on extension services for information about the new technology (Röling, 1985). Where previously knowledge was transferred from farmer to farmer, without the need for external informants, 'knowledge' was now transferred downwards in a hierarchical manner from 'experts' in research stations to farmers in the field (Biggs, 1990; Sumberg *et al.*, 2003): '[Research] should build on and enhance peasants' knowledge and innovative efforts rather than ignoring or seeking to replace them' (Ravnborg, 1996, p.1). The social consequences of the green-revolution were immense, but in countries where research staff worked alongside farmers to adapt HYVs to local conditions, negative social consequences were reduced and economic benefits were enhanced (Vo Tong Xuan and Matsui, 1998; Otsuka and Kalirajan, 2006; Ut and Kei, 2006). Although high-yielding varieties of rice first reached the Mekong Delta in 1967 (Sansom, 1970; Logan, 1971), Ut and Kei (2006) describe Vietnam in 2006 as a country which continues to increase its gains from the green-revolution, in part because of the close relationship between researchers and farmers. In the year 2000 Vietnam's cropping-intensity for rice was 183%, the highest in the world according to the International Rice Research Institute (IRRI, 2010).

To make use of the new technology however, farmers needed to adjust the structure of their fields, to create what Blaikie and Brookfield (1987, p.9) called 'landesque capital'. This required not only technical changes, but also shifts in social and political relations at local and national levels. In Chapter Five the potential increase in yield of short-duration HYV rice is a factor in the context of farmer-state relations in Vietnam in the 1970s, while in Chapter Seven the role of HYV rice is a factor in accounting for the inequalities in wealth which differentiate households.

Realising the potential yield-increases offered by short-duration HYV rice is one determinant of how farmers and the state relate to each other, which is the subject of Chapter Five. In Chapter Six it will be argued that social relations between farmers also needed to alter if they were to benefit fully from HYV rice, while in Chapter Seven the continuous increases in yields of HYV rice today are used to account for the conspicuous differences in wealth enjoyed by different households in An Giang.

2.3 Everyday tools of peasant politics: from compliance to resistance

2.3.1 Everyday politics

> There is a vast realm of political action….that is almost habitually overlooked. It is ignored for at least two reasons. First, it is not openly declared in the usually understood sense of "politics." Second, neither is it group action in the usually understood sense of collective action. (Scott, 1989, p.3)

> Everyday politics occurs where people live and work and involves people embracing, adjusting to, or contesting norms and rules regarding authority over, production of, or allocation of resources. It involves quiet, mundane, and subtle expressions and acts that

> indirectly and for the most part privately endorse, modify or resist prevailing procedures, rule regulations, or order. Everyday politics involves little or no organization. It features the activities of individuals and small groups as they make a living, raise their families, wrestle with daily problems, and deal with others like themselves who are relatively powerless and with powerful superiors and others.
>
> (Kerkvliet, 2005, p.22)

Decisions on the use of natural resources are political decisions. Political acts are carried out by a wide range of actors, not just those perceived as belonging to formal political groups or political institutions. In some cultures the tag 'politics' or 'political' implies acts that are nefarious, negative, unsavoury, while in other cultures politics is welcomed as a resource for resolving disputes and disagreements, for example between states on the verge of war (Kerkvliet, 2009). Farmers, hunters and fishing people make political decisions in choosing when to catch fish from a particular river or area of the sea, where to cut timber or gather products from a nearby forest, and whether to convert a seasonally-flooding marsh into an irrigated field for growing rice or increase the height of a dike and so exclude 'free goods' in the flood season. These actions come under what Kerkvliet (2005, 2009) calls 'everyday politics', which he distinguishes from 'official politics' and 'advocacy politics'. Farmers in the study area in the Mekong Delta daily engage in everyday politics in their use and allocation of resources. In my fieldwork I heard from local state actors about policies and plans, this was official politics, and on occasions I also heard advocacy politics from farmers and others, speaking both for and against the state's plans. The main substance in many of my conversations with farmers was about resources and their allocation, and therefore, by Kerkvliet's definition, those conversations were political, though I suspect that is not a term the officials who accompanied me each day would have been comfortable with.

Everyday politics are invisible to political observers: 'they do not count as politics, in the eyes of most political analyses, because they are not expressed in the manner and places conventional political studies expect' (Kerkvliet, 2009 p.231), but I contend they are the very substance of farmers' lives, because how resources are used is a key determinant, perhaps *the* key determinant, of their wealth: 'Everyday politics matters' (Kerkvliet, 2005, p.234). While Kerkvliet has written extensively about everyday politics in Vietnam by farmers in the North from a historical perspective, focusing particularly on the rise and fall of co-operatives, less has been said about contemporary everyday politics of farmers in the Mekong Delta. One purpose of this thesis is to address the omission from the literature of how farmers conduct everyday politics in contemporary Vietnam.

2.3.2 Everyday resistance and everyday politics

From Scott's (1985, 1989) account of everyday resistance and Kerkvliet's (1995, 2005, 2009) categorisation of politics into everyday, official, and advocacy politics, a provisional continuum of political action may be constructed. At one end lies 'everyday compliance', submission by subordinates to what is required of them by superordinates, also what people do to get along with their neighbours. This does not necessarily mean that people agree with what is expected of them, or what the neighbours want, and they may even make vocal complaints, but they present a façade of acquiescence, they go along with it, while simultaneously they may 'harbour alternative visions, values and beliefs for how resources should be produced, distributed, and used' (Kerkvliet, 2009 p.234).Thus people have 'on-stage' and 'off-stage' views of what is happening. 'What is conveyed is the *impression* of compliance without its substance' (Scott, 1985, p.25-26, italics in original).

In this continuum, the 'everyday resistance' of Scott's analysis lies somewhere between Kerkvliet's 'everyday politics' and overt conflict which may be physical and result in people getting hurt. However, before examining this

continuum it is important to record an important methodological difference between Scott's and Kerkvliet's work which may have affected their analyses. Scott's account is based on a substantial period of residence by him with his family in a rural Malay village, when he was able to get to know participants in both their 'on-stage' and 'off-stage' modes; Scott was a participant observer of contemporary village events going on around him. Kerkvliet's analysis on the other hand is based on visits made 'by the day' to villages in the North of Vietnam, close to Hanoi, in the period between 1992 and 2000, with officials always present at least at the start of interviews, and he was not allowed to stay in villages overnight. Kerkvliet also focuses on events in the past, on 'building collective farming and dismantling it' (Kerkvliet, 2005, p.1). However, Kerkvliet also interviewed officials and examined archive materials to develop his narrative and that action increases the validity of what he has to say. This difference in the way Scott and Kerkvliet worked may account for the difference in their terminology, with Scott seeing farmers as involved in 'everyday resistance', a ceaseless struggle against those above, below and in parallel with them in society, whereas Kerkvliet sees farmers as engaged in something less adversarial, more collegiate, which he calls 'everyday politics'. However, Kerkvliet may only have heard the 'on-stage' mode of his participants, and missed the *sotto voce*, the 'off-stage', and private, alternative, narratives of events, to which Scott, living in a village, had access. This research was subject to the same limitations as Kerkvliet's, as I too was not permitted to stay overnight in villages, so I did not have access to the 'off-stage' narrative either. For that reason I use Kerkvliet's 'everyday politics' rather than Scott's 'everyday resistance' in my analysis.

2.3.3 Official politics, advocacy politics and everyday politics

Official politics is what the state and other formal actors do. These actors, which include political parties, corporations, universities, churches and other organised groups, comprise authorities which develop plans and policies and seek to execute them. In Kerkvliet's (2009) analysis these are all political actors because they

allocate and use resources, they are formal and are either part of the state or occupy spaces which are sanctioned and legitimated by the state. Advocacy politics is 'direct and concerted efforts' to 'support, criticise, or oppose authorities' (Kerkvliet, 2009, p.232). Their actions may be overt or covert, passive or confrontational, depending on the issue, also the amount of space for advocacy politics is determined by the state. Everyday politics is the daily actions of people, accepting or avoiding the requirements of official organisations, and doing so in ways that are 'quiet, subtle expressions….that are rarely organised or direct' (Kerkvliet, 2009, p.232). This taxonomy suggests clear boundaries between one form of politics and another, but that distinction is an illusion. Rather, the same individuals are likely to operate in different ways at different times, depending on circumstances. The operation of these different strategies will be examined in this thesis in relation to water management, agriculture production and household diversification in the Mekong Delta.

Everyday politics manifest themselves in a multitude of ways. Individuals may display support, compliance, modifications and evasion, and resistance. Thus between support and resistance lies 'everyday modifications' (Kerkvliet, 2009, p.237), what Li (2000, p.162) refers to as engagements with state authority which are mostly 'unremarked, "everyday" patterns of action and inaction'. In states where change by formal advocacy is permitted, formal and informal groups may openly criticise the policies of the state and seek to change them. In Western European countries, for example, plans for environmental transformation, such as the route for a new motorway or railway line through farmland, are open to public challenge in the media, at planning enquiries, and in the legislature. There is room for public criticism and demonstrations against proposals and these actions may lead to their rejection, acceptance or modification. In developing and socialist countries the space for this to happen may be limited or may not exist.

2.3.4 Modification by 'informal advocacy'

In some societies formal advocacy by subordinate groups against the state's proposals is not legitimate and those seeking to alter the path chosen by the superordinate group do not have access to mechanisms of the kind described above. Here the state may ignore criticisms of its plans, even suppress critics by force. This has been the case in socialist societies, such as China where the Three Gorges Dam was built despite opposition by informal advocacy and demonstration (Qing *et al.*, 1998). The construction of this dam forced communities to relocate (Heming *et al.*, 2001), reduced productivity in the East Sea (Chen, 2000; Gong *et al.*, 2006) and endangered endemic species of fresh-water fish (Park *et al.*, 2003), but the state went ahead and implemented its plans. In non-socialist states suppression of opposition also happens, notably in some post-colonial states where the colonial administration left a legacy of 'central planning'. After decolonisation new governments frequently continued with this structure of administration. For example, central governments in India (Swain, 1997; Roy, 2002) and Southern Africa (Nüsser, 2003) decided to build large dams, decisions that were implemented despite advocacy politics and everyday resistance, covert and overt against them. In these decisions, 'everyday modifications' to the state's plans were often not possible, and protest, contest, and conflict often ensued: '….twelve families, mostly Dalit who had small holdings near the [Maheshwas, India] dam site had their land acquired. When they protested, cement was poured into their water pipes, their standing crops bulldozed' (Roy, 2002, p.75). In England too, physical resistance to environmental transformation takes place, for example the resistance to motorway construction across Twyford Down in Hampshire in 1992 (Eden, 2002) and elsewhere in the UK.

However, in Vietnam there has been space for everyday politics to bring about modifications to centrally-devised plans. Kerkvliet (1995, 2005, 2009) and Fforde (1984) have described how local actions and informal strategies of everyday

resistance by farmers in the North of Vietnam to collectivisation led to modifications of the state's plans and subsequently to a fundamental change of direction by the communist government which was formalised in 1986, leading to doi moi, or renovation, a process which is on-going. What distinguishes that event is the apparent absence of bloodshed and overt violence; the signals that came from below, along with pressures created by international events, led the state to move from a central economy to a market economy: 'Put simply, decollectivisation started locally, in the villages, and was largely initiated by farmers; national policy followed' (Kerkvliet, 2009, p.1). More recently O'Rourke (2004) records successful challenges to official plans for environmental transformation for industrial development as a significant feature of everyday politics in urban and periurban Vietnam.

2.3.5 Theorising farmer-state relations in Vietnam

There has been debate but lack of agreement among scholars about the relationship between the state and farmers in Vietnam, between those who see the state as 'dominant' in all matters, others who see the state behaving in a form of 'mobilisation corporatism' in which it controls all that happens directly, or indirectly through proxy organisations, and a third group who see the relationship as more interactive, nuanced and subtle, the products of an ongoing dialogue between party-state actors and farmers, in which state policy has sometimes emanated from the reality of what was happening on the ground; policy making based on 'bottom-up' phenomena, rather than the other way round.

Thayer (1992, p.111), drawing on Rigby's (1991) analysis of the essential features of socialism in the Soviet Union, describes Vietnam as an example of 'mono-organisational socialism', one with 'little scope for the organisation of activity independent of party-led command structures'. In Womack's view (1987, p.499), during the period up to 1975, the party needed to be 'mass regarding', whereas after reunification in 1975 it could afford to disregard local support, a change aptly

captured as 'The masses have become the fish and the party controls the water'. Later, with reference to the country's high level of poverty and low Human Development Index, Womack (1996, p.180) describes these indicators as 'symptoms of a vast and coordinated party-state which pre-empts alternative and autonomous societal organization from the national centre down to the grassroots of the village and workplace'. Similarly, Porter (1993, p.101) sees power in Vietnam as residing solely within the '*bureaucratic polity*' (italics in original) and uninfluenced by 'extrabureaucratic forces' in society, thus the bureaucracy closes its ears to other voices. Kerkvliet (2005, p.33-34) describes this as 'the dominant state' model of relationship.

A second view is of the state as the organiser of 'authorised' organisation, with their procedures and membership approved and therefore posing little threat to the state polity (Kerkvliet, 2005, p.34. See also Dang Phong and Beresford, 1998). The state can use these organisations to mobilise support for its actions, although they have no scope for actions outside of those granted to them by the state they can feed information back to the centre. Turley (1993, p.269) uses the term 'mobilization authoritarianism' to describe this process, because it 'captures the Leninist elements of intensive, preferably voluntary citizen participation in state affairs through formal institutions dominated by a single party exercising a constitutional monopoly of power' while another term is 'state corporatism'. Kerkvliet (2001 p.243) bundles these together under the term 'mobilizational corporatism' because these organisations 'can mobilize people to support [the government's] programmes and policies, maintain channels of communication between authorities and each sector of society, and manage social and economic groups that otherwise might be unruly'.

In Kerkvliet's view (2001, 2005), neither term succeeds in capturing what actually happens. For one thing, the state does not always succeed in delivering

what it plans to do, and therefore people need to improvise, also the actions of its agents are not always in line with policy and may be corrupt. For example, corruption by party officials in a province in the Red River Delta resulted in street protests by peasants, an example of 'advocacy politics', which attracted the attention of higher authorities (Kerkvliet, 2001) and led to corrective action against officials. People, be they town dwellers or farmers, 'violate' and 'deviate' from the state's wishes in many ways, such as building homes in defiance of state rules and declining to support collectivisation, the latter action having an immense impact on the policies of the state. Dang Phong and Beresford (1998) point out the considerable scope leaders away from the centre, particularly General Secretaries at province level, had for 'breaking the fence' to modify policies coming from the centre, even initiating their own. Kerkvliet (2001, p.269) adopted the word 'dialogic', a term used by Bakhtin (1981) to describe in literature how one body of work continuously informs and is being informed by, other bodies of work, in order to capture the two-way nature of people-state relations in Vietnam.

> State agencies do not completely control policy-making and implementation. People can ignore the state's rules on some matters. They can also go beyond official channels to make their views and concerns known. Groups and forces in society beyond the reach of the state not only exist but their activities from time to time influence what authorities decide. (Kerkvliet, 2001, p.269)

The advantage of this third approach, Kerkvliet (2005, p.36) holds, is that 'authorities can adjust and change policies in the face of realities beyond their control'. It also reflects the space for different levels of the state to take their own initiatives. Dialogic relations would also provide the space for everyday politics to modify the state's policies.

My research did not take place at the level of the state at the national level, nor was it primarily concerned with historic events, as was Kerkvliet's, nor

contemporary industrial development, as was O'Rourke's. My fieldwork followed farmer-state relations through contemporary events at commune level over the course of five years. The context was local government plans to alter the height of the dikes and the farmers' response. Dike building is crucial to the choice of agricultural technology and therefore livelihoods, so the farmers' decision is of interest in itself. It is also important because it feeds into the debate about which kind of relations are exercised between the state and farmers. In addition, I was offered an account of a significant local agricultural transformation from the late 1970s and with that material I am in a favourable position to make a comparison between farmer-state relations soon after reunification and today, thirty years later. How farmers in the North of the country resisted and modified the state's plans is relatively well known by comparison to what is known of everyday political actions in the Mekong Delta. This thesis aims to start to fill, at a micro-level, the gap in the literature identified by Luong (1992) and Kerkvliet (2005).

2.4 Collective action, common pool resources and irrigation in South-East Asia

2.4.1 Farmer-farmer relations in the use of a common pool resource

This chapter has so far focused on relations between the individual and the state. In this section the focus turns to relationships between farmer and farmer in the use of a resource which is common to all of them, water. Systems of collective action for the management of irrigation water, which operate outside of the state in at least three other states in South-East Asia, have so far not been reported from Vietnam. One purpose of this section is to set out what is known about those groups and later, in Chapter Six, to use that framework to analyse what, if anything, is unique about that action in Vietnam. Another purpose is to ask why these actions operate

outside of the state and to consider some of the dangers they face should the state choose to co-opt them.

2.4.2 Common pool resources

Common pool resources are resources used by multiple users, or for which joint use involves subtractability, and from which it is difficult to deny access (Steins and Edwards, 1999). Hardin (1968) postulated that a resource freely open to everyone would be irreversibly depleted, his so-called 'Tragedy of the Commons'. Hardin's analysis is often modelled as 'the Prisoners' Dilemma' (Dawes, 1973, 1975). In Dawes' model the interests of two users of a resource would be best served if they co-operated, but in the absence of trust each attempts to extract as much as possible before the resource is exhausted and each gets less than they might have got had they co-operated (Wade, 1988).

Olson challenges the notion that individuals with common interests would co-operate voluntarily. Unless the number of users was quite small 'rational, self-interested individuals will not act to achieve their common or group interests'. (Olson 1965, p.2). Hardin (1978, p.314, quoted in Ostrom, 1990, p.9) also believes that 'coercive force outside their individual psyches' would be needed to husband the resource.

Hardin postulated two resolutions to the problem, 'a private enterprise system' and 'socialism' (Hardin, 1978, p.314). Private ownership raises the expectation that owners have a long-term interest in maintaining the resource. State control can be costly to enforce, and may be ineffective. Private control also raises problems where local users are excluded from a resource they rely upon for their subsistence, as has sometimes been the case where 'game parks' and 'fishing lots' have been created in developing countries. A third alternative is community control (Agrawal and Gibson, 1999; Agrawal and Gupta, 2005).

Ostrom conceptualises a model to account for the successful use of common pool resources without central control (Ostrom, 1990). In this model users enter into 'a binding contract to commit themselves to a co-operative strategy that they themselves will work out' (Ostrom, 1990, p.15). The key elements are: all users must share the cost of negotiating and enforcing the contract; the contract is only binding if all the users agree to it; all users must stand to benefit equally from the contract; all users must have access to all the information needed to make decisions; all users must be able to observe the actions of other users; and it must be possible for any office-bearer, or employee, to be held to account by the users and, if need be, dismissed.

Ostrom's (1990) work on indigenous systems of control has been seminal in developing an understanding of the physical and social conditions under which the collective use of a natural resource can be effective and sustained over the long term A key feature is the importance of each user knowing all the other users and being able to see their actions.

2.4.3 Collective action and water management

Groups of users engaging in 'collective action' have come in for much examination, most notably from Ostrom (1990, 2000(a) (b)), also Gamson (1991, 1992) Agrawal and Gibson (1999), and Anderies *et al.* (2004). In general, the question raised is: why do groups of people behave in ways that appear to defy Hardin's prediction and Olson's expectations? On the one hand this examination has been about what constitutes community and location (Agrawal and Gibson, 1999) and on the other the nature of 'collective action' and how it operates (Gamson, 1991, 1992). Agrawal and Gibson (1999) challenge the concept of a community as a small, homogeneous social structure with shared norms, suggesting instead multiple actors with diverse interests and networks of relationships within and outwith the group, able to

influence decision-making in various directions. The community may be dependent on those networks for its survival. Gamson (1991, 1992), however holds that the strength of collective action lies in the strength of group members' collective identity, the extent to which they hold common norms and expectations. However, this may not be true and tensions between group needs and individual needs may arise.

Some scholars have viewed communities and individuals as obstacles to the efficient use of resources, such as irrigation water, fish stocks, forest resources (Ives and Messerli, 1989; Agrawal and Gibson, 1999). However, others see local communities in a different light: 'Communities down the millennia have developed elaborate rituals and practices to limit off-take levels, restrict access to critical resources and distribute harvests' (Western and Wright, 1994, p.1), raising questions about the ability of the individual or household to meet their needs within the actions of wider group. Communities may be differentiated internally by their interests and networks, although unified by smallness in membership and proximity to the resource, leading Agrawal and Gibson (1999, p.635) to conclude that there is 'no easy correspondence between social homogeneity and sustainable resource use'. Collective action requires a collective identity, solidarity, a shared consciousness and what Gamson (1992, p.55) calls 'microbolizations' which he describes as 'microevents that operate in linking individual and sociocultural levels of identity, solidarity and consciousness processes', suggesting the identity and needs of the individual are not lost but are taken account of within the needs of the group. Ostrom (1990) and Lansing (1991) see collective action as providing the dynamism for the management of common pool resources. Collective action is as much a meshing and sharing of social and cultural identities as it is of shared economic needs.

At a higher level, the need for systems of water management, social as well as physical, has been theorised as the precursor to the development of the machinery

of the state. Wittfogel (1957) hypothesised that the social organisation needed for managing water use under conditions of shortage and flooding was the impetus for the development of state bureaucratic structures. Kaijser (2002) relates the development of regional government in Holland in the Thirteenth and Fourteenth Centuries to the social structures which arose for organising and maintaining the polders, canals and windmills, which were essential for draining the lowlands next to the sea so that agriculture and human life could be safe. Falvey (2001) suggests that the administrative system in Northern Thailand arose from the aggregation of local water management regimes into larger units. Hunt *et al*. (1976, p.398) also hypothesised: 'Irrigation….is systematically linked with major features of the social organisation, closely linked with differential power, and embedded in the local-national linkages of state'. By contrast Leach (1959), basing his arguments on the dry area of Sinhala in Ceylon, now Sri Lanka, agues for a less-centralised notion of the state, with the monarch granting local barons the power to levy fues, possibly in the form of corvée labour, on farmers.

While some of the above is *post-hoc* theorising about water management and the development of the state, and in the case of Wittfogel's (1957) was constructed to provide a validation for wider theories about the state and bureaucracy, Kaijser's (2002) concern is with actions that begin with individuals and small groups who act without coercion from above, who need to co-operate if they are to be successful—which in the case of Dutch farmers meant taking action to prevent themselves being overwhelmed by floodwater. Could this be an example of co-operative expediency in the face of a common threat, a terminal disaster? The equipment for flood control was costly and because of the openness of the areas inside the polders no farmer could protect themselves without building their own dike, which was expensive, so there was pressure to co-operate: 'It can be regarded as a sociotechnical system that includes both natural components and man-made artifacts' (Kaijser, 2002, p.522). This distinguishes it from Hardin's (1968) 'Tragedy of the Commons' conception,

where individuals stood to gain by 'free riding', by not observing the rules for extraction, and taking as much as they could before someone else did. In Kaijser's example each person stood to lose, possibly all they had, if they did not act together, so the presence of few free riders could be tolerated, and the others would bear the cost, rather than lose everything. Hardin (1968) saw free riders as an insurmountable problem, only to be remedied by privatisation or state co-option of the good. The Dutch farmers displayed collective action under duress in a peculiarly exposed situation, a case of 'we hang together, or we hang', and this distinguishes it from Hardin's concept, which is about the potentially unsustainable extraction of a limited resource rather than protection from a common threat.

Theorising collective action and common pool resources needs to take into account not just the sustainability of supply, and the heterogeneity of the user group, but also the type of resource. For example is it a biological resource which has a point of extraction beyond which it cannot recover, or is the resource limited in quantity, such as water in a stream or river, but ultimately inexhaustible in supply? Alternatively the resource may pose a threat to users' lives and livelihoods, such as low-lying land vulnerable to flooding and this may promote a group activity for protection.

The social actions of dike building and water management over more than a century provide the physical and biological chassis upon which agriculture in An Giang has been built, what Biggs *et al.* (2009) call 'The Delta Machine'. It is the underlying narrative throughout this thesis and I engage with it at several points. In Chapter Four I describe how agriculture in An Giang is carried out inside protective dikes of different heights, and in Chapter Five I use local farmers' reaction and resistance to the state's plans for raising dikes to higher levels in three communes to enter the debate about the nature of farmer-state relations in Vietnam. In Chapter Six I analyse farmer-farmer relations in the context of their management of

floodwaters and the dike system and compare these endogenously-managed systems found in An Giang with endogenous systems elsewhere South-East Asian; while in Chapter Seven common dikes provide the physical and social environment within which households construct different and at times competing livelihoods.

2.4.4 Towards a framework for analysing endogenous water user groups in South-East Asia

Collective actions for the diversion and distribution of flowing water, found in several countries of South-East Asia, are examples of the use of a common pool resource where there is enough of the resource, but the cost of diversion and accessing it is above what individuals can bear on their own; thus individuals need to work together to meet their needs. This section sets out information about endogenous water users groups in three countries in South-East Asia which will be used in Chapter Six to identify what, if anything, is unique about a type of collective action which takes place An Giang, but which is not so far recorded in the literature.

The subak *of Bali, Indonesia*

Endogenous water clubs have been described in Bali, Indonesia, by Lansing and Kremer (1993), Lansing (1987, 1991, 2003, 2006) and Janssen (2007). The *subak* is the lowest level of a hierarchical organisation controlling the distribution of water from mountain-top crater lakes through networks of tunnels and canals to hundreds of hectares of paddy fields. One *subak* is at most a few tens of farmers and a 'water temple', a place where offerings are made to a god in exchange for the release of water from the level above. *Subaks* 'provide a vehicle to achieve voluntary social co-operation in the management of the irrigation on which each village—and society itself—is utterly dependent' (Lansing, 1991, p.52). At shrines in their fields, farmers practise a sequence of rituals which mark the stages in the growth of the crop. This information feeds into the next layer of the distribution system, triggering the

release of water. At the topmost layer, priests distribute water according to a ten-year calendar which ensures a fair distribution over time, sometimes sufficient for rice, at other times for different crops.

Despite the system of *subaks* in Bali being over one thousand years old (Lansing and Kremer, 1993; Janssen, 2007), on arrival in Indonesia Dutch colonisers regarded *subaks* as inefficient and imposed state control of irrigation, but with only limited success. The *subak's* deeper value was rediscovered in the late 1960s, when the initial introduction of short-duration HYV rice proved disastrous (Lansing, 1987). By synchronising the arrival of water in neighbouring fields, *subaks* had created a 'synchronised fallow' period which acted as an effective form of pest control (Lansing, 1991). Under pressure from the state, neighbouring farmers planted short-duration HYV rice at different times throughout the year and there was no longer a synchronised fallow. This absence of a fallow allowed pests to flourish, with devastating consequences. At that point the ecological benefit of water temples became apparent.

The zanjera *of the Philippines*

In the Philippines, endogenous water users' associations were in operation well before the arrival in 1521 of Spanish colonists (Tapay *et al.*, 1987; Labramonte *et al.*, 1997). The primary objective of a *zanjera,* or *zangjera,* was the mobilisation of local resources for the procurement of a stable and reliable water supply for its members (Kerkvliet, 1984). The system was examined and described by Siy (1982, 1989). Reviewing Siy's description, Kerkvliet, noted: 'a major theme throughout is the members' deep concern that all share equitably in the benefits of and responsibilities for building, maintaining, and expanding their irrigation networks' (Kerkvliet, 1984, p.357).

At one time the government attempted to incorporate *zanjeras* into the state, intending to use them to spearhead national policy on irrigation. Siy warned that by doing so the country's national planners 'not only may be destroying effective irrigation methods but may also be undermining people's efforts to be self-reliant' (Kerkvliet, 1984, p.357) a point reiterated more recently by Fujiie *et al.* (2005).

The muang fai *of Northern Thailand*

In North-West Thailand, members of *muang* (ditch) *fai* (diversionary barrier) systems, share the costs of maintaining and operating the irrigation system. *Muang Fai* have existed for several centuries and are still being formed (Tan-Kim-Yong, 1994; Cohen and Pearson, 1998, p.21; Falvey, 2001; Ounvichit, 2008; Ounvichit *et al.,* 2008). Ounvichit *et al.* (2006) give an example of a *muang fai* with twenty four farmers, two weirs, 2.5km of ditch, 17ha of paddy, and an unlimited supply of water. Costs were shared on the basis of the size of the off-take gate into each field. All members meet once a year to hear the elected leader's accounts for the previous year and the estimate of costs in money, labour and materials, for the following year, to be shared on the basis of the size of off-take gates.

Significantly, the annual cost of repairing the weir was high and if the system was to continue it was essential to maintain membership of at least 24 households to share costs. Should one household decide to withdraw the loss of income might force others to drop out as well, imperilling the continuation of the system. Thus it was in the interests of 'headenders' to encourage the commitment of 'tailenders' by maintaining the full length of the ditch, even the section that lay below headenders' off-take points. The weir and the ditch defined the boundary of a common pool resource and everyone knew and could see what everyone else was doing (Ounvichit *et al.*, 2008). However, Ounvichit *et al.* (2008) also report much larger groups working in this way, including one in Chiang Mai Province with 740 farms irrigating

937 hectares from an eighty metre long stone barrier diverting water through an 8km main canal to twelve villages.

Ounvichit *et al*. (2006 p.21) flag up possible dangers should *muang fai* be incorporated into government policy: 'if [the delegation of management of local commons from state agencies to rural communities] is promoted for the motive of saving government resources alone, without recognising the severe constraints in organising rural people, positive consequences are unlikely to be forthcoming'.

In an apparent contradiction of Ostrom (1990), the membership of *zanjera*, *subaks* and *muang fai* can be large with tailend users unlikely to see what is happening at the headend. However, as all three models have operated successfully over considerable periods of time, this suggests that trust and secure social relations between members exist. This element of trust appears to contradict the expectations made by Dawes in 'The Prisoners' Dilemma' (Dawes, 1973, 1975) but as Ostrom (2000) points out, despite the considerable amount of empirical data she has assembled, there are no definitive 'rules' for conducting effective collective action.

Constraints on the effectiveness of collective action arise from inadequate information flows to members, members having conflicting interests, lack of leadership, inflexible or externally-imposed rules, the lack of regular opportunities to alter the rules and change the leadership, the extent to which the group has common interest in the good, and the degree of heterogeneity of the membership (Agrawal and Gibson, 1999). Attempts by the state to incorporate endogenous water users groups into government policy have proved problematic and may endanger their survival (Kerkvliet, 1984; Lansing, 1991; Ounvichit *et al.*, 2008). Dangers arise in distributary systems where the government has paid for the infrastructure and devolves water sharing and fee collection to 'water users' associations', under the banner of 'participatory irrigation management' (Groenfeldt,

1997; Raby, 2000; Fujiie *et al.*, 2005; Nikku and van der Molen, 2008). This form of devolution, in which the rules, even the prices to be charged, are set by the government, may lead to decreased rather than increased efficiency (Janssen, 2007) and can eventually disempower local pre-existing social organisation, as has been the case in Taiwan (Bottrall, 1977; Lam, 2001).

From the literature used above, the reasons why these groups are successful may be the abundance of the resource, the advantages to be had from co-operation, and the magnitude of the danger they could face should they not co-operate. Taken together, these factors may stimulate and nurture positive social relations between members, which manifests itself in a commitment to equitable sharing of the costs and benefits. Over time, the social capital this creates may extend beyond an immediate small group of members, beyond Ostrom's (1990) comment that groups need to be small so that members know all the other members and observe their behaviour. These endogenous relations exist outside the aegis of the state, and when the state attempts to co-opt their activities for its own purposes they may break down or their effectiveness is reduced; the state is not a stakeholder in the activity and it is not part of the social relationship that glues it together for a common purpose. Thus the space permitted by the state for endogenous user groups to operate is symptomatic of the wider relationship between the state and the individual and the state's tolerance for activities outside its control.

In this thesis I argue that there is a relationship between the likely success of a collective action and the type of resource the users are engaged with. Where the resource constitutes a threat to users' livelihoods, the value of co-operation is high and different to the value of co-operation where the resource is limited in supply.

2.4.5 Endogenous water users' associations in Vietnam

Reports in the literature of endogenous water users' associations operating in Vietnam of the kind described in Bali, the Philippines and Northern Thailand are limited. Malano *et al.* (1999) describe an 'asset management [irrigation] scheme' at La Khe Irrigation System in the Red River Delta. This was a state-run scheme with consultation of farmers at the development stage. Small (1996, p.249) describes '"farmer-managed" irrigation systems' in Quang Nam-Do Nang province, where a group of users buy water from the state, undertake the final distribution to farmers' fields and recover costs from users. However, the literature available does not contain accounts of wholly-endogenous irrigation groups operating in Vietnam. This thesis will contribute new information on endogenous user groups from An Giang Province

In earlier sections of this chapter, the focus was on farmer-state relations. In this section the focus has been on farmer-farmer relations but set within that earlier framework of how the state reacts to, and provides space, for farmers' actions. This raises questions of what space the state provides for collective action and why it is in the state's interests to do so. In comparison to other collective action groups managing their own irrigation in South East Asia, how effective are these groups in Vietnam and what dangers may face them should the state decide to co-opt them? Group actions to control and make use of a physical resource that can wipe out the users may provide a particular incentive for co-operation. This thesis will also suggest that in order to assess the effectiveness of collective action it is necessary to consider whether the resource is biological or physical and whether, unchecked, it poses a threat to the users.

2.5 Heterogeneous livelihoods within common pool resources

2.5.1 Heterogeneous household behaviour within a common pool resource

The conformity that households display in managing a common pool resource, or in preventing flooding, may set them against other households in constructing their livelihoods. A group of households may be cooperating in collective action for the management of a common pool resource, while at the same time they may be constructing different livelihoods, depending on a range of factors, such things as the size of the family size, the age of the parents, education, previous successes and failures in the market and how they were overcome, and their experience with different agricultural technologies. These differences may lead to different views on how the common pool resource is to be used, creating the potential for tensions, disagreements, even conflicts, between neighbours on the management of the common pool resource. This is particularly true for households growing rice, where the water regime needs careful control if farmers are to benefit from the continuing advances being made to rice technology and obtain higher yields through intense production.

Households construct different livelihoods, comprising both on-farm and off-farm activities, 'pluriactivity' in the words of Evans and Ilbery (1993), (see also Rigg 2001), in which crops or animals may be just one activity among many and 'farming' may not even be the largest or most important. What household members undertake daily away from the farm may be the largest component of a livelihood. Chambers and Conway (1992, p.i) defined a livelihood: 'comprises people, their capabilities and their means of living, including income and assets'. To this must be added the institutional and cultural context within which livelihoods occur (Scoones, 1998; Ellis, 2000). In addition, connecting rural people with global markets, providing them with access to information by television, the internet and mobile phone

technologies, and rising levels of school attendance all create opportunities for new enterprises which will give new meanings to Chambers and Conway's (1992) definition of livelihood (Bouahom *et al.*, 2004).

In South-East Asia the rate of economic and social change continues to increase and this is reflected in changes to what constitutes 'livelihoods' in rural places (Bouahom *et al.*, 2004; Rigg, 2006; Rigg *et al.*, 2008). Increasingly, rural people can no longer be thought of as 'cut off' from that world beyond the physical space of their village or community. Instead, the micro-level of rural life is connected to the wider world; micro-level events are no longer isolated and detached from macro-level events. As new technical opportunities are developed and become widely available, these affect the way people in rural areas make their living.

2.5.2 The heterogeneous household

The meaning of the term 'household' is contested. For Ellis (1993) it is to be preferred to the term 'family' because it includes all the blood members of the family along with dependents who share the same hearth, a multi-generational household and not just the original parents and children, which is sometimes referred to as a 'stem family' (Knodel *et al.*, 2000). Marsh *et al.* (2006, p.267) define membership of a 'farm household' as those who share 'the same fund or budget', who eat meals together, and who are related 'by blood or marriage'. In countries without state-funded social care for the elderly, the multigenerational household is the traditional way to provide care for elderly parents. In this way not only the original husband and wife and their children, but children's spouses and grandchildren over three, even four, generations, may be included (Knodel and Stedal, 2003). The presence of several generations under one roof may be important for the household and its well-being through the wider social relationships marriage may bring. The addition of spouses may increase the

household's labour resources as well as its requirements for food and services, particularly health and education. Marriage may bring in an additional adult—or one may depart---but in either case it offers the potential of benefit through widening the net of social relationships, a micromobilization (Gamson 1992), as well as additions to the household pool of education, skills and labour.

Multigenerational households may have different members present in the house at different times. Some members of the household may reside and work in the household and on its lands daily, year-round. At other times, when there is insufficient work nearby, some may work away as itinerant labourers for periods, at other times they are present and available for work in land preparation or planting. Other family members may live permanently away from the parental home, only returning to celebrate festive occasions, such as the New Year. Distant members may still retain ownership or user rights to some of the household's land and return regularly at festivals to take part in major decisions on land use (Nguyen, 2010). A further category is those who live at the house permanently, but depart daily for work off the land, such as food processing, local manufacturing or local government administration. All of these configurations offer different opportunities for households.

The presence of married, grown-up children and their children, and grandparents as well as the original parents living in the same household may bring benefits in several ways, but these are changing as livelihoods in South-East Asia re-structure under the forces described above (Nugent, 1990). One benefit of a multigenerational household may be through cost-sharing. Kochar (2000) describes instances in South Asia where the parents bear some of the household core expenses, leaving more money with married children to support grandchildren, with this support altering as the parents become older and the sons' incomes rise. Another benefit can come through grandparents taking care of children while

younger members leave the household to sell their labour, as in rural Thailand (Kamnuansilpa and Wongthanavasu, 2005). In developing countries in Asia, and elsewhere, care of aging family members is frequently undertaken within the family. As household livelihoods diversify and stretch beyond the immediate area of the house, the role of older people in the home becomes more important.

Another major source of diversity within the household arises from the asymmetry between the capacities and needs of men and women and the power relations between them, 'gender relations (like all social relations) embody both the material and the ideological' (Agarwal 1997, p.1). Men and women may have access to similar resources, but how they use them may differ. This may be related to cultural constraints on the distribution of labour and agricultural inputs, for example the inputs available for fields tended by women may be less than those for fields tended by men (Udry *et al.*, 1995; Udry, 1996). As the economy of the household changes, this asymmetry of power may alter and women may be expected to undertake more work outside the home (MacPhail and Xiao-yuan Dong, 2007), as well as undertake additional roles within it (Fuwa, 2004). Women, especially when pregnant or breastfeeding, are particularly vulnerable when the household is exposed to stress, through climatic or economic events, and as the economy of the household changes they may be particularly disadvantaged (Chambers 1989).

These views about intrahousehold diversity and efficiency are at some distance from Chayanov's early Twentieth Century work in which he viewed the peasant household as an entity, a single work unit, which carried out labour according to its needs (Chayanov, 1966) and did not hire additional labourers. When those needs increased, as children arrived, the parents worked harder and longer but once the children started to contribute their labour the parents worked less and when the children eventually left home for their own farms, the parents could meet their remaining needs through considerably less work. Labouring at that time was

described by Chayanov (1996) as 'drudgery', and was carried out only to meet needs. Chayanov's (1996) view that the peasant household should not be seen solely in rational, i.e. economic, terms may still have relevance where the household relies exclusively, or nearly exclusively, on the (undifferentiated) labour of its members. Households may practise 'satisficing', 'looking for the needle sharp enough to sew with', rather than 'looking for the sharpest needle in the haystack' (Simon, 1987, p.244). Economic drivers are not the only explanations for household activities, there are cultural and historical dimensions as well.

One consequence of household heterogeneity is that the notion of the household as a single, decision-making unit is questionable, although that may not always be recognised by some household members. Different members may have different goals, although older members may resist the concept of household heterogeneity, as Bouahom *et al.* (2004), recount from rural Laos. They report senior family members of one village believed the installation of water pumps to improve irrigation and rice production would offer young people a secure livelihood within the village. However, the young themselves were not so convinced and had their eyes on opportunities across the river in Thailand (Bouahom et *al.,* 2004). The advent of television, amid other forms of electronic communications, and rising rates of education may intensify these divergences of aspirations and opportunities between members of the household.

2.5.3 The pluriactive household

Many rural households rely on a range of income sources, sometimes referred to as pluriactivity or multifunctionality (Ploeg, 2010). Income may be gained from working the family's land, travelling to work other land, undertaking non-farm work, such as craftwork, at the house, undertaking non-farm work away from the farm, or working as a 'middleman', buying-up farm produce locally on behalf of a distant company.

What a household does will depend on the resources, or assets, available to it. Chambers and Conway (1992) identified assets as 'tangible', such as stores and resources, and 'intangible', claims [on] and access [to], together with the 'capabilities' of the household. This became the so-called Sustainable Livelihoods Approach (Carney, 1998; Scoones, 1998) in which five 'capitals' are identified: social, natural, physical, human and financial, which are framed by external processes including laws and policies, the government and the market economy, and vulnerable to trends, shocks and cultures. Bebbington (1999, p.2022) also wrote of five types of assets: 'produced, human, natural, social and cultural'.

Diversification improves livelihood security as well as opportunities for wealth creation for people living in the countryside (Ellis, 2000). By engaging with several different activities households spread risk and should one activity prove unproductive, another can take its place, whereas the household which relies on only one or two income sources is more vulnerable to climatic and exogenous risks, such as market shocks. Block and Web (2001, p.334) identified this characteristic for households in Ethiopia which had survived the famine of the 1980s, but they also note the reverse, namely the extent to which exposure to shocks, policy or natural, 'affect diversification over time as households reconsider past choices and adapt to new conditions'. The principal constraint to diversification is often the entry-cost, in terms of knowledge and access to credit. Where credit is lacking or carries high risk, poorer households may choose to follow lower risk, but less favourable, options such as fuel wood gathering, rather than higher risk options such as cattle raising (Dercon and Krishnan, 1996).

2.5.4 The aspirational household: education and diversification

While some assets are 'concrete' and may be measured as physical entities, other assets give people capabilities, even leverage, which they may employ to change the world around them. Sen (1997) distinguishes between 'human capital' and 'human

capability'. 'Human capital', says Sen (1997, p.1959), refers to the agency of the individual, such as skills, knowledge and effort, while 'human capability' refers to 'the ability of humans to lead lives they have reason to value and to enhance the substantive choices they have'; to see humans solely in terms of their productive abilities is to demean them and deny the wider framework within people construct their lives. Acquiring knowledge through education and experience may increase a person's productive ability to grow particular crops, but it may also raise a person's status and their access to power; the former is human capital, the latter is human capability and capability is the starting point for bringing about social change (Sen, 1997; Bebbington, 1999).

Education and training matter in rural households. They are implicated in diversification and poverty reduction (Ellis and Allison, 2004; Reardon *et al.* 2006). The benefit of even one person in the household being literate may spill over to other members. For example, the relative success of farmer-managed irrigation systems in Nepal and Iran has been related to participants' educational attainment (Bhatta, et *al.,* 2005; Khalkheili, et *al.*, 2009). In Bangladesh the earnings of female illiterate workers living in households where just one person was literate were 65% higher than households where no one was literate (Basu *et al.*, 1999). Female education may alter the pattern of household expenditure considerably. In research in China, the higher a woman's level of educational attainment, relative to her partner, the greater the household's expenditure on children's education and clothing and the less spent on tobacco and alcohol (Xiao-yuan Dong, 2007, p.96)

Literacy may also aid and improve the household's agricultural activities and increase its capacity for non-farm activities, whether these take place on the farm or elsewhere. Education is a key to understanding the choices households make when they consider entering into non-farm activities:

> One often sees a march of diversification first into self-employment manufactures (for example food processing and preparation), and then into wage-employment in manufactures, then self-employment in services (such as petty commerce, bicycle repair, and so on) and then wage employment in services such as transport, teaching, truck or farm equipment repair. (Reardon *et al.* 2006, p.6)

The literature raises questions about the household's ambitions for its children and for diversification. Does the family see farming as the way forward, or will it be a combination of some household members farming and some working away from home and remitting money? For some households, farming is a full-time occupation, while for others it will turn out to be a location at one moment in time on a trajectory of change which takes people away from the land (Rigg, 2005, 2006). As the pressure on land area increases, so households recognise there will be insufficient for all of the children to have a share, or a share large enough to support them by farming. This then raises questions about education, who should get it and how it is to be paid for, such as by the sale of land or using the remittances from family members working away from the farm. Education operates as both a 'push factor', as when there is insufficient land to make a living, and a 'pull factor', offering access to different life styles, possibly a better income and support for other members family.

2.5.5 The institutional framework for rural livelihoods

Livelihoods are dependent in many ways on the institutional framework within which they take place (Carney, 1998; Ellis and Allison 2004). Earlier in this chapter (Section 2.3.5), theories about the nature of farmer-state relations in Vietnam were presented, ranging from the 'command economy' type through to a more interactive form, what Kerkvliet (2001) calls 'dialogic'. At the level of the state, Vietnam has undergone a transition from a type of command economy to a market economy, based on household production. The local institutions, at province,

commune and village level, and how they interpreted instructions from the centre, defined the rise and fall of co-operatives. Since the formal launch of renovation, or doi moi, in 1986, local institutions may still be limiting what choices are available to households, even, it is suggested, to the quality of agricultural inputs made available locally, with particular crops being favoured over other crops (Markussen *et al.,* 2009). For example there may still be limitations to property rights and access to credit for some households, even access to extension services may not be available to all households. The institutions of the commune and how they vary between communes, play a key part in farmer-state relations in Chapter Five and their role in facilitating access to credit in Chapter Seven.

Institutions include a wide set of formal and non-formal structures. At the formal level these include banks, with access to credit, the police as a source of protection for high-value crops, the land registry which confirms land titles and records transfers of user rights, and local offices for collecting taxes. In Vietnam the term 'formal institution' includes the CPV, the Vietnam Fatherland Front (VFF), Farmers' Union, Women's Union, Youth Union and other arms of the party-state. At the informal level, membership institutions will include religious group, 'clubs' of farmers who grow the same crop, patrilineage societies, and water pumping clubs. All these provide social networks which have the potential to play into a household's capacity to invest and diversify. Above these come the local government at the level of the village, with district, provincial and national administrations above them. Despite labelling some institutions as formal, with a suggestion of inapproachability, individual households may have family members and close family friends working in them and this may give relatives better access to the institution, and thereby gain better outcomes, than other households. Membership of informal societies may also offer opportunities to navigate round local constraints and provide more personal links in to institutions.

In South-East Asian countries such as Vietnam, societies for the remembrance of ancestors may serve to bring the wider family together, for example once a year at a memorial site. 'Apart from bearing religious and moral significance, ancestor worship provides an opportunity to create and maintain social capital among relatives….they also discussed ways to help each other to build houses and develop household economies' and form 'credit associations' (Nguyen, 2010, p.140). These patrilineage meetings were frowned upon during the wars and the period of collectives, but since 1986 they have no longer been discouraged (Luong, 1993). These gatherings provide opportunities for networking and arranging support, another example of the value of social capital, this time within informal institutions.

Formal institutions not only hold the "rules of the game", but also, through habituation and practice, the "rules in use" (Watts and Peet, 2004, p.25), and this may pose problems for those who depend on their support to gain access to resources. Not everyone experiences institutions in the same way, they may be experienced differently by men and women. Agarwal (1997, p.3) describes the difficulty women may experience in trying to gain land ownership in India: 'Are you suggesting that women should be given rights in land? What do women want? To break up the family? (Minister of Agriculture to [Agarwal] at an Indian Planning Commission seminar on Land Reform, June 1989)'. Social capital consist to a large measure on trust between the individuals concerned (Dufhues *et al.,* 2006) and this trust can bring economic benefits. When relatives or close friends work for local institutions, these 'trust-links' may bring advantages when the household needs to deal with the local government or the bank.

The role of institutions is important and directly effects households, but they may not always act in the ways expected of them, for example they may even oppose diversification. In Brazil, Chase (2010) records that government institutions, set up to aid agrarian reform and to assist landless people, were hostile to peasant

diversification, what Rigg (2006, p.189) refers to as 'a paradigmatic blind spot on the part of officials'. Institutions are important gatekeepers to resources needed for change, and how they behave can determine whether or not those attempting to diversify can be successful (de Haan and Zoomers, 2005). Institutions show a division between those concerned with maintaining social and cultural norms, and those concerned with maximising profit-making: institutions may give 'legitimacy to certain rules of conduct and behaviour which concern power relations and the establishment of social and cultural norms far more than utility-maximising thought' (Koelble 1995, p 232-233). Thus institutions may have a key impact on how households construct their livelihoods.

This thesis operates at three levels of scale, with households and individuals being the 'lowest' level of scale. This does not in any way concede that being the least in size, households and individuals have no leverage. As was made clear in Section 2.2.3, political ecology and scale, the inner body in a set of nested structures may have leverage which it exercises through the use of everyday politics or everyday resistance (Section 2.3.1). Indeed, this thesis will argue that the relationship between the state and farmers in Vietnam is 'dialogic', it is interactive, and households and individuals are not powerless pawns in the wider game of farmer-state relations.

Chapter Seven, the final empirical chapter, will ask whether dependency on a common pool resource, which provides a near-similar environment for all the households farming within it, leads to similar outcomes for everyone. Given the redistribution of land before and after 1975, the combination of similar land resources and common environments raises an expectation that different households will achieve fairly similar outcomes, but does that happen and if not why is that not the case? Second, what are the constraints to diversification, is it education, environmental location, availability of technologies, access to credit, or

are there other factors, such as land holding, which determine success? Third, formal local institutions have been the mediating structure between the individual and the state in Vietnam, sometimes trying to persuade farmers to follow government policy and at other times transmitting news to higher level institutions of farmer resistance to the state's policies. What roles are local institutions playing today, are they facilitating or inhibiting change or taking the line of least resistance they can find between the state's policies and farmers' ambitions?

2.6 Research questions

The research question were outlined in Chapter One, here they are set out more fully to show how they link to the literatures selected for this thesis.

Group one: questions concerning political ecology (Section 2.2), everyday politics and theories of farmer-state relations in Vietnam (Section 2.3). First, in light of Kerkvliet's (1999, 2001, 2005) models of farmer-state relations in Vietnam, were relations in An Giang Province in 1978 and later 'dialogic', 'dominant state' or 'mobilization corporatism', or were they different from all of these models? Was the relationship between farmers and the state in the 2000s different to the relationship in 1978 and if so in what ways and why? Third, with respect to everyday politics is there space for farmers to conduct 'formal advocacy' against the wishes of the state and if so what form does it take?

Group two: questions concerning collective action and the use of common pool resources (Section 2.4). First, what space is there for collective action by groups of farmers in a socialist state such as Vietnam and why does the state tolerate them? Second, what, if anything, distinguishes endogenous irrigation groups in An Giang from endogenous irrigation groups elsewhere in South-East Asia and what dangers

might face these groups should the government co-opt them into the state? Third, what strains does collective action create between neighbouring households, and how are they resolved? In addition, the thesis proposes that collective action by users who are under threat by the resource, as in Kaijser's (2002) account of collective action in the Netherlands in the Thirteenth and Fourteenth Centuries, have special reasons for cooperating and acting collectively, and this distinguishes them from collective action by users of common pool resources which are limited in their quantity or pose problems of equitable distribution (Ostrom, 1990).

Group three: questions concerning household success, livelihoods and institutions (Section 2.5). First, why are some households wealthier and more successful than others, even within the same water regime and in a socialist state which carried out land redistribution? Second, what are the constraints on diversification, are they for example, education, location, availability of technologies, access to credit, social capital, or are there other inhibitors, and to what extent is landholding the key factor in success. Third, what is the role of the Peoples' Committee in the government of the commune, and is it biased towards some households at the expense of others?

Chapter Three

Research Methodology

3.1 Introduction

Field-work in a developing country which is a one-party state brings its own particular challenges and those take different forms, depending upon the country chosen (see Scott *et al.* (2006) for an account of the particular constraints faced by three researchers doing their fieldwork in different parts of Vietnam). The challenge is possibly no greater than doing research in a multi-party state, but it calls for its own approach and sensitivity, particularly with respect to partner institutions and gatekeepers, without whom access to the field in Vietnam is not possible. That relationship prescribes the boundaries for what may be done, who may be visited and what may be discussed.

I went to the field with some general areas of interest and enquiry that I wanted to explore, rather than a fixed set of research questions. This enabled me to develop a general understanding of relationships and agriculture from the perspectives of the different actors, farmers, officials and academics. I was keen to hear the voices of farmers, it is they who have transformed the landscape, and in this thesis I am particularly concerned to represent their views, in the empirical chapters and in the contexts of wider theoretical debates. The precise focus for the empirical work, namely the raising of August dikes to high dikes, only emerged in mid-2003, after three periods in An Giang. On return to the United Kingdom (UK) in 2004 I used theoretical and conceptual literatures to make sense of the empirical materials and to work-out what those materials had to say to different bodies of literature.

This chapter describes the methods I used in this research. Section 3.2 sets out how access to Vietnam for this research was obtained, how the research

focus developed and the timetable. Section 3.3 describes my association with a host university in Vietnam, the principal gatekeepers, how I worked with translators and how I trained staff to work with me. How communes and households were chosen and how interviews were carried are the subjects of Section 3.4. Section 3.5 describes the work done on the effects of building high dikes. Section 3.6 describes how analysis was approached and Section 3.7 deals with theoretical and ethical issues. Section 3.8 contains conclusions.

3.2 Accessing Vietnam, developing the research focus, research timetable

3.2.1 Partnership with An Giang University

This research was not a solo activity, planned and executed by the researcher, rather it was a collaborative exercise, developed and undertaken in partnership with colleagues in Vietnam and my academic institution in the UK. My host and partner in Vietnam has been An Giang University (AGU), a Ministry of Education and Training supervised public university, funded by the government of An Giang Province and located in Long Xuyen on the banks of the Hau River, a branch of the Mekong River, not far from the border with Cambodia. When I was studying for a Master's degree at the Royal Agricultural College (RAC), Cirencester, between 1998 to 2000, the Vice Principal, Professor Paul Davies, provided me with an introduction to Professor Vo Tong Xuan, at that time the Director of the Mekong Delta Farming Systems Research and Development Institute at Can Tho University. Professor Xuan invited me to visit Can Tho to gather data for my dissertation, which was on rice-growing in the saline-intruded area of the Mekong Delta (Howie, 2000). In 2001 Professor Xuan, now also Rector of the newly formed An Giang University (AGU), invited me to go to Long Xuyen in An Giang Province, located upstream of Can Tho, and work with his staff to develop an undergraduate curriculum for the new university. In exchange, AGU would support me in the field to carry out work towards a PhD. As Scott has described

(Scott *et al.* 2006), gaining access to the field in Vietnam may be a challenge for Western researchers who wish to use social science research methods, so this offer of entry through an exchange of gifts was one key factor in choosing to do research in An Giang Province. AGU supplied letters of invitation which I took to the Vietnamese Consulate in London and they issued me with student visas lasting for five months at a time

On my first visit I learned this was the first province to grant Land Use Rights to farmers after the collapse of agricultural co-operatives in the 1980s. This province had been willing to 'break the fence', a colloquial term in Vietnam to describe an administration that is prepared to make its own interpretation of instructions coming from the centre. This suggested too that relations between farmers and the state here might be dynamic and interactive and a good location for research. In the literature I found that this Southern delta had not been the focus of attention for research in the way the Red River Delta had been, for example by Fforde (1984, 2009a, 2009b), Fforde and de Vylder (1996), Kerkvliet (1995, 1999, 2001, 2004, 2005) and Marr (1988). People here were not as poor as those living in the provinces in the centre of the country, nor as ethnically diverse, nor did they appear to have the extensive and very obvious cultural history of the North. I had also heard a narrative, while studying for an earlier qualification, that in developing countries, large-scale environmental modification was often associated with soil degradation (Blaikie and Brookfield, 1987), yet here in the 1980s, large--scale environmental transformation had turned a situation of food insecurity into one of considerable food abundance. I was curious to know if these changes had brought about soil degradation

The two-way arrangement with AGU is on-going and remains active; SMS messages by mobile phones allow frequent and fast contact to be maintained. This relationship has helped me to avoid the tensions described by Scott, *et al.* (2006) during their fieldwork, and address Madge's (1997, p.21) ethical concern that when working in a developing country, 'the research(er) should do some good', although it will be for others to evaluate the worth of the work I and

others did to construct an undergraduate curriculum with the title: 'Integrated Rural Development'.

My initial plan and preparation had been towards research into the flow of new ideas and knowledge to and among farmers and how they learned new ideas and technologies, but senior staff in the university asked me to change to farmer decision-making. They said that often they did not understand the reasons for farmers' actions and wanted to know more about why farmers made the decisions they did:

> *The farmers come to meetings, listen to officials, agree to make changes, go home, talk with their wives, and don't do what they agreed to do.* (Mr Le Minh Tung, then Vice-Rector AGU, April, 2002).

As the curriculum developed there were opportunities to meet officials from the agriculture department, the extension service, local government, a large fish-processing enterprise, and an agricultural purchasing company, as we consulted them about the contents of the curriculum. The purpose of these meetings was to check if the curriculum contained what people wanted, but they also greatly enlarged my understanding of the concept of 'rural development'.

In early July 2001, towards the end of the curriculum work, my official counterpart, Dr Thao, but at that time still Mr Truong Ba Thao, invited me to lunch with a group of farmers in a commune where he had previously been the Leader. I wanted to learn about their farming and ask for their support for my research, which at that time was called simply 'farmer decision-making in An Giang'. At lunch they said they would support me (Figure 5). Later, I described the meeting:

> Thao took me to Vinh Binh Commune to have lunch with some of his friends and neighbours. We climbed up two metres onto the veranda of his friend the president of the Farmers Union in the commune. We consumed several dishes of snake-head fish soup, rice, vegetables, chillies, limes, sauces and green tea. Afterwards

Figure 5 My introduction to farmers in Vinh Binh Commune, July 2001

Sitting on my right hand side is Mr, now Dr, Truong Ba Thao, my counterpart; sitting on my left is Miss Hong Dao, my translator at that time. Note the green coloured *Fanta* lemonade bottle on the left. At the start of the meal the bottle was full of rice wine; it had been emptied well before we rose to leave, each guest drinking half a shot-glass of the fiery liquid and passing the second half for me to drink. This commune is in the Long Xuyen Quadrangle a large depression in the ground between the Mekong River and the South coast of Vietnam. Here all houses are raised above the bank, to avoid inundation in the monsoon season. This veranda is approximately 3.5 metres above the rice fields and was reached by climbing 2 metres above the bank up a bamboo ladder. The householder, who is the tall man on the right of the picture looking at the camera, said that in 2000 the floods rose to within 20cm of the floor we were sitting on

(Photo: Mr Duong Van Nha July 2001)

> we drained a lemonade bottle of 'rice wine', distilled nearby from 'sticky' rice. As each visitor was passed the small full shot-glass he, and with only one exception they were all male, drank half of it and then passed the remainder to me for consumption. By undertaking, and frankly enjoying, this hospitality I found I had been inducted into the life of farmers there. I had also developed a rather unwanted reputation for being 'good at drinking'; as one field assistant was later to put it: *Charles, you are a good drinker, so you are very popular with farmers here*. However, it also meant I was welcome wherever I went, or wanted to go, in the commune, but eventually we had to ask officials to say to farmers that unfortunately we would be unable to stay for lunch each time we visited a farm. (June 2001).

3.2.2 Shaping the research focus.

This research took place over a number of years and six visits were made to Vietnam, as well as a previous visit for MSc fieldwork in 1999. The work in Vietnam for this research was divided into three phases: learning about agriculture (2001-2003); focusing on decision-making for high dikes (2004); and a short, follow up visit with specific questions (2007).

Between 2001 and 2003 the focus was on households, how they farmed, the technologies they used, and how those fitted together. After two seasons of farm visits, I drew up detailed notes covering all that I knew about each household, conflating the information from successive visits into a single account for each household under headings such as crops, water, animals . From these I could see that what people did in different places was determined overwhelmingly by the prevailing water regime: August dikes excluded river water between December and August, they were pumped free of water in December to allow two crops before the next floods; and high dikes, excluded all flooding and allowed year-round cropping.

Initially I had wanted to create a grounded theory, in the manner of Glasser and Strauss (1967), into farmer decision-making, that was the driver in the initial fieldwork, but after collating the data in mid-2003 I abandoned it for

two specific reasons. First, it was difficult to collect economic data in a consistent fashion, for example distinguishing between paddy and milled rice, wet and dried rice; finding out how much of crops were sold, eaten by the family or fed to animals; and the problem of distinguishing between labour bought in and family labour, essentially Chayanov's question (Chayanov, 1966) about peasant economics. Second, I found myself drawn increasingly into questions of 'why' at different levels: why had the land surface been transformed; why did farmers farm in common compartments; why weren't the sluice gates in the high dikes opened regularly. My perception of grounded theory, constructed with the assistance of a computer programme, was that it would be unlikely to capture that rich human dimension which I was privileged to hear.

From 2004 the focus was on high dikes, their expected and actual effects and how the decision to raise a dike from the level of August dike to high dike was taken. That phase of work took place in three communes, two where the initial research had been carried out and a third one, where no previous work had been done, but where high dikes had been in place for several years. Finally a short follow up visit was made in December 2007.

A synopsis of the visits to Vietnam, what work was carried out each time and the main outcomes are set out in Table 1. This timetable might suggest the work was carried out in a very pre-planned manner, but that would be an oversimplification. In practice, many strands were being pursued at the same time: curriculum development, language training, household visits, learning more about agriculture each day, helping Vietnamese colleagues to improve their English, and talking with my gatekeepers and other staff in AGU. Later on I would be asked by staff from the UK or the US visiting AGU to explain how agriculture 'worked'. In between fieldwork, periods in the UK provided important opportunities to begin to put the materials gathered in the field together and identify themes from the literature which could be used to shape the material into a thesis. Opportunity to make presentations provided the spur to tease out a bit more and extend my understanding further. This would then

Table 1 Fieldwork activities and outcomes, 1999-2007

Duration, year, location	Research activities and other activities which supported my research	Research outcomes
Two weeks 1999 Can Tho University	• Master's student at Royal Agricultural College, Cirencester • Fieldwork for MSc at Can Tho University, Mekong Delta • Meeting: Prof. Vo Tong Xuan • Interviews with staff at Mekong Delta Farming Systems Research Institute • Journey to Soc Trang in tidal area, visit to one farmer	• Visit to a household near Soc Trang. Observed the boat we arrived in was much closer to the top of the bank when we came to leave than when we arrived. Why? • MSc (2000)
Five months 2001 An Giang University (AGU)	• First draft of undergraduate BSc curriculum: *Integrated Rural Development* • Led consultation on draft curriculum with directors of agricultural, agricultural research station and agricultural extension, and business people • Lunch with farmers in Vinh Binh commune • Visited Dr Truong Ba Thao's farm • Meeting Vice-president, Vinh Binh • Daily lunches and discussions with Prof. Vo Tong Xuan, AGU	• Agreement from An Giang University for my research programme, provisional title: *Farmer Decision-making in the Mekong Delta* • Developed my basic understanding of agriculture and local government • Agreement of Vice-president and farmers in Vinh Binh to support my research
Five months 2002 An Giang University	• Second draft of undergraduate curriculum (2 months) • Trained three staff to work with me in the field • Developed research questions in conjunction with field staff • Fieldwork in 3 communes in Chau Thanh District (3 months). • Interviewed 2 sellers of inputs in one commune • Briefings at departments of land taxation, agricultural bank, and hydrometeorology.	• Agreement for research from: An Giang People's Committee, Chau Thanh District and Leaders of 3 communes. • Developed and tested interview questions • Interviewed 47 farmers and officials in three communes • Developed understandings on tax, hydrology and credit

	• Interviews with officials in three communes: Leader and extension officer; heads of farmers' union, youth union, women's union; and the bank	• First understanding of agriculture in the field
Autumn 2002 SOAS (London)	• Beginners course in Vietnamese language, 2 hours per week.	• Assisted my pronunciation of vowels and tones
Two months 2002-2003 An Giang University	• Four staff from Royal Agricultural College, Cirencester to visit farmers in two communes (HE link programme) • Completed curriculum and presented it to Rector Board for approval (2 weeks) • Revisited 42 of 47 farmers • Revisited commune staff • Presented my initial understandings to staff in Faculty of Agriculture and Natural Resources	• Additional opportunity to question farmers and confirm earlier understandings • Finished writing BSc curriculum • Introduced to Prime Minister and thanked for curriculum work • Followed up with farmers on any changes they have made since 2002 and why. • Feedback to AGU staff on my understandings
September 2003 An Giang September-January Ho Chi Minh City November 2003 Can Tho University November 2003 An Giang Province	• Presented request to carry out final stage of research on decision-making for high dikes • Vietnamese language lessons at Vietnam National University, University of Social Sciences and Humanities • Supported DARWIN project: *South South-East Asian Wetlands Restoration Initiative* (Royal Holloway Institute of Environmental Research) Made presentation on provisional findings to farmers and officials in Vinh Binh Commune	• Granted approval to return in 2004 to research into high dikes, their effects and decision-making • Gained sufficient Vietnamese to conduct most quantitative questions with farmers • Social science research techniques—question design and participative mapping • Feedback from farmers on high dikes and anticipated effects
March-April 2004 An Giang University	• One month language training • Applied for permission to work	• Language training in research area to improve pronunciation

May-June 2004	in Cho Moi District, where high dikes have functioned for about ten years • Created and delivered five days training in human geography research methods • Developed research questions for households • Developed routine for consultative meetings with farmers and officials. • Carried out group meetings with a range of stakeholders in three communes • Interviewed commune officials • Using four teams, interviewed households in three communes on expected or experienced effects of high dikes • Interviewed older householders on environmental transformations in their life times	• Granted permission to work in Kien An Commune • Trained eight staff in interview techniques • Research questionnaire on high dikes, in 2 versions: actual effects and anticipated effects • Developed proxies using household goods for rich, poor and medium households and mapped where they could be found • Obtained views of 24 households in in each of three communes on expected effects of high dikes • Learned about environmental transformations from the 1940s to 2000s
June 2007 London	• Professor Vo Tong Xuan and head of BBC Vietnamese Language Service	• Discussions about attempts to create large-scale co-operatives in the delta after 1975
November 2007 An Giang University	• Revisited officials in Vinh Binh and Binh Thanh communes. Visited two households in each commune • Revisited key trader in Vinh Binh commune • Discussions with Mr Le Minh Tung, acting rector An Giang University	• Learned about progress towards a decision on a high dike in Vinh Binh Commune • Learned about impact of new high dike in Binh Thanh Commune
January 2008 London	• Discussions with a friend from Long Xuyen who I could not readily speak to in Vietnam	• Life in the delta for his family immediately after reunification in 1975

feed into the next round of fieldwork. This was what was gained by working inductively and allowing the research to develop interactively.

