The University Of Sheffield.

Occupational Health of Thai Older Farmers

By:

MR. Weerachart Kaewanan

A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy

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Faculty of Medicine, Dentistry and Health

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Abstract

The number of older people is increasing worldwide – within both the general and the farming population. Thailand is also becoming an ageing society, and with limited welfare support older people are increasingly required to rely on themselves. This study focuses on how Thai older farmers who are still working experience their lives and how they manage to 'balance' the multiple demands that they face.

The study employed a design drawing on the principles of Constructivist Grounded Theory and the findings based on in-depth semi-structured interviews with 27 Thai older farmers and in some instances their family members. Theoretical sampling was applied to find potential participants and two phases of data collection were implemented to ensure that sufficient data were gathered for theoretical saturation.

Comprehensive data analysis revealed the range of challenges that farmers face as they age and also highlighted the changes that they have experienced throughout their working lives. The substantive theory that emerged comprised of three main elements and charts how farmers have adapted to their lives over time and continue to do so. The theory captures the temporal nature of changes the farmers faced utilising the basic social processes of **becoming** and **being.** The core category of **balancing**, which lies at the heart of the theory, serves to bring the other elements together into a cohesive whole**.** Taken together these three elements capture the dynamic and continually changing nature of the farmers' lives and how their experiences have been shaped by a wide range of local, national and global influences.

The theory produced in this study is subsequently related to the wider literature on older farmers in other countries and areas of commonality are identified. Attention is then turned to broader theories of ageing and comparisons made between the core category of 'balancing' and similar processes described in the international literature. Implications for the future support of older farmers in Thailand are presented and the contribution the study makes to a wider understanding of the shared process of ageing in differing contexts is considered.

Acknowledgement

This thesis would not have been possible without support from many people involved in my research throughout my study. First and foremost, my supervisory team, Professor Mike Nolan and Professor Mark Hayter, who have guided me through my long and exciting PhD journey, from the first step when I had no idea of what qualitative research was until my thesis was fully complete.

Secondly, during my field research assistance from health professionals and village leaders in the research settings who led me to discover valuable participants was appreciated. Without their support I would have struggled to deal with that issue, especially when my original plan could not be carried out. All of my participants who wholeheartedly joined my research project and shared their personal and relevant experiences with me require acknowledgment and thanks. They had the good will to help my research in order to be of benefit for other people.

Mental support was also very meaningful for me, particularly when I felt uninspired, lonely or homesick. I was encouraged and stimulated to work further by my family during our regular contact.

I acknowledge and appreciate all help and support I have received and would like to thank everyone who helped make my dream come true.

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Chapter 1

Overview

1.1 Introduction

This chapter provides a brief rationale outlining my reasons for conducting the study upon which this thesis is based. It starts by introducing myself, including my professional background, interests, career development, source of funding and their influence on my decision to undertake the research that lies at the heart of the study. I will therefore briefly discuss my personal background and how my experiences influenced my interest in the health and lives of older people generally, and the health and other issues facing older farmers in particular. It is hoped that providing this information will enable the reader to begin to appreciate my potential role and the influence that this exerted on the subsequent study. This is an important aspect of 'reflexivity', a topic that will be explored at various points in the thesis.

The second part of the chapter provides a brief synopsis and overview of each chapter by way of an introduction to the structure and content of the thesis.

1.2 The researcher's background

I graduated from Khonkaen University, Thailand with a bachelor's degree in pharmaceutical science. Following this, I worked in Sinrindhorn College of Public Health for 7 years as a lecturer and researcher. The diploma of pharmacy technique was my main course, but I also taught on other programmes, including the diploma of dental nursing and the diploma in Thai traditional medicine.

During this period I undertook a Masters Degree in Public Health in order to expand my knowledge and one of the key requirements of the programme was the completion of a thesis. As I sought to find a topic I began to look at a range of literature amongst which was the demography of Thailand and I was struck by the recent growth in the older population and the potential economic consequences of this, especially the health and social care costs. There was relatively little interest in older people in Thailand at that time and I decided to make them the focus for my thesis, with an

emphasis on health promotion. To do so I adopted Pender's principle to measure health promotion levels among Thai older people (Kaewanan, et al., 2009). After completing this small piece of work my interest in the subject of health and older people grew. When I secured funding for a doctoral study in occupational health this provided me with a chance to undertake further research on older people and workplace safety. However, the question then became which type of occupation should I select to study? To resolve this I again looked at the existing literature on occupation amongst the older population and found that agricultural work remains one of the main types of employment for older Thai people. Importantly whilst there are many older people working in the agricultural sector information about their lives and health was very limited and this seemed to offer a promising subject for my Doctorate. In addition to this professional interest I also came to the study with personal experiences that helped to inform my decision.

1.3 personal reflections on my experiences of ageing and farming

Whilst an initial consideration suggested that the literature on the lives of older framers in Thailand was very limited I did have some insights on my own, albeit gained many years ago from my childhood as a number of my relatives had been farmers. Even though my parents were not farmers themselves they often helped other family members especially at harvest time when the rice was ready to be collected. During this period they often helped relatives for several days and took me with them. Whilst I took no part in the actual harvest itself I remember thinking how hard it looked and the considerable effort that my parents expended to help relatives left a considerable impression on me. This was rekindled by my need to find a topic for my doctorate that would both be of interest to me and also have the potential to provide new knowledge that might inform future health related initiatives.

My personal experiences of ageing and how this might be experienced came from two sources: my own family and my studies. Once again these overlapped with and reinforced the focus on farming. The family influence was a subtle but important one. My father, who had been a primary school teacher, started a small farm after his retirement growing fruits and vegetables such as tamarinds and garlic. His motivation

was not to make money but to remain active and in so doing also produce something that would be useful, not just for the family but also to relatives and neighbours. Whilst not immediately aware of it, this may well have raised questions in my mind about motivations and reasons for choosing to remain active after retirement.

As already described above my interest in ageing, farming and health emerged from my Masters study but on reflection had probably been shown earlier in my academic career. As part of my bachelor degree in pharmaceutical science, I learned about the nature of ageing primarily in terms of the decline of physical functions and an increase in chronic diseases. Such people needed more medication and were also likely to have more side effects as a consequence. This stereotype was reinforced by my contact with older people when on hospital placement. Later, when qualified, I dealt with many, often frail, older people. I was therefore somewhat surprised when the literature I consulted for my Masters' degree indicated the large numbers of older people who continued to work, especially in such a physically demanding, and risky, occupation as farming. This stimulated my curiosity as to why people would do this and how they managed their health and treatments with the demands that they faced. The above exerted an undoubted influence of the subject of my doctoral thesis, the funding for which is described below. As will be clear this also exerted an influence on the direction of my study.

1.4 The source of funding for my Doctoral study

My college is part of the Praboromarajchanok Institute, Ministry of Public Health. Recently, it has been upgrading many of its programmes to Bachelor Degrees - including a Bachelor of Public Health which is a collaborative programme between the college and Burapha University.

The educational system in Thailand has quality assurance systems to maintain its standards and one of the important indicators are the qualifications held by educational personnel. For higher educational institutes, the standard is based upon the percentage of staff with doctoral degrees per a number of bachelor degree students. Praboromarajchanok Institute, as the head office, established a policy to

increase the number of lecturers with doctoral degrees in related fields. It then offered funding opportunities for staff to study PhD programmes both in Thailand and aboard. I applied for funding to complete a doctorate in the area of occupational health and was successful. Therefor the broad focus on occupational health was as a result of the funding for the degree but the particular topic arose out of the combination of factors described above. Having considered factors influencing the origins of the study described in this thesis the following sections provide a brief outline of the structure and content.

1.5 Overview of the structure and content of the thesis

Chapter 2 Background

This chapter provides the background and context to the study. It begins with a consideration of worldwide demographic trends before moving on to the situation in Asia generally and Thailand specifically In order to place elderly farmers in context the first section concerns demographic data worldwide, in Asia and in Thailand. This explores the growth trends in the numbers of older people within societies. The next section provides background information on farming, Thai farmers, their situation, and the occupational risks they face such as diseases, accidents and injuries, and pesticide toxicities. Finally the chapter provides information related to the support of older people in Thailand such as health care, mutual support for older people, the working situation of older people, Government support for older people and Government support for farmers.

Chapter 3 literature review

This chapter sets out the literature review for the study. It describes the systematic methods used to search the literature and presents the empirical and non-empirical work related to farming and older people. After the search process is described in detail the literature retrieved is appraised and themed. The chapter then presents these themes and highlights their influence of the sensitizing concepts and foreshadowed questions that provided initial direction for the study. As the study was informed by the principles of constructivist grounded theory and the role of the literature in grounded theory is contested this section also contains a reflexive account on the role that the literature played in the study.

Chapter 4 Methodology

This chapter presents the methodology underpinning the study. Choosing the appropriate approach to address the aims of the study is an essential step and a number of methodologies from both quantitative and qualitative designs were considered. The decision to select a qualitative design is justified and the key aspects of qualitative research, such as sampling, data collection and data analysis are described. The decision to undertake a study informed by constructivist grounded theory is explored and the features of grounded methods are described and discussed. Ethical principles in qualitative research are explored and the principles used to inform this study presented. Finally, the matter of rigor, trustworthiness and reflexivity in constructivist grounded theory are presented and discussed.

Chapter 5 Method

This chapter describes how the methodology outlined in chapter 4 was employed in the field. It considers the practical application of the research study in Thailand including the obstacles encountered and the measures taken to address these. This chapter starts by describing how participants were identified and how they were sampled. The approaches to data collection are then set out and the processes used to collect and analyse the data are considered, with examples being provided.

Chapter 6 Findings

This chapter presents the findings of the study and presents the theory that derived from the processes that have shaped and continue to shape the experiences of older Thai farmers as they live their lives today. This experience is presented as comprising three major elements; 'Becoming'; 'Being'; and 'Balancing'. The first two, becoming and being, represent, firstly in 'becoming', periods of transition for the participants and, in 'being', longer periods of living life as a farmer in Thailand. During both 'becoming' and 'being' participants engaged in a subtle process of 'balancing' by which they sought to address the challenges that they faced throughout their lives as farmers. Thus 'balancing' represents the 'core category' of the theory that links each aspect to the other.

Chapter 7 Discussion

The discussion chapter begins with a consideration of whether the study can be considered to have met the quality criteria set for the research, including an overall reflexive element. The extent to which the study met its original aims and a comparison of the results with the literature on farming amongst older people is considered. The theory that emerged is then compared with wider theories on the process of ageing from the international literature and similarities identified and discussed.

Chapter 8 Conclusion

The final chapter provides suggestions of how the results from this study could be used by stakeholders such as health professionals and policy makers to help future initiatives intended to support older Thai farmers. The strengths and limitations of the study are also considered.

Chapter 2

Background

2.1 Introduction

The aim of this chapter is to help readers to understand the context for the study and highlight the significance of the research. It will explore the demographic changes currently affecting countries all over the world, including Thailand. As specific data on Thai older farmers is very limited, information regarding Thai older people and Thai farmers generally will be presented. This will help to illustrate the conditions that Thai older farmers, as a sub-group, face. After a consideration of demographic trends attention is turned to services for older people in Thailand and the reasons why many Thai older people decide to work longer, rather than retiring. Although the focus of the study is on Thai older farmers because no projects have been designed to specifically help this group, those projects developed by the Thai government to support Thai farmers generally, as well as Thai older people will be described. Thai older farmers may access such schemes.

Definitions of 'older people' differ by country and reflect local contexts and legislative frameworks. For example, the US defines older people as 65 years old or over, while in Thailand, it is 60 years old or over. As the proposed research is set in Thailand, the definition of older people used in this thesis will be 60 years old or older. However, when citing data and literature from different countries the definition relating to the original source will be used.

2.2 Demographic data on older people world-wide, in Asia and in Thailand

The number of older people is growing globally (Bloom, et al., 2011; Waite, 2004). This phenomenon reflects changing demographic trends which impact on economics, health, social welfare and politics all over the world. However, the extent of ageing varies by region and country dependent largely on three variables: increasing longevity, declining fertility and the ageing of the "baby boomer" generation. Increasing longevity and declining fertility are factors that have influenced ageing in most countries and have significantly increased the percentage of older people. The impact of 'Baby boomers' has been more specific. These are a generation of people, largely in western societies, that were born after the Second World War. They too are

becoming older but the extent varies. Overall, developed countries have in the past aged more than developing countries and over a longer period of time (Bloom, et al., 2011). Thus, the accumulated number of older people in developed countries is generally higher than that in developing countries, but the current pace of change is now faster in developing countries. This means that developing countries have less time to prepare for the challenges that an ageing population poses.

The number of older people (over 60 years old) is predicted by the UN population division to rise from just below 800 million people (11%) currently to over 2 billion people in 2050 (22% of the world population). When comparing the rate of increase between the world's population as a whole and older people specifically, between 1950 and 2050, the former will increase around 3.7 times, while the latter is predicted rise 10 fold. Amongst differing groups of older people, it is anticipated that those aged 80 years old or over will have the highest growth rate, being expected to grow 26 fold between 1950 and 2050 (Bloom, et al., 2011). The situation in Asia reflects this phenomenon but with variations in the numbers of elderly people among different Asian countries.

2.3 Older people in Asia

When considering demographic changes in Asia, the numbers of older people are increasing in line with global trends. It is anticipated that the number of older people will rise from 207 million people in 2000 to 857 million people in 2050 or around 314 percent. When comparing demographic data between 2000 and 2050, the average age of Asian people will increase from 29 years to 40 years. Although the proportion of Asian people in the working-age group will remain the same between these two periods of time, the proportion of Asian older people will rise sharply from 6 percent to 18 percent. In contrast, the proportion of young Asian people (15 years old or lower) will reduce from 30 percent to 19 percent. Japan is the Asian country with the highest number of older people in the world, which is currently 17 percent and is growing rapidly. Bangladesh, an Asian developing country, has the lowest number of older people in Asia, with only 3 percent aged 60+ in 2000. However, the population of older people in Bangladesh, as well as other countries in Asia, is anticipated to increase to 5 percent by 2025 and to 11 percent by 2050 (Jaijagcome, et al., undated).

2.4 Older people in Thailand

In Thailand, although the overall demographic changes are similar to global and Asian trends, the growth rates of older people among differing regions of Thailand vary. In 2010, the central region of Thailand had the highest percentage of older people, at 16.13%. The second highest percentage of 13.17% was in the northern region, the area in which the research comprising this thesis was undertaken. However, because of its larger area and higher population, the northern part of Thailand has a greater number of older people than the central region. The region that has the lowest percentage of older people, at 9.97%, is the southern part of Thailand.

Figure 1 below illustrates the regions in Thailand, following the administrative boundaries set by of the Thai government. It will be seen that the northeast region of Thailand has both the largest area and population, with the north region being the second largest part of Thailand.

(World of maps.net, Undated)

Despite these regional variations according to data collected by of the College of Population Studies, Chulalongkorn University, Thailand is now experiencing a continuously increasing ageing population in both quantity and proportion (Jungwatana, 1999).

The numbers of Thai older people (60 years old or over) have been growing consistently, but relatively slowly, from 1995 to 2010 as the table 1 below shows (Jungwatana, 1999).

Table 1 shows the number and percentages of Thai older people from 1995 to 2010

Year	A number of older people			Percentage of older people		
	Overall	Male	Female	Overall	Male	Female
1995	4,816,000	2,228,000	2,588,000	8.11	7.51	8.71
2000	5,733,000	2,637,000	3,096,000	9.19	8.48	9.89
2005	6,617,000	3,022,000	3,595,000	10.17	9.34	11.01
2010	7,639,000	3,477,000	4,162,000	11.36	10.40	12.31

In the next 20 years it is predicted that growth of the older population will be more rapid with the proportion of older people reaching 25%. In addition, the differences in the proportion of older people and people of working age (15-59 years old) will rise from 32.4% in 2010 to a predicted 38.6% in 2030. In 2010, the ratio between older people and working age people was 1:10, in 2030, it will be 1:4. Therefore the population of working age will have to support more older, and often dependent, people (Puvapanit, et al., 2010).The need to support this growing number of frail older people is therefore a significant issue for health and social services.

2.5 Older people in Thailand: social issues

2.5.1 Health care services in Thailand

Before 2001, health care in Thailand was organised under 'the Public Welfare Scheme (for the poor and elderly people (60 years old or over) and children under 12 years

old)' (Teerawattananon and Tangcharoensathien, 2004:i32) which provided free health care for these groups. Since 2001, Thailand has implemented Universal Coverage funded by the government, which covers every person who has no other health service benefits, such as Social Security Benefits for workers in formal sectors (all of whom are younger than 60 years old) or the Civil Servant Medical Benefits for current and retired government employees, and their families. The new health care project has replaced the two major former health service schemes, the Public Welfare Scheme and the Voluntary Health Card Scheme (Teerawattananon and Tangcharoensathien, 2004). The scheme provides healthcare services which are free of charge for people who register at primary healthcare units. However the project does not cover some high cost treatments, such as haemodialysis.

The other substantial feature of the current health care system is the separation of the health care purchaser, The National Health security office, from the health care providers, including the Ministry of Public Health and some private health services, such as private hospitals or private clinics. The National Health security office pays for health care services, according to the benefit packages designed by its committees and the number of registered people in each hospital or health care institutes, while health care institutes of various types and sizes under the supervision of the Ministry of Public Health provide free health care services to the population who register with them. Therefore, Thai older people can still access the same health care services, although the health care policy has altered. For such people, including older farmers, the current scheme removes the financial burden of paying for health care and allows them to access services without them having to worry about paying for the services.

However, elderly people, who are retired government employees, and their families are entitled to health care benefits from another scheme, 'the Civil Servant Medical Benefit Scheme' (Teerawattananon and Tangcharoensathien, 2004; Thammatach-aree, 2011). This scheme offers better benefits than the Universal Coverage scheme as those people covered by the scheme can choose services from the health care provider that they prefer. Older people not covered by this scheme and who can afford to buy private health insurance pay per service using their own resources. Private health care

services are generally more convenient, more flexible, but are much more expensive than the government health care services. Moreover, there is no long waiting list in private hospitals, unlike governmental hospitals. Most Thai farmers cannot afford to access private health care services and therefore rely on state provision.

In order to control the cost of the Universal Coverage scheme, primary health care has been prioritized, with primary health care units being the main health care providers for the registered population in each designated area (Towse, Mills and Tangcharoensathien, 2004). Patients with severe conditions, which primary health care services cannot cope with, are transferred to secondary and tertiary hospitals accordingly.

As a result health care services in Thailand are operated by either the governmental or non-governmental organizations. Each organization has diverse goals, from self-help programmes, non-profit social support to profit-driven business. The current health care system for older people available in Thailand can be sumarised as follows (Jitapankul, et al., 2001):

Health care services for all Thai older people

1. Older people clinics in hospitals

   These specialized clinics are generally located in large government hospitals rather than more local community hospitals. Normally, older people will initially receive primary health care services from general practitioners (GPs). When the GP thinks an older person needs more specialist services they will be transferred to those clinics which specifically care for older patients.

2. Health service in hospitals

   Most hospital services provide acute treatment, while units providing rehabilitation are limited.

Health care services available for some older people

1. Private sector health services for older people

These are set up mainly as businesses for profit, although some organizations offer non-profit services. These services are located in some private hospitals to provide services specifically for older people with sub-acute health problems or social problems of a longer term nature. There are also mobile services visiting older people at their homes providing doctors or nurses to meet their needs.

2. Private carers for older people

There are private carers who are trained to look after older people in their own homes, and organizations to train such carers have been established. However, there is no quality assurance for such services and they are only available for those older people with a good income who can afford to pay for them. Most older farmers cannot afford services requiring extra payment and their families are expected to provide any care they need.

Health care services specific to particular geographical areas

1. Health centres and rehabilitation projects for older people

These projects are supervised by Bangkok Metropolitan Administration and are mainly for people living in Bangkok.

2. Health services run by non-government organizations (NGOs)

These services are temporary, scattered and specific to defined areas. Each service sets its own objectives. For example, mobile medical units organized by the NGOs provide free medical services in some areas such as screening tests for certain diseases, such as avian flu.

Most Thai farmers are generally poor. They cannot afford any special health care services which require extra payment. Therefore, the services which they normally access are health services in hospitals, older people clinics in hospitals and health services provided by non-government organizations. There are no specific occupational health services for farmers. The services organized by some government departments, following labour legislation, are aimed at formal workers in industrial

factories. Thai farmers generally only access health services for treatment when they are ill or injured rather than services that aim to promote health or to prevent disease.

2.5.2 Pension systems in Thailand

The pension system is one of the fundamental services that the government has established to support Thai people when they retire from their work. The government has tried to expand the pension system to include all people, but this has proved challenging as there are a variety of pension systems currently operating for different types of workers with different benefits offered.

According to The Office of Saving and Investment Policy, the Ministry of Finance (Jantaramart and Viriyanupong, undated), the pension systems in Thailand can be separated into 3 groups.

1. **Basic welfare**

   The budget used to finance this comes entirely from the government without participatory saving. Welfare in this category provides monthly earnings only for retired government officials who started their jobs before 1997.

2. **Compulsory pension systems**

   This scheme is designed for workers in formal sectors. It is administrated by the Social Security Fund which is an organisation providing various services for formal workers during, and after, their employment. There are 3 sources of funding for this pension system: employers, employees and the government. Workers who pay into this fund for at least 180 months or 15 years will be eligible to receive pensions for the rest of their lives after their retirement.

   Additionally, it is compulsory for government officials who started work after March, 27, 1997 to join a new pension system called ‘Governmental pension fund’. This system is funded by contributions from government officials and the government as their employer.

The third pension scheme in this group is ‘Saving fund for private teachers and educational officers’, which is again specifically for these groups and is funded by employees and the government.

3. Voluntary pension systems

These systems are designed for workers who want to save more money for their retirement and are in addition to the two systems described above. There are 4 types of scheme in this group.

The first one is the ‘provident fund’ aimed at providing a retirement income for the general population. It is managed by private companies and funded by two sources: employers and employees. The second scheme is ‘Retirement mutual fund’ designed to support saving and long-term investment for retirement. Money can be accessed after members are older than 55 years old and have invested for more than 5 years. The third scheme is ‘Social security fund for informal workers’, funded by both workers and the government. Members can only access money when they are 60 years old. The final scheme is the ‘National saving fund’ aimed at informal workers who are defined by the Office of Social Security as ‘People who have jobs and earnings, but no employer. They are not covered by the Law of Social Security’ (Sompumb, 2015). This type of fund is currently being modified by The Ministry of Finance as it is seen as ineffective.

These schemes are complex and face several challenges. Due to the numbers of older people increasing whilst numbers of young workers are falling, the government is required to spend a large proportion of its budget on pensions, without raising taxes. Furthermore, apart from government officials who are eligible for two pension systems, other formal and informal workers risk having insufficient income after their retirement. Informal workers are especially at risk of poverty, as few have joined the saving systems and will have to rely on their own means to support themselves after their retirement.

Recognising these difficulties the government has tried to introduce various support schemes.

2.5.3 Projects to support older people financially

Because the number of older people has been increasing consistently the existing social security system, including pensions, is not adequate. Some older people have to work despite the fact that their physical health is poor. With its limited resources the government has tried to help them but as noted above elderly people still largely rely on themselves and their families. But there have been some specific projects that may assist them.

For example the 'Money to earn older people's living' project, administered by the Department of Public Welfare, was started in 1991. The purpose of this project at the outset was to financially support older people (over than 60 years old) who had not enough income, but who had been ignored by their families or were unable to take care of themselves. Later, this responsibility was transferred to local administrative organizations all over the country.

Since 2006, the government has amended this policy by providing financial support to every older person without reference to their financial status. The amount of money paid has increased from 300 baht to 500 baht (around £6-£10) per month. In 2007, 1.75 million older people had registered for this scheme, rising enormously from the initial 20,000 older people registered. By 2010 the number of older people who are entitled to support was 6.8 million and the government has to pay 41,216 million baht (approximately £825 million) for the project in 2010 (Singhakarn, Undated).

As the number of Thai older people registering for the above scheme continues to rise the government is trying to find alternative means to financially support Thai elderly people. The establishment of a national saving fund is proposed, which can support Thai older people in the next 20-30 years (Singhakarn, Undated).

Despite the above provision many older people support each other.

2.5.4 Mutual support for older people in Thailand

There is no universal social support service provided by the government or any other organization that is available to all older people. The government only provides social care for a very limited number of older people who have no family, cannot help themselves or have mental disability. Therefore for most Thai older people the family is the main and only source of support.

However, in some cases older people develop self-help groups to support each other at clubs or in groups with varied names. These clubs are run independently, under the network of the senior citizen councils of Thailand, and are supported by the Ministry of Public Health, or other organizations, for example, the Faculty of Nursing or Borommaratchonnani Nursing Colleges. The clubs provide a range of activities such as: 1) Health promotion activities 2) Leisure activities 3) Cultural activities 4) Sports and exercises for health and 5) Charitable activities. These older peoples' clubs are not part of the formal health care system, but they can be used to access healthcare services by elderly people. Usually older people's clubs vary by sub-district. Where such clubs exist every older person is eligible to apply to be a member including older farmers.

2.6 The role of older people in Thailand

Generally older Thai people believe that they are still have something of value to offer to society based on their accumulated experience gained over a life time and therefore seek to maintain a role for themselves. For example, many act as mentors to younger people and provide advice on topics such as: work or business; family affairs or life styles; education and finances. Older people also provide moral support to their family and community and often participate in many traditional, cultural ceremonies and festivals in their neighbourhood, especially those involving religion, such as a marriage or monkhood (Jitapankul, et al., 2001). The establishment of older peoples' clubs was intended to promote and sustain such roles. Clubs elect their own chairman and members of the Executive Board, and people give donations to fund activities such as visiting elderly people who are ill and making offerings to monks. More generally older peoples' clubs provide a place to meet, have celebratory parties and exchange information, as well as being a centre for older peoples' welfare, leisure, sport or exercise, religious and cultural activities. They also aim to support older people who

have problems and organize activities that preserve precious Thai traditions and cultures (Chardsumon, 2003). Chardsumon (2003) argues that via such clubs older people can preserve their roles and status in their community.

However, because of shortfalls in the pensions system many older people continue working and it is to this group that attention is now turned.

2.7 The working situation of older people in Thailand

In Thailand, the age of retirement in Thai law is 60 years old as historically older people did not live much beyond this age. However, as noted, life expectancy is increasing and the length of time that older people spend in retirement is now longer than in the past. This means that they often face living on a reduced income and in order to improve their economic situation, older people may need to continue to work (Jitapankul, et al., 2001). This is often the case for farmers. Nearly all farmers in Thailand, as well as those in other countries, such as the US or the UK, are self-employed workers and despite support from a variety of schemes face challenges in retirement.

As noted above the Thai government has recognised these challenges and has begun to implement support schemes for older people, including farmers.

2.8 The working situation of Thai farmers

Apart from Bangkok, the capital and centre of industry and business, agriculture is the main occupation that most Thai people rely on for their living (Plianbangchang, et al., 2009). But farmers in Thailand still experience poverty as of the approximately 12 million poor Thai people, around 9 million are farmers. Their financial problems originate from poor productivity and uncontrolled prices for their agriculture products which are usually lower than the cost of production. These variables often result in massive debts. Many farmers lose their lands and migrate to work in other areas or change their jobs (Chumsri, 2010). With the low levels of education among older farmers, it is difficult for them to find other good job opportunities.

A study conducted by Chardsumon (2003) to explore the work of Thai older people found that Thai older people generally have low levels of education, usually primary education or lower. As a result, most older people work in the agricultural sector.

Many older farmers lack any reserves and have accumulated debts. Consequently most older farmers have been unable to save money for their retirement and have poor financial security. (Chardsumon, 2003). As a result many older farmers have to continue working, despite a deterioration in their physical health and they are more vulnerable to accidents and injuries than their younger counterparts. Not surprisingly families play an important role in farmers' lives often as co-workers who provide help when needed. For example, when farmers are ill and cannot work, usually their families not only take care of them until they recover but also undertake most of the work on the farm.

2.9 Common hazards in agriculture

Some diseases are found more frequently in farmers than the general population and workers in other jobs. They are often caused by virulent infectious agents or substances used in farming. These risks can be seen as biological hazards. The major one is leptospirosis. However injuries and accidents have a more significant impact.

2.9.1 Accidents and injuries in farming

The definition of an accident is 'any unpremeditated event leading to injury either on the farm (yard or field), or on the roadway involving farm machinery' (Doyle, 1989:128). Lee, et al. (2011:77) defined 'an agricultural injury' as 'physical damage that results from working on growing crops or raising livestock and other directly associated activities'. Such things are not uncommon amongst farmers.

All farming work involves physical activities, such as controlling farming machinery and animals, or transporting produce. Consequently the possible risks of farming accidents are high compared with other industrial occupations. As a result, farming accidents can cause both non-fatal and fatal injuries, and longer term poor health among farmers (Health and Safety Executive, 2010). Amongst the risk factors for accidents in farming, age is significant indicator. Other factors include the nature of farming tasks and how safety conscious farmers are themselves. In order to lessen the risk of accidents measures designed at prevention, education and training for farmers (Solomon, 2002) have been developed but as yet do not exist in Thailand.

Specific information about injuries among older farmers in Thailand is not available, and so general accident statistics for older working people are presented to provide some indication of the situation.

The report on 'Working of Thai Older People in 2010', conducted by The National Statistical Office of Thailand (2010) provides information concerning the characteristics of accidents, injuries and other problems experienced by all older workers. According to the report 3.1 million (38.8%) of 8.0 million Thai older people still work of which 90.3% worked in informal sectors. That means they do not have any protection or benefits under current labour laws. The significant data from the report are illustrated in tables 2 and 3.

Table 2: The percentages of Thai older people who have experienced accidents, injuries and treatment, following the report from The National Statistical Office of Thailand in 2010.

Accidents, injuries and treatment	**Formal sectors (Percent)**	**Informal sectors (Percent)**
1. Older workers in the agriculture or fishery sector	13.2	64.0
2. Older workers who had injuries or accidents	9.8	14.3
3. Older workers who had been wounded by sharp objects	64.3	60.1
4. Older workers who had minor injuries and no need for treatment	60.7	68.8
5. Older workers who had treatment by themselves with medicines from drug	19.7	19.4

stores		
6. Older workers who had treatment in hospitals for not over than 3 days	14.9	8.6
7. Older workers who had treatment in hospitals for over than 3 days	4.8	2.8
8. older people who had injuries or accidents that needed treatment in hospitals, because of losing some part of a body	0.3	

Table 3: The percentages of safety problems that older workers have experienced, following the report from The National Statistical Office of Thailand in 2010.

Safety problem	Formal sectors (Percent)	Informal sectors (Percent)
1. Low wages	51.5	52.3
2. Danger from machinery	41.1	18.8
3. Chemical toxicities	26.2	70.7
4. low body movement	34.6	33.0

The other risks that Thai farmers may face are injures from the general physical demands of their work. Taechasubamorn, et al. (2011) remarked that among Thai farmers, low back pain was common, and when compared with general Thai people, Thai farmers had a higher 12-month prevalence rate of low back pain. When compared with the rate in other countries, Thai farmers had rates of low back pains higher than found in developed countries. The researchers explained that this

phenomenon might be caused by 'poorer economic conditions and lower level of education' (p.619) as well as the type of agricultural tools and equipment utilized on their farms which require more physical effort than those available in developed countries.

In Thailand, both male and female farmers work together, particularly on family farms. Female farmers have higher levels of low back pain than male farmers. However amongst both groups most farmers continued to work as they cannot afford to stop, thereby potentially exacerbating their situation.

As well as injuries and accidents a particular risk in farming comes from pesticide use.

2.9.2 The challenges posed by pesticide usage

In Phitsanulok, Thailand, where the present study was conducted, many farmers utilize both chemical and biological pesticides to control pests including highly toxic products that have been banned in Thailand since 2004. In an attempt to promote their products and to attract the attention of farmers, companies use the media and well-known personalities, such as movie stars and sporting celebrities who have little knowledge of pesticides but whose fame means that many farmers may listen to them. Sponsoring public events in communities or villages is another tactic used to ensure that farmers remember the brand names of pesticides.

In addition to continuing to use toxic products, self protection practiced by farmers while working with pesticides is often not appropriate. With little understanding of the main route of pesticide absorption, most of the farmers only protect their mouths and noses without recognizing that the skin is the major organ exposed to pesticides (Plianbangchang, et al., 2009).