The final period of fieldwork took place between mid April and late June 2004. It began with a further one-month's language training at AGU, designed to help me to develop a local accent. The research purpose of this visit was to find out how the decision to raise the dike in one commune was being taken and how this was expected to effect different groups of people. To bring out the likely effect of raising the dikes I wanted to compare one commune where the dikes had been raised to a high level some years previously, with a commune where building a high dike building had been talked about by farmers and officials at the lunch in 2001, but no action had yet taken place. In each commune the first step was a consultation meeting, attended by farmers, landless, traders, officials, school teachers, health workers, all invited at our request by the commune government. We asked people what were the issues around high dikes and, with their assistance, drew up maps of where we might find people of different wealth. Later, a research team consisting of university teachers used structured and semi-structured questions to ascertain the effects, or the anticipated effects, of raising the height of the dikes on people of different wealths. Finally, we held meetings with groups of older residents to ask about changes in the environment over their lifetimes. This was to help me to develop a longer term perspective on environmental transformation in the study area.

It was at this point that my wife took ill and I returned to the UK and looked after her until she passed away in the spring of 2006. Research and writing up were not recommenced until later that year. A further period of personal illness caused another seven month break in 2007-2008.

In December 2007 I returned to AGU for a two week visit. One of the reasons was because I wanted to hear what progress had been with the high dike and I wanted to show that the relationship built up over several years had not come to an end. The visit was short in duration, but the relationships and

friendships I had built earlier meant that I had many informative conversations in just a few days. I visited two communes, met their Leaders and in each one spent time with two farmers I knew from previous visits. I also had meetings in the UK with Professor Vo Tong Xuan, with Mr Giang Nguyen, Head of the BBC Vietnamese language service, and with a friend from Long Xuyen who it had not been possible to talk to at length in Vietnam, an 'off stage' voice (Scott, 1985, p.25).

3.3 Gatekeepers, translators and training for staff.

3.3.1 Three gatekeepers who situated me in the field

Gatekeepers are crucial to the process of research, wherever that is carried out, but particularly in a developing country with a one-party state. Gatekeepers frame the researcher, other people read signals about their expected behaviour towards an outsider from the signals given out by the gatekeeper-researcher relationship. For that reason I set out some facts about three gatekeepers who enabled me to enter the field and carry out this research. Between them they situated me in the field and in the eyes of all the people I met. Undoubtedly they will have influenced who I met and talked with and consequently, what I heard.

My principal gatekeeper was Professor Vo Tong Xuan, a rice scientist often referred to Vietnam's 'Dr Rice' because of his role in averting famine in the late 1970s when HYV rice was attacked by brown planthoppers. He trained in the Philippines and returned to Vietnam before reunification in 1975. Subsequently his role in moving Vietnam from a country in food insecurity to the world's second largest exporter of rice is hard to underestimate. For 16 years he was a member of the national assembly, and by the time I met him he had been a member of the Food and Agricultural Organization's Technical Committee as well as Vice Rector of CanTho University. In 2000 he accepted the rectorship of An Giang University (AGU), formerly a teacher training college, but upgraded to a university by a directive from the prime minister in 1999. This was only the

second university to serve the people of the delta. Professor Xuan[1] is also well known outside the country, being a trustee of the Rockefeller Foundation and a research fellow of the International Rice Research Institute (IRRI) in the Philippines. I learned an immense amount about the delta, agriculture and Vietnam from Professor Xuan, especially on my first two visits when I was the sole foreigner in AGU and apparently in Long Xuyen as well. Professor Xuan spent several days each week at AGU and we ate lunch together almost every day. In his modest and self-deprecating manner, he gently educated me about Vietnam, its history and social structure in a way I could never have received in Europe, or from reading the literature on Vietnam. This relationship has been seminal to my work and my love of the area.

The second figure who framed my relationship with farmers was Dr Truong Ba Thao. When we first met he was studying for his PhD and I helped him by sending books and journal articles on the genetics of aromatic rice. Dr Thao was my official counterpart during the curriculum development work, later he obtained for me the permission I needed to enter the field and he took me to meet key people in each commune. He trained in agriculture at Can Tho University in the 1970s, he first taught at an agricultural college North of Ho Chi Minh City, later he came to An Giang Province and was appointed Leader of Vinh Binh Commune. Dr Thao's background in agriculture is unusual for a commune Leader; the Leader in one of the communes I worked in told me he knew nothing about agriculture.

In 2000 Dr Thao was appointed to An Giang University as head of the Department of Biotechnology and Vice Dean of Agriculture and Natural Resources. He still has a farm in Vinh Binh Commune, where he grows aromatic rice on 3ha of paddy land. Riding on the back of his Honda motorbike, I visited his land and learned somethings about rice growing through watching the

[1] [1] In Vietnamese the family name is the first word in the name order, the second name may indicate the sex, and the third name is the given name or, as would be said in the West, the 'first' name. This is the name order in Vietnamese, as it is for Chinese, Japanese and Korean names.

practice of it; I also got paddy mud between my toes, the nearest I got to participant observation. I got to know some of his neighbours and followed aspects of their lives as well. He always saw that I remained healthy, if I was feeling unwell, which rarely happened, he would appear and take me to a doctor or bring medicines. Dr Thao's career is a not untypical example of how roles in Vietnam are intertwined: farmer, researcher, teacher and on occasions, an employee of the state.

The third gatekeeper was Mr Le Minh Tung. Like Professor Xuan, Mr Tung had also had some of his education outside Vietnam, having been a Fulbright scholar at Harvard University in 1993-94, where he gained a Master's degree in Public Administration. Like Professor Xuan, he too had been a member of the National Assembly, in his case for 8 years. When I first arrived in 2001 Mr Tung was Vice Rector, having previously been the Province's Director of Environment and Technology. Mr Tung ran the university on a day-to-day basis when Professor Xuan was away on university or international business and it was no surprise when Professor Xuan retired in 2007, Mr Tung replaced him as Rector. Mr Tung has also been Vice Chair of the People's Committee of the province.

3.3.2 Working with translators

Where the researcher cannot speak the respondents' language, the use of translators is inevitable: it is translators, or nothing! This might be seen as creating a distance between the researcher and those he or she wishes to understand, and this is particularly the case when using semi-structured or open questions, but it is a limitation that must be endured and its impact on the outcomes of the research acknowledged. My one contribution to reducing it was to make use of the opportunity provided by my NERC/ESRC award to spend time doing 'hard language' training. I began learning to speak Vietnamese in AGU in 2001, with lessons nearly every evening, often by candle light during the numerous power failures experienced at that time. In 2002 I attended a weekly evening class at the School of Oriental and African Studies in London. In the

autumn of 2003 I attended the University of Social Sciences and Humanities, part of Vietnam National University, Ho Chi Minh City and took an intensive language course. In 2004 I did another month's training with a teacher at AGU. This study did enable me eventually to make good progress and I learned sufficient to conduct most every-day conversations with farmers. I also gained an appreciation of how difficult it was for Vietnamese speakers to become fluent in English. That understanding was important when I was trying to work out the meaning of translations into English, for example by the staff who helped me in the field in 2004.

My plan was to work with two translators, one as meeting leader, the other as note-taker in Vietnamese. This plan was developed from a conversation in the UK with Celia Luttrell in 2001, just as she was completing her PhD on livelihood resilience in Central Vietnam (Luttrell, 2001). The plan was for the meeting leader to use the questionnaire, written in English, and ask questions in Vietnamese. They would translate most of the answers into English, so that I could keep notes, and with my feedback, steer the conversation in the direction I thought most productive. The note-taker would write down everything said in Vietnamese. Later, normally within two days, the note-taker translated her notes and I wrote them onto the opposite pages of my interview note books. In this way I would have two versions of the responses. In 2002 I trained three teachers to work with me in this way in the field. The first step was to discuss with them what I wanted to find out and in the process test out my understanding of agriculture, which at the start was limited. We then worked together to develop interview questions to gather quantitative and qualitative data and protocols to keep our technique consistent (Appendix 1).

I was keen to pay translators for the work I wanted them to do. On asking at AGU how much to pay I was advised to 'pay what you think' or 'not to pay at all'. I decided to pay 12USD/day in the field and 8USD/day for writing up in the university. This amount was related to the amount I had paid for one day's help at Can Tho in 1999 and what I could afford. It appeared to be acceptable and payment

was never an issue throughout the fieldwork. At the end, I asked the university if they wanted to keep a portion of it for making staff available to me, but they declined, saying the staff development was sufficient payment and the teachers, whose salaries were low, were to keep all of it.

3.3.3 Training research assistants

In 2004 I trained eight assistants to work with me in order to complete the fieldwork in the time available. The first part of the training aimed to raise awareness of positionality and of hermeneutics, how in social science research, they would be the instrument of data collection. The teachers were used to going to the field with instruments and notebooks to measure, gather samples, count and weigh, ask closed questions, but now they would be the instruments and they needed to be aware of how they would distort and interpret what they heard and saw (Figure 6). The second part of the training was to consider the benefits and losses of raising the height of dikes, who would gain and who would lose (Figure 7) and how we would find people with different perspectives on our questions. Next we discussed the concept of development and how it may ignore the wishes and needs of local people (Figure 8). From that I drew out the origins of participatory appraisal and the work of Robert Chambers. I did this to clarify what participatory rural appraisal and participatory learning and action meant, as I had often heard the acronyms misused by staff. The third part was to develop a programme and research protocols to use when consulting people in the commune about their views on raising the height of dikes and how we would locate people with different views. Finally, working together, we drew up a timetable for the work.

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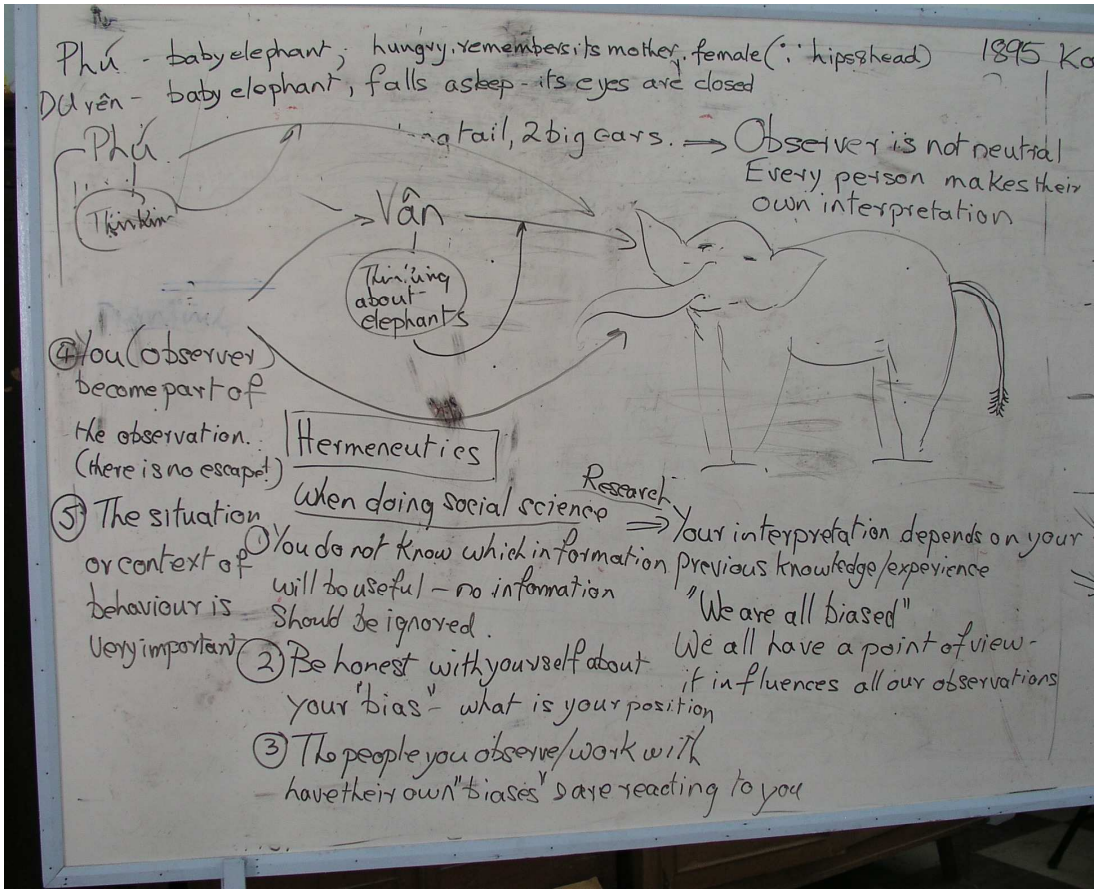


Figure 6 Training for research assistants (1)

Trainees were shown a sketch of an elephant on a white board and asked to describe what they saw. The answers included 'baby elephant', 'baby elephant missing its mother'. The purpose was to raise awareness of how, in social science research, the observer interprets as well as records what is seen and heard. (author. 11th May 2004)

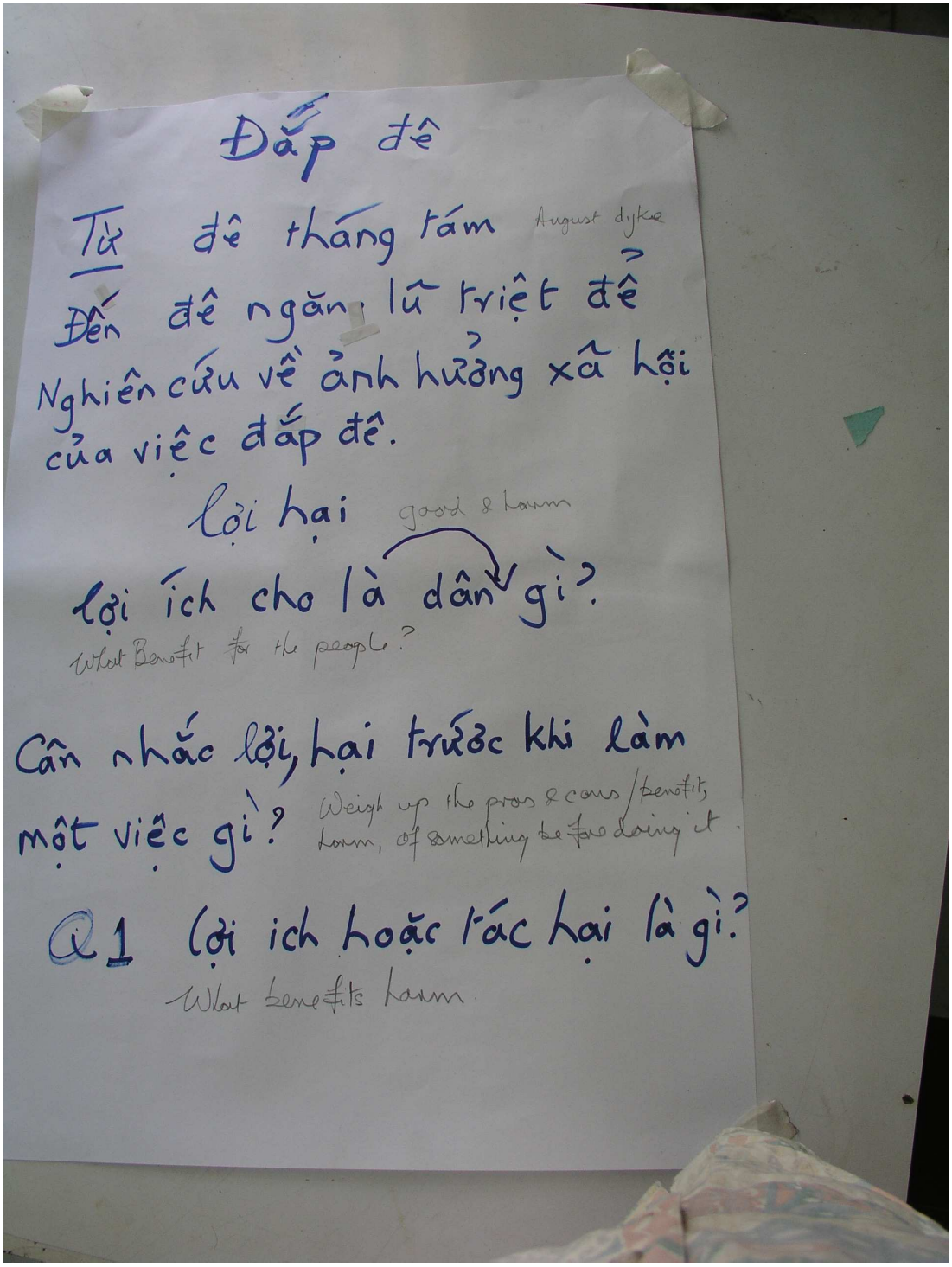


Figure 7 Training for research assistants (2)

My research questions for discussion by the team. At the top it reads: 'Dike. From August dike to flood control dike, study of dike effect on social life for local people, advantages and disadvantages'. (author. 12th May 2004)

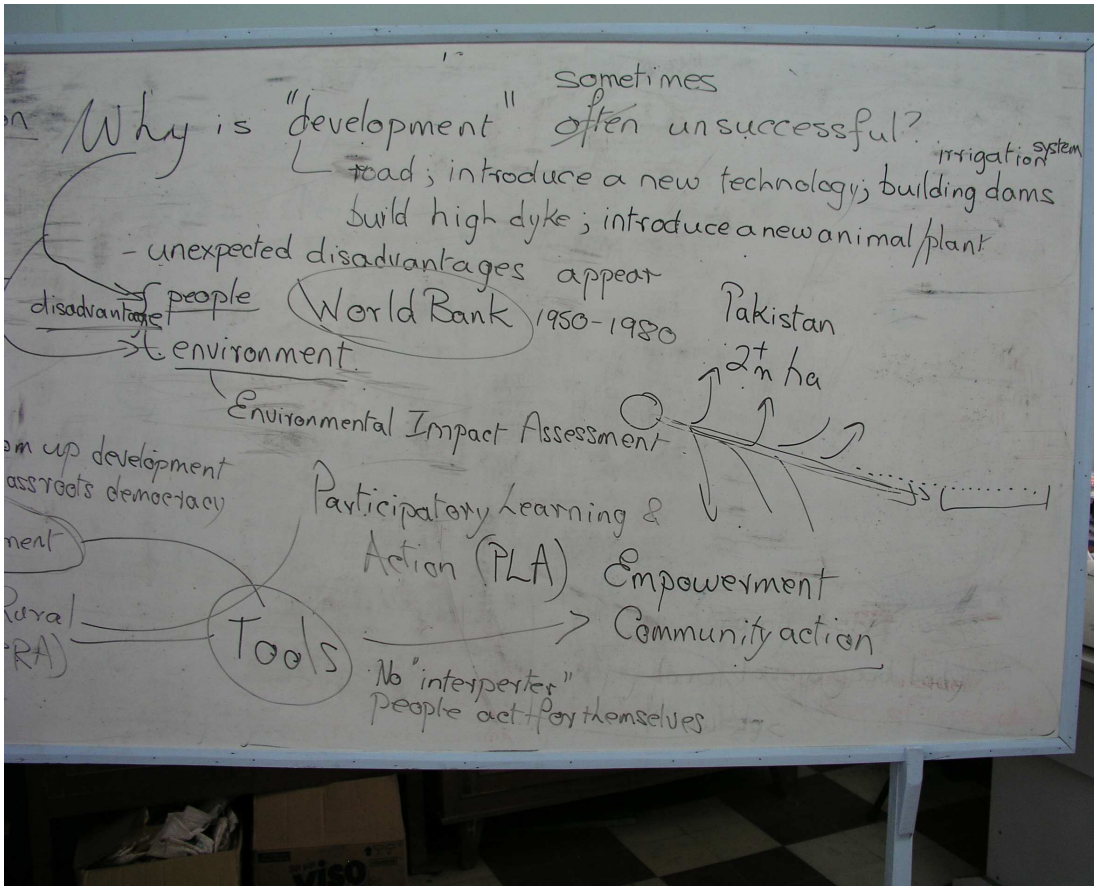


Figure 8 Training for research assistants (3)

Summary of discussion on 'development' and how it may overlook the needs and wishes of local people. Pakistan was taken as an example of development, here of irrigation schemes, which have lead to salinisation. Although we discussed Participatory Learning and Action (PLA) as a way of empowering people to identify, define and pursue their development needs, PLA was not part of our research strategy. (author. 12th May 2004)

3.4 Accessing households and interviewing farmers

3.4.1 Choice of communes

The area suggested by An Giang University for fieldwork was Chau Thanh District. The reasons for that suggestion may have included the following: this was where my counterpart, Dr Thao, had worked as district agricultural officer and before that as a commune Leader; it lay along the road from Long Xuyen and was easy to reach by road and ferry; it may have reflected a wish to keep me away from other areas, although I never had any reasons to believe that to be the case; or even a hope that I could make practical suggestions to officials for improving agriculture. The district had a wide range of water regimes, from the Long Xuyen Quadrangle, which is an area of depression that floods in some places to 3 or more metres in most years, to areas close to Long Xuyen which had been raised above the flood level. Dr Thao had substantial social stock there, as the lunch with farmers in 2001 had demonstrated, which may have made access easier than elsewhere.

Fieldwork was carried out in three communes in Chau Thanh District. To gain access I first wrote formally to the university, asking for their support and requesting them to approach the provincial government with my request. Once I had written authorisation from the province government, Dr Thao took me to Chau Thanh to show the letter, with the official stamp on it, to the President of the District and we asked his permission for me to work in three communes. From there we went to meet the Presidents of the communes. We asked the President to give the households they chose a letter asking if they would work with us (Appendix 2). Dr Thao made all the arrangements for these meetings to set the work up.

Three communes in Chau Thanh were selected for the following reasons. Binh Thanh was an island not far from Chau Thanh town, a five minute journey by ferry. Part of the island had just been enclosed inside a high dike, farmers were adapting to this change and I would be able to follow that. Binh Hoa lay just

beyond Chau Thanh town and we drove across one part of it in order it to take the ferry to Binh Thanh. Parts of this commune lay within high dikes, other parts were still inside August dikes and part was unprotected by dikes. Finally, Vinh Binh Commune lay nearly 30km from Long Xuyen. All the land here was inside August dikes and when I was travelling around An Giang Province and beyond in 2001 this area looked no different to many other communes we passed. Vinh Binh had a plan to build a high dike, and that was of particular interest for this research. It was also the commune where Dr Thao had been the Leader. These communes are described more fully in Section 4.3.

In 2004 the research focus narrowed from 'farmer decisions-making' to finding out how the decisions to raise a high dike was taken. To do this I wanted to work in a commune where high dikes were long-established, as well as Vinh Binh, where one was planned, and Binh Thanh, where one had just been completed. In 2001, I visited Cho Moi District informally on Sunday mornings. It lay a short ferry ride across the river from Long Xuyen and I could easily travel by pedal bike, riding along the dikehead tracks in the early morning. There I saw intense production of cucumbers, large flocks of ducks being herded across fields of rice stubble, beans growing suspended on bamboo frames over ditches, and rice growing at several different stages, all going on in the same compartment. This was quite different to agriculture far out in the Long Xuyen Quadrangle. In 2004 I requested permission to carry out work in one commune there. Once that was granted I went with my counterpart to the district head quarters and they were willing for us to work in Kien An, on the North West corner of Cho Moi Island. The physical and demographic features of all four commune are set out in Chapter Four.

3.4.2 Getting to and from the research areas

I wanted to live for a period in the research area, to move closer to participant research, but was told by AGU that was not possible Instead, I travelled out each the morning and returned to AGU each evening, with the most distant commune,

Vinh Binh taking 30-40 minutes to reach. The time and energy involved in travel was another factor I took into account when I accepted the opportunity to work in Chau Thanh District, rather than in a district further away from Long Xuyen. Daylight began at about 5.30am in the morning, dusk was at 6pm, in the middle of the day the temperature was normally above 30C and everyone, farmers and officials, ate lunch at 11.30, then rested between 12 and 1.30pm. We, three of us, would leave AGU at 6.10am, stop and eat breakfast at a shop on the way and arrive at commune headquarters by 7.45am. Breakfast was an important meal, for catching up, discussing the previous day's work and bracing ourselves for the unexpected. Each day brought new experiences for us, one day it was how to react to the death of a commune official overnight, another day two policeman arrived at the farmhouse where we were working and wanted to inspect our letter of permission. We stopped work at 11.30 for lunch and afterwards we would rest and try to sleep in loungers in a coffee shop or on a farmer's veranda for an hour or so before visiting another one or two household in the afternoon. We needed to set off back to AGU by 4.30pm at the latest in order to have time to eat, rest and prepare for the next day. Given these practical constraints, the time available for farm visits and interviews in one day was limited to a five or six hour period. I did not want to travel by car, even though that would have given us longer in the field, because I believed that would create, or at least reinforce, the barrier between outsider and insiders, wealth and poverty. Instead we travelled, as most people did, on small 70cc Honda motorbikes, with me sitting behind whoever was the meeting-leader that day, and the note-taker travelling on her bike. In March and April the journey was dusty, but by the end of May or early June it was frequently made in driving rain as the monsoon got underway. One wet day when we were trying to get from one part of a commune to another, our bikes came to a halt because the spaces between wheels and frame were packed so tight with mud the wheels would not turn. Fortunately there was a coffee shop nearby and we spent 2hours waiting for conditions to improve, before we eased the mud off the tyres with sticks and cautiously returned to the main road..

3.4.3 Selection of households

My original plan was to conduct 'snowball' sampling, in which I would have asked one household who we should visit next but I abandoned that approach even before it was tried out, when I saw how much work would be required to gain access to work in that way. For example, if a farmer in one commune, where research was authorised, suggested we should speak to his friend and informant in another commune, where research had not been authorised that would be difficult to carry out, and the friend might have been in another district, even another province. Later on, by the end of the fieldwork in 2004, that approach might have been possible, as by then I was known and my work appeared to be understood and accepted, but at the outset it seemed too much to ask of my hosts. Instead, purposeful sampling was carried out.

When we first visited a commune HQ I asked the Leader if we could visit households with particular characteristics, and I left the choice of households to them. The characteristics I asked for were: experienced farmers and less experienced; successful and less successful; older and younger farmers; farmers in different water regimes, although in Vinh Binh everyone farmed in the same water regime; and overall to see the range of technologies practiced in the commune. I also asked if we could meet some women farmers. In Binh Thanh, where part of the community was living inside a recently completed high dike, we asked to meet farmers working inside and outside the high dike, in order to gauge its effect. We wanted to see and hear about the range of things people did and to meet a wide spectrum of people, not just rich households or poor households. In the first sessions of fieldwork the aim was to obtain a broad view of farming in each commune, in the second session, which began seven months later, the focus was on any changes they had made, why they had made them and who had been involved in deciding what to do.

I asked if we could visit eighteen to twenty households in each commune. In choosing that number this research was informed by the work of Osbahr

(2001) who carried out research on soil fertility and livelihoods strategies in West Africa and visited about 60 farmers. That number was chosen so that overall fifty to sixty households would be visited. The intention was to work with a smaller number of households, and so have the chance to get to know a smaller number of people quite well, rather than trying to spread the net widely, and gain only a superficial picture of people and their agriculture. That latter approach would have felt uncomfortably like 'safari research' (Hursh-Cezar and Roy, 1976) which I wished to avoid. In the first year, one interview lasted two to two and half hours and required a morning or an afternoon to complete, so fifty households required at least twenty five days in the field, plus an equal amount of time to take down the translation, a total of fifty days spread over a period of seven to eight weeks. I also required time to interview officials and traders. In the follow-up interviews in 2003, half that amount of time only was spent at each household. .

In 2004, when the research focused on the actual or anticipated consequences of raising the level of the dike, the households chosen for interview were identified in a different way. We asked each commune to gather a group of ten to fifteen people, including farmers, landless people, teachers, health workers, buyers and sellers of inputs and produce, to talk with us about dike building. One member of the team agreed to lead a discussion on the benefits and disadvantages of high dikes (see Section 3.4.2), as perceived by the different participants. Another task for this meeting was to ask the group how we might identify rich and poor households in their commune, based on their possessions and behaviour, and where we would find people who had benefited or lost by the high dikes, for example in terms of health and education, as these were both issues that emerged early-on as being significantly altered by the high dike. Finally we asked one member of the group to take the pen, lead a discussion and draw a map on a flip chart on the wall to show where we would find the people we wanted to interview. From the map commune officials agreed to find households we could visit. In this way seventy two households were identified and visited across three communes.

3.4.4 Farm interviews

Interviews in 2002 and 2003 were conducted at forty seven households, sixteen in Binh Thanh, seventeen in Vinh Binh and fourteen in Binh Hoa. The procedure was for the three of us, me, the meeting leader and the notetaker, to reach commune headquarters on motorbikes before 8 a.m. We were than led to the first farm of the day by a member of staff. In Vinh Binh this was the president of the farmers' union, in Binh Thanh the Vice-Leader, but in Binh Hoa it was whoever was available. That person would generally remain with us throughout the morning, going away for lunch and returning in the afternoon. I had asked at the university about using a tape recorder at interviews but I was warned I might be required to give copies of recordings to the police. In any case I prefer note taking because I see it as more open and honest with interviewees, there is no hidden device, everyone can see me writing down what is said, it is easier to look back a page or two in my note book to ask someone to confirm what they said earlier, and everyone can see me altering the record, than to search for comments on a machine. A further point was that I did not want the burden of transcribing tapes at a later date, especially given the problems associated with translations and the difficulties in using any kind of rich text analysis involving Vietnamese script.

In Vinh Binh and Binh Thanh, farmers' houses were adjacent to their land. In Binh Hoa several farmers were living away from their land, on the edge of the town which increased in size even during the period of this fieldwork. Meetings nearly always took place on the front veranda of the raised house, sometimes more than six foot above the ground. We would leave our shoes at the bottom of the ladder, climb up and be invited to sit on stools around a circular table or on a large wooden bed or on the polished wooden floor (Figure 9). The meeting would start with glasses of green tea and be interspersed with more cups of tea and cold drinks. Often there would be an electric fan to keep us cool. The number of participants varied. Very occasionally it was just the man, more often.

Figure 9 On the veranda of a participant's house, February 2003

On the right of the photograph is the farmer we had interviewed, next to him the president of the Farmers' Union who accompanied us to all our meetings in this commune. To the right of me in the photograph is a neighbour who I interviewed earlier and in the centre another neighbour who dropped in to hear the conversation. We were about to be served lunch, by the farmers wife.

(Photo: Miss Pham Huynh Thanh Van. February 2003)

it would be husband and wife. Frequently there would be a fringe of others, sitting forming an outer circle. Someone might interject a comment into the conversation but more often those in the outer circle would follow the proceedings in silence. On the edges of the veranda, or inside the house, which was open to the veranda, there might be young children or older people, also listening in silence. Children returning from school would cling to the outside of the balcony rail and listen as well.

With very few exceptions, the main participant in the conversation would be a man, the husband. He might refer to his wife on a specific point and then she might speak to us directly. My notetaker was always female, a 25 year-old teacher of crop science, and she would try to address some questions to the women, but this was not a deliberate part of the interview procedure. One notable exception was a couple in Binh Hoa. Both of them were graduates of Can Tho University and recently they had decided to return to some family land and take up farming, having previously worked in business. There, the conversation involved both of them. The other exception was on farms where a son had taken on the farming but the father still remained nominally as the farmer. Here, answers were negotiated between them. In 2004, I returned to a four-generation household I first visited in 2002, and the father announced that 'he was waiting to graduate to heaven'. Some households were crowded with several generation living together.

In the first round of fieldwork, in 2002, meetings lasted from two to two and a half hours. If the meeting looked as if it was going to take longer I would ask the meeting leader to leave out some questions; three hours was too long for everyone. After the discussion on the veranda we would asked if it would be convenient to see their land and their crops and animals. This request was never refused. We could then ask about them, the state of the rice, the fish, the pigs and cows. I drew a simple sketch of the farm. This process not only fed into the research but was how I learned how farming actually happened, how different processes were interconnected. Thus, by the end of my period of research, I

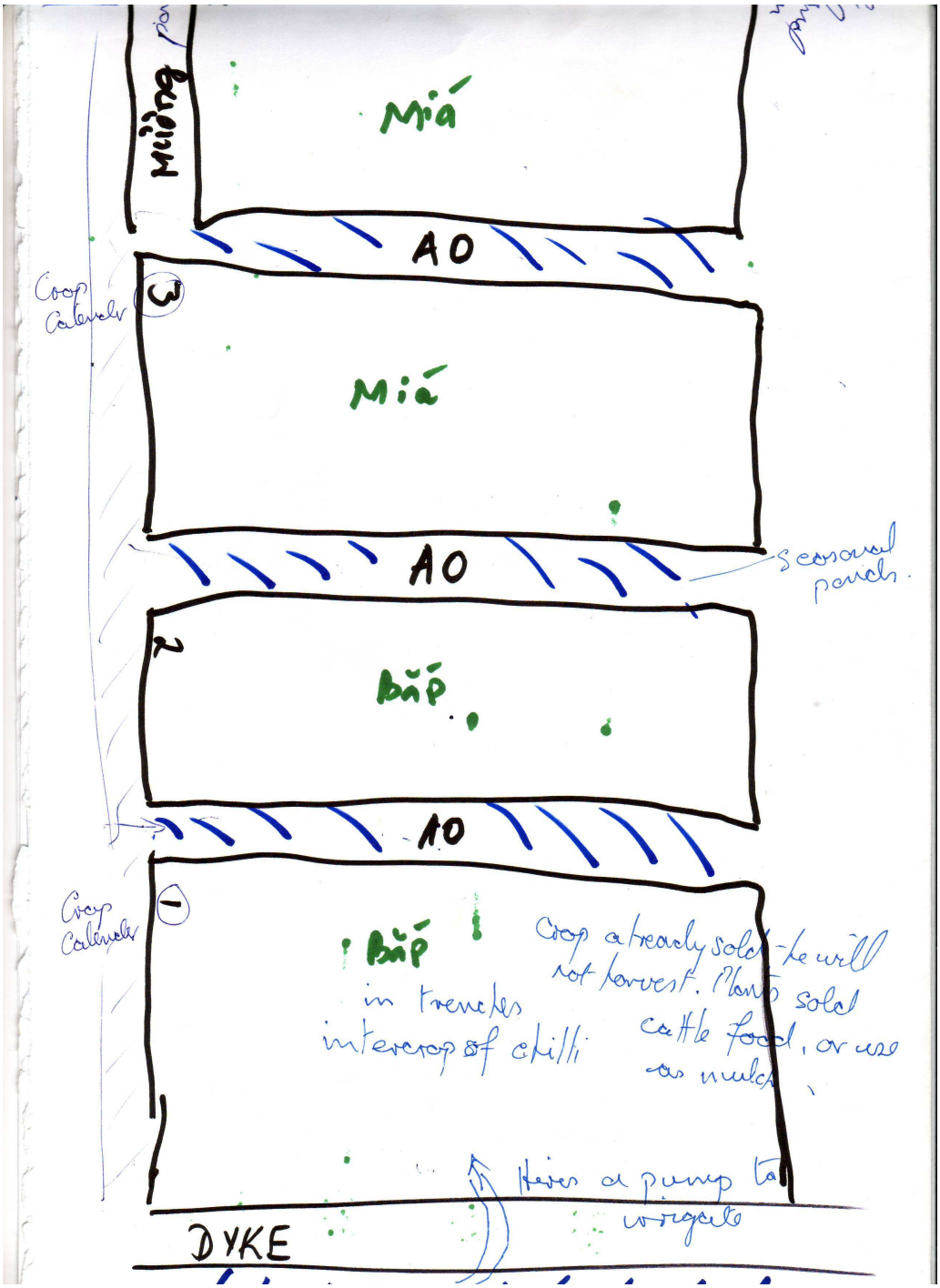


Figure 10 Sketch of a farmer's field, Binh Thanh Commune, May 2002

The farmer said the area was 0.8ha. It was divided into four plots, the two labelled *mia* were sugar cane and *bap* were maize. The maize was intercropped with chilli plants which would continue after the maize cobs had been sold to a buyer who would strip the plants, and the plant remains would be sold as mulch or cattle food. Between the plots were water ponds, *ao*, which were replenished by pumping water in from the canal, at the foot of the sketch. The pond surfaces were covered in water hyacinth which could be used as a mulch or to feed pigs on. (author, 6th May 2002)

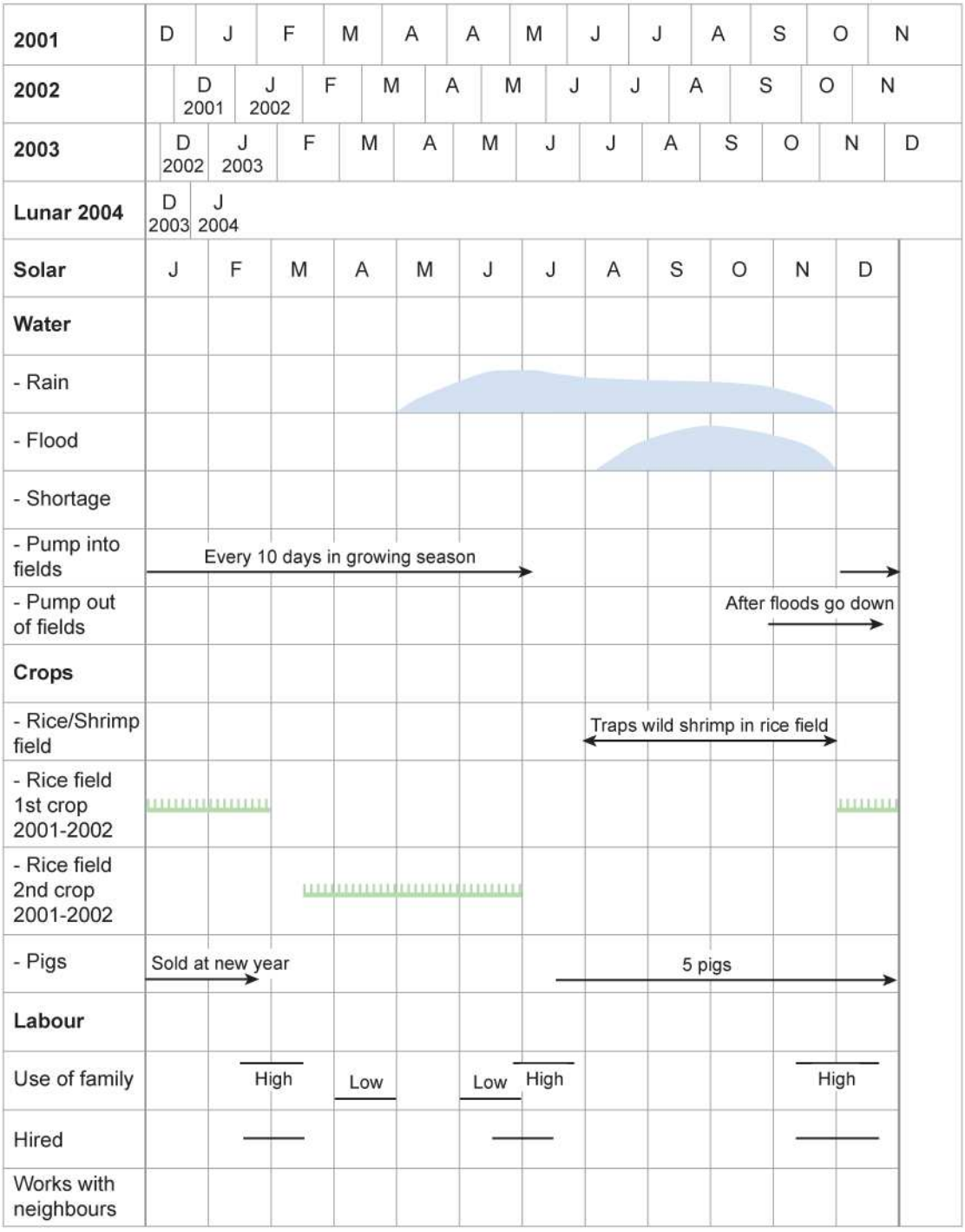


Figure 11 Calendar of crops, water, labour, animals

At the top of the figure the timings of the Lunar Calendar are arranged with respect to the Solar Calendar. Farmers used the Lunar Calendar when talking about when they did particular things. (Source: author 2010)

could suggest with reasonable accuracy the age of rice plants and whether they were in need of fertiliser or water. An example of a farm sketch is shown in Figure 10. We also made calendars for each crop, the availability of water and labour and the condition of the soil, which included the depth of sediment left by the flood (Figure 11).

Interviews of this sort have their limitations, they are framed on the one hand by the positionality of interviewer and interpreters, how the meeting has been set up, where and when it takes place and how it is conducted, and on the other by who does the speaking for the household, is it the man or the woman, or as once happened for us, both of them. Nevertheless, and despite these limitations, this sort of interview offers rich opportunities, possibly the only ones, for distant researchers to hear at first hand about the actions and lives of people living in very different circumstance to their own.

I was keen to show respondents that they were not being taken for granted, so I asked in the university if a payment should be made for a meeting. Answers included: 'you must pay them for their time'; 'pay them what you like'; and 'don't them pay them or [Agriculture Faculty staff] will need to pay them when we visit them'. Eventually, I decided to give a presents that all the adults were likely to enjoy, in the first year this was a small drum of good quality green tea, presented at the end of each meeting, and in the second year a packet of fancy biscuits. I was always thanked for the gifts; I had no sense they were seen as patronising or unacceptable, although the response may have been innate politeness. Another way of recognising participants was to take pictures and go back with the prints on a Sunday afternoon. These unscheduled visits were also a potential space for 'off-stage' voices to be heard.

Despite asking to meet at least one women household head several times in each commune we were never introduced to any women who were farmers. However, in Vinh Binh Dr Thao did introduce us to a widowed lady who owned

the town's largest supplier of inputs, selling it on credit to farmers. She seemed to be the town's principal entrepreneur.

The procedure used for follow up visits in 2003 was much quicker. I wrote to Mr Tung and explained what I would like to do (see Appendix 3). After the first round of farm visits in 2002, I examined all the records and picked out lines of enquiry which might prove useful, such as a farmer who was in debt, another who told us he wanted to branch into aquaculture, or had tried growing a high value crop but had failed and a farmer whose crops were diseased. Meetings were set up as before and lasted about an hour. The purpose of the interview was to ask farmers if they had made any changes since my visit a year ago and if so why? In this way I hoped to get farmers to talk about change, what brought it on, how it happened. Also, by visiting them three or four months earlier than in the previous year I could extend my knowledge of farming, as crops would be at a different stage. All but four of the original 46 households were revisited in 2003.

3.4.5 The Lunar Calendar

It was at this time in 2003 that I became aware of the lunar calendar, which all the farmers followed. On asking farmers when they had sown the present season's rice, they gave me dates which were several weeks different from the previous year. At first I thought I had been mistaken over what had been said, but later working with my translator, she realised I was unaware that consecutive lunar years are 'one week later', than the corresponding solar calendar. This happens for three years and in the fourth year there is an extra month, a thirteenth or leap month to catch up with the solar calendar. Between the two visits to farmers there had been a catch-up month so farmers appeared to be one month ahead of the previous year in their activities. After that experience I always checked which calendar we were on, drew blank calendars according to the lunar year and imposed the solar years on them afterwards. We interviewed one farmer who believed that after the Year of the Dragon the level

of flooding the following year would be less. He planted over 1500 papaya seedlings on his bank after the Dragon floods went down, but when we visited him a year later the following floods had also been high and the trees were all dead.

3.4.6 Feedback to farmers

In September 2003 I gave feedback to farmers and officials in Vinh Binh Commune. I had asked at the university if this would be acceptable, I sent a copy of what I wanted to say in advance, and was told verbally there would be no problem. I wanted both to give feedback, and to check my understandings. About twenty people attended, including several farmers I knew, as well as traders, and officials. I set out what I had heard about the advantages and disadvantages of the high dikes planned for this commune and the difficulties experienced with the present August dikes. I was also able to talk about the problems experienced by farmers wishing to diversify, such as not wanting to be the first to try a new crop, the cost of converting land for new crops, and the high burden of transport costs to markets if only one or two farmers grew the new crop. A few farmers had told me they were interested in making larger-scale investments, but didn't know who else in the commune had the money to do that. I said this to the meeting and suggested one possible investment might be a cool store. This could enable farmers to store degradable produce until sufficient had been gathered to make it worthwhile for a buyer to come to the commune, which was 30km away from Long Xuan, and purchase it. I also set out a table of some advantages and disadvantages of converting from rice to fruit and vegetables. This session seemed to go well, there was a good discussion and I was told afterwards that several farmers had voiced reservations about the plans for a higher dike.

3.4.7 Interviewing officials

In order to enlarge my picture of farming I wanted to meet officials whose actions and decisions might have an impact on farmers. Using very similar letters and questionnaires, I also sought interviews with organisations in the commune: the Farmers' Union, the person providing extension services, if there was one, the Women's Union and the Youth Union. I met the President and the Leader of each commune several times, formally and informally. I was always made welcome and often the meeting extended to lunch and sometimes that included rice wine or beer.

By 2004 I knew some of these people quite well and we had good discussions. With only one exception, they were all men. There had been a woman Vice-President in one commune, but by 2004 she had disappeared. They were always eager to hear if I had any new ideas for them, keen to talk about football, or the folly of the Westerner's wars in Afghanistan and Iraq. While I may have gone to the field to gather information, I inevitably got caught up in commune life. One morning we got to a commune HQ by 8 a.m., ready to go to the field, but found it lifeless, everyone was sitting around looking dazed and shocked. They said the previous evening the Vice-President and others had gone to inspect a dike wall, in fact they saw us on the way back and asked if we would go and have a drink with them. I was tired and knew we still had several more days of fieldwork and I declined, also I suspected the drinking could be heavy. Unfortunately, on their way back later that evening on a damp road the Vice-President had slid off his motorbike into a limestone pillar a shop front, hit his head and died instantly. Our meeting leader, who I now knew well, suggested it would be appreciated and 'you will get respect' if I would go to the man's house and pay respects to his widow and family. I asked for, and was given, an envelope. Fortunately I had a Bank of England £10 note in my wallet, so we went to the house and joined in the Buddhist wake and left the envelope. There was no fieldwork that day. At this point I felt my research was quite

participatory, and I was probably as close to the people I wanted to understand as I was likely to get.

3.5 Investigating the effect of high dikes

3.5.1 Planning the work

After fieldwork in 2003 the evidence indicated that the scope individual farmers had for making farming decisions was constrained by the height of the dikes. In effect, whoever made decision about dikes pre-empted and set the framework for all the other decisions. I made the question of how that decision was taken the focus for the final stage of fieldwork. The research question for this part of the fieldwork was: who makes the decision to raise the height; how is that decision taken; and how do high dikes affect people from different wealth groups. Three approaches were planned to answer these questions. In the first approach, working in three communes, two where we had already worked and a third where a high dike had been in place for several years, we would hold meetings with a range of informants and ask what people thought about high dikes, the advantages and disadvantages. We would use a participative method to agree on proxy definitions of rich and poor and ask the meeting to tell us where we could find people of different wealths who might have experienced the dike in different ways. That would lead on to a series of household interviews, twenty four in each commune, using a mixture of closed and semi-structured questions. This would indicate what were the effects, or anticipated effects, of high dikes for different wealth groups.

The second approach was to convene focus groups of older people and ask about changes to the environment over their lifetimes, and younger groups to ask about the effect of dike building on health, education and transport. The third approach was to interview a number of 'key informants', located at senior levels within the province and beyond, about dike building. I planned to ask for an interview with the President of the People's Committee for the province and one or two other senior members of the provincial government, and senior staff

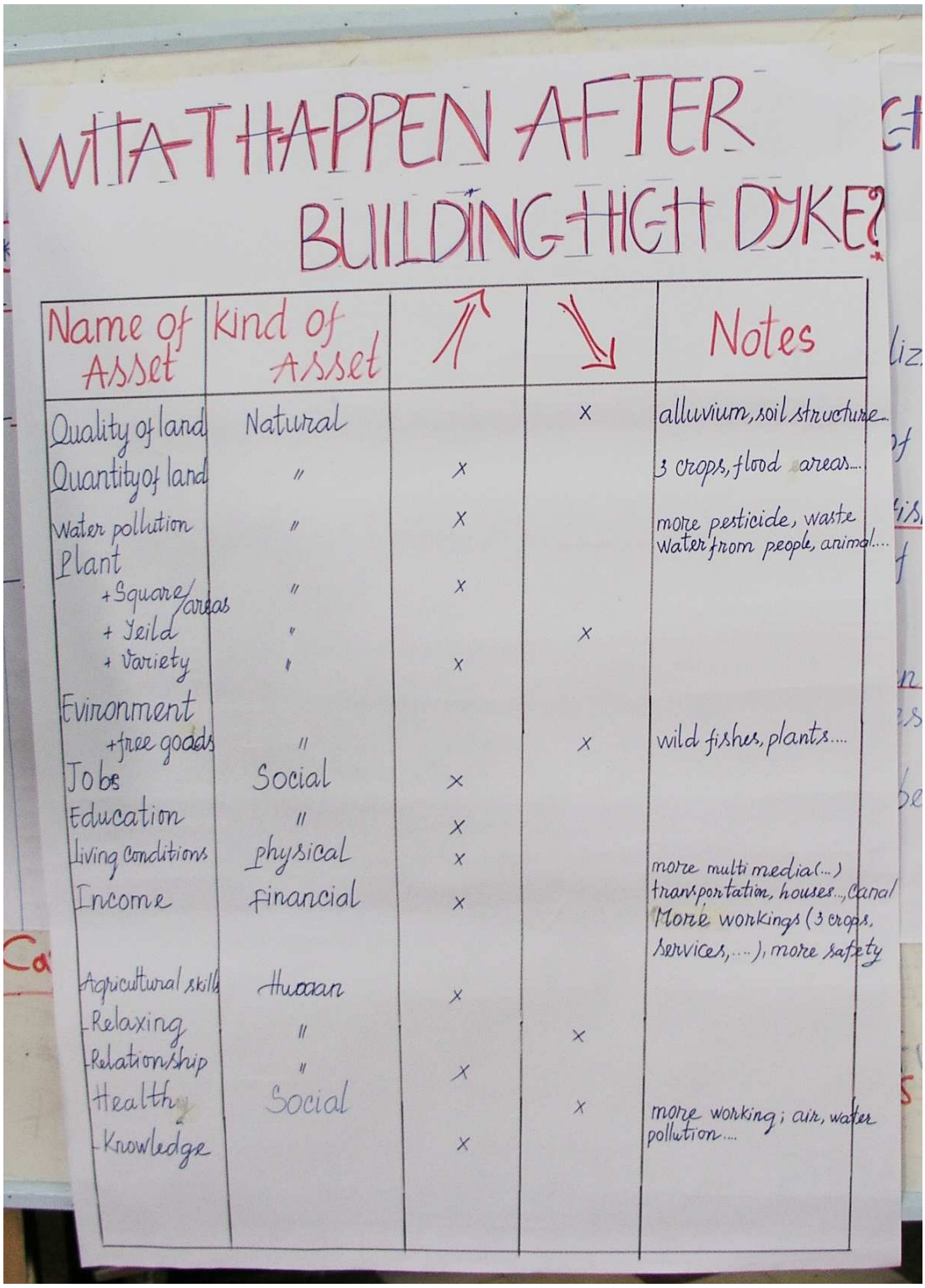


Figure 12 Summary of brainstorming with teachers on the effect of raising the dike

This was developed with staff who were training to investigate the effects of dike building. (author, 12 May 004)

staff at the Cuu Long Rice Research Institute (Vietnam's version of IRRI in the Philippines) to hear about the impact of high dikes on agricultural, and finally to ask for an interview with a senior member of staff at the Vietnam Environmental Protection Agency (VEPA). Unfortunately, due to family ill-health, set out earlier in Section 3.2.2, some of the second phase and all of the third phase of this work had to be abandoned.

After training eight teachers to use social science methods in order to work as research assistant (Section 3.2.5), we brainstormed the issues around high dikes (Figure 12). I also needed to find a person who was willing and capable of leading these meetings.

3.5.2 Group meetings in three communes

Meetings were arranged for us at the HQ of each of three communes. We asked commune Leaders if they would invite a group including: farmers with different water regimes; landless people, women heads of households; a person from education, one from health; two or three people who bought and sold; and one or two commune staff. One member of the team led the meetings, guided by the script we had developed with her. At the meeting we gave people from different backgrounds cards of different colour as name labels, and a stack of small cards of the same colour for writing on and a pen. We began with a general discussion on the effect of raising the dikes high. Research team members acted as facilitators and one member recorded this on flip charts, three members took notes. Later on participants wrote their views on their coloured cards, so we learned the views of different groups of people. Most people wrote cards for themselves, only one or two used assistants to help them, an indication of the high level of literacy among participants. The evidence they gave us informed the next piece of work and has informed the empirical chapters of this thesis.

We then asked people to tell us how they would know if a home was rich, poor, or in between, that is we sought proxy indicators for household wealth. Again, we did this with coloured cards (see Figure 13), and participants put their cards up, rich on the left, poor on the right and between rich and poor in the middle. Finally, we asked the meeting to tell us where we might find households of different wealths in the commune, also of different conditions of household health (ill health was frequently mentioned as a consequence of high dikes) and locations where children were not good at school attendance (improved school attendance was frequently mentioned as an immediate benefit of the high dike).

Figure 13 Identification of proxy indicators of wealth

On the left are the indictors of rich households, and on the right of poor households. The space in the middle is for 'in between rich and poor'. The colour of card indicates the origin of the person making the comment, such as with land, landless, traders, officials, health workers, school teachers.

(Photo: Miss Pham Huynh Thanh Van, June 2004)

Figure 14 Participatory mapping.

The participant who is starting to draw the map is the commune post man.
(Photo: Miss Pham Huynh Thanh Van. June 2004)

To capture this we had a discussion about where we should go to find people with these different perspectives. In each case a volunteer came forward to lead map drawing with suggestions of where we should go to interview people. This exercise was successful, each meeting produced a map (Figure 14).

At these meetings there was a lot of free-flowing discussion between participants as well as with research staff. I had no sense that commune officials were 'controlling' what was being said. Beforehand I asked officials if they could make available sufficient soft drinks, green tea and biscuits for everyone, and at the end of the meeting each participant was given an envelope with a 10,000 VND note (£0.50) in it. On the way to meetings we sat down to breakfast together (Figure 15), afterwards we ate lunch together. These team meetings were essential to give members coonfidence and ensure we were all 'on-message' about the programme. At lunch afterwards we discussed what we had learned, about the processes we had used as well as answers to the research questions.

Figure 15 On the way to the field: team breakfast

(Photo taken by the owner of the breakfast shop. June 2004)

In the following days the notetakers, three at each meeting, translated and reported all they had written down. These meetings in communes, involving a wide range of individuals, were the most ambitious activities planned and undertaken in my fieldwork.

3.5.3 Household interviews on the effect of high dikes

The next step was for the research teams to interview households in the areas identified at the group meetings. In each commune officials identified households for us to interview in the areas identified at the meeting. At interviews, teams used the questionnaire we had developed. The questions, which had come from our training meetings and from the group meetings, were arranged in groups around the following topics: crops; health; education and extension; transport, travel and information; jobs, finance and credit; environment and irrigation; houses and land. There were also questions about the effects of dike building on livelihoods which were tailored to the conditions of each commune: in one a high dike had been in place for several years; in another, part of the commune had just been surrounded with a high dike; and in the third the dike was still in the planning stage. After the first day's work we reviewed the questionnaire, decided there were too many closed questions and that needed to be improved; one team had failed to agree on who was going to take notes, so they had gathered very little information. Eventually, four teams interviewed the planned twenty four households in each commune. While a few people wrote reports for me in English, it had been my plan to discuss each household with the team that visited it. This was an exhausting and very time-consuming process. Not everyone's English language was at the same level, and one or two were quite sparse and we needed help from a third person with better English. Sometimes I wondered if it would have been better to have done all that fieldwork myself, but I had neither the time nor the energy for three weeks of intense fieldwork at the start of the monsoon rains, and I was very grateful for their help. This was another example of the constant two-way

process that marked all my fieldwork in AGU: the staff got the benefit of training in fieldwork methods and in English, and payment; and I got wide access to the field and their knowledge. Just as these interviews came to an end it was necessary for me to return to the UK.. As a result, not all interviews had been transcribed. I was fortunate to be offered help by my original Vietnamese notetaker, who was involved in this work as well. After I returned to the UK she transcribed the remaining interviews and notes from the meetings, and sent them to me. Without her assistance that work would have been incomplete.

3.5.4 Focus groups on environmental transformation

The purpose of the focus groups was to ask longer-term residents about environmental transformations in their area: what had changed, when had it happened and what had led to the change. There was also a plan to meet health and education workers, but as with interviews of the key informant, these meetings did not take place. Two meetings about environmental transformation were held in two communes, four meetings in total. Meetings were arranged by commune officials at our request. Each meeting was attended by six or seven people, ranging in age from the late fifties to eighty one years old, with roughly equal numbers of men and women. I took my Vietnamese note-taker and two other research assistants. Meetings took place on the verandas of houses; I supplied tea and soft drinks and each participant received an envelope with 10,000 VND at the end. We asked questions about how agriculture had changed in their lifetimes, for example with the use of fertilisers and pesticides; the digging of canals locally; changes to the abundance of free goods; the coming of August dikes and what they had to say about high dikes. We also talked of changes in education and health and the size of the population. Meetings lasted about ninety minutes, men and women seemed to contribute equally to the conversation. One lady who came said nothing. She was tiny and very hunch-backed and arrived perched on someone's back. After she left I asked why she had come, "*because she wanted to see the foreigner*".

3.6 Analysis of the data

Initial data organisation in 2003 led to the decision to change the focus for the remaining part of the work (Section 3.2.2) For the reasons stated above I decided to focus on the decision to raise the dikes to a high level, how it was made, who gained and who lost by it.

After I returned from the field I read and reread my data to identify themes. At the same time I read theoretical literature and identified a number of areas that would enable me to use my empirical materials to address particular theories. This was a time consuming and at times very frustrating process. It required me to leave my comfort zones of knowledge and enter new areas, for example about communism and the rise and fall of CMEA and how Vietnam's communist path has differed from the paths of China and Cuba. Most of all I had to look more critically at what I had seen and heard in the field. I needed to recognise the weakness of some of my data, while other aspects had strengths . Once I had decided on the paths to be followed, and accepted the comments of others, I had to leave out far more of the data than I used. In Chapters Five, Six and Seven I use my empirical materials to address questions raised by theoretical literature.

3.7 Ethical and theoretical issues

This research was challenging for the reasons set out in Section 3.1. Not all the issues raised in trying to work ethically in a developing and socialist country can be overcome, but it is important to be aware of what they are and to understand the limitations they place on the researcher when interpreting data. Section 3.5 sets out the main issues identified in the literature so that how they were dealt with in this research can be accounted for.

3.7.1 Ethics of fieldwork in a developing country

Carrying out research ethically in a developing and socialist country involves a recognition of the asymmetries of power in relationships between researcher and participants, and on occasions between researchers and gatekeepers as well. Asymmetries operate at several levels including when gaining access to the field, when engaging with people with different cultural norms, and subsequently in the creation of knowledge (Scheyvens and Storey, 2003; Kvale and Brinkmann, 2009). Access to the field may be controlled by powerful elites who in return for, or even as a condition of, granting access, may ask for, even demand, access to the data, even the transcripts, and insist on influencing the way findings are presented (Flowerdew and Martin, 1997). Both researchers and participants are subject to asymmetries of power

Obtaining 'informed consent' whether in writing or verbal, from participants who may be illiterate, or if literate may not able understand the possible implications of what they are being asked to do, may challenge researchers' adherence to their ethical principles (Scheyvens *et al.*, 2003).

Behaving in a manner which respects cultural norms may be difficult to achieve in practice. For example, if the custom of the society is for the man of the house to speak on behalf of the family, it is important to be aware at all times that other views may be available, but not voiced at interviews (Scheyvens and Leslie, 2000) and attend to these voices separately. In this research, the Vietnamese notetaker would try and have a conversation with some of the women in parallel with the conversations I was having through the meeting leader.

The gender of the researcher has implications for fieldwork (Scheyvens and Leslie, 2000; Cornwall, 2003), as does their age (Desai and Potter, 2006). Considerable attention has been paid in the literature to the need for researchers to consider methods that will be inclusive of participants of different ages, but

less attention has been paid to the impact of the researcher's age on the data collected. As a white male, six foot tall and in my sixth decade I needed to be aware of how the people I wanted to hear from might see me in the field (Figure 16). No remedy is possible, so it was important to recognise that people would place their own interpretations on my motives for carrying out research.

Previous researchers may have visited the location you want to work in already and may have set norms and expectations in the minds of potential participants which you are expected to follow. This did not happen here, although, as explained later in Section 3.3.3, I was fortunate to have as my main gatekeeper one of Vietnam's foremost agriculturalists and rice scientists. Occasionally, potential participants display what Mama (2000) and McDowell (2003) have described as research or participation 'fatigue' and may be reluctant to engage with your work. A counter to that may be requests for payment to take part, so research becomes a commodity to be bought by the researcher (Grace, 1998; Scott, *et al.,* 2006), which in turn leads to questions about the validity of the outcomes. In this work it was possible to construct an exchange. I contributed to the development of an undergraduate curriculum for An Giang University, and in return they supported and facilitated this research

Figure 16 My location in the field

In the field I was unmistakeably different from everyone else, I clearly had my own narrative; and my perspective had been shaped by my own history. It was important for me to remain honest about the differences between me and participants in my research. (Photo: Pham Huynh Thanh Van, 27th January 2003)

There are many aspects to appropriate behaviour in the field (Leslie and Storey, 2003). This includes wearing appropriate clothing, using the correct language, eating food with people, talking part in festivals as well as being as observant of local customs and behaviours as possible. This society may have been located a long way in physical distance from the Northern roots of Vietnamese culture (Section 4.4), but it was still Confucian in the way people were shown respect, for example by using the correct pronoun when addressing more senior people and accepting that respect when you are the recipient of it. This was one reason for learning some Vietnamese. Another aspect was eating with colleagues and accepting daily hospitality and, when the occasion arose, attending the wake of an official who died between one day's work and the next (Section 3.3.7). Sometimes when I was tired and hot it could be difficult to concentrate on the research when the householder wanted to interrogate me about England's poor performance in World Cup football, but this may have been the price to be paid to build trust, to be invited back, to be given more information than minimum answers. These aspects frequently do not feature explicitly in codes of ethics, yet they are important for developing the 'personal social relations with the researched' (Robson, 1997, p.51). Before I began this fieldwork I undertook a session on 'research ethics' and completed the necessary documentation at my institution in the UK, but when I got to the field I felt underprepared and sometimes overwhelmed by the multiple dimensions involved in trying to behave 'ethically' in the field.

In the field, particularly where foreigners may be a novelty, some interviewees are proud to take part, perhaps eager to meet a foreigner, but it should not be assumed that they want their names or locations to be made known when the data is published (Cupples and Kindon, 2003). 'Because of the potential risks associated with revealing respondents' true identities, no other consideration should be allowed to supersede this fundamental principle' (DARG, 2003). Where access to the field can only be obtained through gatekeepers, it will be difficult to conceal at the local level who has participated in the research,

but a strenuous effort should be made to conceal who said what, for example by the use of pseudonyms, in any texts produced.

In this research all the arrangements, the selection of households to visit, were made by officials and it was unusual not to be accompanied by one of them at each interview. On my first arrival in 2001 Professor Xuan said to me within the first hour that if anyone asked me what I was doing I should say I was a scientist and "*everything will be okay*". What was important was to listen very carefully to all that was said and later to reflect carefully on what it could mean and discuss those possible interpretations with university colleagues. I was surprised to be told openly by interviewees of their objections to policies, for example to the raising of a high dike. I did not seek to find out what people had done in the years before and immediately after reunification, yet many people told me about losing and gaining lands at that time. That information has been critically important to understanding differences in household wealth among farmers today who seem to have quite similar assets (Chapter Seven).