The above financial and work related difficulties can also lead mental health problems among older Thai farmers. As there are many uncontrolled factors involved in agriculture such as flooding and drought, farmers in general and older farmers in particular are vulnerable to stress, anxiety or depression.

In recognising these difficulties the Thai government has introduced some measures to try and support farmers.

2.10 Schemes to support all farmers in Thailand

The 'produce price assurance' project for Thai farmers is aimed at protecting farmers' income. Under this project farmers obtain compensation when the prices of particular produce in the market falls below that set by the government. If the prices of particular produce is above those set by the government, farmers can sell their produce in the market without any compensation. When prices are low the compensation to which the farmers are eligible equals the difference between the price set by the government and the price in the markets. This project protects farmers from uncontrollable variations in produce prices. This scheme allows every Thai farmer to participate but the criteria set by the government can change every year (Thailand Development Research Institute, 2011).

The government also has a scheme to support poor Thai people, including poor farmers, who: have personal debts with government banks, which do not exceed 500,000 baht (approximately £ 10,000), with no history of late payments or deliberately failing to pay. This project does not aim to write-off their debts, but to allow them to pause paying their debts for a period of time. This provides a chance for poor people who join this project to use their money in other ways such as paying their other debts not covered by this scheme. Participants in the scheme may either: suspend the principle of their loans and the deposit of 3 percent, or pay the principle of their debts with the deposit reduction of 3 percent. This project is financially supported by 4 banks controlled by the government (The working group of financial information, the ministry of finance, 2012).

While such schemes can help older farmers with their finances, they cannot cover all of their costs. Older farmers therefore still need their jobs to provide a source of income, and the challenges their work presents increase as they age.

2.11 Summary

The aim of this chapter has been to highlight a range of current issues facing older people in general and Thai older farmers in particular in order to set the context for the study on which the thesis is based.

The increase in both the number and proportion of older people is apparent both globally and nationally. The number of older people in Thailand is growing consistently and due to limitations in the pensions available to them many poor older people still need to work to support themselves. The main jobs available are in agriculture and as existing Thai labour laws do not provide protection for such workers they have to rely entirely on their farming activities. Farming, especially as people age poses a number of significant challenges such as accidents, injuries and the risk of poor health from excessive pesticide usage. Older Thai farmers are therefore at risk of both poverty and threats to their health. If they are to receive better support more information about how they experience their life is needed. That is the primary aim of the research described in this thesis. Having set the overall context in this chapter the next one explored the limited literature that is currently available in order to highlight both the need for the study and the broad questions to be addressed.

Chapter 3

Literature Review

3.1 Introduction

This chapter briefly outlines and summarizes the research literature and grey literature in relation to both farming generally and older people working as farmers in order to highlight what is already known and what new insights a study might provide. The role of the literature in qualitative studies, and especially those adopting a grounded theory approach has been, and remains, contested. In their early writings Glaser and Strauss (1966) were clear that no literature should be consulted until after data collection and analysis had been completed in order to ensure that any resultant theory was grounded only in the data. As grounded theory evolved (see methodology chapter) differing versions emerged and attitudes towards the use of the literature changed also. Glaser largely maintained his initial stance whilst others began to argue that some knowledge of the literature was required prior to the study starting. In summarizing these positions Jones and Alony (2011) suggested that Glaser believes that researchers should enter the field of study with an 'empty mind' whereas authors such as Strauss and Corbin argue that a preliminary literature review is required to discover what is already known about a given topic. As will be explained in the next chapter this study adopted a grounded theory approach based on the constructivist model of Charmaz (2006, 2014). She argues that an understanding of the existing literature, together with other forms of knowledge, including the presuppositions of the researcher, help to identify the broad 'sensitising concepts' and subsequent 'foreshadowed questions' that guide the initial direction of the study. Whilst these questions may change as data collection and analysis are undertaken (as was the case in this study: see next chapter) this early acknowledgment of sources that influence the study from the outset is important. It was Charmaz's (2006, 2014) arguments that were adopted in my study.

The chapter begins by describing the search methodology and outlines how the literature was critically appraised. It then describes how the results of the review were organized into themes to allow it to be presented in a logical and organized manner.

Following this the final section presents the sensitizing concepts and foreshadowed questions that initially guided the study. As will be apparent, there was very little literature relating to older Thai farmers and therefore the wider international literature on farming in general and farming amongst older people has been drawn upon. The initial focus of the study was on health and related issues potentially effecting older Thai farmers and this is where the search was focused. As will be explained more fully in later chapters as the study began the focus broadened to explore the lives and experiences of older Thai farmers more generally.

3.2 The search strategy

A search of the following databases was conducted;

- Medline
- CINAHL
- Cochrane Library
- Web of knowledge
- Google scholar

In order to search for relevant literature, the following key words were used;

- 'older' or 'elderly'
- 'occupational health' or 'safety'
- 'farmer', 'farm worker', farming' or 'agriculture'
- 'accidents'
- 'hazards'
- 'mental health'

These search terms were combined using these key words with alternative Boolean logic, such as 'and', 'or', 'not', to narrow down the number references before evaluating each article in detail and deciding whether it should be included in the search. In addition the references in the selected articles were included, as was the 'grey literature'- produced for example by government departments or any other non-government organization, such as business, academic institutes or non-profit organizations. The inclusion criteria for the search were;

- Occupational hazards faced by farmers of all ages and their consequences for them and their family, such as injury or pesticide,
- Research concerning farmers of all ages, especially their experiences of their occupation or their perceptions of safety management,
- Guidelines or projects intend to improve farmers' working conditions or protect farmers,
- Formal reports published by organizations that aim to improve or develop farmers' occupational health
- Research regarding elderly people and older farmers' physical or psychological health, especially that relating to the impact of their agricultural work,
- Research on older people and older farmers in Thailand and other Asian countries.
- No date parameters were set

The exclusion criteria were;

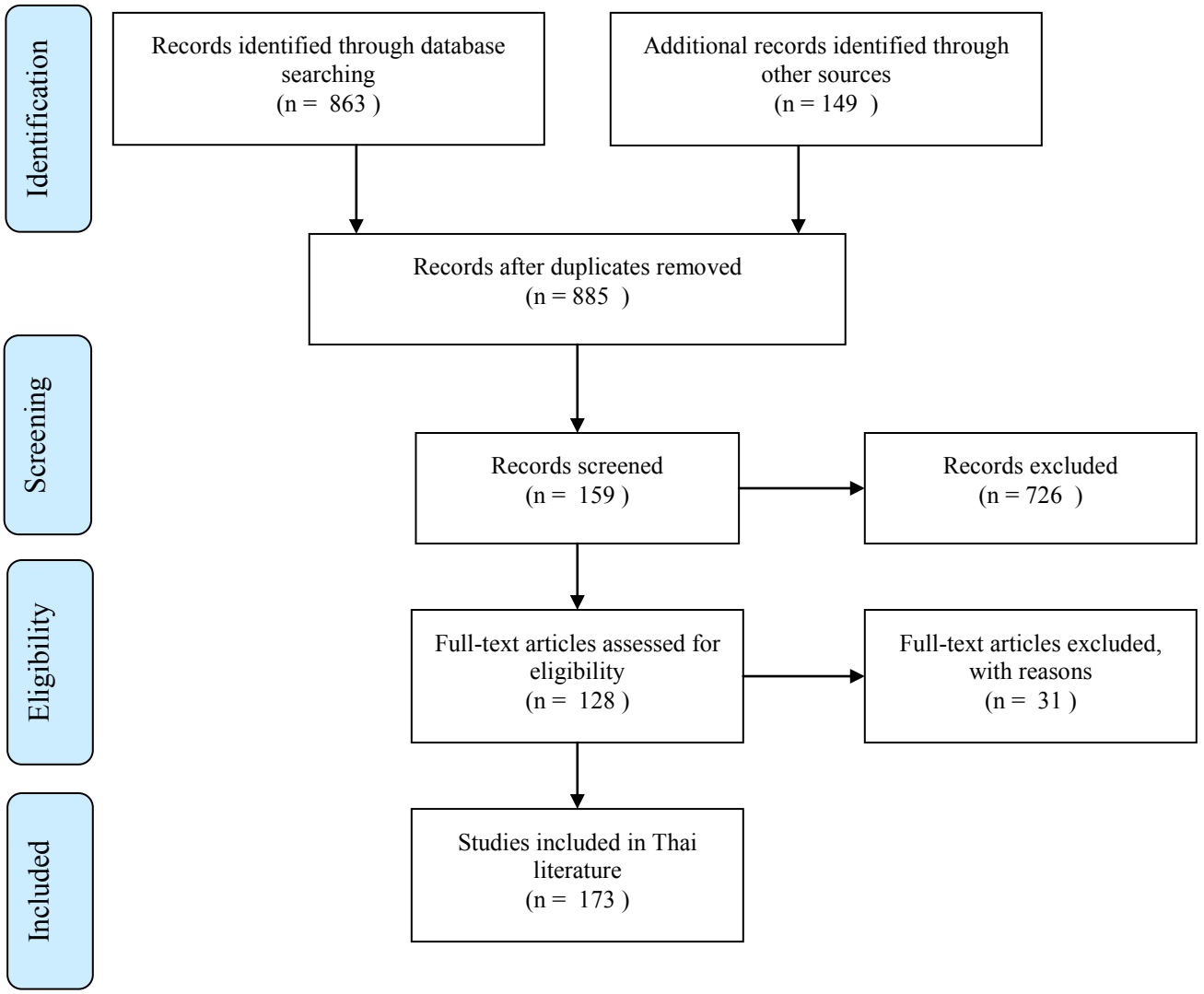
- Language: Only papers published in English or Thai were accepted.
- No age limitation was set due to the limited literature in the area of study
- Full text literature is unavailable and inaccessible.

The results of the search can be seen in table 4.

Table 4: The outcome of literature search

Database	The total results shown when using the key words	The number of the articles that met the inclusion criteria	The percentage of the articles that met the inclusion criteria
Medline	137	41	30
CINAHL	119	14	12
Cochrane library	1	1	100
Web of knowledge	211	37	18
Google scholar	395	76	20

Figure 2: The process of the literature search



3.3 The reasons to exclude some literature from the process of literature search and assessment

After the records from databases were screened and the full-texts were searched, some papers were rejected after applying the exclusion criteria. The contexts of some materials were not related with the study.

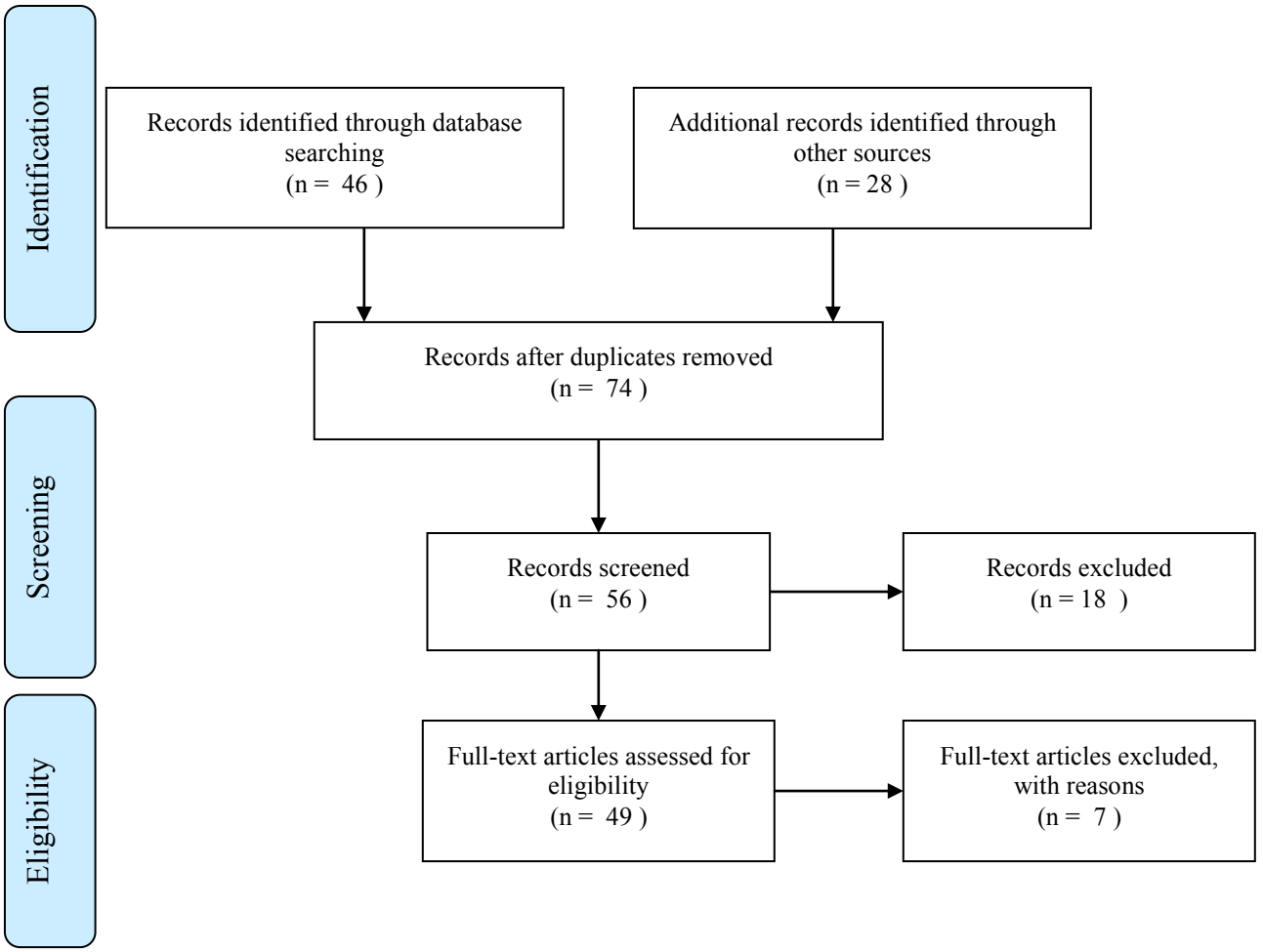
3.4 The related Thai literature

Whilst research papers focusing on Thailand written in English and published in international academic journals are rare, some are available in Thai. To access this literature the online research library within the Ministry of Public Health, Thailand was searched for relevant studies. A further search was also conducted via Google scholar. The process of this search can be seen in figure 3 and the results from searching those two databases are presented in table 5.

Table 5: The outcome of Thai literature search

Database	The total results shown when using the key words	The number of the articles that met the inclusion criteria	The percentage of the articles that met the inclusion criteria
Health System Research Institute	394	35	9
Google Scholar	553	11	2

Figure 3: The process of the Thai literature search



Quality appraisal of the literature

To appraise the research literature the Critical Appraisal Skills Programme (CASP) checklists on qualitative research, RCTs and Systematic reviews were used to inform my assessment of the quality of research literature within my review. These were chosen, because they were developed to be practical tools, especially for a study using a large volume of materials within a literature review. The CASP checklists consist of around 10 questions with guidelines to judge the answers to those questions. In addition, the criteria for appraising qualitative research studies by Mays and Pope' (2000:52) was also used; these comprise 7 dimensions: worth or relevance, clarity of research question, appropriateness of the design to the question, context, sampling, data collection and analysis, and reflexivity of the account. Each of these criteria are accompanied by a list of questions to guide how to appraise the quality of a qualitative study.

Most of the papers within the review were of a good quality even though not all of the articles reveal every detail necessary to judge their quality with those criteria presented above. However, some of the authors accepted the weakness in their research due to the limitations such as small sample sizes and low response rates in quantitative research, and recall bias in case control studies. Either research goals or questions were displayed in each article and appropriate research methodologies used to meet the desired outcomes. For instance, qualitative approaches were used to identify causes of stress in farmers. Data collection and data analysis techniques used in each study were appropriate to the objectives and research questions. Most of the papers described in detail how data collection and data analysis were conducted. Appropriate details of both participants and research settings were provided to allow for an understanding of the research context. Purposive sampling is widely used by qualitative research for recruiting participants, resulting in a wide range of informants, while different types of sampling such as random sampling, cluster sampling or systematic sampling were applied for quantitative research. Subsequently, in the qualitative studies either semi-structured or structured interviews were the methods chosen to gather data from participants. For quantitative studies surveys were the most frequently used approach for data collection, while interviews surveys via

telephone were another way to reach respondents in remote areas. Many of the studies had cursory sections on ethical considerations which may be due to the editing and word count policy of some academic publication.

Some of the qualitative projects had a small number of participants. However, the researchers claimed that this was adequate for their studies due to the saturation of findings and no new data being found within the last few interviews. The matter of generalisation is not considered to be problematic for qualitative research, because it is not seen as the goal of such an approach. However, even though some of the research focuses on a small area and their participant numbers are small their findings can be used to confirm or contrast with research in other contexts or countries, making the overall outcomes more meaningful.

Study designs can be categorised into 6 groups according to their hierarchy of evidence: anecdotal, expert opinion, case reports, cross-sectional surveys, case control studies, cohort studies, randomized controlled trials (RCT) and systematic review and meta-analysis (Jesson and Lacey, 2012:117). Literature with the higher levels is perceived as more trustworthy, because factors affecting the outcomes of studies can be controlled such as bias or intervention. Within my literature review nearly all of the quantitative studies were cross-sectional survey research, generating data like frequency, percentage or the outcomes from the comparison between variables, while some of cohort studies, case-control studies and systematic literature reviews were included, demonstrating the incidence of some occupational hazards in farming. Not all of the literature used random sampling as a method of recruiting samples from the population. The outputs from such research merely show the data from samples, not the population.

Furthermore, within the quantitative studies the response or completion rates of some papers were quite low, only 43, 51 or 57% in some cases. These low response rates for data collection make the results of those studies less trustworthy as the results reported will not accurately represent the data from the population. This is a serious problem if the main aim of the research is the generalization of the results to the

population. Thus, using the data from those studies should be done with care. Most of qualitative research papers did not describe how data were analyzed in detail. This is probably due to the limitation of word counts determined by journal requirement. However, most papers described their techniques in enough detail to determine that they had used an appropriate and widely used analytical approach.

As part of the search the intention was to search for literature on occupational health or older farmers in order to identify relevant subjects that are rarely or insufficiently explored and to be a model or an example for the study. Both quantitative and qualitative research materials were discovered. However, most were quantitative and none of the studies attempted anything like a theoretical or conceptual explanation of the farming lives of older people. The literature in this field is completely descriptive. Quantitative approaches in the literature review are mainly observational, providing numbers and other statistical data to describe the circumstances under the study. They are capable of offering broad data, but lack the in-depth understanding that can be gained from using qualitative method. In addition, the qualitative research found simply reported descriptive data with little or no attempt to conceptualize or to link with the theoretical literature on aging or the working lives of older people. It is this lack of conceptualization and theoretical understanding within the research on this topic is the justification for the development of my research focus and objectives.

3.5 Thematic analysis of the literature

In order to present the literature in a systematic and logical manner the papers were subject to an informal thematic analysis. This saw the main issues/concepts explored in the papers being used to organize the body of literature into thematic sections. In all 11 themes were developed and will be discussed in the following section.

3.5.1 The perceptions of farmers toward their agricultural work

Amshoff and Reed (2005) explored the views of farmers in the United State toward their work and how it affected their health. The meaning of work for farmers was significant with their ability to conduct their work seen as equivalent to health in their minds. The farmers continued to work until they could not work anymore. They did not consider that any chronic health problems they had could increase their risk of injury.

Farmers often see their work as being a life-long element - therefore, the complete retirement of farmers is rare. The farmers also reported 'a sense of accomplishment' from their work (p.306). This research has similar outcomes to the research by Winter et al. (2009) into the 'work of retired farmers over age 50'. They also illustrate that the farmers still continued to work despite reporting a retirement from farming work. The farmers reported a number of reasons for continuing to work – for example; 'can't sit around' (30%), 'keep me healthy' (29%) and 'I like to work' (27%) (Winter, et al., 2009:9).

However, Lizer and Petrea (2007) report in their study 'Health and Safety Needs of Older Farmers' that the proportion of the American older farmers aged 65 years or over is rising as farmers' children increasingly change to work in other better-paid careers rather than continuing the traditional job as a farmer. The data showed the percentage of famers aged 35 years old had changed to other jobs, from 15.9% of the farmer population in 1978 to 5.8% by 2002. 'The annual exit rate of older farmers' had fallen from 8.4% between 1978 and 1982 to 6.4% between 1992 and 1997 (Cole and Donovan, 2008:82). Additionally the number of younger people who had chosen this occupation had decreased. With these events, the farmers who are of retirement age often have no choice but to continue to work.

3.5.2 Fatal injuries in older farmers

A number of factors have been found to increase the risk of occupational injury and death among farmers. Some of these are caused by external factors, such as economic problems, but many of them are internal variables from farmers themselves, such as stress, health problems, working behaviour. It is certainly the case that agriculture is one of the most dangerous forms of work in the world, especially in relation to older farmers. Voaklander, et al. (1999) studied older farmers' death from their work in Canada, finding that older farmers had more opportunities to gain injuries. Most causes of their death came from tractors and other machinery that were in poor condition and lacked suitable maintenance due to financial insufficiency. If they work individually and have an accident, it may take a long time before other farmers or family members can find and deliver them to the hospital for appropriate treatment.

As their physical state is weaker conditions than younger farmers, older farmers may also have higher opportunities to have fatal injuries or fewer opportunities to be fully cured from serious injuries.

3.5.3 Injuries among farmers in Asia

Injury is also a concern for older farmers – particularly in less developed areas of the world. Research by Lee, et al. (2011), with farmers aged 60-69 years having the highest proportion of injuries and deaths (40.01%). Notably, male farmers aged from 65 to 69 years old had the highest mortality rate (64.87 per 100,000 person-years). A study in China by Xiang, et al. (2000:1269) to study 'the patterns of work-related injuries among Chinese farmers in Hubei province' found that farmers still largely manage their farming tasks manually. As a result, the most common type of injuries is caused by 'hand tools'. Chinese farmers, as with many other farmers, are fairly poor and this results in limited awareness of occupational health and safety practices, because financial issues are a primary concern. Moreover, the study found that pesticide use had a strong association with injuries in farming. Between 1992 and 1994, 78.8% of patients were resulted from 'acute organophosphate poisoning' (p. 1274).

The characteristics of farming in Thailand are very similar to other developing countries in Asia like China. Many of tasks are accomplished by hands with simple equipment rather than heavy agricultural machinery. Therefore, the styles and patterns of injuries, as well as their consequences, are likely to be similar to those in other Asian countries.

3.5.4 Risk factors for injuries

The literature suggests that the older farmers may have multiple risk factors. They may, for example, spend too much time in their farms, have some underlying diseases, and use some certain drugs to control the medical symptoms as well as being under stress. These factors put them at risk of injuries. With mixed risk factors, it is more difficult to manage their problems. The reason why older farmers are vulnerable to higher rate of injures have been explained as the deterioration of 'sense and reaction time', yet the results from Crawford et al. (1998) showed no statistical significance of age on the high incidence of nonfatal farming injuries as lower rate

of exposing to the risk factors and higher experiences than younger counterparts. From their study, neurological symptoms were found to be a risk factor of injury as they could lessen coordination between hand and eye. Other studies state other causes other than age which both inhibiting or stimulating accidents. For example, health status, a number of hours of working per week, 'cumulative work experience' and working behaviours (Browning, et. al, 1998:349). In addition, if the older people experience severe accidents, they often have a lower 'survival rate' than younger workers (Solomon, 2002:461).

Working continuously long hours and often alone, older farmers may have more opportunities to acquire injuries. Castillo and Rodiguez (1997) report that more than half of the injured older farmers had worked more than 30 hours per week and only 5 percent of those can limit either types of work or time spent for their workloads. Apart from age-related factors, the other risk factors leading to injury are 'financial pressures, off-farm employment, musculoskeletal injuries, and even the side effects of an underlying health condition or medication' (Cole and Donovan, 2008; Amshoff and Reed, 2005:306). However these too can be age linked - older farmers who are in debt are highly likely to have injuries. Browning, et al. (1998) also found a relationship between yearly income and injury rate among agricultural older workers. Older, solitary farmers also often had to return back to their work as soon as possible after an injury putting them at additional risk of further accidents (Solomon, 2002:463; McCurdy, et al., 2003, Braund and Alexander, 2007).

Arcury and Quandtc (1998:332) further showed that demographic factors like gender, age and education are 'underlying causes' of accidents. The information from focus group interviews revealed that although the participants had knowledge of working safely in farming, with the economic pressure that they faced, they might not perform those safety principles (Arcury, 1997). There are four crucial variables that affect farm safety: control, economic stress, beliefs and access to information. They can be summarized as follows:

- Control in this case means 'having the ability to make decisions to follow safe work procedures at the work site. It extends to control over

where one lives (for farm workers), and of the general market for one's produce (farmers) and labour (farm workers)' (Arcury and Quandtc, 1998:333).

- Economic stress means 'fear of not having work (farm workers), and knowing that –due to no control over the weather, international commodity markets or financial markets- one's livelihood and way of life may be lost (farmers)' (Arcury and Quandtc, 1998:333). With the economic stress, farmers would be pushed to work without considering the measures of safety that they may have already known.
- The beliefs in this theme mean the recognition of the risks to have danger or injury from their jobs is feasible. Without the beliefs farmers may ignore the safety measures when they have pressures from 'economic stress or lack of control' (Arcury and Quandtc, 1998:333).
- Access to information will enable farmers to understand the occupational risks that their tasks may have.

The other risk factors contributing to injury among older farmers include retiring from other jobs not related with agriculture and entering farming late in life, not having enough supplies, being unable to access health services, no funding to preserve their machinery in good conditions and working related stress (Cole and Donovan, 2008). The farming tasks that need physical strength, such as 'tractor driving, mowing fields, work with livestock' and fixing agricultural machinery, can cause high rates of both mortality and morbidity (Amshoff and Reed, 2005:306).

Browning, et al. (1998) and McCurdy, et al. (2003) also found that using medicines can raise the risk of occupational injury. Although the intention of medication is to treat illness and help workers fully recover before returning to work, in fact every drug has its own side effects and prescribed drugs may affect or disrupt the working process of farmers. Other drugs that may disrupt farming work were medications for the stomach, the heart and depression (Voaklander, et al., 2009). Narcotic pain killers and NSAIDs medications are also related with increased risks of injury as the pain relief may make farmers carry out work as normal without full recovery from injury.

Moreover, underlying diseases among older farmers plays an important role in the increasing probability of accidents. For example, arthritis can cause mobility difficulties, or previous injuries can obstruct their mobility during their work time (Voaklander et al., 2006). Prior injuries may also indicate inappropriate working conditions or old and poor maintained agricultural equipment (Voaklander et al., 2009). Depression can contribute to behaviour abnormalities such as poor concentration, putting farmers at risk, while stress could prolong the reaction times necessary for certain hazardous tasks (Voaklander, et al., 2009).

High workloads amongst farmers are also a factor. A causal model of injury developed by Kidd, Scharf and Veazie (1996), shows a relationship between workload and injury among dairy farmers (Kidd, Scharf and Veazie, 1996:230). Farmers who owned 'more than 30 acres under tillage per worker' and who performed over than 60 hours a week had 2.78 times more risk of injury and this variable contributed to 51% of injury (Kidd, Scharf and Veazie, 1996:234). Fatigue from long hours of work has been suggested as a significant factor affecting safe practice in farming with the similar effects found in truck drivers who drive for too long.

Table 6: Summary of the section of risk factors for injuries

Titles of studies	Researchers	Significant risk factors
Occupational and Environmental Health Risks in Farm Labor	Arcury and Quandtc (1998)	Control, economic stress, beliefs and access to information are four significant factors for farming safety
Health, Work, and Safety of Farmers Ages 50 and Older	Amshoff and Reed (2005)	The farming tasks that require physical strength
Agriculture Injuries among Older Kentucky Farmers: The Farm Family Health and Hazard Surveillance	Browning, et al. (1998)	Health status, a number of hours of working per week, cumulative work experiences, working

Study		behaviour and financial issues
Accidental Injuries in Agriculture in the UK	Solomon (2002)	Lower survival rate when experiencing injuries
Agricultural Injury in California Immigrant Hiexpectancyic Farm Workers	McCurdy, et al. (2003)	1. Early returning back to work from financial pressure 2. Overexertion and strenuous movement
Agricultural Injuries: Improving Occupational Safety	Braund and Alexander (2007)	Having re-injuries and prolong healing from early returning to work
Pain, Medication, and Injury in Older Farmers	Voaklander, et al. (2006)	1. Side effects from medications 2. Underlying diseases
Health, Medication Use, and Agricultural Injury: A Review	Voaklander, et al. (2009)	1. Side effects from medications 2. Underlying diseases
Older Farmers' Prevalence, Capital, Health, Age-Related Limitations, and Adaptations	Cole and Donovan (2008)	1. Financial pressure, off-farm employment and musculoskeletal injuries 2. Effects from underlying health conditions and side effects from medications 3. Retiring from other jobs not related with agriculture 4. Having not enough supplies 5. Being unable to access health services

		6. No funding to preserve their machinery in good conditions 7. Working with stress

3.5.5 Challenges from agricultural chemicals

Chemical hazards in farming can involve exposure to various types of chemical substances, such as pesticides, solvents, metals, engine exhaust and grain dusts. However, pesticides are a major concern in farming and their adverse effects take a longer time than accidents or injuries to appear (Weichenthal, et al., 2010). The literature suggests that using agricultural chemical substances to protect plants or crops from insects or to boost their growth is common internationally, especially within modern agriculture where business becomes the major factor influencing the agricultural sectors. However this trend has a number of potentially negative effects on farmers.

3.5.6 Occupational exposure to pesticides

Lebailly, et al. (2009:78) in a study among France farmers using pesticides in 'open-field farming' found that the factors determining contamination of pesticides were 'the type of spraying equipments, the number of mixing-loading, application tasks performed, the presence or absence of technical problems or cases of overflowing and the number of times nuzzles are unplugged'. Among several tasks of agriculture, the agricultural work which generates the highest risk of pesticide exposure was 'mixing-loading' which accounted for 'two-thirds of the total daily exposure'. Furthermore, the method and frequency of spraying pesticides also was a factor in occupational exposure (Van Drooge, 2001).

According to Frost, Brown, and Harding (2001) in a study of 'mortality and cancer incidence' found in British farmers concluded that there is a higher incidence of testis cancer, non-melanoma skin cancer and multiple myeloma in British farm workers, compared with general British people. In addition, there were the high

incidences of lymphohematopoietic cancers, leukemia, and multiple myeloma among the applicators using Alachlor in North Carolina (Lee, et al. (2003).

Agricultural workers with low education may also use pesticides inappropriately. In one study farmers in Ethiopia had a significant misunderstanding of pesticide toxicity – not knowing what to do when hazardous agents had contact with their skin and the importance of using 'personal protective devices' like gloves, respirators and goggles (Hanchenlaksh, et al., 2011:627). Also their awareness of carrying out safe practices was limited. For example, they used containers with poorly fitted lids to carry pesticides which can lead to their exposure to toxic agents which leak from the containers during the application. One of the reasons for this behaviour is that the workers had only primary education, so it was hard for them to read the recommendations or advices on labels at pesticide containers and understand comprehensively (Mekonnen, and Agonafir, 2002). Such factors are very likely to apply in Thailand – especially in older farmers who may not have had an extensive education.

3.5.7 Preventing toxicity from pesticide exposure

Although many people involved with agriculture recognize the dangers of pesticides, they still need them for their food production. As a result of this, research and schemes to develop safe practice for pesticide use have been initiated. In some countries there is legislation to control and limit pesticide harm toward general workers by allowing only trained workers with a license to control pesticide application (Van Drooge, Greneveld and Schipper, 2001). Therefore, the risks of pesticide toxicity may be limited and proper protective measures from training courses, the effects of poison can be restricted and prevented. Lebailly, et al. (2009:79) suggest that taking photos or videos of farmers during their pesticide spraying can be useful as occupational professionals presently can use them for helpful suggestions to lessen potential risks of pesticide exposure. Also, different types of pesticide sprayer can contaminate with different parts of farmers' body. For instance, the users' hands will be exposed to pesticides rather than all of their body when using a trailer sprayer, while it is the converse when using a rear-mounted sprayer. Furthermore, to monitor

the effects of pesticides on the applicators, health check-ups with the cholinesterase level test is introduced for organophosphate and carbamate usage. This is also a protective scheme for farm workers who frequently spray pesticides as it can detect the high level of pesticides in farmers who have no symptoms of pesticide toxicity earlier before it reaches 'the removal threshold' (Ames, et al., 1989). Training courses and education programmes concerning safety when using pesticide are also helpful to agricultural farm workers, especially when there is an inability to understand the labels on pesticide containers which may use a complex language. In such cases it is beneficial to explain thoroughly using 'oral presentations and storytelling' to encourage them to follow safety instructions and to avoid toxicity of dangerous agents (Mekonnen and Agonafir, 2002:314; Hanchenlaksh, et al., 2011; Zhang, et al., 2011).

3.5.8 Pesticide usage in Thailand

In Thailand farming is the occupation that has the highest number of people (approximately 14 million) and as already noted farmers are at risk of pesticide exposure, because there is an increase of pesticide usage. From the health check-up of Thai farmers in 2007, around 39% or 6 million farmers were at risk. This number has doubled since 1997 (Naewna, 2011).

However, the primary concern for Thai farmers is their incomes, while health is a less pressing issue. From the study by Buranatrevedh and Sweatsriskul (2005), it was found that using pesticides in farming was positively accepted. The farmers thought that it was 'necessary and unavoidable', even though high scores of knowledge in relation to pesticides were found from the examination (Buranatrevedh and Sweatsriskul, 2005:674).

3.5.9 Mental health of farmers

People today are affected by stress that has an impact both on health and working efficiency and this is a major problem internationally. Farming is one area where this is a major issue. A study of depression symptoms among farmers in Colorado revealed that among 872 farmers, 9.3% of those had depression symptoms. When comparing those with the gender variable, there were 7.9% of male farmers with depression symptoms, while 11.1% of female farmers suffered those symptoms (Stallones, et al.,

1995). According to the nature of farming and older people, many challenges of farming may cause mental health problems. There are various variables affecting their occupation, either controllable or uncontrollable ones, especially unpredictable factors 'such as weather, disease and problems with animals and farm machinery' as well as economic factors that play a significant role in increasing their vulnerability to mental health problems (Gregoire, 2002: 472). For example, the variations in product and crop prices in farming can have a high impact on income, potentially deteriorating the farmers' mental health -in the worse cases leading to suicide (Gregoire, 2002). Certainly in the UK, the largest proportion of suicides is amongst farmer group compared to workers in other occupations. (Gregoire, 2002:473).

Similarly high rates of suicide have been found in the USA, Sweden, France and India. The area of land occupied by farmers may be the other considerable factor influencing suicide. Farmers with land areas of less than 300 acres appear to have the higher suicide rate than those with more land areas. As farmers with a smaller amount of land may have less support for their activities, they may have higher stress than their counterparts with larger areas of land. In addition most of the suicide cases among farmers were among men who were diagnosed with a psychiatric illness and were taking antidepressant medications (Gregoire, 2002).

Qualitative research by Raine (1999) in the UK identified three major stressors in faming; paperwork, financial problems and the BSE crisis. Paperwork became problematic because of 'role conflict' where farmers had to do the increasing volumes of paperwork and other administrative work which they thought of as undesirable tasks (Raine, 1999: 267 and 262). However, this work was a legal requirement and had to be done carefully as were monetary punishment for any mistakes. This kind of work was especially difficult and stressful for older or poorly educated farmers.

Finance is the other main concern for farmers as a result of uncontrollable factors like prices of their produce fluctuating or financial losses from animal deaths. Those factors were difficult to manage. For farmers who acquired loans from banks, they would feel stressed from being unable to return that money to banks. Subsequently, bank

personnel might pressure them by repeatedly calling to ask for farmers to return their debts. In serious cases, they were in danger of losing their farm completely – with the additional difficulty of seeking alternative employment due to lack of other work skills.

Two other, less prominent stressors were 'physical isolation during the day' and 'the public's view of farming' (Raine, 1999:265). When being alone during their working time, isolated farmers may have more opportunities to worry and become depressed about their troubles compared with farmers working in teams. The misunderstanding of general people toward farmers' work might become a cause of stress among farmers. Farmers might have been viewed in unpleasant ways like being brutal with their animals or being concerned with only making money by destroying the environment or poisoning consumers by using agricultural chemicals in excess of safety levels. Farmers still claimed that 'unfair media coverage along with activities of animal rights and environmental groups' was responsible for influencing communities to criticize farmers (Raine, 1999:266). As a result of these many factors farmers often described symptoms such as; 'tiredness, irritability, problems sleeping, not enjoying the job, feeling down and anxious' (Raine, 1999:266). The effects of stress not only impacted on farmers themselves but also their families.

The results of these studies are summarised in table 7 below

Table 7: Studies on mental health of farmers

Titles of studies	Researchers	Significant results
Causes and Effects of stress on Farmers: A Qualitative Study	Raine (1999)	1. Stress among farmers can cause health problems and higher probability to commit suicide 2. Three major stressors were paperwork, financial problem and the BSE crisis 3. Other two lesser significant stressors were physical isolation during

		the day and the public's view of farming
The Mental Health of Farmers	Gregoire (2002)	1.Farmers may have mental health problems from both controllable and uncontrollable factors 2. Financial issues were found as the most crucial cause of stress among the UK farmers. 3. Time pressure and complex administrative work were also found as the causes of stress. 4. Areas of land occupied by farmers may be the other considerable factor influencing suicide in farmers 5. Most of the suicide cases among farmers had been found having psychiatric symptoms, such as depression
Linking stress and injury in the farming environment: A secondary analysis of qualitative data	Kidd, Scharf and Veazie (1996)	Fatigue from long hours of work had been suggested as the significant factor affecting farm safety

3.5.10 Mental health challenges among Thai farmers

There was very limited research evidence found in Thailand regarding mental health problems. However, in the grey literature (ASTV Manager Online, 2010) Dr. Pensri Manowachirasun, who was a preventive medicine doctor from Phichit hospital, revealed that because of drought, Thai farmers had mental illness and tried to commit suicide. In Thailand, suicide is mostly found among business people, but this year grass root farmers had the highest suicide rate. In just 6 months in 2010, there were 29 attempts to suicide. Most of the farmers were 40-50 years old or over and male. Furthermore, some farmers had depression or anxiety. They were worried and isolated themselves from social contacts. They had sat brooding looking at the sky, waiting for the rain and looking at their dry fields. The first 6 months in 2010, there were 126 patients with depression and 278 patients with anxiety.

3.5.11 Promoting health and safety in farming

Because of the health problems associated with farming a number of schemes to promote health and reduce accidents are present in the literature. Laws and regulations for improving the working environment have also been issued by government agencies. In addition, providing occupational education for agricultural workers is necessary, although its effectiveness is not clearly proved (McCurdy, et al., 2003). Braund and Alexander (2007) suggest that when treating farmers with injuries from agriculture health professionals should consider referral to occupational counselling and risk identification.

Castillo and Rodiguez (1997) suggest that to reduce the chance of falling by safety training, and designing effective shoes suitable for different workplaces. To develop practical plans for farming safety practice, Voaklander, et al. (2009) advise the integration of knowledge from multiple disciplines of gerontology, occupational health and safety, and injury prevention. This will provide farmers with safer workplaces and support them to continue their work. However, a challenge to developing such safety measures is the difficulty of accessing small private farm owners, because they are more likely to resist projects or attempts to help from an external community or the government (Voaklander, et al., 1999).

The methods designed to control and prevent injury among older and younger farmers are usually not dissimilar except for some certain conditions required by farmers because of the physiological change following aged-related alteration, like visual and balance impairment, such as 'good lighting, uncluttered and non-slip walkways in buildings and stairs, as well as clean and functional access steps, handholds for mounting and dismounting tractors and other machinery' (Cole and Donovan, 2008:92). Additionally, safety equipment for tractors is necessary. In order to establish effective schemes for improving the environment for older farmers, involvement of older people is beneficial in term of planning and practicing.

Economics was emphasized as the most significant factor for 'their safety decision making' (Kidd, Scharf and Veazie, 1996:234). This information led to a recommendation for injury prevention by incorporating the results of injury in term of economic effects into farmer education that would be a driving force to push safety into 'a competitive demand in their decision making' (Kidd, Scharf and Veazie, 1996:235). From an economic perspective farmers are inclined to work longer and harder but this increases the risk of accidents and therefore farmers would benefit from help and advice to plan their workload not only on a daily but also on a seasonal basis. As a result of this strategy, fatigue would be reduced and subsequently risks of injury could be manipulated.

Following information from mental health research, interventions to promote mental health and prevent psychological problems have been developed and tested in the UK. Although both government and non-government organizations have important roles, non-government organizations seem to be superior in term of providing health promotion and prevention, while the governmental organizations may pay more attention to treatment. The mental health promotion initiative involve knowledge dissemination through publications in several forms for farmers with some networks offering information in relation to self-detection of stress, stress management, the route for supportive services, advices and counselling. Local authority provision of either 'telephone or face-to-face contact with volunteers' is increasing (Gregoire, 2002:474). However, persuading farmers who are at risk or may have somatic

symptoms to access these services in addition to physical health through primary health care services is necessary. 'Specific practical support for farmers, for example with financial problems, retirement, housing, and retraining for those who wish to leave farming but feel trapped,' would also indirectly influence farmers to reduce the rate of suicide (Gregoire, 2002:475). Better social support for farmers, such as 'self-help groups, befriending schemes', could also provide a protective factor for farmers (Gregoire, 2002:475).

Such studies are summarised in table 8 below:

Table 8: Health and safety in farming

Titles of studies	Researchers	Strategies
Agricultural Injury in California Immigrant Hiexpectancyic Farm Workers	McCurdy, et al. (2003)	1. Issuing laws and regulation to improve working environment 2. Occupational education
Agricultural Injuries: Improving Occupational Safety	Braund and Alexander (2007)	Occupational counselling and risk identification by health professionals
Fellow-Back Study of Oldest Workers with Emergency Department-Treated Injuries	Castillo and Rodiguez (1997)	1. Safety training, improvement of floor conditions and designing effective shoes 2. Effective, preventive programmes of workplace safety offered by government agencies
Health, Medication Use, and Agricultural Injury: A Review	Voaklander, et al. (2009)	Integrating multiple disciplines, such as gerontology, occupational health and safety, and injury prevention

The Mental Health of Farmers	Gregoire, A. (2002)	1. Knowledge dissemination 2. Stress control, such as self-detection, stress management, advices and counselling 3. Supportive services from local authorities, such as telephone or face-to-face contact with volunteers 4. Social support, such as self-help groups and befriending schemes

In order to reduce injuries among farmers, methods to control and reduce the number of hazards they face have been developed and practiced. Some require national action like issuing new legislation or programmes which require the government's budgets and services through its departments. However, some can be learned and practiced by farmers individually or through mutual help, such as safety training or social support.

3.5.11 Literature on family support for older people

Family input can critically influence older people's lives, health and well-being and they are often an important source of help for older people who cannot manage certain aspects of their lives. Whatever older farmers are trying to achieve, they sometimes cannot accomplish everything themselves, especially when their bodies are ageing. At these times their family is likely to play an important role in their lives. There is an extensive literature on family support for older people and this suggests that large cultural differences exist, especially between Western and Eastern cultures. It is not intended that these differences will be explored here, rather attention is given to the role of the family in supporting older people in Eastern cultures, especially Thailand.

Cultural differences considerably affect the feelings of responsibility that children have for their parents. This is especially so in Eastern societies where ideas of 'filial piety' have existed for centuries. In Thailand if older family members are in need of support Thai people usually consult within the wider family and it is usually their children who initially deal with any support needs that arise (Vachrapetpranee, 2010; Malathum, et al., 2005). Vachirapetpranee (2010) concluded that the family, and, on occasions, the wider community, typically provide older people with 4 types of support: physical, mental, social and economic. Physically older people may receive direct 'hands on' care, with either personal care or help with domestic or other work. This may take a variety of forms, for example, their kin may accompany them to hospital when they have an appointment with a doctor (Jangprachak, 2014). This is one way of showing that the older person is still of value to the family. This is very important in Thai society and families will demonstrate their continued commitment to their older members in numerous ways in order to show that they appreciated and respected (Vachirapetpranee, 2010); Jangprachak, 2014). Older family members are also assisted to remain socially active within their community, for example by being helped to join in community activities and thus maintain religious and cultural traditions (Jangprachak, 2014). Finally, economic support is given if needed in the form of providing parents with money or necessary goods.

Malathum, et al. (2005) reported that the majority of carers for older people are female relatives, mostly female children, while a spouse was a carer for around one third of older people. This is due to the fact that nearly all of older people in Thailand live with their spouse and/or children. In rural areas even if older people do not live in the same household their children are likely to live nearby and can support them either directly or by social contact thereby combating feelings of loneliness and isolation (Vongpanaruk, 2013). Whether or not older people need practical help one way of reinforcing their value is to seek their opinions about important family decisions (Komjakraphan, 2013). Most of this literature relates to frail older people and as my participants will, by definition, still be working it is not clear how much will be relevant to their circumstances. Nevertheless I anticipated, based on my own

experiences, that the family will play a role in supporting older farmers and therefore considered it important to explore what this role might be.

Before going on to identify the sensitizing concepts that emerged from the literature and the foreshadowed questions that derived from them I briefly reflect on the insights learned from the literature review.

3.6 Summary

Research in the area of occupational health in farming and agriculture generally has been published in many different types of academic journals. However, the focus of the existing research is mainly on farmers of all ages, while older farmers, as a sub-group, are relatively under-studied. Amongst the published studies quantitative research methods were dominant, primarily comprising surveys describing the rate of accidents or occupational hazards. Some studies have attempted to design interventions to promote better occupational health and reduce accidents, but without conclusive results. Few research articles were found directly focusing on older farmers and the health issues that such individuals face. More importantly, nearly all the published work has come from the developed, Western world with relatively little from Asia and even less from Thailand. Whilst the Western literature may provide some insights of relevance to Thai older farmers there is clearly a need for work that explores the experiences of such individuals using qualitative approaches. That is the aim of this study, which was initially informed by a number of sensitising concepts from which more focused foreshadowed questions where derived, as described below.

3.7 Sensitizing concepts

According to Bowen (2006:14), sensitizing concepts are used ‘as interpretative devices and as a starting point for a qualitative study’. With sensitizing concepts, the attention of the researcher is drawn to a number of potentially significant social phenomena. Such concepts can guide the study and suggest which research problems might be explored. The sensitizing concepts I drew upon have been developed from the insight gained from reviewing the literature, together with my own areas of interest, which identified some substantial issues that require further research and lead to a number

of foreshadowed questions. The sensitizing concepts informing this study were as follows;

-Farmers in general and older farmers in particular face many challenges. Two main problems which were identified in the literature were injury and chemical hazards. It is important to know how farmers recognize and manage these issues.

-As farmers grow older, they may develop various diseases which can put them at higher risk of accidents and injuries due to the symptoms of their illness and/or adverse effects of their medications. Exploring how they manage these challenges is interesting.

-As the participants in this study will be older farmers many of them will be likely to have chronic diseases and need regular input from health professionals. Therefore, exploring the experiences and perceptions of their own health management, such as medications and health service visits is important to understanding how they use services and how, if needed, such services can be improved.

-Even though older farmers face numerous difficulties many still continue to work. It is important to clarify the reasons behind this and to explore whether these are primarily economic or also relate to feelings of self-worth or identity.

-Farmers have always faced uncertainty as part of their occupational lives, such as price variations that potentially put farmers under stress or at risk of other mental health problems. Research on this subject is also important to identifying their experiences and the way they manage these difficulties.

- From the literature it is clear that family members, especially children and spouses, can play a significant role in support of older people, and by inference older farmers, physically, socially, economically and mentally. However there were no studies that explored if, and how, family members support older farmers and the impact that such support has on both parties. It was considered important to explore this in my study.

From the above sensitising concepts a number of initial ‘foreshadowed questions’ emerged. These are described below.

3.8 Foreshadowed questions informing the initial direction of the study and their links to methodology

As highlighted in the sensitizing concepts above it was clear that there were a number of important areas where current research evidence about the lives and experiences of older farmers, especially Thai older farmers, is either limited or absent. This is especially obvious in relation to how they perceive the relationship between farming, ageing and their health status and the actions they take, if any, to balance the demands they face with the resources that they have. The limited research that I found suggested that farming is one of the riskiest occupations, and that older farmers might be even more vulnerable than their younger counterparts. Therefore, it seemed to me to be important to understand how older farmers prioritize their health and their work and whether one is perceived to be more important than the other. This is likely to influence the actions that they take. For example if participants thought that farming and its outcomes were the most important they might risk their health to achieve farming goals. Conversely, if their health was considered their priority, they may try to avoid activities that put them at risk of occupational hazards even if farming goals are compromised. Given that an element of risk is an inherent part of farming how Thai older farmers perceive risk and how they managed it in relation to their health is important if any future health related strategies are to have an optimal chance of success.

This is also important as studies also indicated that many older farmers suffer from chronic health conditions and are therefore more prone to risk of injury – I was keen to explore the impact that this may have on Thai older farmers and if received any health advice from professionals, and if so how did they respond to it?

Furthermore it was apparent that farming is complex work and in many countries, including Thailand, it is a family business. In traditional Thai culture adult children are expected to express their gratitude to the parents by looking after them when they are old and can no longer work. I was interested to see how this manifest itself in a farming context in Thailand and what role the family played in supporting older Thai

farmers. Whilst this idea emerged from the literature it was also influenced by my own early experiences of farming in my family and how, at that time, family members were important in supporting farming activity. Was this still the case in a country that has changed considerably in the last 30 years?

Another question that I wanted to explore was what motivated older Thai farmers to continue working? As indicated in the previous chapter the welfare system in Thailand has not yet fully responded to the challenges of an ageing population and the pensions and health care available are limited. In light of this is the primary reason that older farmers continue to work economic, or are there other motivations? Literature from the US indicated that older farmers kept working because they gained both personal satisfaction and perceived health benefits from doing so. I wondered whether this was also the case amongst Thai older farmers.

Informed by a combination of my own curiosity arising in part from my personal experiences and a consideration of the limited empirical and grey literature in relation to older farmers and health the following 'foreshadowed questions' informing the initial direction of the study were developed;

1. What do Thai older farmers think about the relationship between their health and their work?
2. How do Thai older farmers conceptualise risk and how do they prioritise risk, work and their health? What do they do, if anything, to minimize risk?
3. How do Thai older farmers manage their health problems and medications while continuing to work?
4. What roles do family members play in the working lives and health of Thai older farmers?
5. What motivates Thai older farmers to work beyond retirement age and what factors contribute to them continuing to do so?

It was hoped that by addressing these question that important new insights into the lives of Thai older farmers would be gained that would not only provide greater

theoretical understanding but also generate knowledge that could have practical relevance in helping to shape future actions to support Thai older farmers who wish to continue to work. For example, the first question will provide greater understanding of the nature, characteristics and working style of older farmers in Thailand in relation to health issues. The second question explores how Thai older farmers conceptualise risk and what aspects of their role they perceive as potentially dangerous and how they prioritise risk and their health. Given that most older farmers are likely to have a variety of health problems, with their attendant treatments, it is important to consider how they manage this in relation to their work, this is the focus of the third question. The fourth question explores the role that the families of Thai older farmers play and what might be needed to support them. The final question explores the key issue of why Thai older farmers decide to continuing working after their retirement age and what factors contribute to this decision. Addressing this question may have implications for supporting Thai older farmers in their role, or alternatively teasing out what might assist them to retire if they wish.

Given the lack of any prior studies on the lives of older Thai farmers and the limited attention given to the lives of older farmers in the western literature (other than in quantitative studies) it was clear to me that any study I undertook would begin to provide some conceptual/theoretical insights that would hopefully be useful. Informed by my own disciplinary background in Pharmacy and the requirement of the funding to undertaken a study that had occupational health as part of its focus the above foreshadowed questions seemed to be a good place to start. Although my own methodological experience was in quantitative research the need to conduct a qualitative study seemed fairly obvious. The next question was which methodology to adopt? This decision was shaped by a number of factors.

- Firstly, being a genuine novice in qualitative methods I turned to my supervisors for advice. While they directed me to a number of general qualitative texts describing a range of approaches both of them had a background in grounded theory and suggested that this might be a very appropriate method. They asked me what I primarily wanted to achieve and I replied that firstly I wanted a better understanding of how older Thai farmers experienced their lives in regard to the issues raised in the

foreshadowed questions and that secondly I hoped that any insights I uncovered would not only add to understanding but might also help to improve the provision of support for Thai older farmers. I therefore needed an approach that would help me to build a 'theory' that also had the potential for practical application.

- Secondly, as one of my supervisors with a background in Gerontology pointed out, as I was seeking to understand the experience of older Thai farmers it was highly likely that this could only really be fully understood with reference to their prior experiences. Any method I adopted therefore had to be able to accommodate a temporal element.

- Thirdly, it was clear from the literature that the influence of other people, especially family members, had to be accounted for and therefore the social interactions that farmers had with others were likely to be highly influential. The methodology therefore needed to be able to unpack any social processes that were at play.

- Fourthly, given that I was new both to research of this nature and to studying the population of interest I wanted an approach that would provide me with guidance but that was also flexible in its application.

- Lastly I wanted, if possible, to allow the older farmers themselves to play a part in the study.

Reflecting on all of these factors firstly lead me to consider grounded theory as an approach and then to the constructivist principles advocated by Charmaz (2006, 2014). This is considered more fully in the next chapter.

3.9 Reflexivity: Thoughts on the role of the literature review

As outlined at the start of this chapter I followed Charmaz's (2014) stance in relation to the use of existing literature and other forms of knowledge and recognized the importance of having a broad understanding of the field in order to identify gaps and to allow me to develop my understanding of the issues surrounding the health of older people in general and also that of older farmers. This helped me to identify 'sensitising concepts' and subsequent 'foreshadowed questions' that provided direction for the early part of the study. In addition engagement with the literature also enabled me to develop my methodological thinking – the relative lack of prior work and the limited

insights into the lives of older farmers, and of Thai older farmers in particular, made clear the need to adopt a qualitative model, even though this was a set of approaches that I was largely unfamiliar with.

My review of the literature also helped me to understand how important the grey literature was to understanding the field of study. For example, when I looked for data about older people in Thailand I could find very little in published research. I found such information on the website of the Office of National Statistics, online newspapers, and unpublished articles or reports written by government officials, government departments or university professors. These materials were more useful than the published papers in my review. However, one of the most significant ways the literature review played a part in the development of my ideas was the realization that there was a complete lack of theoretical and conceptual work associated with the research into farming in general and also the work of older farmers. It made me realize that this was where my contribution could be made – and that my work in Thailand could still produce insights that others, elsewhere, could use as a reference point for their work on elderly people involved in agricultural or other work environments.

3.10 Summary

This chapter has considered the role that the literature played both in findings out what was already known and identifying gaps in existing knowledge. An analysis of the published and grey literature was used to identify sensitizing concepts from which the foreshadowed questions that provided initial direction for the study were derived. It is important at this point to stress that because a qualitative Grounded Theory approach was adopted that the initial questions might be subject to change as the study unfolded. This indeed turned out to be the case as the following chapter will make clear and the focus of the study expanded as a consequence beyond health issues to explore a range of changes that the participants experienced over time and how they adapted to these.

The next chapter explores the rationale for the methodological approach that was adopted to explore the initial foreshadowed questions.

Chapter 4

Methodology

4.1 Introduction

This chapter will describe the methodology of the study chosen to address the foreshadowed questions developed in the previous chapter. These questions are fundamentally concerned with capturing the experiences, perceptions, perspectives and beliefs of the participants about their life as an older farmer – and given this the use of a qualitative research design is presented as the most appropriate methodology to address these aims. This chapter will firstly explore the features and characteristics of a range of qualitative approaches before justifying the choice of a grounded method approach for this study. Following this, the manner in which grounded theory proceeds, particularly data collection and data analysis will be discussed. The chapter ends with a discussion about rigour, trustworthiness and reflexivity in qualitative research and the approaches most closely linked with constructivist grounded theory are presented.

4.2 The qualitative research paradigm

Qualitative methodologies 'provide the opportunity to gain an in-depth understanding of a phenomenon that would not have been possible if the data were reduced to numbers and statistics using a quantitative approach' (Raine, 1999:267)**.** Qualitative research is used to examine and explore people's perspectives, experiences, perceptions and feelings. This is achieved by interpreting data which are collected from techniques such as in-depth interviews, focus group discussion, observation, content analysis, visual approaches and participants' histories. Researchers can combine these approaches to gather different types of data. The significant characteristics that a qualitative researcher should possess are being open-minded, curious and flexible when listening to people's narratives in their own natural setting. Researchers should acknowledge that their participants' experiences, behaviour and beliefs are influenced by multiple factors: social, cultural, economic or political (Hennink, et. al., 2011).

4.3 The philosophy of qualitative research

Being contrary to the idea of an experiment, or a measurement of quantities or numbers, qualitative researchers 'stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry' (Denzin and Lincoln, 2000:8). Researchers try to find answers for inquiries focusing on the process of creating social experiences and the meanings they present. Researchers work within one of several different overall philosophical approaches known as paradigms, such as positivism, post-positivism or constructivism (Denzin and Lincoln, 2000).

A paradigm or 'an interpretive framework' is 'a net' which covers three principles: 'ontology (What is the nature of reality?), epistemology (What is the relationship between the inquirer and the known?), and methodology (How do we know the world; or gain knowledge of it?)' (Denzin and Lincoln, 2000:19). These principles influence the way researchers apply methodology, perceive the world and perform their actions. Every research study involves interpretation that is shaped by 'a set of beliefs and feelings about the world and how it should be understood and studied' (Denzin and Lincoln, 2000:19).

Table 9: The critical characteristics of the major paradigms (Denzin and Lincoln, 2000).

Paradigm	Its significant properties
Positivism	-Positivism and post-positivism have some significant differences in term of 'reality and perception' (Denzin and Lincoln, 2000:9). Positivists believe that -'There is a reality out there to be studied, captured, and understood' (Denzin and Lincoln, 2000:9).
Post-positivism	- It is unachievable to entirely understand and catch a reality. The reality can only be

	estimated. - Post-positivists utilize a variety of procedures to collect as many realities as they can.
Constructivism	-There are various forms of 'truth' and knowledge which are not uncovered or found, but arise from the construction of humans in forms of 'concepts, models, and schemes' to understand experiences when they interact with objects or other aspects of the world outside themselves (Denzin and Lincoln, 2000:197). - Those constructions would be modified or changed further when facing new experiences. - Being able to interpret those experiences, requires 'a backdrop of shared understandings, practices, language, and so forth', not remoteness from the world outside (Denzin and Lincoln, 2000:197).
Critical theory	-'Articulates an ontology based on historical realism, an epistemology that is transactional and a methodology that is both dialogic and dialectical' (Denzin and Lincoln, 2000:160). -'Critical theorists seek to produce practical, pragmatic knowledge that is cultural and structural, judged by its degree of historical situatedness and its ability to produce praxis, or action' (Denzin and Lincoln, 2000:160).

Action research	Its objective is to develop new ideas that can change an existing practice. A new practice results from the cooperation within a research team which comprises of researchers and stakeholders. They work together as co-researchers. A research process is not fully controlled by researchers, but facilitated by them to ensure that research procedures established in the first stage are followed. As a result, emergent knowledge is created from the high levels of participation and collaboration of those in the research team.
Ethnography	'To write a culture. Involves exploration of a cultural group in a bid to understand, discover, describe, and interpret a way of life from the point of view of its participants. Its roots stem from cultural anthropology, particularly the work of Clifford Geertz, who argued that building 'thick descriptions' is the only way we can uncover the underlying frameworks that produce both behaviour and meaning' (O' leary, 2010:116).
Phenomenology	'Study of phenomena as they present themselves in individuals' direct awareness and experience. Perception, rather than socio-historic context or even the supposed 'reality' of an object, is the focus of investigation' (O' leary,

	2010:120).
Ethnomethodology	'Study of the methods that individuals use to accomplish their daily actions and make sense of their social world. Ethnomethodology focuses on uncovering the 'rules' that direct ordinary life. It is not interested in whether what is said or done is right or wrong, true or false. In fact, ethnomethodology ignores the question of 'what' altogether and concentrates on 'how' interactions are performed' (O' leary, 2010:123).
Feminist theory	-Many traditional principles of research are unconsciously biased by male values and beliefs, from steps of data collection, data analysis to presentation process. Therefore, knowledge or reality obtained from research practices has also demonstrated male views. -Feminist researchers have attempted to conduct research that is free from male biases or 'patriarchal influence' (O' leary, 2010:127).

4.4 Qualitative approaches

Under the umbrella of qualitative methods, phenomenology, discourse analysis and grounded theory are research methods used widely in health research. They have diverse aspects in terms of, for instance, goals, sampling methods, data collection and data analysis techniques, and products (Starks and Trinidad, 2007). Each methodology has its own strengths that depend upon the research questions and the conceptual frameworks of a particular study. For example the application of

phenomenology in qualitative research involves asking significant questions about participants' 'lived experiences' until their meaning has been discovered, while discourse analysis helps researchers to understand 'the knowledge, meaning, identities and social goods' of participants 'through the shared, mutually agreed use of language'. On the other hand the objective of grounded theory is to generate a theory that can describe the social processes that people use to make sense of and order their lives over time (p.1374). This latter points highlights the temporal dimensions of a grounded theory. Furthermore, the final outcome of a 'grounded theory' is not only the understanding of participants' experiences, knowledge or meaning on some particular issues, but also the development of an explanatory 'theory' that identifies how the components of the social process under enquiry 'works'. Therefore, grounded theory studies have the potential for practical application that goes beyond conceptualization (Starks and Trinidad 2007). All of these aspects were identified in the previous chapter as being important for my study. From the literature review it was clear that farming and ageing are multifaceted and the impact and effects of these different aspects influence what it is to both age and work in agriculture. Grounded theory offers the methodological tools necessary to explore the processes of ageing and farming in a way that goes beyond the description or interpretation of experience. It was also noted that the research literature on farming and ageing was lacking a theoretical or conceptual strand. Grounded theory therefore provided the methodology to address these gaps and answer the foreshadowed questions in a way that other qualitative approaches would not.

4.5 Grounded Theory

Kennedy and Lingard (2006:102) writing on the 'origins and paradigmatic location of grounded theory' state that the emergence of grounded theory can be seen as a response to the supremacy of quantitative research methodology or the 'experimental research paradigm' that is a deductive approach aiming to test existing theories. Quantitative research originates from the main philosophical idea known as positivism that means 'an approach to the generation of knowledge that is characterized by its search for a singular, apprehendable truth, its reliance on the detached, objective researcher and its upholding of benchmarks of rigour such as

validity and reliability' (Kennedy and Lingard, 2006:102). With the principles of Post-positivism, the advancement of positivist basis, Glaser and Strauss first developed grounded theory. After the initial work of Glaser and Strauss in the 1960s, the ongoing development of grounded theory among the various emerging initiatives has continued, based on the Post-positivist disciplines that rigour and objectivity are preferable. The basic idea of Post-positivism is that 'the whole truth is never fully apprehendable, but is approached progressively through the process of research'. Subsequently, researchers in the areas of education and nursing have developed new concepts and approaches in grounded theory beyond Post-positivism. For example, constructivist grounded theory assumes 'multiple socially constructed realities' are what help to order life (Kennedy and Lingard, 2006:103).

Although grounded theory was originally developed by Glaser and Strauss, subsequently they had significantly different ways of interpreting its practical applications. For example Strauss and Corbin made major changes to grounded theory by including some procedures that they believed could enhance its credibility. However, this was strongly criticized by Glaser as forcing the data rather than allowing concepts to emerge naturally.

However, despite these differences grounded theory shares certain inherent characteristics. For example, every step of the research process like data collection, data analysis and theory generation are closely linked to each other. As theory is generated from data, researchers should not seek to test existing theory but rather the theory should be grounded in the data. Grounded theories should provide approachable meaning and in-depth understanding as they emerges from data and they should be capable of application in practice.

Through application and development by the founders and their apprentices, grounded theory, its concepts and methods were separated later into different approaches to 'theory generation'. Glaser explained that the final outcome of grounded theory is 'an empirically grounded hypotheses' which can be developed further by testing and verifying with both quantitative and qualitative methods,

while Strauss remarked that additional testing is not necessary. The theory developed from empirical data can be practically used as its origin and verification are derived from data (Hallberg, 2006:143). Within the diverse interpretations of grounded theory, Charmaz (2006) proposed a different version that she called constructivist grounded theory.