Identities of interviewees have been guarded in two ways. First, individuals outside of AGU are not referred to by name in this work. I used household numbers, a system of identification that was known to me and the three people who went to households with me, but not used in discussions with commune officials. Second, the locations of the forty six households we visited in the first two years have only been shown in general terms on the maps of two of the communes (see Figures 48 and 50). In addition, for the reasons set out earlier in this chapter, eight years have passed since the household fieldwork began and that passage of time will also provide some anonymity.

In the field, many dilemmas appear and how they are dealt with casts some researchers as 'ethical absolutists', with a clear-cut solution to each dilemma, and others as 'ethical relativists', who are 'constantly debating, negotiating and reflecting on such dilemmas in the course of their fieldwork…'it is your personal characteristics—ideally, a combination of integrity, maturity and

sensitivity to the local cultural context---which you will need to call on to guide you' (Scheyvens, *et al.,* 2003, p.166). In this debate I have placed myself at each point at different times in this work. Sometimes I was a realist, as when I accepted I could not do participant observation and I could not choose the individual households to visit in 2002. At other times I have been an absolutist, as when I developed a way of asking a group of people how they would know if a household was rich or poor, or in presenting maps with rather vague indications of where households were located.

3.7.2 Positionality

Harding (1987) argues that so-called value-neutral, objective, disinterested scientific research fails to recognise the value-laden process which generated it. England (1994, p.87) argues that 'fieldwork is intensely personal, in that the positionality and biography of the researcher plays a central role in the research process, in the field as well as in the final text'. While England was arguing this to be the case in quantitative research, and Harding was arguing more generally for qualitative rather than quantitative research, the points they are making are important and relevant to research of either kind wherever it is carried out. When we set out on research we have, as Haraway (1991) has argued, 'maps of consciousness' which have been created from our individual mix of origins and life experiences. That consciousness then plays into all the meetings we have and the knowledge we create or play some part in creating; our positionality is inescapable. The challenge is to recognise what that position is and be alert to how it shapes the process and outcomes of our research.

When this research began I was sixty year old, a white male. My biography begins with a childhood in Uganda Protectorate in the late 1940s and early 1950s, where my father was a Community Development Officer but also spent a lot of time working in the Boy Scout movement and we attended church once or twice each Sunday. In the 1950s I travelled to Nairobi in what was then Kenya Colony, to attended a boarding school for the sons of Europeans. There I

heard a very wide range of views expressed about other races, from the sons of Afrikaner farmers to the sons of British missionaries in the Belgian Congo. This was not an ethnically diverse experience, the only real opportunities to meet other races were at Boy Scout camps, when I worked on a farm in Kenya in school holidays and when I attended an Outward Bound School at the base of Kilimanjaro and occasionally through a church. After completing a Teacher Training Certificate in 1963 I joined the British Antarctic Survey and after some training I worked as a meteorological assistant in the South Shetlands and South Orkneys, spending two and half years there. I next worked in East Pakistan, this time for the British Council on science education, and in 1971 I was living less than a kilometre from where the civil war broke out in Dhaka which led to the birth of Bangladesh. Next came twenty years teaching in secondary schools in Central Scotland, during which I developed an interest in how new teachers learned to teach and the part schools and other teachers can play in their development. This eventually took me away from school and into work on the structure of teacher training, which led first to a teacher training college in Scotland, followed by periods working for government to develop policy and training materials for teacher mentors, in Edinburgh and in London. Finally, I drafted a consultation paper on continuing professional development for the teaching profession in Scotland. The next step was a complete change-I took a masters degree in agricultural systems and from there to Vietnam and this research. There were numerous life-experiences that fed into this research, including a long-standing interest in agriculture in a developing country, the violence that sometimes accompanies the birth of new nations, how people learn, and curiosity about large flood plains and how they are used.

Several times I was asked by commune leaders and farmers to bring them a new 'technology', that is a new strain of plant or animal, next time I came, and I had to be honest and say that I could not. I would go on to say that even if I could I would not want to advise them what to plant or tend because they would be the ones who would suffer and lose should it fail. The temptation to be 'the adviser' was always present and needed to be resisted at every point. My

indirect contribution to farmers came from the area where I had experience, education and curriculum development, and as education was a subject that arose frequently in interviews, my contribution to AGU seemed to be a satisfactory answer. If some farmers said they did not want to meet me then that was not conveyed to me.

3.7.3 Fieldwork in a country with a one-party state

Undertaking fieldwork in social science research using qualitative methods in a country which has only one political party requires additional awareness and preparation on the part of the researcher. Western scholars have perceived the space to work in partnership with Vietnamese social science scholars to be limited, partly owing to a lack of research capacity in that country (Marr, 1988), but also, in the view of Marr (1993, p.346) because 'it remains to be seen how much lee way the [Vietnam Communist Party] will give to Vietnamese scholars to participate in research which the party cannot control'. That position has been changing, but the expectations held by some Western scholars of what they can undertake there sometimes needs to be modified, as was the case with Scott et al. (2006) in their respective research projects in Vietnam. I was positioned through my association with AGU and did not experience the limitations they report.

In Vietnam space for social science research is limited. Turley (1993) believed civil society was 'weak' and Gray (1998) that if it does exist it does not have independence from the state and was not able to challenge it. Sinh (2004, p.273), writing more recently about development planning and the coal mining sector in Vietnam, perceived there was space for journalists and scientists to establish a discourse which 'challenge[s] the usual practices of government and business [in respect of development and its environmental consequences]'. O'Rourke (2004, p. 196) confirms there are over 150 such environmental organisations in the country, but goes on to say: 'All of these groups are careful to avoid being overly critical of government policies and practices'. This was not

my experience, at least when working in a university. However that was a sheltered and privileged environment and the same may not be true beyond it.

Many western scholars doing research in Vietnam, including students undertaking fieldwork as part of a doctoral research programme, choose to work at a university (Kerkvliet, 1995, 2005; Lloyd, *et al.,* 2004; O'Rourke, 2004; Scott, *et al.,* 2006). In order to gain access to the field the researcher must gain the support of a partner organisation in order to apply for the appropriate visa. Once in the country the host organisation makes an application on the researcher's behalf to the provincial government. At this point the researcher may be asked to provide quite specific details of their proposed research questions and interview questions. Once the provincial government has approved the proposal it will issue a letter of permission endorsed with their official stamp and armed with that document it is possible to enter the field and begin to make arrangements at the local level. It is district officials who authorise where exactly the work may be undertaken, and only once that has happened will the researcher be allowed to visit the commune where they wish to work, seek their co-operation and negotiate the details of where, when and how the work will be done. It is normal for the researcher to be accompanied by a member of the commune staff when visiting participants. This sequence of steps may take two or more weeks to complete.

The decisions described above frame the work early Twenty First Century western social science researchers are able to undertake in Vietnam (Lloyd, *et al.,* 2004; Scott, *et al.* 2006; DaCosta and Turner, 2007). The key to moving from ambition, and rhetoric, to research in the field is the possession of the official, stamped document from the provincial government. Those were the steps I had to take in Vietnam and they resonate with those reported by western researchers in other one-party states, by Kurti (1999) in Hungary and Romania and Reid-Henry (2003) in Cuba, as well as Lloyd *et al.* (2004) and Scott *et al.* (2005), in Vietnam. Pierre Gourou, the French scholar of tropical geography, when carrying out field-work in the Red River Delta in the 1930s,

> ….travelled by car along the narrow dike roads dividing the rice fields ….. and was accompanied by Vietnamese interpreters, field assistants' and others, including on occasions one Vo Nguyen Giap, later to be the architect of France's ejection from Vietnam (Bowd and Clayton, 2003, p.151).

It is pertinent to ask whether Gourou too was required to obtain 'permission' before he accessed the field and carried out the fieldwork that led to his seminal work on the tropics, *Les Paysans du Delta Tonkinoise, étude de géographie humaine,* published in 1936? As a member of the colonial power, Gourou's work would have been framed by his location in French colonial society; it was just a different framing from the one experienced by Western researchers working in Vietnam today, but it was framing nevertheless. As I described previously (Section 3.2.1), I too was framed by the process through which I gained access to the field and how I travelled to and from it each day (Section 3.3.2)

3.7.4 Interviews, questions, samples and participatory methods

Interviews are flawed processes for data gathering, laden with ethical and power issues, according to Kvale and Brinkmann (2009) and therefore situated and partial; at a different location at a different time, different answers might be heard. Interpreting data into knowledge or theory is also flawed, involving as it does the ascription of meaning to text, flawed because that meaning comes from the context of the researcher, possibly more than from the participant (Rennie, 2000). This hermeneutic is deeper still when face-to-face interviews are mediated through translators and field assistants. Thus there is the respondent's impression of what is happening, the translator's interpretation of that response, which is then imparted into the translation and finally the researcher will impart further meaning to it, coming from their own prior knowledge and views, a different form of 'triple hermeneutic' to the one described by Kvale and Brockington (2009). The danger is that researchers will find what they are looking for, relativism, which may be idiosyncratic and particular to one

researcher only, where another researcher with the same interview transcript might ascribe different meanings to the answers. Imperfect as they are however, the interview remain a key tool to find out what others know, think, feel and wish for, but we must be clear about its limitations. As Munn and Drever observe (1990, p.65): 'Beware of being convinced that you have a truth'. It is important to seek other ways to verify what respondents have said. Typically this is done through the use of secondary sources and information from other respondents which enable the researcher to narrow the ambit of uncertainty by 'triangulating' what has been learned (Denscombe, 1998). In this research secondary sources were used after returning from the field and the short return visit in 2007 benefitted from that reading.

An interview should be 'an inter-change of views between two persons conversing about a theme of mutual interest' (Kvale and Brinkmann, 2009, p.2). However, to be effective and consistent, interviews need structure, typically through the use of an interview schedule, and this is even more important when working through translators. Researcher and translator need to have a clear, shared understanding of the purposes of the research as well as the questions to be asked. At interviews there needs to be a balance between questions designed to elicit hard data, such as land holdings, crops and fertiliser use, and others that encourage the expression of opinions (Overton and van Diermen, 2003). In this way 'why' questions, which go beyond the 'how', 'when', 'which' 'who', 'where', can be generated and asked. Further, and in the spirit of the 'inter-change of views', by asking questions that offer the possibility of pursuing different issues raised by the interviewee.

When the purpose of research is to make definitive statements about a population or a situation, a representative quota, rather than the entire population, may be drawn out for interview, representing variables such as age, gender, wealth, or other variable of the population, depending on the purpose of the work (Overton and van Diermen, 2003). However, in many circumstance, non-representative sampling is used, such as 'convenience sampling', such as all

the people in a convenient location; 'snowball sampling', where the researcher asks one respondent to recommend others who might help the research; and 'purposeful sampling', where the researcher deliberately decides where and who to interview based on some known characteristic (Overton and van Diermen, 2003). In this research I chose to do purposeful sampling. I did this because I wanted to met people with specific characteristics. I asked commune officials if I could visit households with specific characteristics, such as success and failure in agriculture; different technologies; different water regimes; and different ages. However, I had no part in identifying and selecting households that met those criteria, that was done for me. I trained staff to work with me so that we had a consistent approach and worked in the same way at each household.

3.8 Conclusions

This research was carried out using qualitative methods, particularly semi-structured and structured questions. Initially forty seven households in three communes were visited to collect data with a view to constructing a grounded theory of farmer decision-making. However, after two seasons of fieldwork it moved away from that to a more inductive approach because the data I was offered was very rich and I did not want to 'flatten it' by applying a complex process of analysis. This change was also made because when the data was collated it became clear that decisions about dike-building, particularly the heights of common dikes, pre-empted the scope individual households had for making their own decisions.

I was positioned in the field as a result of my relationship with three important gatekeepers. This will inevitably have influenced how I was seen in the communes and households. The initial fieldwork was carried out with two translators, but when the fieldwork focused more tightly on dike-building, I trained eight university teachers to work with me using qualitative research methods. Working with this team, I held meetings in communes to identify proxy indicators for wealth and map where we would find people who would have

different experiences of the effects of the dikes. Finally, working with the team I had trained, we visited seventy two households. This material was analysed to identify themes that relate to theoretical literature.

Fieldwork in Vietnam has not been a fraught process for me, as it has been for others (Scott *et al,* 2006). Instead it was richly rewarding, not only in the data I gathered, but in the friendships I made and the privilege I had to observe the lives of others, and no doubt to be observed by others in return. In part I had good fortune to link up with An Giang University, but from a broader perspective I believe I also benefitted from my previous experiences of living and working in developing countries.

Chapter Four

An Giang Province: a transformed landscape

4.1 Introduction

An Giang Province is located in southwest Vietnam, (Figure 17) on the border with Cambodia, where the two main branches of the Mekong River enter the country. Over the past 150 years seasonally-flooding marshes and forests have been transformed into walled, irrigated compartments growing two or three crops of rice each year. In 2005 the province produced nearly three million tonnes of rice, making it the country's largest producer (Table 2). It is also the province with the highest overall aquaculture production in terms of value, in the southern half of the country.

	Vietnam		An Giang (value and as % of all)	
	1995	**2005**	**1995**	**2005**
Rice production (million tonnes)	24.7	35.8	1.95 (7.9%)	2.94 (8.2%)
Value of agricultural produce (million USD)	5,490	9,140	276 (5%)	430 (4.7%)

Table 2 **Rice production in An Giang and Vietnam, 1995-2005**
(Source: GOSV, 2010)

This chapter sets the context where the empirical materials were collected. Section 4.1 lays out the administrative structure, physical conditions for agricultural production, and the land use and hydrology of the province. Section 4.2 describes three agricultural environments: flooding; within August dikes; and within high dikes. Section 4.3 aets out essential materials about the four communes where research was conducted.

Figure 17 Location of An Giang Province, Vietnam

(Source: based on Central Intelligence Agency map)

4.1.1 Administrative structure, population and poverty in An Giang

The province is divided into 11 units, comprising one city, one town and 9 districts, each further divided into wards and communes. This research took place in four communes, three in Chau Thanh District and one in Cho Moi District (Figure 18) The province is approximately 3,500 km² in area and in 2007 had a population of 2,250,000 people, giving it a density of just under 6.3 persons per hectare against an average density of 4.0 for the Mekong Delta overall (GOSV, 2010). The capital of the province is Long Xuyen City, which is connected by road to Ho Chi Minh City, a four hour journey by air-conditioned bus. The main road passing through Long Xuyen takes traffic from across the Delta to the border crossing into Cambodia. Transport by water is common for dried agricultural produce and by road for perishable produce. Numerous ferries cross the river and canals and services are frequent. A bridge across the Hau River is being built at Long Xuyen and one was recently completed at Can Tho City, downstream of Long Xuyen. Can Tho City is the largest urban centre in the Mekong Delta.

The population of An Giang Province is made up four ethnic groups: Kinh, who make up approximately 95% of the population; Khmer, who make up 4.2% of the population and are located mainly on the hilly border with Cambodia; the Cham, who are few in number (0.6%) and are located around the border town of Chau Doc; and the Chinese who make up 0.7% of the population overall and are located mostly in Long Xuyen City (Personal communication. Nguyen Thi Hong Dao, Vice Director, An Giang Foreign Affairs Department, 8/07/10).

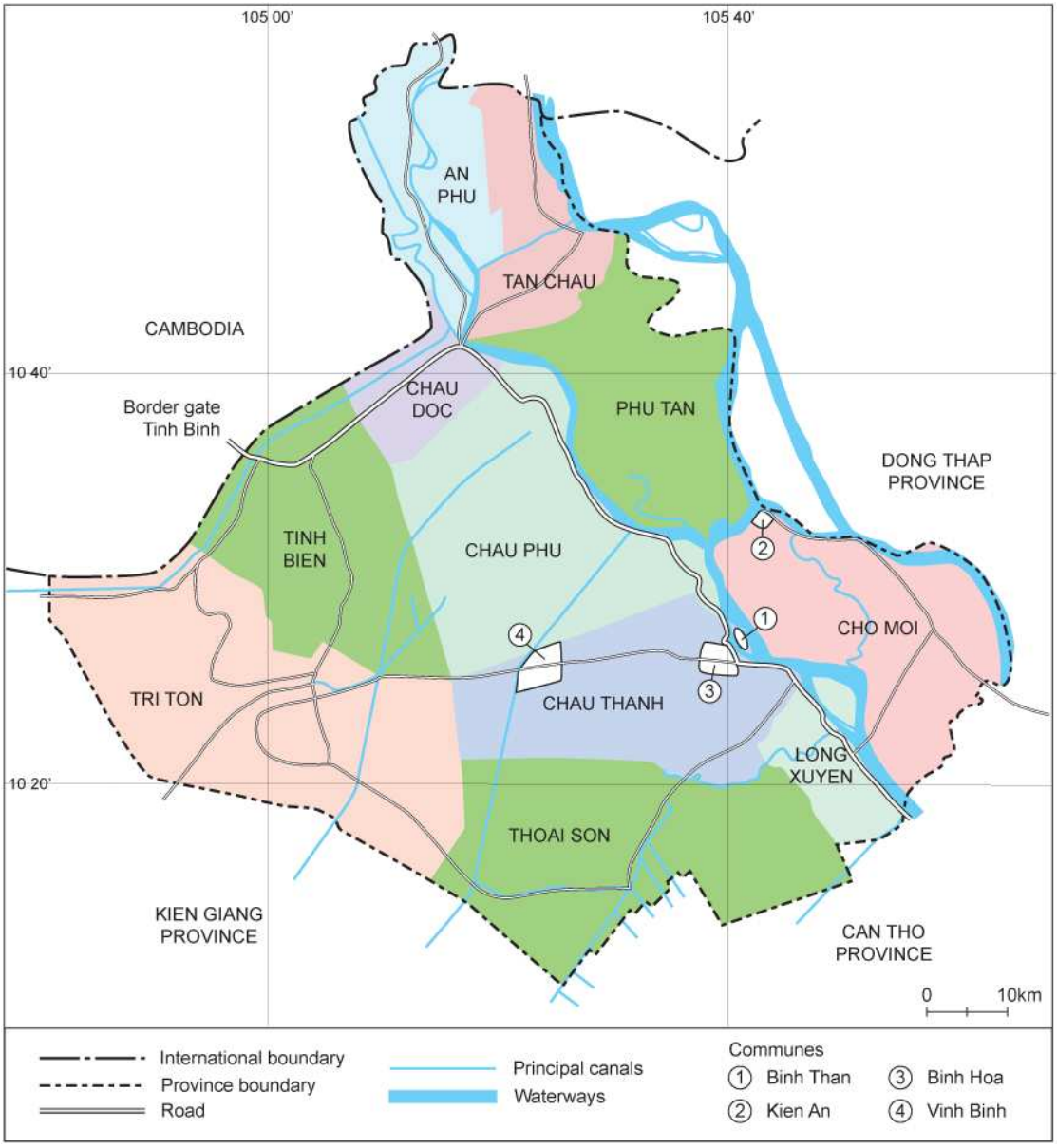


Figure 18 Administrative divisions of An Giang Province

The communes where research was carried out are numbered.

(Source: based on map of An Giang People's Committee)

In 2003 the Inter-Ministerial Poverty Mapping Task Force (2003), using data from the 1998 Vietnam Living Standards Survey (VLSS) and the 1998 Vietnam Population Census, identified the poverty ratio for the province as 40.29% overall, rising to 45.55% in rural areas and dropping to 20.7% in urban areas. The rates of poverty in An Giang were higher than for the delta as a whole: 35.85% overall, 39.70% in rural areas and 17.41% in urban areas. However, using preliminary population data for 2003 and the same methodology, and VLSS data, the General Office of Statistics of Vietnam (GOSV) gives the poverty ratio in the Mekong Delta as 17.5% in 2002, dropping to 15.3% in 2004 (GOSV, 2005). While there may be room for correction to these figures once the findings of the ten-yearly population census of 2009 are incorporated, there are clear indications that the incidence of poverty in An Giang Province is falling. A likely reason for this is the continuous rise in the value of its agricultural and aquatic produce. The reduction of poverty is an issue that arises in Chapters Five and Seven.

4·1.2 Physical conditions for agricultural production

The province is located downstream of a catchment basin of approximately 700,000km^2 in area and a river more than 4,500 km long. Each year an estimated 414km^3 (Hori, 2000) of river water brings abundant water laden with organic and inorganic materials throughout the year. River water contains approximately 500g/m^3 of sediment, in canals 50g/m^3 and in fields 30g/m^3 (Personal communication. Dr Bui Dat Tram, Director, Centre for Hydrometerological Forecast of An Giang Province, 10/07/02). Until the introduction of HYV rices in the late 1960-70s, this organic matter was the principal source of nutrients for agriculture. Since the 1970s, rice production has shifted from a single crop of long-duration, low-yielding rice to multiple crops of short-duration, HYV rices. The adoption of HYV rices has been accompanied by a steadily increasing use of artificial fertiliser.

The annual mean temperature is 27.5°C and annual mean rainfall 1189mm (see Table 3 for further details). These resources of land and water together give An Giang Province the potential to be a major producer of rice and other crops.

	Average	Maximum and timing	Minimum and timing
Mean annual rainfall	1189mm	October and November	
Mean air temperature	27.5°C	37°C - 39°C in March to May	January and February
Daily tidal amplitude (cm)		140-160 in the dry season	20-30 in the flood season

Table 3 Temperature, rainfall and tidal amplitude for An Giang

(Source: Statistical Office for An Giang province, 2005, and personal communication from Dr Bui Dat Tram, Director, Centre for Hydrometerological Forecast of An Giang Province, 10/07/02)

4·1.3 Land use and hydrology

Life, culture and agriculture in this province are tightly interlocked with the hydrology and the seasons of the year. Long Xuyen City, the capital lies 120km from the East Sea, yet despite that distance, the river rises and falls with every tide. The surface of the province is not level, in places there are large depressions which fill with 3-4m of water in the monsoon season. This is an accumulation of rainwater from the monsoon rains and river water which flows out of rivers and canals. The annual flood may last from early August to late December, although timing and depth vary from year to year. The fall in elevation between Long Xuyen and the sea is only 6m and when the river is in flood, water moves through this area only slowly on account of the immense volume coming down the river, and as a result it flows out of watercourses and covers the fields. Canals have been constructed in the area at different times for defence, communication, irrigation and to drain away acidic water from newly-turned soils (Figure 19). In Cambodia *Tonle Sap*, the Great Lake, acts as a reservoir, with river water flowing out of the main river into the lake at the height of the floods and leaving it later as the current and volume in the main river decrease. This affects the amount of water and the timing of flooding

downstream in An Giang. A further, but more predictable variable, are the tides in the East Sea.

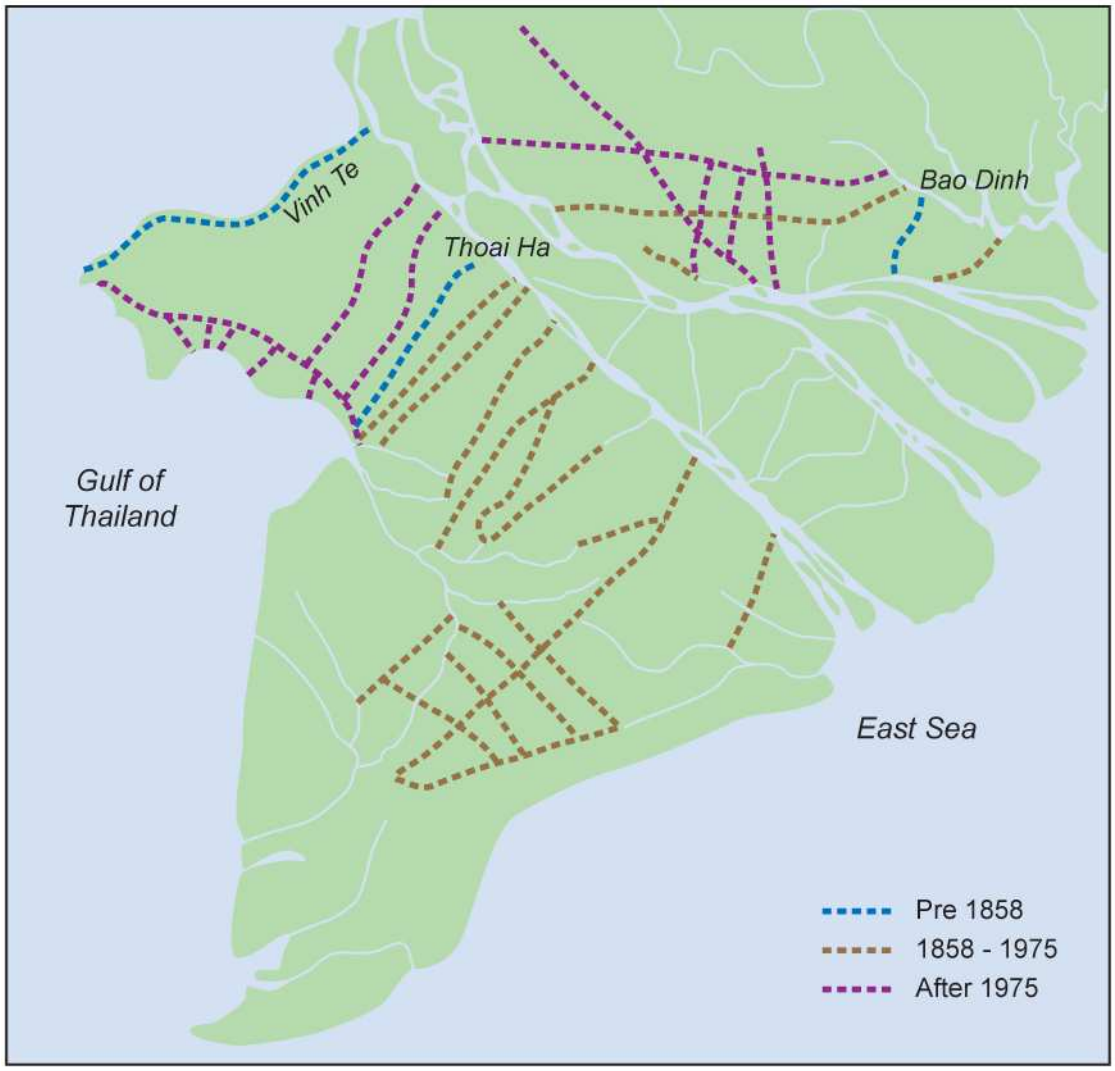


Figure 19 Canal construction in the Mekong Delta

There have been three major periods of canal construction: pre-1858; between 1858 and 1975 when many canals were excavated under French colonialism; and after reunification in 1975.)

(Source: based on Nguyen, Vo Tong and Tran, 1998)

The land area of the province is approximately 3,500 km²: four-fifths is devoted to agriculture and 94% of that is used to grow flooding and irrigated rice; 4% of the province is described as forest land; and 0.6% as 'unused land'. The remaining one-fifth consists of hills close to the border with Cambodia, another outcrop in Thoai Son District, and urban settlements. The choice of agricultural technologies is largely determined by the water regime and other environmental factors, availability of technologies suitable for each set of conditions, proximity to purchasers and processors and, since the beginning of doi moi, market pressure.

4.2 Agriculture in An Giang

In this province, rice is grown in three different environments: in flood waters without dikes; inside August dikes; and inside high dikes. Next in this chapter, each set of conditions is considered in turn. Later in the thesis, these descriptions form the contextual background for the arguments to be developed in Chapters Five, Six and Seven.

4.2.1 Flooding rice

The areas where flooding rice is grown are characterised by the land being inundated deeply, 2-3 metres, for part of the year and dry for the remainder. The varieties grown here are low-yielding, they take approximately six months from sowing to harvesting, little or no artificial fertiliser or other chemicals are applied, and yields are low, typically 2t/ha. The sequence of events is shown schematically in Figure 20. The ground is prepared roughly before the flood season begins. The land may have acid sulphate conditions, if so then the arrival of the first rain water dissolves this acidity, producing a strong solution on the surface of sulphuric acid (up to pH2.5), which kills fish and plants, and cultivation there can only begin after the acidic waters have drained or leached away.

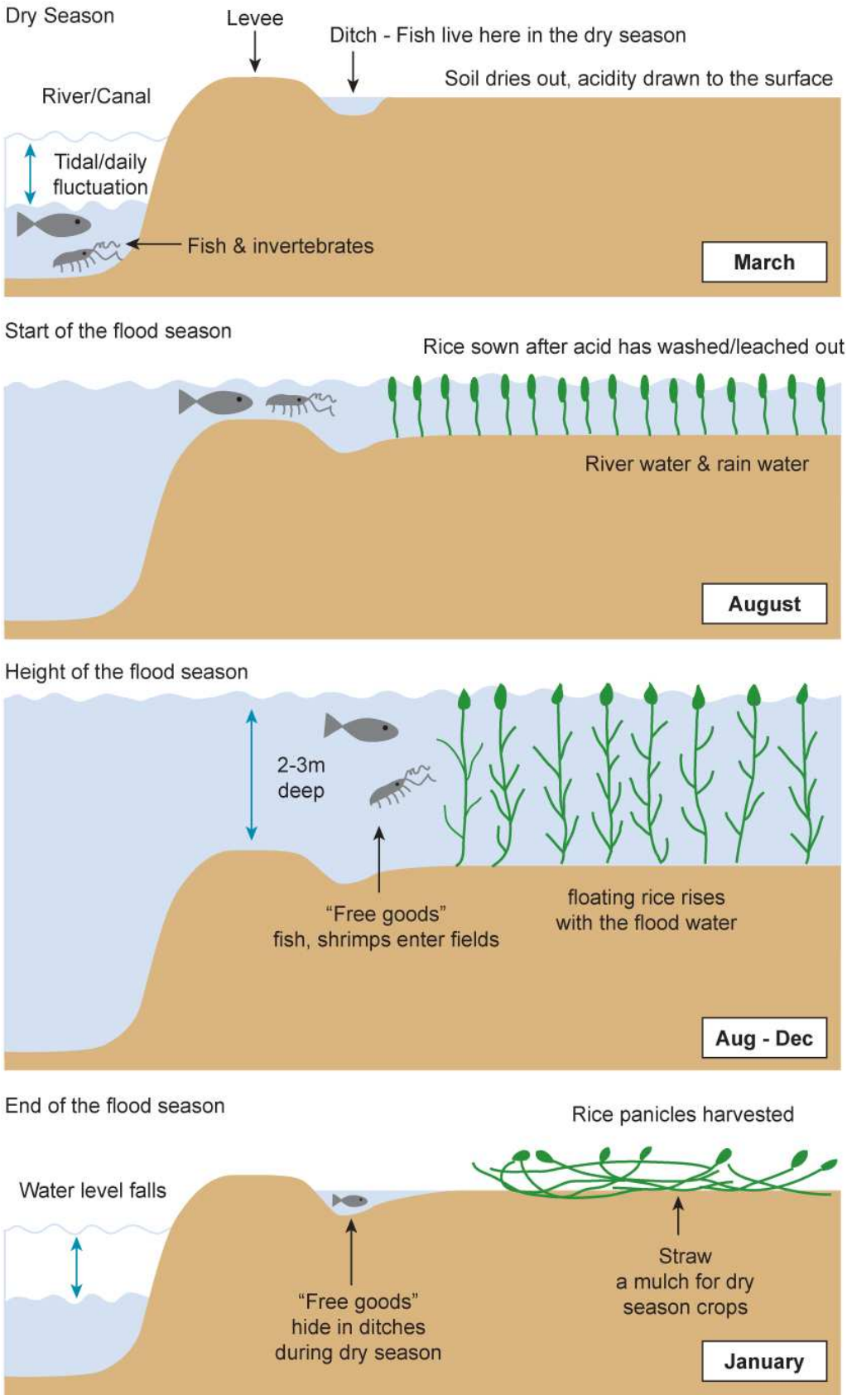


Figure 20 Flooding rice

(Source: author 2010. Based on personal communication, Vo Tong Anh, An Giang University, Vietnam. March 2005.)

Seeds are broadcast by hand, or seedlings transplanted from a seed bed. Transplanting is practised when the water level is expected to rise rapidly, possibly too quickly for seedlings to rise above it, so larger plants are used, but transplanting is an additional cost. Rice grown under these conditions has the ability to elongate rapidly and produce long strands of straw (Figure 21). A low retaining bank slows run-off from the field at the end of the flood season and provides a ditch where fish and invertebrates hide, potentially providing additional food for households in the dry season.

The area where this technology is practised in An Giang is now down to less than one thousand hectares in Tri Ton District and since 2005 this technology may have ceased (Personal communication. Vo Tong Anh, Dean, Faculty of Agriculture and Natural Resources, An Giang University, Vietnam. 17/03/10). Yields are low, one or two tonnes per hectare only, and farmers need to work large areas to make a satisfactory income, see Figure 21. To supplement their income, farmers grow Chinese onions, which are traditionally consumed at *Têt*, the Vietnamese New Year and command good prices. These are planted after the rice has been harvested and rice straw is used as a mulch, see Figure 22. Chinese onions are labour intensive as they need watering by hand. The returns on this crop are high, but as the investment for it comes from outside the community, local people do not benefit very much from it.

Figure 21 Flooding rice grows to two or three metres in length

As the water level in the rice field rises so the tip of the plant grows upwards in order to remain at surface level. Flowering takes place at the surface. As the water level drops the plant falls with it, coming to rest on the ground in a horizontal position. The panicles are cut off and threshed, leaving long strands of straw on the ground. This straw can be used for several purposes, including as a mulch to retain water in the ground for crop-growing in the dry season.

(Photo: Vo Tong Anh, with permission. 2005)

Figure 22 Rice straw used as mulch for an 'upland crop'.

Flooding rice produces straw two to three metres long, depending on the depth of the flood water. After the flood water has receded the dead plant stems fall to the ground. Farmers use this straw as mulch to retain water for crops in the dry season, planting seeds and seedlings in holes burrowed through the straw. The wet soil can be seen to the left of this photograph; to the right is a young cassava plant (*Manihot esculenta* L.). Crops grown in the dry season are referred to as 'upland' crops because they are not subjected to flooding. However, during the six month long dry season plants will be irrigated with water from a watering can once or twice a week.

(Photo: Vo Tong Anh, with permission. 2005)

4.2.2 August dikes

August dikes provide about 200 days or more free of floods, which is sufficient time between one set of floods and the next for two crops of rice to be grown and harvested. In this way approximately 75% of An Giang's rice land produces two crops per year (Statistical Office of An Giang Province, 2005).

The sequence of events is illustrated in Figure 23. By mid December, the highest daily level of water in the river and canals is normally lower than the height of the dike wall, although it still rises and falls with each tide. The group of farmers with land inside the dike meet and decide when to pump out the remaining water, or leave it to evaporate. Pumping out the remaining water can bring forward the start and finish of the spring paddy crop and maximise the time available for growing a second crop to completion before the next flood season. Farmers have 'pumping clubs' whose members meet and decide when to start pumping, how much it will cost and who is to be awarded the contract for this work. The cost of pumping water out is divided on the basis of area and the depth of water in a field; field boundaries are marked with low banks which need rebuilding each year. Those with land in the centre, which may be lower-lying than land near the wall, may try and delay the start until the water level is lower, in order to reduce their costs, while those with land near the edge are likely to want pumping done as soon as possible to maximise the chance of a second crop. Farmer-farmer relations, as exemplified by pumping clubs, is the subject of Chapter Six.

Land preparation takes 5-10 days. The soil is broken up, generally by small tractors, although some farmers still use oxen or water buffalo, and kept moist. At the same time, seeds are prepared in tanks of water until chitting, or germinating, has occurred. Chitting improves the establishment of seedlings (Farooq *et al.* 2006). Once the soil is ready and the seeds have chitted, they are sown by hand, although some farmers use drum seeders.

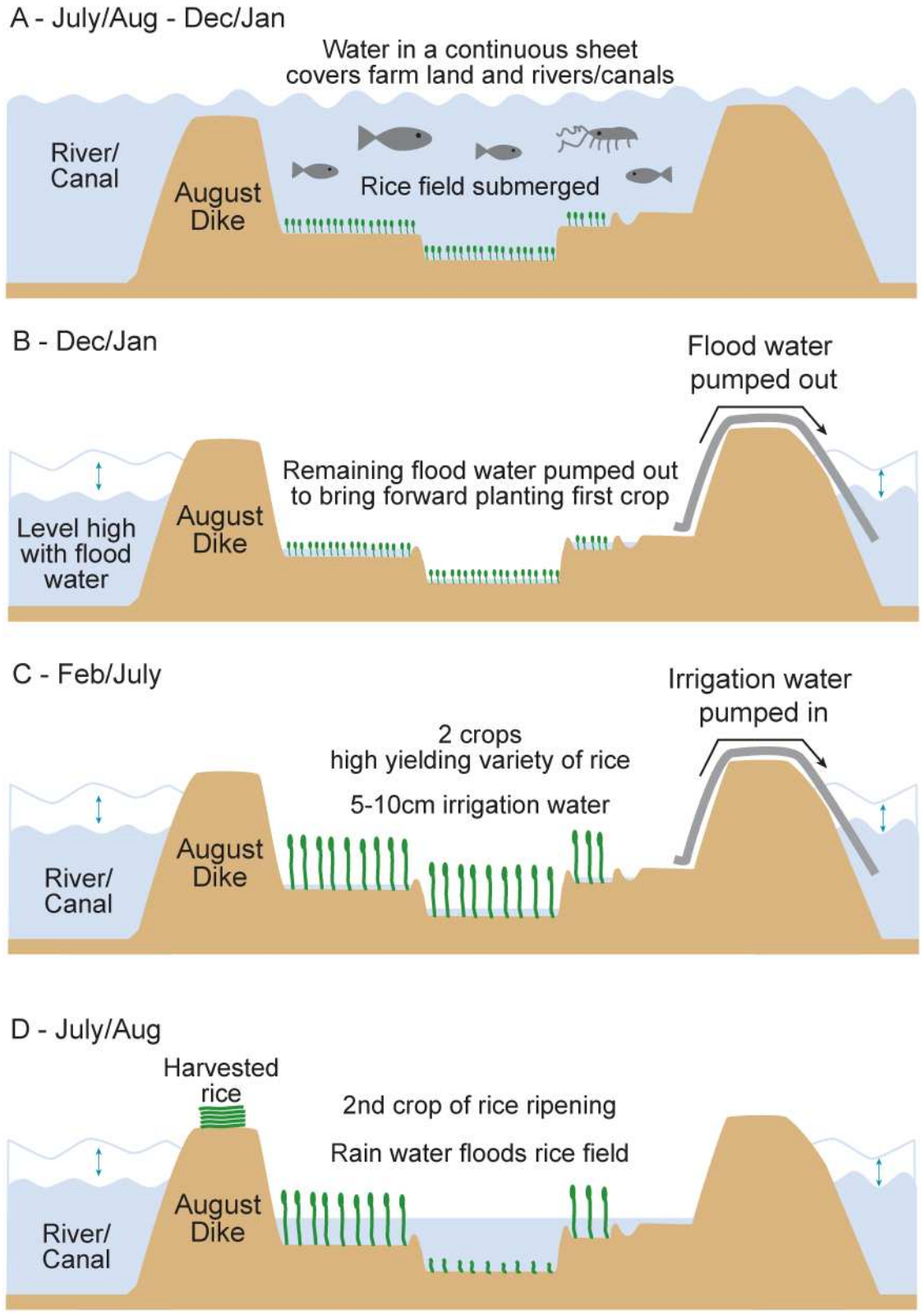


Figure 23 Annual sequence of events inside an August dike

Two crops of rice are grown between one monsoon season and the next.

(Source: author 2010)

Growth of HYV rice, from sowing to harvesting, takes approximately 95 days. Farmers prefer to keep 5 to 10 cm of water in the field, although they have individual preferences for the timing of the last irrigation.

In Vinh Binh Commune farmers used 0.75 to 1.1 tonnes of fertiliser (diammonium phosphate and urea) per hectare over the year, using less for the first crop than the second; farmers say the first crop benefits from organic matter deposited earlier by flood water. However, if the floods overwhelm the bank before harvesting of the second crop can take place, in the investment in fertiliser may be lost.

Harvesting is done by hand, although a small hand-steered cutting machine was seen on one occasion. Harvest teams of men and women travel around the delta, returning to the same farms at the same time each year to cut the crop. Rice stems are cut with a sickle or knife and gathered into loose bundles which are collected and threshed by machines driven into the field (see Figure 24). The still-husked rice is transported out of the field and spread out on the bank or even the surface of the road, to dry, although a few farmers owned their own crop drying machines. Once dry, rice is stored in sacks until sold. Some rice will be kept at home and may be husked by a travelling rice mill, built on the chassis of a lorry (Figure 25). Broken rice and bran are fed to fish, pigs, and chicken. Rice husks may be sold for firing brick kilns with the resultant ash being brought back and applied as fertiliser to the soil (Figure 26).

Figure 24 Rice threshing

Cutting has been done by hand and threshing is by machine. The chaff can be used as fuel for brick kilns and the resulting ash used as fertiliser. The straw may be used as a mulch for crops grown on the banks or as a medium for growing mushrooms, or burned and applied as ash fertiliser to the soil.

(author. March 2003)

Figure 25 Travelling rice mill

Milling produces four products: whole rice for human consumption; broken rice and bran for animal consumption; and husks as fuel for firing brick kilns. Rice ash may be applied as a fertiliser. (author. May 2001)

Figure 26 Rice husks being transported by boat

The likely destination is a brick factory where the husks will be used as fuel to heat the kilns. The resulting ash will be sold back to farmers as fertiliser.

(author. June 2001)

Farmers move quickly after the first harvest to plant the second, or summer-autumn crop, because delay may put the second crop at risk. The field is harrowed, the stubble is turned in, it may also be burned, and the soil irrigated. Preparation and sowing can take 5 days or even less. The second crop will be ready to harvest after a further 95 days, but by this time the water in adjacent canals may be high enough to flow over the banks and inundate the field. Once the second crop has been harvested the sluice gates are opened to admit water. Opening the gates reduces pressure on the dike in the period when the water level is higher outside than inside and will admit more sediment; early flood waters contain more suspended materials than water admitted later on.

The situation which often occurs inside August dikes at the beginning of August is summarised in Figure 27, when the level of water in the waterways is rising and the level of fallen rain water inside the dike is also rising. Farmers with land in the centre of the field are able to reduce their harvest costs by transporting cut stems for threshing to the bank by boat, rather than by hand. The temptation is to break down the top of the dike and allow canal water to enter so boats may be brought into the field and` used to transport the crop. Sometimes the harvest teams need to reach down into the water to cut the stems.

Flooding inside August dikes may last from August to November or later, depending on their location, the amount of rain and the volume of river, both of which vary from year to year. During this time fields and canals form a continuous sheet of water (Figure 28) sediment and a range of organisms enter fields, including seeds of 'wild rice' (Figure 29). The year's cycle of water events inside August dikes is summarised in Figure (30).

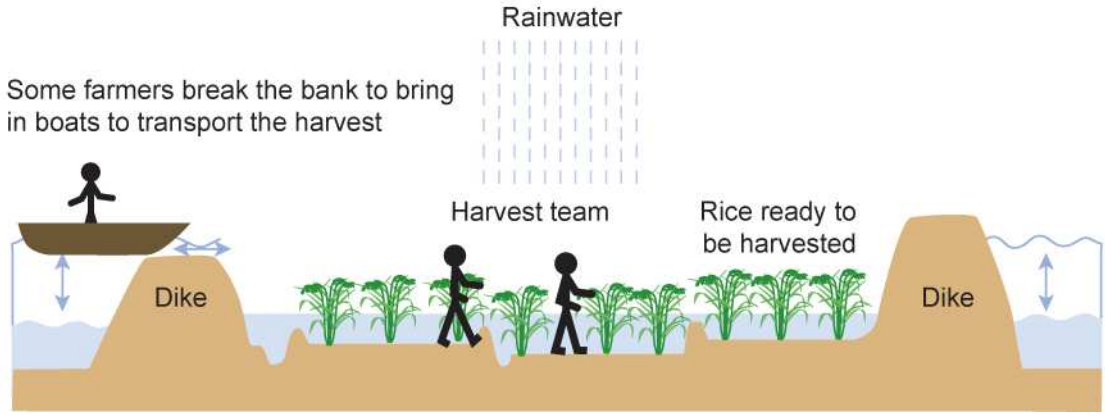


Figure 27 Situation inside August dikes at the beginning of the flood season

The level of water in the adjacent canal or river may be higher than the level in the compartment. At this point farmers with land in the centre may break down the top of the dike in order to take boats into the field. This endangers crops standing in the lowest part of the field and the harvest team needs to wade in order to cut the crop. When the waters go down at the end of the floods, the damages to the wall must be repaired to make the wall secure for the next season. The cost of repairing the wall is shared between all the land users in the compartment, it is not just paid by those who broke the bank.

(Source: author 2010)

Figure 28 Between August and November water in the canals and fields forms a continuous body of water

When this happens sediment, organic and inorganic, and many organisms, including fish and shrimps, enter the fields and are trapped there when the water level drop. (author. October 2003)

Figure 29 HYV rice plants invaded by 'wild rice' and grasses

Note the tall stems in the right centre of the image. Flood water brings nutrients in to the fields but also wild organisms, including the seed of grasses and other plants. These plants reduce the purity of the rice crop and its value as a seed crop is less. This crop is about 80 days old and should be harvested within the next ten to fifteen days. (author. June 2002)

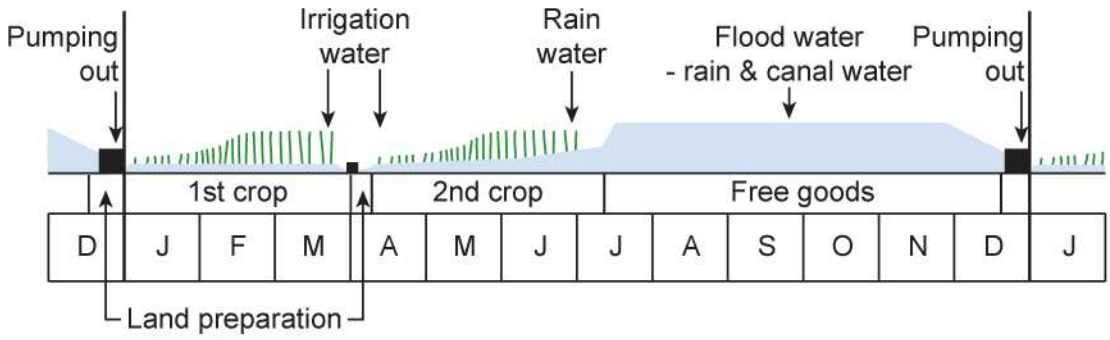


Figure 30 Annual cycle of rice growing and water availability within an August dike

(Source: author 2010)

The top of the dikes may provide important assets for farm households. Between one flood and the next, farmers use them to grow crops for consumption and sales and for keeping cattle on a short-term basis, often selling them before flood waters cover the bank. Most houses are built on the banks, with rice fields behind the house and the canal in front. Houses are built on stilts on the bank to avoid flooding at the height of the flood season (Figure 31).

Once the water level begins to go down, the broken walls need to be repaired and strengthened; if this is not done the dike may collapse at the start of the next flood cycle. The arrangements for repairing the walls and pumping out the remaining water are carried out by a 'pumping club', with all farmers with land inside the dike taking part. During the period when the fields are filled with water a number of other technologies are available (Figure 32).

4.2.3 Technologies and food chains inside August dikes.

The area inside an August dike allows other technologies to be deployed in the flood season. One striking example is the erection of nets on paddy land to cultivate shrimps (Figure 33). Once the second rice crop has been harvested and the field begins to flood, a fine net cage is erected and small shrimps are introduced. These may be small shrimp caught in a waterway, or cultivated shrimps which have been purchased from specialist growers. They may be fed broken fish carcasses or purchased food. After three or four months they are harvested (Figure 34). During the flood season fish ponds are overwhelmed by flood waters. To prevent fish escaping a net cage is suspended inside the pond, or mesh walls are dug in around the edge. At the end of the flood season they too are harvested (Figure 35).

Figure 30 House located on stilts on an August dike

The height of this house above the surface of the water in the canal indicates the expected rise in water level during the flood season. (author. March 2003)

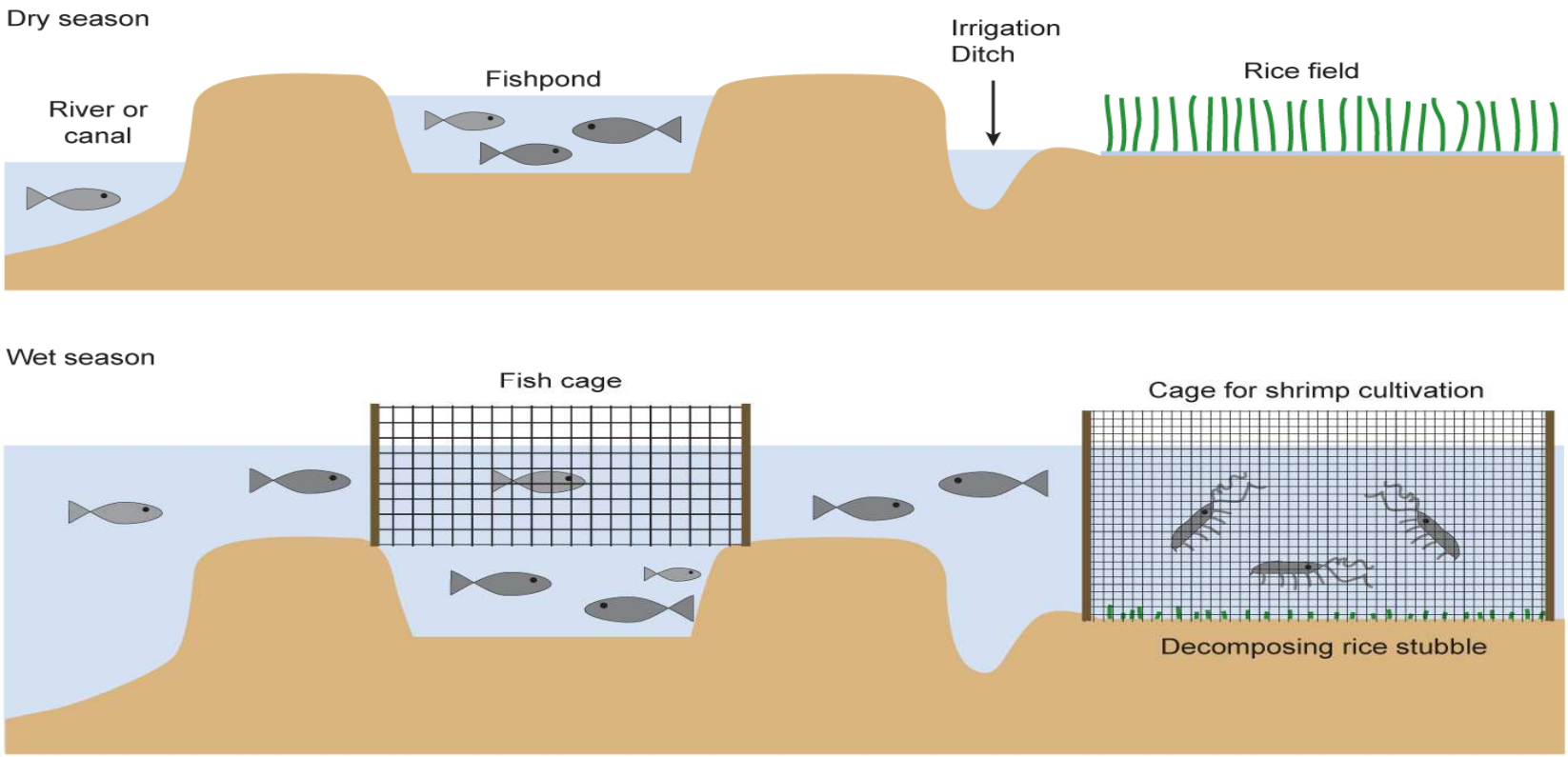


Figure 31 Cultivation of fish and shrimps in a flooding area

To prevent fish from escaping, a net wall is hung inside the pond or dug into the edge. The net may be stocked with wild fish or purchased stock and fed with a range of foods, including fish offal, fish meal, crabs and snails trawled from the river or flooded fields. Shrimps are cultivated in a net cage erected on rice stubble. The stubble nourishes invertebrates and they are consumed by small shrimps which have been caught in water-ways or purchased from a supplier.

(Source: author 2010)

Figure 32 Harvesting shrimps from a net cage at the end of the flood season

The farmer harvested about 500kg, receiving about 45,000VND or 3USD/kg. (author. December 2007)

Figure 33 Harvesting fish from a netted pond after the flood season

(author. December 2007)

A wide range of products may be caught in the water which enters fields from the river in the floods (Figure 35). Shrimps and fish are caught in basket and net traps (Figure 36), and eels in pipes (Figure 37). Water chestnuts grow wild, or are planted. Crabs (Figure 38) and snails (Figure 39) are caught and used for human and animal consumption. Snails may even be stored in sacks where they aestivate and kept until needed (Figure 40). In addition, silt, a mixture of sediment and decaying organic matter, will settle in the fields, but the further fields are from the place where water enters the dike, the slower the water is travelling and the less solid matter it contains when it eventually arrives.

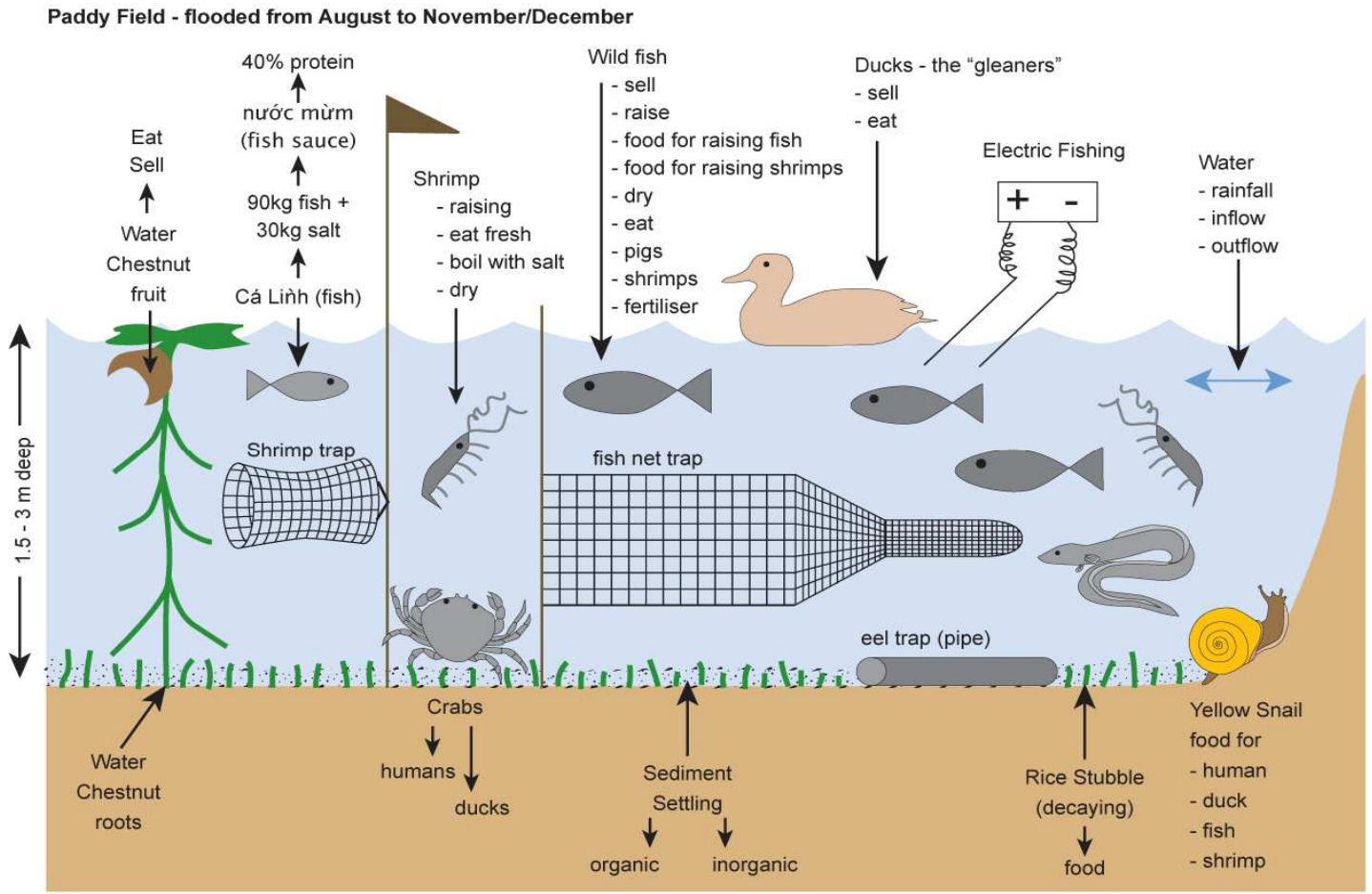


Figure 34 'Free goods' available once river water enters the fields

These goods are available to be harvested by anyone. (Source: author 2010)

Figure 35 Fish traps standing in a flooded field

Anyone may erect a net in the flooded field. (author. December 2007)

Figure 36 Eel traps

Eels enter the pipes and are prevented from leaving by the basket traps in the entrance (author. December 2007)

Figure 37 Crabs collected in flood water being sold

Crabs are used for soup and to feed livestock. (author. December 2007)

Figure 38 Golden apple snails for sale

Snails are food for livestock such as ducks, fish, and shrimps. They are even used as fertiliser. (author. December 2007)

Figure 39 Golden apple snails ready to be transported

Snails will aestivate when out of the water and remain alive for several weeks after collection.

(author. December 2007)

4.2.4 High dikes

In An Giang Province in 2004, approximately 25,000 hectares were enclosed by high dikes, 20,000 hectares in Cho Moi District and 5,000 hectares in Chau Thanh District, (Figure 18). This constitutes about 7.5% of the land area of the province. In these two areas the dikes have been raised to a height that prevents water in adjacent river and canals flowing over the top of the dike when water levels rise between August and November. During the monsoon season a metre or more of rain falls in two to three months, creating the possibility of flooding inside the dike. To control this, water is pumped out of the dikes into the rivers and canal. At other times of the year, water is pumped from the waterways into the fields to irrigate crops. This creates non-flooding land inside the dikes and an area for houses and roads on the bank-top which is unlikely to be flooded (Figure 41). The integrity of these areas is heavily dependent on the strength of the walls and the reliability of pumps (Figure 42) and sluice gates (Figure 43).

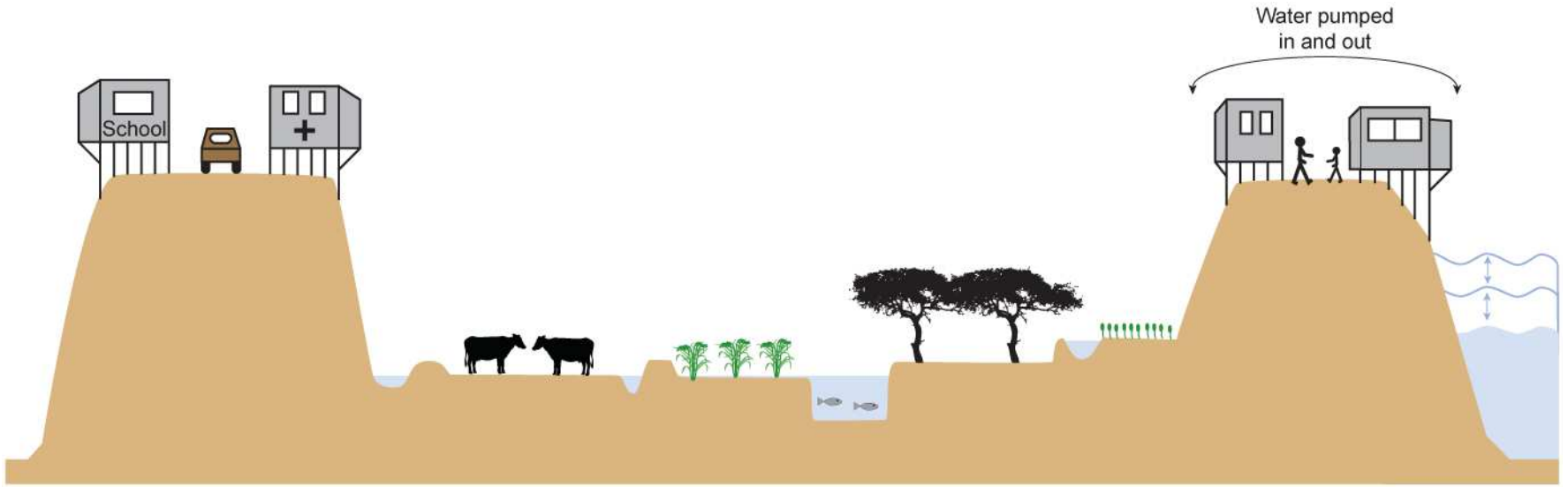


Figure 40 Schematic summary of agriculture inside a high dike

Water is pumped from the waterway into the dike when there is no rainfall. If there is heavy rainfall then rain water will be pumped out of the fields into the waterway. (Source: author, 2010)

Figure 41 Pipes between a canal and a high dike compartment

Figure 42 Sluice gate set into a high dike

(author, May 2004)

One important use of these areas is for growing multiple crops of rice. I was shown an area where a third crop was being grown in one year and told of farmers who grew seven crops in two years. These conditions are also satisfactory for planting vegetables, growing fruit trees and raising livestock, none of which can be done continuously when the fields are flooded for several months each year. Vegetable growing, (Figure 44) is done intensively and requires a large supply of labour and easy access to markets for perishable crops. Cho Moi and Chau Thanh districts are both adjacent to the markets of Long Xuyen City which had a population of over 248,000 in 1998, (Inter-Ministerial Poverty Mapping Task Force, 2003). In flooding areas fruit trees only survive if grown on the banks, and they must compete for space with houses, livestock and roads, but in high dike areas fruit trees are planted in the fields. Similarly, there is only limited space available for raising cattle in the flooding areas but this is resolved with high dikes (Figure 45). So far however, farmers appear to show little inclination to use land inside dikes to grow fodder crops, preferring instead to travel quite long distances to gather wild grass from roadsides and the banks of water-ways.

Figure 43 Vegetable growing inside a high dike

(author May 2004)

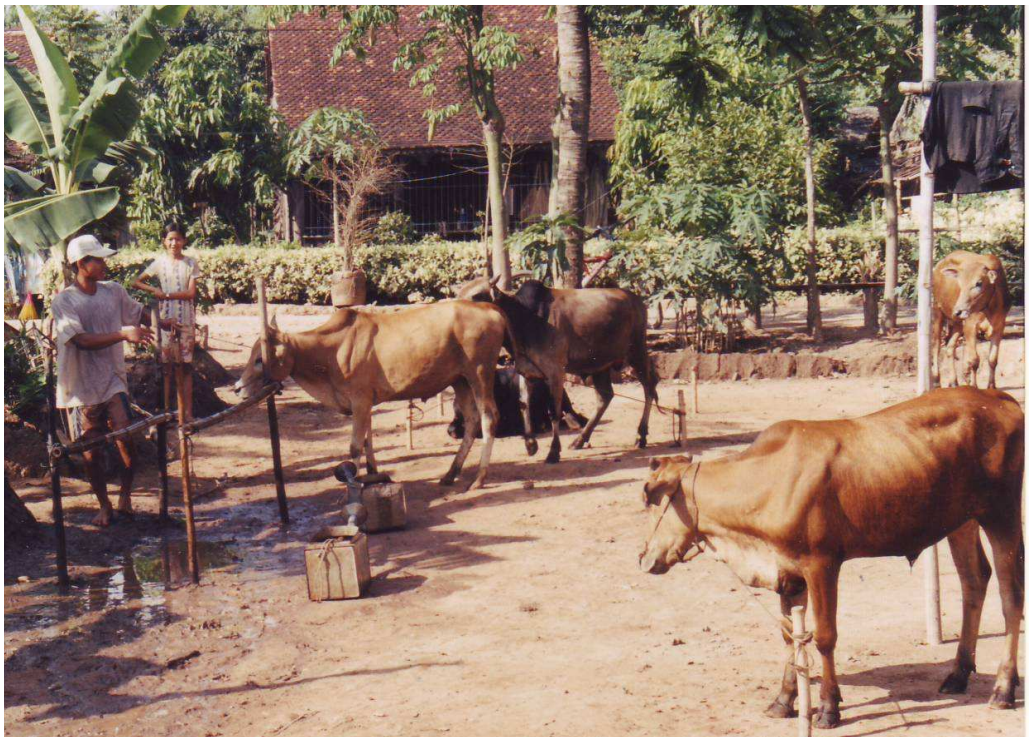


Figure 44 Raising young cattle inside a high dike

(author. June 2002)

The major difference between the two systems of dikes is that August dikes permit water to come in for several months of the year, and high dikes are intended to admit no water at all. This exclusion has benefits, but it imposes two penalties. First, high dikes prevent the entry of free goods such as shrimp, fish and certain water plants and second the exclusion of alluvium and organic matter.