One of the unique properties of grounded theory is that of constant comparison, which involves concurrently collecting and analysing data. Codes are developed from comparing incident with incident. New incidents found will be compared with the existing codes. Codes will also be compared with codes until categories are created. In the same way, categories are compared with categories. During the processes of the constant comparison, the directions of data collection are indicated. With the repeated procedures of data collection and analysis, finally 'high-level conceptually abstract categories rich with meaning, possessive properties and providing an explanation of variance through categorical dimensionalization' emerge (Birks and Mills, 2011:94).
The constant comparison of data requires two thinking processes, induction and abduction. With these sophisticated thoughts, it demonstrates a characteristics of 'an abstract conceptual framework' rather than only 'a qualitative descriptive account' (Birks and Mills, 2011:94).

4.6 Justifying the use of a constructivist grounded theory approach

Glaser and Strauss's original grounded theory proposed strict and rigid rules of grounded theory application that they required researchers to follow. Since then different strands of grounded theory have been developed –with several key differences. For example, while Glaser views that it is necessary for a researcher to have 'an empty mind' and not precede the study with a literature review (Jones and Alony, 2011:99) Strauss allows general knowledge in relevant fields to occur. Other significant differences between Glaser and Strauss are outlined by Jones and Alony (2011:99) in table 10 below.

Table 10: The comparison between 'GLASERIAN' and 'STRAUSSIAN' Grounded Theory

'GLASERIAN'	'STRAUSSIAN'
Beginning with general wonderment (an empty mind)	Having a general idea of where to begin
Emerging theory, with neutral questions	Forcing the theory, with structured questions
Development of a conceptual theory	Conceptual description (description of situations)
Theoretical sensitivity (the ability to perceive variables and relationships) comes from immersion in the data	Theoretical sensitivity comes from methods and Tools
The theory is grounded in the data	The theory is interpreted by an observer
The credibility of the theory, or verification, is derived from its grounding in the data	The credibility of the theory comes from the rigour of the method
A basic social process should be identified	Basic social processes need not be identified
The researcher is passive, exhibiting disciplined restraint	The researcher is active
Data reveals the theory	Data is structured to reveal the theory
Coding is less rigorous, a constant comparison of incident to incident, with neutral questions and categories and properties evolving. Take care not to 'over-conceptualize', identify key points	Coding is more rigorous and defined by technique. The nature of making comparisons varies with the coding technique. Labels are carefully crafted at the time. Codes are derived from 'micro-analysis which consists of analysis data word-by-word'
Two coding phases or types, simple (fracture the data then conceptually group it) and substantive (open or selective, to produce categories and properties)	Three types of coding, open (identifying, naming, categorising and describing phenomena), axial (the process of relating codes to each other) and selective (choosing a core category and relating other categories to that)
Regarded by some as the only 'true' GTM	Regarded by some as a form of qualitative data analysis (QDA)

The third paradigm of grounded theory is constructivism as developed by Charmaz (Mills, et al., 2006) that refutes 'the existence of an objective reality' (Mills, et al., 2006:26) arguing that realities result from social construction. Constructivist grounded theory advocates the co-construction of knowledge between participants and researcher(s) and as suggested by Mills, et al. (2006:26); 'constructivism emphasizes

the subjective interrelationship between the researcher and participants and the co-construction of meaning'.

However, Charmaz (2014:15) adds that 'a caveat is in order. It can be difficult for novices to sort out what stands as grounded theory in any version'. Charmaz suggests that 'I emphasize flexible guidelines, not methodological rules, recipes, and requirements' (p.16) and 'Like any container into which different contents can be poured, diverse researchers can use basic grounded theory strategies such as coding, memo writing, and sampling for theory development with comparative methods because these strategies are, in many ways, transportable across epistemological and ontological gulfs, although which assumptions researchers bring to these strategies and how they use them presuppose epistemological and ontological stances' (p.12). This was the advice that I adopted.

Drawing on the above arguments this study adopts a 'grounded approach' using the main components of constructivist grounded theory such as theoretical sampling, constant comparative analysis, memoing and theoretical development – in order to address the initial foreshadowed questions. Adopting a design drawing from a constructivist approach to grounded theory allows for the use of certain methodological tools without the potentially restrictive dimensions of a Glaserian or Straussian based methodology. It can also be argued that a more constructivist driven approach places more recognition of the relationship between the participants and researcher and allows more space for co-construction and generation of the data and resultant grounded theory. This was also something that I wanted to adopt but as will be explained later it proved difficult to achieve in practice.

4.7 Sampling in qualitative research methods

Sampling in qualitative methods is different from quantitative research. In qualitative approaches both research settings and participants can be identified purposefully by researchers. However, both random sampling and a large number of participants are not proposed by qualitative methods as they are generally used by quantitative approaches. In qualitative research data collected from participants are interpreted

inductively for their meaning. Both generalisation and random sampling are not required for this type of research, while quantitative research aims to test a theory deductively. Minimisation of bias, 'controlling for alternative explanations', generalisation and repeatable outcomes are other main characteristics of quantitative approaches (Creswell, 2009:4). With generalization the sampling in quantitative methods can links samples with the population, as a sample chosen represents the population's properties (Bloor and Wood, 2006). In other words, with appropriate sampling and statistics, the outcomes from studies in small samples can be used to explain the same phenomenon in the same population.

However, the aims of qualitative research are not involved with generalisation. Thus, sampling techniques in qualitative research aim to seek out a relevant group of participants with experience of the phenomenon being studied – in order to provide an in-depth analysis. To do this, qualitative researchers often employ 'purposive sampling' to identify individuals who can provide this rich data. These participants should be knowledgeable regarding the relevant subjects that the research has focused on. It can be calculated in advance using information such as 'time, space, identity or power' in order to find suitable data sources (Coyne, 1997:624). However, in this study purposive sampling will only be used for the initial selection of participants. Following this sampling will be guided by the techniques set out with a grounded method approach.

4.8 Sampling in grounded theory (Theoretical sampling)

Theoretical sampling is a data collection technique specific to grounded theory. When compared with other traditional data gathering methods, it cannot be planned before research is initiated. 'Open and flexible' are characteristics of this approach (Corbin and Strauss, 2008:144). However, initially the first few sampling could be conducted by purposive sampling. Participants or documents with rich and relevant data are accessed to acquire primary data for data analysis. Subsequently, theoretical sampling is adopted for the next data sources (Draucker, et al., 2007) and guides subsequent data collection by developing interviews questions for example. With this principle, interview and observational guides follow the concepts emerging from ongoing data analysis. The interplay between data collection and analysis continues until all core

categories and a theory are well-developed. As a theory is developing theoretical sampling also allows sampling different types of participants to refine the emerging theory (Draucker, et al., 2007).

The aim of theoretical sampling is to discover 'relevant concepts and their properties and dimensions' (Corbin and Strauss, 2008:144). Theoretical sampling ends when theoretical saturation is reached; meaning 'all concepts are well defined and explained' (Corbin and Strauss, 2008:145). Finally, even if testing an emerging theory is not the main concern of grounded theory, this could be undertaken by the guidance of theoretical sampling (Draucker, et al., 2007). In summary, developing a theory by grounded theory method can be achieved through constant comparative analysis of data gathered from theoretical sampling (Coyne, 1997).

4.9 Data collection

Qualitative research uses numerous methods of data collection such as observation, group discussion and in-depth interview. Each type of data collection has different strengths and limitations. For instance, the behaviours of participants and the meanings made 'out of their experiences' can be recorded through observation and interview (Starks and Trinidad, 2007). However, this approach is often not suitable for health related research due to its 'intrusiveness and logistical difficulty' (p.1375). There are a number of other data sources that can be used in qualitative research such as journals, diaries, log books, governmental and organisational documents for example (Birks and Mills, 2011). However, to achieve an in-depth understanding interviews are often considered the most significant data collection technique in qualitative research designs.

One of the key differences between qualitative and quantitative research is that in qualitative research methods a researcher is the principal instrument to gather data. Moreover, the activities of data collection in qualitative studies occur in natural settings, 'where participants experience the issue or problem under study' (Creswell, 2009:175). A participant will not be led to a laboratory and no questionnaire will be sent to them to write out. Data will be collected when participants and a researcher

have ‘face-to-face interaction’ (p.175). As the main objectives of the study are concerned with gathering experiences, perceptions and feelings of participants, the best option for data collection technique is in-depth interviewing. This type of data collection is also ideally suited to grounded theory. This procedure ‘allows the interviewer to deeply explore the respondent’s feelings and perspectives on a subject’ (Guion, et. al., 2009:1).

The properties of in-depth interview are the use of open-ended questions, the semi-structured pattern, the requirement of understanding, interpreting and recording an interview. Open-ended questions such as ‘why and how’ are necessary for participants to feel free to describe their experiences with their own speaking styles rather than replying ‘yes or no’. Interviewees are encouraged to describe their experiences deeply with prompts from the researcher whose task is the analysis and interpretation of that information (DiCico-Bloom, and Crabtree, 2006). The semi-structured pattern allows key issues, which have been identified in advance, to flow continuously from the beginning of an interview. In order to gather in-depth information, it is necessary for researchers to employ effective communication skills throughout an interview. Recording an interview is essential but researchers can also record other issues, such as how participants behave during an interview by taking field notes. Data recording during the interview process is then subject to analysis and interpretation (Guion, et. al., 2009).

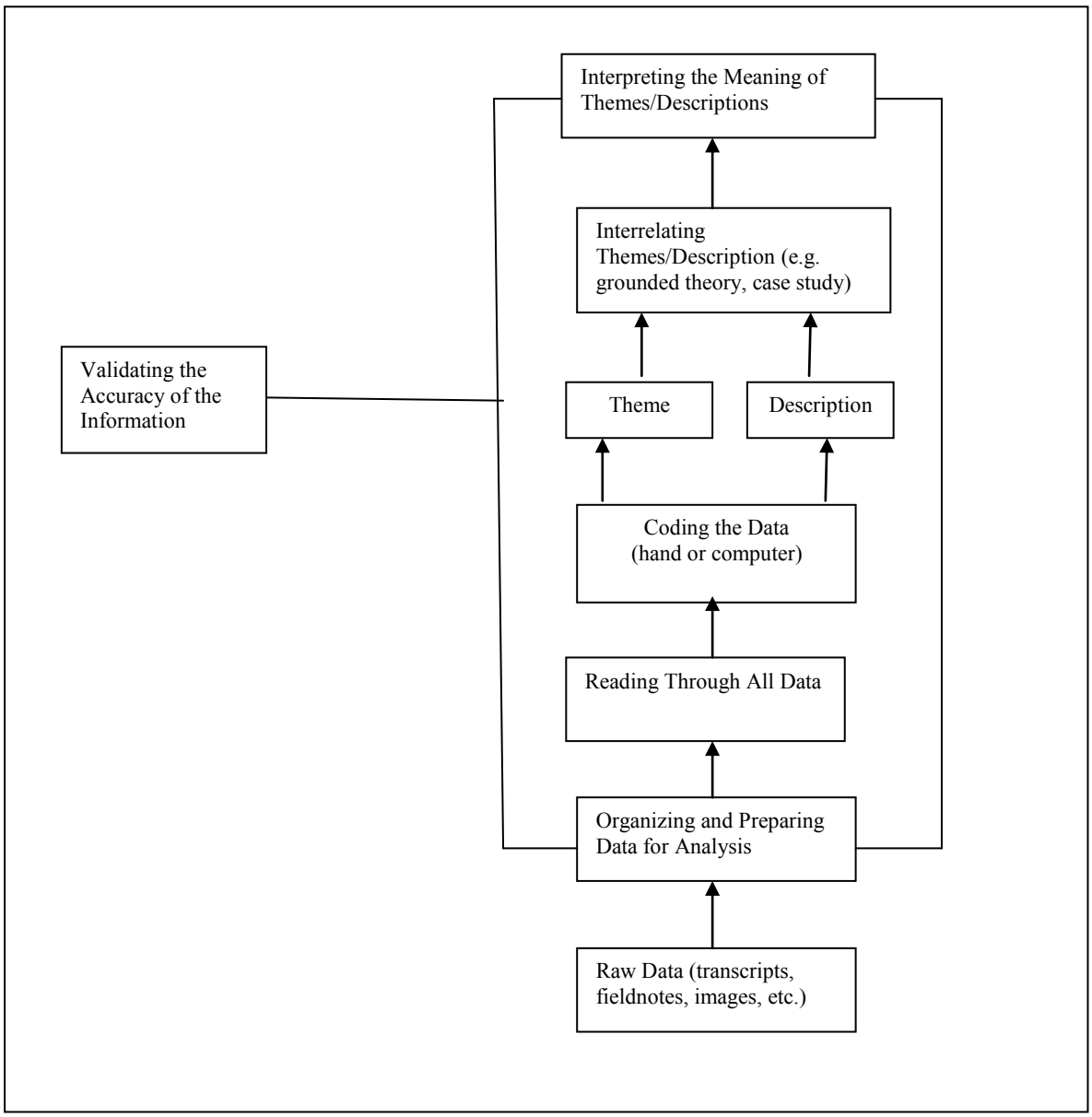
As the purpose of an interview is to collect in-depth and rich information from interviewees, a strategy for achieving an effective outcome should be in place. Firstly, interviewees should be comfortable enough to allow them to talk freely without fear of judgment or criticism. Secondly, the response of interviewees should be noticed as their reactions to the same question may be dissimilar. Therefore, the use of flexible strategies is promoted. Being patient is the another property which will be valuable during an interview in order to build a relaxed atmosphere so that respondents can describe their stories openly. Any changes in interviewees should be noted such as non-verbal language, ‘tone of voice’ and ‘facial expression’. The final beneficial characteristic is being an active listener which requires that interviewers

pay full attention to respondents until the end of an interview, check the correctness of what interviewees have already described by a technique of paraphrasing and understand the stories clearly through 'tone and emotional content' (Guion, et. al., 2009:2).

4.10 Data analysis

Even though there are diverse types of qualitative research methods, their data analysis consist of a number of general steps that can be carried out, while some particular research designs like grounded theory require specific procedures that are different from others. Data analysis for qualitative studies can be summarised as figure 4 below. The diagram (Creswell, 2009:185) describes the overall processes of data analysis in qualitative research from the first stage when raw data are acquired until the final stage when the ultimate outcomes of the research are succeeded.

Figure 4: Data analysis in qualitative studies



In grounded theory the first stage of data analysis, known as initial coding, can be accomplished with 'Line-by-Line coding' (Birks and Mills, 2011:96). Birks and Mills (2011:93) explain that 'coding is an active process drawn from the substantive area of investigation, the researcher's knowledge and experience, and extant theory', and 'codes are a form of shorthand that researchers repeatedly use to identify conceptual reoccurrences and similarities in the patterns of participants' experiences' (Birks and Mills, 2011:93). As a result of this process, abstract concepts emerge. Sequentially, concepts will be progressively developed. These codes in grounded theory represent

components of the emergent theory that can describe data and inform whether data collection should be performed further. This method is known as theoretical sampling (Birks and Mills, 2011).

The next stage is creating sub-categories which are derived from groups of codes that can reflect concepts at higher levels from the stage of focused coding. The process of initial coding should be free of existing concepts in the first instance, with existing theories from literature being used only when the theory from the current study is relatively well developed (Birks and Mills, 2011).

The next phase is the development of larger categories from subcategories referred to as axial coding. Subsequently, a core category, which can express maximum divergences of properties in data, will be identified, before sophisticated relationships around a core category that are 'a concept that encapsulates the process apparent in the categories and subcategories constructed' will be generated (Birks and Mills, 2011:100). A great deal of data will be sorted, synthesized and organized in the way of developing axial coding. In order to identify the relationships between categories, theoretical coding is needed. Theoretical codes, the results from theoretical coding, are 'advanced abstractions that provide a framework for enhancing the explanatory power of your storyline and its potential as theory' (Birks and Mills, 2011:123). Linking the most significant codes finally establishes hypotheses that lead to the emergence of final theory (Charmaz, 2006).

Constant comparative analysis

Constant comparison analysis is another crucial feature of grounded theory. The aim of constant comparison is to discover 'emerging patterns and themes' by comparing 'like with like' (Goulding, 2002:69). The data analysis continues and concepts will be compared with concepts to reveal differences and similarities among them. Concepts that are found alike will be categorised into the same theme. The theme that is constructed with this method will become 'a higher-level descriptive concept', when the research progresses (Corbin and Strauss, 2008:73). When similarities and differences of data are identified from constant comparative analysis, the generality

and the descriptive abilities of categories are multiplied. Categories' explanatory powers increase due to properties created from comparison of facts (Goulding, 2002). This process can assist researchers to distinguish one theme or category from another. In addition, properties and dimensions closely related to the theme can also be recognised from the application of constant comparison (Corbin and Strauss, 2008).

The other unique characteristic of grounded theory is theoretical sampling. Defined as 'the process of identifying and pursuing clues that arise during analysis in a grounded theory study' (Birks and Mills, 2011:69). Theoretical sampling is specific to grounded theory. While other research methods allow researchers to design the sampling procedure in the early stage before its implementation in the real setting, theoretical sampling in grounded theory can identify themes that require more clarification or explanation and guide the direction of further data collection, such as the data which are missing or incomplete during the process of the constant comparative analysis. These cycles continue until categories are completely created. Subsequently, theoretical sampling then has a role in clarifying, confirming and expanding the existing categories (Birks and Mills, 2011).

4.11 Memoing

Memoing is a very important technique for grounded theory practice. It is a collection of 'thoughts, feeling, insights and ideas' of the researchers as the study progresses (Birks and Mills, 2011:40). Memoing is carried out from the beginning to the end of the study. Birks and Mills (2011:42) suggested possible forms that memos may take:

- Your feelings and assumptions about your research.
- Your philosophical position in relation to your research.
- Musings on books and papers that you have read.
- Potential issues, problems and concerns in relation to your study design.
- Reflections on the research process, including factors that influence quality in your study, such as those discussed above.
- Procedural and analytical decision making.

- Codes, categories and your developing theory.

4.12 Ensuring the rigour of the study

There is no uniform approach to the issue of rigour in qualitative studies. However as this research project is mainly informed by Charmaz's constructivist principles her suggestions for ensuring rigour in grounded theory have been applied. According to Charmaz (2014:337-338) the criteria to evaluate the quality of a grounded theory study consist of four principal dimensions: credibility, originality, resonance and usefulness. These were criteria were also endorsed by Corbin and Strauss (2008:299) as providing comprehensive criteria that 'address both the scientific and creative aspects of doing qualitative research'. Charmaz (2006) suggests a number of questions in relation to each of these criteria that are outlined below.

Credibility

- Has your research achieved intimate familiarity with the setting or topics?
- Are the data sufficient to merit your claims? Consider the range, number, and depth of observations contained in the data.
- Have you made systematic comparisons between observations and between categories?
- Do the categories cover a wide range of empirical observations?
- Are there strong logical links between the gathered data and your argument and analysis?
- Has your research provided enough evidence for your claims to allow the reader to form an independent assessment-and agree with your claims?

Originality

- Are your categories fresh? Do they offer new insights?
- Does your analysis provide a new conceptual rendering of the data?

- What is the social and theoretical significance of this work?
- How does your grounded theory challenge, extend, or refine current ideas, and practices?

Resonance

- Do the categories portray the fullness of the studied experience?
- Have you revealed both luminal and unstable taken-for-granted meanings?
- Have you drawn links between larger collectivities or institutions and individual lives, when the data so indicate?
- Does your grounded theory make sense to your participants or people who share their circumstances? Does your analysis offer them deeper insights about their lives and worlds?

Usefulness

- Does your analysis offer interpretations that people can use in their everyday worlds?
- Do your analytic categories suggest any generic processes?
- If so, have you examined these generic processes for tacit implications?
- Can the analysis spark further research in other substantive areas?
- How does your work contribute to knowledge? How does it contribute to making a better world?

These criteria will be used later in the thesis to establish the rigour of the study. Recently another dimension of the quality of a grounded theory study has been suggested and that concerns ‘reflexivity’. How this was addressed in this study is considered below.

4.13 Reflexivity and constructivist grounded theory

As a number of authors point out any discussion about the role of reflexivity within grounded theory research is relatively recent (Leonard and Mc Adam, 2001, Gentles, et al., 2014, Ramalho, et al., 2015). In one of the early pieces of writing to consider this issue Leonard and Mc Adam (2001) suggested that at the time of their study most existing grounded theory studies failed to provide any 'proper' account of reflexivity. They argued that constructivist approaches to grounded theory were only just beginning to emerge and that until that point reflexivity within grounded theory was seen as unnecessary.

However, as Gentles, et al. (2014), in their review of reflexivity in grounded theory, point out the growing influence of constructivist approaches to grounded theory has considerably increased the level of debate. Despite this it is suggested that many current authors still fail to make their own understandings, specific processes and approaches to reflexivity explicit (Ramalho, et al., 2015), something which Ramalho and colleagues argue that the researcher should do so at the earliest opportunity. To achieve this means making clear what reflexivity means within the context of a given study (Gentles, et al., 2014), and in order to do so with respect to my study I draw primarily on the work of Gentles, et al. (2014) and Ramalho, et al. (2015).

To be true to the principles of openness that lie at the heart of reflexivity (Gentles, et al., 2014) I should make clear at this point that my own initial thesis failed to be fully reflexive and it was only when this was pointed out to me by my examiners and they requested the addition of a fuller reflexive element that I gave more detailed consideration to this aspect of my work. Hence what follows in respect of reflexivity must be considered as a retrospective account and whilst at this point I cannot change many aspects of what I did (other than by the inclusion of this section) it is important that I make as transparent as possible my own position, actions and their potential influence on my study.

As Gentles, et al. (2014) note whilst reflexivity is relatively new to grounded theory it has been considered as an essential element of qualitative research for many years.

Over time the term has been defined in many ways but at its heart it most 'often refers to the generalised picture in which researchers strive to make their influence on the research explicit (Gentles, et al. 2014:1)'. However this is not as straight forward as it sounds because as a reflexivity became increasingly popular qualitative traditions (for example ethnography, phenomenology and so on) each adopted their own approach, something that is still generally lacking for grounded theory (Gentles, et al., 2014). Gentles, et al. (2014) sought to rectify this deficit and it is their arguments, augmented by the work of Ramalho, et al., 2015) that I primarily draw upon below.

The work of Gentles, et al. (2014) and Ramalho, et al. (2105) seems particularly appropriate as both were concerned with how reflexivity could be applied by a doctoral student undertaking a grounded theory study. Both of the students who co-authored these papers struggled to address reflexivity as there was a lack of guidance in the existing literature. In order to try and shed further light on the issue Ranalho, et al. (2015) focussed primarily on the use of the existing literature in grounded theory and its relationship to reflexivity, but did also consider aspects of analysis. Gentles, et al. (2014) took a broader approach and reviewed both the emergence of reflexivity in relation to qualitative studies generally and how the principles might be applied to constructivist grounded theory specifically. Their concerns were to try and make explicit the power of the researcher to 'dictate' key elements of the research process, for example, the questions to ask and who to ask them of, to consider how this power could be 'shared' with participants and to outline how the processes that were adopted could be made transparent via reflexivity.

In endorsing the use of reflexivity they cautioned against being too reflexive, arguing that there was the potential for the researcher to focus too much on themselves. They also acknowledged that no matter how reflexive the researcher tried to be that it was still primarily their own account that the reader had to rely upon. Notwithstanding these caveats they proposed that reflexivity needs to operate at several points in the research process, and therefore has a temporal element and that the researcher can exert influence in several ways including: the type of questions to be asked and of whom (which are likely to be influenced by existing preconceptions); the methods of

data collection and analysis and the reporting and writing up of the results. Depending on the epistemological position of the researcher such influences can be seen in a negative light, as introducing 'bias' into a study, or as a positive element (providing they are acknowledged and accounted for) in that they recognise the shared contribution of the researcher and participants. Constructivist grounded theory adopts this latter position. In their study Gentles, et al. (2014) considered the following aspects of reflexivity:

- The researcher's influence on the research design and decisions re the type of questions to ask and any preconceptions that they might bring into the study. Ramalho, et al. (2015) point out the importance of making fully explicit the role that the literature plays as this point. So far in this thesis I have provided insights into my own background and the role that this may have played in shaping the study and considered the influence of the literature in framing the sensitising concepts and foreshadowed questions.
- The nature of the researcher/participant interactions during data collection and analysis, including such issues as; the perceived 'power' of the researcher in the eyes of the participants; how the researcher contacted the participants; how they presented themselves to the participants; how they sought to involve the participants as 'partners' in the research process. These aspects are considered in the next chapter;
- The researcher's influence on data analysis. Gentles, et al. (2014) argue that the processes that lie at the heart of grounded theory analysis, especially constant comparison and memo writing, encourage reflection on the part of the researcher, something strongly endorsed by Ramalho, et al. (2015). Nevertheless any researcher influence still needs to be made explicit and how constant comparison and memo writing were practiced must be described. This is again considered in the next chapter.
- The researcher's influence on the writing and reporting of the study
- The influence of the research on the researcher.
- As helpful as these points are Ramalho, et al. (2015) make a very powerful additional argument in that in their view for a doctoral student much of their

reflection must (or at least should) take place with their supervisory team. It is their supervisors who hopefully have the experience needed to guide and support what is usually an inexperienced researcher during a difficult period. For these authors the supervisor/supervisee relationship is possibly the primary 'terrain of reflexivity'. This was certainly the case for me and again will be considered in the next chapter.

The framework proposed be Gentles, et al. (2014) (with the addition of the latter point) is consistent with the principles of constructivist work that informed my study and was adopted by me. Most of these aspects of reflexivity will be addressed at the appropriate point in the thesis (as has already occurred in respect on the first bullet point above) but a brief overview of how each of the above points was addressed will also be provided when the quality of the study is considered in the discussion.

4.14 Ethical issues in qualitative research

Protecting the rights of participants who join a research project is a basic principle of conducting research. Most higher education institutes have a formal process to approve the ethics of a research project. The general characteristics, which will be considered by the committee, are as follows (O' leary, 2010:42):

1. Ensure integrity in knowledge production
2. Promote responsibility towards participants
3. Protect both the researcher and the granting institution from any potential legal ramifications that might arise from unethical research

The ethical framework applied in this research consists of three main aspects: 'Ensuring respondents have given informed consent, Ensuring no harm comes to respondents and Ensuring confidentiality and, if appropriate, anonymity' (O'Leary, 2010:41).

4.14.1 Ensuring respondents have given informed consent

After the proposal is agreed and before the participants can engage in the project, they should have a right to receive essential information about the goals of the study, the detailed procedures, how they will be involved with it, time they have to spend and the risks or benefits they may have. The informants should clearly understand these

details and have the right to ask for and gain accurate answers and further explanation from the researcher. However, explaining 'endless technical details to each participant' may not be applicable (Kimel, 1988:69), because they may not understand information that is too complicated Information therefore needs to be given in a clear and easy to understand format. It is possible that some participants may not be able to read and write well enough to understand some documents and is these circumstances a family member who has no literacy problems will be asked to explain the content to the older person. If it is the older farmers' request, the researcher will perform this task instead of their family member.

Participants will be informed that they have a right to decide whether to participate in the research, because it is voluntary. If they agree to join the research project, the next step is to sign 'an informed consent form' provided by the researcher. It will be formal evidence of their understanding and agreement. The relationship between researchers and participants is ruled by an informed consent as 'the central norm' (Kimel, 1988:67). Nevertheless, participants can change their mind to withdraw from the study whenever they desire (Creswell, 2003). They should also be informed that it is not obligatory to continue to join the research. This concept has to be emphasized both in the documents which are offered to participants and in the vocal clarification of the research process.

4.14.2 Ensuring no harm comes to respondents

Participants should not be harmed by participating in a study. Harm in this case means all physical, emotional and psychological forms. Physical harm is considered easy to acknowledge, while psychological harm, such as 'resentment, anxiety, embarrassment, or reliving unpleasant memories', is difficult to recognize (O' leary, 2010:41). It may usually happen without intention and expectation. However, researchers have to try to predict possible harm and protect participants from it. The possible harm to participants will be predicted and methods to prevent it will be proposed in the ethics application (Creswell, 2003). It is not expected that the present study will cause participants any harm but if they become upset during the interview the interview will be stopped, support offered and if necessary the interview will be concluded.

Beneficence

Beneficence is another issue significant for ethical consideration. Direct benefits to older farmers could be offered in the future, if their stakeholders acknowledge the information from this research and decide to offer assistance to them in some areas that older farmers might not be able to deal with by themselves. Nevertheless, people who are likely to gain advantages from the knowledge could be younger farmers who are less experienced, mental stability and have lower resources, when compared with older farmers. In terms of risks to the participants, this study put minimum risks to them as the subjects and inquired asked were not sensitive topics or triggered any negative feelings or consequences for them. From the researcher's observation, the reactions or responses of all of the participants were comfortable, natural and relaxed. Some even felt enjoyed or were enthusiastic when talking about their stories. If some of the informants showed signs of hesitation when describing regarding some subjects such as personal or family problems, the researcher informed them that they could avoid talking about it, if they felt worried. The possible risk that the researcher could identify was the relationships between the respondents and other people that could be in trouble, because if those people realise that their mistaken, failed or wrong actions are revealed by the participants, they are expected to be very frustrated. Thus, the maintenance of confidentiality is an effective measure to protect the participants.

4.14.3 Ensuring confidentiality and anonymity

The identity of participants has to be protected within the research design (O' leary, 2010). There are several approaches that can preserve participants' confidentiality and anonymity. Using pseudonyms for participants instead of their real names is an important element of qualitative research, as is ensuring that place names are not too specific to allow a reader to infer someone's identity. Care must also be taken when writing up the analysis to ensure that, as far as is possible, no one will be able to identify any of the participants. Raw data must be safely stored and no one other than the researcher should have access to it without the permission of the participants on (O' Leary, 2010). It is good practice to store raw data in a password protected computer. After completion of the study there must also be a plan to destroy the raw data – usually in compliance with institutional guidelines for data management.

4.15 Conclusion

This chapter has discussed the methodology that was adopted in this study and after a variety of research designs were considered, a constructivist approach to grounded theory was chosen. Subsequently the principle features of such an approach have been considered including approaches to data collection and analysis. In the final section questions relating to rigour/quality, reflexivity and ethics have been described. Having provided an account of the methodological principles of the study the next chapter considers how these were applied in practice.

Chapter 5

Method

5.1 Introduction

This chapter will explain the practical stages of conducting the research project. It outlines how the participants were recruited and how the interview process was conducted and how the data were analysed. It will also outline how the study changed and adapted to circumstances in the field. In order to enhance confidence in the credibility of the study, examples of the coding process and memoing will be provided. Finally, a reflective section will be provided considering how I attempted to address a number of issues raised in the previous chapter.

5.2 Study setting and access

The study was conducted in Phitsanulok province which is a large province in the north of Thailand. It has a population of approximately a million of whom nearly 37,625 are elderly (The National Statistical office of Thailand, 2009). With large areas under agricultural production (47% of the provincial area) and a significant section of the population engaged in farming, the potential existed to collect a variety of data from older farmers who have worked, and continue to work, in different types of agriculture, such as rice or corn farming, or fruit growing. The limited existing literature available would suggest that such individuals are likely to have had different experiences, challenges and problems (The Office of Agricultural Support and Development, Chiangmai, 2011). From a practical perspective this area was not too difficult to travel around meaning that this province and its population had a number of advantages both practically and conceptually.

5.3 Sample and sampling

My initial strategy for accessing the participants was to contact the local older people's clubs to seek their help. As outlined in chapter one these clubs provide a venue where older people can meet and are often very popular. It was hoped that approaching these clubs and seeking the help of the local chairman would provide a 'neutral' and informal way of approaching participants. However, it soon became clear when the clubs were contacted that they had very little information on the occupation of their members and informal discussions soon revealed that very few older farmers actually

attended these clubs. In retrospect this was perhaps a naive assumption on my part, knowing, as I do, that farming was a demanding occupation it seemed unlikely that the older farmers would have the time to attend. Therefore, I approached local health professionals as another potential route to recruit participants and they suggested that I approach village leaders to help me recruit potential participants. Following this advice I arranged to see a group of village elders and with their help made some appointments to approach some older farmers to request their participation. This purposive approach was used to gain an initial group of participants, but following this theoretical sampling was adopted in keeping with the principles of grounded theory. At this early stage some inclusion criteria were required and these are outlined below:

1. Participants should be 60yrs of age or over (this age fits with the Thai government's official definition of 'older people')
2. Participants must be active farmers who spent a large proportion of their working time in farming.
3. Farming work must be the main source of income for the participants.