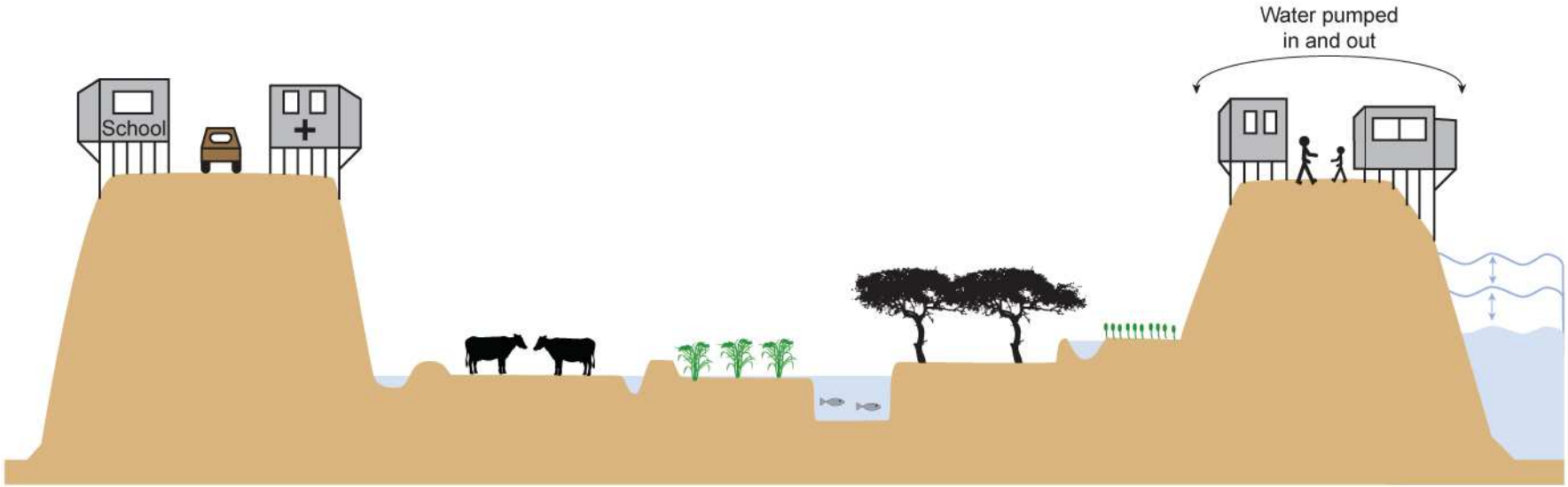
Farmers growing rice inside high dikes presented their story of declining rice yields and rising levels of fertiliser (Table 4). In Kien An Commune the seven farmers who grew rice all reported the amount of rice produced per tonne of fertiliser applied had declined by more than 40% since the height of the dike had been raised in the 1980s. Whereas previously, rice grown within an August dike gave an average of 23.9 tonnes of paddy rice per tonne of fertiliser applied, after the dike was raised yields declined to an average of 12.37 tonnes of paddy per tonne of fertiliser. Farmers were harvesting three crops of rice per year, so the amount of rice they had for sale had increased, but the amount they spent on fertiliser had increased more sharply. All thirteen farmers interviewed in Kien An agreed with the statement 'The soil quality was better before than after the dikes were raised'.

Looked at more widely however, high dikes bring social gains as well as economic and environmental losses (Figure 46). Access by road to schools, health services and markets improve, and piped water and electricity are more secure, whereas losses include the absence of free goods, accumulation of pollutants such as pesticides and fertiliser and people living there told us this had an impact on their health. However, farmers have a greater choice of technologies and with easier access to markets perishable vegetable crops may be grown throughout the year (Figure 47).

Farm number	Tonnes of rice per tonne of fertiliser used when growing 2 crops of rice per year.	Tonnes of rice per tonne of fertiliser used when growing 3 crops of rice per year.	Decline (%) in rice yield for each tonne of fertiliser applied since the height of the dike was raised.
1	22 0	12.0	45
2	24.3	14 .0	42
3	20.0	10.0	50
8	28.0	10.0	64
10	26.7	15.6	42
11	16.75	10.0	40
17	26.7	15.0	44
Mean	23.49	12.37	47

Table 4 Ratio of rice produced per tonne of fertiliser applied before and after the raising of a high dike in Kien An Commune.

(Source: fieldwork 2004)



GAINS

- year round crops
- household diversification
- more employment
- better school attendance
- better vaccinations
- better extension service
- houses above water level
- travel improves health, education and trade
- toilets
- electricity
- water by pipe

LOSSES

- sediment (organic & inorganic)
- free goods
- pollution inside dikes
- sewage
- dengue fever
- flood season rest

Figure 45 Gains and losses brought by raising the height of the dike

(Source: author 2010)

Figure 46 Cabbages being transferred from cycle rickshaw to boat, Kien An Commune.

Cabbages are one of a large range of vegetables grown year-round within high dikes. (author June 2004)

4·3 Four communes in An Giang Province

The rationale for the choice of An Giang Province and Chau Thanh District for this research were stated previously in Chapter Three, Section3.3. This section describes some characteristics of each commune and the anticipated research interests. Basic demographic about the communes, obtained from VLSS (1998) is presented in tabular form (Table 5).

4.3.1 Binh Thanh Commune

Binh Thanh is an island of 890ha located in the Hau River (figure 18). According to the data collected by the VLSS in 1998 there were fewer than 1500 households, land holdings per household were less than two-thirds of a hectare and more than 53% of the inhabitants were described as poor. At the upstream end land is being removed, at the downstream end land is being created. The island is divided by a horse-shoe shaped canal, leading to Crocodile lake, where shrimps were raised in nets in the flood season. On the upstream side approximately 250ha had been enclosed within a high dike which was completed in 2001. When I first visited in April 2002 farmers talked about their experiences of this change. However, in 2004 residents were saying that many people had left to work in the industrial estates around Ho Chi Minh City and the island was now less crowded, *"life was better"* (household 11, February 2003). Farmers here ceased to grow rice when HYV rices became available in the 1970s, they said the soil was unsuitable for the new varieties. Interestingly, several reported having rice land in other communes. On the island, farmers grew vegetables, sugar cane and maize, raised fish in ponds, bought young cattle from Khmer farmers, fattened them for 12 to 18 months and sold them on. Inside the high dike area irrigation water was supplied to farmers by the commune government and farmers paid a charge based on their land holding.

There were two research interests about this commune. First, the very recent erection of a high dike offered the opportunity to watch and talk to

farmers as they adapted to the new conditions; were they, for example, prepared for it and what were their expectations for it? The second interest was to carry out research in a commune without any rice growing in it, to find out what alternatives there were to growing rice. So much of what I had seen in my first visit to AGU in 2001 had been about rice, it was to be seen in every direction whenever I travelled, but this commune did not grow any, so what did they do, what were the alternatives?

	Area km²	Population	People per hectare *	Kinh population (%)	Number of households	Hectare per household *	Households with electricity (%)	Poverty ratio
An Giang Province	3407	2,044,376	6	94.9	421,191	0.809	61.4	.4019
Chau Thanh District	234	155,419	6.64	99.7	32,900	0.711	62	.4421
Binh Thanh Commune	8.9	6,900	7.75	100	1,419	0.627	37.2	.5328
Binh Hoa Commune	26.4	19,568	7.41	99.8	4,080	0.647	78.2	.3530
Vinh Binh Commune	40.42	1,0081	2.49	97.6	2,058	1.964	34.69	.4824
Cho Moi District	356	35,3118	9.92	99.8	7,1750	0.496	43.8	.3905
Kien An Commune	24.96	29,642	11.88	100	6,243	0.4	46	.4098

Table 5 Demographic data for An Giang Province and selected districts and communes

Columns marked * have been extrapolated from the data (Source: Inter-Ministerial Poverty Mapping Task Force (2003), using data from the 1998 Vietnam Living Standards Survey (VLSS) and the 1998 Vietnam Population Census)

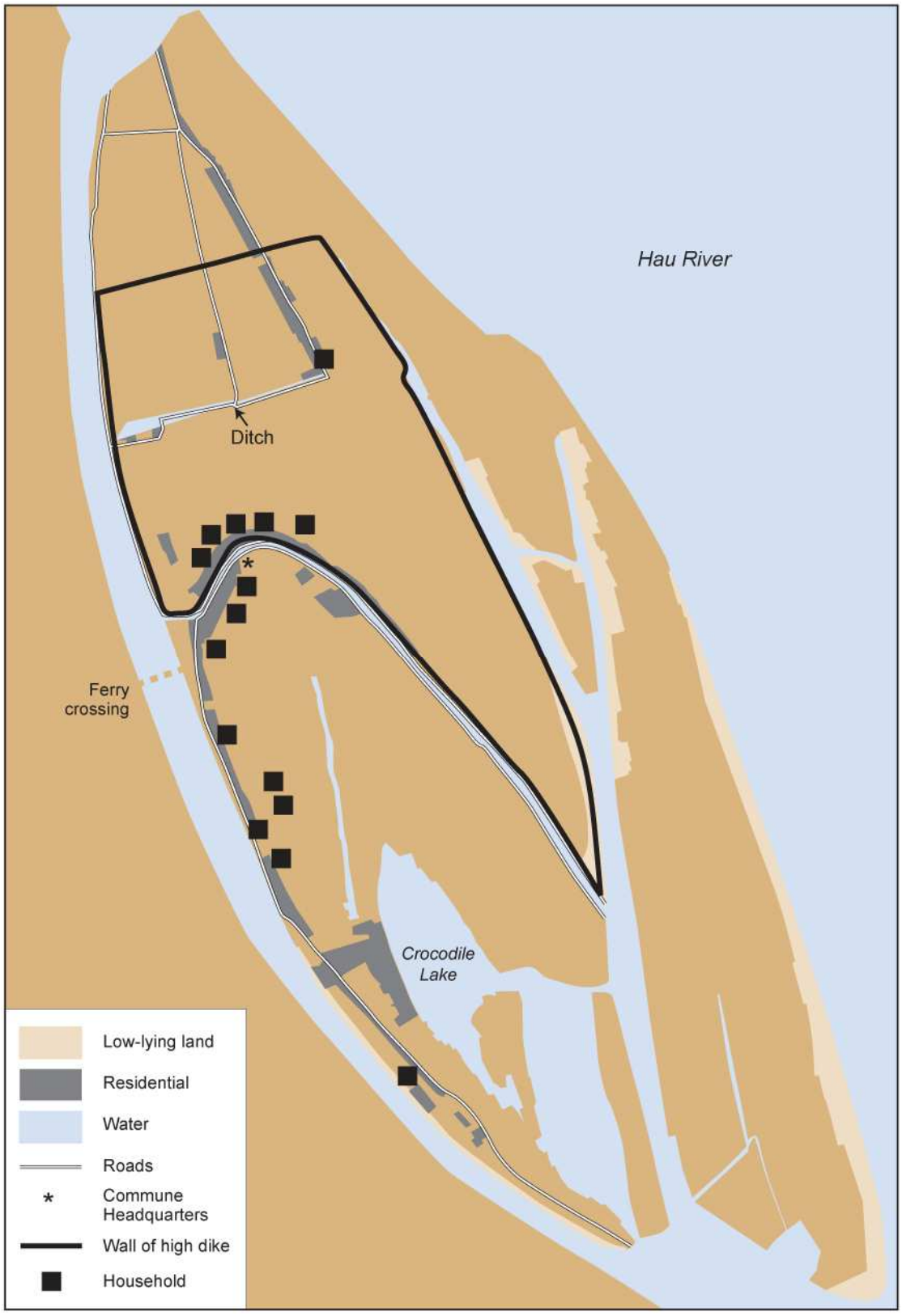


Figure 47 Binh Thanh Commune in Chau Thanh district

(Source: based on map of An Giang People's Committee)

When group of older people in Binh Thanh were asked about changes to the environment, several people could remember when the island was covered by floods each year and as water receded the ground would be covered in dead fish. The smell was terrible and they had to tie up their dogs to prevent them bringing rotten fish into their houses, but the fish acted as a natural fertiliser. One man could remember a French company selling chemical fertilisers to farmers. They also reported that when US forces appeared on the island in 1963 and gave people guns with which to defend themselves, the wild birds, which had been common, were destroyed.

4.3.2 Vinh Binh Commune

Vinh Binh is located 30km from Long Xuyen and straddles the *Kenh Mac Can Dung Moi* canal and the main road from Long Xuyen to the district town of Tri Ton (Figure 49). The commune is 4,042 hectares in area and the largest of the four communes where research was carried out (Table 5). It was also the least densely populated, with approximately 2.5 people per hectare, but had a high ratio of poverty, 48%, with many households having insufficient land on which to sustain themselves. While all 18 households involved in the initial part of this research had a supply of electricity, in the latter stages when views were being sought on the proposed high dike, an area at some distance from commune headquarters was visited where several houses had no electricity. This is another indicator of poverty and of the difficulty of creating services in a flooding area.

The commune is located inside the Long Xuyen Depression and in the flood season water lies 1.5 to 3.0 metres deep. Land is divided into more than 35 compartments, each bound by walls that exclude flood waters until about August, the timing varying according to several external factors. Depending on the intensity of the river flow and the amount of rainfall, the commune is likely to be flood-bound from late August to late November, or later, with only the main east-west road and some of the broader dike-head roads clear of flood water.

Figure 48 Vinh Binh Commune in Chau Thanh district

(Source: based on map of An Giang People's Committee)

During the flood season life is difficult, I was told by my gatekeeper Dr Thao. There is a lack of employment for landless people, and children have difficulty travelling to school by boat across wind-swept water and then by rickshaw on muddy banks. We were told it was not uncommon for very small children to fall off the porch of their homes and drown.

All 18 households visited were growing two crops of rice per year, a 'winter-spring' crop and a 'summer-autumn' crop. The first crop benefited from silt deposited by flood waters and produced a heavier crop than the second, for which farmers needed to supply more chemical fertiliser. With two crops of rice, farmers said there was insufficient time to grow another annual crop of a different plant. On the banks, farmers grew vegetables, particularly water melon, and kept a few pigs. However, with such wide-scale flooding, there was little potential for diversification other than on the bank. Indeed, during the course of this research, which in this commune lasted between 2001 and 2007, there was a distinct impression that one reason we had been offered the chance to work here was to discover answers to the often repeated question 'what should we grow'? During the flood season the fields were available for the collection of 'free goods' and the cultivation of shrimps. However, the latter requires a large investment in netting and not many households did that. However, a few had dug fish ponds into the bank and were cultivating fish of several varieties on a small scale. In the flood season the ponds were protected by erecting net walls to prevent fish escaping. Several farmers made a steady daily income during the flood season by catching wild fish and crabs in the canal and selling them in the market

From a research perspective there were three points of interest in this location. First, it appeared to be typical of the communes in the depression; all the farmers grew two crops of rice within August dikes and many people said they gathered free goods in the flood season. Second, the commune had a plan to create a high dike. They were quite open about that and discussions went on freely with everyone, farmers, officials and traders. An unanticipated bonus was

to find one farmer who had his own high dike which surrounded an area of three hectares. He was experimenting growing high-value water chestnuts for a Taiwanese company. Third, my counterpart had been the Leader here and still knew many farmers and was well known to officials. Members of staff at the university advised me, after my first visit there in 2001, that perhaps I would just meet his friends, but by the last visit in 2007 my network of contacts had spread well beyond that initial circle.

4.3.3 Binh Hoa Commune

Binh Hoa is broken into several areas by two main roads forming the letter Y on the eastern side of the commune (Figure 50). The commune has several water regimes, including common August dikes, common and private high dikes and banks raised above the flood waters. The households visited by this research were spread across the commune, from two which were close to the riverside opposite Binh Thanh island, to several on the opposite side of the commune, several kilometres from the river. The commune appeared to be in a state of intense change at the time of this research. When we first visited in 2002, the commune's offices were housed in a low-lying, single storied building, and if it had rained overnight the floors next morning would be flooded to a depth of a few cm, but opposite it was a large double-storied building was being constructed, the new head-quarters buildings. A hundred metres further off a new market block was being finished and on the opposite side of the main road there was a food-processing factory. The main road to Chau Doc was being upgraded, and there was constant noise and dust or mud, depending on the weather. At the Y junction someway before we reached the HQ an industrial zone was declared in that area, and the level of the land in the fork of the road was raised up by pumping in river water and allowing the sediment to settle. This destroyed some farm lands and displaced farmers. The commune was 2640 hectares in area and in 1998 had a population of just under 20,000 people and a density of more than 7 people per hectare.

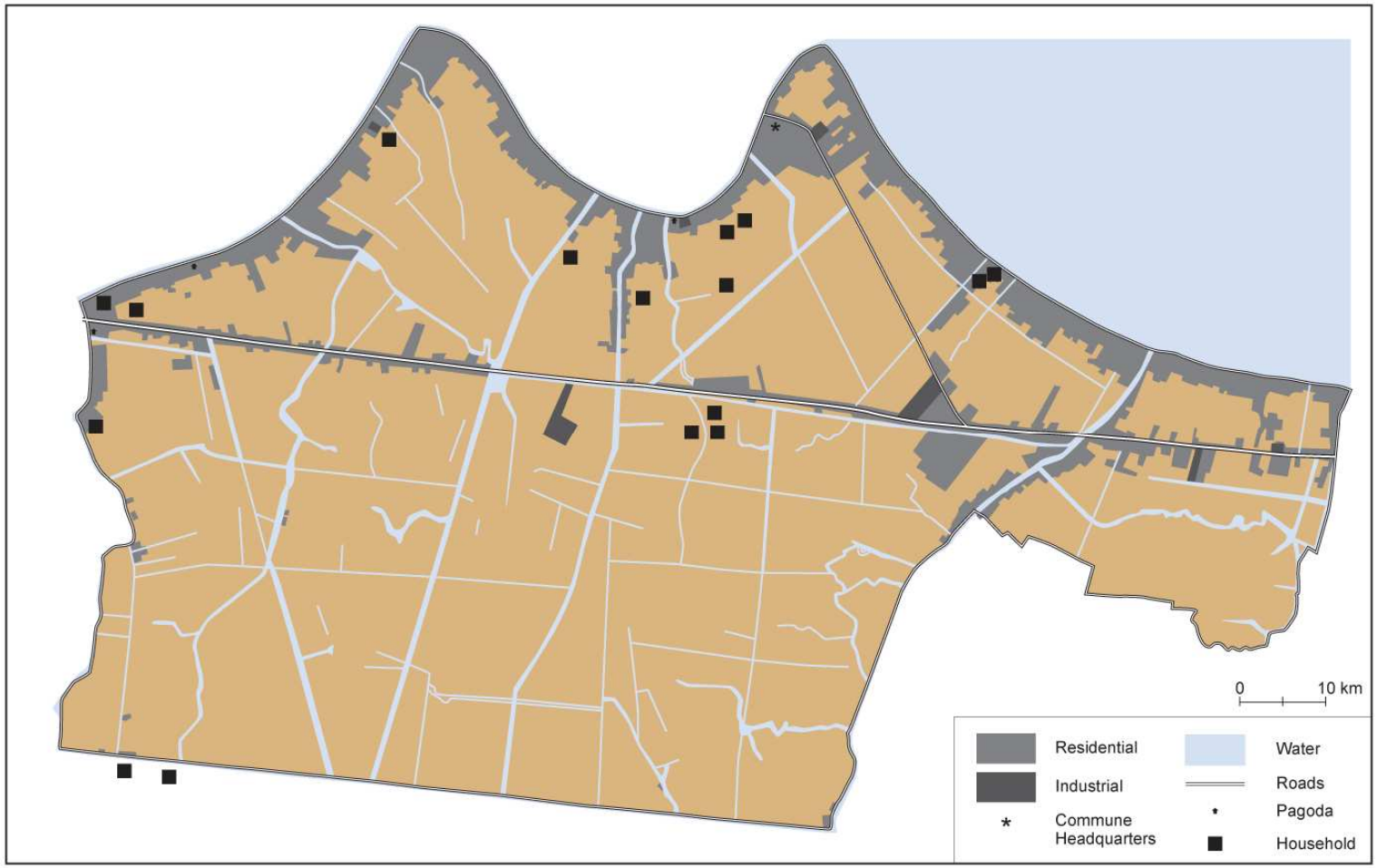


Figure 49 Map of Binh Hoa Commune

(Source: based on map of An Giang People's Committee)

In 2002 households had just less than a third of a hectare each and 78% of them had a supply of electricity. The poverty level in Binh Hoa was 35%, the lowest of all the study communes. With so much change happening here much of the information obtained in the VLSS in 1998 was likely to have been out of date by 2002.

The research interest in this commune came from the variety of water regimes it contained and the crops that were grown here. Agriculture here included rice growing inside August and high dikes and vegetable and cattle raising on flood-free land, there were small sized factories, such as saw mills and a yard for building boats, beside the river, and notices offering rabbits and fish fry for sale. Binh Hoa was also close to Chau Thanh town and beyond that, Long Xuyen. During the period of this research the roadside between the town and the Y junction in the road became a continuous row of buildings. There was a strong sense that this was a place on the move, on the way from agriculture to much more varied and diverse enterprise activities.

4.3.4 Kien An Commune

Kien An was added as a research location only in 2004. This late addition to the research map did not provide opportunities to get to know officials and farmers as well as we had done elsewhere. Nevertheless, a group of older farmers who were gathered by officials at my request to tell me about environmental change in their lifetime, provided an invaluable first-hand account of the transformation of agriculture here in the late 1970s.

Kien An is located at the northwest corner of Ch Moi Island (Figure 18). It has an area of 2496 hectares, a population density of just under twelve people per hectare and households had an average of just less than half a hectare each. In 1998 its poverty level was 41%. A wide range of crops was grown here. This included three crops of rice per year, cattle raising, fish farming in cages suspended in the Mekong River, okra, chilli, several kinds of Cucurbits, beans of

many types, onions and leaf crops. There was a palpable sense of industry here on the front porches of many houses. Each time we went to Kien An we saw people sitting outside in their porches, sorting and trimming vegetables, packing them in large plastic bags and loading them into small trailers attached to motor bikes or into boats.

The apparent coincidence between the relatively low level of poverty and the smallness of land holdings per household might be explained by the growing of vegetables, which are labour intensive and could be produced year-round as the land was protected from flooding by high dikes. Thus a small area of vegetables, with ready access to a market, may have ensured a better income than a larger land holding at a greater distance from markets.

Kien An was chosen because parts of it had been enclosed by a high dike for many years, though some parts had been enclosed more recently. I wanted to compare what I had already learned about agriculture in August dikes with what happened inside high dikes. From what I learned here I next wanted to develop questions for farmers in Binh Thanh and Vinh Binh about what they might expect from high dikes in their communes. I wanted to find out how aware they were about the likely consequences of a high dike in their area.

4.4 Transformation of An Giang Province

Transformation in An Giang can be related to four events: the arrival of Vietnamese settlers in the middle of the Eighteenth Century (Li, 1998); the destruction of forests and seasonal marshes by French colonists in the late Nineteenth-early Twentieth Centuries (Brocheux, 1995); land redistribution and reclamation after 1975 (Vo Tong, 1995); and the development of a market economy after 1986 (Vo Tong and Matsui, 1998). The principal historical events around those transformations are set out in Table 6.

Date	Event
1546	The Nguyen family, anticipating conflict as Trinh Kiem succeeds the Le dynasty in *Thang Long* (now Hanoi), asks to be sent to Thanh Hoa, in the southwest corner of the Red River basin. This begins the 'Southern Project' (Li, 1998, p.14).
1558	Nguyen family continue to move southwards, displace the Champa kingdom, a mixture of Cham people and hill peoples.
1757	Vietnamese arrive at Chau Doc, An Giang province, on the border between Vietnam and Cambodia. Assisted by deserters from China (1670), they occupy the delta with strategic forts (Li, 1998).
1859	French forces capture Saigon (Popkin, 1979).
1867	Cochinchina ceded to France by Vietnam
1884-1885	French Protectorate established over Tonkin and Annam, together with Cochinchina they constitute the Union of Indochina. French colonists establish 'legal right' to 'unclaimed' and 'unoccupied' land in the Mekong Delta and begin transforming forests to paddy land. Rice growing expands across the delta.
1916	Resistance to enforced recruitment into French army to fight in Europe in the First World War. 38 resistors executed.
1925	Revolutionary League of the Youth of Vietnam founded by Ho Chi Minh. Other religious-military resistance groups emerge, such as Hoa Hao and Cao Dai.
1940-1945	Indochina ruled by Vichy French. Japan permitted to use the country as a staging post. In March 1945 the Japanese depose the French, in August Viet Minh forces enter Hanoi and depose the Japanese. September 2nd 1945, Ho Chi Minh declares Vietnam independent of France. European powers declare France to be the rightful power.
1945-1954	Low level conflict develops to full-scale military engagement. Armaments supplied by newly declared People's Republic of China. In March 1954 French forces at Dien Bien Phu defeated by Vietnamese forces led by General Vo Nguyen Giap.
1954-1975	Vietnam divided: Democratic Republic of Vietnam in the north; Government of Vietnam in the south. Low level warfare breaks out and by 1963 USA forces are heavily involved in the South. 'Land to the Tiller' begins land redistribution in the delta, late 1960s. US forces retreat in 1973, forces from the north enter Saigon in April 1975. Vietnam reunified. Land redistribution in the south continues.
1980s	Collectivisation of agriculture in the Mekong Delta attempted and abandoned. Farmers declined to cooperate (Marr and White, 1988).
1986	The process of renovation (*doi moi*) begins. Agriculture eventually operates in a market economy. Vietnam rises to be world's second largest exporter of rice, after Thailand. An Giang is Vietnam's biggest producer of rice (General Statistics Office of Vietnam, 2010).

Table 6 Historical context for agricultural change in the Mekong Delta

Vietnamese settlers arrived in the south as part of a deliberate move out of the Red River Delta (LI, 1998) which began in 1546. The 'Southern Project' (Li, 1998), in which a rival family for the emperorship decided to leave the North in the Sixteenth Century, was the driver for Vietnamese occupation of the South of present-day Vietnam and that led to the first stage of transformation in the Mekong Delta. Li (1998) reports there was frustration in the Red River basin with the constraints of Confucian life, dominated by the mandarins, a legacy of Vietnam's long occupation by China, and a move out of the basin would permit escape from those constraints and the creation of a different society. Li quotes a mandarin, Nguyen Cu Trinh: "*There is no way to the west and it is too hard to go to the north, therefore we should do our best to go to the south*" (Li, 1998, p.14) By the mid Eighteenth Century intense Vietnamese occupation of the Mekong Delta is under way with the development of more extensive rice cultivation. This is the first stage of agricultural transformation.

The second stage of transformation follows on from French ambitions for an Oriental empire in the Nineteenth Century and the declaration of the South as a colony of France in 1867. This involved land acquisition by the colonists, with the former, unregistered, land owners now working as labourers: 'Control of land was a key part of the French *mission civilisatrice* in colonial Indochina' (Cleary 2005, p.356). Whereas the village system of land ownership existed in the Red River Delta, this system had not been established in the South. As there was no effective system of land registration the colonists claimed the land was 'unoccupied', a situation with similarities to Wainwright's description of British colonisation of what later came to be called British Honduras (Wainwright, 2008). In 1929-1930, according to Brocheux (1995), the Inspector General for Agriculture, Y. Henry, reported that nearly 59% of land in Long Xuyen Province [today's An Giang Province] was owned by less than 5% of the province's landowners, each holding more than 50 hectares.

French colonisation en-meshed Vietnam and particularly the Mekong Delta, into a Northern economy. Using mechanical dredgers (Figure 51), up to

twelve million cubic metres of spoil were extracted per year (Brocheux, 1995) and the area growing rice in Cochinchina expanded from 686,000 hectares in 1881 to 2,187,000 by 1930. Rice exports from Indochina rose three-fold between 1903 and 1918, with 90% coming from Cochinchina (Table 7). The Mekong Delta had become the rice basket for the region and the major source of rice imports for France and beyond.

Country	1917	1918	Total 1917-18	Exports
Cochinchina	1,259,279	1,447,152	2,736,431	90%
Tonkin	103,629	170,880	274,509	9.1%
Annam	1,689	852	2,541	0.08%
Cambodia	2,150	831	2,981	0.1%
Total	1,366,747	1,649,715	3,016,462	100%

Table 7 Rice Exports in Indochina, 1917 and 1918, millions of tonnes

(Source: *Bulletin Economique de L'Indochine 1921 Bulletin 141, page 187)*

The consequences for the environment of the French activities were drastic and irreversible. In just 50 years, over 80% of forest in the West of the delta had been cut down (Brocheux, 1995). Not only were forests cut down, but the pattern of canals dug at that time did not present a unified understanding of the drainage of the delta: 'canals were like the work of Penelope, projects without end' Biggs (2004, p.67).

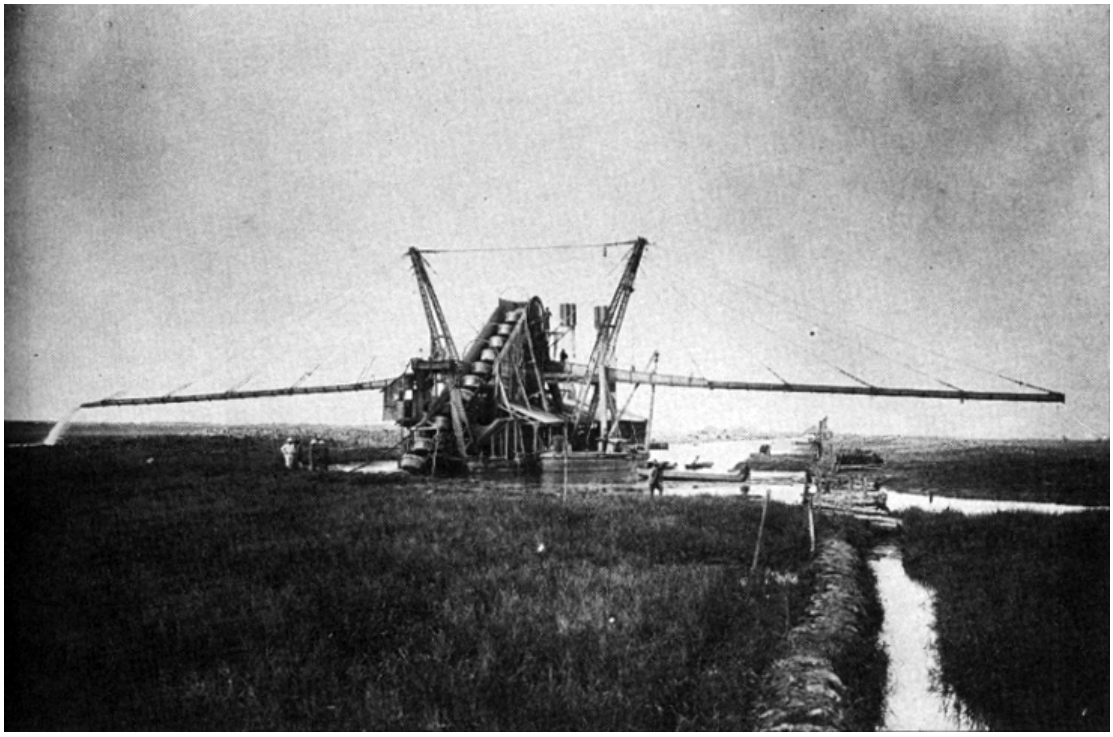


Figure 50 Mechanical dredger in the Mekong Delta, c. 1930

The height of the individuals give an indication of the size of the machine. (Source: Brocheux 1995, p.21. Permission to use this image was requested from Centre des Archives d'Outre-mer in July 2010, but no reply has been received)

The third stage of transformation begins after 1975. According to Stellman (Stellman *et al.,* 2003), the war by the USA against Vietnam did not result in the spraying of defoliants in this part of the delta, but the area had been bombed. However, after reunification large land-holdings were redistributed to landless people and considerable transformation has followed. Redistribution led to the cultivation of areas with acidic sulphate materials lying just below the soil surface. Rice grown there initially only gave small yields because of the acidic conditions. To drain this and to improve access, numerous small canals were built after 1975. The fourth stage of transformation has been the erecting of dikes, first to delay flooding so that the new HYV rices could be harvested, then high enough for two rice crops, and later the building of high dikes to prevent all flooding. This fourth stage of transformation was continuing at the time of this research.

4.5 Vietnam, the one-party state: from collectivisation to doi moi

This thesis is in part concerned with the political relationship between farmers and the state in so far as it impacts on how land is transformed for agriculture. In order to do that effectively it is important to set out briefly the formal structure of politics in Vietnam. The country is also an example of a group of countries that used to be much larger than today and included the USSR, several East European and Baltic states, Cuba and, at various times, other countries particularly in Africa which experimented with their own versions of socialism. Today however, the number of countries that describe themselves as socialist is much smaller. North Korea professes to be a socialist state, although socialism there appears to be intertwined with a personality cult, Vietnam and China follow broadly similar lines, while Cuba appears to be in state of transition following the moving aside of its founding figure. Vietnam broadly follows changes in China, although as Mr Le Minh Tung told me, 'rather more slowly'. Vietnam's socialism is very pragmatic, farmers forced the CPV to change course sharply in the 1980s, and it lacks the top-down authoritarianism seen in China and the former USSR.

4.5.1 The party and the state

Vietnam is a one-party state with a written constitution, a president, a national assembly and a government run by a prime minister with ministers in charge of ministries. The Communist Party of Vietnam lies at the centre of a matrix of supporting unions, or patriotic 'mass movements' as they are described, including the Vietnam Fatherland Front, Vietnam Peasants Union, Youth Union, Farmers' Union, Women's Union, and the Veterans' Union (Figure 52). At the centre is the Central Organising Committee of the Communist Party of Vietnam and above it the Politburo, the latter containing the most senior figures of state and party.

The relationship between the people, the party and the state has been described as 'The Party leads, the state manages and the people are the masters' (Fourth party congress 1976, General Secretary Le Duan, quoted by Dang and Beresford, 1998), or , as a student colleague from Vietnam put it succinctly:

> *the Party decides but cannot do, the People's Committee does but cannot decide.* (Personal communication from a Vietnamese fellow student, London, March 2007)

While the degree of direct state control, and control by the CPV, has lessened since 1986, a process described as a move away from partification of the state that occurred in the years after 1954, the entwined and inseparable structure of party and state set out by Dang and Beresford in 1986 is still indicative of the relationship between party and state. In Vietnam there are two parallel worlds: on one hand the public, visible, apparatus of the state and state-owned enterprises, and on the other, the private, less visible apparatus of the party.

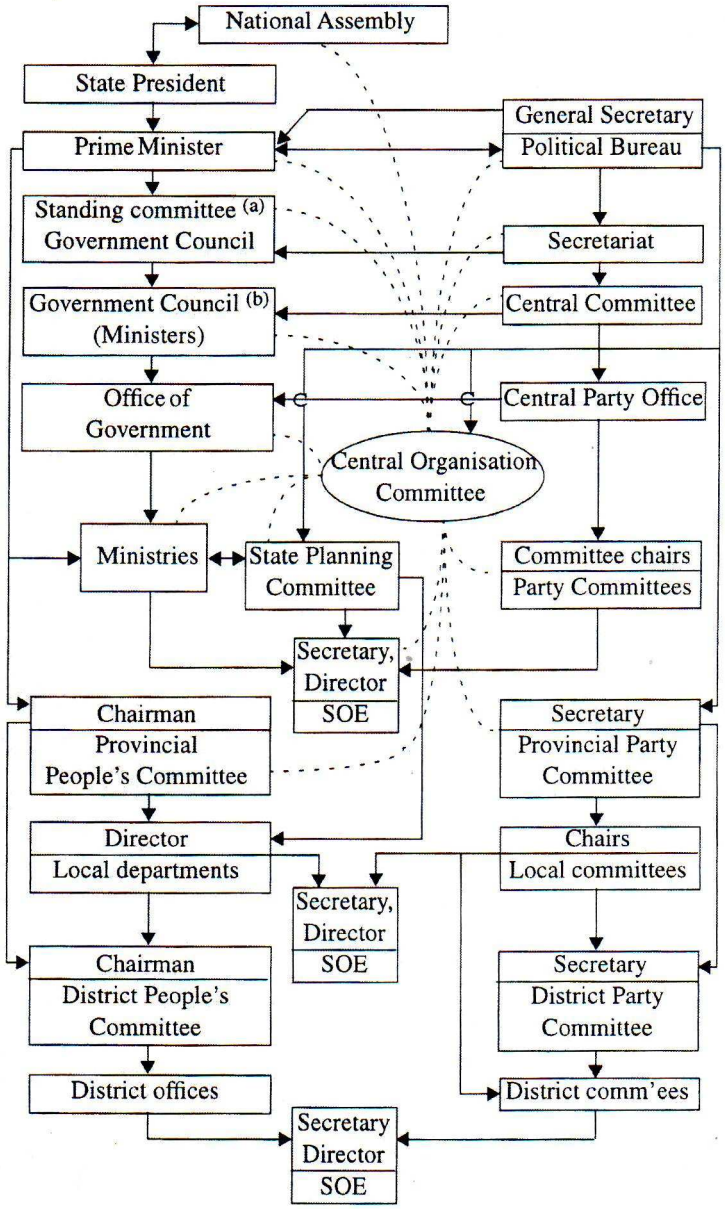


Figure 51 **Relationship between the Communist Party and the state**

(Source: Dang and Beresford, 1998, p.36. Reproduced by permission of the Nordic Institute of Asiatic Studies, Copenhagen)

Party sections operate at all levels of the state, right down to the level of the commune, where the appointed 'Leader' or General Secretary is senior to the President of the commune, who is elected by the people of the commune in a ballot. Each state organisation and ministry has a similar structure, with the General Secretary at a more senior level than the head, or minister (Dang and Beresford 1998). At local level, the commune Leader and the elected President of the people's committee are responsible for the efficient running of the commune. That includes everything from education and police to health, agriculture and the development of infrastructure.

Despite this imposed structure, the party does recognise it owes its future existence and security to its ability to provide the people with what they want. Unlike China, the CPV does not use the army to impose its will on the people , rather it does so by intense consultation, co-operation and consent. Secretary General of the Party, Do Muoi told cadres in 1994:

> *If our economy develops strongly, and living conditions, culture, the situation of our people gets better day by day, then I believe the people will defend the party, the system of government, and regime such that hostile forces cannot do anything. The key point is to make good economy, take care living conditions good. In the process, principally because of a good economy and living conditions, people's confidence in the party and regime will increase* (Kerkvliet, 1995, p 10)

4.5.2 The commune government

Household members frequently referred in meetings to 'the government', but generally did not specify whether they meant commune, district, province or national government. The commune is headed by the Leader, who is appointed by the district, and the President, who is elected by the residents. Asked to describe the difference between them a colleague said, "*The Leader does very little with residents, that is the function of the President*" (personal communication, colleague at AGU, 2007) Both Leader and President have

deputies and there is also an elected committee, the Peoples' Committee. The officials in the commune include: head of police and head of security; a tax collection officer; and officials for the women's union, youth union, farmers' union, Red Cross, retired soldiers' association and aged peoples' officers. If the commune is fortunate, it may have a health centre, primary school, bank and post office. Formerly an agricultural land tax was collected, based on the category of fertility/productivity of land and its distance from a canal. However, in 2001 the payment of this tax was suspended for ten years. Previous payments have been used to pay for dredging canals and repairing the main banks.

One function of the commune is to 'recommend' farmers to the bank. With a recommendation farmers were able to obtain loans, for the purchase of inputs, cattle, even the construction of an individual high dike. Sometimes the borrowers were a group of households taking out a joint loan, where each stood surety for the others, but also single farmers working on their own. The system of 'recommendations' to the bank was a way for the commune to implement its policies. For example, if there was a policy to reduce poverty by making loans for buying a few cattle, the commune would recommend poor households to the bank. However, if the loan was not repaid on time and became very overdue the farmer was likely to be visited by a bank official, accompanied by a police officer. Another way the commune government promoted its policies was by trying to attract purchasing companies to establish a link with a group of farmers in order to make a contract for the purchase of a particular product, such as beans, water chestnuts or okra. This was a further arm of its policy-making role, which could then be linked into bank-lending. In these ways the local government takes a very active role in agriculture in the commune.

4.5.3 Collectivisation and doi moi

Before reunification in 1975, the south had depended on the USA for imports of over 1 million tonnes of food grain per annum, but this ceased in 1975. By the late 1970s, farmers in the delta were being urged to form cooperatives. A resolution at

the Fourth National Convention of the CPV in 1976 urged all party leaders to achieve full collectivisation by 1980, but by 1986 less than 6% of farmers in the Mekong Delta belonged to collectives; farmers who joined got preferential treatment in the distribution of inputs, seeds, and fertiliser (Pingali and Vo Tong, 1992; Vo Tong, 1995). Land had been distributed on a *pro rata* basis, but farmers no longer had security of ownership—land could be reassigned by the authorities at any time—and all capital assets, from tractors to draft animals became the property of the state.

At first, all produce was collected by the state and the household received a price for it fixed by the state. An assessment was then made of how much the family needed for their own consumption, and the rest was removed. In the face of such requisitions, farmers in the south simply produced sufficient for their household consumption and there was little or nothing left for the state to collect; in practice they reverted to farming the garden around the homestead and left the rest of their land fallow. When asked whether this resistance provoked a violent response from the authorities, Professor Xuan replied that the soldiers were all related to farmers' families 'so there was no violence' (personal communication from Vo Tong Xuan, London, 2006; personal communication Nguyen Giang, (Head, BBC Vietnamese language service), London, 2006). On the side however, a black market thrived, indeed that is how people survived. By 1981 there was rising discontent and food shortages, if not outright food insecurity. Aware that food was still being produced, leaders of individual provinces displayed pragmatic approaches to encourage greater production. As Dang and Beresford (1998, p.78) explain, the long years of resistance to the French and then the US forces had bred a culture which gave local officials considerable scope for interpreting and even reformulating policy orders from above in light of local circumstances, *phep vua da thus le lang,* 'the writ of the king yielded to the village'. Should the General Secretary in the province or district be well connected to a member of the Organising Committee, and the reformulation was successful, this was likely to be adopted as the national policy

In 1981 the Politburo issued a directive which accepted the so-called Contract 100 system (Vo Tong, 1995, p. 188). The word 'accepted' is a signal that this policy had probably been tried out somewhere and found to have worked. Contract 100 gave some assurance to farmers about their use of the land but in return they were required to deliver a contracted amount of output. Anything beyond that amount could be kept by the family or sold on the open market (Pingali and Vo Tong 1992; Vo Tong, 1995). At first this stimulated production, but by 1987 the rise had levelled off. Between 1976 and 1981 gross aggregate production rose at a rate of 1.9 percent per annum, between 1981 and 1987, under Contract 100, it rose at 2.8 percent per annum, but this was not sufficient to meet demand. By mid-1986 food production had stagnated, the state failed to deliver inputs to collectives at the right time, it did not have sufficient funds to buy the food produced under Contract 100, the supply of consumer goods remained too limited, inflation had soared and stories of corruption among officials were rife. In short the populace had lost faith in the leadership (Marr and White, 1988).

One way out of this snare was to change the leadership. At the Sixth Party Congress in December 1986, Le Duan, who had been General Secretary of the Party since 1960, was replaced by Nguyen Van Linh and this change of personnel was accompanied by a raft of reforms, the so-called doi moi or renovation. From now on there was to be more openness to criticism and suggestions from the public, a reform agenda, admission of past mistakes and blunt criticisms of cadres who had misused their authority (Dang and Beresford, 1998). These reforms, embryonic at the time, have reshaped and redirected social policy in Vietnam up until the present day.

While this was happening at national level, locally other solutions were being tried out by Party Secretaries at provincial level. For example, in An Giang Party leaders recognised the need to restore the confidence of the farmers. They achieved this by granting farmers 'Land Use Certificates' and with this reassurance households resumed production beyond what they needed for household consumption. Any surplus could be sold in the open market. This

development was picked up at national level and endorsed as the way forward. With this renewed confidence and stimulation to farmers, food production rose sharply and Vietnam has moved from being food insecure to being the world's second largest exporter of rice. In this way, households in An Giang played a significant part in shifting Vietnam from socialist production to market-oriented production. They did so by refusing to produce more rice than they needed for household consumption.

> The failure of collectivization can be attributed to policies that disregarded producer incentives and disrupted market mechanisms for the flow of inputs and outputs. (Nguyen, Vo Tong and Tran, 1998, p.47)

Far from being a top-down state that imposed its will on those below by force, the government has bowed to farmers' non-co-operation and changed direction. Arguably, Vietnam's rising level of wealth today and its success in reducing poverty can be attributed to the effect of the actions by farmers in the Mekong Delta on economic policies in the 1980s.

4·6 Conclusion

This chapter has set out the agricultural, historical and political context within which the empirical materials were gathered. The land surface of this province has been transformed by a succession of political events, both from within Vietnam and from outside. Today, An Giang is Vietnam's most prolific producer of rice, enabling the country to be a major exporter to international markets. Traditional varieties of rice, of long-duration and yielding one or two tones per hectare, were grown in deep flood water, but that method of cultivation has almost ceased. HYV rices, which need three months from sowing to harvesting and yield seven tonnes per hectare, or more, have replaced flooding rices. These varieties were first developed during the Green Revolution' in the 1960s-1970s, but Vietnam has succeeded in maintaining an upward yield trend ever since (Tran and Kajisa 2006).

The province has an abundant supply of water flowing down the Mekong River, also rainfall. These resources were specifically employed by the French colonists between the late Nineteenth and early Twentieth Centuries, who oversaw the cutting down, by Vietnamese labourers, of forests and clearing of land to grow flooding rice for export to France. Vietnam at that time was linked into a wider global economy and one result was the loss of millions of hectares of forests and marshes.

The transformation of the landscape has continued since the French left in 1954-55, this time in response to the need to produce more food and be food secure after the end of the war with the US. HYV rices, which require level fields, soils well drained of acidic materials, regular irrigation and artificial fertilisers, have enabled farmers to achieve very high levels of production. In the course of this, two significant things have happened. First, farmers in the delta demonstrated their resistance to collective agriculture after reunification in 1975 by refusing to produce a surplus of rice from their land. Farmers' actions in the delta in the 1980s demonstrated their political power and led to the end of collective agricultural production in Vietnam. It also initiated a series of economic reforms, called doi moi or renovation, which still guide the country's economic development. Although Vietnam is a socialist state with only one political party permitted, nevertheless the CPV demonstrates pragmatism in its relations with farmers.

The second impact has been a further transformation of the delta's surface. By raising dikes of different heights, flood waters can be delayed or totally prevented from entering fields, and this makes it possible to grow two or more crops per year. By this means productivity has risen through increased cropping intensity. However, this has come at a cost. Increasing amounts of fertilises need to be used to maintain that level of production.

This chapter has laid out the context for the three empirical chapters, which concern the relationship between the farmers and the state in the continuing transformation of the agricultural landscape, how water is managed by farmers, and why some households have become much richer than others in this process of transformation.

Chapter Five

Farmer--state relations:- dike building and agricultural transformation in An Giang Province, 1975 to 2007

5.1 Farmer-state relations 1975 to 2007: co-operation and contestation

5.1.1 Introduction

This chapter focuses on the relationship between farmers and the state since 1975, as manifested in the building of dikes. Dikes and decisions about their construction are important for two reasons. First, a dike alters the enclosed area's economic potential, particularly food production, it has long-term effects on the soil and biodiversity and improves peoples' access to health, education, employment and markets. Second, dikes are the product of political decisions. If Lasswell's (1936) maxim, 'Politics: Who Gets What, When, and How', is in any sense true then, in the context of a flood plain, decisions to control flood water are political decisions, in that they allocate 'who gets what'. Decision-making for building dikes is an indicator of the distribution of political power between individuals and the state, they signal the outcome of contests between farmers and the state.

Drawing on peoples' responses in three communes at three points in time about how they came to build a dike, the effect of dike building in their commune, or why they did not want a dike, this chapter addresses three key questions about farmer-state relations. First, in the light of Kerkvliet's (1999, 2001, 2005) models of farmer-state relations, were relations in An Giang Province in 1978 'dominant state', 'mobilization corporatism' or 'dialogic', or were they different from all three? Second, were relations between farmers and the state in the 2000s different from relationships in 1978 and if so in what ways and why

had they changed? Third, what space is there for 'formal advocacy' and 'everyday politics' against the wishes of the state, and what form does opposition take? Space for political opposition in Vietnam is limited, therefore why and how farmers oppose the state's plans in the 1980s and beyond is also of interest in contemporary Vietnam.

Three cases studies are used to develop arguments about relations between farmers and the state, in 1978, in 2002-2004 and in 2002-2007. However, that statement risks implying relations can easily be 'read off' from the empirical materials. The reality was much less clear cut and the arguments made here only emerged from reading and rereading a very large number of conversations with farmers, officials, university staff, and taking into account the contexts of their collection, and reading the literature, particularly history, politics and agricultural technology. Seen on their own, detached from a wider scale, the events analysed in this chapter might be dismissed as having only local significance, crucially important to local farmers and officials, answering questions about farmer-state relations at particular places and points in time, but not beyond. Alternatively, they may be seen as having significance at a wider scale, and contributing to the understanding of the part played by Vietnam's farmers not just in agricultural transformation, but also the country's political transformation and the development of 'renovation', *or* doi moi, in the 1980s.

5.1.2 Models of relationships and everyday politics

As outlined in Chapter Two, Kerkvliet (2005) presented three models to explain farmer-state relations in Vietnam. First the 'dominant state' model of relations, based on the premise that there is little scope for organisation and decision-making outside the party-led command structure, and people only do the party's bidding. In Womack's (1987, p.499) view, after the war's end in 1973 and reunification in 1975, the state could disregard local support: 'the masses have become the fish and the party controls the water'. Second the state as the organiser of authorised organisations, what Kerkvliet (2001, p.243) calls

'mobilization corporatism' because it can mobilise people to support government programmes, particularly by 'groups that otherwise might be unruly'. Third a more interactive and responsive model which Kerkvliet (2001) calls 'dialogic', in which authorities nuance policies as they go along, responding to circumstances as they develop. In this model there is room for reinterpretation of central policies at lower levels, although not without risk to the provincial party secretary, should things go awry (see Dang and Beresford's (1998, p.69) account of what happened to Kim Ngoc when he 'failed to achieve…high-level support' for his unorthodox experiment in collectivisation in Vinh Phuc Province in the 1960s and as a result, lost his job as Leader of the province). In this chapter, empirical materials will be used to test whether any one of the three is sufficient to account for farmer-state relations in An Giang.

This chapter also engages with issues of scale, in this case the effect of the local on the national. The significance of local actions in pursuing 'multi-scalar politics' is debated by Leitner and Miller (2007, p.121): 'Scale is one important dimension of strategies of social action and is the subject of intense debate among many social movements. What is the most effective scale for organizing?' Using the empirical materials gathered in this research, it is argued that local actors did play a part in Vietnam's 'multi-scalar politics'.

5.2 Farmer-state relations: Kien An Commune, May 1978

5.2.1 Farmers raise the dike

In 2004 a group of farmers in Kien An commune explained why they decided to raise their dike in 1978 and how the state responded. The context for the farmers' actions was as follows: insects had been attacking crops, causing wide-spread food shortages; HYV rice was available with the potential to double or treble yields, the policy was to change to HYV rice, but the reconstruction of fields to realise that potential had not taken place; and in 1978 the floods arrived earlier and were more severe than usual (Vo Tong and Matsui, 1998). While the

plans of Hanoi to introduce HYV rices may have extended all the way to An Giang Province, in reality that would not have included detailed prescriptions for local circumstances; much would have been left to local decision-makers to respond to local circumstances, 'authorities can adjust and change policies in the face of realities beyond their control' (Kerkvliet 2005, p.36). What happened in Kien An is an example of just how local, local decision-making was.

The first crop of HYV rice in 1978 had been grown without a dike after the floods receded, and had been harvested. The land was not at the lowest level so farmers were waiting for the first rains, due in late April, early May, to moisten the soil before planting the second crop: sown too early and the seedlings would be scorched by the sun, too late and they would be drowned. When the rains arrived they planted seed and it started to grow, but soon the water level in the river began to rise, water entered the field and began to rise and farmers could see that the plants would be drowned before flowering was complete and seed had set.

At this moment, "*government ordered farmers to harvest the crop*", even though no grain had been set. The principal teller of the story was Mr T, at that time the Vice-Leader of the commune, meaning he was a party appointee, but possibly also elected by farmers. He and the others set to work and created the barrier to protect the rice. They did this by digging up one side of the road that bounded their fields and piled it onto the other half of the road, creating a bank double its original height. This bank delayed the flood, the plants set seed and a crop was harvested. By making their own decision these farmers secured their crop. Later, farmers nearby who were growing sugar cane, asked if Mr T could do the same for them and save their crop as well. Mr T called for the loan of a tractor from a neighbouring district and, in one month they built 6.3kms of dike. To emphasise farmers' commitment to the plan Mr T said they:

> [used] *expensive cooking oil to light up the bank so they could work at night*.

Mr T did not go home for a month, in his absence his wife fed their animals on the leaves of their banana trees, as there was no other food for them. To reinforce the bank against the high floods people lent him corrugated iron sheets from their houses, *"he promised to return them"*. In this way they saved the rice and the sugar cane, in the process they transformed their land to meet their needs. What they did was not outside the state's plans, but they took the initiative, they did not wait to be instructed or given consent by the government but they were not opposed. In Kerkvliet's 2001 analysis, this was a 'dialogic' interaction between the authorities and the farmers, the farmers micro-managed the situation to meet their needs, and they were unopposed by the state.

Earlier, a different group of older farmers in Kien An had told us of the problems in the same year and how this had led to the building of the first August dike. This previous group gave no details, but their comments did confirm what Mr T and his friends later told us.

5.2.2 The state's response: links between the local and the national

The province acknowledged the farmers' actions and made them known to Hanoi. In Mr T's account:

> *Mr Do Muoi* [the Deputy Prime Minister responsible for Socialist Transformation of the south, and later Prime Minister then General Secretary of the party], *a Leader of the country, he visited the hamlet in the flood….does not believe this model….travels by plane from Hanoi….must come and see for himself* [having seen it he] *requests the government to keep the dike.*

Subsequently these farmers are asked to multiply new seed rice for other farmers, using this land protected by the dike. This is a job that would have been very prestigious, if it had gone wrong the consequences for these farmers, the area and the credibility of the party and state could have been serious, so this was an accolade, a public statement of faith.

Here, the state showed itself to be willing to let farmers take an initiative. Had farmers been operating within Womack's (1987) state-dominated model of decision-making, trying to micro-managed the details, at this level most likely there would have been a delay and the crop would have been lost. The move from one crop to two was going to require dike building, and here farmers appear to have done it spontaneously, unfettered by authority. This reaction by the state hardly fits in with the model of farmer-state relations as 'dominant state' (Kerkvliet, 2005). If that model existed, then farmers would have needed explicit authority before getting to work on the dike. The pressure on the farmers was to act quickly and decisively. When the rains begin and the river rises events move steadily, irreversibly. There would have been no time for meetings in far-off Long Xuyen—a day's journey on slippery muddy roads across a flooded island and then across a swollen, fast-flowing river, and telephones would have been few and far between and possibly out of order once the flood began. If that crop was to be saved, local decision-making would have been crucial. However, Kerkvliet's second model, 'mobilization corporatism', could apply. Almost certainly the farmer who led the story telling, Mr T, as the deputy Leader of the commune, would have been a member of the party, so their actions could seen as voluntarism (Turley, 1993), an authorised group acting in support of government policy.

This event could have been dismissed as being too small-scale to interest decision-makers and policy creators at higher levels. Yet, it was not. It attracted attention from provincial officials and then from the national level, drawing no less than the man charged with turning the southern economy from capitalism to socialism, to visit Kien An. Further than that, the state then hitched itself to the farmers' success by asking them to multiply seed rice, a most responsible task given the shortage of food at that time. Thus the state does not just accept their actions, it endorses them and engages with them, a two-way process of 'dialogic' relations is underway. A very senior figure travels 1500 kms from Hanoi to Kien An in the monsoon season, to see for himself what they did and to tell them it

was the right thing to have done. By backing the actions of these men he is putting the party's credibility at stake. This reaction by the state is more in line with Kerkvliet's third model, 'dialogic' relations, a nuanced pragmatic response by the state to what was happening on the ground. Mr Do Muoi was later to play a major part in the attempt to introduce collective agriculture in the Mekong Delta (Vo Tong, 1995 and 1998), perhaps he saw the actions of these farmers in Kien An as a 'proto-collective', a model he could harness.

5.2.3 Reflections on Kien An Commune: a view of 1978 from 2004

I had worked in An Giang Province since 2001, but I did not engage with Cho Moi District and Kien An Commune until May 2004, so I was personally unknown to the authorities there. Unlike Vinh Binh, I had no 'social capital' with the commune authority and no previous personal contact with farmers there. My official counterpart would have been known, but when he first took me to the district and then the commune to ask for access, the meeting was quite formal and business like. In Chapter Three I described how we asked the Kien An authorities to invite a range of people to a meeting where we asked about the effects of high dike building. In parallel with household interviews I asked to meet groups of older people who could tell me about environmental changes in the area. The meeting with Mr T and his friends was one of two environmental meetings in Kien An.

What transpired at the meeting, and what it says about farmer-state relations at the time was discussed above, but that the meeting took place at all, as much as what was said and how it took place, offers an insight into farmer-state relations in 2004, more than 25 years after the events described, had taken place. The meeting was quite formal, the group at the table all wore shirts and long trousers and looked smart, but not in the sense that they had been 'got up for the day', but as if this was their everyday dress. We sat at a table covered by a table cloth and were served green tea. To the side, not part of the circle, but included by a break in the circle, sat two other men, one of whom I remembered

from the meeting in the commune headquarters, the other a man of small stature, barefooted, with a weather-worn and wizened face. The man from the commune was well-dressed, a good shirt, smart trousers and shoes, the appearance of someone who was at home in an office, but not out of place out and about with residents. The older man looked to be well into his seventies, he would have been in his forties at the time of the events described and may have been an active participant. These two did not speak, but photographs taken by my team show them to be paying careful attention, absorbing what was being said.

I had no idea in advance what we would hear. Mr T's account was unsolicited, unprompted, uninterrupted, and appeared to be unforced. At the end we posed for photographs on the steps of his house, which interestingly was still raised up above the ground. What kept coming to mind afterwards was that in some way this meeting had been deliberately set up, the information I had been given was quite unlike the answers to questions elsewhere, it was stark but it seemed credible. It did not criticise authorities, although Mr T said they had had to press hard to get a loan of a tractor, but it was not an anonymous account; the first person singular featured throughout the account. On reflection at the time I had, and still have, the impression I was being told something of considerable importance which had not got to outside ears before, in a sense I was being used to put on the record an event of significance outsiders knew little about. At the time of the event, the late 1970s, the narrative in the west was about the hardships people in the delta were suffering after the North 'captured' the South, and how people were leaving the country, the so-called 'boat people', for political reasons or starvation, or both. Yet this was the time of a notable agricultural success, the rolling out of HYV rice with multiple crops of rice in one year giving much higher yields (Naughton, 1983). It had been a story worth telling, but it was drowned out in the West by the focus at that time on Truman's doctrine of US opposition to communism, wherever it occurred (Kaiser, 1980). When the Western press was admitted to the south after reunification reporters focused on 'epic wartime events' the fate of

American soldiers 'missing in action' or the decrepitude of transport in Ho Chi Minh City (Marr and White, 1988, p.6). Journalists sought out stories that served a Western narrative of communism as backward-looking and authoritarian. The success of the rice transformation was ignored.

5.2.4 Concluding remarks on Kien An Commune

Mr T told me about farmer-state relations in 1978, but the staging of this meeting also had something to say about farmer-state relations and the space available for 'everyday politics' in 2004. Whether or not Mr T had been asked to tell an outsider about these events is not known, but he did so in the presence of a commune official, there was space to do it. As a Westerner, a researcher known to be asking questions about agriculture, perhaps I was seen as someone who would recognise the significance of what was being told and make it known. This seemed to be an account both farmers and officials were content for an outsider to hear, a small tale in itself, but signifying the constant interactivity, the intertwining, of farmers and the state. These were not guarded, 'off-stage voice, but 'on-stage' ones (Kerkvliet, 2009, p.234). What happened here in 1978 was something they now wanted the wider world to know about. It was not Scott's (1985 and 1989) 'everyday resistance', rather it was adaptation to the new political regime, a continuation of what White (1986, p.50) calls 'peasant participation in the elaboration of a new system' and further evidence of a 'dialogic' relation between farmers and the state.

5.3 Farmer-state relations: Binh Thanh Commune, 2002-2007

5.3.1 The state takes the lead and raises the dike

In 2001 the height of an August dike in Binh Thanh was raised to keep out all flood water (Figure 53). The rest of the island was at several different levels,

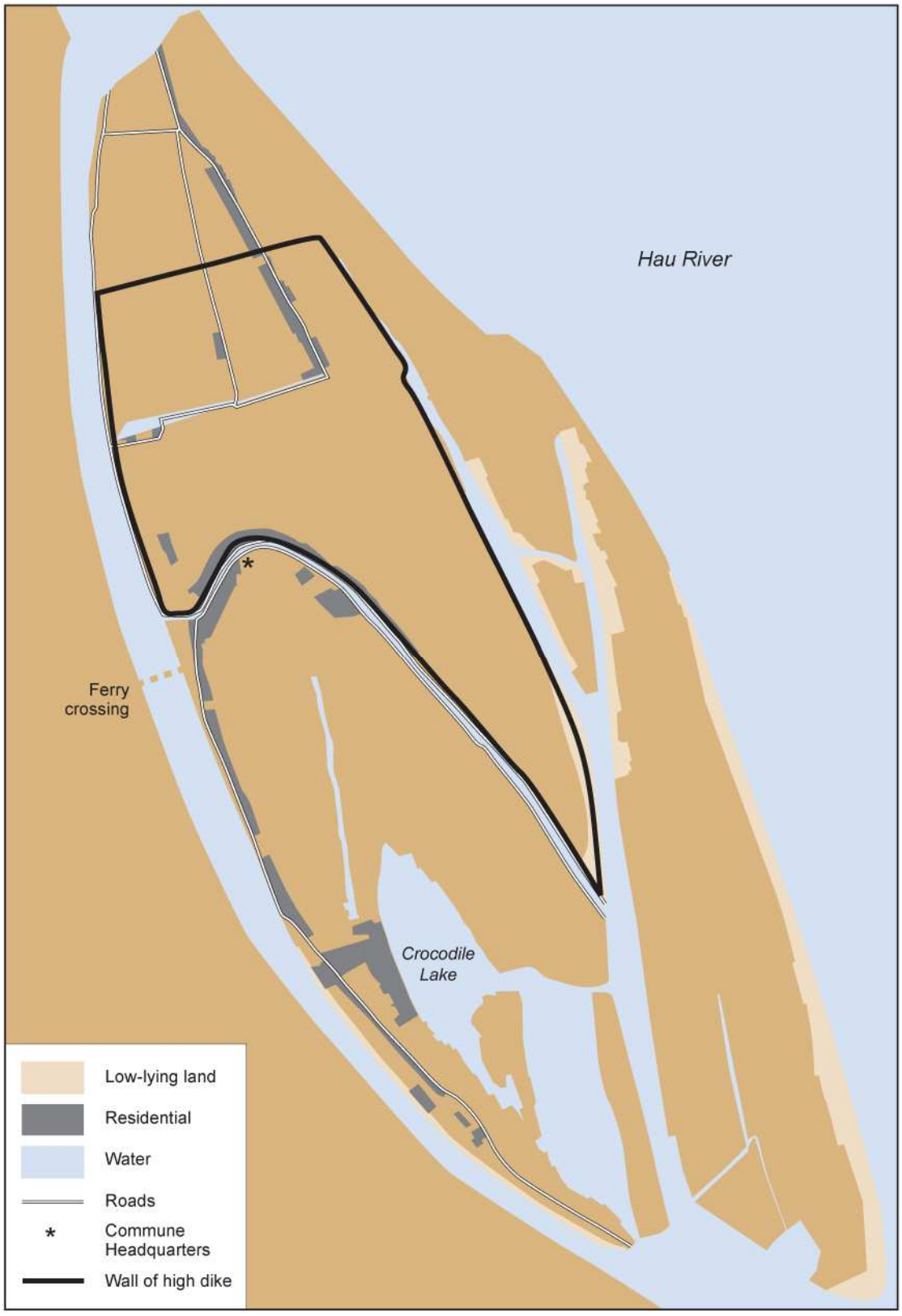


Figure 53 Binh Thanh Commune showing area enclosed by the high dike

Source: based on map of An Giang People's Committee

ranging from banks that were rarely covered to deeply-flooding areas where shrimps were raised in net cages in the floods. In Kien An Commune residents spoke about the building of the first August dike in 1978, more than 25 years ago. By contrast in Binh Thanh Commune, between 2002 and 2004 and again in 2007 this research was able to follow farmers' and officials' reactions to the changes brought about by the high dike.

The President of Binh Thanh Commune was a figure of some power as he was also Vice-Leader and Chief of Police. A former army officer, he had arrived in 2000 and was still in post when I last visited in 2007, a rare exception to the apparent rule that officials seemed to move every two or three years. Over the course of six years many conversations were had with him and other officials, including on one occasion the Leader of the commune.