5.4. Ethical practice

Following ethical approval by the university's ethics committee, the ethical principles guiding the project described earlier were put into practice. Information sheets for the participants were translated from English to Thai and in order to ensure the accuracy of the translated work, an education professional who worked in a university language institute was hired to check the translated work. The result was that meanings, with small differences in vocabulary, were the same.

In addition, prior to interview, participants were given a verbal description of the project and also the chance to ask questions if desired. All of the participants agreed to participate in the study. Some participants needed a relative to read the documents for them and in these instances sufficient time was allowed for this to happen. Following agreement to participate a consent form was signed.

Before the interviews started participants were reminded that they did not have to answer any questions that they might feel uncomfortable about – none did so. All of

the respondents actively participated in the interviews. After the interviews the recordings were stored in a password protected computer. When the interview recordings were transcribed into interview transcripts, the participants' real names were changed to pseudonyms to protect the participants' privacy. Subsequently, these pseudonyms were used in the thesis, and during any presentations or seminars related to the study.

5.5 The interview procedure

The interviews followed an interview guide based on the foreshadowed questions informing the study. However this was used flexibly and the guide evolved as the interviews progress, informed by emerging data and consistent with the principles of constant comparison. An important part of planning for the interviews was to try to minimize the potential for any 'power imbalance' given my background as a health professional. It was also important to ensure the language used in the interviews was not overelaborate and easily understood. The approach to interviews was discussed and planned during supervisory meetings – this included issues such as using the right body language and not using the interview schedule like a 'questionnaire' – an important part of not looking like an official. Not wearing a tie was also important as it was felt that this helped reduced potential concerns about the interview being seen by participants as an official or professional encounter. Time was also spent at the start of the interview just chatting about simple things like the weather and items in the local news – in an effort to 'break the ice' and develop a relationship with the participants. Attention was also paid to the language used in the questions – strenuous efforts were made not to use terms and language that would not be understood. This was discussed within supervisory meetings and drafts of the potential interview questions were constantly edited to ensure this was avoided. It was also an important part of the data collection process that the manner in which the interview had proceeded was reflected upon and any words or phrases that seemed problematic were changed prior to the next interview.

5.6 Two phases of data collection in this research project

This study consisted of two periods of data collection – phase 1 lasted for nine months and phase 2 for one and a half months.

5.6.1 Phase I (From January to September 2012)

This phase began as soon as ethical approval was obtained. It was initially expected to last 6 months but as the process of recruitment had to change from the clubs to village leaders some extra time to adapt to this was required. The time period was also extended as recruitment was a little slower than expected. After each interview finished, the audio files were transcribed and translated in order to send electronically to supervisors. This then allowed supervisors to see the early data and, via skype, discuss the data and also the progress of the research interviews. This process enabled me to provide my reflections on the data so far and also allow discussion about the use of memos and the process of theoretical sampling. Being able to discuss my emerging skills as an interviewer was also important and the feedback from these meetings enabled me to reflect on areas where my technique could be improved – for example, identifying areas where a prompt may have yielded more explanation for a participant or ensuring that I had picked up on seemingly important comments.

In keeping with a grounded approach data analysis commenced as soon as data were available – initially by open coding and drafting tentative memos. This approach helped refine the interview guide for future interviews. In addition some participants were able to indicate other farmers who might wish to be interviewed. This, combined with other approaches to theoretical sampling, helped further data collection. The cycle of data collection and data analysis continued until the themes were becoming developed and at this stage a return to the UK was required for a number of reasons. First, it would allow the completion of the final elements of the Research Training Programme at the University. Second, as data analysis was becoming more in-depth and conceptual a period of time for numerous supervisory meetings was necessary. These meetings were an important part of developing ideas about the data analysis so far and being able to have a period where the emerging theory could be scrutinized was important. Supervisory meetings allowed me to present ideas and have them questioned and challenged, this was an important part of my reflexive approach to the data. One of the central areas of these discussions and subsequent reflexivity was the scope of the data being collected and whether the initial focus, primarily on health, was broad enough to capture the full extent of the farmers' experiences. As

highlighted by the foreshadowed questions the initial goal of the study was to collect data mainly on the health issues of Thai older farmers – with an emphasis on personal health and managing occupational hazards. As was noted earlier this reflected both my initial interests and the influence of the funding for the study. However, during the latter stages of phase 1 it started to become clear that numerous other issues were arising connected to the lives and work of the farmers as well, for instance; social, environmental, economical, and technological factors that interacted with their health either negatively or positively. This emergence of these themes began to broaden the scope of my analysis and after supervisory meetings and reflections on the data so far it was decided that collecting and analyzing more data would enhance my emerging theory making it more comprehensive and complete. Therefore the data collected so far were analysed further to begin to look at these broader themes and it was decided that upon my return to Thailand that these would be explored further in subsequent interviews.

5.6.2 Phase II (From April to May 2013)

This second phase of data collection allowed me to re-enter the field after this valuable period of reflection and supervisory discussion. This phase had 3 main objectives. One was to seek out additional participants to collect new data using an amended interview guide developed from the analytical and reflective work done in the UK. Second, it also allowed the opportunity to return to some of the earlier participants and collect additional data from them to expand upon their accounts in response to a broader set of questions developed from reflections on the data analysis in phase 1. Third, it allowed attempts at co-construction of the emerging theory with the participants as proposed by Charmaz's (2006) grounded theory method. To do this, meetings were arranged with five of the participants from phase 1 to present them with a verbal summary of the emerging analysis and themes. From this there was a general agreement that the themes were representative of their experiences and no element of the emerging framework was challenged – although some expressed surprise that some farmers avoided using pesticides and hired younger workers to undertake this task for them. Upon reflection it was clear that my initial thoughts about engaging the participants in the process of co-construction were too ambitious

and that the practical world that the farmers inhabited did not require them to think in a rather 'abstract' way about their day to day lives. This, for me, raises questions about the relevance of, or best means to, engage participants within a constructivist study. During phase 2 supervisory meetings continued via Skype and email – during which time it was decided that the theory being developed was robust and its composition was saturated enough to call a halt to data collection and return to the UK to complete the final stages of the analysis and construction of the theory.

5.7 Data analysis

The process of open coding commenced as soon as data were available. Every meaningful sentence or phrase was coded – with each interview producing a large number of codes. The approach suggested by Charmaz (2006)'s to label codes using verbs rather than nouns or noun phrases was employed. As initial coding proceeded the next step of data analysis was to gradually develop larger themes from the initial codes. This involved the iterative process of constant comparative analysis – looking for patterns from the initial codes and testing out potential larger themes into which the initial codes could be placed. Memos and supervisory discussions helped with this. During this period numerous themes were developed – many of which changed in terms of composition with some being subsumed into other themes and others dividing into separate ones. Next, themes were developed into larger themes or core categories. The final stage of grounded theory data is describing the relationships between those core categories and how the final theory 'works'. The following section provides an example of the data analysis process – for the development of the core category 'Balancing'.

5.7.1 Examples of the coding processes

Figure 5 The overall process of coding: initial, focused and axial coding

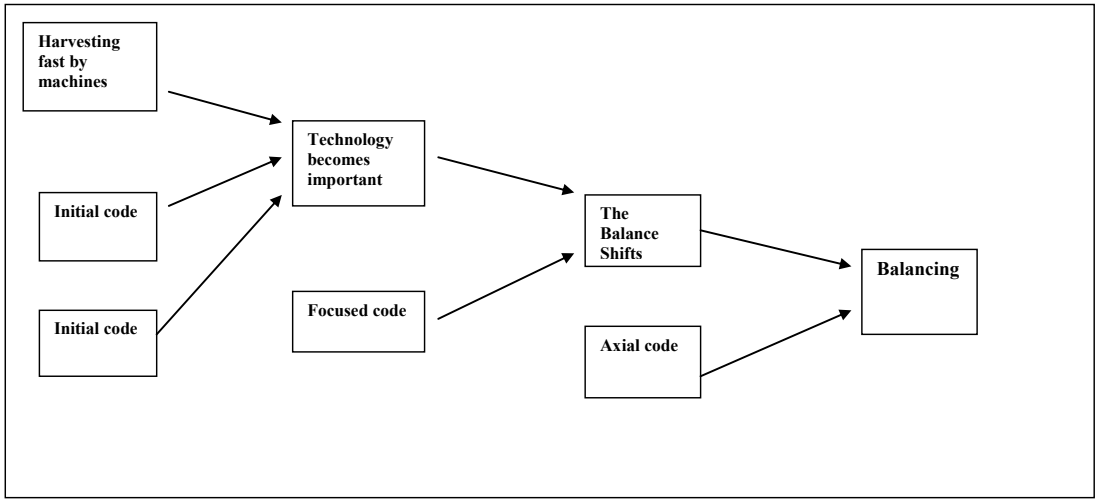


Fig. 5 demonstrates the coding flow to the core category 'Balancing' and how the initial codes came together to represent the issue of the rise of technology and the manner in which the farmers managed this process. As Charmaz suggests, initial codes were given labels but as analysis proceeded these initial codes were linked with more abstract codes that were more substantial – places where initial codes came together to represent an overall picture of the elements of the phenomenon. Therefore, initial open codes eventually became subsumed in a number of more substantial and more abstract focused codes: 'technology becomes important', 'money becomes master', 'natural becomes out of balance' and 'policy becomes prominent'. Subsequently, the sub-category of 'the balance shifts' arose in early stages of analysis. Please see the results chapter for a fuller discussion of these categories.

Initial coding

Table 11 provides an example of how raw data was coded in the early stages of data analysis – showing how initial codes were grounded in the data and simply reflect the remarks of the participants. Raw data shown in the table below were extracted from parts of an interview transcript that was relevant within the focused code of 'technology becomes important'.

Table 11: An example of data analysis during initial coding

Raw data	Initial codes
Today they are rush, but they use machines to harvest. It's finished. Harvesting 50 rai doesn't takes a day to finish. They get money. In the past harvesting 30 rai took 3-4 months. There were 3 types of rice, they would harvest orderly. If they grew the same type and they couldn't finish harvesting on time, the remaining one might went to	-Explaining the fast pace of working -Using machines nowadays -Harvesting is fast by machines. -Describing how fast they harvest at the present -Getting money more quickly -Taking a longer time for harvesting in the past. -Explaining types of rice grown in the past -Describing the harvesting approach in

the waste and become soils.	the past - disadvantages of growing only one type of rice

Memos in initial coding

Memos are important elements of the analytical process in a grounded method study. One of the memos linked to the development of the 'technology' code was the realization that the participants talked about the differences between farming now and farming in the past. The need to use machines was an important aspect of this – with participants recognizing that they could not stick with the old ways of working if they wanted to survive. The use of machines and other technology was seen as economically important – as it enable the farmers to harvest faster and get crops to market sooner without placing extensive physical demands upon them.

Focused coding

As initial coding, theoretical sampling and memoing continued, analysis turned towards developing more focused coding. This process was guided again by memos that sought to place the initial codes into larger focused codes. The following uses the 'technology becomes important' code as an example. From across the data participants referred to the necessity for them to use technological advances in their farming work. This was linked to the recognition that as they aged the physical demands of farming got worse – machines were a way to adapt. The use of other advances in faming technology – particularly pesticides and fertilizers added to the participants' remarks about having to embrace new developments – both to keep up and to reduce their physical workload.

Axial coding

As data analysis proceeded links between groups of 'focused' codes were tested – for example how these codes sat alongside other elements of the data. Part of this analysis also involved looking for explanatory concepts that could be used to explain these links and the processes they represented. For example, with the 'technology becomes important' code other potential factors such as 'money becomes master', 'natural becomes out of balance' and 'policy becomes prominent' were identified by

the participants as significant determinants that have changed their living and working. Thinking about this conceptually and trying to develop an overarching explanatory theory with a core concept at its heart led to the term 'balancing' emerging. This captures the many ways in which the participants in this study meet and responded to the multitude of challenges they face throughout their farming lives – a process by which they adapt, change and achieve a 'balance' between the technological, physical, social, financial and societal challenges of being an older farmer in Thailand.

5.8 Reflections on the realities of using a grounded approach

This section uses the reflexive criteria outlined in the methodology chapter to consider a number of challenges encountered and how I attempted to address them when undertaking the study. These are considered below on a point by point basis using the elements of reflexivity suggested by Gentles, et al. (2014).

The researcher's influence on the research design and decisions re the type of questions to ask and any preconceptions that they might bring into the study.

In the introductory chapter I provided a description of my personal background and motivation for undertaking this study. These comprised a mixture of professional and personal influences. The role of the literature was explored in some detail in the third chapter and my consideration of the literature combined with my own background and preconceptions played a major part in shaping the foreshadowed questions that gave initial direction for this study. I therefore clearly had a significant role in the type of questions that were initially asked. As I later appreciated these were too narrow to fully capture the lives and experiences of the participants leading me to adopt a wider perspective informed by the data. This highlighted how many of my initial thoughts were challenged as data collection began in earnest.

As a health professional I was used to seeing older people living with chronic illness and being cared for by their family. My early thoughts were about how health affects their work and the early questions driving my study focused on

this. As I became more aware of the lives of older farmers I began to appreciate how resilient many of them were and also that health concerns were only a part of their lives and work. It was this realization, alongside the data analysis, that made me recognise that there was far more than just health issues influencing the lives of the farmers. These reflections were important in influencing the expansion of my interview questions towards the later end of phase 1 of data collection and through phase 2.

My influence on the design of the study was perhaps less. My own inclination would have been to adopt a quantitative design but the literature clearly argued for a qualitative approach and thus provided the major impetus in this regard. As discussed earlier my supervisors played an important role in pointing me towards grounded theory (also see below)

The nature of the researcher/participant interactions during data collection and analysis, including such issues as; the perceived 'power' of the researcher in the eyes of the participants; how the researcher contacted the participants; how they presented themselves to the participants; how they sought to involve the participants as 'partners' in the research process.

This element was covered earlier in the chapter when the interview process was discussed.

The researcher's influence on data analysis. Gentles, et al. (2015) argue that the processes that lie at the heart of grounded theory analysis, especially constant comparison and memo writing, encourage reflection on the part of the researcher, something strongly endorsed by Ramalho, et al. (2015). Nevertheless any researcher influence still needs to be made explicit and how constant comparison and memo writing were practiced must be described.

This element was addressed earlier in this chapter when I provided examples of data analysis, coding, construction of axial codes, illustrated by the memos which guided this process.

Reflections within the supervisory team. It is the supervisors who hopefully have the experience needed to guide and support what is usually an inexperienced researcher during a difficult period. For Ramalho, et al. (2015) the supervisor/supervisee relationship is possibly the primary 'terrain of reflexivity'.

The supervisory process was an important element of the research journey and resulted in considerable reflection. The main areas covered can be summarized as;

1. The development of foreshadowed questions and sensitizing concepts occurred as a result of presenting the findings of the literature review and discussing the gaps in both empirical and conceptual knowledge relating to older farmers with my supervisors. This helped to clarify thinking and also focused my thinking on the precise contribution the study aimed to make.
2. Discussions with supervisors also helped me to realize the important of a flexible approach to data collection in qualitative research- particularly the notion of not being guided by rigid research objectives and the importance of following the data. The decision to be informed by the principles of constructivist grounded theory was in large part a result of reflections with my supervisors.
3. Sharing the early data with supervisors was an important part of the analysis – it enabled me to check out ideas and reflect on their feedback. This continued throughout the data analysis process and contributed to my reflections and thinking as the theory developed.
4. An important contribution of the supervisory process was the way the study aims broadened out towards the end of phase 1. It was a return to the UK and a more focused period of supervision that developed my thinking about the data so far and led to the modifications made to both sampling and data analysis within phase 2 and to the development of the theory.

5. Through the supervisory process I was able to reflect and adapt to the plans for co-construction in the project – namely, its reduction in emphasis upon my theory.

5.9 Conclusion

This chapter has explored the methods by which the research aims were achieved in practice. It demonstrated the realities of my study, the ways in which initial aims and approaches had to be modified and the flexibility offered by qualitative designs. It has also considered how data were collected and analysed and the steps taken to manage the research in an ethical manner. Examples were provided of how data analysis progressed from initial codes to the development of core categories. The chapter concluded with a reflexive section. The next chapter will present the final grounded theory which captures the findings of the study.

Chapter 6

Becoming, Being and Balancing: Processes shaping the lives of older Thai Farmers

6.1 Introduction

This chapter presents the findings of the study and comprises of a number of sections. It begins by providing details of the participants and their circumstances. This is followed by a brief overview of the processes that have shaped and continue to shape the experiences of older Thai farmers as they live their lives today. These processes comprises the mid-range theory that lies at the heart of the study and seeks to capture the nature of changes the farmers have experienced over time and detail how participants have responded to these significant changes, including ageing. The findings are presented in more detail throughout the chapter. The processes emerging from the analysis to form the theory have been termed:

- Becoming;
- Being ;
- Balancing;

The first two, becoming and being, represent, firstly in 'becoming', periods of transition for the participants and, in 'being', longer periods of living life as a farmer in Thailand. During both 'becoming' and 'being' participants engaged in a process of 'balancing' by which they sought to address the challenges that they faced throughout their lives as farmers. Many of these challenges were beyond their immediate control and were brought about either by global phenomena, such as climate change or shifts in Government policy in Thailand, either relating to farming in particular or more general issues such as health care. Responding to these changes required that farmers achieved a balance in their lives and therefore 'balancing' represents the core category and basic social process that unites the theory as a whole. Following a consideration of the nature of the participants and a broad overview of the theory each element of the theory is described in more detail drawing on interview and other data in order to highlight and explore the links that exist between the processes and how they have unfolded over time. Prior to this attention is turned to the characteristics of the participants themselves.

6.2 Participants

Information about the participants has been summarized in table 12 below, pseudonyms are used to protect confidentiality. As will be seen the majority of the participants were male, aged mostly between 60-68 years old, with a lesser number of the participants being 70 or older. Most graduated with a primary education, only a few having secondary education or higher. The main type of agriculture practiced was rice farming, sometimes combined with other activities such as fish farming, tending livestock or fruit/vegetable growing. The areas of land farmed varied according to the type of farming undertaken. Rice farming requires a larger area of land than other types of farming, while vegetable growing needs the least area. Of the 26 participants 23 were the farmers themselves and 3 were supporting family members.

Table 12: Participants' gender, age, levels of education, types of agriculture and area of land farmed

No	Participants	Gender	Age	Education	Type of agriculture	Area of land (rai)	Roles
1	Kong	Male	70	Primary education	Rice farming	20	Farmer
2	Leung	Male	74	Secondary education	Rice farming	10	Farmer
3	Wit	Male	65	Secondary education	Vegetable farming	40	Farmer
4	Bang	Female	64	Primary education	Vegetable farming	0.75	Farmer

5	Nam	Female	64	Secondary education	Rice farming	9	Farmer
6	Man	Male	65	Primary education	Fruit farming	9 (5 for rice farming and 4 for fruit gardening)	Farmer
7	Pat	Male	62	Primary education	Vegetable farming	2	Farmer
8	Tong	Female	54	Primary education	Vegetable farming	2	Family member
9	Bud	Female	57	Primary education	Rice farming	More than 20	Family member

10	Pan	Male	63	Primary education	Rice farming	More than 20	Farmer
11	Long	Male	68	Primary education	Rice farming	14	Farmer
12	Shoul	Male	68	Primary education	Rice farming	Own 4 and rent 25	Farmer
13	Rat	Male	60	Primary education	Cattle farming/Rice farming	Own 17 and Rent more than 20	Farmer
14	Yong	Male	78	Primary education	Vegetable farming/Rice farming	10 (5 for vegetable farming and 5 for rice farming)	Farmer

15	Fong	Female	63	Primary education	Vegetable farming/Rice farming	23	Farmer
16	Cherd	Male	61	Diploma	Cattle farming/Rice farming/Fish farming	More than 60	Farmer
17	Young	Female	63	Primary education	Rice farming	60	Farmer
18	Mee	Female	71	Bachelor degree	Rice farming/Crop farming	12	Farmer
19	Keng	Male	66	Primary education	Rice farming	10	Farmer
20	Moo	Female	62	Primary education	Rice farming	10	Family member

21	Mort	Male	73	Primary education	Rice farming	11	Farmer
22	Dam	Female	72	Primary education	Rice farming	30	Farmer
23	Dee	Male	66	Primary education	Rice farming	None	Farmer
24	Koo	Male	64	Primary education	Rice farming	28	Farmer
25	Pan	Male	62	Primary education	Rice farming	10	Farmer
26	One	Male	63	Primary education	Rice farming	Own 15 and rent 30	Farmer

27	Chom	Male	77	Primary education	Rice farming	20	Farmer

Land unit comparison

1 rai is equivalent to 1,600 square meters or approximately 0.4 acre.

6.3 Overview of the theory

As noted above the theory comprises three main processes described as: Becoming; Being; and; Balancing with the latter being the core category. Reflecting the temporal nature of grounded theory, becoming and being, as well representing processes, can be seen as transitionary (becoming) or longer term phases (being) in the farmers' lives that unfolded overtime with various forms of balancing being required. The way that the theory as a whole links together is briefly outlined below, together with the various elements that comprise the major phases overtime.

BECOMING A FARMER

- **Balancing multiple responsibilities**
- **Balancing expectations**
- **Becoming skilled**

BEING A FARMER: THE EARLY DAYS

- **Living in balance with nature**
- **Balancing the books**
- **Balancing risks**

THE BALANCE SHIFTS

- **Technology becomes important**
- **Money becomes master**
- **Nature becomes out of balance**
- **Policy becomes prominent**

BEING A FARMER IN RECENT TIMES

- **Becoming skilled in Balancing the books**
- **The old ways become redundant**
- **Balancing new risks**

- **Becoming an older farmer**

BEING AN OLDER FARMER

- **Achieving a new balance**
- **What will become of the future?**

6.4 BECOMING A FARMER

'Becoming a farmer' captures the earlier years of the participants' lives from their later childhood to their early adult life. This was a highly formative period that shaped the rest of their lives as it was during this time that decisions (if they can be called such) about later work were made and the skills and knowledge needed to 'become' and to 'be' a farmer were initially learned. This dynamic time can be captured under three broad headings: Balancing multiple responsibilities; Balancing expectations; and Becoming skilled. Together these highlight the balances and compromises that the participants had to make and their need to acquire a range of skills.

As will become clear from the accounts below the participants came from large families and they were usually the older child with several younger siblings for whom they were, in many respects, largely responsible for. This meant that the participants' own needs and desires had to be compromised and they had to balance their own expectations for their future with those of their parents and the multiple responsibilities that were laid at their door. These are described below.

6.4.1 Balancing multiple responsibilities

From a very early age participants had to balance multiple responsibilities including not only their own schooling and religious practices but also, as older children, to assist their parents with the farm and other family 'chores'. This is captured in the quotes below which vividly highlight both the level of responsibility participants held at a very young age and the difficult lives that they led. The need to 'balance' the multiple demands they faced was a skill that they refined over the years and, as will be seen,

served them in good stead later in life when they faced multiple new challenges. Below, Mrs Mee sums up the tradition role of older children is a Thai farming family during her youth, as well as the sort of expectations about their future that parents had:

> *Mrs. Mee- When a mother had children, the oldest child looked after the second one. The oldest and the second ones looked after the third one and the second and third ones looked after the fourth and fifth ones. They looked after others continuously. Older children looked after the younger ones. They also looked after themselves, helping their parents, feeding and bathing their younger siblings. They also cooked food for their parents. When their parents came back from the farm when it was dark, they could eat food. The younger children ate food, because of their older siblings who helped them. People in the past liked the oldest child to be a male, because he was able to help their parents work hard, working in the farm…Most parents wanted their children to be farmers, so they didn't allow their children to study further. They already had land for their children for living. Working together, they didn't have to hire anyone.*

As Mr Koo relates, such responsibilities were taken on at an early age and meant that even young children had a long 'working' day:

> *Mr. Koo- I had done this (farming) since I was 10 years old. In the morning I withdrew rice seedling for my mother before going to the school. Sleeping in my own farm and dressing for the school from there, around 7:30 am I went to study at the temple. My farm is near the temple. After the school finished I cooked for my family. After I cooked I went to sleep in my farm until morning and returned to my house. I never slept in my house, taking books and my homework there.*

The demands placed on children were often compounded by the relative lack of infrastructure, such as transport to school, as described by Mr. Dee below

Mr. Dee- In the past, no one helped my parents to rice farming. I had to help my family. In the past there were no vehicles to the school. I had to bike from here to Phitsanulok. In the past at 6 am I started biking from my house. In the past there weren't a lot of vehicles like nowadays.

Because of the difficult situations in which their parents lived the participants often had to finish their education as soon as they could as the expectations of their parents was that they would leave school and go on to work on the farm, irrespective of whether this was what the participants wanted for themselves. In this way they had to 'balance' their expectations with those of their parents, often compromising the former. This is captured below under 'balancing expectations'.

6.4.2 Balancing expectations

When the participants were younger leaving school at an early age was not necessarily unusual as educational opportunities for poorer Thai people generally were very different from what they are now. There were fewer educational institutes and more obstacles to prevent students from studying further. Fewer students had a chance to study in secondary schools, let alone universities. In general after graduating from the local primary schools children were expected to continue in their parents' occupation. Some participants were happy to do so but those who might have wanted to pursue further education usually could not do so due to a number of factors such as: lack of sufficient finances; the need to support younger siblings; or lack of encouragement and support from their parents. As a result working on the farm was the only realistic choice for them, it was the life they were brought up to, as the following quotes show:

Mr. Chom- *I started looking after my siblings, going to the school, helping my parents to do farming on Saturday and Sunday. People didn't want their children to study, worrying about their farms. 15 years old was the age to leave, students needed to leave the schools whether they would finish their study or not. No one would be allowed to study further. In the past students who finished primary schools would leave the schools.*

Interviewer-Why did you decide to go into agricultural work after your graduation?

Mr. Wit.- At that time my parents did farming and had no money, so I had to leave the school and work. They didn't have money to support my study.

Interviewer-Did you want to do agricultural work, or was it because you had nothing else to do?

Mr. Wit.- I wanted to study, but my parents had no money to support me, so I turned to work in our rice farm.

Many participants sacrificed their own ambitions for the wider good of the family. For example, In order to help other family members to study after his father died Mr. Pan decided to cancel his own plans to further his education and to support his brothers instead, who subsequently went on to other occupations;

Mr. Pan-I didn't study when I was young, so I have to do this, doing rice farming continuously. My father died when I was young, so I have followed his occupation. My brothers are government officials. After my father died, I had to do farming to support their studies, using a lot of money. I wasn't able study, so I have continued doing farming.

As they had worked on the farm from an early age many of the participants picked up a number of the skills they needed to become farmers as they went along, many of the other skills they needed were passed on by older relatives as described below.

6.4.3 Becoming skilled

As described above due to the rural nature of their lives, the need to support the family and a lack of formal education beyond a basic level meant that farming was a *fait accompli* for many of the participants, as Mr. Keng related below:

Mr. Keng- I lived in the countryside, my parents did farming, so I have followed them. I can't find other jobs to do. In the past it was difficult to find a job. When

I was young there were few jobs. It wasn't like at the present. It was difficult to find a job. I did only farming.

To be a successful farmer required that participants acquired the skills needed. As well as 'learning by doing', farming knowledge and skills were transferred from generation to generation as children were taught approaches to farming by their parents or other elders as described below:

Interviewer-That's what I want to know. Where do you get this knowledge?
Mr. Chom- From the parents, my parents were farmers. I had learned from them continuously. I got the skills from my parents and my grandparents from that time.

Mr. Dee- From older people. People in the past didn't let children play for fun all the time like these days. Drawing at wood with charcoal and starting chopping it first. Then, 'You replace me'. People in the past knew how to use children. I can do it because of them. In the past around 4 am every one woke up. Some took water. Some took buffaloes.

For Mr. Pan it was his mother who had taught him how to farm:

Mr. Pan-Yes, my mother taught me since I was young. For growing seedlings, she told me "you do like this, my boy. Don't break it. Rice will die". She taught me. I saw her and followed her ways. If I didn't follow her, rice would be broken and dead. It wasn't like doing farming today which is easier.

Having acquired many of the skills needed at an early age going on to 'be' a farmer was the only option that participants had. The section that follows brings together participants' accounts of being a farmer when they were younger. As will be clear later this was significantly different from being a farmer today.

6.5 BEING A FARMER: THE EARLY YEARS

In the past farming was far simpler than it is today and most of the routines of life were dictated largely by nature, from when the crops would be harvested to where people could live. To farm successfully meant 'living in balance with nature'

6.5.1 Living in balance with nature

As suggested above agriculture in the past depended almost entirely on natural conditions, particularly the availability of water, which largely dictated productivity. There were no man made aids to provide water, such as dams, and so the farmers had to wait for nature to provide the water essential for growth. If the rains were late and the rice seedlings had become old then output was poor:

> *Mr. Man-We had to work depending on the weather. Only waiting for rain, in the past if there was no rain there was no water in swamps, or probably a little water. Dams built in the past weren't used to release water for farmers. They were built to produce electricity. We were afraid that rain would be absent or rice seedlings would be too old for transplanting. Old rice seedlings can't grow well, so the output will be low.*

The availability of water also dictated where people would live. In the past farmers had to live near water courses, because water was an essential resource. As Mr Man noted above at the time there was no irrigation systems like today which could transfer water from its source to distant places. Not only was water used for agriculture, but it is also used for most daily activities, such as cooking, cleaning, drinking, and taking a bath. In some areas it was also the main mode of transportation. Therefore people had to live together as communities near water resources, such as rivers. Those who could not live near rivers had to build their own water resources. For example, ponds were constructed near their houses, digging by hand and building crude wooden structures. Mr. Man picks up his story below:

> *Mr. Man-People in the past had built their houses around rivers. They didn't live far from them. In the past people here or somewhere else had travelled with*

boats. Except for people who didn't have land around rivers would live around here, but they needed to build ponds. In this house in the past 5-6 people had built a pond. At that time there was no cement, so wood with a square shape was used to construct a pond.

However, nature often compensated and by living in balance with nature famers could supplement their food sources by foraging for what nature provided. As will become clear later this meant that farmers had very little need for money to purchase what they would have considered as 'luxury' goods. Some described that they might not spend money on anything for days or even weeks, for if other goods were required then these were traded for. Most things that they needed were either foraged or self-produced:

Mrs. Mee- Some looked for wild vegetable for their food following folkways, no trading. There was no trading in the past except for fish sauce, oil……..food in the past was simple. Most of vegetable weren't cultivated. Only were garlic and onion grown, and chili. Other vegetable could be collected from forests. Just like this season it would have vegetable like kwan, sap, everything including mushroom. Someone shot birds or squirrels for food. I had enough money. I had rice and fish for food. I bought only salt, garlic. I grew and dried chili. Mostly we prepared food ourselves.

Mr. Pan- 1,000 baht was more than enough for a whole year, because I didn't spend money. I went to the market, but I didn't buy anything. Vegetables grew around my house. Vegetable on my farm had no toxins, because no pesticide was used. A lot of fish and crabs were in the fields. At night frogs could be caught. Sometimes it was nearly two weeks or even a month I didn't spend money, because no goods were needed. We only bought sugar to make desserts, there were lots of vegetables in forests. They could be found every season. This season had this vegetable. That season had that vegetable. Mushroom grew in some seasons. It was natural. It depended on seasons.

As the above accounts suggest in the past there was very little need for, or reliance on money. However the farmers did live in quite close knit communities in order to be near a water supply and consequently an informal system of 'exchange' developed whereby people would help each other out on a reciprocal basis. 'Balancing the books' was therefore not primarily about keeping track of money but ensuring that you helped others when your support was needed. Only in this way could you expect to receive help in return.

6.5.2 Balancing the books

As noted above although the farmers often had few financial resources there were informal systems of exchange whereby labour or the use of farm animals was exchanged between famers and 'rewards' such as free meals were given for help provided. As with life in general much of this activity was dictated by the weather and the extent to which the seasons arrived when expected:

> *Mr. Man- When it was time rain would come. Sometimes rain came early we could do farming early. Sometimes some farmers who had free time and did nothing would go to help other farmers first. It was up to what they had. Someone had cows. Someone had buffaloes. They would take them to help other farmers to plow fields or prepare surfaces of fields. There was no hiring workers in the past. If I were a farm owner I would only prepare drinks and food to eat.*

> *Mr. Pan- When I was young, both men and women hit rice to separate grains. Sometimes nearly 50 people, or even 100 people helped each other, being in unity there was no need to pay wages. They prepared Sato (a traditional alcoholic drink made from starch) served in a thank-you party. They drank Sato in the party and ate food cooked from chickens or ducks. No need to buy pork. They already had ducks and chickens to cook or fish or fermented shoots. .*

Farmers in the past were seen to be far more helpful than at present. They helped each other in various ways, without expectation of financial gain, with any payment being made in kind:

> *Mrs. Mee-If someone asked my husband to make a plough, he did it for free. They only gave him the wood. He made it for free…They brought food for us. Sometimes it was fish or crabs. If they had it, they brought it to us as a reward, but not money.*

Apart from exchanging labour, the materials used for farming were also borrowed and returned after harvesting, with their being a high level of trust and mutual support between neighbours:

> *Mr. Dee-People in the past looked after each other well. If they didn't have enough rice (to plant), they could borrow it from others. Next year they would return it. People in the past didn't cheat others. When they got their crops, they came to the house to return what they owned.*

Because of the above informal system farming did not necessarily require a great deal of capital investment but it was also a precarious and unpredictable existence. However, the cost of living was very low and as was apparent in the above quotes most farmers did everything for themselves, with little need to pay for extra labour or hire/maintain expensive equipment. Most help came from family members (as noted above this was how the young became 'inducted' into farming) and farming was supplemented by growing vegetables for personal consumption, with any extra being sold, and by fishing. There was no reliance on expensive commodities such as man-made fertilisers (see later) as there is now, rather once again nature provided what was needed:

> *Mrs .Mee- Actually it (fertiliser) came from ploughing the fields using cows and buffaloes. They peed and excreted faeces on the land. This could greatly reduce*

the cost of fertilisers. Even though farmers didn't have money to buy fertilisers, the yields were satisfactory.

As a result life in the past was simple and relatively uncomplicated but also dependent on factors largely outside personal control. People in the past lived quite different lifestyles than at the present. Indeed the idea of a 'lifestyle' independent from their daily work made little sense to the participants. Due to lack of modern conveniences in their lives, such as electrical appliances or transportation, they lived simply, as their predecessors had done for many decades before. As will be discussed later the rapid pace of recent changes brought numerous challenges for the older farmers. In the past farmers worked largely to live, making money was not a motive for most, providing that they had enough to support their families. However that was not to say that life was risk free, rather that the source of risk was different than it is today. Nevertheless the farmers still had to balance out the risks that they faced.

6.5.3 Balancing Risks

Given the central role that nature played in the lives of the participants it might be expected that many of the risks that they had to balance came from nature itself, especially the environment. These are considered below.

Risks from the Environment

As will become evident shortly due to environmental and other changes flooding was now a major risk that the farmers faced. Whilst this was not the case in the past as the abundance of trees and forests slowed the flow of water from the mountains flooding still occurred but had relatively little impact, as Mrs Mee describes below:

Mrs. Mee- Sometimes there was flood, but it came and left rapidly, because there was no construction to block the water. It could flow naturally. No serious damage. Nowadays floods stay for a long time and it will decay the rice. In the past water came and went. It didn't remain for a long time. Flooding in the

evening, in the morning it normally went. No serious damage from flooding for a long time.

Consequently environmental conditions, at least in the form of flooding, posed few problems. Indeed it was a lack of water that was of greater concern. When problems did occur they were relatively minor and mostly related to the physical demands of farming itself, for example accidents. In addition there were no man made pesticides in the past and consequently little pollution. As will become clear shortly this is not the case today as the use of chemicals to aid the harvest (see later) caused problems with toxicity, meaning that extra care had to be taken, something that no one worried about in the past:

Mr. Koo-Nowadays there are a lot of toxins around us. In the past when I went to the farm, I never took bottled water to drink, just brought a tank to contain water from the fields or a swamp. The water was cool and smelled good like distilled water. That was water from a swamp. Nowadays there are a lot of poisons. They are from the mountains. I have to prepare water to drink from my house.

Mr.Dee-Water from the farm could be drunk. When I went to the farm, I didn't need to bring water with me. I separated one corner of a swamp not allowing buffaloes near it. The only one problem was buffaloes' urine. Sometimes they peed over there. Now there are toxins, I don't dare to wash my face with the water there.

The most serious risks that the farmers faced were posed by accidents or ill health, which were worsened by the relative isolation in which the farmers lived and the paucity of health care provision. But compared to the situation today even these factors were seen to pose little risk.

Health care and infrastructure in the past

From the participants' point of view people in the past were healthier and stronger than people at the present, as the increased use of pesticides were seen to have resulted in many additional dangers. Moreover the greater physical labour farmers performed in the past was seen to have kept from fitter and stronger:

> *Mr. One- There were fewer diseases in the past for the generation of my parents, people who were 60 years old were still strong. They were better at plowing the land than people nowadays. People nowadays are very weak, looking very old and walking jerkily. We live in the environment with a lot of chemicals, eating vegetable or something else contaminated with chemicals.*

However, the past held its own challenges with infectious diseases, such as malaria, being the main causes of illness and death in rural areas in Thailand. The health care system in Thailand at that time was poor. There were no essential drugs and medical devices to treat patients.

> *Mr. Man-In the past malaria was the main causes of illness. Only malaria, flu wasn't a big problem, but people who had malaria usually wouldn't survive, because there were no antimalarial drugs at that time. There was no saline solution. It was difficult to go to see a doctor in the past.*

In addition the transportation system in Thailand was not well developed at that time and it was difficult for patients to get to a doctor for treatment if they lived far from government health care units, as most of the farmers did:

> *Mrs. Mee- Having treatment in a hospital meant walking there for 12 kilometres, walking in the fields.*
> *Interviewer -But what if patients couldn't walk?*
> *Mrs. Mee-They had to be carried. Making a wood stretcher and putting cloth onto it. Then letting a patient lie on it and carrying them for 12 kilometres.*

People who carried the stretcher were changed periodically. Otherwise, using a cart pulled by buffaloes.

With the unavailability of modern medicine in rural areas in Thailand at that time traditional medicine based on herbs were the main means of treatment and traditional medicine was widely practiced when people were ill. The necessary herbs could be found in forests (again reinforcing the reliance on nature), and knowledge of medicinal plants was another of the skills that the farmers learned:

Mr. Koo- people used 'Prasartnorat' (Herbal medicine) and boiled it. 'Yasang' (another herb) could be gathered, it grew itself. People in the past knew about it. Some drugs could be found in forests. Diseases disappeared. Fever could be treated with some medicines. They were bitter....Lukmakir (Herbal medicine) was applied to treat Athlete's foot. Pounding it and applying it. Then, it disappeared. Sapsia (A Herb) could be used to treat wounds.

However a risk here was that the effectiveness of 'medicines' in the past was not as good as today and diagnosis, even by a doctor, might not be accurate, often being made using little more than trial and error:

Mr.Man- In the past doctors couldn't diagnose illness correctly. Medical technologies at that time weren't modernised like those at the present. They diagnosed that disease should be treated with this medicine depending on what they thought was wrong.

Therefore whilst life was not 'risk free' in the past the types of risks farmers faced were less complex than today and self-care was often seen as the best 'cure'. Indeed overall, as the above accounts have shown, life as a farmer in the past was relatively simple, if challenging, with much being dictated by nature itself. Farmers lived in relatively small, isolated but close knit communities were people helped each other out on the implicit expectation that any help given would be returned when it was needed. There was little need for money and life was lived on a largely subsistence basis.

This first component of the grounded theory has shown how the participants **became** farmers, described what it was like to **be** a farmer in the past and how a relatively straight forward **balance** could be achieved. An appreciation of this is important as it is needed to better understand the influence of the past in shaping the participants' meaning of and responses to the rapid changes they have experienced in recent years. As will be considered below these changes have challenged every aspect of the older farmers' lives. In the past they lived simply and tradition played a large role in shaping major life choices (in fact few had real choice), such as which occupation to follow and day to day life. Farming was family business which was transferred from generation to generation. Farmers' children learned how to farm from their parents and then after graduating from schools and leaving after only primary education they followed in their parents' footsteps. Agricultural tools used were simple, such as hoes or spades which they could buy or make themselves. If help was required this was not hired but other farmers came to help, confident that this help would be returned when required. Nature was the main force shaping decisions and the availability of natural resources such as water dictated everything from where to live to when to plant rice. Expectations were relatively low and making money was not a major priority, rather subsistence living was the order of the day. Living required few additional resources beyond those that could be grown, collected or traded. Therefore there was little need to use money, except for some necessary items, such as salt or clothing which participants could not make themselves. Skills of financial management were not really required. Modern infrastructure and conveniences were largely absent. If they were ill herbs could be found from forests.

However, as hinted at above, more recently this previous way of life had over recent years faced numerous and fundamental challenges that arose from a, variety of sources. The next section describes how the balance of life has shifted for the participants in more recent times.

6.6 THE BALANCE SHIFTS

As described in the section above most of the participants had started to farm at an early age, often from 10 onwards. As most were now in their late 60's or 70's farming was a way of life that they had pursued for some 50 years. The first 30 or so of these followed the traditional patterns described above and had changed relatively little for a century or more. However, in the last couple of decades the participants had lived through a period of rapid and profound change that had fundamentally shifted the taken-for-granted 'balance' that had characterised their earlier lives. This section charts the type of changes that had brought about this shift in balance, starting with the increasing influence of technology.

6.6.1 Technology becomes important

For most of the farmers' earlier lives technology played little part in their traditional ways of working, which were essentially 'low tech'. However in recent times agricultural technology had developed rapidly on a number of fronts in an effort to raise productivity as well as to increase the convenience and speed at which crops could be grown. Pesticides were developed to deal with pests which did not exist in the past. Agricultural machines, such as harvesting machines, were introduced to reduce the time spent harvesting produce. For example it could take several months to complete harvesting in the past, but now it required only a few days. As a consequence buffalos were no longer needed. New strains of rice meant that planting could occur much more frequently than in the past. Piping water to the fields was now no longer an issue. Whilst there were many advantages to these developments they also posed major challenges, meaning, as will be described in the following section, that the old ways of farming were becoming redundant, new risks had arisen and money became increasingly important. A flavour of this is provided below, as is the impact on farmers' lives and the perceived problems:

> *Mrs. Nam- Now I spray pesticides a lot. In the past we did rice farming once a year. Now someone can do it 3 times a year. But the soil can't adapt itself properly. Fungi can occur. We don't leave soils exposed to sun light for enough time. In the past it wasn't like this when we did farming once a year.*

However, some farmers appreciated the benefits, for example, of using agricultural machines instead of buffaloes. For them using machines such as tractors was more efficient and meant that they could work longer as machines don't become tired, unlike buffaloes which needed rest and food. This is one of the reasons why farmers chose to replace buffaloes with the machines, selling the former to buy the latter:

> *Mr. Pan-When I use a tractor, I will sit on Hongte (a place where farmers sit behind a small tractor) which has wheels. When I used buffaloes, after only 2-3 hours, they were tired and hungry. I had to take them to eat grasses and sleep near water. I couldn't force them too much to work and there wasn't enough grass for them. It was hard. Using the machine is good.*

While the advantages of using agricultural machines were undeniable there were negative consequences in terms of unforeseen social changes. Some of the participants felt that the sense of community that used to exist in farming was now largely gone as farmers did not have to call on their neighbours for support. They had become more independent but also more isolated as a result. This fundamental shift in the 'balance' of life is described below by Mr. Long :

> *Mr. Long-It disappears (the sense of community) because of the machines. For example, using the harvesting machine, I don't need help from others. Farmers work individually. In the past they really had to help each other, but now it disappears.*

Furthermore, with the use of new technology farmers had become less dependent on natural factors, such as water from rain. In the past many farmers could plant rice only once a year in the rainy season and then had to wait until the next year before they could plant again. Nowadays many farmers planted rice two or three times a year, using pumping machines to transfer water from either natural sources or a distant irrigation system to their own fields:

Mr. Man-There are a lot differences. In the past after harvesting, they did nothing, waiting until the time to do farming next year. Now there are agricultural machines. Even though there is no irrigation, they can use machines to pump water from a swamp which is 1-2 kilometres from their fields. They can put a pipe through their neighbours if they agree with 2-3 pumping machines at a river to do farming 2 times a year. If their farms are near a river, they can do farming 3 times a year, because it doesn't take a long time to harvest. Harvesting 10 rai takes only 2 hours to finish.

However, technology did not come cheap and whereas in the past money played relatively little part in the farmers' lives it now became increasingly important. This was another major shift in the balance of how life was lived.

6.6.2 Money becomes master

In the past farmers could live comfortably with little or no need for money. Their farms and the natural environment could provide them with their daily needs. What they did not grow they could collect from natural sources near their houses like rivers, swamps or forests. There might be no need to spend money for several days or even weeks. Now however things were very different as the farmers had numerous expenses to meet meaning that money figured far more prominently in their lives. Consequently farming now required various levels of investment in a range of products, such as fuel oil, agricultural machines and a variety of chemicals. In addition there were maintenance costs for the machines and/or hiring workers to work on their farms. As a result farmers now relied on loans, a thing unheard of in the past, in order to pay these costs.

Mr. Long- For a tractor, before using it, it takes 1,000-3,000 baht to maintain it and a lot of money for the cost of oil. Before I can use it, I have to pay a lot, while buffaloes and cows eat grasses, not oil. Since farmers turn to use machines, they are in trouble, not being rich.

Mr. Pan-Using the machines is good. They work fast, but they need oil. I have to buy oil for them. A gallon of oil now is, oh, several thousand baht a year, more than 30 baht per litre. I use 8-10 litres of oil per day. You can calculate it.

As will be described below the increasing reliance on money meant that the famers had to learn a range of new skills in financial management. In addition to technological advances and increased financial costs recent government policies, relating to both farming itself and wider concerns such as health care also served to further shift the balance away from the old ways of farming. A number of these were closely related to the importance of financial considerations.

6.6.3 Policy becomes prominent

Over recent years agricultural policy had played an increasing important part in the farmers' lives. Higher rice prices were introduced by the Government as an incentive to encourage farmers to grow more rice but as a result there was more competition among farmers to rent land from land owners to grow even more rice. This in turn pushed land rental fees up and this was one of the factors raising production costs yet further:

Mr. Pan- Now the demand to rent fields for farming increases. For example, it was 10,000-15,000 baht in the past. Now it increases up to 25,000-30,000 baht. The fields are in high demand.

Mr. Long- People compete a lot for land to do rice farming. The renting cost now is 1,000 baht per rai per time, 3 months. Sometimes it is 1,200 baht. Now the renting cost is high. People compete a lot for land to do rice farming, because of the high rice prices. Even though its 1,200 baht per rai, they still do, especially if there is a canal near the fields.

Other government policies also exerted a considerable influence. In the recent past there had been a number of policies issued by the government intended to specifically help farmers as well as general policies that also impacted on their lives. An example of

the latter is access to medical services free of charge. Consequently, Thai farmers do not now need to worry about hospital fees if they suffered from any work related illnesses as treatment by government health services is provided free of charge. The full impact of this for older farmers is considered later.

Other more specific government initiatives are the promotion of organic farming and the rice price assurance project designed to protect farmers' income and financial security by making prices less uncertain and more controllable. Infrastructure projects such as the construction of dams and irrigation systems, both to generate electricity and for their agricultural benefits have further shifted the balance away from the older ways of farming.

However, such government projects have had both positive and negative effects. Although the original intention of the government was to help to raise farmers' living standards, this has not always been achieved. For example some policies, such as the introduction of organic farming, have not been widely accepted by farmers. Conversely some of the projects had been accepted enthusiastically in the short term without thought to their longer term impact. A number of these, and their both positive and negative results, are described in greater detail below.

Organic farming

In the past farming had never required the use of pesticides as most of today's pest did not exist or were controlled by natural means. Furthermore, fertilisers were usually not necessary due to good soil condition and the lack of over-farming. However the balance shifted considerably when modern agricultural techniques were introduced and became standard practice among Thai farmers. For example recently new pests had emerged which required effective methods to control and destroy, consequently pesticides are now in routine use. However, using pesticides lead to other problems for farmers. For example pesticide toxins can gradually harm farmers' health when they are used for a very long time. In addition consuming produce contaminated with pesticide toxins can increase the risk of some chronic health problems such as cancer.

Another disadvantage of pesticide usage was the increasing costs of investment which leads to lower profits or even loss of capital for farmers who fail to control their costs of production. In order to lessen these problems organic farming was introduced by the government and has been widely promoted.

The principles of organic farming were introduced to older farmers by governmental officers and they primarily consisted of replacing chemical pesticides with natural pesticides produced from herbal extracts and replacing chemical fertilisers with natural fertilisers produced by microorganisms. However, the acceptance of these ideas by older farmers was very varied. Some adopted the methods piecemeal and used both chemical and natural fertilisers at the same time. As a result the amount of chemical fertilisers and pesticides used varied considerably with some farmers using a large amount of organic material while others used very little:

> *Mrs. Tong-Doing it (organic farming) in only a small part of the farm is OK, but doing it in most of the farm is impossible….Some farmers use organic substances, but they have to use chemical substances alongside organic ones. None of farmers who don't use chemicals are successful. Every one use chemicals, but some use a lot, while others use only a small amount.*

Only a small number of farmers actually preferred using organic fertilisers to chemical ones.

> *Mr. Leung -It is up to agriculture, like farming. I don't pay too much attention to practice. When we farm, we apply fertilisers and spray pesticides. We use biological fertilisers. For chemical fertilisers we don't use it if it is not necessary.*

Although some farmers acknowledged the benefits of organic fertilisers they could not wait for the results, which are much slower than when using chemical fertilisers and required higher investment. Therefore, most farmers still preferred using chemical fertilisers to organic ones:

> *Mr. Keng-I was advised to use organic fertilisers, but the outcomes are too slow and I will have to invest a lot. If I use chemical fertilisers the outcomes will be quicker. After I use them I can see the outcomes in this year. For organic fertilisers if I use them I will see the outcomes in the next year or others….They are good, but the outcomes are too slow.*

The impact of such the organic farming policy had been considerably reduced by not consulting fully with farmers prior to its introduction nor of thinking through its acceptability. Another policy that received more enthusiastic support, at least initially, was the rice price project.

The Rice Price project

The rice price project was introduced to help stabilize fluctuations in the price of rice and make it easier for farmers to plan ahead. At the time of data collection every Thai farmer could participate in the project a number of times annually, with the price they received for their rice being set by the government. However, farmers do not receive the full amount, with some money being given to private companies who bought the farmers' rice on behalf of the government. Consequently farmers receive about 85% or less of the 'guaranteed' price. Despite this the project was seen as superior to an earlier one which had been based on paying compensation to rice farmers:

> *Mr. Pan-I think it's good. It's better than the compensation. If I get a lot of outputs, I will get more money. For example, for the compensation if I had 20 rai, 1,000 baht per rai, I would get only 20,000 baht. I think the project is better.*

However, the government also set numerous regulations, one of them limiting the frequency with which farmers could join the project each year. Currently each farmer could sell their rice to the government no more than twice a year. For those farmers who cultivate rice 3 times a year their final harvest will not be accepted. Therefore, they must find a market and sell these crops themselves, this was often not economical once other costs had been taken into account:

Mr. Dee- I can do it (grow rice) 3 times a year, but the government won't accept my output. I can do as much times as I wanted, but the government won't buy my rice. I will get 6,000-7,000 baht if I sell my output to the market myself. It's not worth the cost of fertiliser. If the rice price is lower than 10,000 I will lose my capital. The costs of production are higher.

Despite this many farmers were very satisfied with the government rice project as it helped them to earn more profit. However, it represents another example of how significantly such changes have shifted the balance, with farming now becoming increasingly complex, not only agriculturally, but also financially.

The policies on organic farming and the rice price were specifically targeted at farmers. Others to do with infrastructure has had an impact, such as the construction of dams and irrigation systems. Over the last two decades the construction of dams and irrigation systems has exerted a big influence on the farmers' lives. With guaranteed water for agriculture from dams and irrigation systems farmers could now cultivate their crops more often, and with greater certainty. However, to achieve this land belonging to farmers had been expropriated by the government to construct dams and irrigation systems. The farmers accepted a small amount of compensation from the government for their loss, because they thought that those irrigation systems would bring other long term benefits to them. Once again though, as will become clear later, this also had a significant impact in alerting the balance within farmers' lives.

As well as the above, often quite specific, government initiatives, Thai farmers, like the rest of the country, had been influenced by a series of societal and environmental changes, the latter having changed the balance and impact of natural factors.

6.6.4 Nature out of balance

As described earlier the weather, and especially rain and temperature variations, had always exerted a major effect, especially on a crop such as rice which is very sensitive to any changes. For example, higher temperature can prevent rice from producing

grains and subsequently it becomes atrophic. For fruit growers higher temperatures make fruit trees' flowers fall early, which results in lower productivity. Compared to the past most of the farmers felt that temperature variations, especially high temperatures, were much more common nowadays:

> *Mr. Pan-Yes, if it's hot, my rice won't produce grains. Rice grains will be atrophic, a lot of problem….No, if it rains, I will get rice, but if it doesn't rain, I won't get like I expected*

> *Mr. Man-The problem I have is heat. If it's too hot, trees' flowers will fall. Even though I try to water them, but it won't help, they overheat. If the flowers fall, the fruits will be low. If I get good outputs, it will be good. If the weather is hot, I will be worried. I will get some, but not much. I expect that I will get this amount of produce, but I don't get up to that amount, I will be disappointed. It depends on the weather.*

Therefore whilst the availability of water was now more certain due to irrigation schemes, factors beyond the control of farmers, and the government, such as climate change meant that old problems had simply been replaced with new ones. Moreover, whilst in the past farmers could make efforts to carry water to their crops they could do little about rising temperatures.

As will be seen from the above a wide range of national, and indeed, global factors influenced older Thai farmer and had altered the balance by which they had lived their lives for the preceding decades. 'Being' a farmer now was therefore radically different than it had been in the past. The nature of these changes and how the farmers responded is now considered.

6.7 BEING A FARMER NOW

One of the most significant changes described above was the growing importance of money in the farmers' lives. As a result of this they had to become far more skilled in handling money in order to 'balance the books'.

6.7.1 Becoming skilled in balancing the books

Previously, as noted, the farmers had paid little heed to, and had not much need of, money. Life was based largely on a subsistence economy where farmers grew, collected or traded for most of their needs. They only had to buy a relatively small range of produce and had no need to borrow money, nor to put themselves in debt. However, things had now changed significantly and money played a major part in their lives. They needed it to buy many necessary items and goods for both their daily and working lives. This required what was, for these farmers, a large scale investment. Foremost amongst these investment items were a range of machines, essential for modern agricultural practice. These were expensive to buy and required on-going financial resources to maintain and run. Additional costs were incurred to purchase a range of chemicals, both pesticides and fertilisers, as well as money to pay for casual labour, as and when required. Furthermore farmers could not now grow or collect all the food that they needed and had to buy a range of produce.

The above changes were accompanied by a more fundamental shift in the rationale underpinning farming. In the past money and profit were not major motivating factors but now profitability had become the main aim. Farmers had to calculate the profits they would obtain for each investment after selling their produce. Consequently, the market became a primary consideration:

> *Mr. Man-It is the market prices. How much fruits are sold in the market, I will sell at those prices. I don't set my own prices. Fruits in Phitsanulok are sold at the same prices. If I sell my fruit more expensive than other sellers, the customers won't buy mine, but others.*

This meant that many decisions were taken out of the farmers' hands, and just as with the government price for rice, farmers became far more dependent on 'market forces'

and the financial sector. To manage these often complex financial matters meant that farmers had to acquire a range of new skills in order to remain solvent, foremost amongst these was the need to manage their debts and balance a budget.

Debt control and budgeting

With the rapid changes in the techniques of modern farming, such as the widespread use of chemical pesticides and fertilisers, and the need for agricultural machines, came a requirement for a level of capital investment unheard of in the past. It was therefore not surprising that some older farmers were cautious and afraid of falling into debt. As they became older this became an even greater concern for some, who decided to cut back on the amount of investment that they made;

> *Interviewer-Don't you ask for a loan from the government bank of agriculture?*
> *Mrs. Nam- In the past I did, but now I don't….the money I borrowed was invested in my farms, but now I am old, so I don't ask for a loan. I have returned all of the money I borrowed. Now I only do it for my living. That's enough….No, when it was due, I returned money to the bank on time.*

Others, such as Mr. Long, kept a tight rein on how much they borrowed and did not over-extend themselves in case an unforeseen problem arose:

> *Mr. Long- As for the problem of debt, I barely have any. I don't borrow a lot of money from anyone, so I don't have a lot of debts. If I had a lot of debts and a problem such as aphids arose, I wouldn't have money to pay back my debts. Usually I ask for a little loan, 40,000-60,000 baht, after that I pay my debts as soon as I can. But if aphids considerably damaged my farm, and I had a bigger debt, say 100,000-300,000 baht for investment, then if I don't get the crops, I won't have money to return the loan.*

In order not to fall into debt the older farmers tried to budget carefully, for some this was done informally, whereas others adopted a more carefully planned approach;

Mr. Cherd- To hire workers I have to have money. If I don't have money I can't hire workers….I have to think, prepare. I will need money for the project. How much do I need? I have recorded it all in a big notebook….For me I got 300,000 baht from selling rice. The costs were more than 100,000 baht. I knew, because I had recorded, calculating all the costs, hiring costs. I had recorded all.

Keeping accurate records, and calculating likely profit and loss carefully, became important, if at first rather alien, tasks:

Mr. Koo-I recorded my costs, the costs of oil, growing rice, a harvesting machine and a truck. I recorded all. A harvesting machine for 10 rai was 4,500 baht. I recorded already. The cost of 10 sacks of fertiliser, 850 baht per sack, was 8,500 baht. The cost of growing rice was 7,000 baht. I recorded and finally calculated the total costs. The cost of pesticides was 200-300 baht per bottle. I recorded all.

As well as trying to minimise their debts in order to secure money when they needed it the farmers had to be seen as a 'good bet' by the financial institutions. They had to be 'credible'. This sort of 'impression management' was a new requirement for most.

Credibility preservation

If the older farmers could not preserve their financial credibility with the financial institutions this could have a profound impact on the amount of interest that they were charged or on the size of the loan they could secure:

Interviewer-How much is the interest?

Mr. Wit- It was 5 percent per time. I have to return money to the bank by this March, if I don't return money on time, my credit will be lost. If I want to ask for a loan, I will get only a few. They will give me a lower loan.

In some instances, as was the case with Mr. Pan, rather than lose their credit status farmers borrowed money from other sources to pay back the bank:

> *Mr. Pan-Water damaged all of rice and I had a loan from the bank. I had to ask for a loan from someone to pay for debts from the bank to preserve my credibility. I borrowed money from people in the village. I don't want to lose my credibility with the bank. If my credibility is good and I want to buy more land, I can buy it. If my credibility is bad, they won't give me a loan. You lose credibility I won't get a loan. They won't give me a loan. They won't help me.*

The rate of interest for farmers with bad credibility could be as high as 15% while that of farmers with very good credibility could be much lower at only 5% or 6%. Thus if the older farmers could return their principal with interest on time, their credibility was upgraded. In other cases tactics such as interest only payments were negotiated to manage debt and maintain the status as an 'excellent customer':

> *Mr. Pan- When I went to pay my debts, they said "You don't need to pay for your debts, just only pay for your interest. Your capital can be paid in the next 3 years". My interest was 15 percent. My loan was a short term. Now my interest is 6-7 percent, because I have a status of an excellent customer.*

In addition to the above in order to manage their finances successfully and maintain their financial credibility farmers often had to diversify and develop a number of income streams.

Developing several sources of income

As farmers have no regular salary their income is uncertain, often depending on forces outside their control. Such factors include the type of crops that are grown. For example vegetable farmers can sell their crops every day. However, other types of farming, such as rice farming, work on a far longer time scale and crops are harvested only every 3-4 months. In these cases farmers who have free time after finishing their tasks on their own farms may either cultivate multiple types of crops with differing

growing periods or take another job in addition to farming. This not only supplements their income from farming but gives them another source of revenue if their harvest failed. This was particularly necessary in the past when, for example, only one rice crop a year could be harvested:

> *Mr. Long- I did rice farming once a year, so I did construction work additionally.*
> *Interviewer-You had free time when you finished farming, so you went to do construction work?*
> *Mr. Long-Yes, both when it was arid and after I finished farming.*

> *Mr. Koo- In the past, as well as farming I was a contractor for construction work. In the past I could do farming only once a year. After harvesting rice and storing it in the barn I would persuade my relatives to help me work as a contractor to build houses. These were my supplementary incomes… I have done like this until my sight is poor, so I stop the job. Then after building an artesian well I can do farming twice a year. Therefore I continuously do rice farming.*

Another tactic was to grow some produce that was used to feed the family and others that were cultivated for commercial purposes:

> *Mr. Chom- I used to do in the past, growing vegetable for food. I grew every kinds of vegetable….Mostly for food, but if it was more than enough I sold it. I grew lettuce and mun. Previously I had grown beans, sesame, corns and cassava.*

Some farmers sought other alternative ways of generating more income by selling their own produce in the markets, rather than to wholesale merchants, who offered less profit than direct sales:

Mr. Man-Yes, when I have fruits, I will sell them at my fruit stand. I don't need to have wholesale business with anyone. Selling them by myself earns much more money. 50/50 is the profits. I sell my own fruits. I don't buy them.

Many farmers relied on the help of family members to remain financially viable, with a division of tasks as noted below:

Mrs. Tong-Yes, he has duties to water them and clear grasses, looking after it….I only sow vegetable seeds and go to sell vegetable. We have different tasks. We depend on each other.

Many participants became quite creative and demonstrated considerable diversity in their range of farming in order both to limit, and to manage, potential debt:

Mr. Man-For example if we have 3-5 rai of land we will manage it into several different sections, building a pond for fish farming in 800 square meters of land, growing vegetable in 400 square meters of land, vegetable such as Kapao or chilli, growing fruit in 400-1,600 square meters of land and in 2 rai growing rice for food for a family. We don't have too many debts. We have no need to buy food, with vegetables from the farm, fish as well. Ducks or chickens can be found in the farm. What is left can be sold or distributed to neighbours.

It is clear from the above that in addition to becoming skilled in balancing the books remaining financially viable had required considerable changes to the way in which farming was practiced. In many respects the 'old ways' had become redundant and this meant that 'being' a farmer now was very different than in the past.

6.7.2 The old ways become redundant

As described in some detail earlier the participants had been used to a way of life that was low tech, locally focused, not financially driven and were most of the work was done personally or with reciprocal help from neighbours. The pattern of farming that

resulted had remained relatively unchanged for generations, However, in a very brief period of time much of this had changed and the 'old ways' of doing things were no longer 'fit for purpose' and were rapidly becoming redundant. Crops were grown far more frequently, machines had replaced livestock and the use of pesticides and chemical fertilisers had replaced their natural alternatives. Nature, although still important, no longer held sway and the balance had shifted for good. The pace of life was now far quicker and could feel chaotic to the participants:

Mr. Man-Today they are in a rush, they use machines to harvest. It's finished fast. Harvesting 50 rai doesn't takes a day to finish. They get money. In the past harvesting 30 rai took 3-4 months.

Mr. Pan-Yes, they have to use the machines. If an amount of water isn't enough for farming, they can use a pumping machine to pump water into the fields. Only using buffaloes can do nothing now. But using buffaloes is good. Their faeces become fertilisers for farming, making things growing well.

There was also an increasing reliance on paid labour, a thing unheard of in the past and not without its challenges. The pace of social change over the last 20 or so years had been rapid and had impacted on Thai society as a whole, as well as the older farmers. Agriculture had long been a traditional lifestyle for rural Thai people but over recent years the younger generation had increasingly turned to other jobs such as business, industry, construction or tourism. They have turned their back on farming and this had resulted in labour and population movement from the countryside to urban areas where business and industry are situated. This meant that there was a scarcity of labour for agriculture. Older farmers, as farm owners, could not easily find enough workers. This situation was worsened by the fact that the traditional system of farmers helping each other was not far less common. Farmers had become much more 'self-focused' with informal help now being replaced by the expectation that people were paid for any help given. Consequently, if any farmer needed help they had to hire other farmers rather than asking for help like they did before. As described above monetary gain had become one of the main driving forces:

Interviewer-Farmers help each other? They can ask for help when they need it?
Mr. Wit- In the past we had, but since the irrigation came, farmers work only for themselves.

Mrs. Nam-Yes, when we used buffaloes, transplanted seedlings and reaped rice grains, we helped each other, preparing lunch for all.
Interviewer-When did this vanish?
Mrs. Nam- Since there are machines like harvesting machines. In the past we helped each other, withdrawing grasses or seedlings, sowing seeds and transplanting them, including harvesting when it was time. We hit rice to sort out grains. Sometimes I used buffaloes to tread on rice to sort out grains. I set buffaloes in rows to tread on rice.