From these conversations it was possible to put together the case the commune had made for increasing the height of dike. This dike was built because it was, "*the policy of the government*", we were told on several occasions. The President said the purpose of the authority was, "*helping farmers to develop economically*" (February 2003). The dike was expected to raise some, at least, of the 99 poor households, out of poverty. At the time of this research, rural poverty was defined by the Government of Vietnam as a household with an income of less than 200,000VND per month, just under 13 USD (Prime Minister's Decision No. 170/2005/QD/TTg dated 08 July 2005, cited in World Bank (2007)). The President of the commune said rice alone would not produce sufficient income to support a population density of 7.75/h on the island, so farmers needed other ways to generate income. A group of eight farmers in their late 60s and older said that formerly they had grown floating rice until that became unprofitable, and then grew tobacco until that too became unprofitable. Next, they raised August dikes around parts of the island, grew vegetables in the dry season and gathered wild food in the floods (Figure 54), but income from gathering free goods had declined sharply and poorer households had

Figure 52 Woman sorting wild water chestnuts

In the flood season fields which grow crops in the dry season become locations for the growth of wild resources, such as water chestnuts, shrimps, fish and crabs. Richer households said the return on gathering them was insufficient, but poorer households said they would miss these resources if flood waters were prevented from entering fields. (author. January 2003)

insufficient to live on in the flood season. Rice growing had also produced rice bran, with a 50 to 70% protein content (Gnanasambandam and Heitiarachchy 1995), and this had been used to raise pigs, but when rice-growing stopped farmers turned from pigs to cattle, feeding them on wild grass and the remains of crop plants. A high dike, the older farmers said, would permit year-round vegetable growing and cattle-raising. Another reason given by the President was that a high dike would eliminate child deaths caused each year when very young children fell from front porches into the flood water while their parents were working (Figure 55).

Asked specifically if people had been consulted about raising the dike the President's reply was, "*yes, but the decision was made here*", which was taken to mean the commune headquarters (HQ) building where the meeting was taking place. Asked:

> *who has the plan, farmers or* [HQ]? the answer was we *have a plan, have a discussion with farmers, here* we *decide.* (24/06/02).

The dike could only be built if at least 50% of farmers agreed, without that level of support they could not go ahead. Asked if anyone had objected, the President said only two households were not happy, so he had talked to them and tried to persuade them to agree, telling them their children could now get to school in the flood season and they could grow three crops in a year. This contrasted with comments by a former official, when working in a different commune at a later date, who said it had been very difficult to persuade them.

Figure 53 Young girl on the porch of her home

During the flood season this house will be surrounded by more than a metre of flood water. When parents are at work children are left in the care of siblings, some fall off and drown. (author. May 2004)

The figure given to us for the cost of the project changed over the years of this research. In 2002 the President said the commune government paid 500 million VND and farmers paid 120 million VND, so a total of 750million VND. Farmers were supposed to pay in three instalments, after three harvests, but up to that point in 2002 only 80% had done so, which he called "*a bit poor*". The farmers' costs were shared on the basis of 300,000 VND per 0.1ha. In December 2007 the President said the district had donated, "*not a loan*", 1.2 billion VND and farmers had paid 300 million VND, a total of 1.5 billion VND. The government had made this contribution because:

> *before 2001 people here had been too poor to pay for the dike.*

In 2002, another official from Binh Thanh, speaking after he had been transferred to a different commune, said the original estimate was 400 million VND, but the final cost was 1.0 billion VND:

> *they needed government support, they were very lucky to get this from Hanoi* and, *it was very hard to persuade farmers to accept it.*
> (Former official of Binh Thanh Commune, 28/06/02)

It was not possible to deduce from this data exactly what the dike cost nor to cross-check the figures with other sources.

A major question about the high dike concerned whether the sluice gates would be opened to admit flood water and alluvium and how the timing of an opening would be arranged. At first the potential loss of alluvium was seen as the principal reason for opening the gates, but research in Kien An revealed concern about the build-up of pesticide residues and health problems associated within high dikes which were not flushed out by flood water. This finding fed into the later interviews with officials in Binh Thanh. In 2002 the plan was to open the dike every four or five years. Asked who would choose the year and the timing, the President replied:

> *the commune would decide on the year and they would consult farmers on the month*, but added *the water would be allowed to rise inside the dike at the same time as outside,*

indicating the timing would be determined by the timing of the flood rather than anything else. My translator told me that it would be very complicated, since it would involve the Farmers' Union, the farmers' clubs and something called the 'co-operative union'. This concern with layers of structure, official organisations, suggested that in this commune relations were less 'dialogic', less interactive, and more 'mobilization corporatism', with decisions being handed down rather than reached interactively (Kerkvliet, 2005), than relations in Kien An had been in 1978. Here groups of farmers were being mobilised in support of the government's plans, akin to Turley's (1993, p.269) description of 'intensive, preferably voluntary citizen participation in [commune] affairs through formal institutions'.

In 2004, three years after the wall was completed, the President said that no decision had been taken yet about which year the gates would be opened. Up to the time of our last visit in 2007 the gates still had not been opened. In 2007, the President said they were consulting about opening them but, "*more than 70% of the people did not want them to be opened*" (December 2007). One reason was that once water entered the fields there would be insufficient space and food to accomodate the increased number of cows. Another reason was there would be 'social and economic destruction', meaning that people had got used to life without a flood and they did not want to change back to a flooding life-style. A third reason was farmers were now using "*biotic products*" as fertilisers, so there was less need to flush the fields, he said. However, they were allowing rain water to accumulate inside the dike and then towards the end of the flood season, allowing river water to enter and leave by the sluice gates at low tide. In this way they hoped they were reducing the burden of toxins inside the dike. The commune appeared to be caught in the trap observed elsewhere. By creating flood-free zones, farmers with land within it were growing annual and perennial crops and raising animals side by side, and it looked increasingly

impossible to find a time when no-one's crops or animals would be affected by a flood. With this change to a high dike the former 'synchronised fallow', a flood season without crops in the fields (Lansing, 1991), had been destroyed.

The remark made about the build-up in the number of cows was a symptom of the power available to the commune government to shape the direction of agriculture. Through its support of applications by farmers to the bank for loans the commune could favour one technology over another and households of one level of wealth over others. Prior to 2001 there were about 500 head of cattle, but by 2007 there were over 1500. Farmers bought calves from Khmer herdsmen, fed them for 12 to 18 months and then resold them, often doubling their initial outlay or more. But the number of cattle was outstripping the available wild grass. At this point another policy came into play. There were cheap loans available for growing baby corn for export, and the plant residue could be fed to cattle. This was part of the so-called *bo* (cattle)-*bap* (maize)-biogas policy, although no-one on the island was seen to be making biogas.

As a further support to households, the commune arranged contracts between farmers and buyers. The commune would approach or be approached by a buyer and asked to find farmers willing to raise a particular crop. The company would supply cheap or free seeds, sometimes including fertilisers, and farmers would sign a contract agreeing to sell the produce to the buyer at a specified price. The commune could then step in and support applications for loans for households with contracts. For example, the commune had made contact with a mushroom-buying company in Ho Chi Minh City which was offering farmers contracts to produce straw mushrooms. The District was paying for a demonstration hut (Figure 56). at commune headquarters and farmers who wanted to grow mushrooms got support for their loan applications.

These arrangement produced tensions between producers and buyers (Figure 57). If the market price at the time of harvest was lower than the one

Figure 56 Binh Thanh Commune demonstration house for growing straw mushrooms

Mushrooms are grown on bales of moistened rice straw. The side panels can be adjusted to control temperature and humidity inside the house. The Commune had a policy to develop mushroom growing. They were doing this by supporting farmers' applications to the bank for low-interest loans.

(author. January 2003)

Figure 54 Grading okra on a farm

The buyer, in the green and brown shirt with his back to the camera, is sorting the fruit. Okra in the pile closest to the camera have been rejected because they are bent, the main pile to the man's right were bought for 600VND/kg. Later that day this buyer was selling blue bags of okra to a man in a boat nearby on the river for 1,200VND/kg; the next day I saw okra on sale in Long Xuyen market for 2,400VND/kg. Although this household was only 10km from the city by boat, the farmer was getting only 25% of the final price paid by the consumer. Individual farmers were dealing directly with local buyers, they were not organised into groups to sell in bulk. In the absence of producer groups, bulk sales only happened when the commune developed a 'policy' with a wholesaler to develop a crop. (author April 2002)

agreed at planting, buyers would look for ways to hold down the price, so they might claim the products fell below certain standards. Should the market price at the time of selling be higher than the one agreed when the crop was planted, then farmers might try and hold back their produce until buyers raised their price. In order to achieve a contract a group of farmers would work with the commune. In one case a group of farmers with a contract to multiply baby sweet-corn seed for a Thai seed company persuaded a neighbour with a field next to their fields not to plant his usual corn variety. They did not want the pure seed line to be contaminated, so they asked him to plant a different crop, or delay sowing his crop for a few weeks, which he agreed to.

In these ways the government of the commune was attempting to help households to adapt to the new conditions, possibly an example of 'mobilization corporatism' (Kerkvliet, 2001, p.243), because they were mobilising people to support the commune's decision to raise the dike.

5.3.2 Farmers' unpreparedness for raising the height of the dike

Farmers within the high dike in Binh Thanh appeared to be unprepared, almost caught unawares, by what happened after the height of the dike was raised. Overall, this suggests farmers acquiesced to the plan, rather than actively sought it. Their unpreparedness was signalled in five ways: the number of cattle rose sharply, leading to a shortage of food and an excess of manure; lack of confidence in the strength of the wall; distortion of the market for vegetables; a rising concern about the deterioration of the soil; and concern about the adequacy of water for irrigation.

The first signal of unpreparedness was the sharp rise in the number of cattle being raised and a shortage of food to support them.. Each animal needed 20 to 40kg of grass per day. One farmer was raising 76 cattle in stalls (Figure 58). He supported them by growing fodder on 0.75ha, but this was unusual as most farmers collected wild grass, even gathering it away from

Figure 58 Cattle in stalls in Binh Thanh Commune

The commune had a policy of support for farmers applying to the bank for loans to purchase cattle. This household had over 70 animals. Between 2002 and 2007 the number of cattle in the commune tripled, from 500 to 1500. This led to a shortage of wild plants for animal food Here they are feeding on the remains of maize plants. On the right, underneath the wooden stand, light is reflecting off a stream of manure. Farmers were unsure what to do with manure, with some farmers burying it to reduce the smell. Above the stalls, suspended from a bar, are nets which are dropped down at night to keep insects off the animals and reduce the chance of insect-borne diseases. (author. January 2003)

the island. The remains of crops, such as sugar cane and maize were now being sold, rather than given away for fodder. One farmer knew elephant grass would be good fodder, but was reluctant to grow it because of the difficulty of eradicating it if he wanted to reuse the land. In 2003, a 75 year-old farmer, particularly aware of the shortage of wild grass, said that as more farmers turned to cattle, "*cow people must think about growing grass*" (February 2003). This man described how to make cattle feed by mixing rice straw, urea, water and rice bran. He foresaw difficulties ahead if they did not start growing food for animals. Another effect was the rise in the price of young animals, and a decline in the price of finished ones.

Related to the rise in cattle numbers was an increase in the amount of manure, and uncertainty about what to do with it. Formerly manure had been sold as fertiliser for raising cabbage seedlings, but now it was being given away in exchange for small gifts, or nothing:

> *Vietnamese farmers regard manure as dirty, likely to carry disease and harbour insect larvae, which attack crops if used as fertiliser.*
> (Fieldwork assistant, February 2003)

Some farmers said they buried it to get rid of it and the smell. When the Leader was asked what advice they were giving to farmers about this , he replied, "*he was not a graduate in agricultural and did not know what to do about it*", rather confirming the earlier point that the Leader, "*does very little with residents*". A likely future consequence of using grass and plant remains as animal food, but failing to incorporate manure back into the agroecosystem, will be a reduction in soil nutrients (Pretty, 2008).

At first farmers were not confident the high bank would hold when the river level rose. One said in 2002 that he had not invested in planting crops in the flood season in 2001 because he did not believe the bank was strong enough. These fears seemed understandable (Figure 59), and they were confirmed in 2007 when

Figure 59 The recently completed high dike wall in Binh Thanh Commune after the first flood season

Projecting from behind the tree trunk on the left is a motor which drives a propeller to push water up the pipe and out into the Hoa river, which lies behind the bank. This arrangement would have been used should the bank break, also to pump out excess rain water. (author, May 2002)

the President said that in 2001 water rose to within three centimetres of the top of the dike. However, he added a team was always on standby to react to signs the bank might breach and they could get help from the district within 30 minutes

The high dike allowed farmers to grow vegetables year-round, but soon this increased level of production distorted the market and in 2007 some were saying it was no longer economical to grow vegetables, but better to stick to maize and sugar cane, the same crops they had grown before the height was raised. A tax official said:

> *when new technology is shown on TV many farmers follow it and the price goes down.* (Tax officer. May 2002)

A farmer who formerly grew water chestnuts in his field now could not do so in 2001-02 and he did not know what to grow in its place. Another farmer, with only 0.2ha of land, lost money because he did not properly understand the technologies of the new vegetable crops he was growing. Also, he misread the market and planted the new crops when the price was at its peak and harvested them as the price crashed through over-production. He said his soil was "*exhausted*", he had bought chemical fertilisers for his new crops, but when they failed he fell into debt. This issue is returned to in Chapter Seven.

In 2002 farmers were either not concerned or they did not know what would happen to the fertility of their soil once the dike had been raised. One farmer told us he did not know when his soil would become exhausted, but he would work hard for his family. His short term goals were more about his family than the long-term health of his soil. One translator commented:

> [He will] *give his grandson a lot of money and some exhausted land.* (February 2003).

By 2007 the position had changed. A near-neighbour of the man above was complaining his soil was exhausted. He was using more artificial fertiliser

but he would have preferred to use manure. He could not afford the labour needed to prepare it, adding that a bag of prepared manure, which he described as, "*dried and burned*", was equal in price to 50 bags of unprocessed manure.

Formerly, farmers pumped water into their fields from the ditches that ran though the area, with the level in the ditch rising and falling with the tide. Now these ditches were cut off from the river and farmers were paying the government a flat rate of 50,000VND per tenth of a hectare per three month "*growing season*" for water to be pumped into the ditches, regardless of which crops they grew and how much water they used. Already in 2003, some farmers said the soil was dry and claimed the government was not putting enough water into the ditches. In the monsoon season rain water was accumulating inside the dike and needed pumping out, to prevent plants being drowning. This required a further payment to the government, yet one farmer told me he had to go to the commune HQ and complain before they pumped out the water. The issue of water control inside dikes is the subject of Chapter Six.

5.3.3 Binh Thanh Commune: mobilization-corporatism and farmer acquiescence

From the comments of the farmers and my observations there was a strong suggestion they were not prepared for what would happen once flooding ceased. Farmers may have been offered advice, low-interest loans and new technologies, but the overall impression was that they were reacting to a change of circumstances, rather than being proactively prepared for the change. From the empirical evidence presented above the dike did not appear to have been raised in the teeth of farmer opposition, rather farmers had gone along with the development and the accompanying policies, which were directed to help them adapt to the new conditions. Members of the commune government said farmers were consulted about the dike, but it was difficult to detect 'grass-roots democracy' in action here, which is what my gatekeepers said was the policy to be followed in this kind of development:

> The people in communes and villages shall discuss and directly decide on the following works:
>
> 1. Undertakings on, and levels of, contributions for the construction of infrastructure and public-welfare facilities... (*The Regulation on the exercise of democracy in communes*, Government of Vietnam, Decree 79/2003/ND-CP of May 11th 1998 promulgating the regulation on the exercise of democracy in communes states: (Chapter 3, *Article 7))*

In 2003 it was superseded by Decree 79/2003/ND-CP of July 7th 2003, but the section quoted above remains unchanged. These decrees have been criticised by several writers as too centred on the wishes of the state. Fritzen (2006, p.25) argues that state management agents 'face weak incentives to transfer decision-making power to the grass-roots', Nhut Duong (undated, p.4) suggests 'grass-roots democracy is...only a means for the government to continue to hold a grip on power using grass-roots democracy merely as an exercise in legitimatisation', Evers and Benedikter (2009, p. 436) argue there is a only superficial change from the 'era when a hydraulic bureaucracy was born [1975] in the delta as a child of the new socialist state and constantly consolidated its power over water as a means of production', while Fforde (2009b) contends that 'references to grass-roots communities are better translated as references to the base of the apparat'.

In this commune there were indications the government made the decision to raise the dike, farmers had born part of the cost and *post hoc* were being persuading to go along with it. This was being done in two ways: first, support for applications to the bank by poor farmers for loans; and second, developing contracts with buyers for the purchase of produce. The most obvious was support from the bank for raising cattle and crops. At first the return on raising cattle was substantial, some farmers reporting a doubling of value within 12 months. However, while the number of animals rose, the availability of feed did not, and by 2007 the attraction of this policy was in decline. In the case of vegetables, overproduction caused market instability and poorer farmers made losses.

The commune government acted as intermediary between farmers and large-scale purchaser because there appeared to be an absence of co-operatives, or farmer production groups. The word 'co-operative' carried negative connotations, while 'farmer co-operation' and 'farmers co-operating' did not. To avoid confusion with the former state-organised co-operatives, it needed to be preceded by the words 'new-style'. New-style co-operatives, detached from the state, were permitted under a 1997 law (Government of Vietnam: Co-operative Law, 1997, cited by Nguyen, 2007, and Marsh and Macaulay, 2002), but have been noticeably slow to develop in the south of Vietnam. Pattison (2000, p.33) claims in 1996 6% of households in the south were engaged in co-operatives, against 98% of households in the north, although the portions may have changed since then. In the absence of a co-operative, this commune government was playing the role of intermediary between growers and buyers. The link between commune policy and bank lending was made clear by the bank officer in another commune who said:

> *the policies of the bank and the commune fit together …. economic policies may vary from commune to commune. In the strategy they follow the commune policy but individual investment decisions are made by the bank.* (June 2002)

This comment reinforces the view of the commune as broker, if not controller, of economic life in the commune. In this they were acting as gatekeeper to diversification, important institutions in determining if farmers trying something new were to be successful, as described by de Haan and Zoomers (2005).

With some legitimacy, the government of this commune could claim to be raising incomes and reducing poverty, both of which were justifications for raising the height of the dike. However there were dangers in this type of policy-led development. One was the limited technical knowledge of commune staff, as with the policy to provide loans for cattle, to the point where there was insufficient grass for them. Another drawback was that so long as the commune

took the lead in economic initiatives, farmers were likely to remain unorganised, disparate producers, disconnected from the market, easily picked off by middle-men and unable to create sufficient mass to command better terms from buyers.

The commune government was the controller of economic life, it created the environment for economic activities. This was not a return to the 'postrevolutionary degeneration of mass-regarding politics' (Womack, 1987), but by its actions the government, and behind them the CPV, were shaping economic life in the commune through its policies. Farmers here were passive in their relations with the state, there was no evidence that the commune's direction was challenged by farmers, rather farmers were going along with it; everyday politics was acquiescence to the actions of the state, there was no overt resistance or even advocacy against the policies. In Kerkvliet's (2005) terms, relations here were not 'dialogic', new ideas came from commune staff. In their 'on-stage' politics, at least, farmers accepted the policies as a *fait accompli*, and they were willing to go along with the plans and actions of the state, even paying a share of the cost. Farmer-state relations in Binh Thanh Commune were less 'mobilization corporatism' than 'dominant state', but with inducements being offered to farmers to go along with the states' wishes.

5.4 Farmer-state relations: Vinh Binh Commune, 2001 to 2007

5.4.1 Farmers and the commune discuss raising the dikes: 2001-2002

In the last section, it was argued that farmers in Binh Thanh Commune acquiesced to the wishes of the state, farmer-state relations were not 'dialogic'. By contrast, in Vinh Binh Commune farmers and officials discussed building a high dike and farmers voted against the plan.

In Vinh Binh, located in the Long Xuyen Quadrangle where floods were two to three metres deep in most years. the principal source of income was HYV rice grown in compartments inside August dikes. Between 1987 and 1996 all the

land had been enclosed, enabling two crops to be grown between one flood season and the next. By comparison with farmers in Binh Thanh and Kien An Communes, the options for alternative income-generation here were very limited. To improve incomes, the commune government had a plan to increase the height of some dikes to create flood-free areas.

On my first visit here in July 2001, (see Section 3.2.1) the subject of high dikes was a topic for discussion. Farmers had two concerns about high dikes: the effect on the soil and the strength and reliability of the dikes. All the farmers at the lunch described the quality of their soil as 'better now', which I learned later was a comparison to the acid sulphate conditions created after 1975 when *Melaleuca* (most likely *M. cajuputi* (Powell)) forest were felled by pioneer farmers as part of agricultural policy after 1975. Farmers put this down to the building of canals for draining away acidic waters, and the supply of alluvium in flood water when it entered the fields. Farmers knew that a high dike would end the supply of alluvium and they would need to increase their use of fertilisers. The second fear arose from farmers' perception that the dikes were fragile and not secure enough to withstand floods of unpredictable size and timing. Just the previous year these farmers lost their second rice crop when flood water overwhelmed the dike earlier than expected. These farmers were not convinced a high dike would keep out exceptionally high floods, and if they had diversified into perennial crops and animals, the economic consequences would be severe.

Another factor was the cost of the dike. A farmer with his own high dike explained how much it would cost. To enclose 50ha required a dike of 3 km [sic]. If it was 27m^2 in cross section, the total volume would be 81,000m^3, a cubic metre of excavation cost 6.000VND, a total of 486million VND. Sharing this cost across 50ha gave a figure of just under 10million VND per hectare. He commented that neither farmers nor the government had enough money to pay for it. For all these reasons farmers were concerned about the height and security of the dikes, their lives and livelihoods depended on them. In this commune 'dike building is politics'.

In September 2003 I offered a feedback session on my findings to farmers, officials and traders. The offer was accepted and the session took place in the commune headquarters in November 2003 (see Appendix 4). The advantages of a higher dike set out at the presentation included: improved safety of the second crop and the option of year-round crops, which could increase incomes; potential to diversify away from rice; the problem of trying to reach agreement on when to start pumping water out in December would cease; and there would be more work available here. Anticipated disadvantages were: fears about the strength of the dike; concern about losing the benefit of the supply of alluvium; concern about loss of free goods in the flood water; and reluctance to give up 'the way of life' of rice, particularly the chance to rest from work when fields are full of water. In the discussion that followed there were divisions of opinion between farmers about the benefits. The farmer who had his own high dike was dismissive of the value of wild products in the flood season:

> *In this area very few fish…result of use of pesticides and fertiliser… now if you go to the field to catch fish not enough income even to pay for the bait…some years the flood is very high-dangerous for catching fish.* (household 18)

but a farmer who had nine children (household 27) said:

> *my family need access to fish, to sell,* [to make] *fish sauce…need this income.*

An official of the Women's Union said that when the floods were high farmers could not work and they had no income and a high dike would reduce under-employment in the flood-season.

The Vice-President of the commune put the case for raising the dike to the meeting. He said the population had increased, but the area of land remained the same, therefore a high dike would increase opportunities for employment and improve earnings. This was the same argument deployed by the President of

Binh Thanh Commune, suggesting it might have been a policy emanating from the district or province. The farmer with his own high dike was positive about the need for higher dikes in the commune, adding:

> *build many gates, so you do not need to break the dike—also admits alluvium.* (household 18)

Another farmer (household 23), of 3ha, charged the commune with responsibility for making the decision:

> *the commune must decide where* [it is] *suitable for* [high] *dike… where not… decide correctly. If dike built around large area, those farmers who raise fish will be in trouble if the water is admitted. Only suitable if everyone grows three rice crops. So* [Vinh Binh Commune] *must decide where it is suitable,*

after which my translator said that others present commented in support of that statement. The Vice-president of the commune went on to say that the government "*requests*" them to change. They "*must change*" to three rice crops, or a combination of rice and other crops, he said. The seller of inputs said she would welcome farmers growing three crops of jasmine rice each year, but added:

> [farmers] *must use a lot of chemicals*, and: *when farmers grow three crops of rice, serious blast*[2] *for third crop. How can farmer prevent*?

At this meeting there was a sense of genuine dialogue between the stakeholders, the officials and the farmers. However, farmers were not of one opinion, and the differences between them could be related to two factors: the size of their land holding and wealth; and the depth of flood water in their field. Those who farmed in very deep depressions were apprehensive about the walls bursting, as well as the loss of wild goods and sediment. Those in shallower depressions said they only got limited sediment and wild goods anyway so it was

[2] Blast is a fungal infection, often caused by *Magnaporthe grisea*

not worth hanging on to those assets and they would be better off growing another crop at that time of year. Those who were wealthy had less need of free goods, compared to their income from rice the small amounts to be gained from shrimps and fish were not worth the trouble, a question of opportunity costs. For poorer households the free goods were important and the chance to make a hundred litres of fish sauce to sell was important, it represented a bigger fraction of their annual income, a better opportunity cost on their time. The very fact that I was invited to present my findings at a joint meeting of farmers and officials suggested that the decision to build was not to be taken as a 'given' and that the subject was still open for debate. Most important of all, I sensed that farmers in this commune had more of a voice in the decision to raise the dike than I had previously understood them to have, and more than farmers in Binh Thanh had before the high dike was built there.

5.4.2 The policy of the commune

In 2002 a new commune Leader had just taken up his post. Formerly he had been at Binh Thanh, and as I was working there at the that time, events there became a reference point in our conversations. Asked at the first meeting about a high dike:

> *we had heard a high dike is to be built, where will it be?* He replied: *it needs good transport link. Not yet decided. They are thinking about it.*

The President of the Farmers' Union confirmed they were thinking about having a dike high enough to allow two crops of rice and another crop between floods, with the additional crop either at the end of or between the rice crops. The choice of a dike to extend the flood-free period, rather than create a no-flood zone, probably reflected the depth of water in this part of the district, well inside the Long Xuyen Quadrangle. In some places flooding could be 2.5 or 3 metres deep, if a bank around a flood free-zone was to burst when the floods outside were at their highest the consequences could include loss of life. The location for this proposed dike is shown in Figure 60.

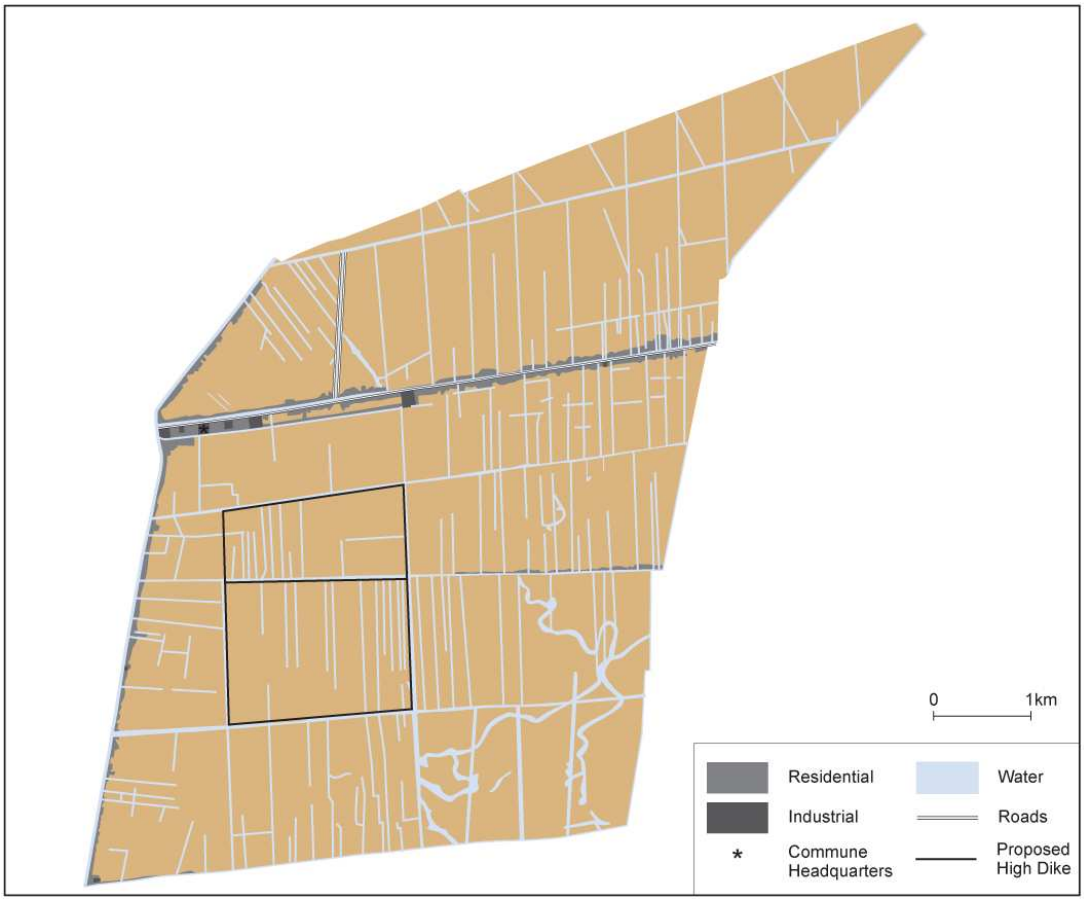


Figure 60 Location map for proposed high dike in Vinh Binh Commune

(Source: based on map of An Giang People's Committee)

The official said the idea for the raised dike had come first from farmers. The district had examined it and decided it would be better to go for two rice crops and another different crop, rather than three rice crops per year. The policy of the commune and the district was to diversify crops, to find additional crops. Asked who would take the final decision on building, the commune or the farmers, the President of the Farmers' Union told us:

> [the commune] *will follow the demands of farmers. They held a meeting with farmers and then they will decide*. Farmers would have to pay for a dike: *government organises, farmers pay 420,000VND per hectare.*

Discussion then followed on whether the sluice gates would be opened, but he was not clear how that decision would be made.

5.4.3 Farmers begin to resist the commune's plans: 2003-2004

Farmers here spoke freely for and against proposals to raise the height of the dike. This happened during household interviews in 2002 and 2003. In 2003 the President of one branch of the Farmers' Union said that, although he was in favour of the dike, only 20% of farmers wanted it and 80% were against it "*because it is low-lying land*". After my presentation in November 2003 the next visit to Vinh Binh was in May 2004. Dr Truong Ba Thao, my counterpart, asked if we could arrange meetings to gauge people's opinion of the proposed high dike. Once again there had been a change of personnel. The Leader was newly arrived, but previously he had worked in Binh Hoa. Asked how the policy was going in Vinh Binh and when the dike would be built he announced to our considerable surprise:

> *Farmers do not agree, now they are arguing over price of doors, concrete, very expensive.*

In January 2004 the commune had consulted farmers, many groups had come to the commune to discuss the proposal and they had rejected it. Farmers would have a raised dike to extend the flood-free period, but they did not want a flood-free zone. The Leader and Dr Thao discussed the reasons and Thao said:

> *farmers added up the cost and decided they would not make a benefit, yields would go down, so they did not want to pay the cost of building the dike.* Also, he said they did not want to give up rice, *because it was their custom*.

This news was fascinating on several accounts. First, what he reported was in line with what some farmers had said at the feed-back meeting in 2003, when some people expressed concerns about the wisdom of the high dike. It looked as if that feeling had spread. Second, the comment about the customs of rice growers had come up several times in conversations with farmers. Many farmers wanted to have rest periods when they did not labour in the fields and when they could socialise with neighbours—drink rice wine and party—and the loss of the flood season would end that lifestyle. Dr Thao had once said that in the delta, if two farmers carrying tools meet on their way to the field at five-thirty in the morning, and one asks the other to come and have a party it was very rude not to go to his house and party. Dr Thao added that farmers who had come to the delta from the north after the war would not do that, also that they were the ones who always had money to invest in new crops:

> [Farmers who came from the north after reunification] *always have money, but here if farmers have money they give a party for their friends, then have no money*.

At interviews farmers were asked what advice they would give to children who wanted to farm and they frequently said the most important thing was to have 'good behaviour', 'to get on well with your neighbours'. So there was intense social cohesion, and given the precariousness of life in the flood season, this was understandable. The third surprise was that it was the farmers with most land who were against the high dike. At first sight they were the ones who had most

to gain, moving from two crops of rice to three could have raised their incomes significantly, at least to start with, yet they were now against it. This was in contrast with their comments at the feedback meeting the previous November. The Leader commented on the farmers' decision, "*not good, farmers should change their custom*", but went on to agree with their view about the likely decline in soil fertility if a high dike was built.

A group meeting attended by nineteen people took place in June 2004 and lasted over two hours. Those attending included eight farmers, two teachers, the doctor, three traders, two commune officials and two landless workers; thirteen people had land in the commune and six did not. Participants were concerned about the strength of the dike and expected rice yields would first increase and then decline (table 8). A range of benefits were expected, from more education to year-round work, but they did not differ in their views about the negative impacts of a high dike from what officials had told us. The woman who owned the commune's most thriving enterprise, selling agrichemicals, said*:*

> *when she asked one hundred people about raising the bank there are about twenty to thirty who agree to grow three crops of rice per year.*

Guided by what the meeting said about indicators of wealth, and where we could find people of different wealth and health in the commune, and using a map made participatively at the meeting, we went on to visit twenty-four households. Households of different wealths spoke of their positive (table 9) and negative (table 10), expectations of a high dike.

Table 8 Anticipating the effects of raising the dike in Vinh Binh Commune, May 2004.

Findings from a participative group meeting of nineteen people, thirteen had land and six had none. The group included farmers, traders, workers and commune officials. This is a translator's summary of what people said.

Present conditions	Expected changes
Education	
• There used to be only one primary school in the commune. Now there are primary schools, a secondary and a high school. • Education standard is low, many new teachers. • Most children go to school, some stay at home to earn, or follow parents to industrial zones for work. • 5% of children leave school because of poverty, higher than previous years. • A lack of teachers, currently short of five in the secondary and eight in the high school. • Most teachers come here from other places • Lack of parental attention on education • Students behaviour is better than in urban areas, but coffee shops and "*drinking shop*" badly influence students	• The number of teachers in this commune will increase • There will be "*better conditions for education*" here after the dike is raised.
Socio-economic	
• Try to reduce poverty and end famine in this commune • Living standards have increased • More vehicles for transportation • "*Facilities for human life enough*" • Lack of equipment for producing • More landless people • More advantaged facilities for catching fish. • Population growth • Because there are fewer jobs in the flood season, people spend more time drinking wine. • Living standard here is getting better, but still lower than other places, so they want to build a dike.	• Family economics have improved so more children go to school now. • More employment. • Local infrastructure is better/improved • Enough vehicle for producing. • To prevent flood to make sure people travel easier. • If people have more income (from more productive agriculture) they will need something to invest it in or they will just waste it.

Present conditions	Expected changes
Health	
• Heart diseases for older people. • Fevers for children Normally students have symptoms of low calcium in the blood. Less petechial fever [dengue] in the commune this year. There are more fevers and diarrhoea here because of water pollution.	• Longevity reduces[3] • No child is undernourished
Jobs	
Growing rice 2 crops per year has improved employment here. [since 1996] There is a lack of employment here, most people work away from here. At some times of the year 70% of population is unemployed. There are too many labourers here in the flood season, too few in the dry season There has been a modernization of work Presently there are difficulties for raising fish and livestock Standard of education of labourers is poor	• Farmers will first get richer with 3 crops of rice, then poorer • Third crop of rice is needed to create employment, so workers do not need to go far away to find work • Needs to be training for new jobs in this area
Environment and Agriculture	
• Many farmers are satisfied growing 2 crops of rice. Some suggest it would be better to have two rice and another crop [between them] rather than three rice crops. • Some people own large amounts of land here, 10-20ha. They do not live here, but in other places. They do not want the high dike. • Natural fish become exhausted, damaged by pesticides and chemicals used to kill yellow snails • Water pollution • Comment from trader: *"when she asked 100 people about raising the bank there are about 20-30 who agree to grow 3 crops of rice per year".*	• Farmers need more advanced techniques • Rat population will increase. • Natural fish will cease • Some people scared about how strong the high bank will be. • Possible to develop fish ponds • At first three crops of rice will give higher yields, but in the following years lower yields

[3] Implies ill health was increasing because of modifications to the environment and the increased use of agrichemicals inside compartments.

Table 9 Expected benefits of a high dike arranged by wealth group

Comments from twenty-four households, arranged by wealth group in Vinh Binh Commune, June 2004

	Rich	Medium	Poor	Total
Number of households per wealth group	**4**	**6**	**14**	**24**
No more floods	0	1	2	3
Safer living in the future	0	2	0	2
Work available year-round; more work for labourers; can remain here all year	0	2	8	10
More crops; 3 crops per year; year-round crops; farmers know new techniques	1	3	2	6
Can grow upland [non-irrigated] crops	0	0	1	1
Grow fruit	0	0	1	1
Raise cows and buffaloes	0	1	2	3
Raise fish	0	1	0	1
Better roads; easier transport and travel; can do year-round business; can do more things	0	5	1	6
Children can go to school; education	0	0	2	2
Increased benefits	0	0	1	1
Earn more money	0	0	1	1
Will not need to repair flood-damage to his house each year	0	0	2	2
Electricity supply	0	1	1	2
Can build a toilet	1	0	0	1
Number of comments about benefits, arranged by wealth group	**2**	**16**	**24**	**42**
Does not know what benefits there will be	0	0	2	2
Does not see any benefits	0	1	0	1

Table 10 Expected disadvantages of a high dike arranged by wealth group

Comments from twenty-four households, arranged by wealth ranking. Vinh Binh Commune, June 2004.

	Rich	Medium	Poor	Total
Number of households per wealth group	**4**	**6**	**14**	**24**
No fish; no free goods; [now] did not need to buy fish in the flood season	1	3	4	8
Water quality will get worse; water pollution	1	0	1	2
Health	1	0	0	1
No sediment	0	1	1	2
Pollution; soil pollution	1	1	0	2
Yields will fall; yields will fall if they grow three crops per year	1	0	2	3
More inputs will be used; increased fertiliser and chemicals	1	1	1	3
Will need to pay to build the dike; does not want the high dike, does not want three crops, "*but still must pay* [for building the dike]"	1	0	1	2
Farmers will use more inputs, use more labour and work harder for lower yields	0	1	0	1
More yellow snails	0	1	0	1
If year round crops then more rats; more mice	1	1	0	2
Life will not be comfortable here; harder for farmers	2	0	0	2
"*No free time*" [in the flood season]	1	0	1	2
Concern that "*outsiders will come and buy land but will not live here*"	1	0	0	1
Afraid if government builds the dike the quality of the structure will not be good	1	0	0	1
Number of comments about disadvantages, per wealth group	**13**	**9**	**11**	**42**
No disadvantages	0	0	1	1
None mentioned	0	1	4	5
Does not know	1	0	2	3

Rich farmers spoke of many more disadvantages than advantages, whereas poor farmers saw more advantages than disadvantages. Poor people, worried about the loss of free goods, expected to get paid work all year-round. Rich farmers saw a range of agricultural disadvantages and only one welcomed the chance to grow three rice crops per year. This view is backed up by what farmers said in answer to the question 'will your household be richer or poorer if a high dike is built'? Poor households expected to become richer but rich households expected to become poorer, or unsure or were ambivalent about the likely outcome (Table 11). None of the rich households expected to become richer, should a high dike be built.

Wealth group	**Rich**	**Medium**	**Poor**	**Total**
Number of households	**4**	**6**	**14**	**24**
They will become richer	0	3	7	10
They will become poorer	1	0	1	2
They will stay the same/do not know	1	0	3	4
Ambivalent about the outcome, *i.e.* both for and against high dike	2	3	3	8

Table 11 Opinions about future household wealth, arranged by wealth group

Answers to the question: 'Will your household be richer or poorer if a high dike is built'? Vinh Binh Commune, June 2004

5.4.4 The situation in 2007: farmer resistance confirmed

By December 2007 farmers' opposition to raising the dike had hardened. In the view of the Leader, the plan to raise the height of the dike around an area of 400ha used by about 100 households was unlikely to go ahead. The commune government had proposed paying 25% of the cost, using money raised by the former agricultural land tax which ceased being collected in 2001, but farmers would still have to pay 4 million VND per hectare. The Leader had recently called two meetings, but only half the farmers with land in the proposed area turned up at them. Of those who did, fifteen farmers supported the proposal, thirty-five were against it. He had now sent a letter to each household to explain the project and its costs. The research assistant explained the Leader's role:

> *Mr* [Commune Leader]'s *job was to consult and report back to the district government, who will make the decision.*
> (Research assistant, December 2007)

> *The proposal needs grass-roots agreement, if people disagree that must be taken into account, that is the policy of the province. It* [the work] *depends on the grass-roots, even if there was a 51% vote in favour it will not get built. The 51% will not make the investment if they know the other 49% will not pay their share. There is no way to force the 49% into paying. If 70% agreed then* [it is] *likely everyone would pay. Completely different to the time before* doi moi, *when the government would have made the decision and invested the money. (*Commune Leader, Vinh Binh Commune, December 2007)

The main argument against the dike was a clash between the rice growers, who wanted the land to be flushed every three years and some sediment deposited on the soil, and the fruit and vegetable growers, who wanted the gates never to be opened, because they would have no income at that time and would lose their plants. An underlying worry for all of them was the high proportion of land owned by outsiders who were non-resident in the commune. Absentee owners who would visit the land at sowing and harvest times, and to spray, were seen as a liability in maintaining the field, because they would not be there to deal promptly with outbreaks of pests on their crops and play their part in managing the compartment (the subject of Chapter Six).

Other meetings in Vinh Binh that day gave further perspectives. A poor farmer (household 26), who I visited several times in the course of this research, said if there were three crops per year that would spread his labour better, he would not get any more income but, *"he would get income three times a year"*. The sons of a rich farmer (household 18), whose land was inside the proposed area, said their father, who was absent, had said he did not like the high dike because, *"it would destroy his fruit and vegetable land"*. This was the man who had urged the commune to raise the dike at the group meeting in November 2003. The seller of inputs, who had 18ha herself, said:

> [the high dike] *would exhaust people …and exhaust the land. The gate should be opened each year …. if yields go down she will not get repaid the loans.*

5.4.5 Reflections on Vinh Binh Commune, 2001-2007: 'the party is now the fish and the masses control the water'

Over the seven years this research had taken place, farmers and officials in Vinh Binh had debated the proposal for a high dike and, at least by December 2007, rejected it. Whereas formerly the wall might have been built because it was part of 'the policy', now farmers were free to reject it, and they had done so. This seemed to bear out the message heard at the beginning of this research in 2001, but which I had not fully believed at the time:

> *farmers are free to choose what they want to grow".*
> (senior member of provincial extension service, June 2001).

Here, farmers were making their crop choice through decisions about the water regime. Despite urgings from the commune government, behind which would have stood the district government, these farmers did not want the dike and had rejected the policy. This is only one case, but the difference between what appeared to have taken place in Binh Thanh prior to 2002 and Vinh Binh, 2001-2007, may also reflect a change to the law on democracy in communes which took place in 2003. The 1998 decree required meetings to be held to agree infrastructure development and for a ballot to be taken, from which a report was to be sent to the committee. The 2003 decree however, has stronger wording:

> The gathering of opinions, open voting at the meeting or secret ballot on each matter shall be decided by the people according to the provisions in Article 7 of this Regulation and must be recorded in writing for reporting to the commune People's Committees on the contents of the meetings and the conclusions on voted issues. (Government of Vietnam, Decree No. 79/2003/ND-CP of July 7, 2003, *Promulgating the regulation on the exercise of democracy in communes*, Article 9 b.)

Now the outcome of a ballot will be known publicly before the result is sent to the committee. This transparency may strengthen local democracy.

In terms of Kerkvliet's three models, what happened in Vinh Binh was at least 'dialogic', if not even more liberal. Farmers had space to express their views against the dike, and they appeared to be setting the agenda for development, hence the re-paraphrasing of Womack's (1987, p.499) original term 'the masses have become the fish and the party controls the water'. Here, the farmers were controlling the water, literally and metaphorically in terms of power as well, and the party was now the fish, and were following the farmers' wishes. But all was not as simple as it looked because there was a further explanation for farmers' actions. Previously, the state would have borne most of the cost of raising the dike, with farmers paying a small fraction. Now, the state was not the major funder, most of the cost would need to be carried by the farmers, and the more land a farmer had the more he would pay for the dike, so farmers here may have been driven as much by economic reasons as by ideological or sentimental ones to take control of events.

However, the decline of 'dominant state' and 'mobilization corporatism' as forms of relationship, if indeed they had declined, was exposing a serious weakness in devolved decision-making. First, farmers could not agree among themselves on what to do and second, the gap between rich and poor could be widened considerably. On the one hand there was a divide within the ranks of the rich and landed farmers, who would have to bear most of the cost, between rice growers on the one side and would-be growers of perennial crops on the other, and rice growing appeared to have got the upper hand, although this was not surprising given farmers' strong cultural attachments to rice cultivation in this locality, as I had heard said repeatedly since my first visit in June 2001. On the other hand there was an economic divide between rich and poor, landed and landless, with the poor standing to lose out if the dike was not built and landed farmers continued to grow two crops of rice, and rice continued to give farmers higher and higher yields. From their descriptions of the expected consequences,

rice farmers knew well-enough the longer term negative effects of raising the dike and were against it, whereas poor people, with little or no land, wanted the high dike built because it would give increase employment, especially in the flood season. For me this was an unexpected outcome of the research. Blaikie and Brookfield (1987) suggest the importance of devolving decision-making on land to those using it, if it is to be used sustainably and fairly, but here a fundamental weakness in that argument was emerging, namely its knock-on effect on those who were outside the decision-making circle, but who were dependent on the outcome of that decision for the means to move away from poverty. On my return to the UK in June 2004 I wrote on white-board in our office:

The landless are the voiceless in decision-making for high dikes.

Given the duty of governments, socialist or otherwise, to alleviate poverty, do they not also have the right, the responsibility even, to override certain stakeholders in favour of the wider population? If the policy to raise the dike was implemented it could create better livelihoods for the poor and landless, but conversely was likely to reduce the long-term sustainability of rice growing inside the dikes. On the other hand, if the government endorsed the actions of the rice farmers, who held Land Use Certificates for large amounts of land and who would bear the main financial burden of construction work, their refusal to change from two crops of rice to three would not increase employment for the poor and landless inside the dike, but it could make rice farming more sustainable in the longer term. Balancing the two, the perceived benefits of localising land-use decisions by those who live and use the land, with the need to share the benefits fairly between those who have land and those who depend on employment on the land but do not have any of their own, is a challenge for those who advocate localising decision-making and possibly merits further research. As Le Minh Tung, a former member of the National Assembly put it, the challenge for socialist Vietnam is:

how to mix market and communism. (conversation with Le Minh Tung, 2007)

5.5 Reflections and conclusions on Chapter Five: 'the water and the fish'

5.5.1 Relations between farmers and the state

The three case studies presented in this chapter demonstrate a range of relationships between farmers and the state. In Kien An in 1978, farmers took an initiative, it was in the plan, but they got on and implemented it at a time to help themselves through difficult circumstances, and later on they are told this would be the policy. In Binh Thanh in 2001 the commune had a plan and implemented it, the farmers seemed to have gone along with it and were being persuaded to adapt to it, but the government paid most of the costs and *post hoc,* the banks were supporting it through loans at favourable rates of interest. In contrast, farmers in Vinh Binh between 2001 and 2007 had no compunction about advocating their view that plans for a higher dike should be dropped. From their position as paymasters for the development, and with perhaps some assistance from the new decree on commune-level democracy, they had decided it was not cost-effective over the longer term and they used their position to delay or halt the work altogether.

Kerkvliet (2005) proposes three models of farmer-state relationships, 'dominant state', 'mobilization corporatism', and 'dialogic'. On the basis of the evidence presented in this chapter, events in Kien An are best described as 'dialogic', because a commune official and his neighbours were acting voluntarily when they raised a dike, but subsequently the state stepped in and endorsed what they had done. Had the party not endorsed it they had the power to step in and prevent it, or at least take sanctions against the farmers, but at that moment the state's economic circumstances were unfavourable for that path of action. After reunification, if the state had wanted to use force to get farmers to follow instructions in the delta, it would have been difficult to get troops to act against their relatives. Also, at this time Khmer forces had made repeated probes into

Vietnam in this area and within a few months this province was to be invaded by Khmer Rouge troops. The government would have had more important matters on their mind than taking action against a group of farmers who took an initiative that improved their food security.

When visiting Binh Thanh In December 2007, by coincidence we sat at lunch with a former deputy party secretary for a district in the province. He knew we were doing research on how decisions were made, and offered this observation about events after 1975:

> *The policy was wrong…*[collectives] *ignored the farmers… the government thinks that because the farmers supported them during the war they would do so again, but they did not… it set us back 15 years*, doi moi *was completely right.*

The person who came to visit and endorse farmers' action in Kien An in 1978 was none other than Mr Do Muoi later to become Prime Minister (1988-91) then General Secretary of the CPV (1991-1998). In this latter role, in 1994, he tells party cadres that economic development is crucial, if peoples' conditions are good they will support the party:

> The key point is to make good economy, take care living conditions good. In the process, principally because of a good economy and living conditions, people's confidence in the party and regime will increase. (Quoted by Kerkvliet, 1995, p.10)

This suggests that the 'dominant state' model, with an implied threat that the state would get its way, regardless of circumstances, was not seen as a favourable way to proceed. However, if the CPV created a favourable environment for the economy and living conditions, this would be in the party's best interests.

However, decisions about land use remain problematic and contentious. In July 2001 Vo Tong Xuan told me of farmer resistance to 'the policy', in Soc

Trang province, which lies close to the sea, where there had been conflicts between farmers growing rice and those cultivating shrimps. Here shrimp farmers breached a wall intended to keep brackish estuary water off rice fields in order to raise shrimps. That evening, waiting in Tan Son Nhat airport in Ho Chi Minh City to fly to the UK, I wrote:

> In Soc Trang farmers breached dikes to let in sea water and grow shrimps instead of rice. This seems to have been a ground-breaking event. He [Xuan] had just heard this morning that the government has agreed to the investment needed. *"Normally party decides, government agrees and farmers follow",* but Soc Trang has been different…So farmers are not 'free' to choose what they want—but were they ever free to choose what they grew? (author, diary note 14 July 2001. Italics indicate quotation from Vo Tong Xuan)

There was a contradiction here between the statement from the extension service officer, "*farmers are free to choose what they want to grow*", and Vo Tong Xuan's statement that, "*party decides, the government agrees and the farmers follow*".

The rights to use land in specific ways in Vietnam have not been as deeply researched as rights to land tenure. Recently Markussen, *et al.* (2009) have indicated that crop restrictions in Vietnam are widespread and have been used to favour rice production and food security over crop diversification. Thus, farmers' so-called 'freedom' to grow what they want may not be as all-embracing as it might appear, and farmer-state relations cannot be as easily divided and labelled as Kerkvliet's (2005) model suggests. Masina (2006) describes Vietnam's decision-making process as:

> *…. multifarious and articulated, and in many instances bottom up rather than top down or, more precisely, a complex web of vertical and horizontal relations….The logic of the Vietnamese strategy is better understood* ex post*, based on what is done in concrete terms-rather than by looking at public statements.* (Masina 2006, pp 3-4)

Events in Binh Thanh Commune suggested a more authoritarian model was at work in the early 2000s. The Commune Leader and government had decided what should happen, most of the money had come, eventually, from the state, and farmers were going along with the changes. From what has been demonstrated in this chapter, this was closer to the 'dominant state' model than either of the other case study communes. A possible explanation for the governments behaviour was to promote the interests of the landless and the poor, to be achieved by increasing employment opportunities. To achieve that aim the commune government was deploying a wide raft of financial measures to help farmers adapt, though some of their policies, for example the one to lend more money for cattle raising, needed more technical foresight and planning. Poverty reduction was going to be helped by creating an environment where vegetables could be grown year-round. Because of its location not far from Long Xuyen City, this goal was reasonable and might well be achieved.

In Vinh Binh, events were 'dialogic' or even more liberal, with individual farmers freely expressing their opposition to the plan for a high dike. There seemed to be no curtailment of civil space for expressing opinions on that subject. Each set of actors, farmers and the state, were able to put their point of view and what the farmers wanted appeared to be the outcome. That civil space existed for the expression of farmers' opposition arose because they had economic leverage; this dike would have to be financed largely by farmers, not the state, and they talked about the economic disadvantages of raising the dike. On the basis of what had happened in Kien An in the years after high dikes went up, rice yields in a high dike in Vinh Binh would most likely rise for a time and then they would fall. Thereafter high yields would need to be propped up by increasing the application of chemical fertiliser. As the return of rice per unit of fertiliser applied was declining, perhaps the province was becoming aware of the full cost of producing rice inside high dikes. If the state forced through the building of high dikes in the Long Xuyen quadrangle, as well as in Cho Moi and the other islands in the river, this could lead to a longer-term decline in rice

security in the province and beyond. Relations in Vinh Binh between farmers and the state were at least 'dialogic', or even more liberal.

The state seemed cautious in pursuing the high dike in Vinh Binh. The fact that they were engaged with farmers was evidence of the strength of the comment from the newly-arrived Leader: "*to consult and report back to the district*" (2007). One difficulty the government at commune or district level would need to resolve with a high dike, was whether or not sluice gates should be opened, thereby privileging rice over other crops. Another pressing issue was the need to create more jobs in the commune. The official from the Youth Union said that in the flood season, 70% of landless people had no work and many people needed to leave the commune to find work elsewhere. Meeting the needs of the landless could have required the state to override farmers by choosing a high dike, which had the potential to create year-round employment if the sluice gates were kept shut, over continuing with the present August dikes. One farmer had a different suggestion: raise the August dike slightly and a longer flood-free period would be created. This extra time could be used for a short duration crop of vegetables and that would shorten the period when there was no employment in the commune.

Up until December 2007 no decision had been made, and the *status quo* continued. This research found that the relationship between the farmers and the commune government in Vinh Binh was interactive or 'dialogic'. The farmers here were certainly not the fish, coping with water controlled by the actions of the government, rather they were controlling the rate of change through their economic leverage. They may also have benefitted from the 2003 decree on local democracy. The challenge for the government in Vinh Binh was how to reconcile this power of the land-holders with the need to address poverty and landlessness in the commune.

5.5.2 The significance of scale in farmer-state relations

Farmers in the Mekong Delta have played a significant part in Vietnam's political evolution in the Twentieth Century. While individual households have only small-sized holdings, when they act together they were able to alter the course of events at national level. Farmers' failure to cooperate in the post-reunification co-operatives, which were orchestrated by the state, led to the food crises of the 1980s. In 2006 Professor Vo Tong Xuan said:

> *In the first year of the co-operatives, soldiers came round, asked how many people were in the house and left sufficient rice only for them for the year and took the rest away. The following season households only grew sufficient for their household needs, there was no extra for the government to take away.* (personal communication, Professor Vo Tong Xuan, London, June 2006)

These were the acts of individual households, there was no suggestion they were coordinated, but even a deputy party secretary at district deputy party secretary was able to say that the policy [of co-operatives] was wrong. Perhaps that is a subject that merits further research. These small, individual acts were everyday politic acts but with bite, not enough for people to get hurt, but taken together they formed an impediment to what the state wanted to happen in the delta. They were a sophisticated form of peasant resistance (Scott, 1985). Circumstances occurring at that time, of food insecurity and events across in Cambodia, gave extra weight to the farmers' actions and the state accepted them and eventually endorsed them. As Kerkvliet (2005, p.27) puts it:

> Everyday activities that are out of line with what authorities require and expect can have considerable political clout.

In this case small-scale, local acts by users of small patches of land, had 'considerable political clout' on national events.

The events analysed in this chapter contribute to debates about scale, particularly the relative strength of the local versus the national. Some literature in Third World political ecology emphasises the disadvantage local actors

experience at the hands of 'wealthy and more powerful actors' (Bryant and Bailey, 1997, p.34), and how 'the parameters of choice [at the local level] are generally controlled by others' (Blaikie and Brookfield, 1987, p.69). Counter to that argument, Zimmerer and Bassett (2003 (a), p.3) argue against notions of 'pregiven sociospatial containers' which fail to recognise 'varying time-space scales' of environmental and social change (Rangan and Kull, 2009, p.32). Here, by their actions, actors at the smallest level of scale argued against the expectation that they would conform with what was expected of them by those at a larger scale. Instead of acquiescing to collectives, they declined to cooperate and precipitated a food crisis. This claim is not new, it has already been made by others, see Vo Tong, (1995) for the south of the country and Kerkvliet, (1995 and 2005) for the north, but this thesis adds new materials to the small amount of empirical evidence available so far from the Mekong Delta. It is a subject that deserves further research. Farmers who took part in those acts are still alive, conditions for research in Vietnam, as enjoyed by this work, seem to indicate that further research on how that resistance took place might now be permitted.

5.5.3 Conclusions

This chapter examines farmer-state relations in An Giang Province in the south of Vietnam, as evidenced by dike building in three communes. Relations are compared with Kerkvliet's models of farmer-state relations (Kerkvliet, 1999, 2001, 2005 and 2009), which were based on empirical findings at different points of time in the north of Vietnam. The sample of communes was not representative, nevertheless three important themes can be drawn from the research.

First, when it is in the interests of the state, spontaneous initiatives which are in line with government policy are encouraged, as happened when farmers in Kien An raised their own dikes in 1978. A precarious national situation, such as arose from food insecurity, the urgent need to adapt fields for growing HYV rices (Vo Tong and Matsui, 1998; Tran and Kajisa, 2006), growing tensions between

Vietnam and China, and China's ally Kampuchea (Chang Pao-Min, 1987; Marr and White, 1988), which had its own territorial ambitions on An Giang, created a situation where the state's interests were best served by maintaining the good will of farmers located close to the Vietnam-Kampuchean border. No less a person than the deputy Prime Minister visits and endorses farmers' actions. Pragmatism, acceptance of local variations to the overall plan, and public acclaim when the outcome was favourable, followed. This was 'dialogic', the state learned from farmers and absorbed their actions into state policy.

Second, the state may still impose its policy, such as to reduce poverty, as happened when a high dike was built in Binh Thanh in 2001. Farmers were consulted about a high dike and, so we were told, 'agreed' to it, though another informant said agreement had been 'difficult to achieve'. The law on local democracy prior to 2003 only required 'a report' of decision-making meetings of stake holders to be forwarded to the People's Committee. There was little evidence here of enthusiasm or preparation for the change. This was not old style 'dominant state' as set out by Kerkvliet, it does not involve physical force, instead it used financial enticements. Here the state enforced its policy but softened its implementation through offerings of 'carrots', rather than wielding of 'sticks'. This was 'dominant state', but 'new-style', less authoritarian. Additionally, it must be said, the presence of a strong Leader had likely influenced implementation of the plan.

Third, the way the state operates is changing, moving away from planning and funding development, to responding to the wishes of those who will pay, as was happening in Vinh Binh between 2001 and 2007, when farmers rejected the state's plans for a high dike. The state developed plans and advocated them to farmers. The commune government invited farmers to meetings, communicated with households by letter, conducted a ballot, and announced the plan could not go ahead because of farmer opposition. Here, there was space for farmers to advocate against the plans. This researcher was present at a meeting where farmers expressed opposition to the plan, and in interviews that opposition was

repeated. While this situation could be referred to as 'liberal relations', that word would need to be defined in wider social and economic terms, of democracy, or market economics. Instead, it is proposed to call this 'advocacy relations'. Three possible explanations lie behind this change. First, the 2003 decree on local democracy requires the outcomes of stakeholder decision-making meetings to be 'written down and reported', to the People's Committee, thereby reducing opportunities for the result of ballots to be watered down. Second, farmers now pay for most dike development work and as the local land use managers (Blaikie and Brookfield 1987) they rejected the state's plan saying it was not good value for money, nor for the health of their soil. Third, as in Binh Thanh, the presence of a strong Leader. Frequent changes of key personnel, as happened in Vinh Binh, may blunt the determination to implement difficult policies, however where a strong Leader is in post for several years, the prospect of implementation increases.

These three communes demonstrate a range of relationships between farmers and the state: 'dominant state, new-style', 'dialogic' and 'advocacy' relations. When necessary the state can be pragmatic, or 'dialogic', towards innovations by farmers. However, when it wants to pursue a policy, such as poverty reduction, it may still act against the interests of some land-users and behave as the 'dominant state', but moderate the effects through incentives. Finally, under new economic conditions and legal frameworks, the state responds to the wishes of certain stakeholders, such as holders of Land Use Certificates, by taking forward or dropping plans for development. A key factor, and one for future research, as identified by Fritzen (2006), Ingle and Halimi (2007) and Fforde (2009), is the operation and effect of Decree No 79/2003/ND-CP, on the conduct of local democracy in communes. The decree has the potential to place more decision-making in the hands of local land-use managers, however its effectiveness will be mediated through the character of those administering the commune. This liberalism may lead to decisions contrary to the aim of other policies, such as reducing poverty, and the role of the state will

be to balance these two needs. Research in a wider sample of communes would be needed to test the general applicability of these findings.

Finally, this chapter has implicitly addressed questions of scale. It has done so in two ways. First, the actions of farmers in Kien An Commune in 1978 were endorsed by the Deputy Prime Minister and, according to the farmers, he told them what they had done was correct and 'it became the policy'. This was no top-down approach, but a bottom-up solution to the problem of how to grow new HYV rices: build a dike to delay flooding, raise it a bit higher and two crops can be grown instead of one. That was a step on the road to food security in the delta, it started locally but influenced policy nationally. This illustrates Blaikie and Brookfield's comment (1987, p.64):

> There is seldom a neat one-to-one correspondence of geographical scale and "level" of decision-making.
> (Quotation marks in original)

Here spontaneous, unplanned local actions impacted on national policies, they were privileged. This may also be an indicator of farmer-state relations in this communist state. This was no centrist state in 1978, with agricultural practices promulgated at national level. Instead, local actions in particular circumstances, '[broke] out of pregiven, scalar containers' (Zimmerer and Bassett, 2003 (b), p.288) and impacted on national policies.

Second, the consequence for the ideology of the state of that low-level farmer resistance in the 1980s, as described by Vo Tong Xuan for this research in 2006, were also spelt out in 2007 by Le Minh Tung, who was a member of the National Assembly in the 1980-1990s:

> *Before 1986 politics changed farming, after 1986 farming changed politics. After the 1985-1986 plenum* [the party] *had no theory to guide them. We started with capitalism, Adam Smith, and communism, Marx and Lenin. So far no new theory.* [We] *learn from China, more reformist, in Vietnam much slower.* (Le Minh Tung, December 2007. At the time of this conversation Le Minh

Tung was Rector of An Giang University and deputy Chair of An Giang People's Committee)

The full role of farmers in that 'low-level resistance of the 1980s' should be one focus of future research.

Chapter Six

Farmer--farmer relations: co-operation and contestation in water management

6.1 Introduction

This chapter focuses on farmer-farmer relations as revealed in the management of irrigation water in An Giang. It focuses particularly on arguments relating to common pool resources, risk, and community, each of which are briefly introduced in the following sub-section. The empirical materials used to develop the arguments were gathered in Vinh Binh commune, where rice was grown inside August dikes, and Binh Thanh Commune where a high dike had just been built. Both locations were previously described in Chapter Four.

6.1.1 Dikes and water, the scene for farmer-farmer relations.

'Collective action' in the use of public goods (Olson, 1965) has been theorised as co-operation by a group of individuals, with a small number of users sharing and managing a common pool resource (CPR) of limited capacity to their mutual, long-term advantage. This idea has been challenged by Hardin (1968) who expected individuals to act primarily for their own gain when they have access to a natural resource of limited supply, the so-called 'Tragedy of the Commons', where the resource is exhausted through over-use. In contrast to Hardin, Ostrom (1990, p.15) theorises users entering 'a binding contract to commit themselves to a co-operative strategy that they themselves will work out', and Gamson (1992, p.55) holds that collective action succeeds because of 'micromoblizations', networks of small-scale social and cultural links within and outwith the group. These linkages, rather than the practice of individual rationality, binds individuals together, strengthening the group and increasing its

chances of success. This chapter seeks to disentangle these ideas through a case study of the ways in which farmers interact in An Giang.

The risk posed by a common threat has the potential to bind groups of people together in a co-operative activity. Kaijser (2002), describing the imperative for farmers and others in Holland to work together to protect the low-lying polders in the Middle Ages, identifies the nature of a threat and its magnitude as factors in accounting for co-operative action. In the face of a potential disaster which will affect all, the coercive force for action arises from below, rather than imposed from above. Olson (1965) also saw coercion as a stimulus to collective action. This chapter will suggest that a similar situation of threat by water exists in the low-lying area of An Giang and has been the force for a form of collective action by farmers. The actions of farmers in An Giang will also be compared with water user groups in Bali, Thailand and the Philippines in order to identify what is distinct about their actions.

Agarwal and Gibson (1999) challenge the notion of 'community' as a homogeneous social entity, whose members have similar aims and ambitions, pointing instead to a group's heterogeneous interests, with individuals engaging in collective actions having social links both inside and outside the group. This contrasts with Gamson's belief that the success of collective action depends on the extent to which groups hold common norms and expectations, although Olson (1965) held that small group size was important if individuals were to overcome rational, self-interest. This chapter will therefore examine why farmers in the August dikes participate in collective action, what holds them together and how the forces of cohesion, on one hand, and competition on the other, and which leads to tensions between those involved in collective action, are balanced.

Chapter Five investigated farmer-state relations as displayed in the building of dikes. This was seen as a political activity because it concerns the allocation of resources, with dike building as an indicator of the distribution of

power between farmers and the state. In the present chapter water is the resource, and control over its use is another indicator of the distribution of political power, both between farmers with different interests and between farmers and the state. In Chapter Five farmers were seen to be using everyday politics and advocacy (Kerkvliet, 2005) to accept or reject the official politics of the state, and this indicated that space is available for the individual in this communist society. This chapter also investigates the space provided by the state for farmers to realise their economic aspirations, this time through their collective action in the management of water.