Nevertheless, some farmers thought that hiring workers was preferable. They only had to pay wages for the work done. There was no need to prepare food and drink for other farmers who came to help them, as they did in the past. Neither was there an expectation that they would return help to fellow farmers:

Mr. Pan-In the past when harvesting I set time aside. For example, if I had a small area of fields. Could 30 farmers harvest it? I would go to help those 30 farmers first. This day I would help that one. That day I would help other one. Only one day did I finish harvesting 10-20 rai, but I had to prepare food and dessert for them, including liquor. Today I hire workers I don't have to buy food for them. The workers will manage their own food. I think this is better, just only paying for their wages. In the past I had to prepare food and liquor for them. For example, for 40 farmers, it was hard to buy food and other things for them.

These changing patterns of social expectations and forms of social exchange were a major factor that impacted significantly on community relationships and cohesion and the ways in which farming was experienced. Farming in the past had relied almost entirely on a range of knowledge and skills that were passed on, sometimes explicitly,

but more often implicitly, from generation to generation. More recently farming, and life generally, had become much more complicated and farmers now needed to access, interpret and apply a wide range of new skills and knowledge. Now there was a far greater need for farmers to be 'connected' with a much more diverse set of stakeholders, such as private companies, government officers, younger workers or financial institutes, than they had in the past. They could not function independently of such people and were, as a consequence, subject to wide range of information and advice that they need to interpret, learn which to trust and act upon:

> *Mr. Long-Agricultural officials hold meetings at shops where they sell pesticides. They advise about this pesticide which kills that pest or this agent used to kill grasses. I hear from those sources. Sometimes it was wrong and the pesticide I bought wasn't effective, the pesticide from shops. It's not good every time. But now I buy from them that don't lie to me. If they lie, they can't sell their products.*

In these new times the relationships between the farmers themselves had also changed dramatically. As already noted agricultural machines were now substantially involved in nearly every step of farming. Human labour played less of a part in the production process and now had to be paid for rather than being provided on a reciprocal basis. This had seen a shift in relationships from mutual interdependence to one based on monetary exchange. Only a very limited number of farmers still routinely helped each other, usually because of kinship relationships or because they had grown up together. However, outside of the family, even this was changing and money was expected to change hands:

> *Mr. Pan-I work like this as a farmer. Sometimes I work by myself. Sometimes my children and my grandchildren help me or I hire workers. Sometimes I help my neighbours, when it was time for me to work, I would tell them, and then they came to help me. Just ½-1 day, it finished….But now it changed already. They said they can't come to help me like they did before, so I have to hire them.*

Many participants felt that these changes had fundamentally affected peoples' personalities and motives, not necessarily for the better:

> *Mr. One- Nowadays people seem more selfish, living for themselves. No one does like it was in the past. Money is everything. It looks like if we have no money we aren't alive. We can't help each other like in the past, because when we walk out of houses money will be spent.*

As a further complication farmers had started to band together in partnerships, and if you were outside the group then it was difficult to get help, even if you were prepared to pay for it:

> *Mr. Pan-Before 3-4 years ago, I could ask them for help, but since 1-2 years ago, I couldn't, only paying for their working. Now they are interested in doing their own farms, they have no interest in others. Now some only work for their partners. If they have a lot of partners they can do farming. If they have fewer partners, they may have to work alone, otherwise they may have to hire workers. Sometimes even though they hire workers, the workers may not come to work for them.*
>
> *Interviewer-But if you have money to hire them, they may come to work for you.*
>
> *Mr. Pan-No, if I am not their partner, they won't come to work for me. They prefer to go to work for a large group, their partners. When they didn't come, I had worked by myself.*

Mr. Pan talked about how his local community had changed drastically. There was little social interaction between farmers, leaving him feeling relatively isolated, with the old sense of community being largely absent:

> *Mr. Pan- In the past after finishing working, people would assemble and talk together. Now they stay in their own house. Some days I don't see anyone.*

It was clear from the above that the focus on a more commercial economy was having an influence well beyond the exchange of money, eroding traditional values as well as traditional farming practices. Certainly life was a lot more complicated, on a range of fronts, than it had been in the past. As described in the section on 'balancing the books', financial risks were now much greater than they had been but other risks had also arisen that needed to be balanced out.

6.7.3 Balancing risks

Given that money had become the motivating force for most farmers maximizing productivity became an overriding concern. One of many obvious challenges to productivity in the current situation was the proliferation of pests that had occurred over the past several years. Pests damaged crops leading to low productivity and eventually farmers could lose their capital and be in debt. Many farmers expressed worries regarding pests and when they heard of an epidemic of pests in other areas their worries increased. Aphids were a particular concern and to avoid them farmers relied heavily on pesticides, the purchasing of which required further expenditure, with no guarantee of success:

> *Mr. Kong: Most of the problems are epidemics of aphids. They are serious problems. When investing heavily, it is also necessary to spray pesticides heavily. Sometime using pesticides fails and the output falls substantially.*

> *Mr. Long-Yes, I thought "would pests come to my farm? I am afraid of aphids. Will I get the output?" From news that there were aphids over there at Pichit, there were a lot of aphids. "Will they come to my village?" I thought.*

Paradoxically aphids had been deliberately introduced to supposedly ease one problem, only to create another, far more serious, one:

> *Mr. Man-In the past they (aphids) didn't exist. It started to appear more than 10 years ago, probably 20 years. Someone told me they were introduced to eat grasses. They were seen eating grasses in swamps and people who managed*

tourism around swamps used them to reduce the costs of hiring workers to get rid of grasses. After they were released they didn't eat grasses. They eat rice after seeing it. Rice is more delicious for them, spreading substantially around, in only one year. Only a small size, only a small finger, it laid a large number of eggs. Rice is soft and sweet. They eat rice.

Another challenge to productivity, and a risk that needed to be addressed, was the spread of wild rice, which is known to farmers as "Edeed Edeng". It can be highly destructive because wild rice is capable of growing more rapidly than the rice grown by farmers. Consequently, it competes with 'normal' rice to absorb both water and nutrients from soil. This results in stunted growth in normal rice. Such rice produces low yields and poor profits, as wild rice, although invasive, is not sold commercially as its growth is easily disrupted by adverse weather:

Mr.One -Edeed Edeng absolutely, causes a lot of problems. I got only 5 tons from 15 rai. Generally I should get 10 tons. This was because of Edeed Edeng.

Whilst the more widespread use of pesticides helped to reduce the risk from new pests it brought additional risks to health as a result. The dangers posed by pesticide toxins entering the water course have already been briefly alluded to but in addition wind-blown droplets was another route for potential wider dispersion of dangerous chemicals. Whilst farmers might take precautions when directly applying pesticides themselves, water and wind borne contamination represented an invisible threat, often coming from a long distance away;

Mr. Man- Water resources are full of pesticide toxins, from farmers living in mountains or the north. A lot of pesticide toxins flow with water into rivers, sometimes grass-killing agents, every type of pesticides.

Some tried to mitigate the effects by more careful spraying but this is an imprecise approach:

Mr. Koo- I will observe, while spraying pesticides. If the wind goes to that direction I will say 'spray that direction'.

However, it was apparent that not all farmers were so knowledgeable, either about how to spray safely nor of the potential harmful effects of pesticides and fertilisers, which could cause systemic damage in a variety of ways as well as causing problems with minor injuries that failed to heal. As well as the challenges to health this posed, there were also financial implications:

Mr. Man- My neighbour always sprays pesticides carelessly. Now his leg is still injured, having chronic wounds, it's like the cells are dead, caused by pesticides. He started using pesticides before I did. He has no knowledge of using pesticides.

Mr. One-At first I had wounds on my feet after that I went to spread fertilisers by using a machine. My feet are swollen like this. I got surgery for four wounds at Ruamphat hospital (A private hospital)… After I went down to sow fertilisers my wounds got infection. I had stayed in the hospital for a week, costing me more than 100,000 baht.

Accidents were another threat to health, especially if farmers relied on complex new machines without being fully trained in their use.

Mr. Chom- I had a bad accident from using a pumping machine borrowed from someone, I never used that type of a pumping machine before. I used to a normal pumping machine. The wounds were around here, being deep to the bone. But the doctor was very good in suturing my wounds, there is no scar left.

As farming involved physical activity and using machines there were more opportunities for farmers to have accidents and injuries than many other occupations. Fortunately potentially serious accidents, such as those described above, were relatively rare and most were minor. After a brief period of recovery most farmers

were able to return to work. Others however were potentially fatal and death was sometimes avoided as much by luck as good judgement. The participant below seems to have been lucky on a number of occasions:

> *Mr. Koo- Last summer I was using a machine to prepare soil surfaces. There is an electricity post in the mid of the field. I anticipated that the machine could narrowly pass the electricity post, but I accidentally turned the machine to the left and it clashed the electricity post and dragged me for a long distance. Fortunately I could grab the control hand of the machine and switch off the machine. Otherwise if my hand had missed the control hand of the machine I would have died already. If my hand had missed it the machine would have dragged me and pressed me into the mud until I would have died….I had it, but if I had immersed in the mud, the phone couldn't have had any benefit (laughing) and I might have been dead. The phone was in my pocket. The machine could press me into the mud. I would have suffocated. I've had 3 accidents. Fortunately I could help myself. No one could help me. Once I drove the tractor and it went down a swamp. I let the tractor go, but I didn't go down the swamp, only letting the tractor go down. I was thoughtful, letting only the tractor fall down. If I had held the tractor both I and the tractor would have fallen down together. Fortunately I was thoughtful, letting the tractor go, and didn't let myself die. The tractor wasn't important. I must survive first. I was thoughtful. If I had been too possessive I would have been dead. I thought like that.*

All of the above risks had to be thought about and a balance achieved if they were to be addressed successfully. Over the last two decades the participants had been faced with a number of major changes that fundamentally shifted the balance in their lives. But possibly the biggest change of all was their own ageing.

6.7.4 Becoming an older farmer

As they aged the farmers naturally experienced physical changes as their strength slowly declined, in what was still a demanding occupation, and they became more prone to illness. They therefore found that they could not work for as long as they had done in the past, they became tired more quickly and took longer to recover from things such as injuries. To compensate for this many had to hire workers, which as noted was now more difficult as younger people had moved away from rural areas to the city:

> *Mr. Long-Yes, following my age, my physical power is lower. I am old now. When I was young, my physical power was strong. When I worked hard and took a rest for a while, I would be relieved from tiredness. As I am old now, it takes a long time to relieve from tiredness.*

> *Mr. Koo-If it is too hard I will hire workers to help me. It's 60-70 baht per rai. The cost of hiring workers to apply fertilisers for 10 rai of land is 600 baht. If I can do it by myself I will do it, but I have hip pain and leg pain around here, so I hire my relative. I will ask him to apply fertilisers for me. When I have hip pain I am unable to carry a bag of fertilisers.*

Most of the older farmers now had a variety of long term conditions. Some managed these well with the help of the new health care system and found that their work was not severely affected. For others this was not the case:

> *Mr. Koo-I have hypertension, It makes me faint-hearted and tired to do anything. Sometimes I feel dizzy that makes me downhearted. I also have leg pain. Applying fertilisers makes me get hip pain. Just walking for a short distant I have to stop and sit down….Having poor health I don't want to do anything. If I am healthy I want to work continually. If my health is poor I will be faint-hearted, wanting to do nothing.*

Whilst physical factors to do with ageing where clearly an important influence, other changes described above to do with working practices had also impacted on the farmers' health. These are considered now.

As already noted the effects of the chemicals now used in farming were an important consideration. In the past, whilst the work was more physically demanding, there was no real risk off environmental contamination. Farmers could safely drink water from a swamp or from their own farms. They could take a bath whenever they wanted without fear that their bodies would absorb toxins. But the increased use of chemicals, and especially pesticides, had changed all this:

> *Mr. Koo-It came from pesticides. Comparing situations between today and in the past, nowadays I can't drink water in my farm and I can't take a bath with the water from the swamp or in the fields. In the past going to the farm and seeing clean water, I could drink it. There was nothing dangerous, but today I can't drink the water. In the past when it was hot I could take a bath, but now I can't. There are a lot of pesticide toxins. There are a lot of pesticide toxins in the mountains as well. The farmers who do farming over there use a lot of pesticides as well. They go with water to dams. People who are allergic to them will have rash.*

Due to these changes some older farmers had to restrict their activity and the number of times they visited their farm. They changed from being a 'hands on' farmer to a more managerial role, having oversight, seeding the main role to younger family, if they were fortunate to have children who wanted to be farmers:

> *Mrs. Dam- Just once a month I will go to see my farm, but he (son) goes to look after it every day, clearing grasses and spraying pesticides….I don't do, just looking around. Wearing boots I walk and look around things, after that I return home.*

Others were not so fortunate and with illness in their spouse and a lack of family help had to adopt multiple roles. For example, because of his wife's illness Mr. Koo not only farmed rice, but also did the housework. His son is not interested in helping him in either set of tasks. Therefore, rather than sleep near his land, as he would have done in the past, Mr. Koo sleeps at home to look after his wife and then has to get up exceedingly early to travel to his land whilst returning to his other responsibilities at the end of the day

> *Mr. Koo-My wife isn't well. I have to cook rice, so I have to sleep in my house, not going to sleep in my farm and leaving a tractor over there. In the morning around 4 am I get up and cook rice. My son never helps me. In the morning he gets dressed and goes to work, returning home around 6 pm. I cook rice and do all the house work. I told him "I have cleaned the house since I was 4-5 years old. Now I am 60 years old. I still have to do it".*

As the participants became older they were more likely to have health problems. It was here that government policy, in the form of the 'gold card project' had proved very useful for them. This project, run by the Office of Health Security and the Ministry of Public Health, provided free medical and public health For the participants this project protected them from the costs of medical care, which were now no longer a burden. As a consequence the participants were far more likely to visit a doctor if they felt unwell:

> *Mrs. Tong-He (her husband) has the 30-baht card (from the government insurance project). When doctors make appointments, he goes every time.*

> *Mr. Pan-It's good. If I don't have the gold card, oh, I have to pay every time I go to see doctors, 200-300 baht per time. How can I pay for this? It's good for this project. I think it's very good. I can save a lot of money. If the gold card project haven't existed, how can the poor find money to pay for hospital fees?*

Mrs. Dam-Using a gold card I don't need to pay any baht. Actually it should be thousands of baht. I am disabled as well. 15 years ago I got impaled by a nail, having tetanus. I stayed in a hospital for 2 months, having 2 toes cut off… I go to see doctors continually, once a month. I take medicines regularly. It's free of charge. I have an appointment with a doctor once a month. I got medicines for 3 months or 2 months, going to be checked continually.

However, the success of the scheme is also one of its weaknesses. As more patients accessed government health care services due to the gold card project hospitals became crowded with a large number of patients waiting for medical care. Patients might need to queue for a long time before seeing a doctor and this made them dissatisfied with health services provided by government hospitals:

Mr. Pan-Oh around half a day (to wait), sometimes I went there about 5 am and I came back home around 12 am or 1-2 pm. There were a lot of patients, 200-300 patients. Sometimes when I couldn't wait, I would come back.

All of the above factors impacted on what it was now like for the participants to 'be' an older farmer.

6.8 BEING AN OLDER FARMER

Despite the absence of any real choice in the occupation that the participants had undertaken throughout their lives farming had come to define who they were and how they saw themselves. 'Being' a farmer was central to their sense of identity and few had any thoughts of 'retiring' in the foreseeable future. Over the last 50 years they had experienced numerous changes and had drawn on a wide range of skills and knowledge, some learned at an early age and others acquired more recently. In doing so they had been able to successfully achieve a balance between the demands they faced and their ability to deal with these. However as they aged, and continued to do so, they needed to engage in an ongoing process of achieving a new balance on a number of fronts. How they did so comprises the final part of the theory.

6.8.1 Achieving a new balance

This section will elaborate on how the older farmers worked to continue to achieve 'balance' in important aspects of their lives, at the heart of which still lies their role of 'being' a farmer. This meant them adopting ways of achieving a new working balance that recognized their own ageing and some of the limitations that came with it, as well as maintaining their health and well-being. These two aspects often went hand-in-hand.

Of most direct relevance to the original questions driving this thesis, and having the most immediate impact, are the changes and challenges that the participants faced in terms of farming itself. To address these challenges the older farmers had to adopt new approaches to balancing the demands of their work. One of these was balancing their use of time more effectively and/or timing certain events so that they did not exceed their resources.

Balancing time, demands and resources

The demanding and time consuming nature of farming in a rural country such as Thailand was all too clear throughout the participants' accounts. In some respects the advent of new technologies, such as tractors, had speeded up the process of farming. On the other hand such machines had also impacted, usually negatively, on patterns of community interaction and cohesion.

In order to get the most out of 'advances' in farming techniques the older farmers had to learn to time things to best effect. One example is the best time to apply pesticides. This was not prescribed by the companies themselves but by a process of watching and observing the older farmers learned when the best time to spray pesticides was:

> *Mr. Long- Pesticides from companies are effective in getting rid of aphids, but don't spray when weather is hot. I spray in the morning when it's cool…From my observation, spraying when weather is hot is not effective. It will be better if spraying in early morning. The cooler, the better. Around 9 am I will stop and start again tomorrow.*

Sometimes such knowledge was passed on by word of mouth to others so that they too would benefit:

> *Mr. Koo- Don't spray pesticides when it's hot. Someone told me, spray pesticides from around 7:30 to 8:00, depending on the weather. The next time will be in the evening. When it's very hot don't spray pesticides… It's suitable to spray pesticides in the morning and evening. In the evening it should be when the sun light isn't strong.*

This also suited the farmers' physiological resources as they had learned that as they got older they couldn't work for as long, nor as effectively in the heat of the day, or if they did need to work in the heat then they had to protect themselves. For example boots were worn instead of bare feet and these were sprayed with water to keep their feet cool:

> *Mr. Pat-Yes, it's not like in the past. In the past I didn't feel it hot like this time. Now it's extremely hot, burning me. In daytime I can't walk with bare feet, feeling hot at my feet….I have to wear footwear, wearing boots….I wear boots like this (He pointed at his boots)….I can work. Sometimes when I stand to work and feel hot, I will pour water.*

Another potential way to save time and minimize the use of their physical resources was to use machines or to hire labour, but this also required that the farmers learned a new set of skills.

Using machines and hiring workers

The greater use of machinery and hired labour also meant that the older farmers had to adopt new ways of balancing the demands of work. Sometimes this was out of necessity as their own failing stamina meant that they couldn't work for as long or as effectively as in the past and it became more efficient for others to do the hard manual

aspects of farming. However, in order to feel that they were still a 'farmer' the older farmers continued to do what they were able:

> *Mrs. Nam-I have to hire them….My physical power is lowering. At one time I had good physical power. I could do that…like plowing fields, sowing seed, I never hired anyone. Recently I had to hire workers to do those tasks, but applying fertilisers, I do it by myself.*

Others, such as Mr. Pan, selected which tasks they felt capable of doing and hired workers, depending on their physical resources:

> *Mr. Pan-I can't do every task. I hire workers for some work. If I can do it, I will. If I can't do it, I will hire someone to help me….It's up to my physical power. If my physical power is enough to do that work, I will do. If it's too hard, I have to hire workers.*

Others, such as Mr. Long selectively hired workers to do certain tasks, or not, depending on their mood and perceived capabilities on a given day. This allowed him to continue to play an active role without becoming too tired:

> *Mr. Long- They (workers) lower my workload, but I don't hire them every time. Sometimes I do this task and let workers do another task. For example, I prepare surfaces of fields but for sowing rice seeds, I will hire workers. My workload will be lower. I can't do every task like preparing the surfaces, sowing rice seeds etc. When I was younger, 40-50 years old, I did. I am not a lazy man. I had worked all the time….Yes, following my age, my physical power is lower. As I am old now, it takes a long time to relieve from tiredness.*

However not all of the older farmers were satisfied that the younger workers they hired had the skills to do the job effectively perceiving that they lacked the depth of knowledge and experience required. But, because of the scarcity of labour there was a reluctance to complain:

> *Mr. Pan- They don't spray pesticides as correctly as farm owners do themselves. If farmer owners see anything wrong, we can correct ourselves. Workers who are hired to spray pesticides only spray untidily, just to finish it and return home (laughing). It becomes my suffering and I had headache. I was getting stressed again. They don't spray pesticides well. I have to repeat spraying pesticides, but I can't tell them.*

Consequently, because of the difficulties of recruiting workers, and despite their perceived limitations, farmers often tried inducements to persuade younger workers to return. Some older farmers prepared food and drinks on working days as supplementary benefits in addition to payments. In many ways this seemed to be returning to the practice of supplying neighbouring farmers with food and drink in return for their labour, except now the workers expected to be paid as well.

Machines were also used to help with some harder tasks and often replaced the need for manual labour. As Mr. Wit describes below this enabled him to balance his time and resources to best effect, with the newer machines doing away with the need for workers altogether, as they not only picked but also packed the rice:

> *Mr. Wit- I wait until the grains were ripe. When it was time, I would harvest it. We don't need workers now. We use harvesting machines. It works until we get rice grains. For the old model we needed workers to collect grains released from the machine with sacks….Yes, and the workers would pull them and keep them in trucks. Then they would be sold at the markets. Now we don't need workers to do that.*

Modern agricultural methods, such as the use of machines, were favoured by many participants, such as Mr. One, who saws them as far more efficient:

> *Mr. One-Now it's a lot more comfortable. In the past I had to plow land by myself, using cows or buffaloes and withdrawing rice seedlings. Otherwise I had*

to hire someone to do so. Now everything is comfortable, no need to use pan and force cows and buffaloes to work It's much comfortable than in the past….Everything. If I use cows and buffaloes I can't finish my tasks at the same time like others who have tractors. Using a small tractor, walking after it, can finish plowing 5-6 rai of fields. Using cows and buffaloes can finish only 2-3 rai a day.

The family was also a resource that some farmers could draw upon. As already noted many got no help from their children but generally wives were expected to take an active role. Whilst there was no uniform model for the assignment of tasks traditionally Thai male farmers undertake more physically demanding activities. In some instances female farmers undertook the remaining tasks that they are capable of. Sometimes women took a lead role in assigning tasks, such as Mrs. Nam, who was the family leader:

Mrs. Nam-Sometimes he goes to the farms, while I stay at home. Sometimes we go there together. I took a Meathod (A knife with a long handle) to clear grasses around ridges….Yes, I clear grasses around ridges regularly. He sprays pesticides or any others….I tell him "you do that work. I will do this"….Yes, I told him "You do spray pesticides. I will clear grasses around ridges", dividing the tasks between us.

In Mr. Man's family there was no set method of task assignment, but a flexible arrangement depending on what needed to be done:

Mr. Man-I don't assign the tasks. It's up to her (his wife) whether she will do or not….No, I don't assign the tasks. Sometimes I help her or sometimes she helps me. I and she don't ask each other for help. For example when she sees her mangoes are ripe and ready to harvest, she may pick up them by a wood with a basket. Sometimes I help her. The fruits will be arranged and left in baskets in the garden for 3 days to ripen them. After 3-4 days, if they are ripe, they will be carried by a motorcycle to the market.

Conversely in Mr. Pan's family tasks are assigned according to gender:

> *Mr. Pan-She will do female work, observing water in the farm and others, while I will spray pesticides and others, mixing pesticides by myself.*

Most of the farmers had now largely abandoned traditional working styles altogether and moved to employer-employee relationships as required. Only can a very small number of the older farmers preserved with the old traditions, particularly in cases when there was a strong familial network or longstanding supportive relationships with neighbours, forming a sort of cooperative combining both old and new methods:

> *Mr. Cherd- We help each other to sow rice seeds, we have 4-5 families, helping each other….Today we work on this farm. That day we will work on that one.*
> *Interviewer-How can you help each other?*
> *Mr.Cherd-3-4 people, they are my siblings. We had lived together….Other farmers also join us, living near us, helping each other to do activities….Living in different houses. We are the same team, preparing our own food to eat at the fields …..we help each other to sow rice seeds, in the past we plowed our own fields individually. We joined our four tractors to help each other….for sowing seeds we still help each other. We still do. For applying fertilisers we help each other as well. Today we do for this one. The next day we do for that one.*

Another form of balance that some farmers followed was to change the type of crops that they grew, again dictated by the demands of certain types of farming and the resources available.

Changing the type of agriculture

As many of the farmers grew older they found that the type of farming they practiced was becoming too demanding for them. However, rather than retire altogether they modified their approach and tailored their activities to suit their capabilities. For

example one farmer, Mr. Wit, stopped farming rice, being unable to start his tractor engine by himself, so he rented his fields to his children who became rice farmers. Mr. Wit himself grew vegetables:

> *Mr. Wit- I don't go to the rice farm anymore and turned to growing vegetables near my house….I am not able to igniting engines of machines and walk around the fields anymore. I allow my children to do it (rice farming) instead of me.*

Similarly Mr. One planned to move to vegetable or fruit gardening when he gave up rice farming, whilst Mr. Cherd intended to stop livestock farming and turn to rice and fish farming. He considers these more suitable for him. The important thing for both participants was to remain active in farming in some capacity:

> *Mr. One-I am over 60 years old now. If I decided to stop rice farming I will do fruit gardening….I don't think I will stop doing farming. I can't do rice farming, being unable to go to the farm I will grow vegetable or something else.*

> *Mr. Cherd-If the irrigation system here is completely finished I plan to sell my livestock farm. I own a fish farm, so I will do it instead.*
> *Interviewer-Will you still do rice farming?*
> *Mr. Cherd-Yes, I will. Doing rice farming is easy. I don't often need to go to see it.*

However changing the type of farming and adopting a new form was not necessarily easy, especially if finances were a consideration:

> *Mrs. Tong-I have to do this, because I don't have enough land.*
> *Interviewer-Don't you buy more land?*
> *Mrs. Tong-I don't have the ability….I have no money. I get money and use it. I don't have a large amount of money to buy it.*

As was clear from above as the farmers aged they sought to maintain a balance between their obvious desire to remain in farming, the demands that this posed and the resources, both physical and financial, at their disposal. Another very important balance to be achieved was that between risk and health.

Achieving a balance between risk and health

As they aged farmers had to pay far greater attention to their health, something that they had largely taken for granted in the past. The first stage of this was to recognize the importance of maintaining their health in light of the threats to it that they faced. Whereas when they were younger the farmers would have carried on working unless they were seriously ill, they were now more likely to recognize the need to allow themselves to recover, not to push themselves too hard and to get any necessary treatment. This was now an essential balance to be achieved but was easier than in the past due to improvements in health care:

> *Mr. Chom-Health is more important than working. If I can't work I will take a break and find medicines to take. When I become healthy again and strong enough to return to work I will.*
> *Interviewer-Do you still push yourself to work, even if you are ill, having a fever you still work.*
> *Mr. Chom- No, no, if I can't work I won't, I never do that… I have a sound mind. Generally I told myself I am not old. That is what I think.*

There was also an increased awareness of the potential for toxins to be present in the environment and for the need to take extra precautions if, for example, they sustained an injury:

> *Mr. Long- If I had a wound I would stop working straight away, I wouldn't dare to work, because of toxins. Having a wound, I won't work in my fields. There are toxins in the fields. They can go into my wound and my wound will be chronic and severe, if I have a wound, they can make my wound inflammatory.*

Others, such as Mrs. Young, now tailored the amount of work they would do to match their strength and abilities. She would stop working if she was too tired, recognizing the impact of her age and physical condition:

> *Mrs. Young-I become too hot and tired. Occasionally I felt weak, but it disappeared after I took a break from working. I do as I am able to do. I don't work as hard as when I was young. At that time I was strong. I am old now.*

Mr. Koo was aware of his failing abilities, but occasionally still tried to continue working until he had finished a certain task. However he eventually realized that this was not a sensible approach:

> *Mr. Koo-No, Yesterday I tried (to continue working). I was hot from sun light. I tried to clear grasses. "I will finish clearing grasses in this area". I was trying. Oh, I couldn't stop it. I wanted to finish it, but "I don't feel well". It was hot. I stopped working. If I worked further "will my health be poor?" "Who will help me?" I thought like this. No, I stopped working and relaxed for a moment, sitting in the shade of a tree and when I was relieved I returned home.*

As noted above pesticides and fertilisers now posed a threat to health that was becoming increasingly recognized by the farmers. Some tried to minimize the direct risk to themselves and their families, for example by not spraying food for personal consumption and only relying on their own produce:

> *Mr. Koo- The rice I eat isn't sprayed with pesticides or something. I cultivate it in 10 rai of the fields, only applying fertilisers. Eating rice produced by others is dangerous. I would like my rice to be pesticide-free.*

Despite the awareness that they needed to balance their demands and resources work was in fact seen as having a positive effect on their health with many farmers believing that they were healthier than their peers **because** they continue with a degree of physical labour. They felt that this helped them to be remain both physically and

mentally well. Carrying on with work was therefore very important to them as it made them fitter than peers who didn't work:

> *Mr. Pat-I can't stop working. It's not good to stop working. I will continue working so that my body will be stronger than other people who don't work. I think, people who are the same age as me and don't work anymore can't go anywhere, but I can go anywhere. If I stop working, my health will be bad. It's not good. I have to do something.*

> *Mrs. Tong-Working like this is better than exercising, I have no time to exercise, clearing grasses, watering vegetable or other tasks. I don't stop working. Actually I am stronger than older people who don't work anymore. They can't do like we do now. For us, that's fine.*

All of the older farmers tried to continue with their work in order to stay healthy. Doing farming and other physical activities was seen by participants as one of the main reasons that they were able to maintain their health, and remain fit, healthy and happy. To stop work was seen as a way to become 'lazy' and 'bored', and to lose health:

> *Mrs. Bang-I have to work. If I won't work, just sleeping, I will have muscle pain. When I use my body to do this and that, I will be sweaty and I feel well. You can try. If you only sleep and do nothing, you will be lazy.*

> *Mr. Man-They have their own happiness. It's like their exercises. Someone more than 70 years old still do. They have good health. If they only sit at their house, they will be bored. It would be better to do this, having exercises, looking around their fields.*

As suggested above the advantages of working hard were acknowledged by the older farmers, especially when they compared their health status with other people of their age who they knew. Some of the people they knew who had done only 'light work' all

their lives had become unhealthy since retirement. Some could not walk or undertake daily activities actively, whereas others had serious chronic diseases. This reinforced for the farmers the benefits of work for their health.

> *Mr. Long- Sometimes I think that someone who is a retired government official and the same age as me has diseases and is sickly. He has done light work all his life, I think. After he retired from his job, he isn't strong like me. I try to think what it is involved. It's strange… I think that he had done lighter work than me, but when he was retired, why he become like this. His body is weak. What is involved? They had done governmental work like a teacher or a soldier. Someone I know who was a general, after he retired, he had this disease and that disease, cancer and others. I am still strong. That's good. I am tired, but I am not downhearted.*

Despite the perceived benefits of continuing to work some of the older farmers also recognised the importance and benefit of differing forms of exercise for specific purposes, especially if these were recommended by an 'official' source. The quotes below show the efforts that some participants went to and also highlight that the pattern of their day seems to have changed very little, for example with Mrs. Nam still getting up at 4am:

> *Mrs. Nam-At the hospital, they told me to exercise with a stick. I do it every morning. It relieves me. They told me that the fibrosis sticks my muscles together. When it occurred, I felt pain. In the past I couldn't turn my upper part of body….now it has disappeared. Sometimes I jog around here….Yes, after I cook rice. Around 4 am I wake up after that I go jogging and stretch my legs…Exercises would be what I have done in early morning.*

> *Mr. One-I bike every day, 2 kilometres a day. If I have free time I will bike farther. When being older we shouldn't stay still, but exercise every day. Then our body will be strong. Someone who is old said "Oh I had done a lot already"."*

Why I have to do now."….Exercise….Don't stay still. When being older don't stay still.

However despite their efforts many of the older farmers had chronic diseases, such as hypertension and diabetes. But they did not let these disrupt their daily work or living, as due to the improvements in health care the older farmers had regular follow-up checks at hospitals and took the necessary medication to manage their conditions. They also followed advice about healthy eating and, as noted above, the benefits of regular exercise.

However due to the large number of patients using government hospitals some older farmers preferred private health services if they were affordable. Again this represents a form of balance, with the decision being made to use limited financial resources to optimize health:

Mr. Pan- I have hypertension, so I need to go to see doctors. I have to observe my health status. For example I have these diseases, but I don't find the medicines to treat them, I can't live. Everyone is the same. Everyone has some disease, hypertension, hyperglycemia or others.