6.1.2 Research questions

The overarching question addressed in this chapter is: why has the co-operative structure of pumping clubs evolved in a context where dikes have created divisions between farmers with different interests? This is broken down into three subordinate questions:

- why do farmers in An Giang cooperate in water management and how do they carry that out?
- what tensions has co-operation brought about between farmers and how are they resolved? and
- what role remains for the state in water management in the commons?

6.2 Common August dikes: farmer-farmer co-operation in the commons

6.2.1 Introduction: the pumping club

Dikes reduce the length of time land is covered in flood waters and by doing so they extend the time available to grow crops, allowing two or more crops to be grown between one season's floods and the next. In the deeply-flooding area of An Giang farmers grow irrigated rice inside August dikes. Rather than each

farmer having his own dike, a group of farmers works together within a common dike, together they manage the flood water and maintain the common walls. They work co-operatively in what is referred to as a pumping club. One pumping club is made up of all the farmers with land inside one common August dike. Pumping clubs have two purposes: agreeing on the date to start pumping-out and paying for the last of the flood water inside the dike at the end of the monsoon season, after which planting can begin; and initiating and overseeing repairs to the dike walls, without which subsequent crops are in danger of submersion and loss. Without these co-operative actions each farmer will need their own dike if they are to grow more than one crop of rice each year. However, this co-operative action reduces the scope for individual decision-making. Clubs function to resolve disagreements and the divergent wishes of their members, therefore an examination of how they operate offers a opportunity to investigate farmer-farmer relations, as well as to extend further the analysis of farmer-state relations developed in Chapter Five.

Pumping originated from the need to manage irrigation when HYV rices were introduced into the delta in the 1970s. Research by Vo Tong just before reunification describes their origin:

> The main constraint to higher rice production in the delta is water control. Presently only about 22% of the rice fields in this part of Vietnam are irrigated by communal irrigation schemes or by individual pumps (Mekong Delta Soils Project, 1974) during the dry season. On the other hand the lack of adequate drainage in the deep water area in the wet season prevents the spread of existing HYV rices. Communal irrigation schemes were not successful due to inefficient management and maintenance. Irrigation authorities often attributed the irresponsibility and lack of discipline among farmers to the failure of irrigation schemes. The present trend is towards small scale irrigation units of about 100 ha area to be managed by government inspired private operators. (Vo Tong 1975, p.101)

6.2.2 The operation of pumping clubs

In Vinh Binh Commune all the land is divided into compartments protected by August dikes (Figure 61), although one farmer interviewed had a private high dike surrounding his land. The compartments are 100ha or more in area and each compartment is worked by 100 farmers or more. Some farmers have land inside more than one compartment, and some compartments have fields used by farmers from other communes, even from other districts. Some compartments span commune boundaries, thus compartments and commune boundaries are not always congruent. These incongruencies pose challenges to pumping clubs.

Inside the compartment, land is demarcated into individual plots by shallow irrigation ditches, or small ridges, each plot being referred to by farmers and university staff alike as 'a field' (Figure 62) . The fields inside a compartment are at different elevations; often fields near the centre of the compartment are lower-lying than fields near the walls. The significance of differences in elevation comes into play at the beginning and end of the flood season.

Figure 55 Compartment inside a common August dike. View from the dike

Compartments vary in size. They are subdivided into individual fields by low ridges, irrigation ditches and occasionally, as on the left of this picture, fence poles. The banana trees in the foreground are growing on top of the dike. By late August rain water will have gathered inside the compartment and the water level in the lying behind the photographer, will have risen and begun to flow over the dike. By September the water level inside and outside the dike will be the same and one body of water will have been created. (author. May 2002)

Figure 56 Field boundary

Within a common August dike, farmers' fields are separated by low ridges or by the ditches used for channelling irrigation water from the bank, where it is pumped in, to the crop. Behind the farmer, who is standing on the right in this picture, can be seen a low ridge, with the land in front of it irrigated in preparation for the next crop. The field on the right and the one behind it, which has a crop of rice, are at different elevations and will have different times when they are flooded and exposed. All three men are standing on the bank of the farmer's fish pond, which is on the left. The banks of fish pond offer another location to raise crops, this one to grow papaya trees, aubergines, and several varieties of beans. Cucurbits are also cultivated on the banks.

(author. June 2002)

Each compartment is adjacent to a river or canal and in that wall there is a sluice gate. which is opened in the flood season as the external water level rises. The gate is opened in order to reduce pressure on the dike wall, if the difference in water levels between inside and outside is too great, the dike can break. Fields next to the gate are favoured by farmers over fields further into the compartment because they receive more sediment when canal water first enters. By the time canal water reaches the inner fields, its rate of flow has decreased and its load of sediment will be less. This differential deposition most probably accounts for the difference in elevation between fields near the gate and those in the centre. The earlier in the flood season the gate is opened the greater the load of sediment the water carries.

The annual cycle of events within a August dike was described in Chapter Four (Figure 23). During the flood season, from August onwards, the compartments begin to fill with water. This is an accumulation of rain water, water that has overflowed the dike walls from adjacent canals or rivers, and water admitted through the sluice gate. Eventually the flooded compartments appear to be covered in a single sheet of water with only the houses raised on stilts or lines of trees indicating the boundary between one compartment and the next (Figure 63). There never appeared to be a shortage of water in Vinh Binh Commune; no interviewees here reported experiencing a shortage, but the size and timing of the flood varied from year to year, making the timing of the flood season unpredictable. The threat to farmers, and the reason for their co-operative action, is to counter the threat posed to their crops by flood water. In December, by which time the rains have usually ended and the water level in the water-ways has begun to fall, farmers prepare their land for the first crop. If two crops are to be planted and harvested before rain and rising river water threaten the fields again, a sequence requiring around 200 days, it is important to plant the first crop as soon as possible, so that the second crop has the best chance of maturing before the next season's floods begin. Pumping water out of the compartment exposes fields sooner than waiting for water to evaporate.

Figure 57 Compartments joined by flood water

Trees mark the tops of the August dikes which divide the area into common compartments. (author. November 2003)

The first task of the pumping club is to decide when pumping-out should begin. As farmers explained to me, several meetings may be required before agreement is reached. In making their decision, farmers will take account of several variables. First, they need to judge whether the river is likely to rise again, and this depends on three factors: the state of tides in the East Sea; the formation of high pressure weather systems in the East Sea which, like the tides, cause water inland to back up; and predictions of impending down-flow from Cambodia and further upstream. Second, the difference in height of individual fields within the compartment which means that some fields have a deeper water covering than others. As the cost of pumping is based on the depth of water in individual fields, farmers with deeply-covered fields are reluctant to start too soon, when there is still considerably more water, and so a greater cost to them. Farmers on the edge of the field however, are keen to make an early start so that their harvest, if it is from good stock and looks healthy, might be bought at a premium by other farmers as seed for the second crop. A further reason for wanting to start promptly is to minimise damage from disease and pests, such as blight and thrips; rice planted early in the season is less vulnerable than rice planted later on, when the insect burden is higher. Third, farmers need to agree on the cost of pumping, and decide who should get the contract, which is often a member of the club. Fourth, the dike is likely to need repairing, any deviations in the level of the wall can weaken it, and rats burrowing into the earth bank are another cause of weakness.

In June 2002 in Vinh Binh commune, the farmer in household 30, located on the bank of Kênh Mặc Cần Dung Mới canal, a main artery for transport in this district, built along the line of one of the original early nineteenth century, pre-French, canals, said that he was one of a group of four farmers who organised the pumping in their common dike. In February 2003 he told us that the previous year they held three or four meetings in his house to reach agreement:

> *this number* [of meetings] *needed to get enough people there--absent landowners who live far away. Pumping started 4th November* [lunar] *when there was 80cm water in the field, cost 4,100VND per 10cm per tenth hectare.*
>
> (Farmer 30, Vinh Binh commune, February 2003)

As was described in Chapter Four (Figure 27), at the end of the second crop, when the compartment is beginning to fill with rain water, the top of the wall may be damaged. Damage occurs when farmers with low-lying fields in the centre of the compartment want to get their boats into the field to transport their crop out of the compartment. By digging away a section at the top of the wall they can drag their boats into the compartment and transport the cut rice from their low-lying fields to the banks where it can be threshed. If this damage is not repaired at the start of the first crop, and the water level in the adjacent canal or river rises again and flows over low points in the wall, everyone's crop is at risk of inundation. Weaknesses in the wall which are not repaired may lead to its collapse when the following year's floods begin. According to the President of Farmers' Union, Vinh Binh Commune, farmers wait until 80 or 90 percent of the wall is exposed before agreeing on what repairs are needed. The cost of repairs is born by all the farmers on the basis of the size of their fields and regardless of who broke the wall. In addition to deliberate damage and rodent damage, the earth dikes sink down over time and need to be built up again. Periodically the canals are dredged and the debris is used to raise the height of the dike (Figure 64). This work appeared to be organised by the commune, but paid for by farmers on the basis of the size of their fields

Figure 58 Top of the dike wall beside Kenh Mac Can Dung Moi Canal, Vinh Binh Commune, 2003.

The canal had just been dredged and the excavated materials used to raise the height of the wall. The dredging was organised by the commune government and cost 4,000VND for every *gia*, or basket, of extracted material. The cost was shared by farmers on the basis of the size of their land holding. A week before this picture, the dike head had been a dusty track used by pedestrians and two-wheeled transport, now people needed to walk or use boats to reach their homes. After a short while the material dried and settled and use by pedestrians flattened it. (author. February 2003)

Pumping clubs need to deal with two areas of controversy. First, members need to reach a decision on the date when pumping-out should begin. Farmers with fields at different elevations inside the compartment stand to gain or lose by the timing. The process of reaching a decision can be drawn out, with one group saying it was difficult to get absentee farmers to attend meetings. As farmers in other areas became richer there appeared to be a tendency to buy Land Use Certificates for land in areas where it was cheaper, such as Vinh Binh. In 2001, at my initial meeting there with farmers, fears were expressed about the loss of land control to richer farmers from Cho Moi District, where high dikes had been a feature for some years and farmers there were said to be richer. In Binh Thanh, after they turned to vegetable-growing inside a high dike, a farmer told me he had bought user rights to land in Vinh Binh, in order to continue growing rice. The second difficulty clubs need to deal with arises from the cost of repairing the damage caused by farmers who break down the top of the dike. Many farmers complained about the cost of these repairs, but there seemed to be no system for policing the banks and apparently no penalty for those who did the damage This damage had to be repaired each year to maintain the integrity of the wall, yet farmers seemed to be willing to carry that cost.

6.2.3 Pumping clubs: collective action or enforced farmer-farmer co-operation?

Drawing on Olson (1965) and Ostrom, (1990 and 2000), collective action may be defined as 'the self-policed extraction by a small and defined group of users of a rivalrous, non-excludable resource, referred to as a common pool resource, from which others cannot easily be excluded' (Table 12). In order to address the question of why farmers in An Giang cooperate in water management, it is important to break the actions and structures into their component parts and ask if this is collective action in Olson's and Ostrom's terms, or are their actions a response to adverse circumstances and not to the careful use of a rivalrous, non-excludable resource.

	Excludable	*Non-excludable*
Rivalrous	**Private goods** Consumption by one person reduces the availability for other consumers. One consumer can exclude other consumers.	**Common pool resources** or **common property rights (CPR)**. Consumption by one person reduces the availability for other consumers. One consumer cannot exclude other consumers.
Non-rivalrous	**Club goods** Consumption by one person does not reduce the availability for other consumers. One consumer can exclude other consumers.	**Public goods** or **open access resources** Consumption by one person does not reduce the availability for other consumers. One consumer cannot exclude other consumers.

Table 12 Goods arranged according to excludability and rivalrousness

(After Olson, 1965 and Ostrom, 1990 and 2000)

In the course of one year, an August dike displays all four types of good (Figure 65). Dike walls are club goods and because they may be financed partly by the state, they are also to some degree, public goods. When flood waters overlap the dikes, a public good, a water commons, is created in the compartment, within which there is a CPR of fish, invertebrates, wild vegetables and other biota. Access to these rivalrous goods is unlimited, everyone is free to enter any compartment and collect it, although farmers say the amount of biota is being reduced by agrichemicals. At the same time silt and organic sediment suspended in the flood water, also public goods, are deposited on fields, becoming private goods. As the water level in the compartment drops below the top of the dike, the remaining water becomes a club good and pumping-out is a service for club members. Rice-growing is conducted by private individuals on private goods and fields are irrigated privately. Towards the end of the second crop rain water, a public good, accumulates in the compartment, building up first in the lowest-lying fields. As the level of water inside the compartment and

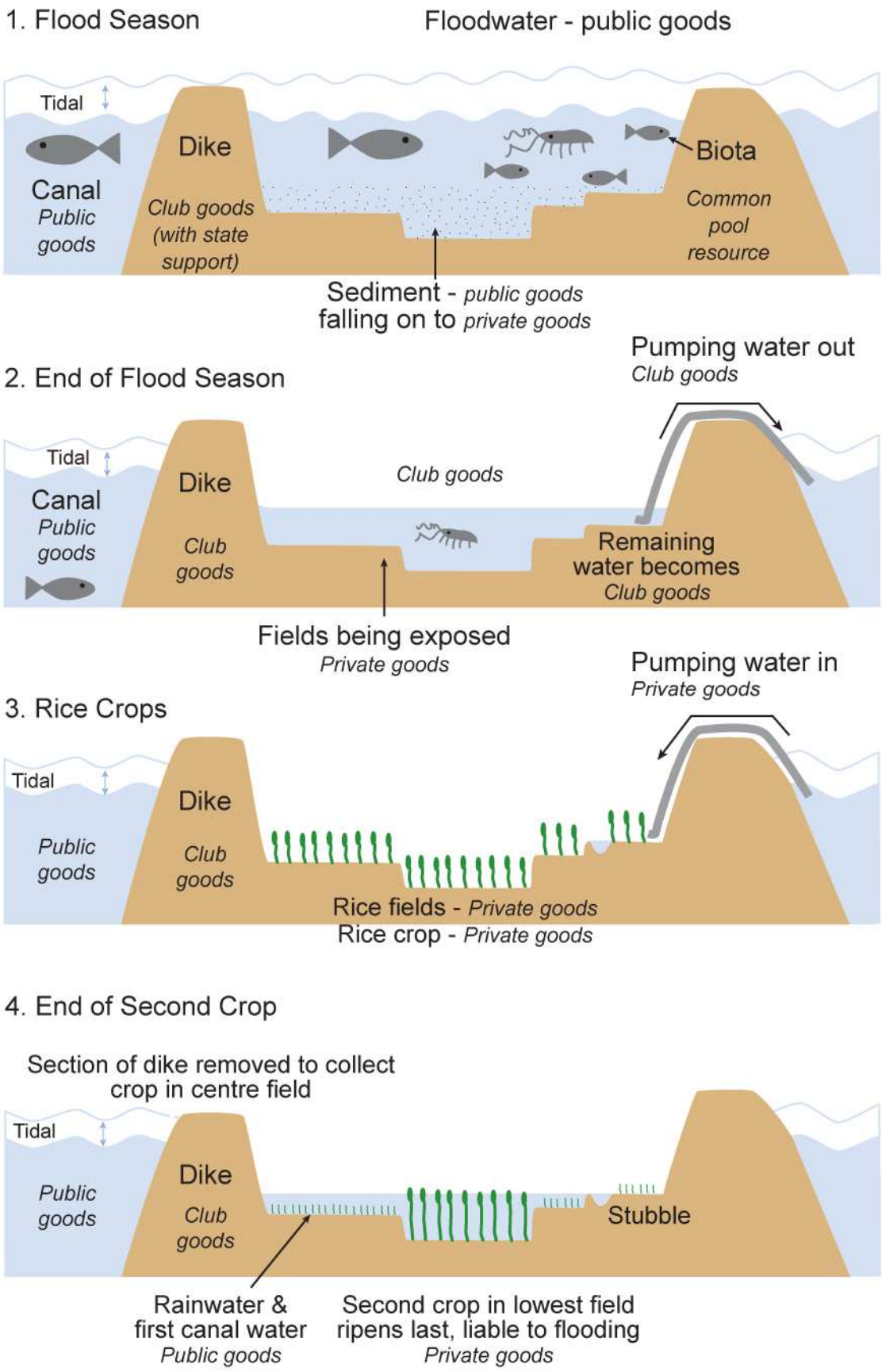


Figure 59 Annual sequence of goods in an August dike

(source: author)

adjacent canals rises, some farmers break down the top of the dike in order to admit their boats to collect their harvest and reduce their costs, an action by private individuals which degrades club goods, and later the cost of repairing the damage will be borne by all the members of the club. The only threat to the supply of water is the prospect of hydroelectric dams being built up-stream of Vietnam (VietNamNet, 6th April, 2010).

The situation presented above does not fit readily into the analytical framework presented in Table 12. Collective action is the term reserved in the literature for actions in the management of CPR (Olson, 1965; Ostrom 1990). In the situation described here, however, water is not a CPR in Olson and Ostrom's sense, because it is not a rivalrous resource, there is plenty of water. This analysis in terms of CPR and collective action indicates the difficulty of attempting to 'fit' a complex structure of environmental goods and services and human behaviour into existing models of explanation, or even looking for a unitary explanation for a complex process. Although there are elements here that fit into the concept of collective action, such as maintaining the dike regardless of who causes the damage. Overall, farmers' joint actions were not primarily for the defence and wise use of a CPR.

There are at least three other possible explanations for their behaviour. One is that farmers work together because they are under a common threat, similar to the one Kaijser (2002) describes as existing in the Netherlands in the Middle Ages. Using Kaijser's analysis, the impetus in An Giang for farmers' co-operative actions may be the threat of early and late flooding to the compartment. Should either threat materialise farmers would experience economic loss. A second explanation might be the increase in political leverage the group can exert with the commune government, and elsewhere, if they work together. This could be far higher than anything individuals can achieve working on their own. A third alternative explanation could be the economic potential they create if many of them produce the same crop at the same time and thereby attract buyers to the area. However, if too many choose the same crop and a

market surplus develops farmers experience losses, well illustrated by Vietnam's 'boom and bust' experience with coffee production in the 1990s (Ha and Shively, 2008).

Farmers' actions are 'collective', in that they act together to execute it, but it is for self-preservation, rather than the management of a CPR. To parody Benjamin Franklin's warning to his fellow signatories at the signing of the Declaration of Independence in the United States of America, it is a case of 'If we do not [build a dike] together, we shall surely [need to build a dike] separately' (quoteworld, 2010). Farmers in Vinh Binh are acting as 'rational individuals', but they are not acting in competition with other rational individuals, instead they join together in a club, recognising they can achieve their individual rational interests better if they act collectively, rather than individually. What they are doing is in keeping with part of Olson's (1965, p.2) prediction:

> unless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, *rational, self-interested individuals will not act to achieve their common or group interest* (italics in original)

The threat from flood water is of such magnitude that club members are willing to tolerate free riders, individuals who damage the wall for private gain but who will not bear the cost of repairs alone. If the club refused to repair the damage done to the dike head by some for private gain, they would further expose themselves to the very threat they are trying to avoid. The places where boats are dragged across the dike, if left unrepaired, would likely be the places where even more water would come in at the next threat, so members pay the cost of repairing the damage to prevent that happening, regardless of who caused the damage. Here, free riders are tolerated because it is not in member's individual interests to leave the damage unrepaired.

Olson (1965, p.7) held that individuals act overridingly in their own rational self-interest:

> Purely personal or individual interests can be advanced, and usually advanced most efficiently, by individual, unorganised action.

In a purely rational environment it would make little or no sense for enterprises producing the same product to contribute to a club which helps competitors, in this case fellow farmers growing rice. These farmers all grew the same plant, rice, so it is legitimate to ask why they did not take more individual courses of action, why they do not try to eliminate their competitors and thereby improve their own position in the market. Individual actions carried risks however, as shown by the farmer who grew specialised water chestnuts inside his own private high dike (Figure 66). This farmer, a man in his early 60s when first interviewed in 2002, had been farming for 40 years, and was a man of stature in the community; in interviews, farmers in his neighbourhood said they consulted him about their crops, so he was perceived to be a role-model farmer. According to their policy, the commune had backed his request to the district bank. In 1996, the bank lent him 75 million VND, approximately $5,000 US. At an interest rate of 1.8 percent per month, with the loan repayable over five years repayments would have been 2.05 million VND each month, assuming a steady rate of repayment. He was nearly at the end of repaying the interest and capital when we visited him in mid 2002. He used the loan to enclose 3ha of land with an earth bank. In 2002 he was cultivating water chestnuts, growing a variety from seed supplied by a Taiwanese company, who were buying the fruit under contract intending to export it. When revisited in 2003, he told us he that had given up growing this crop because he could not collect sufficient fruit in one day to meet the minimum weight of one tonne which was the minimum amount the company would come and collect. As he could only produce 800kg per day, and he had no storage facilities to delay their deterioration, he had no option but to transport them each day at his own expense, and the cost of transporting his produce had destroyed the project.

Figure 60 Water chestnuts being raised within a private high dike in Vinh Binh Commune, May 2002

The commune government supported the farmer's request for a loan to raise a high dike around his 3ha of land. He was growing water chestnuts successfully, (see lower picture) but the cost of transporting the produce daily in a fresh condition made the exercise unprofitable Also, he lacked any co-producers in the commune. Shortly afterwards he ceased growing water chestnuts and used the area to grow speciality rice for export. With his own dike he could control the environment more exactly than inside a communal dike and also reduce the incidence of weeds, thereby raising the quality of his produce and his return, but without other producers nearby the transaction costs were prohibitive.

(author. May 2002)

In this case the farmer lacked co-producers, to share the cost of logistics. Here, a purely private market situation was unsatisfactory, co-producers were needed to make the market work. Working on his own, and operating in a rational, individualistic fashion, did not guarantee him success. Paradoxically, therefore, producers needed co-producers in order to attract buyers and sell their produce. In this situation, other producers of the same crop would not be rivals because without them one producer operating alone would fail to attract buyers. Under certain circumstances, co-operation is more fruitful than competition.

Another reason for the absence of competition between growers of the same crop may be the limited length of time households have security of use over their land. According to Olson (1965), driving a competitor out of business will not in itself enable the victor to become a larger enterprise or increase their market share unless they can intensify production or extend their business through the acquisition of more land, thereby capturing the share of the market vacated by the vanquished competitor, but Vietnam's current land laws make this option difficult to exercise. The Land Law of 2003, which came into force in 2004, continued the allocation norm of three hectares per household, with rights guaranteed for 20 years, (Government of Vietnam 2003, Article 70) and continued the right of households to lease land beyond that norm (Government of Vietnam 2003, Article 35), though subject to renewal more often. According to An Giang Department of Agricultural and Rural Development, in 2009, out of 324,179 farmers in the province, just 426 or 0.13 percent of them, farmed five hectares or more (VietNamNet, 6th April, 2010). The desirability of land accumulation above three hectares and an increase in the length of time farmers have security of tenure, are currently under discussion by the Ministry of Agriculture and Rural Development (Lookatvietnam, 25th March 2009). This links with the state's expressed wish to see the use of more intensive technologies for planting and harvesting (Vietnam News, 3rd August, 2010). Very recently, initial evidence has come in suggesting that the limit on land holdings has risen to five hectares, at least in An Giang Province, but this has not so far been confirmed (personal communication by SMS text with Dr Truong Ba Thao, 22nd September,

2010). Land accumulation, which would permit the use of more modern technologies is an aspiration, but it was not in evidence in Vinh Binh Commune, An Giang Province, at the time of this research (2001 to 2007).

Considering further farmers' co-operative behaviour, Olson sees groups as being justified and validated only if they perform a specified service for their members, otherwise he questions why rational individuals wish to club together in the first place:

> Though all of the members of the group therefore have a collective interest in obtaining this collective benefit, they have no common interest in paying the cost of providing that collective good. (Olson, 1965, p.19-20)

Instead, individuals would rather their competitors bore the costs and they got the benefits. Gamson (1992, p.57) however, who describes Olson's (1965) work as a model of 'individual utilitarian[ism],' which assumes an 'absence of collective identity', questions Olson's denial of a group identity as a factor influencing group action. Instead, Gamson suggests the glue binding individuals together into a group is more than just one of economic self interest:

> When people bind their fate to the fate of a group, they feel personally threatened when the group is threatened. Solidarity and collective identity operate to blur the distinction between individual and group interest, undermining the premises on which such utilitarian models operate'. Gamson (1992, p.57)

A collective identity, a structure with strong social bonds which rise above mere rational or economic self-interest, might be evidenced therefore by acts of philanthropy towards other members of the group which build and maintain a collective identity.

In Vinh Binh Commune there was considerable and consistent evidence of social cohesion, made up of philanthropic acts which might fall under the heading of 'micromobilizations', to use Gamson's (1992) word. These acts held

people together and when people did not participate in them, for example when they did not live in the area and could not participate in meetings, this was a matter of concern. Individuals showed concern for other members in several ways, two of which can be quantified to a limited extent. One indication of social cohesion was the considerable amount of money households identified as their annual donations at weddings. It was common to see a floral arch at the front of a house; this was a public announcement that a wedding was taking place. Between the floral arch and the house, tables would be arranged at which men and women, often at separate tables, sat eating and drinking: both men and women would be wearing the traditional *ao dai,* the women in colours, and the men in black or white. On arriving in May 2002 for an interview at a household of thirteen people, made up of the husband and wife, each thirty nine years old, his parents, and nine children aged between five and nineteen years old, we found everyone had just returned from a wedding party along the road. Everyone was wearing their *ao dai,* and looked very smart. We gathered that the celebrations had been good and as a result the parents were loquacious in telling us about their financial difficulties. Despite being in debt to a bank by several million VND, and having even been visited by a bank official accompanied by a policeman to talk about their debt, they said they allocated five percent of their yearly expenditure to weddings and parties. This household said they expected to attend at least fifteen weddings in a year and donate 50,000 VND each time. Of the seventeen households we interviewed in Vinh Binh, nine of them said specifically that they allocated money for parties and weddings, allocating up to 20 percent of their household's non-agricultural annual expenditure to parties; one household expected to attend thirty such celebrations in a year, donating 50,000VND at each one. This behaviour has been interpreted as showing goodwill and support for neighbours, goodwill towards people who they would support in times of crisis and who they could call on for reciprocal support in times of need.

Another calibration of social cohesion was attendance at neighbours' funerals, as I had done following the accidental death of a commune official in

Binh Hoa Commune (Section 3.4.2). On that occasion, among the fifteen or twenty people sitting quietly and drinking tea, the men with white bands around their heads, I recognised officials from the commune HQ and a farmer who I had interviewed. This was an important social event, to which the term 'micromobilization' can reasonably be applied.

A second indicator of social cohesion may be the help families gave each other during the flood season. More than half of the households interviewed in Vinh Binh Commune (nine out of seventeen) spoke about food insecurity during the flood season, either in their own home or in homes around them. Households would help those in need, either by lending money, and not charging interest, or by giving rice:

> *Some people come and borrow money/food in flood season. Very few farmers charge interest for these loans.* (Farmer 22, Vinh Binh commune, 22 May 2002)

In some parts of the commune the incidence of food insecurity in the flood season was high. One farmer said three out of his seventeen neighbours did not have enough in the flood season, another said in May 2002 that in the previous flood season fifty percent of his neighbours were short, and even that was down from seventy percent the year before. On a wider scale, in 2001, at my initial meeting with a group of farmers in Vinh Binh (Section 3.2.2) farmers said twenty percent of the commune's population were 'in need' during the floods. Several farmers referred back to 1978-79 and the food shortages they experienced that year, caused by insects, severe flooding and specifically the uncertainty experienced when they first grew HYV rice instead of floating rice. The year 1978-1979 was deeply embedded in the memory of this community, it was the bench-mark for judging hardship in succeeding years.

Some of the social cohesion observed in Vinh Binh Commune will very likely have sprung from the shared experiences of the late 1970s, when farmers simultaneously faced environmental, technological and political challenges.

Social cohesion may well have grown out of farmers' widespread resistance to state-enforced co-operatives in the 1980s. At that time farmers declined to grow rice other than a small amount just sufficient for home consumption, in which case, should a household's rice crop have failed, they would have had no reserves to fall back on:

> At first, all produce was collected by the state and the farmer received a price for it fixed by the state. An assessment was then made of how much would be needed by the family for their own consumption, and the rest would be removed. Later, however, in the face of such requisitions, farmers in the south simply produced sufficient for their household consumption and there was nothing for the state to collect; in practice they reverted to farming the garden around the homestead and left the rest fallow. (Field notes June 2006, following a conversation with Professor Vo Tong Xuan, in London)

Under those circumstances it is likely there would have been neighbourly helping-out, although further research is needed to establish more fully what occurred at that time.

Another indicator of social cohesion was the importance of farmers behaving well towards others. 'Good behaviour' towards neighbours was seen as essential:

> *Young people, if they want to be farmers, they need good behaviour, work well on the field and be polite.* (Farmer 17, Vinh Binh commune, 22 May 2002)

When asked if he knew all the 200 or so farmers with land in his 160ha compartment, this farmer said he:

> *Walks around every day, sits around, shares experiences with other farmers.* (Farmer 22, Vinh Binh commune, 22 May 2002)

As recounted in Section 5.4.3, engaging in social activities with neighbours, even going off to drink wine early in the morning, was held to be important to maintain good relations with neighbours. One specifically-stated

reason given by some rice farmers for resisting the building of the high dike was their wish not to give up a way of life which gave them a rest during the flood season from labouring in their rice fields. The woman who sold inputs to farmers put it very clearly in 2007:

> Question: *Do farmers in Vinh Binh want a high dike*?
> Answer: *No*, [it] *exhausts people and the land.*
> (Principal seller of agricultural inputs, Vinh Binh commune, 5th December, 2007).

Farmers' present way of life gave them time for social activities with their neighbours, for holding parties and drinking tea, and *ruou* (rice wine), activities which built the solidarity and cohesion that got them through crop failures, extreme floods and adverse political circumstances. All these activities had the potential to bring the community together, to generate social cohesion.

Despite these indicators of apparent cohesion and unity of purpose within pumping clubs, there were also signals of tensions between members. Agrawal and Gibson (1999, p.629) challenge the notion of a community as 'a small spatial unit', as a 'homogeneous social structure', stating rather there are multiple interests. As stated in Chapter Five, rich and poor households expressed different opinions about the advantages and disadvantages of building high dikes (Tables 5.1 and 5.2). For example, whereas poor households saw the high dikes as ensuring year-round employment, the rich saw it differently. The rich expected their yields of rice would fall, the dike would be costly and,

> *life will not be comfortable here*, and with two crops of rice *there is certainty of small profit*, but with vegetables *there is possibility of high loss* (meeting with group of farmers, Vinh Binh commune, 4th July 2001)

There were clear differences in expectations between rich and poor. A limitation in my research was the lack of access to the voices of women in the household, so the fieldwork lacks data from within the household about tensions between members arising from common dikes. Another source of tension within a pumping club was deciding on the date to start pumping water out of the

compartment at the end of the monsoon season. For individuals with low-lying fields a later start could save them money, but that would deprive those with fields at the edge of an extra margin of profit. Another source of tension arose from damage to the dike. There was a weary, reluctant acceptance of the damage done to the dikes by free riders. Individuals doing this damage were never referred to by name, just referred to as 'some people'. Thus while farmers engaged in the collective practices needed to avoid the loss of crops due to early or late flooding, at another level they were less united and a suggestion tensions existed. Overall however, the advantages to be gained from joint action against flooding appeared to outweigh the disadvantages of farming inside a compartment with a common water regime. Within these small group, members work together to overcome a common threat, placing the group's goals above personal goals, but that does not confirm that they are a 'unified' group, just that they have prioritised their common needs above their individual rational interests. Inside the August dikes, there is social cohesion, but individual wishes are not totally suppressed.

6.2.4 Distinguishing features of pumping clubs in An Giang.

In South-East Asia, three systems of collective action by farmers for water management have been described in the literature, and were set out in Chapter Two. The pumping clubs in An Giang show some similarities to user-controlled water groups elsewhere in South-East Asia, but also some differences, which may relate to whether this is collective action in the use of a CPR, or co-operative resistance to a common threat. The *subaks* of Bali, through a system of 'water temples', religious ceremonies and distribution channels, allocate water equitably from lakes at the top of mountains to groups of users located lower down (Lansing, 1987, 1991) so that over a period of time, each group receives an equal share of the resource. In Thailand the *muang fai*, ditch and barrier, system diverts water from rivers or streams into channels, from which gates of calibrated sizes admit water to farmers' fields (Ounvichit *et al.* 2006). All members contribute to the cost, in materials and labour, of maintaining the

system according to the size of their gate, regardless of where they are located along the ditch. The system of *zanjeras* perform the same function for farmers in the Philippines, but on a much larger scale, with the initial distribution ditch being divided to deliver water to different groups of farmers (Siy, 1982 and 1989; Kerkvliet, 1984), which is then distributed by sub-groups to individual fields.

These systems have four common characteristics: they are systems for delivering water by gravity to fields for cultivation; they function independently of the state; they are transparent in operation, they keep accounts, hold annual meetings and have the ability to dismiss their office-bearers; and, because of their structure and visibility, 'free riding' would be difficult to conceal. In each location there is a collective interest in making the system successful, if any members should leave the system the cost to remaining members would increase, so the group behaves in ways to maintain the consent and co-operation of all the water users; and they are committed to equitable sharing of resource. Membership of *muang fa*i is small, for *subaks* and *zanjeras* the final distribution groups are small but the overall system may be large.

Pumping clubs in An Giang differ from collective action user groups elsewhere in South-East Asia in two key ways. First, members are acting in a combined way in response to a common threat; they are being coerced. Second, free riders are tolerated. The potential damage to be done if the dike is not repaired is the loss of the second crop, so rather than suffer that loss all members of the club share in the cost of repairing the wall. In these two ways the pumping clubs of An Giang have more in common with the groups of users who managed the polders in the Netherlands in the Middle Ages, as described by Kaijser (2002), than with contemporary water user groups elsewhere in the region. However, An Giang's pumping clubs are similar to other groups in the South-East Asian region in that they operate independently of the government; members share costs on the basis of the size of their land holding and the depth of water in their field; and the number of members is small enough for all members to see the actions of all the other users in the compartment.

The advantages to the state of allowing An Giang's pumping clubs to function largely independently of the state were summarised above, in Section 6.2.3. However, as Vo Tong wrote in 1975, pumping clubs began as 'government inspired private operators', to provide irrigation in diked compartments (Vo Tong 1975, p.101). However, in both the Philippines and in Bali, the state has attempted to co-opt user groups for its own purposes, with less than satisfactory outcomes in each case. In Bali, in the early Twentieth Century, Dutch administrators enmeshed the *subak* into the structure of the state (Lansing, 1991). This led to the loss of the synchronised fallow, a mechanism that had controlled pests and disease, and the nutrient flush that arrived with the new season's irrigation water. The disadvantages of this change were exposed in the late 1960s when the first crops of 'green revolution' rice proved disastrous. In the Philippines the government attempted to incorporate *zanjeras* into the state, intending to use them to spearhead national policy on irrigation and to collect irrigation fees for water delivered to farmers through systems farmers had not been involved in designing. Siy warned that by doing so the country's national planners 'not only may be destroying effective irrigation methods but may also be undermining people's efforts to be self-reliant' (Kerkvliet, 1984, p. 357) a point reiterated by Fujiie *et al.* (2005, p.23):

> The new policy orientation to delegate the management of local commons from state agencies to rural communities has a high potential to increase both efficiency and equity. However, if it is promoted for the motive of saving government resources alone without recognising the severe constraints in organizing rural people, positive consequences are unlikely to be forthcoming.

6.2.5 Contest and co-operation between farmers and the state

Vinh Binh People's Committee, through the commune government, recognised pumping clubs and gives them space to make their own decisions. Drawing on Kerkvliet's analysis (2009, p. 232), pumping clubs and their operation can be categorised as 'official politics', rather than 'everyday politics'. In other countries

they might be classed as 'public corporations', free to operate in the space provided for official society. Pumping clubs in August dikes exist outside of the apparatus and day-to-day control of the commune government; they had not been enmeshed by the state at the day-to-day level of their activities, they were not contesting the role of the state, they were operating at arm's length from it. Farmers talked of officials attending meetings when pumping-out dates were being decided, but they did not talk of officials being involved in decision-making, other than as holders of Land Use Certificates and observers. It was common for officials also to be farmers, so it was not surprising that some had land in the communes where they worked, and therefore attended meetings as fellow farmers, rather than just as officials. Officials were thus vulnerable land holders, just like other farmers. For example, in Binh Thanh Commune the President farmed in a nearby commune and my official counterpart from An Giang University, Dr Truong Ba Thao, had bought Land Use Certificates in Vinh Binh when he was the Leader, and continues to farm there. Thao says he attends meetings and takes part in discussions about setting the date to start pumping:

> Question *Do you go to meetings of farmers to decide when to start pumping-out water and repair dikes for your farm? Does your manager go on his own?*
> Answer *At the end of October I will attend meeting with farmers.*
>
> Question *Do you go every year? Do you speak or are you silent*?
> Answer *I discuss with the*m.
> (Personal communication by SMS text with Dr Truong Ba Thao, 9th September, 2010)

Meetings of the pumping club engage a range of stakeholders with a wide base of knowledge and a diversity of interests. This would indicate that when decisions are reached they enjoy substantial support from users. The President of Vinh Binh Commune Farmers' Union described this organisation as a '*co-operating union*', with the tasks of pumping water out and protecting the dike (President of Farmers' Union, Vinh Binh Commune, 28 June 2002). In 2007, the newly-arrived Leader of the Vinh Binh made a similar remark:

> [farmers] *want to cooperate, e.g. on pumping, significant change from co-operatives.* (Leader of Vinh Binh commune, 5 December, 2007)

The distinction in these remarks between 'co-operative' and 'co-operating' is not a mere semantic. To have called pumping clubs 'co-operatives' would have sent a different set of signals, about state-controlled decision-making, one which officials and farmers have rejected, but a 'co-operating' union indicated occupation of a different space.

At one level of analysis, therefore, the pumping clubs in Vinh Binh Commune are just what they say they are, namely clubs, in the sense of Olson's and Ostrom's framework (see Table 12), established for the benefits of their members in the allocation of non-rivalrous, non-excludable goods. The state has not tried to take them over; instead it supports them with occasional financial assistance for the maintenance of the walls. The advantage to the state of allowing clubs to function autonomously may be that they enjoy uncontested support by farmers and appear to work well in managing competing interests in the prevailing environmental and economic circumstances. The function of the pumping club is clear, its goals are very limited, its membership is clearly defined. All members can see what all the other members are doing and everyone can participate in the club's decision-making; pumping clubs are transparent.

It appears that farmers are better-off giving up some independence in order to enjoy the protection of a common dike, rather than each farmer needing to erect his own dike, even if they do lose control of the water regime to the club. As the fate of personal high dike described above demonstrated, it was difficult for one farmer to act individually and diversify into other crops, to market his produce, even if he had control over the water regime. That high dike probably owed its existence to a loan at favourable terms for that farmer. Further factors against increasing the number of individual high dikes are the loss of land to the footprint of the dike walls, and the cumulative effect the building of numerous high dikes will have on the surrounding water level. Increasing the

area of land inside high dikes will lead to ever-higher levels of water outside the dikes in the flood season, leading to the need for even higher walls.

At another level of analysis, however, pumping clubs are emblematic of farmer-state relations. The relationship between the state and pumping clubs may be described as a dyadic patron-client relationship between state and farmers, with the state as patron and farmers as clients. Unlike the system of dependence by weak clients on strong patrons in return for material support in times of need, theorised by Scott (1976), but heavily criticised by Haggis *et al.* (1986, p.1435) for 'inadvertently present[ing] a landlord's view of peasant society', the relationship in An Giang appears to be more symmetrical, with significant strands of dependence running in both directions. At a national level, in order to maintain food security and for sale on international markets, the state needs farmers to grow rice. To achieve this, it urges particular provinces to maintain high levels of production for certain crops, and the state depends on An Giang in particular to produce the largest amounts of rice in the country, for home consumption and for export. Having tried and failed to enmesh farmers in the Mekong Delta into co-operative farming in the 1980s, when the state-controlled land ownership, access to inputs, and appropriation of outputs, Vietnam subsequently adopted a free market for inputs and outputs, but only granted security of land holdings for a limited period. The Land Law of 2003 states that all land is the property of 'the State, which represents the entire-people owner of land [sic]' (Government of Vietnam, 2003, Chapter 1, article 1), and grants security of holding for different lengths of time, depending on the use. This position allows the state to retain a trump card: farmers hold Land Use Certificate granting access to land, but only for a defined and quite limited period of time. This is a source of on-going tension between farmers and the state, well described by Kerkvliet (2006). Dao (2010, p.324), writing about people being displaced for dam-building in Vietnam, confirms the lack of security of land holding, as a continuing issue in farmers' relations with the state:

> People are unable to avoid being clients in this client-patron relationship with the state. Land basically still belongs to the state.

Nevertheless, despite this check in the distribution of power, the state is dependent on the goodwill of farmers to grow rice, as was exemplified in the 1980s when delta farmers declined to grow more rice than they needed for home consumption. The issue of land security cuts both ways. On one side it gives the state power over the people, but on the other side it gives the people leverage over the government. Without the co-operation of millions of farmers, food insecurity would soon follow, leading to social unrest and a decline in support for the government and most likely failing support for the CPV. The land-dependent segment of the population of Vietnam is very large; most people still make their livelihoods in rural areas away from the cities. Agriculture in Vietnam is labour-intensive, with small land parcels and only limited mechanisation. Overall, 48 percent of those in employment are classified as farmers, by far the largest section of Vietnam's working population (Government of Vietnam, 2009), while in An Giang Province, 80 percent of labour works in agriculture and 20 percent elsewhere (Personal communication, Le Minh Tung, Vice-President People's Committee, An Giang Province. 9/12/07). With this proportion of the population dependent on the land, it would be perilous for the state, and particularly for the CPV, if they reduced the security farmers have on land. To do so would create uncertainty and the very real risk of farmer disaffection, coupled with food insecurity and reduced support for the party-state in rural areas.

In An Giang the state benefits by leaving farmers to manage water inside their August dikes. Delegated water management brings three main benefits to the state: it is a signal of the state's support for farmers, despite the insecurity created by uncertainty about the duration of Land Use Certificates, and thereby maintains farmers' support for the state; it allows for farmers to fine-tune their actions to the changing conditions, thus enabling them to grow the maximum amount of rice, an occurrence that benefits the population as a whole and the state; and when An Giang's farmers produce what is expected of them it raises

the status of local officials at local and national levels. With all these potential benefits, it is not surprising that the pumping clubs of An Giang appear to enjoy considerable freedom of action.

6.3 Common high dikes: farmers lose control of water management

6.3.1 The pumping clubs are eliminated

The erection of a high dike in Binh Thanh Commune brought about the end of the pumping club and the adoption by the commune government of responsibility for opening the sluice gates, maintenance of the dike, and the pumping of water. The impact on farmers of this change at the time of the changeover was set out in Section 5.3, and this sub-section draws upon that account. Once the high dike was fully built, the compartment was no longer liable to flood between August and December. The practical effect of this change was that those crops which did not grow in flooding conditions could be grown year-round. The only crop that some farmers had previously grown which they were no longer able to was water-chestnuts. Another change was that the government took over supplying irrigation water from the adjacent canals into irrigation ditches within the compartment, and pumping excess water out during the monsoon rains. The final change was that farmers no longer undertook the repair of the dike walls, instead the state undertook the repair work and reclaimed part of the cost from farmers.

When the high dike was completed, the relations between farmers and their land, farmer and farmer, and farmers and the state changed in four fundamental ways. First, farmers' fields were no longer submerged by water for three or four months each year. The purpose of the high dike was to prevent the compartments being completely submerged for three or four months when the level of the river rose due to precipitation upstream. However, some farmers did not believe at first that the high dikes were strong enough, saying they would

break, and in 2000-2001 some farmers chose not to plant crops during the first flood-free, monsoon season. Farmers said that if they planted seeds and the dike were to break under the pressure of external flood water, they would lose their investment, so they chose instead to leave fields fallow and avoid that risk. The ending of flooding also brought an end to the deposit of silt and sediment, along with other free goods such as fish, crustaceans and molluscs. The loss of silt and the absence of a flushing effect, which carried away toxins such as pesticides, had been identified by farmers in Kien An, where high dikes had been in place for several years, as a serious loss, and by 2007 the farmers in Binh Thanh were making similar comments. Farmers in Binh Thanh had not grown rice for many years, so they did not talk about declining rice yields associated with increased levels of fertilisers, but they talked about their soil becoming drier and harder (see section 5.3.2).

The second fundamental change was that farmers no longer needed to act co-operatively in order to maintain and repair the dike wall. Coupled with the ending of floods inside the compartments the need for collective action to pump water out at the beginning of the planting period also came to an end. The meetings needed to reach agreement about when to begin pumping, who should get the contract and how much it would all cost, were no longer required. This change eliminated one source of tension between farmers. It may also have reduced opportunities for 'social mobilizations'.

Third, relations between farmers and the state had altered.. Irrigation water for crops growing within the high dike was no longer pumped into the compartment by individual farmers. Instead, farmers paid a levy to the state and the commune arranged for the pumping to be carried out, although I was told by a teacher that one farmer might get the contract to carry out that work. Farmers and teachers gave two reasons for this change from a farmer-delivered to a state-delivered service. First, water needed to be pumped into the compartment throughout the year, or at least whenever rainfall did not provide sufficient water for the crops, and when there was too much rain water accumulating

inside the compartment water needed to be pumped out in order to prevent flooding. The former pumping clubs had functioned at only one point in the year, which was at the end of the flood season. As farmers grew a greater range of crops inside high dikes, the timing of those requirements was no longer synchronised, as it had been with rice. Now, pumping needed to be done year-round, possibly each day. Also, because of their cost and possibly to spread the benefits, high dikes tended to enclose larger areas than the August dikes, so several small compartments were enclosed by one high dike. Managing water was no longer a small-scale seasonal task, instead it had become large-scale, year-round, daily task, and for this reason it had been taken over by the state. One university staff member said it was just too big a job for farmers to do reliably, and that was why the government had taken it over. What this take-over of pumping did to the social cohesion, Gamson's 'micromobilizations' is not known, a subject for further research.

The fourth, and possibly most far-reaching and potent change, was that control of the sluice gates moved away from farmers to the state at the local level. This shift of control significantly rebalanced farmer-state relations. The rebalancing may have been an unintended, an unexpected consequence of the high dike, or it may have been deliberate. I have no evidence either way as to why this happened and can only speculate, but control of the gate represented control over the year-to-year environment inside the compartment and with it the economic potential of the farm land. The state may have acted to overcome an operational problem; or it may been the result of careful foresight by the government. The purpose of sluice gates, which were also present in the walls of August dikes, was to allow water to pass through the wall when the level of water in the adjacent river or canal was rising. This had the benefit of admitting free goods early in the season, when the river was carrying a lot of them, but also in equalising pressure on the inside and outside of the wall, thus making it less likely to be breached. A second benefit of the gates however was when they were opened the compartment could be flushed out and shed accumulated agrichemical toxins. By letting water enter and then flow back out again, the

load of pesticide residues and human waste could be reduced, or at least transferred from fields to watercourses, turning it into someone else's problem. These were the benefits offered by sluice gates. The pumping club controlled the gates in August dikes, but in high dikes the gates were controlled by the state. This change in control threw up a problem of very considerable proportions: who should decide when the gates would be opened. This question is returned to in Chapter Eight.

6.3.2 Inside high dikes, farmer co-operation gives way to contestation

Rice and vegetables make incompatible bedfellows inside a high dike. This was made particularly clear by the Leader of Vinh Binh Commune when he was asked in 2007 if the decision to raise a high dike had been taken:

> *Farmers who want to grow intensive rice-want gates opened every 3rd year. Farmers who want intensive vegetables and fruit growers-want no flooding.* (Leader of Vinh Binh commune, 5th December, 2007)

Vegetables can be grown year-round, so there are unlikely to be times when the fields are empty; there is no synchronised fallow when flooding would not make an economic loss for vegetable farmers. Indeed, an economic advantage of vegetables is that they provide year-round employment. Growing, watering, harvesting and preparing vegetables for market is a labour intensive, daily task (Figure 67). Vegetables also provide small amounts of income every few days, whereas rice provides substantial amounts of income every 100 days or so. On the other hand, rice, can be grown so that there are times when there are no crops in the field, making it theoretically possible to flood the compartment.

Figure 61 Intensive production of vegetables provides daily work throughout the year

In Cho Moi District cabbage seedlings are being raised for transplanting into an area with high dikes and no flooding. Farmers were able to distinguish between male and female seedlings on the structure of the cotyledons, discarding male seedlings in favour of female plants which produced a better yield. Note the bullock attached to a cart. As this area no longer flooded, farmers were able to maintain a higher stock of cattle than areas with August dikes.

(author. May 2004)

Synchronised rice-growing has clear times of the year when all farmers are doing the same activity with the same crop, but with vegetables that synchronisation is lost. Further, even if vegetable-growing were to be suspended for two or three months, supposing farmers were prepared to take a temporary economic loss, farmers who had planted perennial crops, such as mangoes, might well see their trees die of drowning, and fish ponds would need to be secured with raised nets if the fish are not to escape into the flood waters.

In Vinh Binh commune, farmers were restricted to growing crops in the period between one flood season and the next. Although upland crops such as water melons would grow in place of one of the rice crops, farmers made their living by raising just two crops of rice in one year and there was no crop diversification in the communal compartments. Farmers' activities were highly synchronised and bounded by the water regime. In Kien An commune, by contrast, after the high dike had been completed, farmers diversified, with some continuing to grow rice, even growing seven crops in two years, while others grew vegetables. In interviews in 2004 I was told the sluice gates had not been opened in the flood season, a fact confirmed to me in September 2010 (personal communication, Vo Tong Anh, 13th September 2010). The commune was dealing with toxins by pumping water into compartments in the dry season, when the effect of their build-up was most noticeable, but it was not clear whether this water was being used to flush individual fields or just to maintain the level of water in the ditches, where toxins may accumulate. In Binh Thanh Commune, once the high dike was completed in 2001, farmers were at first not certain about what to grow in order to make use of the new conditions, although the commune was offering 'policies' to help farmers, such as preferential, low-interest loans, for raising cattle and for specific crops to be sold under contract between city-based buyers and the commune (see also Chapter Five). Some households were apprehensive about the strength of the wall and were at first reluctant to risk investing in crops during the flood season. In this commune there had been very clear statements by the commune's President in 2002,

repeated in 2003 and 2004, of their intention to open the gates, but by 2007 those gates had still not been opened:

> *70 percent of farmers are against* [opening] *it*.
>
> (President, Vinh Binh commune, 10th December, 2007)

This third example leads to the centre of the dilemma that is created by high dikes: when, if ever, should the sluice gates be opened and who should make that decision? In essence, this is a problem of priorities: should rice be prioritised above other crops; should vegetables, or other crops be prioritised instead; and is it the role of farmers or the state to make that prioritisation? At the time of this research, the state had assumed the role of answering these questions. This can be interpreted as a rebalancing of power relations between farmers and the state. Markussen *et al.* (2009) have suggested the state prioritises particular crops, achieving this by ensuring growers of preferred crops receive better quality inputs than others, leading in the authors' opinion to the maintenance of food security. At another level this problem is a signal about changing relationships between farmers and farmers, farmers and their land, and farmers and the state, when the dikes are raised to a level designed to exclude all flood water.

6.3.3 The changed relationships brought about by high dikes

Raising the dike has altered relationships between farmer and farmer, and between farmers and the state. At the time of this research these new relationships were still being worked out and tensions were evident.

Whereas formerly, with August dikes, farmers' best options were to act together, collectively, in order to keep the flood waters out of the compartment, the building of a high wall removed the necessity to cooperate. Pumping clubs were collective action, a group activity providing mutual support between members, but they were developed in response to a common threat faced by a

group of farmers. Out in the depressions of the Long Xuyen Quadrangle it was a better strategy to 'hang together' than to 'hang apart'. Farmers displayed the characteristics of collective action similar to that required to protect a CPR, but here the resource was abundant, too abundant, rather than being in short supply. However, the situation created by high dikes pitted farmers with one type of crop against farmers with other types of crop, pitting growers of vegetables and perennial crops against rice growers. There was no indication that this tension had yet boiled over into social unrest in An Giang, but this has happened elsewhere in the delta. An example was given in Chapter Five of a reported clash in Soc Trang in 2001 between rice farmers and shrimp growers. This was not an isolated event. In early 2010, another clash over priorities in the lower delta left several thousand hectares of shrimp farms with insufficient salt water and the shrimps died. Priority was given to using the sluice gates to maintain the supply of fresh water for rice rather than salt water for shrimps:

> In Bac Lieu's Gia Lai District alone, 6,000ha of shrimp farms have been affected. Many shrimps have died due to the lack of saltwater, according to the district Agriculture and Rural Development Bureau. More than 16,000ha of shrimp farms in the district now face a shortage of saltwater after sluice gates were shut to save more than 20,000ha of rice. (Vietnam Business News, 23rd May, 2010)

Thus relations between farmers growing different crops has become competitive and contested. With the removal of the external threat of flooding, farmers are able to act more as 'individual rationalists', and are competing with each other over the use of resources. What this research did not have the time to focus on was the effect of the change from one system of dikes to another on social cohesion and systems of support among the population: what are the social implications, the gains and losses outside of the economic sphere when the dikes are raised? Siy, quoted by Kerkvliet (1984, p.357), noted that changes to farmer-organised irrigation in the Philippines to fit in with the wishes of the state, and warned: '[by] destroying effective irrigation methods [the state] may also be

undermining people's efforts to be self-reliant'. There is however, another dimension to this problem of control of the sluice gates.

In Section 6.2 a case was made to explain why the state granted considerable space to farmers for the independent actions of the pumping clubs. It was argued that giving farmers this high degree of self-determination in managing their August dikes might lead to the maximum possible returns for farmers, and therefore to the benefit of the state and officials as well, and it may have been a *post hoc* admission of the state's failure to collectivise these farmers in the 1980s. Now, however, with high dikes, the balance of power appears to have tilted towards the state, in the form of the commune government, and away from farmers. The state is back in charge of pumping and dike maintenance and, most significant, of deciding when the sluice gates should be opened. There are two perspectives from which to analyse the situation.

On the one hand, it might be interpreted as fitting in with one of the three models of farmer-state relations set out in Chapter Five: an example of the 'dominant-state' model of relations, with little scope for decision-making outside the command structure of the CPV; 'mobilization politics', designed to mobilise potentially troublesome groups into supporting the government; or dialogic relations, in which authorities nuance policies to suit circumstances and realities on the ground. Undoubtedly the local government was having to adapt to the situation as it arose. Where once the party-state would have decided what was needed and farmers would have paid for it, since the events of 1986 it was less free to do so:

> *Before, party decide, farmers must pay.* (Le Minh Tung, Vice chair, An Giang People's committee, December 2007)

One way of interpreting what had happened here is to view it as the state taking power away from groups of farmers, and a high dike would have several hundred farmers within it, who were becoming economically powerful and might push for

even greater decision-making powers of their own. By retaining control of the sluice gates, the state retained the power to 'divide and rule', keeping open the option to play one interest groups off against another, prioritizing one crop over another. Markussen *et al.* (2009) identify this as a way in which the state prioritises certain crops. This behaviour by the state indicates there was more of the dominant state model of politics in controlling sluice gates than the dialogic model of relationships.

A second possible strand of explanation, however, is that by retaining control of the gates the state was acting to maximise the potential to create employment and maintain social stability. High dikes and vegetable growing are labour intensive, so by failing to open the dike this tilted the balance away from growing rice, which is not as labour-intensive, and towards vegetables and other crops which are more labour-intensive. Keeping the gates shut in the flood season opened up opportunities for a larger number of people to gain work and raise their standard of living, to lift themselves out of the poverty many in Vinh Binh Commune said they were suffering. By contrast, rice-growing, for all its lifestyle possibilities, did not employ as much labour and when conducted within August dikes, no wage-earning employment at all for up to four months each year. The reason given by most people for the high dike in Vinh Binh not going ahead was because insufficient farmers were in favour of the change, although in other parts of the commune poor people wanted the dike in order to have 'year-round employment'. However, the only people who had a vote in this matter were the holders of Land Use Certificates, and they were against it. In this decision the landless were also the voiceless, yet they were the ones who stood to gain most in the short term, at least until the negative impacts of high dikes, as reported by farmers in Kien An, caught up with the environment inside the dikes. An argument could be made for saying that by creating year-round employment, the government was acting as the advocate of the poor. By maximising employment, poor people would benefit and the state would contribute to social stability. By acting to create additional employment in rural areas, the state

could possibly persuade the landless not to leave the countryside in order to seek employment in the cities.

At my final interview with the Leader of Vinh Binh Commune in December 2007, I asked if the dike would be built. My assistant summed his position up as follows:

> *The proposal needs grass-roots agreement, if people disagree that must be taken into account. That is the policy of the province. Mr* [Leader's name]*'s job is to consult and report back to the district who will make the decision.* (Meeting with Leader of Vinh Binh commune, 10th December, 2007)

This was not the first occasion I had heard the phrase 'grass-roots democracy'. Decree 79/2003/ND-CP, which was passed in July 2003, confirmed an earlier decree of 1998 granting 'local people' a greater say in the election of local leaders. In Vietnam, the organisation of elections is the responsibility of Mass Organisations and one such is the Vietnam Fatherland Front (VFF). Before an election the VFF will nominate the list of candidates. The first step is to consult the local party cell about whose name should appear on the ballot paper, but after Decree 79/2003/ND-CP was issued the VFF was required to be open to having more nominations on the ballot and not just the one put forward by the CPV. This decree was a national response to dissatisfaction which had led to civil unrest and violence on occasions. In 1997, in Thai Binh Province, but also elsewhere, there was unrest after it was revealed that local party officials were guilty of corruption, including the misuse of public funds.:

> Fighting corruption was one of the key rationales behind the grassroots democracy. (Minh, 2002, p.18)

In a critical review of these developments Fforde (2009a, p.20-21) observes:

> Overall, this research suggested that these robust elements of Vietnam's rural society were uncontentious, positive, and had

> largely arisen through self-empowerment despite opposition from the Party and lack of donor support.
>
> This limited evidence thus suggests a picture of contestation processes that, occurring at a certain pace, appear to contrast with Leninist or neo-Soviet norms.

Local officials were becoming increasingly dependent on popular local support in order to maintain their positions, suggesting the change to the height of the dike was a genuinely contested issue. On the other hand, however, I was told informally in writing by an academic that the company hoping to build the dike would pay the Leader of the commune ten percent of the value of the whole contract when it was signed:

> *They are self-interest*[ed]*, get the benefits, but do not bear the cost (environmental costs for the whole community).* (personal communication by e-mail, teacher, An Giang University, January 2008)

This was an assertion I had no way of following up or verifying from other sources. What I saw being displayed in Vinh Binh was a struggle for local democracy, with a high dike as the immediate goal, but with the bigger issue being the distribution of power between farmers and the state.

6.4 Conclusions

The pumping clubs in Vinh Binh were a collective or co-operating action by farmers under a common threat from seasonal flood waters. While the membership of clubs were not unified in their intentions, members were willing to sacrifice individual utilitarian ends in order to benefit from a common dike which enabled two crops of rice to be raised instead of one between one flood season and the next, thus doubling their income from the same area of land. There were strong signals of social cohesion, generated though what Gamson (1992) called 'micromobilizations', such as participation at weddings and material support for neighbours in distress during the flood season, which kept the group

united. This model of action concurs more with Olson's (1965) notion of collective actions by a group under coercion, rather than Ostrom's (1990) model of collective action in the management of a non-excludable, rivalrous resource. The club's relationship with the state was one of an 'official organisation', operating within the space available for everyday politics (Kerkvliet, 2005). The state did not interfere with the day-to-day operation of the dikes, the water inside them or the gates in their walls. Pumping clubs in An Giang shared this freedom within the state to act with farmer-based irrigation groups in Bali, Thailand and the Philippines, but differed from them in three key ways: they were not managing a common pool resource, such as irrigation water; they were not concerned with free riders; and they were acting in the face of a threat and not for the management of a scarce resource.

It is suggested that the reasons for the acceptance by the state of pumping clubs within August dikes had to do with allowing farmers to maximise a commodity that is valued by the state, and one that contributes to national food security, but this freedom from everyday control may also may be a reflection of the outcome of the previous trial of strength between farmers and the state at the time of collectivisation, in the 1980s, a contest which farmers won. However, when the dike is raised to the level which excludes all water, relations between farmer and farmer, and between farmers and the state, undergo profound alterations. Farmers within high dikes no longer need to, nor do they, act collectively. Rather they begin to act as rational utilitarian individuals, seeking to maximise individual income over the group interest, falling more into Agrawal and Gibson's (1999) model of community as a collection of self-interested individuals with heterogeneous and competing interests. The impact of high dikes on social cohesion is a subject that would merit further research into what is lost within the community when they are built. High dikes generate contestation between farmers, which is manifested in the difficulty experienced in reaching agreement on when the sluice gates should be opened. Sluice gates are important for biological sustainability and the health of the soil, but since the high dikes have been raised it has not proved possible to open

them in the case study communes, because farmers of different crops were unable to reach agreement, so we were told. This failure is seen by rice farmers as the reason for a decline in yields and the need to use increased amounts of fertiliser and was given in another commune as a reason for resisting plans for a high dike.

With high dikes, control of the sluice gates has fallen to the state. It is not clear if this has come about in order for the state to reassert control for political reasons or if it is a pragmatic move. The former would suggest that the state sees large groups of farmers with economic power as a potential threat that needed to be controlled, whereas the latter could suggest the state was acting on behalf of landless people. In either case, the issue of when to open the gates in the high dikes, and who should make that decision, remains unresolved. Elsewhere in the delta the issue of zoning for different crops has been an issue for a decade and has still not been resolved. However, it is suggested here that the rise in the level of the sea, related to anthropogenic climate change, will make decisions on this issue more urgent if Vietnam is to maintain food security as the climate gets warmer and the seaward edge of the delta experiences greater inundations of salt water.

Chapter Seven

Inter-household diversity and diversification

7.1 Introduction

This chapter asks why different households in the same commune have different levels of wealth and why there are differences in household wealth between different communes. The two previous chapters laid out two sets of constraints within which households operate: everyday political relations between farmers and the state, in Chapter Five; and the social relations between farmers themselves as manifested in the control of conditions inside dikes, in Chapter Six. Based on what groups of informants identified as indicators of household wealth, this chapter aims to account for differences in interhousehold and inter-commune household wealth.

7.1.1 Inter-household diversity and diversification

In this chapter household wealth will be considered in the light of four dimensions: historical; land as a resource; the role of non-farm incomes; and education and knowledge.

Livelihoods have transformed the surface of the Mekong Delta. When Vietnamese settlers arrived in the Seventeenth Century it was largely covered in forests and the Khmer and Cham settlements were confined to river junctions, such as the town of Chau Doc, on raised levees and along the coast (Brocheux, 1995; Li, 1998). French colonial rule (1867 to 1954) was characterised by widespread destruction of forests in the west of the delta, which shrank by more than four fifths between 1890 and 1938 (Brocheux, 1995). Further environmental change took place during the war against the USA, and the arrival of HYV rice has seen that process continue with the building of August and today with high

dikes. This transformation created a sense of on-going change in An Giang which was visually striking:

> These economic/social/environmental changes [across the delta] challenge the notion of any prior 'stability' or 'sustainability' of peasant agriculture in this area. There never was a 'golden era' of peace and stability in [An Giang]. It has always been in flux. (Reflective diary, March 2003)

This sense of constant transformation contrasted sharply with accounts of landscape transformation of land by longstanding rice cultivation practices in the Red River Delta (Forbes and Thrift, 1987; Pham, 1999; Li, 1998), Bali (Lansing 1987, 1996, 2001) and Laos (Fujita, 2006).

Murray (2002, p.489) draws attention to the need to engage with 'change over time (the retrospective approach)' as well as ''look around' at a moment (the circumspective approach)' when considering how to carry out research on livelihoods. Conducting retrospective research is a challenge, who should be asked and who should do the asking, how should the questions be framed and what meaning should be given to replies, and who owns those accounts? Nevertheless historical experiences and accounts are important:

> Peasant strategies cannot, however, be understood in isolation from either their historical experiences or the wider macro-economic environment. (Fforde, 1984, p.2)

Household members are a prime source of knowledge about how local events and wider historical events have impacted the household. Bagchi *et al.* (1998) discuss the methodological issues and advantages of conducting research into 'livelihood trajectories', which can feed into explanations for contemporary household decisions. This research benefitted considerably from longitudinal accounts offered by many households in the study area. The research questionnaires specifically avoided asking householders how they fared during the war and at reunification, this seemed to be too politically overt a question to ask and outside of the research remit. However quite unexpectedly, the

question, 'how did you learn to farm?', designed to tap into agricultural knowledge information systems (AKIS) (Ravnborg, 1996), produced rich accounts not only about the sources of farming knowledge but also how families gained and lost land over two or three generations, including dates, family sizes and how land was split among the children. It included statements about 'land taken by the government', or by the freedom fighters. In the words of Monaghan and Just (2000, p.6), how land was gained and lost was a question 'imposed upon [me] by the actual circumstances and events of people's everyday lives'. The narrative of agricultural transformation in An Giang demands this retrospective be taken into account.

The importance of non-farm incomes for providing income security has been stressed by many authors (Ellis, 1998, 2000; Evans and Ilbury, 1993; Bouahom, *et al.*, 2004; and Chase, 2010). Rigg (2006, p.192) challenges the notion of the 'farming household' in the Global South for reasons of declining profitability, the attraction of other income streams, environmental degradation and land shortages, and social and cultural changes. Nevertheless, rising populations require the production of rising amounts of cereals. In Vietnam this has been achieved through ramping up plant yields and increasing cropping intensity by dike building. Rice in Asia is unique in being produced overwhelmingly on small-sized farms, typically 2ha or less (Greenland, 1997), thus access to land by large numbers of people is still seen as crucial for satisfying national food security and household consumption, although the effectiveness of owning land in reducing poverty is questionable (DFID, 2002). For some households this is land to cultivate, while others depend on cultivation to provide seasonal employment as part of their income suite (Dorward, *et al.*, 2004). The World Bank recognises the importance of land, 'providing secure tenure to land can improve the welfare of the poor' (Deininger, 2003, p. ix). Considerable land redistribution took place in Vietnam before and after reunification (Kirk and Nguyen, 2009; Do and Iyer, 2003). Under the constitution of Vietnam all land belongs to 'the people' (Government of Vietnam, Articles 17 and 18, Constitution

of Vietnam, 1992), and land users have security for defined periods of time only (Government of Vietnam, Article 67, Land Law, 2003).

Success in agricultural transformation, poverty reduction and development of non-farm activities are related to access to education and training (Ellis and Allison, 2004; Reardon *et al.* 2006, Bhatta, *et al.,* 2005; Khalkheili, *et al.* 2009). Rigg (2005) suggests that for some households, farming should be seen as a location on a trajectory of change away from the land with progress along that path dependent on access to education, and other services, such as transport and health (DFID, 2002). In addition to helping households to improve their agriculture, for example in Nepal (Bhatta, *et al.,* 2005) and Iran (Khalkheili, *et al.* 2009), or giving access to non-farm income generation (Reardon *et al*., 2006), education has:

> reworked the idea of agriculture and the value attached to farming in the eyes and minds of many, and particularly of the young (Rigg, 2005, p. 175).

Education and access to information technologies have created different aspirations in rural communities as well as lifting the young above farming. In this research, success in education was often stated by farmers to be their ambition for their children, coupled with the hope they can leave farming and have another life.

7.1.2 Research questions and chapter structure

The overarching question in this chapter is why are some households wealthier than others, why do household activities in the same commune vary, why are not all households in one commune with a similar water regime doing the same things? There are many aspects that could account for differences in household wealth. For example is wealth determined by the amount of land the household has, and why do households in a socialist state have different amounts, how do differences in holdings come about? Is the water regime a controlling factor in

wealth, does it limit the choice of crops and animals, the number of times land can be used in one year? Or do economic factors determine household wealth such as the availability of crops suitable for particular environmental conditions, the state of the market for the sale of particular produce, the availability of non-farm employment, remittances from family members working in urban areas, the availability of credit, or their experience of success and failure in the past? Are social factors the determinants of variation in household wealth, such as the number of people, their age and education, or the household's social relations with neighbours and other farmers, or their religious associations, or their former relationships with the state?

The questions to be addressed in this chapter are thus:

- Within one commune, what factors account for differences in wealth between households?

- Are households in one commune more successful than households in another commune and what causes those differences?

The remainder of this chapter is structured as follows. Section 7.2, is arranged by commune. First, households are identified as rich, middle or poor in wealth using criteria identified by people in Vinh Binh, Binh Thanh and Kien An communes respectively. No data was available for Binh Hoa commune, but in that commune we were told how much land a household of two adults and two children needed to be secure. The criteria that were identified were land holding, food security and income security. Next, possible explanatory factors for those diversities are identified. This is done separately for each commune. In section 7.3 differences in wealth between households by communes are considered with a view to pulling out explanatory features at the commune level. Finally, Section 7.4 draws some overall conclusions about household diversity and answers the questions set out above.

The allocations of households to wealth levels indicates relative wealth; they are not measures of absolute wealth based on, for example, the Vietnam Living Standards Survey (VLSS). The use of a different selection of households, or of different criteria for identifying levels of wealth, might well have brought different proportions of wealth levels. The purpose of grouping households by wealth is to search for possible explanations for differences in wealth, rather than to establish absolute wealth.

7.2 Vinh Binh Commune

7.2.1 Inter-household differences of wealth in Vinh Binh.

All farmland in Vinh Binh is within August dikes. These fill with water from August to December each year, although the timing varies from year to year. One household had a private high dike, but all the others had land inside common dikes. There were more than seventy compartments in the commune, each used by a group of farmers, the number depending on the area enclosed. The commune was located beside the road between Long Xuyen and the district town of Tri Ton, about 30km from each. This placed it further from the province capital and urban concentration than either of the other communes. A group of people, made up of farmers and others, in Vinh Binh Commune told us the characteristics they used to decide on rich and poor (Table 13). Indicators were a mixture of what people have or do not have, with some reference to moral expectations and normative behaviours. On the basis of what people told us, criteria were selected to identify levels of wealth in this commune (Table 14) The seventeen households interviewed in Vinh Binh were allocated to a wealth level, based on how they met the criteria we had been given (Tables 15). This is not an exact classification by, for example reference to the VLSS. The purpose is to identify relative levels of wealth as seen in the eyes of the community.

Rich people

- Enough conditions (for instance shops, house near main road) for business
- Owning enterprise/shop for business
- Owning more land (>5ha)
- Owning more wealth (house, gold)
- Enough facilities for producing (machine)
- Enough facilities for human life (Honda, TV)
- Normally contact with new technologies
- Thinks carefully before deciding to do something

Middle people

- Owning medium land (1-3ha)
- Owning stable job
- People do not work hard but not lazy

Poor people

- No facilities for reproducing
- Owning less land (0.1 to 0.2ha)
- No job, labourers, lack of knowledge
- Do not want to work (for earning money)
- Too weak for working (not healthy)
- More children
- Lack of knowledge

Table 13 Indicators of wealth by a group of residents in Vinh Binh Commune, June 2004. The group of nineteen people was made up of eight farmers, two teachers, a doctor, three traders, two commune officials and two landless workers. Thirteen of the group had land in the commune and six did not. Those without land in the commune included the doctor, some officials and landless people.

Wealth level	Land	Income security year-round	Food security year-round	Number of households
Rich	5ha and above	One large income or several smaller secure incomes	Never experience food-insecurity.	3
Between rich and middle	3-5ha	Two or more secure income streams	Never experience food-insecurity.	2
Middle	1.1-3.0ha	One secure income stream	Sometimes supplement income with fishing in the flood season	6
Between middle and poor	>0.5-1.0ha	Occasional income-insecurity	Sometimes supplement food and income with fishing in the flood season	3
Poor	<0.5ha	Income-insecurity at any time of the year.	More than occasional food-insecurity. Need to fish frequently	3

Table 14 Criteria for wealth levels in Vinh Binh and number of households allocated to each wealth group, 2002-2007

Table 15 Households in Vinh Binh Thanh Commune ranked by wealth using indicators identified by the community

Household number	Wealth level, land (ha) food/ income security	Land holding and water regime		Income streams				
		Common August dike	Private High dike	Rice	Other crops	Non plant	Non-farm	Free goods (consume or sell)
18	Rich (3.0) Secure	nil	3.0	2 crops	Water chestnuts sorghum	Fish	Failed middle man for water chestnuts	nil
28	Rich (3.5) Secure	3.5	Nil	2 crops	Nil	Pigs Ducks Duck eggs Fish	Wholesale seller of ducks and duck eggs	?
31	Rich (7.5) Secure	7.5	Nil	2 crops	Nil	Fish Ducks, pigs	Rice drier	Occasionally makes fish sauce
23	Rich/ Middle (3.0) Secure	3.0	Nil	2 crops	Sugar cane, maize	Nil	Nil	Fish
27	Rich/Middle (4.0, then 3.0) Income-	4.0 then 3.0. Family member ill,	Nil	2 crops	Nil	Nil	Fish sauce Family members going to work in	Fish

House hold num-ber	Wealth level, land (ha) food/ income security	Land holding and water regime		Income streams				
		Common August dike	Private High dike	Rice	Other crops	Non plant	Non-farm	Free goods (consume or sell)
	insecure	into debt, loses land					city, will make remittances	
14	Middle (2.3) Occasional food and income-insecurity	2.3	Nil	2 crops	nil	Pigs	Fish sauce Dried shrimps	Fish Shrimps with traps
16	Middle (1.5) Food and income secure	1.5	Nil	2 crops	Rented land, attempted water chestnuts, failed.	Cows Eels	Two sons do off-farm work.	Fish
24	Middle (2.8) Food secure.	2.9	Nil	2 crops	nil	Nil	nil	
29	Middle (2.0) Food and income secure.	2.0	Nil	2 crops	Water spinach	Fish pond pigs	Tailoring Roadside food stall	Daily fishing
30	Middle 2.6	2.6	Nil	2 crops	Water melon Mung beans	Pigs Ducks	Fish sauce	Daily fishing in flood season.

House hold num-ber	Wealth level, land (ha) food/ income security	Land holding and water regime		Income streams				
		Common August dike	Private High dike	Rice	Other crops	Non plant	Non-farm	Free goods (consume or sell)
	Food and income secure.				maize	Fish		Snails for duck food.
32	Middle (2.5, then 4.0) food secure, income insecure	2.5 then 4.0	Nil	2 crops	Nil	Nil	Rice mill, buys broken rice, sells products	Fish and fish sauce when sufficient fish
15	Middle/Poor (1.3) Food insecure in the flood	1.3	Nil	2 crops	Mangoes Straw mushrooms	Pigs	Repairs bicycles Day labouring as harvester Selling fish catch	Catches and sells fish year-round, also crabs and snails
19	Middle/poor (1.5) Occasional food-insecurity	1.5	nil	2 crops	Nil	Fish pond	Retired, lives with son	Catches fish to sell to buy food in the floods.
22	Middle/poor (1.9) Income-insecurity, food secure	1.9	nil	2 crops	Beans Cucurbits Sweet potatoes	Fish pond	Hires out oxen	Fish sauce
17	Poor (1.0) Only just food and income	1.0	Nil	2 crops	Water chestnuts (failed)	Pigs (failed)	Sons work off-farm, send remittances. Buys rice, gets it	Fish, crabs, shrimps, snails, for eating and

House hold num-ber	Wealth level, land (ha) food/ income security	Land holding and water regime		Income streams				
		Common August dike	Private High dike	Rice	Other crops	Non plant	Non-farm	Free goods (consume or sell)
	secure						milled, sells products.	selling.
25	Poor (1.0) Food secure, income insecure	1.0	Nil	2 crops	(Failed)	Fish. Had failures with fish	Remittances from children	Fish
26	Poor (0.2) Food and income insecure	0.2	Nil	2 crops	Maize Vegetables Water spinach	fish	Harvester, jobbing joiner. Remittances Roadside stall	Fish, snails, crabs

Table 15 Households in Vinh Binh Thanh Commune ranked by wealth using indicators identified by the community

Placing households in wealth levels in this commune is problematic for two reasons. First, in the other two communes, the need to catch fish daily was an indicator of food-insecurity. Here however, farmers fished regularly in the flood season for food, whether they were food insecure or not, so the act of fishing could not be taken by itself as a reliable indicator of wealth in this commune. Those who were poor would collect fish, shrimps, snails, eels and crabs to sell in order to buy food staples, whereas those who were rich and fished in the flood season were adding to their diet, not their income. Second, several households were in debt to the bank. Two households described being visited by bank official accompanied by policemen. Debts arose when a crop failed. In two cases this was when farmers were trying to grow a different crop to other farmers in the compartment, in another because they could not repay the loan taken out several years ago for building a new house. For this reason they might appear to have the land of a middle-income household, but they were income insecure. These households had recently lost land or were in the process of selling land over the period of this research. Often they lost land by taking a mortgage on it from another farmer. If they were unable to repay the loan on the due date the land would be lost. The mortgage would be taken out because the household was already in debt to the bank and the mortgage money was needed urgently to pay off the original loan, leaving the farmer ultimately no better off and minus some land. Visiting some of the households over a period of six years, I was able to observe that one or two were in a constant state of economic crisis. One household had thirteen occupants, nine of whom were dependents. When we first visited them they had just let out a hectare of land for a mortgage, but by the following year that land had been lost as they had been unable to redeem the loan on time. At that point there were still six children at school and the farmer's proposed solution was for the wife and their oldest three children to work in factories on the edge of Ho Chi Minh City, "*we must sell our labour",* he said (household 27). This household was going to attempt to get out of debt by some members leaving the farm in order to generate remittances, a form of pluriactivity.

The key to wealth and security in Vinh Binh is the amount of land to which a household has access, achieved by owning the Land Use Certificate, or by renting from other farmers. Land holdings varied between seven and a half hectares, which produced 70 to 80 tonnes of rice per year, and 0.2 hectares, which produced about 2 tonnes per year, sufficient to feed a household of four people and a few animals. With one exception, set out previously in Section 6.2.3, all households farmed their rice inside sets of common dikes. This prevented those who wanted to earn an income by farming specialised varieties of rice, such as aromatic or jasmine rice, from doing so because those crops required different water regimes. The same applied to those who wanted to raise vegetables year-round, or cultivate water chestnuts.. The area of land on top of the banks is small and while many households raised vegetables these were of such small amounts as to be for household consumption, with any surplus sold in the local market, rather than for commercial purposes. Opportunities for diversification in Vinh Binh were very limited. Where a household had pigs these would be few in number, three or four at a time. Pigs were classically a means of financial saving —food and other scraps and rice were fed to them and when the family was in need one would be sold. A few households had non-farm incomes, such as a son working away by the day, a daughter with a stall selling noodles in the local market or at the front door, but non-farm activities were not widespread.

The principal source of income for all farm households was rice, a winter-spring crop, planted as flood waters recede in December, and a summer-autumn crop, planted in March and harvested just before the compartments floods again in late July, early August. This second crop is vulnerable, should floods come in mid July it can be lost and farmers are forced into debt when that happens. What is striking is the degree of variation in the amount of land households have. For example there was a thirty-five fold difference between households 31 and 26.

Despite an overarching narrative that all households got more or less the same amount of land after 1975, and the 'normal allowance' for annual crops enshrined in the Land Law of 2003 is 3ha per household, the evidence from this research is that there were differences in land holdings before reunification and these differences continue to the present-day. Considerable redistribution had already taken place in the delta before 1975 under the 'Land to the Tiller Programme' (Sansom, 1970; Callison, 1983) and redistribution continued after reunification. According to Vo Tong, (1995, p.187) the allowance in the Mekong Delta for adults after reunification was 0.1 -0.15ha and half that amount for each child under 16 and adult over 60. At the time of this research (2002 and 2003), the prime source of land was from parents (Table 16).

How land was obtained in Vinh Binh	Household wealth level					Number of households by source of land
	Rich	Rich/ mid	Middle	Mid/ poor	Poor	
Total households	**3**	**2**	**6**	**3**	**3**	17
Government allocation	0	0	2	0	0	**2**
Government allocation plus purchase	0	1	0	0	0	**1**
Government allocation, soon lost in debt.	0	0	0	0	2	**2**
Family hand-down of land	3	0	3	3	1	**10**
Family land, lost to government	0	0	1	0	0	**1**
Family hand-down, lost to the government and later regained	0	1	0	0	0	**1**
Family hand-down plus purchase	0	0	0	0	0	**0**

Table 16 How land was obtained by seventeen households in Vinh Binh commune

Four of the five rich and middle/rich households received most or all of their land from relatives, usually parents, each of whom was a farmer with a substantial holding, in one case with 25ha. Parents had arrived here in the 1940s and 50s, when land was 'available' to be adopted, although it was covered in wild grass and needed to be cleared and brought into cultivation. Of the six farmers who were poor or middle/poor, two had inherited no lands and two received only small amounts from the government after 1975. These latter had been forced into selling some of that land soon after getting it in order to cover their debts incurred from early crop failures. Another household had returned land previously allocated by the state to its original owner and then bought it from the owner, but subsequently fell into debt when they tried to grow HYV rice and were forced into selling it. A few present-day differences in land holdings in Vinh Binh are due in part to contemporary successes and failures, but most arise from differences in the holdings of the parents and grandparents of the present generation. The data obtained in this research is insufficient to unravel those differences further.

Three dates stand out in these narratives. First, some farmers had land taken by the state in 1975 and just after, but later the state allocated them new land. Other households appear to have kept large amounts of land until at least 1978. Second, 1978 was a time of great danger and was likely to have been a period of great stress in the province. Excessive flooding and severe attacks by insects that year (Nguyen, Vo Tong and Tran, 1998) coincided with the availability of HYV rice. In that year three of the farmers in this study were allocated land by the state. They gave up flooding rice and tried to grow HYV rice, but the floods were severe, there were insect attacks and they were not sure how to grow non-flooding rice. While their fathers knew how to grow flooding rice, these farmers appear to have had to work out for themselves how to grow the new HYV rices. Another cause of failure at that time was actual acid sulphate soil (ASS). As more people arrived in the area after 1975 and more land was broken in, the newly-

turned soil quickly became acidic and this reduced yields of HYV rice for several years. This is indicated in the discussion summarised below:

> Question: *"How was production in the early 1980s?"*
> Answer: "*farmer knowledge was poor"… "land not fertile"*
> Notes from discussion which followed: Much of the land here [between Vinh Binh and Tri Ton] was covered in *Melaleuca* trees after reunification. When people went to use it the soil became actual acid sulphate [undisturbed soil is described as potential acid sulphate]. When growing flooding (i.e. rainy season) rice this matters much less because the acidity is washed rain and flood water before the rice seeds or seedlings are planted However, the problems occur when farmers plant HYV rice, "[farmers] *went from one okay crop to two poor crops*" unless the land was exactly level the acid water would accumulate in one part of the field [and where it accumulated rice would not grow]. *"Lack of level did not matter with flooding rice but was serious problem with irrigated rice*".
>
> (Field notes, household 26, Vinh Binh 5/12/07)

The date of these problems in Vinh Binh corresponds with the account of building an emergency dike to protect the new HYV rice given by farmers in Kien An Commune on Cho Moi Island, set out in Chapter Five. At that time some farmers lost their newly-allocated land. The chain of explanation for this is: they did not know how to manage irrigated rice; they had no prior experience of farming; for some of them the crop failed; they were unable to pay off the loans they had taken out to buy seed and fertiliser; and they lost their land to repay their debts. The year 1999 was mentioned several times in Vinh Binh as the year when most of the August dikes were completed. After that date two crops of rice could be planted, with reasonable certainty they would survive to be harvested, and farmers began to achieve 'stability' in their lives. From that point of stabilisation, farmers grew two crops each year, which nearly doubled the amount of rice produced per hectare, so farmers with 3ha or more had the cropping equivalent of 6ha or more, doubling their income. For farmers with small amounts of land, the effect of this doubling would have been much less, and thus the benefits were regressive, with greater benefits for those with most land. That imbalance was somewhat counteracted by the creation of more

employment by those households with large amount of land, but that employment is confined to the rice seasons and is not available in the flood season. Two of the three wealthy farmers interviewed had parents who were successful farmers and taught their sons, or in one case son-in-law, how to grow rice, although the value of that knowledge would have declined after 1978 when HYV rice was grown because it required different techniques for cultivation. Those who did not learn from their parents had to work it out for themselves along with their neighbours; some succeeded, while others did not.

The amount of rice produced from 25ha of land growing flooding rice, which yielded around 2 tonnes per hectare from one sowing per year, but required no chemical fertilisers, could now be obtained from less than 5ha, growing two crops of HYV rice in the same period of time. Thus, although wealthy farmers appear to have much less land than their parents, they are, in production terms, at least as wealthy as them but on just one-fifth of the area of land. However, it must be pointed out, that simple equivalence masks the use and impact of chemical fertilisers on the environment, in this case on the loss of free goods in flood waters and the quality of the soil; Pretty (2008) in particular, draws attention to the impact of chemicals in agriculture. The loss of free goods is likely to be a 'push' factors driving the smallest-scale farmers and landless towards the 'pull' factor of high dikes and the prospect of year-round employment which they said they would welcome. However, farmers with large land holdings were concerned about declining yields per unit of fertiliser and declining soil quality if there was a change to higher dikes. This decline in yield has been the experience of farmers in Kien An who had farmed within high dikes for several years, as set out earlier in this thesis in Chapter Four (Table 4). While the stalemate between landholders and the government about increasing the height of the dike in Vinh Binh Commune continued it was difficult to see how additional employment could be generated in this commune.

7.2.2 Causes of differences in wealth in Vinh Binh Commune

In Vinh Binh, households live off rice and the income they get from selling it. Plant technology (HYV rice) has raised rice yields substantially since 1978, and August dikes have doubled the number of crops in one year. Households which are rich today had land and agricultural knowledge in the past, which were handed on by parents. Land ownership prior to reunification still shapes land ownership and therefore household wealth today. HYV rice and double-cropping has doubled household income, and made owners of large amounts of land in this commune comparatively rich. Double-cropping HYV rice has also created more employment in the commune, although some employment opportunities such as harvesting rice may be done by teams of peripatetic workers, who travel around the delta, rather than by people who live in the commune. Opportunities for those with less land to increase their agriculture are limited owing to the lack of flood-free land, and other forms of employment, particularly in the flood season, are also limited. With little non-flooding land anywhere in the commune, opportunities to grow vegetables year-round or fatten young cattle are very limited. For holders of small amounts of land, farming within August dikes does not provide sufficient year-round income. For landless-households there is a lack of employment in the flood season and they sometimes experience food-insecurity. This situation is made worse by the decline in the amount of free goods in flood waters, which was reported by many people. Some households still maintained a daily income from fishing in the floods, but it was not seen as a reliable source of income.

Opportunities for diversification within August dikes were limited and the tops of the banks were not wide enough to accommodate major developments either. Diversification could be achieved with a high dike to keep out all the water somewhere in the commune. However, there is contestation between farmers and the state on the state's proposal to build high dikes in Vinh Binh (see Chapter Five). Owners of sufficient land to meet their needs and accumulate savings were resisting the plan mainly because they would have to pay most of

the cost, and did not see the plan as cost-effective, they said. The owners of small amounts of land and landless people, who need consistent, year-round sources of income, were in favour of the high dike because it would offer increased employment. However, because they had no land and would not be asked to pay the cost of building the dike, they had no vote in the decision to build that high dike. That contest was unresolved by the end of this research (2007).

Differences in wealth between households in Vinh Binh can be put down primarily to differences in the size of land holdings. On the basis of the data collected in this research, these differences arose from land distributed and redistribution prior to and after reunification. As the productivity of HYV rice continues to increase and as August dikes have enabled farmers to move from one to two crops per year, so those with land have become richer and the divergence between rich and poor households has increased.

7.3 Binh Thanh Commune

7.3.1 Inter-household differences of wealth in Binh Thanh.

Binh Thanh consists of several different water regimes (see description of the commune in Chapter Four). One year before this research began (2002), a high dike was completed around part of the Western end of the island, creating a flood-free, common compartment where year-round irrigated cultivation and cattle-raising were possible. Some of the central section of the island was above the flood level and other parts of the centre flooded for a short period of time only, while the Eastern end of the island, which was being extended each year by deposition, and the North Eastern parts, had low-lying areas which flooded regularly. Soil on the island contained clay and was unsuitable for HYV rice. This was given by a group of older residents for why rice was no longer grown here.

Indicators of wealth identified by the group who met us in the commune HQ are set out in Table 17. Unlike the indicators identified by people in Vinh Binh, who stated actual amounts of land to distinguish between rich and poor, the group of people in Binh Thanh give no guidance on distinguishing between rich and poor on the basis of land. In the absence of hard indicators of wealth through land holdings, more weight is placed on statements about food and income security as indicators to differentiate between rich, middle and poor households (Table 18). On this basis, seventeen households in Binh Thanh were allocated to wealth groups (Table 19).

Rich people

- Own land for production
- Own a Honda motorbike
- People who use their time in 'suitable ways'.
- Work hard
- Want to learn new techniques
- Own gold
- Own beautiful/strong house (can last over 30 years)
- Raise cows.

Poor people

- Not raise cows
- Lack money for investment
- No land
- House not strong, will not last a long time
- No wealth (no gold)
- No stable job
- More children
- Lack of knowledge.
- Waste time
- No facility for human life
- No TV
- No refrigerator

Table 17 Indicators of wealth in Binh Thanh Commune, May 2004.

Wealth level	Land	Income security year-round	Food security year-round	Number of households
Rich	>0.9ha	Secure income streams throughout the year	Never experience food-insecurity.	2
Middle	0.4 to 0.9ha	Occasional income-insecurity, e.g. in the flood season	Occasionally food-insecurity, e.g. in the flood season	5
Between middle and poor				4
Poor	<0.4ha	Income-insecurity common at any time of the year.	food-insecurity in flood season	4

Table 18 Criteria for wealth levels in Binh Thanh Commune and number of households allocated to each wealth group 2002-2004

Table 19 Households in Binh Thanh Commune ranked by wealth using indicators identified by the community

House hold num-ber	Wealth level land (ha) food security	Land holding and water regime					Main income streams				
		Common August dike	Common High dike	Common flood land	Banks without flood	Banks with flood	Main veg. crops	Rice	Non-veg. crops	Non plant	Non-farm
1	Rich (7.4) secure	6.5ha, in other commune	0.9ha	nil	yes	nil	beans okra cucurbits	2 crops	Maize Taro root Fruit trees	nil	nil
10	Rich (0.3 plus rents 1.2) Secure	nil	nil	rents 1.2ha in flood land (shrimp)	0.1ha (fish pond)	0.2ha	beans water-mimosa	nil	Maize	fish shrimps	formerly traded tobacco, led to-debt
3	Middle (0.8) secure	nil	0.8ha	nil	nil	nil	cabbage baby corn chilli beans	nil	sugar cane maize yam beans	nil	nil
6	Middle (0.6) Secure	nil	nil	0.45ha	0.15ha	nil	cabbage chilli	nil	sugar cane maize. considering cotton	Trialling soft-shelled turtles	Fishing fish sauce
9	Middle (1.0 and shares 1.2) Secure	nil	nil	0.8ha, shares 1.2ha with sons	yes	0.1ha	7 varieties of veg.	nil	sugar cane maize water chestnuts	nil	joinery, brick laying
11	Middle	nil	nil	0.15ha	nil	nil	chillies	nil	yam beans,	nil	school of

House hold num-ber	Wealth level land (ha) food security	Land holding and water regime							Main income streams		
		Common August dike	Common High dike	Common flood land	Banks without flood	Banks with flood	Main veg. crops	Rice	Non-veg. crops	Non plant	Non-farm
	(0.45) Secure			and rents 0.3ha					maize, taro roots water chestnuts		tailoring
12	Middle (0.1 and rents) Secure	nil	nil	Rents, amount unknown	yes, amount unknown	0.1	cucurbits	nil	yam beans	shrimps cows	Tailoring Sells cloth
4	Mid/poor (0.1) insecure	nil	0.1	nil	yes, amount unknown	nil	Okra baby corn onion	nil	maize	cows	market stall: sticky rice, soya milk
5	Mid/poor (1.25) Secure	0.7ha in other commune	nil	nil	nil	0.55ha	Cabbage chilli Baby corn	2 crop	Sugar cane Yam beans maize	Trying soft-shelled turtles	shop in house front
8	Mid/poor (1.0) Insecure	nil	1.0ha	nil	nil	nil	nil	nil	Yam beans Maize Sugar cane	cows	nil
21	Mid/poor	nil	nil	nil	nil	0.45.	cabbage	nil	Tobacco	cows	market

House hold num-ber	Wealth level land (ha) food security	Land holding and water regime					Main income streams				
		Common August dike	Common High dike	Common flood land	Banks without flood	Banks with flood	Main veg. crops	Rice	Non-veg. crops	Non plant	Non-farm
	(0.45) Some insecurity					By 2007 land levelled			Sugar cane		stall: sold tobacco and herbs
2	Poor (1.36) Insecure	1.0ha in other commune	0.36ha	nil	nil	0.45	Okra Cabbage baby corn	2 crop	Maize	nil	Dredges bivalves
7	Poor (0.4 plus rents 0.3) Secure	nil	0.7ha	nil	nil	nil	Chillies Beans aubergine	nil	Maize Sugar cane Yam beans fodder	cows	nil
13	Poor (Rents 0.4) Insecure	nil	nil	nil	nil	0.4ha	cabbage	nil	Maize Sugar cane Yam beans	nil	labouring fishing daily for food
20	Poor (0.2) *"often hungry"*	nil	nil	nil	nil	0.2ha	Cabbage plus 7 varieties veg.	nil	maize	nil	Making selling noodles; football; labouring

Two households here can be described as relatively rich, five as middle wealth, four between middle and poor and another four are relatively poor. This section of Chapter Seven now seeks to unravel the possible causes for these inter-household variations in wealth. Households and their wealth are considered with respect to two groups of possible explanations: the amount of land and its location on the island; and the number of income streams and whether they cover the whole year. No data were available in this commune on how much land householders' parents had in the past, and so the analysis made for Vinh Binh on that basis is not possible for Binh Thanh.

Binh Thanh is an island in the Hau river with a diverse topography and several water regimes. The island is cut in two by the Long Chinh canal and other waterways which encroach into it (Figure 48). This research was confined to households along the Southern side, but some of households also used land on the Northern side. Four water regimes are identified and household wealth is related to the regimes where the household had land. First, the high dike, completed in 2001, created a common compartment of 120ha. Inside the compartment there were several different levels, but once the wall was completed all levels inside it experienced the same non-flooding regime. Second, along the Eastern edge of the island and on the banks of the Long Chinh canal, the land was raised up. The banks may have been man-made, or levees deposited by the action of the river. This land might be covered in water for a month or so at the height of the flood, but farmers were able to erect their own low individual banks if they wanted to keep water off the field. Third, behind these banks the land appeared to undulate, but we were told it was usually covered in water for two or three months each year, long enough for some sediment to be deposited, and making it unsuitable for year-round agriculture. Fourth, there was low-lying land around *Ho Sau*, Crocodile Lake, and at the Southern tip of the island. The lake was permanent, water rose and fell with each tide, but in the monsoon season the surrounding area was flooded to the depth of several metres, and households erected large net cages to cultivate shrimps or fish (Figure 68).

Figure 62 Temporary fish cage erected on land which is covered in water during the flood season

The cage is stocked with cultivated or wild fish, caught in the river. The fish are fed for two or three months, then harvested and sold. Food consists of fish and other wild goods caught in the river, sometimes cooked and mashed with rice bran. (author. January 2003)

Land in itself does not appear to be a guarantor of wealth in Binh Thanh. Although one of the rich households in the sample had the largest amount of land, most of that was located in other communes and was used to grow rice, but the household with the second most land was poor. A second rich household, and the wealthiest householder interviewed here, owned very little land, but had dug a fish pond on 0.1ha of land on the bank. Another household, number 12, only had 0.1ha of land but the husband worked as a tailor and they managed to hire some flooding lands and raise shrimps in the flood season. However, three of the four poor households had very small amounts of land, 0.4ha or less, and that holding fluctuated from year to year, as land was bought and sold in line with household successes and failures. Ownership of land, or at least the ability to rent land, with different water regimes, was a characteristic of six of the seven households that were rich or middling in wealth. Access to land with different water regimes gave households opportunities to use different technologies and so increase the number of income streams available to them. For example, if they owned or were able to rent land which flooded deeply, they grew water chestnuts or shrimps for three or four months of the year, which provided them with an income stream in the flood season. Cultivating shrimps or water chestnuts in the flood season also increases the use of household-labour at a time of year when other types of cultivation are not feasible, a time when otherwise the household might have had to live off its savings. This is what Morduch (1995), Ellis (1999) and Zimmerman and Carter (2003) call 'labour smoothing' and 'consumption smoothing', with rich and poor households dealing with hardship, which occurs here in the flood season, in different ways. The poor, according to Zimmerman and Carter (2003) store up assets, typically food grains, to cope with shortages, while the better-off invest in productive resources. For example, in one household it was a sewing machine for tailoring (Figure 69), in another it was nets for raising shrimps, all of which produce financial returns which can used to meet household consumption requirements at different times of the year.

While some households in Binh Thanh were reliant on cultivation of crops, others were not. One of the wealthy ones and all of the middle households had only small amounts of land, yet they appeared to be the least food-insecure. For example, household 10, already mentioned, said they made a net margin of 45 million VND per year (equal to 3,000USD in 2003) from raising cat-fish (Figure 70). The man who was the farmer said, *"every dong I invest in the pond makes me one dong profit"*. They had also learned the technique for raising shrimp larvae during the flood season. This required them to rent land which flooded, build a net cage on, stock it with cultivated shrimp larvae and feed them for 3-4 months. This second enterprise also gave him 45 million VND profit, a total of 6,000USD per annum for the shrimps and cat-fish combined. In contrast to this, household 20, at the other end of the wealth scale, had barely 0.2ha, and three income streams, but they grew low-value crops, which everyone else was growing, and made very little income from that. He said he could not deliver sufficient income to feed a family of 5 and they were *"often hungry"*. Catching wild fish in the river was this household's last resort to meet their food needs.

Figure 63 Teacher of tailoring.

This teacher charged students a flat rate of 700,000VND (47USD in 2003) to teach them to tailor. Students had to provide their own sewing machines and paid a charge for electricity and materials. (author. 2003)

Figure 64 Pond for raising cat-fish

On the platform is equipment for preparing fish food. (author. 2003)

Another strategy was to specialise in one particular crop. Household 21, with less than half a hectare of land, was one several households specialising in growing cabbages (Figure 71). He told us that buyers came from Cambodia to buy cabbages in the commune, an example of the development of a niche market. Another farmer, who also grew cabbage, was experimenting raising soft-shelled turtles. Another way to raise income with only a small area of land was through a non-farm activity such as having a shop in front of the house (Figure 72). Here, the initial stock had been bought with a loan, for which the household, number 5, had been 'recommended' to the bank by the commune. Rich and middle households also had fewer income streams than middle-poor and poor households. Size of land holdings and number of income streams by themselves therefore, do not appear to explain variations in wealth in Binh Thanh. Two other explanations are possible. The first is the presence of non-farm income streams and the other is the ability to invest in a high-return activity, such as fish cultivation. How households made this jump was not always clear, but a 'recommendation' to the bank for a soft loan was one route and another was to work in partnership with a wealthier family member. The rich household with the fish pond had previously got into debt and got out of that problem by co-operating with a relative on the wife's side of the family who had money to invest.

Three of the four poor households have non-farm incomes, but they involved low investments, often only household labour, and produced low returns. In some cases they are carried out just in order to meet the household's food needs and did not generate any additional income. In the case of household 20, fishing is carried out to counter food-insecurity, in household 13 labouring provides cash for food and caught fish provides food as well as income, and in household 2 collecting bivalves by dredging is labour intensive for very low returns. For these relatively poor households, additional income streams were a way of dealing with their food-insecurity, rather than a source of income that would raise their level of wealth and make them more income-secure.

Figure 65 Specialist cabbage grower in Binh Thanh Commune

Cabbage growing is labour intensive as the plants require to be watered two times each day. Cabbages also required the application of considerable amounts of pesticides and fertiliser. When this area was revisited in May 2004, this field was a beaten earth square and there was no sign of agriculture here. The land had been levelled-up by the commune and was being used as a football pitch, prior to a new market being built on it. Unfortunately it was not possible to find the farmer and inquire about whether he had received compensation and hear what he intended to do next. (author. February 2003)

Figure 66 House-front shop and the shopkeeper

The initial stock was purchased with a loan, for which the household was 'recommended' to the bank by the commune. The green and cream striped box under the table is made of one inch-thick polystyrene, and is likely to contain blocks of ice, and the red bowl on the table contains soft drinks in bottles. It was possible to buy an ice-cooled drink at any time of the day everywhere in the study areas. Travelling in the early morning, many houses would have a box out on the road side, ready to take delivery of ice from a delivery motorbike.

(author. 2003)

Four poor or middle-poor households had also started to fatten young cattle. As described earlier in Chapter Five, loans to poor households for the purchase of animals was a policy of the commune government following the raising of a high dike in Binh Thanh. Farmers initially described themselves as *"very pleased with it"* (Household 7, May 2002), but it raised two problems. First the cattle need to be kept for a minimum of six months, preferably longer in order to appreciate in value, although they could sometimes double their value in that time. But during that time, the household got no income from the animals. The second problem was that so many households were keeping cattle a shortage of wild grass, used to feed them, developed. To counter this, households were spending considerable amounts of time gathering grass, or were having to buy plant crop remains from other producers, or even travel off the island to get feed. The farmer in household 8, an experienced farmer born in 1926, told me in 2003 the policy had led to a doubling of cattle on the island in just twelve months, from about 500 to 1200 and a shortage of grass was inevitable. He had taken up the option of a loan to try and create more income for his household, but he said that he would need to use some of his land to grow food for the animals.

By contrast, non-farm income activities for middle-poor and middle households required prior investment, in tools and materials, but did provide better and steadier returns. For the two households involved in tailoring, investment was a one-off expenditure for equipment, after that all the income is available to meet consumption needs. In one household, tailoring created half their income. The two households involved in retailing, one a shop and the other a soya milk business, needed initially to investment in stock, but once that was paid off further capital was only needed if they wished to expand the business, and income can be used for consumption. These households had become 'pluriactive'; they were located in the rural area but they were supplying non-agricultural goods and services from farm households. It is questionable whether these households should even be termed 'farms', rather they were small businesses in a rural area which had some garden activities to supplement their non-farm enterprises. However, the capital needed to set up these enterprises

will most likely have been surpluses from farm activities, or land which was used as collateral for loans from a bank. Thus, the ownership and successful use of land was the springboard to non-farm activities, and they in turn led to increased food and income security for households.

7.3.2 Causes of differences in wealth in Binh Thanh Commune

Land ownership plays a subtle role in wealth differentiation in Binh Thanh Commune. On the island there is a variety of water regimes, but rice is no longer grown here. Households frequently used more than one water regime to generate secure, year-round income, and a few even had land in other communes where they either grew rice themselves or rented it out for rice. In this commune the most successful households have land, but their wealth is not related to the amount of land they have or use, but on their ability to generate year-round income streams from it. They did this by growing a wide range of crops and aquaculture.

Binh Thanh is located in the river and this location gives it good transport links to the urban centres of Chau Thanh and Long Xuyen. This proximity offered opportunities for growers of fresh produce, such as vegetable and fruit, rather than rice, which has a longer storage life after harvesting. The most successful household had used their land as collateral for borrowing, and had developed aquaculture on a small piece of land. That required a significant amount of capital and has more risks attached to it than growing plants, but the returns are very large, even from a small area such as 0.1ha. Households here also conducted non-farm activities which generated as much or more income than their agricultural ones. But whereas poor households used several income streams in order to achieve food security, rather than generate income, wealthier households had been able to invest in income-generating activities, such as tailoring and aquaculture. It is suggested that investment in activities which generate income, and not just meet food needs, are based on household

success in agriculture and the use of land as collateral for investment in non-crop produce.

7.4 Binh Hoa Commune

7.4.1 Inter-household differences of wealth in Binh Hoa.

The topography in this commune is complex, with dikes of different heights creating several different water regimes. This complexity was one reason for not investigating the effect of high dikes here. As a result of that decision, no wealth ranking by residents was available, as it was in the other two case study communes. However, thirteen of the fourteen households interviewed provided answers to the question: 'how much land would a husband and wife and two children need to live on'? Their responses included five answers of 1 or 1.5 hectares, with three of them adding that rice alone on that area of land would be insufficient, and eight answers of 2 to 3 ha. Those answers and the wealth criteria for Binh Thanh Commune (see Table 17), have been used to develop wealth criteria for Binh Hoa Commune (Table 20). Households have been allocated to wealth levels based on their land holding and its water regime, food security and income security (Table 21). The main income streams in Binh Hoa, arranged by wealth levels, are shown in Table 22.

Wealth level	Land	Income security year-round	Food security year-round	Number of households
Rich	>2.0ha	One large income or several smaller secure incomes	Never experience food-insecurity.	3
Between rich and middle	>2.0ha	Two or more secure income streams	Never experience food-insecurity.	4
Middle	1.1-2.0ha	One secure income stream	Sometimes supplement income with fishing in the flood season	3
Between middle and poor	<1.0ha	Occasional income-insecurity	Sometimes supplement food and income with fishing in the flood season	3
Poor	<0.4ha	Income-insecurity at any time of the year.	More than occasional food-insecurity	1

Table 208 Criteria for wealth levels in Binh Hoa Commune and number of households allocated to each wealth group, 2002-2003

Table 21 Wealth, land holding, food security, water regime and income streams by household, Binh Hoa Commune, 2002-3

		Land holding and water regime						Main income streams			
House hold	**Wealth level, land (ha) food security**	**Common August dike**	**Common High dike**	**Private dike**	**Banks without flood**	**Banks with flood**	**Main veg. crops**	**Rice**	**Non-veg. crops**	**Non plant**	**Non-farm**
38	Rich (3.0) Secure	nil	nil	3.0ha high dike	House space	nil	Cucurbit	2 Rice, 1 other crop	Papaya W. melon	4 varieties Fish in ditch/pond ducks	Daughter has off-farm shop.
42	Rich (4.3) Secure	4.0ha	nil	nil	0.3 ha	nil	nil	2 rice	Mangoes, custard apples	nil	Builder-joiner in flood
45	Rich (5.7) Secure	5.6 ha (in 3 parcels)	some	nil	0.1 ha	nil	nil	2 crops, 3 crops	Tried sesame seed	nil	Rice drier.
37	Middle-rich (2.7) Secure	1.7 ha. takes care of father's 1.0 ha	nil	nil	nil	nil	nil	2 Rice for seed	nil	Ducks Turtles Flood shrimp	Boat? Snake?
40	Middle-rich. (2.0) Secure	2.0	nil	nil	nil	nil	nil	2 rice	nil	nil	Man: Local official; woman: local teacher

	Wealth	Land holding and water regime						Main income streams			
House hold	level, land (ha) food security	Common August dike	Common High dike	Private dike	Banks without flood	Banks with flood	Main veg. crops	Rice	Non-veg. crops	Non plant	Non-farm
43	Middle-rich (2.2) Secure	1.04 ha	nil	nil	1.0ha	0.16 ha early rice:	nil	2 rice, intercrop soybean	Mangoes (trees rented out)	nil	Yogurt
46	Middle-rich (2.4) secure	1.8ha (in 2 parcels)	nil	0.6ha High dike with four fish ponds	nil	nil	nil	2 crops	nil	Fish, pigs, chickens. Future: shrimps, frogs.	nil
33	Middle (2.0) Secure.	1.25ha	nil	nil	Rents 0.4ha	Rents 0.35 ha	Cucurbit beans	2 crops	Tree fruits, sorghum, water chestnut	Fish pond, cows	nil
34	Middle (2.2) Secure	1.8ha	nil	0.4ha August dike	nil	nil	nil	2 crops, 1 other crop	nil	Shrimp	nil
36	Middle (1.4) Some Food-insecurity	1.0ha	nil	0.4ha high dike	nil	nil	Cucurbit beans	2 crops, 1 other crop	Maize, water melon	Ducks, bat roost (manure)	Failed business

House hold	Wealth level, land (ha) food security	Land holding and water regime					Main income streams			
		Common August dike	Common High dike	Private dike	Banks without flood	Banks with flood	Main veg. crops	Rice	Non-veg. crops	Non plant	Non-farm
35	Mid/poor (1.5) Secure	1.1ha	nil	0.4ha August dike	nil	nil	nil	2 crops, 1 other crop	nil	Shrimp	nil
39	Mid/poor (1.9) Just food secure	1.6 ha	nil	nil	nil	0.3 ha	Cucurbit Malabar spinach	2 crops	nil	Fish pond. Plan: 2 calves	Fishing in flood
44	Mid/poor (2.4) Some income-insecurity	2.2 ha	nil	nil	0.04 ha	0.16 ha	Pak choi	2 crops	Maize, Water melon, Mung bean	nil (Buddhist)	Mortgaged out 0.6 ha. land
41	Poor (0.2) Some food-insecurity	nil	nil	nil	0.2 ha	nil	Formerly chilli, w. spinach, egg plant	nil	Papaya Mangoes	Just bought 7 cows, fish pond	Fishing. fuel Makes and sells bed nets.

Table 21 Wealth level, land holding, food security, water regime and income streams by household, Binh Hoa Commune, 2002-3

Main income streams	Rich	Middle to rich	Middle	Middle to poor	Poor
Niche rice only	45 (5.7)	nil	nil	nil	nil
Niche rice and multiple incomes	nil	37 (2.7)	nil	nil	nil
Niche rice, multiple farm incomes and non-farm business	nil	43 (2.2)	nil	nil	nil
Non-niche rice and multiple farm incomes	38 (3.0)	46 (2.4)	33 (2.0) 34(2.2)	35 (1.5) 39 (1.9) 44 (2.4)	nil
Non-niche rice, multiple farm incomes and non-farm business	nil	nil	36 (1.4)	nil	nil
Non-niche rice and non-farm income	nil	40 (2.0)	nil	nil	nil
Non-niche rice only	42 (4.3)	nil	nil	nil	nil
Non rice, multiple farm incomes and non-farm business	nil	nil	nil	nil	41 (0.2)

Table 22 Households (hectares of land) in Binh Hoa Commune arranged by wealth and main income streams

The next part of this section aims to account for differences in household successes in Binh Hoa commune. Despite the statement in the Land Law (2003) that 3 hectares of land is the 'household norm' for agriculture, some households have more land than others. The possession of land is important for two key reasons. First, farmers with rice land continue to benefit in the on-going transition from flooding rice to HYV rice. As stated earlier in Section 2.2.4, Vietnam has continued to see rising yield levels for rice. Ut and Kei (2006) point to Vietnam as the country where the green revolution is still in progress, and Tran and Kajisa (2006) state this is because Vietnam's scientists are skilled at

developing 'location specific varieties' (Tran and Kajisa 2006). Therefore, as Glewwe *et al.* (2002) recognised, the more land the household has the more income it can generate from rice:

> …households in rural areas who possessed larger amounts of irrigated land and whose productivity of rice was high had a better chance of escaping poverty'. (Glewwe *et al.,* 2002, p. 784)

Second, land provides opportunities for generating additional income streams, some of which are farm based and some non-farm. In the second example, non-farm incomes, land can be used as collateral for loans to start businesses. The important question then is, how did this inequality in land holding come about?

All but one of seven households identified as rich or middle-rich in this commune gained their land, and farming knowledge, from parents, of husband or wife. The one exception, for which there was no ready explanation, was a former builder, who acquired land without assistance from his family and taught himself to farm. For some households, however, the parents' or grandparents' land had been lost through war and political changes and they have not benefitted from the green revolution in the same way as households with more land. For example, in household 35, a middle-poor household, the paternal grandfather had 80ha of land with flooding rice, but nearly all of it was *"lost to freedom fighters"* [sic] and now they only had 1.5ha of land. Several households described how wild land, *"just grass, no trees"* [sic], had been 'found' and later 'lost' in this area. The farmer in household 36, a middle wealth household, recounted his family's history of land gains and losses (see Table 23). This account was not untypical, other households told of similar experiences. As rice yields have continued to rise in modern times, the effect of past gains and losses of land still have impact on household wealth today. This tale, and others like it, of land being inherited, bought, gained/lost in redistribution and lost due to debts, casts light on how households today came to have different-sized land holdings and from that, different levels of household wealth.

Date	Generation	Action	Land gained and lost	holding (ha)
Not given	Grandfather	Arrives here and marries	+1.0ha	1.0ha
		11 children receive 1.0ha each		0.1ha
Ca. 1910	Father	From grandfather	+0.1ha	
		Discovers land at bridge 10	+10ha	
		Discovers land at *Ba The*	+5ha	
		From father in law	+1ha	16.1ha
1955	Father	*"Government takes back"*	-10ha	6.1ha
1963		Present householder born on this land. He was youngest of 9 children.		
1975		*"Government takes back"*	-2.5ha	3.6ha
1980s		*"further loss of land"*	-2.5ha	1.1ha
Mid 1980s	Householder	Householder, youngest son, given all his father's land	+1.0ha	1.0ha
1990s		Farming successful, buys land, sets up business to make and sell blankets	+0.8ha	1.8ha
2000		Blanket business fails. Mortgages land out and looses it	-0.4ha	1.4ha
2002		Growing vegetables on 0.4ha and rice on 1.0ha	nil	1.4ha
2003	Four children, oldest now 15.	Still paying off debts. Wants to return to business	nil	1.4ha

Table 23 Chronology of land gains and losses by one household in Binh Hoa Commune

From what household 35 told this research, holding on to land in the past was fraught with difficulties when land was 'redistributed' by different regimes. In the early 2000s in An Giang land might be taken for development with compensation being paid to the former user. Household 34, another middle wealth household, had built a shallow pond on fairly high land and was raising shrimp in it for part of the year and rice at other times. By the time of our second visit in 2003 they had been told the land was to be levelled for a development zone, (Figure 73). The household would be compensated by the government for the land but not for the investment in the pond, the farmer said. He said he did not know how he would make his living in the future. Previously, in Binh Thanh Commune, household number 21 had lost land to the development of a new market building. O'Rourke, (2004) describes the successful resistance by individuals and local communities in Vietnam to developments which modify the environment. There was no signals of resistance here in An Giang, but the household that lost the shrimp pond was unhappy because they believed they would not be compensated for the value of any crop in their pond at the time the land was taken from them.

All but one household interviewed in Binh Hoa grew rice and twelve did so within common August dikes, the exception being the former who had a private dike around 3 hectares of land. Farming within some of the common dikes in this communes caused friction between households. Reaching agreement on when to start pumping water out before the first rice crop could be difficult. One farmer said failure to reach agreement delayed planting for a month, "*this 2001-2002 season farmers could not agree about pumping water out so* [winter-spring] *rice went in one month later".* As an insurance, this farmer was interplanting his Mung bean plants with sorghum because the sorghum would fruit if the inflorescence was above the flood waters: "*if they reached the milk stage before water covered they will fruit"* (household 33). Failure to reach agreement the previous year meant the bank had not been repaired, water came in early and he lost some of his second rice crop. He said he was dissatisfied with a common

water regime and with neighbours who obstructed his channels for pumping water to his fields.

Figure 67 Levelling up land for development

The pipe delivers water pumped from the river, a kilometre away. Each cubic metre of water delivers approximately half a kilogram of sediment which settles and raises the level of the land surface. This makes it possible to build on the ground and not on stilts. It took 18 months of pumping to raise this 40 hectare site above the flood level. (author. May 2004)

One household with its own dike (household 38) was able to avoid these problems. This farmer and his wife, both born in 1935, parents of twelve children, two of whom worked on the farm, had developed a system for growing rice, fish and various cucurbits together, giving themselves several income streams. They admitted water through flood gates to ensure they got sediment and placed fish traps in the sluice gates to prevent their cultivated fish from escaping. In the dry season the fish carried on living in the ditch surrounding the field (Figure 74). After the rice was harvested they applied a small amount of fertiliser to enable the rice stubble to regrow, then some water was admitted to the field. This water brought on a regrowth of the old rice plants and also allowed the fish, which had spent the dry season living in the ditch around the field, to enter the field, so they could consume the new rice shoots. Within the compartment there was land at several different heights, with different micro-regimes of water. This could not have been achieved with a common dike. The dike wall was also used to generate income. On the side of the bank they grew Cucurbits, particularly long loofa, and yard-long beans, both of which need a frame to hang from, and on the top of the bank grew papaya. Owning all of the bank and controlling the water regime inside it gave this household several income streams. They made decisions suited to their household circumstances and available labour; they did not depend on collective action with their neighbours

Figure 68 Agriculture within a private dike

The rice plants on the right are protected from rodents with a plastic wall. In the foreground is a crop of Mung beans. The ditch on the left houses fish in the dry season. In the flood season the fish inhabited the field, but as the water level fell they returned to the ditch. The frames on the bank support long loofas and other Cucurbits and on top of the bank papaya trees had been planted. Out of three hectares, 0.7ha was occupied by the bank, so growing crops on it as well as in the field was an important use of land. (author. February, 2003)

As if to confirm farmers' comments about how much land a family of four needed to live on, all the rich, middle to rich and middle households either had more than 2.5 hectares or, if less, then they had additional income streams. None of them suffered from food-insecurity, although two of the middle-incomer households sometimes went fishing in the flood season, ate some of the catch and sold the rest. The non-rice income streams were: having land at different heights, with different water regimes, thereby widening the range of crops and harvest times; developing non-farm enterprises; having non-farm employment; or developing niche products.

Three households had developed niche products with rice seed. One household with more than 5ha produced only rice, while the other two with less land had additional income streams. Household 45, with 5.7 hectares was outstandingly successful with rice. They grew seed for research stations and for a local seed cooperative and had previously grown rice for a Japanese seed company. With so much land, plants growing near the centre of this farmer's fields were free of contamination from other varieties, making it an attractive location for field trials of new varieties. The farmer was also experimenting with chemicals and manipulation of the water level in order to develop a technique to kill golden apple snails, molluscs which cause considerable damage to seedlings. The man, who was born in 1948, had been given 5 hectares by his father in 1966 when he reached 18, to which he added another 0.7 hectare. He did not say if he had lost land after reunification. He was harvesting 7 tonnes per hectare for the first crop and 6 for the second crop, giving him nearly 75 tonnes of produce, with a gross value before costs of 127 million VND, or 8,500USD at that time (2003). Using results from the Household Living Survey of 2008, which put per capita consumption of rice in 2002 as 12kg per month falling to 11 kg by 2008, the rice produced on this farm was sufficient for the annual needs of over 500 people (General Statistics office of Vietnam, 2008). In recognition of his success he was a member of the Cuu Long Rice Research Institute, the premier rice research station in the south of the country, and he attended Can Tho international Agricultural Fair to meet scientists and exporters. This household bears out the

deduction by Glewwe *et al,* (2002, p. 784) that holding irrigated land represents a route out of poverty. In 2003 their youngest child entered university to study aquaculture, a clear signal this household had departed from poverty.

Two other households specialised in growing seed rice. They had less land than household 45 and had other income streams as well. One household used different levels in his fields to raise and seedlings which they transplanted and got an early harvest, which could be sold locally as seed for the second crop. They were supplementing their income by making and selling soya milk yogurt and raising tree seedlings for sale. The other specialist household was buying small amounts of new varieties from the local research station and multiplying them for sale locally. In 2003 he had seven varieties, the highest number of varieties recorded for any farm in this research, including variety OM3242, for which he had gone to Cuu Long station, 45 kilometres away in order to buy just 10kg. He expected it would sell for 3,500 VND per kg, twice the selling price of other varieties at that time. This household also raised ducks in the flood season and was experimenting raising soft-shelled turtles (family *Trionychidae*) (Figure 75).

Another trajectory for increased wealth in Binh Hoa, as it was in Binh Thanh, is when households have non-farm activities, which may take place on the farm or elsewhere. Household 40 had only 2ha of rice land but the husband was a former teacher and was now a senior security official at commune headquarters and the wife was still a teacher. This was an example of a 'household headed by someone with a white-collar occupation [which] also benefited significantly [from the green revolution]' (Glewwe *et al,* 2002, p. 790). For such households, farming was a parallel activity, perhaps not even their principal source of their income. Household 46, only had 1.8ha of rice, but had used some income to convert land at his house into fish ponds and a pig shed. He said he planned to put pig manure into a fish pond and raise herbivorous fish on it, such as carp, also to cultivate shrimps and frogs. This was an example of a

household using income from one piece of land to leverage more income out of a another part of his holding of non-rice land by investment.

Figure 69 Farmer in Binh Hoa Commune trying to develop a technique for raising soft-nosed turtles as a niche-crop

(author. February 2003)

None of these rich and middle-rich households said they experienced food or income-insecurity.

The less wealthy households had multiple activities, some of which provided them with food to consume and others with income. Some were less well-off now because of economic misfortunes and lack of resources to get out of debt. One of them, household 33 was constrained by poor farmer-farmer relations within the common dike where their rice land was located; another was in difficulty because some of their shrimp crop had been stolen; and household 36 had fallen into debt because their non-farm business, making up blankets from raw materials, had failed owing, the said farmer, to purchasers failing to pay for their goods. None of these households had sufficient rice land to make a living from non-niche rice on its own. One of these three reported occasional food-insecurity and when that happened he caught fish for food during the flood season.

In three households we heard evidence of religious and traditional beliefs affecting decision-making. In one, the household had 2 hectares of rice land, and another 0.2 land that was slightly raised, where he could grow vegetables, but each time we visited him only a few were growing. He said he did not have enough labour to grow more, there was only him and his wife and when asked why he did not hire someone to work for him he said he did not want to employ anyone else 'because he was a Buddhist'. Each time we visited him, in 2002 and 2003, there was a sense of an economic crisis going on, which we never understood. This was the only household where there was a sense of a religious constraint to economic activities. Elsewhere, one household had traditional beliefs that led to a large crop loss. The man, with his private dike, told us in June 2002 that he was going to plant 1,800 papaya trees on the top his August dike before the next floods. He believed that after the Chinese year of the Dragon, which ended on January 23rd, 2002, the flowing year's floods would be lower, so the water would not come over the top of the bank. When we returned to see him on 23rd January 2003, eight days before the end of the year of the Snake, he

reported that the floods the previous autumn had risen too high and the trees had been killed. Another farmer, who was very poor, told us he knew in advance the height of the forthcoming floods by the location of bee swarms in the months beforehand. If they were living high up in the trees, the flood would reach a high level. He also said he knew about the timing of the next flood by how the veins branched in the leaves of one particular type of grass. However, since a dike had been built near his field, this method had proved unreliable.

The poorest household we interviewed had stopped growing rice on their 0.22 hectares some years ago because the crop suffered badly from pests and mice. Instead of rice they were trying to raise cattle, purchased in 2002 shortly before our first visit, with a loan supported by the commune authority. In 2002 they were already spending several hours each day looking for grass to feed them and by the time of our second visit in January 2003 all but one animal had been sold. They grew vegetables mainly for consumption, but they had also developed two non-farm income streams. Their most important asset was possibly their boat. They used that to go 75 km to the town of Ha Tien to purchase fuel wood, brought it back to the house, cut it and stack it in bundles of particular sizes to be sold in front of the house. Their second use for the boat also made use of a family connection, a daughter who had married and gone to live in Ho Chi Minh city. Through her they bought bales of mosquito netting, cut it into strips and, with neighbours, manufactured bed nets. These they loaded onto their boat, and a party of them would go along canals and the river into Cambodia and sell the nets in Cambodian villages, spending the night in Vietnamese villages located near the border. The whole journey took 12 days and they needed to pay taxes nine times in Cambodia, *"but no proper bills"*. This household said they generally had enough food, but sometimes did not have sufficient money. With insufficient land for crops and no collateral for a loan to invest in it, this household was trying to develop non-farm income streams, including exploiting a market gap in nearby Cambodia.

7.4.2 Causes of differences in wealth in Binh Hoa Commune

Rice was the key to food and income security in Binh Hoa commune. The key to wealth with rice was the amount of land the household had and the number of crops per year that can be grown on it. With one exception, in Binh Hoa rice was grown inside common August Dikes, which yielded two crops per year. Nearly all households had obtained land and agricultural knowledge from parents, so how that generation gained and lost land was still affecting the success of farmers in the early 2000s. The adoption of HYV rices, followed later on by higher-yielding varieties, gave households with 3 or more hectares a substantial income. Households with less than 3 hectares could also be successful if they developed a niche rice product, such as growing rice for seed or multiplying new varieties obtained from research stations.

Households could also become wealthier if they used income from rice to develop outputs that required more investment, such as vegetables or fish. Within common August dike a household might experience constraint to its plans when collective decision-making broke down. In one area there was evidence of tensions between farmers in controlling the common water regime and maintaining the dikes. Where a household had succeeded in building its own dike it escaped those constraints and could adjust production and crops to suit its labour and income needs. Farmers who had only small amounts of land were attempting to diversify into non-farm activities, but experienced difficulties when purchasers failed to pay for their products.

7.5 Inter-commune differences in household wealth.

The main differences between the three communes are summarised in Table 24. In Vinh Binh and Binh Hoa Communes, where rice is the main source of household income, the size of the household's land holding is the principal explanation for differences in wealth. In Binh Thanh commune, where rice is no longer grown, vegetables, particularly cabbage, are an important source of income.

	Vinh Binh Commune	Binh Thanh Commune	Binh Hoa Commune
Dikes and water	• August dikes with common compartment • Very little flood-free land	• High dike (no flood), • Flooding and non-flooding banks • Deeply flooding land	• August dikes with common compartment • Flooding and non-flooding banks
Main income streams	• Rice (2 crops)	• Vegetables • Non vegetables • Cattle • Fish • Non-farm	• Rice (2 crops) • Niche rices • Vegetables • Fish • Non-farm
Is the amount of land the key to wealth?	Yes	No	Yes
Distance from commune to Long Xuyen	27km by road	10km by boat, 12km by road	13km by road

Table 24 Summary of principal differences between three case study communes.

That may reflect a particular set of environmental conditions, more favourable to vegetables than rice, but it may also be linked to its easier access to a large urban population centre than the other two communes. Binh Thanh also attracted cabbage buyers from Cambodia and that may reflect its proximity to the highway between the centre of the delta and the border with Cambodia. In Binh Thanh Commune wealth is less clearly linked to the size of land holdings with several households pursuing off-farm as well as on-farm income streams. The lack of flood-free land in Vinh Binh Commune restricted all households to growing crops within August dikes. All the houses were built on banks, but houses were still raised on stilts and the banks were covered with flood water for several months of the year. This lack of flood-free land limited the scope for raising animals such as pigs and cows, and fish ponds needed to be protected with net walls before the flood water rises (see Figures 76). Vinh Binh's distance from urban areas and vegetable processors also inhibited diversification; an attempt at growing a high value, perishable crop failed primarily from logistical difficulties. Households in Binh Hoa appeared to benefit from rice and year-round vegetable production and there were fewer food-insecure households there than elsewhere in the research area.

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Figure 70 Farming on a flooding bank

Cattle live in the raised shed at night and during the flood season, the green net protecting them from insects and disease. Fish are prevented from escaping during the floods by the net wall, and the brushwood provides a refuge for them.

(author. February 2003)

7.6 Conclusions

This chapter has focused on why some households are rich and others poor, and how this varies between communes. Groups of people in each commune described for us how they identified rich, poor and middle households and the clearest factor that emerged to explain differences between them was the amount of land the household held, along with knowledge. These inter-wealth group differences were indications of relative wealth, not absolute wealth based, for example, on the Vietnam Living Standards Survey (VLSS). The main finding of this chapter is that, despite land redistribution before and after reunification (Hare, 2008), which had led to what Kerkvliet and Selden (1998, p. 39) refer to as, 'a rural population comprised of roughly equal owner-cultivators', farmers in these communes had substantial differences in land holdings. This was true within and between communes. With the passage of time and improvements in rice technology, even small differences in holdings have led to substantial differences in household wealth. This raises the important question, why do some households have more land than others, why are they not all the same?

The continuous rise in yields from HYV rices (Tran and Kajisa, 2006; Otsuka and Kalirajan, 2006) and the raising of dikes, leading to an overall cropping intensity in the province of 188% (An Giang People's Committee, 2005), has magnified the advantage enjoyed by households who have land compared to those who do not, or have very little. High dikes, which allow year-round cropping of rice, a cropping intensity of 300% or more, or continuous vegetable growing, have been raised to increase employment and incomes, particularly for those without land or with only small amounts, as well as to raise rice production and export it. In this research it was very surprising to find such a wide range of land-holdings. Land holdings ranged from 0.1ha or 0.2ha to 7.4h and 7.5h in two communes, while in Binh Hoa the largest holding was 5.7ha. Given Vietnam's declared socialist status, and legal statements about the 'norms' of land holding per household (Pingali and Vo Tong, 1992; Vo Tong, 1995; Land Law, 2003), a

more equitable distribution had been anticipated. However, as Pingali and Vo Tong point out:

> Until 1988, land assignments to individual farmers were carried out by local party officials and the local agricultural officer. Favoritism in allocation of the best quality land was inevitable in such a system. (Pingali and Vo Tong, 1992, p.707)

A further surprise was to hear from several holders of larger amounts of land that it had come from their parents, even grandparents, who themselves had enjoyed large holdings in the area. Many spoke, for example, of their parents or grandparents 'discovering wild land' and then passing it on to their children. Some farmers had been given a portion of land by their parents and then bought their siblings' portions as well, while others used profit from rice to purchase more land This raises the intriguing question of whether the 'favoritism' which was exercised in the way land was allocated after reunification, as suggested above by Pingali and Vo Tong (1992), may have had the more subtle purpose of ensuring that those households who had a track record of success with rice in the past continued to have access to large amounts in order to satisfy local food requirements. It was only in 1994 that rice was allowed to move freely between provinces to meet demand (IFPRI, 1996). Up until that time the movement of rice between provinces required authorisation by the government, so provincial self-sufficiency in rice would have been important

Several farmers with only small holdings of land said their parents were not specifically farmers and they had lost most of their allocation in the early 1980s because, they said, they did not know how to grow rice. This reinforces what the informant groups said characterised rich households, namely the importance of knowledge in rice growing. These unsuccessful farmers had borrowed money to purchase inputs, the crop had failed and they sold their land to pay off their debts. Conditions for cultivation in the late 1970s and early 1980s were difficult, even hostile. Farmers were converting from flooding rice to HYV rice, fields were still being levelled, acidity needed to be drained away before

planting could begin, there were severe floods in the late 1970s, and the varieties of rice available at that time were vulnerable to insect damage (Vo Tong and Matsui, 1998; Vo Tong, personal communication, July 1999). Twenty years later those households were now surviving on one-or two-tenths of a hectare, an amount which was consistently less than the amount farmers said was needed to support a household of four people. For these households, non-farm activities, occasional remittances from family members working away from the land and away from the household, and an erratic income from the collection of free goods were essential to achieve a minimum food security.

The overall conclusion in this chapter is that wealth in the households studied emanated principally from the possession of land, along with knowledge which was passed down in the family. Despite redistribution of land under the Southern government after 1954 and later under the 'Land to the Tiller' programme (Callison, 1983), supported by the USA, or informal redistributions by freedom fighters in the late 1960s-early 1970s, or by the Government of Vietnam after reunification, those with the most land in the early 2000s had by and large received it from their parents. These households subsequently benefitted disproportionately as yields and cropping intensities increased. For example in 2003, a household with one hectare of land growing two crops of HYV rice per year could expect ten tonnes of rice or more, whereas before HYV rices became adapted to the delta and the land was transformed with dikes, five hectares were needed to reach that output (Figure 77). The size of land holding is linked to household wealth by increases in cropping intensity and seemingly never-ending rises in rice yields. Both cropping intensity and HYV rices have depended on environmental and landscape transformation, from wide-scale seasonal flooding to agriculture within compartments with limited or no flooding. This transformation has been achieved through the interaction, sometimes by co-operation and at other tomes by contestation, between farmers and the state..

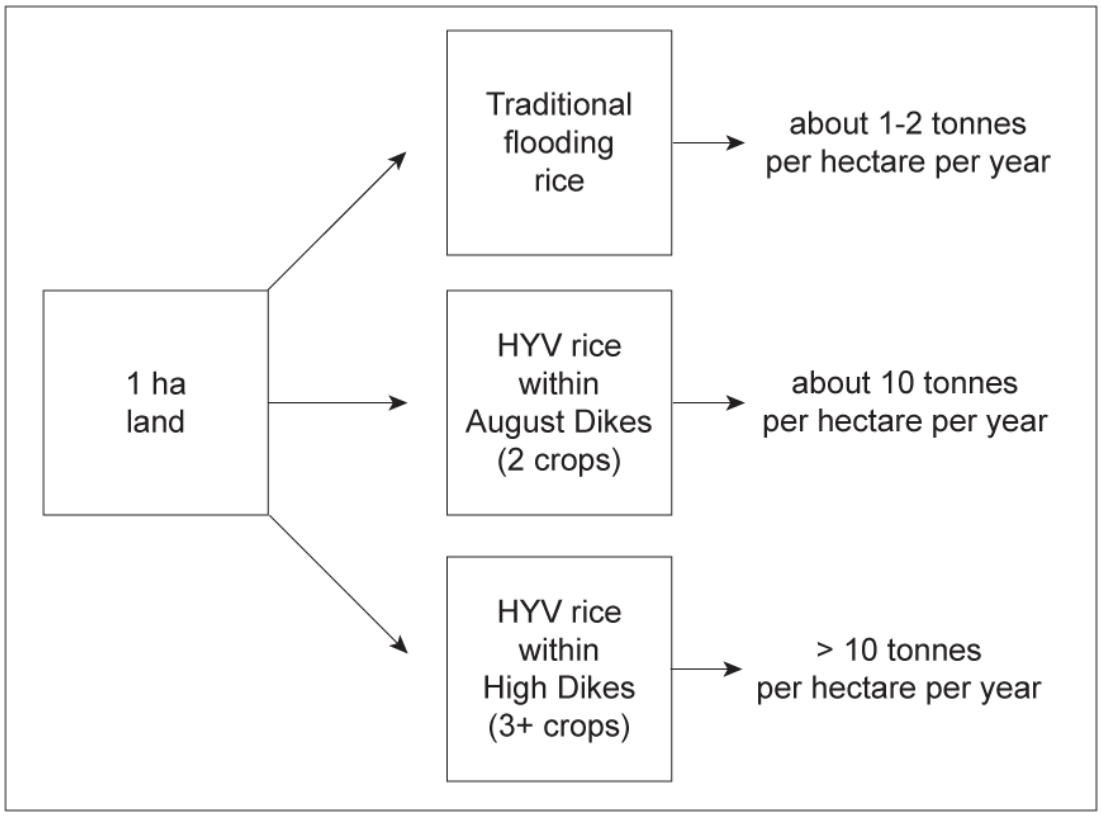

Figure 71 Relationship between land area and rice productivity

The development of HYV rice and the construction of dikes of different heights have led to large increases in the amount of rice which can be produced from one hectare of land in a year. In the study area the relationship land area, dikes and rice yields was the main reason for differences in household wealth. (source: author. 2010)

The second conclusion to be drawn is that food and income security are dictated by the water regime. Within August dikes, farmers work in common compartments which flood for several months each year and the only crop that can be grown in income-generating quantities is rice. Here, the only areas which are irrigation-free, and available for diversification, are the walls and tops of the dikes but those places are also covered by water in the floods. This limits the types and amounts of plants and animals that can be cultivated. The lack of flood-free land makes it very difficult to raise fish other than in quite small ponds on the bank top, protected by net walls in the flood. A similar problem arises with cattle, both in terms of space for the animals and the availability of food for them in the flood season. For holders of small pieces of land, typically less than 1.5ha, credit for diversification and income generation is available, but flood-free space is limited. With these constraints on production in the flood season, the opportunities for year-round employment are also limited.

Where the area of flood-free land has been increased, as with high dikes or wider banks, farmers pursue different technologies in different places, exploiting deeply-flooding areas for water chestnuts and shrimps and raising vegetable crops year-round on high land. Animals may be kept in substantial quantities, although the benefits of that route may be distorted by targeted provision of credit. Flood free banks also make the raising of fish in ponds a feasible option. Households in this environment have more choice of technologies, but need to be alert to rapid changes in market demand. Whereas there is a permanent demand for rice, which is connected to Vietnam's success in establishing itself as an international exporter of rice, the market for vegetables is highly variable. Those who were successful with vegetables had done so by gaining a reputation locally and beyond for niche products.

Those who had several hectares of land had the trappings of wealth, from the length of time children went to school to the quality of their homes and where they travelled to for relaxation. Those that did not have land had poor

looking homes, smaller and less secure, their children attended school for fewer years and during the flood season they were more likely to be short of food and their children's' education interrupted, they needed to go fishing each day not to get fish to sell but just to get enough food to eat. Farmers told us how much land a household of two adults and two children needed in order to get by. In each commune we visited, households that had less than that amount were poor, with income and food-insecurity.

In this research, inter-household differences in wealth can be accounted for primarily by the amount of land farmers received from their parents, along with the family knowledge of rice growing. In flooding communes, land is the rate-determining step for wealth creation. As rice technology and landscape transformation have progressed, so those with land have seen their incomes rise, while those who got no land from family, or who lost it in the early years of reunification and land reallocation, have missed out on that step change in wealth. What happened to rice production in the Mekong Delta between 1967 and 1975, when HYV rices arrived and farmers began to grow more than one crop per year, was still happening at the time of this research.

In the flooding areas opportunities for multiple income sources, or pluriactivity (Evans and Ilbury, 1993; Ellis, 2000; Rigg; 2006; Ploeg, 2010) are constrained by the lack of flood-free land and the distance from consumers and processors. In flooding areas opportunities for income generation in the flood season were very limited, and free goods to provide food security were reported to be declining and unpredictable. That is where the poorest people were to be found in this research. However, where there is flood-free land, diversification can be seen, with some households depending less on agriculture and more on non-farm income streams, although location and transport links to large consumer centres also play a part in farm and non-farm successes

Chapter Eight

Conclusions

8.1 Research questions and findings of this thesis

This thesis had three main aims. The first was to understand relations between farmers and the state in the Mekong Delta, as evidenced through the building of dikes in An Giang Province. The second was to investigate relations between farmers themselves, as demonstrated by the management of water inside a common dike, and the third was to ask why different households in the same water regime achieve different levels of wealth.

8.1.1 Farmer-state relations: 'the fish and the water'

Kerkvliet (2001, 2005), drawing on Thayer (1992), Turley (1993), Womack (1987, 1996), and Porter (1993), suggests three models of relations between farmers and the state in Vietnam: 'dominant state'; 'mobilization corporatism'; and 'dialogic'. The appropriateness of these three models in An Giang was considered in the light of the evidence collected in this research.

A special correspondent to Renmin Ribao [People's Daily] (19th August, 1978), quoted by Womack (1987, p. 497), describes the mutual dependency between cadres and masses during the war [in China] as similar to that between 'fish and water', with each needing the other, but how later when in office, cadres become 'government "officials" while the masses were the "common people" under their jurisdiction'. When a group of farmers in 1978 initiated changes to their dikes in An Giang and the state accepted what they had done, this could be analysed as 'Fish-Water Relations'. At that time Vietnam faced military threats from Kampuchea and China, an economic blockade by the USA, China's withdrawal of its pre-1975 support, and maintaining food security was a priority. Under those circumstances, the state

needed to be 'mass regarding', so the farmers' actions were approved. However, the farmers here are not an 'independent source of political power' (Beresford, 1988, p.118); they had no political label. They were located within:

> individuals, groups, and social forces outside official channels [which] can also affect the political system. This is what the "dialogical" interpretation is pointing out. State agencies do not completely control policy-making and implementation
> (Kerkvliet, 2001, p.269).

Kerkvliet (2001) draws upon Bakhtin's (1981) co-option of the word 'dialogic', in which 'there is constant interaction between meanings, all of which have the potential of conditioning others', in which discourses are 'de-privileged, aware of competing definitions for the same thing' (Bakhtin, 1981, p.426-427), to describe an interactive relationship, and this is what happened in Kien An in 1978.

Porter (1993, p.101) identifies power in Vietnam as located exclusively within the '*bureaucratic polity*', where the bureaucracy can close its ears to other voices. Kerkvliet (2005, p.33-34) describes this as 'the dominant state' model of relationship. In Binh Thanh, judging by farmers' lack of preparedness and general lack of enthusiasm for their newly-raised high dike, despite most of the cost being met from public funds, the plans were implemented without the active support of farmers. This had a strong flavour of 'dominant state' to it, but instead of using strong-arm tactics to implement the policy, farmers were offered inducements such as soft loans, to adapt to it. Furnishing carrots, rather than wielding sticks, to implement a policy of the state, might be described as 'dominant state, new style'. However, this interpretation needs to be treated with caution. The political policy of the commune was to eliminate poverty and a high dike offered that possibility, but within a short time of the height being raised, negative environmental impacts were being reported. Here, human action, in this case social action to reduce poverty, was prioritised above the environment. The social imperative to reduce poverty is strong, but the tendency to see social actions and nature as separate entities, discrete from each other, may result in contrary outcomes. Benton (1994) reminds us that too often

the social sciences become involved with the environmental effects of social actions only after the consequences are apparent, rather than at the point at which decisions to alter the environment are made. He calls for

> The dualistic oppositions between subject and object, meaning and cause, mind and matter, human and animal, and, above all, culture (or society) and nature, have to be rejected and transcended. (Benton, 1994, p.28)

Newby (1991, quoted by Benton, 1994) diagnoses this as a state of affairs deriving from C. P. Snow's (1952) concept of the two cultures, in which Snow enunciated a clear division between the work of the natural sciences and those of the social sciences, a gulf that still exists and needs bridging fifty years later, for example with respect to climate change (Hulme, 2010).

Where the land user is required to pay for changes to the environment however, a different outcome may follow. In this case the originators of social action and technical change are the same people; the 'two cultures' divide is narrowed, cause and effect can be weighed side by side in the minds of actors before the first shovel of soil is moved. This can happen when actors have at least a provisional knowledge of the likely consequences of the technical changes they are considering making. A further requirement for this to succeed, where the works are large and additional actors are required to carry it out, is for an assured pathway from decision-making to implementation, so decisions cannot be modified by other actors, *post hoc*. Vietnam's moves to strengthen local democracy (Government of Vietnam, 2003) may offer that assurance, although Fforde (2009a, p.1) warns against assuming of Vietnam that 'relations between analytical categories and observables [outcomes] are relatively unproblematic'. He further contends that 'local democracy' is an attempt at the 'concretisations of Party intentions' rather than opening the door to democracy (Fforde 2009a, p.10). Despite Fforde's reservations, based on his thirty-year association with local government in Vietnam, farmers in one commune had rejected the government's plans. This was not merely the state modifying its policies in response to farmers' actions, with farmers' practices informing state

policy in a Bakhtinian dialogic sense. Instead, each set of actors set out their case, the state said the dike would reduce poverty and the farmers said a high dike would not be good value for money. There was space for each side to advocate their point of view. This might be called 'advocacy relations'. The land users, and that term is used here deliberately rather than land owners to reflect the Land Law of Vietnam (2003), which gives farmers the use of land for a finite period of time only, spoke openly at meetings and in household interviews against the plan. As in the case of the 'dominant state, new style' relations, however, a rejection of the state's plans will have negative consequences, but this time social rather than environmental. Without a high dike, this deeply-flooding area offers little prospect of employment for those without land during the flood season, and those who have not grown rice, and achieved at least food security, will have neither food nor income security for several months of the year. Further research at this location would be of value in debates at a wider scale over the priority to be given to social well-being versus environmental well-being.

In summary, three models of farmer-state relations were identified in this research: 'dialogic'; 'dominant-state, new style'; and 'advocacy relations'. The timing and location of their practice are dependent on three main factors: national circumstances; the characters of those charged with implementing the state's policies; and the growth of a more open system of local democracy. While there are those within the field of political ecology who may welcome signs of enhanced local decision-making, the advantages to the environment from that shift need to be balanced against another of political ecology's ambitions, namely to create greater social fairness among users of the environment. As some land users become wealthier, party cadres will need to remain 'mass-regarding' and maintain the 'Fish-Water Relationship' with the masses if the poor and landless are also to achieve a measure of social and economic well-being (Special correspondent to Renmin Ribao [People's Daily], 19th August, 1978, (quoted by Womack, 1987, p. 497)).

8.1.2 Farmer-farmer relations: cooperation for survival

Farming within August dikes requires flood waters to be pumped from the compartment and the walls to be maintained if two crops of rice are to be grown and harvested successfully between one year's floods and the next. Since HYV rice was introduced to the deep-water area of the delta in the 1970s, systems have been required to carry this out, beginning with small commercial operators in the 1970s and continuing today with cooperative action by farmers, the so called pumping clubs. In purely administrative terms this can be seen as advantageous to the commune government. Vinh Binh has over 35 compartments, each being approximately 100ha in area and each with its own pumping club. The cost of managing irrigation on this scale is considerable and the potential damage to the government's credibility, as well as economic damage and to livelihoods, should it go wrong, are considerable. Pumping clubs are a symbol of farmer-farmer relations, but they are also an indicator of farmer-state relations; there was no demarcation line between them. In the study area the state provided space for pumping clubs to operate. They were not controlled, they were seen as farmers' business, and farmers were left to get on with them.

Some limited similarities exist between pumping clubs in An Giang and farmer irrigation groups elsewhere in South-East Asia. In Bali, *subaks* are a system of water temples with the purpose of sharing a limited resource equitably (Lansing, 1987, 1991); in Thailand *muang fai*, ditch and barrier systems, channel water into an off-take from an unlimited supply to farmers' fields (Ounvichit *et al.* 2006); and *zanjeras* perform a similar task in the Philippines (Siy, 1982 and 1989; Kerkvliet, 1984). All three have gravity-fed supplies of water, members meet annually to agree on costs and contributions, free riding is possible, but difficult to conceal and groups operate independent of the state. The value of *subaks* was only recognised when, as a result of HYV rice being introduced, and the growing of rice throughout the year, rather than seasonally, became possible that high levels of insect damage were experienced (Lansing 1987, 1991). Collective action to manage flood water and irrigation in An Giang is similar in that it is condoned by the state and costs are

shared among members, but different in two key ways. First, farmers are not acting to gather water for irrigation. They act together to expel waters in order for cultivation to begin. Second, the dangers posed by free riders, those who fail to pay for repairs to the wall, or break open the top of the dike to admit boats to transport the second harvest, is large and will threaten crops. Rather than ignore the actions of free riders, members act to ensure that the dike does not break.

Tensions arise between club members in four ways: first, agreeing on the date for pumping to start; second, some members damage the wall at the end of the second season when they drag boats into the compartment; third, agreeing on the cost of repairing the walls; and fourth, the difficulty of getting absentee land users to participate in decision-making. One way around this problem might be for more farmers to have their own individual dikes. However, the experience of one farmer with his own dike demonstrated the problems of pursuing this route: the footprint of the walls reduces the area for cultivation; and, unless sufficient farmers close by pursue this path, crops grown in this way, which may be different, or have different timings, to those in the compartments, may fail to find a buyer or for logistical reasons. Furthermore, high dikes are costly to build and need careful maintenance to be effective. Conversely, inside a common compartment farmers complained of problems of weed infestation, which affects seed purity, and the impossibility of creating different conditions, such as to grow alternative rices, such as sticky rice.

When an August dike is raised to a high dike, farmer-state relations altered and so did farmer-farmer relations. when this happened, the commune government took control of water management away from the club and kept it. Farmers now pay a fee to the commune for irrigation, for pumping out excess rainwater, and to maintain the dike. The commune government also takes control of the gates to the compartment. These gates may be used to admit flood water, which will flush out toxins from agrichemicals, and provide sediment and nutrients to the soil, but communes were not opening sluice gates. Instead, gates are only opened, if at all, at the end of the flood season to allow excess rainwater to leave, and with it some

of the toxins. At that point there will be little sediment or organic debris in the water, with only limited benefit to the soil. There are four possible explanations for this course of actions by the communes. First, compartments create conditions where a wider range of crops and animals can be grown than inside flooding compartments. Commune governments may see it as their job to arbitrate between growers of different crops in order to avoid conflicts, as were described as happening in Soc Trang Province between rice and shrimp farmers. While a commune Leader said at the outset that the gates would be opened on an agreed date, in practice the more time elapsed after the high dike was constructed, the less likely the gates would be opened. Second, for economic reasons, high dikes enclosed several August dike compartments, so many more farmers were involved. Here, if there is a failure to proved irrigation more farmers will be affected, and the losses would be more widely felt. Third, as Fforde identifies (2009b) when writing of the challenges to establishing local democracy, groups of farmers exercising decision-making on this scale may pose a threat to the Party's control at the local level:

> …. Vietnamese officials are concerned with the lack of central authority and its relationship to corruption, and how informal farmers' groups are creating alternatives to Party-dominated structures in the rural areas, often supported by local political leaders (Fforde, 2009b, p.1)

The fourth potential explanation may be linked to Fforde's (2009a, 2009b) issue of a power contest between farmers and the state. By controlling the environment the state has opportunities to increase the potential for year-round employment among poor and landless people and thus reduce poverty. Further research into this issue would be justified: is it more important to provide year-round employment than to flush out compartments regularly? Farmers in a commune where a high dike was planned gave the loss of water control as one reason for rejecting the plan.

Finally farmer-farmer relations within a high dike alter in two ways. First, farmers no longer need to act cooperatively. Instead they can begin to act as rational economic individuals, pursuing the crops they think will be successful,

rather than growing rice, or other crops that will grow simultaneously to rice in the same water conditions. This change was indicated by the variety of crops to be seen inside the compartment at one time (see Figure 44), and it was one of the reasons given by a commune President for not opening the sluice gates. The second change may be a loss of inter-household cooperation and the micromobilization which Gamson states holds collective action together. Kerkvliet (1984) warned of this loss in the Philippines and more recently Fujiie *et al.* (2005) have pointed to the rise of 'irrigation management transfer' policies. When this happens they cease to be cooperative activities.

At one time the government in the Philippines attempted to incorporate *zanjeras* into the state, intending to use them to spearhead national policy on irrigation. Siy (1982) warned that by doing so the country's national planners 'not only may be destroying effective irrigation methods but may also be undermining people's efforts to be self-reliant' (Kerkvliet, 1984, p.357) a point reiterated more recently by Fujiie *et al.* (2005).

8.1.3 Household wealth: 'without land we must sell our labour'[sic]

The quotation above came from the farmer in a household of thirteen people, eleven of whom were dependents. The first year I visited them they had 4ha within August dikes, but 1ha had just been mortgaged out to another farmer. By the next visit, the mortgage remained unredeemed and the mortgagee was asking for the transfer of title to be registered, meaning the land would be lost. To improve income security some members were going to look for work in the factories around a city, since their remittances would allow the younger members to continue in education and the farmer to meet their needs with a reduced land holding. Those who migrated would become immersed in wider changes, and their exposure to life beyond the commune would 'rework the idea of agriculture and the value attached to farming in the eyes and minds of many' (Rigg, 2005, p.175). It would be interesting to find out if any of them ever returned to live in the commune and how the experiences have changed them.

In these communes inherited land and family knowledge of rice growing were the determinants of household wealth, followed by limitations imposed by the particular water regime where the household was located. In the deeply-flooding area in An Giang, August dikes kept water out long enough between the flood seasons for two rice crops to be grown. However, the environment in the common compartments made it difficult to grow any crop other than rice, and rice growing created its own cycle of life, with periods of intense work and later opportunities for social life, like wedding parties and support to neighbours in the floods. Contrary to my original expectations, there were substantial differences in the amount of land households held, ranging from 0.1ha to 7.5ha. Despite three known periods of reallocation (Pingali and Vo Tong, 1992), and there may have been further ones, more informal and local redistributions, and statements in the law about how much land a household should 'normally' hold, socialism in An Giang had not created Kerkvliet and Selden's (1998, p.39) 'rural population comprised of roughly equal owner-cultivators'.

By developing 'livelihood trajectories' (Bagchi *et al*. 1998) of farmers, this research was able to map the 'retrospective' (Murray, 2002) and learn how farmers came to have different amounts of land today and from there work out why some households are wealthier than others. This revealed first, that those with large land holdings today had fathers and grandfathers who also had large holdings, 30 or 40ha had not been uncommon in the past. One farmer said he was the fourth generation of his family to work that land. Despite the various reallocations these were the households with most land at the time of this research. Land holdings of 3 or 4ha in the late 1970s-early 1980s would have given farmers one or possibly two crops, but conditions of acidity, incomplete dikes, uneven fields and vulnerability to insects would have given annual harvests at best of three tonnes per crop only. Second, as the heights of dikes have been raised, the fields have been levelled, and rice yields have increased, one hectare of land can give a household five to ten times what it did in the 1970s. This is the reason why a household's wealth now is directly linked to its land holdings, and as that holding has frequently been by inheritance,

household wealth today is a reflection of the landownership of previous generations. Tran and Kajisa's (2006, p.188) observed that Vietnam continues to benefit from the green revolution, more than thirty years after HYV rice arrived in Vietnam:

> An interesting observation is that while the Green Revolution ended in the mid-1980s in the Philippines, it has still been sustained in Vietnam as of 2003. Indeed, the growth performance of rice sector in Vietnam in the 1980s and 1990s outweighs any other Asian countries.

Households such as these in An Giang, with their large land holdings, exemplified that performance.

In the deeply-flooding area, opportunities for households to adopt other income streams, farm or non-farm, were limited by four factors. First, a lack of flood-free land during the flood season reduced this potential. During the period of this research, all three communes were observed to raise the level of some land, creating areas for buildings to provide services and this may lead to the development of more non-farm activities. Second, the distance from markets and potential buyers resulted in initiatives taken to develop alternative crops failing because buyers were not prepared to pay the cost of transporting produce. Third, there were few alternative crops adapted to those particular environments. Fourth, where a farmer did try an alternative, high-value crops within his own dike, the lack of other producers of the same crop meant he had to pay all the transport costs and that caused the project to fail. Credit did not appear to be the limiting factor. Rather, it was a lack of suitable enterprises in which to invest and distance from the market.

In the less-deeply-flooding area and where there was a high dike, even though, as commented on earlier, farmers did not appear enthusiastic about it, opportunities for farm and non-farm income streams were much better. In some households, pluriactivity meant income from farm activities was equalled or superseded by that from nonfarm activities. Here pluriactivity was a way of life,

as the chilli farmer whose wife ran a tailoring school, the household which used contacts in the city to buy mosquito net material in bulk, made it up into bed nets and took them by boat into Cambodia to sell, and the commune official and teacher who also grew some rice, each demonstrated. These were households with 'truly multiple income sources' that 'involve wage work in non-farm activities, rural non-farm self-employment such as trading, and remittances from urban areas and from abroad' (Ellis, 2000). The distinguishing features here between pluriactivity in different communes were the proximity to an urban centre providing access to consumers, and an environment with several different types of water regimes.

8.1.4 Relations of scale between state and households: winners and losers

Chapter One began with Swyngedouw and Heynen's (2003, p.910) comment that 'political ecology attempts to tease out who gains from and who pays for, who benefits from and who suffers from particular processes of socioenvironmental change', or as Lasswell, (1936) put it more succinctly in a book-title: '*Politics*: [is about] *Who gets What, When, How*'. This thesis has attempted to determine who gains and who loses in the on-going contest between farmers and the state over environmental transformation in An Giang Province. It does so by showing the connectedness of actions at different levels of scale, starting with the outcome of farmer-state relations in dike building, through the management of dikes by farmers, which in turn is challenged by the state, and finally to the outcome for households. There are winners and losers at each scale.

First, at the highest level, farmers have leverage with the state, and relations between the two sets of actors in this province differed from Kerkvliet's (2001, 2005) models of relationships, which was based on his work in the north of Vietnam. Here in An Giang the state still practiced a form of 'dominant state' decision-making, as when the state paid most of the costs of a high dike which farmers were unprepared for, and tempered the effect by offering incentives to adapt to the new

conditions. However, the welfare of the poorest households here was placed above the environmental costs which land holders would bear. There would be economic gains, but they would be accompanied by environmental pains. As the law on grass-roots democracy was strengthened (Government of Vietnam, 1998, 2003), which happened during the period of this research, farmers in another commune rejected the state's plans for a high dike. These farmers were going to have to pay for the work, and they would also experience the negative impacts of the development. They were making the (re)connection between culture (or society) and nature called for by Benton (1994). The farmers indicated that the development did not represent good value for money and rejected it. This behaviour can be called 'advocacy relations'. However, that still left the state with the need to find ways to reduce poverty and inequality. Reconciling environmental well-being with economic and social equality is a challenge for political ecology.

Second, at the level between farmer-state relations and the household, farmers with land inside common August dikes needed to cooperate if they were to secure two rice crops between one flood season and the next. Individual dikes were costly, although they did exist, and their substantial footprint consumed a lot of land, so common dikes were the norm. Farmer-farmer cooperation was manifest in 'pumping clubs' which were strong social groups, 'making it possible for individuals to live in close interdependence on many fronts without excessive conflict' (Ostrom, 1990, p.88-89). Pumping clubs had three tasks: deciding when to pump water out in spring, and so bring forward the planting of the first crop; reaching agreement on repairing the common wall to ensure it does not breach at the start of the next floods, thereby ensuring the second crop can be harvested; and implementing these decisions. The state provided space for this and did not interfere with their actions. Good behaviour to neighbours was highly valued and built strong bonds. There were plenty of examples of 'micromobilizations' (Gamson, 1992) to reduce tensions between neighbours. However, when the dikes became higher the state 'recaptured' the water management and farmers were required to pay the commune government to provide water. It was not clear why that had happened, although a creeping worry about rising farmer power (Fforde, 2009a)

was one suggestion, while another was a general fear of what would happen if a non-state body was given the contract and failed to deliver. This was a continuation of the contest between farmers and the state over resource control, here taking place over the water management of much larger compartments, which has not been resolved.

The third scale concerns the household and the individuals living there. At this level, the impact of all the decisions made at the two levels above come together. The environment in fields is controlled by conditions in the common compartments, the outcome of farmer-state relations. The timing of water use inside the compartment (with August dikes) is controlled by a group of neighbouring households, an outcome of farmer-farmer relations. Yet despite this communality, households achieve very different outcomes; some are rich and others are poor. The explanation for this difference in wealth suggested here arises from two things. First, the amount of land the household inherited; even though land had been lost, returned, bought and sold, under colonialism, capitalism and finally under socialism, there was intergenerational similarities in the amount of land being worked today, and this was the key to household wealth today. Second, the ability of the same area of land to generate increasing amounts of wealth sprang from the continuing upward yield trends of HYV rices in farmer's fields. Where previously, ten tonnes of rice would require 5 to 10ha of land to produce, today that could be produced from just 1ha within an August dike. Different water regimes offered different possibilities. High dikes or high banks offered farmers more options to diversify income streams. Where that happened however, market information and transport links became determinants of success.

Here in An Giang, scale has operated in two ways: first, actions at the farmer-state level and farmer-farmer levels have transformed household agriculture; and second, actions by many households in this province, and elsewhere in the delta, led to political transformation in Vietnam.

8.2 Conceptual contributions

8.2.1 Farmer-state relations in Vietnam-style-socialism

Space exists for 'everyday politics' in Vietnam (Kerkvliet, 2005). However accounts of everyday resistance were previously untested because, as Kerkvliet (2005) and other researchers (Luttrell, 2001; Scott, Miller and Lloyd, 2006) recount, it is difficult for a foreign researcher to hear 'off-stage voices' (Scott, 1985) in Vietnam. People may appear to go along with proposed changes, while simultaneously they may 'harbour alternative visions, values and beliefs for how resources should be produced, distributed, and used' (Kerkvliet, 2009 p.234). However, O'Rourke's (2004) contribution on resistance to at least environmental modification takes forward understanding of that space. People do resist the actions of the state, or state-approved developments, when they fear the environmental consequences or when they encounter serious acts of corruption or misdoing by state officials.

Perceptions of communist, or socialist, Vietnam range from views of it as a top-down Leninist-type state, where centrally-made decisions are handed outwards for implementation (Thayer, 1992), to a state that engages in, permits, even encourages, interactions between actors at different levels in order to achieve a satisfactory outcome to a general direction set by the state. Dang and Beresford (1998) point out that Vietnam's communism is characterised by reinterpretation at each level of decrees and regulations emerging from the centre. The survival of these, often locally-adapted, versions of the state's intentions depend on the skill with which they are constructed, implemented and deliver acceptable outcomes, combined with the ability of one Provincial Leader (General Secretary of the Party) to gather support from his contemporaries in other provinces in making the case with the Central Committee of the Party. While Thayer (1992, p.111) described Vietnam as an example of 'mono-organisational socialism', Dang and Beresford's (1998) account belies that interpretation, and the findings of this research tend towards agreeing with their view.

Kerkvliet (2001, 2005), whose three proposed models of farmer-state relations were an important starting point in this thesis, conducted his research in the north of Vietnam. Between 1992 and 2000 he interviewed villagers, local officials, older people who had formerly worked in successful and unsuccessful cooperatives, district officials and people from policy making circles. He also read archives and newspapers (Kerkvliet, 2005, p.4-5). Given the distinct histories of the north and the south, it is important to be clear about his position and where his informants were located. Based on his research, Kerkvliet (2001, 2005) proposed three models: 'dominant state', 'mobilization corporatism', and 'dialogic'.

This research differed from Kerkvliet's in several ways: it had a greater focus on contemporary events; it took place at a different time, after the year 2000; it engaged with people who had experienced the events of the past 40-50 years in a different part of Vietnam and might be expected to have a different perspective; and it focused on households, a few officials and some key informants but did not include archival materials. The perspective presented in this thesis therefore comes from a different starting point.

My research suggests that three models of farmer-state relations operated in An Giang, but that these were rather different from those proposed by Kerkvliet. I call these 'dialogic', 'dominant state, new style'; and 'advocacy relations'. First, in 1978 soon after reunification, local people took control of a difficult flood situation and transformed their local agricultural landscape in order to save their crops. Afterwards the state gave its approval and they were told that what they did was now to become 'the policy'. This concurs with Kerkvliet's 'dialogic' relations. Second, there was evidence of 'dominant state' thinking and actions. The state made a decision about raising the height of a dike in one commune and *post hoc* persuaded farmers to adapt to it by 'policies' for loans and by trying to attract buyers to enter into contracts and buy farmers' produce. This was 'dominant state' with carrots, which can be referred to as 'dominant state, new style'. The third model differs from all of Kerkvliet's models. 'Advocacy relations' occurred when the state proposed a plan under which farmers would have had to bear the largest part

of the cost of raising the height of a dike. After discussions and meetings, letters and more group discussions between commune officials and farmers, insufficient households were willing to support it and the project was dropped. Both sets of actors were putting forward their cases, and advocacy was happening on each side. The difference in time between the occurrences on which these second two models are based was only six or seven years, but during that time the law on grass-roots democracy changed and this may account for farmers' success in rejecting the plans in the third example. Dealing as he was with historical accounts, Kerkvliet would have been able to cross check his findings, and he could be reasonably certain that the material outcomes of events were unlikely to change in the future. My research was dealing with events as they happened, outcomes may change in the future; the second two models of relationships should be regarded as provisional and should be the basis for further research.

8.2.2 Political Ecology: reconciling the interests of 'land managers' and the landless.

Robbins (2004) calls for a redefinition of political ecology by asking who constructs, or reconstructs, the environment, and who gains and loses by those productions. Bryant and Bailey (1997, p.45) draw attention to the ability of weaker actors to resist their stronger counterparts, even when powerful actors justify their control by appealing to the 'common good'. Blaikie and Brookfield (1987) write of the advantage of handing decision-making down as close as possible to the 'local land managers' as they are the ones who have the greatest knowledge and the greatest stake in ensuring the long term use of a resource, while Forsyth (2008, p.756) suggests the 'pragmatic co-production of environmental knowledge and social values offers a more constructive means of building socially just environmental policy than insisting politics or ecology exist independently of each other'.

In my research the intersection of social justice and environmental well-being revealed a tension to which past political ecology does not seem to have an answer. The 'largest actor', in this case the state, was in the position of trying to promote

the interests of the 'weakest actors', the landless, by implementing environmental modification over the heads of actors who could claim with some justice to be the 'local land managers', the 'medium sized actors'. The justification for raising the height of the dike was to reduce poverty and one way of raising income levels was to create a flood-free area. This would allow year-round cultivation and provide income streams for households with the smallest land holdings or none at all. They could grow vegetables, work as labourers for other farmers, or raise cattle, all of which had the potential to raise households up the income scale. However, within two years of the dike height being raised the holders of larger pieces of land were complaining that their land was now dry and needed more fertiliser because it was no longer flooded by river water in the monsoon; it was shut off from the supply of organic and inorganic matter from the river. How should this tension be resolved? On the ground it appeared irresolvable; whichever path commune officials took was likely to bring justice to one party and injustice to the other. Agricultural changes here had the potential to be harmful to the interests of one group of actors, but the potential to improve the lives of another group. Which of the two should be prioritised? How should political ecology answer that question?

8.2.3 Pumping clubs: collective action or defence against a common threat

Farmers in the deeply-flooding areas of the delta control flood water with common dikes. These walls create sufficient time for two crops of HYV rice to be harvested between one season's floods and the next. The mechanism for doing this is called by farmers, a 'pumping club'. They are endogenous institutions, not imposed from the outside and where it was supported by the overwhelming majority of households with fields inside the compartment it achieved its two goals which were to arrange for water to be pumped out early in the season so the first drop can be planted and to maintain the integrity of the dike wall. They were supported by strong social structures and values of help and consideration to neighbours in times of need, such as when households ran short of food or money in the flood season. However, clubs were under stress when land holdings passed into the hands of

farmers who did not live nearby or who did not attend meetings. This gave rise to two problems: first if there was a delay in agreeing on the date to pump water out at the beginning of the spring and the first planting was delayed; and second when there was a failure to agree on the repairs to the walls and flood water overlapped the wall at low points before the second crop was off the field. Both of these outcomes created economic losses to households and that is why pumping clubs are important. The question arises, is this collective action in the use of a common pool resource or mutual assistance in the face of a common threat?

Ostrom (1990), in her search for robust models of collective action which have wide applicability, suggests that groups have to be small, resources finite, users all known to each other, free riding easily visible, all members must 'sign up' to the agreement and carry out their part, or pay their share of costs, if they are to succeed. However, in the case of pumping clubs the resource (water) is not finite, it is infinite, and farmers' actions are not to divide the scarce resource up but to band together to keep it out. This type of situation needs to be acknowledged within Ostrom's analytical framework. The social structures created by the collective action are no different to those described for other endogenous CPR management groups, but the overall purpose, defending themselves against a common threat, is different. The other framework within which pumping clubs fit is as precursors of state bureaucracy. Kaijser (2002) makes this suggestion of the groups that maintained the dikes and pumped out water in Holland in the Thirteenth and Fourteenth Centuries, Falvey (2001) for northern Thailand and Wittfogel (1957) for water management groups as precursors of state bureaucracies in general, although Leach (1959), for Ceylon [sic] challenges the idea that large-scale irrigation works require, or are the precursor to, central bureaucracies. This view of An Giang's pumping clubs as protobureaucracies might be vindicated by the manner in which their role has been taken over by the state when August dikes are replaced by high dikes. Within high dikes the areas of land enclosed are considerably larger and an enlarged farmer organisation, in the role of resource managers at a wider scale than before, might appear as an alternative power structure to the communist party (Fforde, 2009a).

8.3 Directions for future research

Several lines of questions for future research arise from this, some of which are historical and will deepen understanding of previous events with a view to informing understanding of modern-day Vietnam, and some with contemporary events and their future implications.

Farmer-state relations remain important for the well-being of rural and urban communities. Farmers in the delta demonstrated their political leverage during the post-reunification government's attempt to create cooperatives, which farmers in the delta eventually rejected. A better understanding of how farmers exercised 'everyday politics' in that situation, the social structures that existed and how the state reacted at local levels, would strengthen knowledge of farmer-state relations today. The balance of economic power now, as indicated by the share of GDP, has shifted from rural activities to factory production, oil extraction, and service industries, yet the overwhelming proportion of the population still live outside towns and cities. How will the state respond to this shift, will political power leave the countryside and if so how will that affect relations in the countryside? Will the large rural-based population feel uncomfortable with this loss of power and how might it react? The generation that rejected the state's plans in the 1980s, and in so doing changed the economic direction of Vietnam, will now mainly be in retirement but still available to discuss and reflect on this period.

Vietnam has made commitments to increase the power of local, or grass-roots, democracy. Fforde (2009a), Fritzen (2006), Ingle and Halimi (2007) have identified the importance of exploring the effectiveness of Decree No 79/2003/ND-CP. Effective local decision-making is a key factor in the sustainable use of local resources, for example in raising high dikes. As this research has shown, high dikes have the potential to create additional employment, which reduces poverty, but have negative environmental effects. Will this decree operates in favour of local communities or will it serve to 'concretise' the wishes of the state? Coupled with

this is the fate of the endogenous pumping clubs. Research into why the state feels it needs to take over water management when the dike heights are raised is important. The clubs have strong social cohesion and may provide nuclei for future farmer cooperating groups, for example for growing and marketing specialist crops, whereas when they are taken over by the government farmers may be disempowered, as has happened in Taiwan (Bottrall, 1977; Lam, 2001).

A third question for future research concerns the sustainability of agriculture within high dikes. Should compartments be flushed with river water and if so how might that be organised? Rice and other crops, particularly perennial crops and animals, grown together in the same compartment pose difficult decisions if the sluice gates are to be opened. Is it the role of the state, 'dominant state, new style', to enforce crop separation and compensate the losers, or will the market take on that role. The latter possibility arises when the value of land inside compartments rises sharply once the height is raised. In Binh Thanh Commune it nearly doubled within three years (personal communication, President of Binh Thanh Commune, December 2007). It may be that rice growing will be priced-out of high dike compartments by the rise in value of those areas for other crops and animals. The delta has ground-water (personal communication, Vo Tong Xuan, August 1999), what potential does that resource have for irrigation and crop separation? These are important practical questions which will test farmer-state relations in further agricultural developments in An Giang.

8.4 Reflections on the research process

My experience of working in Vietnam was positive. I expected to find my work hampered by regulations at every turn, but that did not happen. Shortly after I arrived in February 2001 I met Professor Vo Tong Xuan at a well known noodle (or *pho*) shop in Ho Chi Minh City. Before we sat down to eat, Xuan gently took my elbow and said, *"Charles, if anyone asks what you are doing, you must say you are a scientist, and everything will be okay"*. The full meaning of this remark only revealed itself to me several years later when I read the account of a group of post-doctoral

western researchers who carried out social science research using qualitative methods at different points in Vietnam at about the same time as I worked in An Giang. Scott *et al.* (2006) describe numerous challenges they encountered in gaining access to the field, negotiating partnerships and collaboration and dealing with research as a commodity which needs to be paid for, in money or in kind. The Western paradigm of research in social science is still new to many Vietnamese academics and officials, semistructured questions are potentially dangerous; when an outsider questions a farmer, will the answer challenge the party's concern to remain in control (see Marr, 1993)? Why was my experience so markedly different? It could have been purely due to chance, different people in a different part of the country, and Western researchers of agriculture in the Mekong Delta are not uncommon. However three observations may be relevant. First, I had something to give as well as questions I wanted to ask. Having time to offer help at my host university overcame the problem of commodification; I had something to offer in exchange for their help. Second, earlier life-experiences in Africa and South Asia had alerted me to how different this research would be to working in the UK; I did not expect it to be 'the same' as working in Europe. Third, my principal gatekeeper was very experienced in mentoring Western researchers in their work in Vietnam. Gatekeepers matter.

8.5 Summary and conclusion

Case studies in four communes in An Giang Province in the Mekong Delta between 2001 and 2007 provided insights into farmer-state relations, farmer-farmer relations and why, despite land redistribution, some households in the early 2000s are much richer than others. Comparing relations here with those reported by Kerkvliet (2001, 2005): 'dialogic' relations, which are interactive, had taken place in one commune in the late 1970s; 'dominant state, new style', took place when the state wished to impose a development on farmers and offered inducements; and a new type of relations, which is here called 'advocacy relations', took place when farmers rejected the plans for a high dike.

Within August dikes, farmers carried out water management independently of the state, but when the height was raised water management was taken over by the state. These endogenous user groups have parallels elsewhere in South-East Asia, but the basis on which they operate, which is a joint protection against flood waters, has more in keeping with what happened in Holland inside the dikes in earlier centuries, than sharing the cost of a water supply.

Despite socialist redistributions of land, farmers with larger land holdings in the early 2000s had received land from parents and grandparents, who had also had large holdings. The availability of HYV rice varieties, and the ability to grow two crops per year, has multiplied five-fold or more the amount of rice harvested off any given area inside a dike. This explains why some households are richer than others.

The state holds the balance between the land owners and the landless. While farmers in the August dikes did not want a high dike, landless people wanted it built so they could have year-round employment. Land holders, who would pay most of the cost, decided against it principally because of the environmental damage, they said it was not good value for money, but this left the landless, who had no vote in the decision process, with insufficient income in the flood season. This is a paradoxical situation between environmental justice on the one hand and social justice on the other, which political ecology should address.

The interaction of farmers and the state has transformed agriculture in An Giang. Between them farmers and the state have created the conditions for a highly-productive system of rice-growing. However, for this to happen political power flowed in favour of farmers:

> *Before 1986 politics changed farming, after 1986 farming changed politics* (Le Minh Tung, Rector, An Giang University, 2007, and former member of the National Assembly).

Future food security and social stability will depend on how that relationship between farmers and the state is maintained and nourished.

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APPENDICES

APPENDIX 1
SCHEDULE (Version 3) FOR MEETING WITH A FARMER

Farmer's name_____

Farmer's number_____

Date_____

Commune:_____

Meeting organiser:_____

Note taker:_____

Why was this farmer chosen:
Inside/outside the dike:
Male/Female head of household:
Age of farmer:
Size of farm: small/medium/large:
Distinctive/different technology:

Big distance from canals and roads
More successful/less successful farmer
Other:

INTRODUCTION

DO THINGS IN THIS ORDER PLEASE *The questions are in italic type*

1 **Please be very polite**. **Try and make the farmer feel at ease**. If you can, make some small conversation to put them at ease. We must sit at the same level as the farmer, e.g. on the floor if that is where he/she sits. If possible persuade his wife/husband to join in.

2 Make sure the farmer received our letter. Thank the farmer for agreeing to see us. . Introduce each of us by name. Tell the farmer what we do: **Charles**: teacher and research worker at an agricultural college in England, and trainer of agricultural teachers at AGU. **Tri**: interpreter and organiser of the meeting; staff at AGU. **Van**: plant scientist and note-taker; staff at AGU.

3 Explain I am studying how farmers make their decisions. To do this first I must understand how farmers do their farming. This is what I am interested in today. Tell him/her we are going to talk about the things in the letter, but not to be worried if the have not read it/not understood it. I want to hear all I can about how he/she farms. The meeting may take 2-3 hours, but the should tell us if he feels it is taking too long.

4 Tell him/her I am visiting farmers in 3 communes. Afterwards, when I write about my research, I will not refer to any individual farmer by name. If the head of the household is reluctant to tell us his/her name at the beginning, do not press them but try again at the end!!

5 VERY IMPORTANT. The note taker must tell the interpreter if a question area has been missed, or if the answer was not loud enough for you to

hear. This can be done by eye-contact, it does not always need words. The note taker may also ask for clarification and for more information on some points

6 NOTE TAKER. Write down everything you can. Get the main points down. Fill in the details afterwards. Circle answers on the question sheet. Write your own comments and observations in square [ ] brackets, they are VERY VALUABLE.

Question 1 ***We would like to know about the people who live and work on the farm*.**

Question 1.1 *What is the name of the head of the household? How old are you?*

How long have you been a farmer? Did you have a different job before you became a farmer?

Who taught you how to farm?

How long have you farmed this land? Have you always farmed this land, or did you farm somewhere else before you came here?

How much land do you own? Is your land in one place or many places? Do you hire land from other farmers? Do you rent land to other farmers?

Did you inherit this land from your father? How much land did he have?

How many children did he divide it between?

Question 1.2 Who lives here
(also Age/year of birth, highest level of education)
Who are the adult men who live here?
Who are the adult women who live here?
The children and young people who live here

Question 1.3 ***What services and facilities do you have here at your farm*:**

Do you have a supply of safe drinking water?
Do you have electricity: by mains connection/ battery/electric generator? Y/N
Do you have a radio Y/N

Do you listen to listen to the radio?	*Every day, once a week, sometimes, never.*
Do you have a television set	Y/N
Do you watch TV programmes?	*Every day, once a week, sometimes, never.*
Do you read a newspaper?	*Every day, once a week, sometimes, never.*

Are there times when you do not have enough to eat?
If there are, when does this happen and what is the cause?
Answer:

Question 2 ***Next we would like to ask you about your farm and how you do your farming.***

Question 2.1 ***What are the main pieces of machinery you have****:*

Tractor; hand steered motor cultivator; water pump; engine for a boat (is the same engine used for both jobs?); boat; threshing machine; hand-held sprayer machine for planting seeds

Question 2.2 ***Last year, what were the 3 main crops you grew?*** **(Pie chart)**
Question 2.3 ***Please take us for a walk and show us your farm. We would like you to show us the layout of your farm, where the fields are, what crops you grow, gardens, fish ponds, fruit trees, machinery and other things about it. An easy way to record this is to make a map together as we go around.*** **[We want the farmer to take the pen and do some drawing/writing]**

Van: please make sure you write the names of all the crops, and anything else you observe. As the farmer talks about his fields, make notes.

On the map we want to mark and label the following, if possible.

Fields; raised places where cattle can avoid flood water
dikes; canals; rivers, houses; roads (xe honda/lorry)
Crops; trees (single and groups) nursery beds for seeds/seedlings
Gardens with plants for the household, not just for selling
Ponds and what is in them., are they seasonal or permanent
'Layers' of crops: e.g. bitter gourds above a pond; floating plants
Where livestock (cattle, chickens and ducks) spend the day and where they spend the night. Where manure is collected.

Where grass is collected for cattle food
I may draw a transect across the farm. **At the same time we will make seasonal calendars for each field, or the main ones if there are many.**
For each crop we want to hear about:

- Soil preparation
- Sowing and Transplanting
- Weeding
- Watering (and how: pumping, watering cans?) Application of any chemicals
- Flowering
- Ripening and harvesting
- Threats to the crop: what are they
- One crop that follows another on the same soil

Question 2.4 ***What animals are grown to be sold, when are they bought, where do they come from, when are they sold?*** (Cows, pigs, poultry, fish, shrimps, other)

Where does food for animals come from? Do you buy it, grow it on the farm; gather it from common lands (e. g. beside the river) (Seasonal calendars of food availability)

Question 2.5 ***What natural resources do you collect, to eat, or to sell and when do you collect them****?* (wild plants, snakes, snails, crabs, rats/mice, birds, honey, plants for use as medicines, other things?) (possible seasonal calendar)

Question 2.6 ***Please tell us about connections between different crops or technologies*****?** *For example: Do you use manure from your livestock (cattle water buffalo and chickens/ducks) and humans? If you do, what do you use it for?*

What do you do with plant remains after the harvest? Do you: make compost; burn it and dig the ash into the soil; bury it, or what?

What do you do with the husks after grinding/milling rice?

Do you use ducks to eat pests and weeds in paddy fields or ponds?

Do you grow mushrooms on rice straw?

Question 3 Labour

We would like to know

1 who does the work on this farm,

2 when you are helped by your neighbours,

3 when you need to hire labour,

4 when you help your neighbours

5 when you work away from the farm and what you do.

We are interested in relative amounts, not exact figures.

1 A pie chart for the labour done on this farm. Name the main workers and show their relative contribution

2 A seasonal calendar for the relative amounts of work done on the farm We will show: the farmer and the family; help from neighbours; hired labour. On this calendar also put in when the farmer works with neighbours or off-farm (somewhere else).

Question 4 Conditions of soil and water on the farm

Question 4.1 ***Please will you tell us about the water on your farm and any problems you have with water***.

We will make a seasonal calendar of water:

- *In which month do you have most rain? In which month do you have the second largest amount of rain?* And so on
- *In which month does the flood rise, in which month does it fall?*
- *When do you pump water into the fields and when do you pump it out?* (calendar)
- *Are there any months when there is a shortage of water?*
- *If you pump water in from the canal, is there enough water for all the farmers? If there is not enough water in the canal for everyone, how do you decide who will use it?* Answer:

- *Is the water better for crops and animals at some times of year, and less good at other times?*

Question 4.2 ***Please will you tell us about the soil on your farm and any problems you have with the soil***.
Answer:

If the farmer says nothing, or is confused, use these probes to encourage him
What sort of problems do you have?

Do the problems happen every year/at the same time every year?

Is the soil sometimes too dry or too hard to cultivate

Is the soil sometimes too wet to cultivate

Do you put chemicals on the soils? If so, on to which crops, what kind of chemicals, when do you use them, how much do you use.

Have you seen changes to the soil since you started to farm here? If so, what have they been?

Question 5 Income and expenditure
We would like to know about the relative amounts of income, expenditure and credit for the household. WE DO NOT WANT TO KNOW THE NUMBER of VND.
Question 5.1 ***Income for last year. If you are agreeable to this, please tell us all the income from crops last year.***
We will make a list of the crops and show the income on a pie chart

*Last year did you have any income from working off the farm? Last year did you have any income from the lease of land? Income from the sale of land**?***

Last year did you have income from family working away from home, e. g. in TPHCM

Show the relative incomes from all sources on a pie chart [farm incomes and other types together]

Question 5.2 ***What were your main expenditures last year?***. This might include (tick):

- farm inputs;
- repair of the dike;
- purchase and hire of equipment for the farm;
- purchase and hire of equipment for the home
- food for the family;
- medicines and health expenditure;
- school fees and college fees;
- clothing;
- house building/rebuilding;
- weddings and funerals;
- taxes;
- support to relatives or children living away from home.
- Other:

We will show all the relative amounts of expenditure on a pie chart.

Question 5.3 ***Can you show on seasonal calendar the months when money came in last year, the months when you made major expenditures and <u>when you needed to borrow money</u>? We do not want to know about the actual amounts, but we would like to know when the most money came in, second most and so on?***

Question 6 ***How do you make your farming decisions? Who makes them?***

Tri, and Van: Use an example of a change the farmer has made since last year, e.g. from okra to baby corn.

- Who was involved in making the decision?
- What factors did they take into account?
- Did they consult anyone outside the family?

Question 7 ***We would like to ask you about how you buy inputs for the farm, and how you sell your produce***

Question 7.1 ***What are the main inputs you buy (seeds, livestock, equipment etc?) Where do you buy them? Who do you buy them from?***

Question 7.2 ***Where do you sell your produce? Who do you sell them to?***

Question 8 Organisations

Question 8.1 ***Please tell us about the organisations you belong to*:**

- Farmers union (which one)?
- Farmers club?
- Group of farmers who borrow money from the bank? (a name?)
- Youth union
- Women's union
- Other (1)

Question 8.2 ***Please tell us how often you meet with*:**

- Extension worker:
- Bank official:
- Research scientist:

Question 9 Travel and connections

When you leave your farm, what places do you travel to? For example, where do you go to buy seeds, chemicals, a honda? Do you go to a market, which on?

Question 10 Values and Goals

Question 10.1 ***We would like you to look at some statements about farmers and farming, and tell us what you think of them***

Tri. Mai Talk the farmer through the values questions. Please do not press the farmer too hard. I am more interested in whether he agrees or disagrees, than whether he agrees strongly or disagrees strongly.

Question 10.2 ***Please answer these last questions*:**

What are the long-term goals (in the future) for your farm?

What are the long-term goals (in the future) for your family?

Would you advise your children/grandchildren to be farmers?

What advice would you give a young person who wants to be a farmer?

APPENDIX 2

LETTER TO FARMER ASKING FOR A MEETING (ENGLISH)

Name of Farmer:

Name of Commune:

Dear_____ Date_____

This research has the approval of [quote reference from UBND]

My name is Charles Howie. I am a research fellow and student at the Royal Agricultural College, in England. I also work as a volunteer at An Giang University (AGU), where I help to train teachers of agriculture.

With the full co-operation and support of the UBND and AGU, I am carrying out independent research on how farmers make decisions. As a farmer you make decisions about many different things. These decisions include the day-to-day management of your farm, the choice of technology/crops; buying and selling; credit; and many other things. I want to try and understand how farmers make these important choices.

My research is in two parts. This summer I want to draw up a picture of how some farmers in three communes do their farming. Next year I will work on how decisions are taken. When the research is finished I want to tell farmers about the findings. When I make my report no one will be mentioned by name.

I would be very grateful if you could give me some of your time and explain to me how you farm. I would like to meet with you and your wife/husband. If you agree to meet me this is the day and time I propose for the meeting:

Suggested day and time of meeting:

Suggested place for meeting: Your farm.

If this is not convenient please will you tell Mr Nguyễn Hữu Phước, leader of the commune.

These are the questions I would like to discus with you:

1. Who lives in your household on the farm, who works on the farm
2. A description of your farm and its location; we will draw a simple map with you
3. What crops do you grow; we will make a seasonal calendar with you
4. Conditions on your farm, particularly soil and water
5. Purchase of inputs and equipment, sale of produce
6. How did you learn to farm (who taught you); have you always been a farmer

7. What have been the major events in your life as a farmer
8. Who does the day-to-day work on your farm; who makes the decisions about what to do next
9. How much work do you do with neighbours (helping them, being helped by them)
10. Do you or anyone else in your household work off the farm; do you have any off-farm income
11. How close are you to canals for boats, roads for lorries; and markets
12. How often do you leave your farm, how far away do you travel
13. What is important for you about being a farmer (why do you do it)
14. What do you want to do in the future (your plans)

Thank you. We very much look forward to meeting you soon.

Yours faithfully,

Mr Charles Howie (research worker)
Ms (translator)

APPENDIX 3

LETTER TO MR TUNG ASKING FOR PERMISSION TO MEET FARMERS IN 2003

Mr Le Minh Tung
Vice Rector
An Giang Universitas

Faculty of Agriculture and Rural Development
An Giang Universitas

2 January 2003

Dear Mr Tung

Research on farmer decision-making in An Giang Province

As a further step in the research I began last year, between May and July of 2002, I would like to revisit the same farmers in Chau Than District: Vinh Binh, Bin Hoa and Binh Than communes. I want to ask farmers about their farming in the past 6 months, if they have made any changes to their crops/technologies and any other plans they may have.

The visits would be quite short, lasting no more than 1 hour each, possibly less, therefore I would hope to meet with 4 or 5 farmers each day. I would like to employ two members of university staff and pay for their work, as I did last year. I have not discussed yet with Mr Vo Tong Anh who they might be, but I would be very pleased if Ms Van (Faculty of Agriculture) was one of them. The field work would be spread across 3-4 weeks, spending 4 to 5 days in each commune, a total of 12-15 days of visits. Some more days would be needed here at AGU for writing up, making a total of about 21 working days.

From the previous work I know it is important to make the calendar of appointments flexible, in order to fit in with everyone's availability and work load. I would like to make the visits during these times: January 20-25 and February 10-28. The final dates would be worked out when we make a preliminary visit to each commune HQ.

If you agree with this plan, and are able to support it, I would be extremely grateful if the university could approach the Chairman of Chau Tanh People's Committee and ask for his approval. Once we have his approval Mr Trung Ba Thao has agreed to accompany me to each commune to make the arrangements. He and I have set 10 January as the day to do this, if we have had agreement by then.

I would like to thank you and your colleagues for the invaluable advice and support you have already given me in this work. In time I look forward to presenting my findings.

Your sincerely

Charles Howie

APPENDIX 4

Feedback on research with farmers in Vinh Binh Commune

September 2003

FEEDBACK TO VINH BINH COMMUNE

I would like to offer the Peoples' Committee this feedback on the work I have done so far, I hope it may be useful for the people's committee and to farmers. In 2002 and 2003 I spent several weeks in the commune and I have had a chance to talk to 16 farmers for 4-5 hours each. Many officials in the commune have also been kind and spent time talking with me. From all these people I have learned many things about how farming in this commune. However, I am worried that I may not have understood all the things I have been told, so I would be very pleased to have criticism of my work.

What mistakes have I made in my understanding how farmers work?
Have I left out some serious problems in my analysis?

At the end I have put some questions and ideas for the commune. I hope they are useful and I would be very pleased to discuss them further. Later in my research I will make a fuller report. Next year I would like to revisit a few people, I will explain more about that later this year, before the Tet festival.

1 WATER, FLOODS and DYKES

Some farmers say they want the dyke to be made higher, for the following reasons:

- They will be able to grow crops all the year round.
- Less risk of losing the harvest at the end of the HT rice season.
- They can diversify away from rice.
- With more crops they will have a better income.
- The problem about getting agreement of other farmers to start pumping out water at the beginning of the DX rice season will stop.

Comment: At least one farmer has his own high dyke. This has solved some problems, but he has new problems to solve (see below)

Some farmers say they are not happy about making the dyke higher, for the following reasons:

- It is the tradition to grow 2 crops of rice and for the farmer to have a rest time in the flood season. Some say they do not want to stop this way of life.
- Farmers understand flood waters bring alluvium and they do not want to loose this free benefit.
- Farmers can see that dyke building has already reduced the supply of alluvium to their fields and now they use more fertiliser. Higher dykes would mean more fertiliser.
- Farmers are not sure a higher dyke wall will be safe/will not break

Comment: When one commune builds a high dyke to keep all the flood waters out where does the water go? When 10 communes build high dykes to keep the floods out, where does that water go? What will happen in the future to the communes that do not raise their dykes?

Many farmers harvest wild products from flood waters in their fields:

- The fish *ca line* to make into mum co and nook mum (fish sauce). Some families told us they make 120 litres or more each year. At the price 5,000d/l this may be worth 600,000d per year, more of if it is good quality sauce.
- Fish of many kinds to eat or to sell. This is an important income (benefit) for families in the flood season. The only investment is a new net every 2-3 years.
- Small fish to grow in their fish ponds
- Fish to use as food in fish ponds.
- Small shrimps caught in traps or in nets to be dried and sold.
- Larger shrimps in nets to be sold fresh.
- Water chestnuts to eat or sell.
- Snails for feeding ducks and fish.
- **Comments/questions**:
  - No farmer talked of the financial benefit of these harvests in their income for the year. **How large are the benefits? Would all these benefits be lost if there was no flood? What effect will this have on households with smaller incomes?**
  - Do poorer people/landless people go into paddy fields in the flood season to harvest wild products? Do they pay for this, or is it free? If they get this without paying, **what will happen to their food security in the wet season if there is no flood water and no wild harvest?**

Some difficulties with the present dykes. (Water comes over them into the fields in the monsoon season)

- If pumping out starts too early and the dyke is not very high, it is possible for the water in the canal to rise up again and enter the field before the DX rice is planted
- Sometimes it is difficult to get agreement about choosing the day to start pumping water out at the beginning of the DX season. Some farmers want to wait until the water has gone down, so that it will be cheaper, other want it as soon as possible. This may cause problems:
  - Late pumping-out means the rice is planted later, this reduces the time available to harvest the DX crop, plough the field and plant the HT crop.
  - Late-planted DX rice is more likely to be attacked by thrips
  - Early-planted DX rice may be bought by other farmers as seed rice for the HT crop.
  - If the DX crop is planted late the HT crop may be harvested late. At the end of the HT season rain water may rise up in the field and the rice has to be cut in the water.

Some harvest will be lost, there is more cost to the farmer for transporting the (wet) rice and it may be difficult to dry it in the monsoon season. Early planting of the DX crop is very important

- At the HT harvest some farmers or other people may break down the dyke in some places to get their boats into the field, also to get good muddy water from the canal. The broken dyke may cause problems to other farmers inside the same dyke who harvest late, also farmers must pay to repair the dyke before the next DX crop can begin.

DIVERSIFICATION, INVESTMENT AND ENTERPRISE

Some farmers are willing to try new technologies, other farmers want to see another farmer try it first and talk to him before they try it. Some farmers like to travel and discover new crops/varieties, others wait until their neighbour tries it and then they my try it.

- How can more farmers be encouraged to try new crops?
- "*Farmers believe other farmers more than they believe extension workers*".

Comments:

- **Encourage more seed companies to work with a few farmers to try new varieties, new technologies** in farmers' fields. Farmers are the best people to persuade other farmers to change their technology.
- More demonstrations of new technologies **by farmers to farmer**s.
- **Farmer's should have "Open Days"** on their farmers, so that other farmers can visit new crops and meet farmers in the commune? This needs to be b done with farmers and advertised widely, e.g. on TV. Put up signs to tell people where to go. Do it once or twice a year.
- **Could the Farmers Club organise travel days for farmer**s?

Some farmers wish to diversify but have problems. Some of these:

- The cost of converting their land for a different technology. They are unlikely to have enough land to act as co-lateral for a large loan.
- If only one farmer has a new technology they may have difficulty finding a market for the harvest
- If only one or two farmers grow the new crop they may have additional transport costs to take it to a specialist buyer.
- If they convert to fruit or vegetables the crop must get to a buyer **very quickly**
- Farmers need information about new crops, the cost of inputs and the market price for produce. How can they get it?

Some farmers have money to invest, but do not know how to go about it

- There are successful rice farmers who have money to invest. One farmer alone does not have a lot of money, but three or four together may have sufficient money to try a new business.
- Farmers may not know who else has money to invest. How can they find each other and work together?
- Farmers know about 'new style' co-operatives, but are not confident enough yet to establish one. The problem is one of trust between farmers.

Some comments about the advantages/disadvantages of diversification from rice to fruit and vegetables

	Rice	Fruit or vegetables
Technologies	Farmers know the technologies	Farmers not sure of the technologies
Food security for animals and humans	Rice can be eaten and fed to fish, pigs, poultry	Farmers need to buy rice for food security
Postharvest	**Dried rice is very stable after harvesting** After harvesting and drying, rice can be stored for many months before selling. This does not effect its condition	**Fresh fruit and vegetables only stable for a few hours after harvesting** After harvesting most fruit and vegetables need to reach the buyer in just a few hours, **or** they must be given special storage **or** processed
Processing	Rice can be stored processed or unprocessed.	Fruit and vegetables need cold or gas storage **or** they must be processed into other products quickly.
Transport	Rice can be transported slowly, e.g. by boat	Fresh fruit and vegetables need to be transported very quickly or they decompose
Marketing	Rice is suitable for selling to customers who are far from the growers. Rice may be marketed inside or outside Vietnam, depending on production costs, quality and market conditions	Fresh fruit and vegetables need to reach a market in a few hours. Where is the market for Vinh Binh Communes fresh fruit and vegetables?

There may be different problems if farmer s convert from rice to industrial crops

Questions to Vinh Binh Commune:

- Farmers with their own high dykes allow water to enter into the fields through the sewer gate at some time in the flood season. If you build high dykes will you keep out all the water and have no flood time? Will you let water enter into the fields in some years, but not in others? If you do this how/who will you decide which years to open the gate?
- If you build a high dyke and stop the flood completely, there are no free wild products for to harvest. Do farmers want to loose these wild harvests? What will happen to poor and landless people who may collect these benefits in the flood season.
- How will you prepare farmers to make the best use of the new conditions? Once the high dyke has been built the change to their situation is very large, they may not know what to expect.
- If a few farmers can store fresh fruit and vegetables they can sell them together to a buyer and save transport costs, and increase their quality. Can the commune build a cold store to store fresh produce? Perhaps this could be done with a new-style cooperative.

- If more farmers grow fruit and vegetables, where will they find a good market? Will farmers be permitted to sell at the new border market near Chau Doc?
- When will the commune have a connection to the internet?