Mr. Man-No, I could go when I wanted (with private health care).I don't like to go to government hospitals, I am bored with waiting for a long time. Also the government clinic doesn't give it (the medicine he wanted). Although the (government) hospital treats free of charge, it isn't as good (as the private one).

Despite the benefits continuing to farm was not universally beneficial to health. Due to the demands of the new ways of farming, especially the increased importance of financial management, some of the older farmers suffered from stress related disorders, especially if their crops failed or did not sell for the expected price:

Mrs. Tong-Sometimes I have stress when the vegetable don't sell well, vertigo and constant worry. I was afraid that my vegetable would be spoilt or

something, or wouldn't sell. Sometimes pods of corns are over grown and I can't collect all of them in time. I was stressed and couldn't sleep. My vegetable weren't sold so they would be spoilt.

Interviewer-Did you have to take any medicines?

Mrs. Tong-Yes, medicines to stabilise my mental state….I bought it from the market, from a drug store….I relieved from stress. After that I felt better.

Notwithstanding the wider availability of modern medicine in rural areas the beliefs and practices of Thai traditional medicine still exerted considerable influence. Some farmers used both systems, relying on conventional and traditional medicines at the same time. Some sought treatment from the hospital services first and if they were not satisfied they turned to alternatives sources. This 'balancing' of the two systems was quite widespread. But for some the old ways of treatment were still seen as the most effective.

Mrs. Bud-At that time he (husband) got ill frequently, but since he eats matum leaves (Thai medicinal plant), his symptom disappears.

But disease was not the only threat to health that the older farmers had to contend with. Despite increased awareness of the need to be safety conscious, because farming now involved working with often complex agricultural tools, it was difficult to avoid accidents and injuries entirely, especially for the oldest farmers. However very serious accidents were rare. Most of the cases did not require medical attention and the older farmers usually took care of any injuries themselves with medicine that they could buy or find in the community:

Mr. Pan- Yes, I have (had an accident). Sometimes I harvest with a sickle and it accidentally cut my fingers and they were bleeding….I covered the wounds with tobacco soaked with water and bound it with cloth….They were only small wounds. If it is a large wound, I will go to a hospital, to be sutured.

The older farmers saw accidents as part of their way of life and, as noted above, only sought professional help if the accident was deemed serious:

> *Mr. Pan- Another time my finger was nearly completely cut….A sickle got stuck, so I pulled it hard. It came off and cut my hand. The hospital staff managed medicines for me, dressed my wound. My wound was slowly cured.*

In addition to the above the older farmers also sought to achieve a healthy balance in the way that they lived. As many of the older farmers had chronic diseases and went to see their doctor regularly they were frequently given advice, both about medication and wider information on their lifestyle. Following such medical advice was seen as important:

> *Mrs. Bang- I take the medicine which helps blood circulation in my brain. In the past my blood circulation wasn't good. After I take this medicine, the symptoms disappeared. I don't have them anymore.*

Equally important was the need to modify behaviours, such as excessive drinking or eating too many fatty, or other unhealthy, foods. For example older farmers with hypertension were told by their doctor to stop eating salty food or fatty food and they were keen to follow their doctors' orders. If they felt the benefit then this increased the confidence that they had in the advice that they received and also highlighted the importance of them taking some responsibility for their own health:

> *Mr.Long-It's like I told you. It involves healthy living and eating. I won't eat lipid food. Sometimes hospital staff advised me to decrease this and that food. I follow their advice. It's like I said that I don't only have treatment from the hospital, but I have to treat myself as well. If I eat everything I want, what will happen? Someone said "Death from eating", because I have disease, so I can die. Yes, I have to take care of myself and my symptom is better. I don't have a headache. Only eating some coconut, I had a headache immediately. I stop eating chicken, including internal organs of animals. In the past I ate all of*

them, but since I have the disease, I have to reduce eating them, taking care of myself. I told doctors that I am taking care of myself as well. They told me "That's good".

Mr. One described how he stopped going to social gathering that might tempt him to stray from his new health regime:

Mr. One- After my illness got better I barely go (to parties). If I go I may eat some food which could have negative effects for my health, so I don't want to go joining parties, there will always be alcoholic beverages served, so I decide not to go. It's better.

Modifying their eating habits and life style choices in this way can be seen as a way to balance the risks associated with eating certain forms of food and still living a life that allowed them to continue farming. Balancing risks with potential gains was therefore an important aspect of being an older farmer. Nowhere was this more apparent than when using pesticides.

Balancing risks and gains

As will be clear by now the older farmers' lives were full of risks of one sort or another. In order to survive and continue to work the farmers adopted several strategies to help them to balance out the risks with potential gains. They might either do this by letting others, for example, paid workers, do most of the 'risky' work or take precautions to protect themselves. Many of these strategies concerned the use of pesticides, the gains of which in terms of better productivity were clear but the risks to health were also considerable. 'Risk transfer' was one way of achieving a balance.

Due to the information that they received from a variety of sources, both formal, such as from manufacturers, and informal, such as neighbours, the older farmers had become far more aware of the risks associated with using certain pesticides to treat their crops. This caused worry among some of them. For example, one became fearful about using pesticides after his participation in an agricultural training event held by an agricultural company. He discussed this with his wife and they decided to hire workers

to do all the tasks that involved spraying pesticides. Others let younger farmers do such tasks, which also reduced the risks to themselves:

> *Mr.Cherd-I don't dare to spray pesticides now. I have done this job in the past, but I don't do it now, being afraid of pesticide toxins….I never spray pesticides….Err..I once joined a conference. I was advised not to spray pesticides. "It's better to hire someone to spray pesticides". I do other farming….that's does not risk my life. I thought "It's not good". My wife told me "don't spray pesticides. Hiring workers to do it is better".*

Others stopped spraying pesticides due to their age, believing that when they were younger they would be better able to ward off any potential harmful effects. So they too hired younger workers. But this also was a financial trade-off because if rice prices were not good then profits would be hit, another clear balance to be achieved:

> *Mr. One- If my physical health is good, it (spraying pesticides) won't be a problem, but now I am older. It could be risky…..If I were young I would spray pesticides myself. If I hire workers to do everything my profits would be fewer. If the rice price is high like now farmers will be fine. If it's only 6,000-7,000, farmers will be in a bad situation.*

As well as reducing risks from pesticides older farmers reduced their risk of accidents, again by hiring younger workers to undertake potentially more hazardous jobs, especially those involving more complex machinery:

> *Mr.Pan-Someone drove a large tractor up a ridge and it turned over. The driver fell down into mud and died. The tractor was spinning his clothes and pressed him into mud. He couldn't arise, so he died. His neck was broken…it's very dangerous. Using buffaloes and cows is good, and is not dangerous, but now no one uses them because it's slow. It's better that younger workers drive tractors.*

Clearly whilst reducing the risk to the older farmers the use of younger workers, who might then get multiple exposures to pesticides, was recognised, and is captured in the salutary tale below. Despite the risks some workers continued to use pesticides as they needed the money:

> *Mr. Man- she was hired (a neighbour) to spray pesticides or grass-killing agents, so she did it a lot….Yes, several years ago I went to her house again. Her house was closed. I met her husband while I was fishing. I asked him "Where is your wife". He said "She was dead". "She was dead 3 months ago". Someone told me that she had stayed in a hospital to have treatment for 8-9 months….She didn't recover. She was detoxified through her blood by doctors. It was like resin. It wasn't like blood, but like sticky resin….I don't know how they did, but her blood came out like resin. They infiltrated her body from spraying pesticides for corns or others….Oh, she was hired to spray pesticides. She was dead in Banglakum at her mother's house….She couldn't walk.*

Despite the known, and quite obviously, serious risks, of using pesticides, some farmers still thought that they were essential as they improved yields and therefore profits. They continued to use pesticides, but took as many precautions as they could to reduce the risks involved. This is captured by Mr. Pan below:

> *Mr. Pan- Pesticides have risks, going through your nose and mouth. They have risks. They are very dangerous. I have to protect myself well. I have to use cloth to cover my nose, wear a helmet to prevent dust from pesticides getting to me. If I get too much pesticide, I am finished…it's the death (laughing). There are many difficulties. Doing rice farming is hard but doing rice farming needs pesticides. Doing mun farming needs pesticides. Not spraying pesticides, aphids will eat them all. Pang aphids eat them all. Everything is a risk. Doing rice farming has risks. Doing crop farming has risks.*

Mr. One had experienced pesticide toxicity himself after having working in the fields for many years. He decided to reduce the number of hours he worked to reduce the risk and also not to eat, drink, or even smoke whilst he was anywhere near pesticides:

> *Mr. One- In the past I had used pesticides from early in the day, after I returned from selling desserts. At that time there was a plague of aphids and I sprayed pesticides from the mid of the morning until 6 pm. I got vomiting….I got vomiting, being allergic to the pesticides, having been with them for too long time….I had nausea and dizziness. I got better after I went to see a doctor. After that time I don't use pesticides for long hours….I learned from it that you don't use pesticides for long hours, don't eat anything during pesticide usage, even water and don't smoke a cigarette.*

Other factors also had to be taken into account in order to reduce the risk of pesticide use, such as wind direction, as explained by Mr. Koo below:

> *Mr. Koo- I barely spray pesticides, usually applying hormones. I don't like using a lot of pesticides but while spraying them I will observe wind directions. The wind goes to that direction. I will spray this direction. Don't let it come to me. I have to protect myself. I will observe it. Someone spray pesticides carelessly until being unable to see them clearly from the smoke. It's necessary to observe the wind directions. Follow the wind to not let it go far from me. Don't use too much of pesticides. Usually I use hormones.*

In learning how to protect themselves farmers drew not only on their own experiences but also that of relatives or other farmers, recognising that no method will be 100% safe but that anything is better than nothing, even using traditional cures:

> *Mrs. Nam – I learn from my relatives, I watched while they were working….and, they told me if I do spray pesticides, I should cover my mouth and nose with clothes.*

Mr. One-but not up to 100 percent….Not 100 percent, but it's better than not covering noses, not wearing a shirt. Someone wears only a short-sleeved shirt. Pesticides can go through their skins….The symptoms could gradually appear from the toxins accumulated in the body. It doesn't happen suddenly. It gradually appears. When the symptoms are worse we eat medicines to detoxify them.

Interviewer-What do you eat for detoxification?

Mr. One -Boiling Langjut (A herb) and eating it.

As well as informal advice some farmers attended training organised by government agricultural officers or pesticide companies. The government agricultural officers came to the villages regularly to advise farmers on a variety of farming subjects, including pesticide protection. On the other hand pesticide companies organised trainings as part of their sale strategies to promote their products. But one of the training sessions provided taught the farmers how to use their product safely:

Mrs. Nam-They came quite frequently….Pesticide companies….Yes, the companies which sell pesticides. They encouraged us to join the meetings….The head of the companies. They explained how to use each pesticide which they sell. I had bought and sprayed them….Yes, they did. They taught how much pesticides I should use and only one pesticide was used. Evening is the good time to spray pesticides, also to spray pesticides when weather is cool. Wearing the outfit, covering noses and spraying in the evening….Yes, I spray pesticides in the evening or morning. In daytime I don't spray them.

Others took their information from the literature that came with the pesticides:

Mr. Long- I had no training. I read the label on a bottle….Covering noses while using, using it carefully, including keeping it in a tight container which is far from children, no drinking water during spraying pesticides. It tells you everything. Avoid it spilling into eyes, if it happens, use water to clean eyes. Wearing glasses is better. A label on the bottle has safety issues.

Despite this increased level of awareness some older farmers chose to ignore the advice as using protective clothing was not comfortable or easy to work with. For example using a mask could make breathing difficult, especially if you had comprised breathing anyway. Others chose to ignore advice even from close family members:

> *Mr. Chom-If I cover my nose, my breathing isn't easy and comfortable. I think that staying in the windward direction is enough. There should be no problem.*
> *Interviewer-Oh, what will you do when the wind changes its direction?*
> *Mr.Chom-I will change my direction following it.*

> *Mrs. Fong-About using gloves my daughter has warned me every time, but it's uncomfortable. She told me "you should wear gloves. Mixing pesticides is dangerous". Never mind. After I finish mixing pesticides I wash my hands at once with cleaning powder. I am hurry. If I wear gloves it's inconvenient to work.*

Many of the older farmers tried to compromise as they wanted to reduce the risks involved but also to work with maximum comfort, for example, by using thick socks instead of heavy boots to protect their feet from injury. Of course this was not as effective as socks are not waterproof nor as robust as boots. But for some the risk was worth taking to balance it with comfort and ease of working:

> *Mr. Long-I use socks to protect my feet from sharp shells, but they can't protect from pesticides. If I use rubber socks, it's not long before they are torn.*
> *Interviewer-Don't you use boots?*
> *Mr.Long-I can't walk….When I walk in mud, I can hardly raise my feet….Yes, It's ok to wear boots to walk on ridges, but if I walk into fields with mud, I can hardly raise my footwear (laughing)…I can't pull them out.*

As part of their organic farming strategy discussed earlier the government had recently introduced a campaign promoting the use of biological agents to control pests. Some

farmers had tried these but finding that they were not as effective or as quick acting as pesticides had continued to use the latter. This was especially so if there was a large infestation:

> *Mr. Koo- Sometimes I use fermented solution if not too many pests come to my farm. I don't like using chemical pesticides, only when there are a lot of pests. Fermented solution makes crop stems more strong. Sometimes I mix water with the remains of charcoal production and spray it to my crops. Someone said the remains of charcoal made from eucalyptus is good. Spraying with fermented solution is effective. A bottle of fermented solution is sold for 50 baht. It can expel pests from its strong smell.*

As well as using biological solutions to combat pests other insects could also be used. Mr. Man tried to avoid using strong pesticides which would kill not only the pests, but also other insects which were the pests' natural enemies. This is an example of going back to the earlier ways of working in closer harmony with nature:

> *Mr. Man- I use a small amount of pesticides, because it may kill some insects which eat other insects. That will be worse….The nature kills insects by itself. I just observe whether this insect is strong and whether other insects can kill it. If other insects can destroy it, I won't do anything.*

Another example of going back to nature was the case of 'cherry shells' a form of pest. In the past farmers had a serious problem with cherry shells which suck and eat rice stems. This results in loss of productivity and profits. Some farmers had tried to get rid of cherry shells by using chemicals which are both dangerous and expensive. Recently birds that eat cherry shells and some other small animals had been noted in the area. This natural process provided a solution and farmers no longer have to use chemicals to destroy cherry shells. This results in greater safety and lower costs of production. Farmers in the area appreciate the benefits of the birds, so they never scare them away and ask others not to do so;

> *Mr. Long- Now there are fewer (pests), because of pakhang birds, big birds. Since they came, the uses of pesticides is now lower…. Now it is better. I tell other that "You don't shoot or kill them"….Oh, they help us. My investment is a lot lower from not using pesticides to kill cherry shells. The birds eat all of the shells.*

However there were disadvantages to these birds, as well as benefits. Again there was a balance to achieved:

> *Mr. Chom- Since pakhang birds came they eat all crabs and shells. They are all eaten. In the past there were plenty of cherry shells on my farm, now there all eaten….I haven't paid for chemicals to kill cherry shells for two years. In the past they had destroyed my rice, eating seeds, eating them all. Since the birds came I don't need to pay for the chemicals. The birds can help me a lot. .Very good, as I said that no one harms them (the birds), but they have some disadvantages. When a large number of them come they walk over rice and damage it, but we don't harm them, because they help us a lot. We just only expel them from our farms, never shooting or killing them.*

For some types of farming, like fruit gardening, the farmers could use physical protection from pests rather than relying on chemicals. This approach reduces the amount of pesticides used or avoids their use entirely, which result in the lower production costs and greater personal safety for the farmers;

> *Mr. Man-I and my wife wrap rose apples, we don't use pesticides. We wrap them when they are small. If they are damaged by Wanthong flies when they are small they will be finished.*

If pesticides had to be used then farmers now took greater precautions and immediately cleaned both their body and clothes to remove any pesticide residues. Some of farmers also ate fruits or herbs after spraying pesticides, believing that this can detoxify pesticide toxins which their bodies might absorb:

Mrs.Nam-After spraying pesticides, I wash my hands before eating food….Taking a bath, after finishing spraying pesticides, I take a bath and eat ripe banana….They said it can withdraw the toxicity of pesticides after spraying them. Eating ripe banana is good….If I spray a small amount of pesticides, I don't eat banana. If I spray a large amount of pesticides, I eat it. They said that eating ripe banana is good.

As the dangers of pesticides usage became clearer some farmers, as well as trying to limit their use and take precautions when using, also time their application and do not spray pesticides close to the harvest in order to reduce the amount of chemical residue on their produce. This was seen as an acceptable balance;

Mrs. Pan-If I don't spray pesticides, I won't get any rice. When my rice is fully grown and yellow, I won't use pesticides, because I will eat it. Someone who is going to harvest this week will still spray pesticides. Pesticides will go into rice grains, being absorbed. Pesticides which are absorbed can last for ½-1 month, because they go into rice grains.

As will be clear by now farmers had become much more aware of the potential risks to their health and took a number of proactive steps to protect themselves from threats. The extent to which they did not was often based on their personal experiences. For example those farmers who had suffered accidents themselves became more cautious in order to prevent this happening again in similar circumstances;

Mr. Man-It's important to be careful. I have to think before doing anything….for example, before I climb up a tree by using a ladder, I will bind a ladder to the tree, not letting it move around…. I will think whether it is safe. Thinking first is better that think later that "I should have do that" after something happens. Like people who climb sugar palm trees, many of them were dead.

Precautions such as wearing boots to prevent injury had become much more common place as had working more methodically to prevent or reduce the risk of accidents, however minor:

> *Mr. Shoul- Birds always leave shells on ridges. If I walk on ridges I may tread them. I have to wear either boots or socks. I have both of them.*

Ensuring that equipment was well maintained and in good working order was another proactive step that many farmers took:

> *Mr. Cherd- I have to be careful….Before plowing fields I will check the tools before, tightening the nuts firmly, not letting them loose.*

Other, less predictable threats, such as poisonous snakes also had to be factored into the equation. Their venom is deadly and had resulted in a number of deaths among the farmers. Some farmers wore boots in order to prevent themselves from being bitten or cut by sharp implements that were part of their daily work:

> *Mr. Cherd- In general if the rice ridges are in mess there will be cobras on the farm….several farmers are dead from cobra bites. I have to wear boots. They can protect me from cobras.*

> *Mrs. Bang-Sometimes a harrow has hit me when I was clearing grasses, but it couldn't pierce through my boots.*

However due to certain ancient traditions, such as respecting rice, Mr. One refused to wear shoes when treading rice grains. As a result he developed cuts, which became infected and required surgery. After this incidence he was more careful and always wore shoes when working:

> *Mr. One- I didn't wear shoes. I walked with my bare feet. After treading rice grains back and forth I got wounds…In the past farmers respected rice. Wearing*

shoes to treading rice grains was prohibited. We needed to take off shoes….But now I always wear shoes whatever I do.

Despite all their precautions and efforts to protect themselves and manage the financial and other demands of the new context, life for the older farmers was still difficult and precarious, with many failures and dangers. In dealing with these older farmers drew on the psychological and emotional resources that they had built up over a lifetime.

Drawing on psychological and emotional resources

Although their lives could in many ways, especially by western standards, be considered difficult the older farmers in the study had lived through times that were considerably worse. In doing so they had developed a set of attitudes and expectations that allowed them to face their current challenges with a degree of stoicism but not resignation. They regularly drew on these reserves if things became difficult to deal with, such as the still inevitable, and increasing challenges that they had to confront, including major life events such as the loss of a spouse:

Mrs. Bang- I don't have stress. Even when my husband died, I wasn't stressed. I thought it was his fate.

Similarly, when asked how they felt about their crops being flooded or destroyed by pests they said that it was 'normal'. They did not see this as stressful, but something that had to be accepted it. In such circumstances they would simply start again, drawing on what they saw as their "fighting spirit". They compared the situation today with the more difficult times that they had experienced in the past:

Mrs. Nam- I get used to it. It was harder in the past. Today it's more comfortable. In the past it was hard, not like farming today…. I am used to suffering. I have a fighting spirit. When it floods, just let it pass, just do it again. I have a fighting mind. I will continue to do it.

Mr. Long explained that when the aphids destroyed his crop he accepted it as what life would throw at you:

> *Mr. Long- I could sleep well, I just let it go. If the aphids come, I just accept it.*

Drawing on such an attitude Mrs. Bud continued to farm despite her failing health, unlike others who gave up:

> *Mrs. Bud-My health is poor. I have gallstones and had operations to remove my uterus, appendix and rotten intestine. My health isn't good, but I have fighting spirit….After the operations, I can work….Yes, I do. I have no problem. Some can't work, they say "I can't do that". I can do everything….Yes, I can. My daughter said that I am very diligent. I don't stop working.*

Many, like Mr. Chom, paced themselves so that they were able to work within the limitations that ageing imposed on them:

> *Mr. Chom-I have no stress. If I am tired I will take a break from my working. When I relieve my tiredness I will continue working. I don't force myself, just do things gradually… if I am tired I stop working temporarily. Our bodies are not a machine (laughing).*

Despite their difficulties most farmers still gained considerable pleasure and a sense of achievement from what they did and this provided another form of psychological reserve that they could draw upon. This helped them to look to the future in a positive way, planning ahead rather than simply living for the moment. Many had no plans to 'retire';

> *Mrs. Nam- Looking my rice and seeing it growing well, makes me happy. Also when I harvest, I will get money which I invest for my farm and for my living.*

Mr. Chom-Will I retire next year? I can't say that. If I still have a good will power and a good physical power, I can continue working. As I told you before even if my body is ageing I still have a fighting spirit, so I can still do my job. It is not entirely involved with my ageing body. That is… if my mind is sound I can still work. I had a relative, when he was 60 years old, ho ho, he made a decision to retire. He wasn't old yet, but he retired himself (laughs).

The reason that many older farmers continued to farm was the happiness that they derived from it. Even though many had been asked by their children to stop working in order that their children could take care of them, they refused and decided to continue to farm, which provided both satisfaction and a degree of financial independence.

Mr. Pat-I am not worried about anything, I live comfortably. In the evening I eat food and watch the television. I am not in debt. I am happy, thinking about the vegetables I am growing before I go to sleep. I can still work, so I have enough money to buy what I want to eat. I don't want to ask for money from my children. I think that it's better if I do farming by myself… I and my wife can work for our living.

There was also a feeling of satisfaction with their lives, especially for those who had once been employees and were now farmers of their own land:

Mrs. Bud-When I do farming, I will get the outputs. When they are cleared, I am pleased or when they are green, I am pleased….Grasses, when they are cleared, I am pleased. When rice grows, has grains and is green, I will be more pleased. That's why it is good. I do my farming in my own farm. If I do farming for others and it grows well, I don't get any of their outputs….They hire me daily. I would get only wages. The outputs belonged to farm owners. That's what I think. I was an employee before. After marrying with my husband and having my own farm, I am pleased. The income was enough for my children… When I have my own farm, I can pay for electric and water costs. I think like this. Being an employee was worse. I experienced it before.

Working independently was another advantage that the participants acknowledged and this gave them a feeling of being in control; of being, at least in part, the masters of their own fate. This was seen as more important than simply making money:

> *Mr. Long-Even though I am not rich I am not under the supervision of other people. I can break when I want. "Today I am tired. I won't work for 1-2 days". I can do that. I don't want to be under supervision of other people. Farmers aren't under supervision of other people. I like this, for example, breaking for lunch for an hour. When I was employed, even though it was hot, I had to return to work. Even though it was hot or cold, I had to work. The advantage of being a farmer is "It's hot now, so I won't work. I will work again when it's cool". No one can control me. That's the advantage, being independent. I like this.*

> *Mr. One-Doing rice farming is independent. Farmers aren't employees, being able to break whenever you want and not being forced to work. There is a lot of time to relax. Doing rice farming today isn't as hard as that in the past. In the past it was much harder.*

> *Mrs. Bud-I am more interested in working….I aim to work. When I had gallstone and it rained, I thought "it rains, but the fields aren't plowed yet. My husband didn't plowed them yet. It rains now, so we can sow rice seeds". I thought like this even if I had pain from gallstone.*

Another source of pride for the farmers was the complements that they received on their strength and fitness from other older people in their locality. This provided an additional resource that they could draw upon to keep them going if they felt their motivation to continue farming was lessening;

> *Mr. Long- Someone told me "You are really strong". I replied that "My health may be poor in the future, even if I am strong now". I don't show off by saying that "I am strong. I have no problem". I never say that.*

Mr. Koo- I have never bought a grass-cutting machine, just using a knife. When grasses are too crowded I will use a knife to clear them. I just work like playing until my friends are envious of me. They say things like: "Even if I have a grass-cutting machine my ridges aren't clear like yours". "You don't have a grass-cutting machine, but your ridges are in the better condition". They are envious of me. I told them that "I just playfully work". "It's like exercise". Sometimes I was tired (but this kept me going).

Overall for the vast majority of the participants the balance that they had achieved throughout their lives had been a satisfactory one. They continued to be happy with this balance as they aged, balancing risks with gains, the latter still seen to be in the ascendency. They had 'become' and were still being a 'farmer' in different ways over time by bringing a balance into their lives. Some had now however begun to look to the future.

6.8.2 WHAT WILL BECOME OF THE FUTURE?

Whilst, as is abundantly clear from the above, the majority of farmers wanted to continue in their role, albeit in a modified form, some had begun to consider what a life after farming would be like. Some only thought about 'retiring' when they were no longer capable of farming:

Mr. Chom-I don't really think about it (retiring). I observe my mind and body and see they are strong, so I can't plan now that this year or that year I will stop working. I have no illness and I have no idea when I will have it, so I can't tell you that this year I will stop working or next year I will. I will observe both my mind and my body first.

Others had started to consider more carefully what they would do after their retirement. Their first choice would be to allocate their land to their children if they were interested in farming. However, many farmers' children preferred to take more 'attractive' occupations, elsewhere. In such cases farmers might decide to rent their land to others and so gain an income in this way. But this could also cause concern:

Mr. Long-Yeah, I thought that "should I allow someone to rent my fields?" But they may not do it like I am doing now. I thought like this. I am afraid that someone who rents my fields will damage them. If I let other farmers do farming on my land, I can't warn them like "please make them smooth". I think like this, worrying about my fields.

However, none of the farmers were thinking of selling their own land as they felt very 'connected' to the fields in which they have worked for so long. Keeping their fields gave them a sense of continuity and security, as they in part defined who they were.

> *Mr. Long- I don't want to sell my land. I may give it to my children. It's uncertain. I cherish my fields as I used them for my living for a long time. Even though I am not rich, I can make a living, not starving. I am not suffering for having no food to eat. My live is fine now, because there are many people who are more suffering than me. At least I still have my own fields.*

Nor was this a strictly male preserve as, captured succinctly but powerfully by Mrs. Bang below:

> *Mrs. Bang- No (I don't want to retire), I can do it (farming) longer. I am addicted to this job. I love it.*

The prospect of retiring was clearly one that was still some way off for most and not seen as desirable by many. However it was the future of farming in Thailand that caused many the most concern. Given the scale and pace of the changes that they had lived through the older farmers, as the above data suggest, were largely content with their lives. They had modest and realistic expectations that provided them with an on-going source of satisfaction and pleasure. However, they were less certain about the future of farming in Thailand. With the emphasis now increasingly placed on making a profit and the failing attraction of farming as a future career for young people the participants believed that in the future the new generation of farmers in Thailand would be investors rather than farmers. They would buy land and let their employees farm on it, hiring the labour that they needed. Farmers questioned the profitability of

such an approach, and could foresee a time when the days of the small farmer were numbered and larger tracts of land would be owned by fewer and fewer people. In this sense theirs was a way of life in decline. They were especially sad about the way that their children had turned their back on farming:

> *Mrs. Nam-They (children) do other jobs. In the past they didn't study further, graduated only from primary school. People who were good at studying would be a teacher or other good jobs, while others who weren't would do farming. People in the past would like that, but people at present support their children to only study……I want my children to do farming, but they don't want to do it. They said "I don't want to do it. Doing other jobs is better. My body and face won't be dirty". This is children today.*
>
> *Mr. Man-Now young people aren't interested and don't like to do farming.*
> *Interviewer-Why don't they like to do farming?*
> *Mr. Man-They like having fun and new experiences and experiencing the outside world. They work, get money and use it.*

This was not only a disappointment for many farmers but also further reduced the availability of help should they need it. Many children now lived some distance away but even those who lived locally often would not help:

> *Mr. Long- My youngest son bought a six-wheel truck to deliver food, not doing agricultural work……No, I don't ask for help from them. Even if I ask for their help, they won't come, because they have their own work. I and they have our own work. I have my own work and they have their own work. They have to do their own work.*
>
> *Mrs. Dam-I had done vegetable farming before, but now I do only rice farming because all of my children go to work. I have 4 children. Two children live in Bangkok. One of my children lives in Rayong province and one lives here. His house is over there.*

The next generation of farmers had not been 'born' to the life and did not work as the older farmers had done;

> *Mr. Chom- They (younger farmers) do nothing, hiring workers to do everything. Whether they will gain any profit is their own business. Hiring workers to sow seeds, spray pesticides, harvesting rice grains. They hire workers to do every task nowadays. They do nothing, just only being an investor.*

Many agricultural companies had already attempted to expand their acquisition of land by using their financial powers and resources to pressurize farmers to sell their farms to them. Some farmers had no choice. They had to sell their farms. Eventually, they turned from farm owners to being employees and earning 'wages' from these companies.

> *Mr.Koo-Only a few. Mostly it has its employees farmed on the land. I used to ask for water to pass from their land, but it didn't allow. It tried to pressure me. 'You must sell me your land'. It already pressured some farmers to sell their farm. 400,000 baht per rai. It doesn't let water pass to us…It's like that. My farm is in the middle. Its fields are around me. 2-3 farmers already sold their farms…They may become its employees, because they sold their farms already…It came to ask me to sell my farm, but I said 'No'. In the future when I die, if my children will sell my farm, it is their decision.*

The future they envisaged therefore stood in stark contrast to the past they had experienced. In the past the need for investment was low, farming was more straightforward, based on simple tools and the use of animals. Farmers worked more closely together with no money changing hands and labour being provided on a 'quid pro quo' basis. There was little need for money for a day to day life with most necessities being wither grown, foraged or traded. However as the data have shown the traditional ways had been gradually, but increasingly, eroded by a series of social, technological, environmental, economic, and physical changes occurring at national, local and personal levels.

The older farmers had worked, largely successfully, to maintain a balance over time by adapting their working practices and lives, embracing new ideas and drawing on a range of physical, psychological and emotional resources. They had been both helped and hindered in this regard by a number of government policy initiatives and technological advances. In doing so they maintained a sense of themselves through farming, which provided a source of pride and identity for many of the participants. However, there were some fundamental changes that could not be ignored or resisted.

Money, and the need to manage it, had now become a fact of life. The need to take out loans, never considered in the past, was now a necessity for most of the farmers. This required the development of new knowledge and skills. The nature of farming itself and the relationships between farmers had become more complex. Reciprocal help was largely a thing of the past and labour had to be purchased. The use of animals to farm had disappeared to be replaced by a variety of new technologies. Other changes in farming methods meant that more cycles of crops per year could be planted due to new strains of rice and the availability of a more predictable supply of water via irrigation. However this had knock-on effects. As the land was now farmed more intensively the soil had less chance to recover and chemical fertilisers had to be used. Other unforeseen consequences had also arisen. The introduction of aphids by the tourist industry to keep wild grasses in check had backfired. It turned out that the aphids much preferred eating rice to grass and this led to new plagues of pests which had not previously existed requiring the use of pesticides to keep them in check. This brought both financial and health implications that the farmers had to balance out.

As noted above changes in education and new job opportunities had resulted in the younger generation not viewing farming as an attractive future career and the links between the generations were being lost. Children moved out of their hometowns, to find jobs in the cities and were thus not available, either to help their parents or to take over the running of the farms. This general trend also meant that there was a shrinking work force that the farmers could employ when help was needed. The older farmers therefore had to remain largely self-reliant, but this was also a major source of satisfaction for them and something that they attributed their relative good health to.

6.9 Conclusion

This chapter has attempted to capture the complexity of the lives of the older farmers and described how they **became** a farmer, what it has meant to **be** a farmer and how satisfaction was ultimately achieved for many by maintaining an appropriate and acceptable **balance** in their lives. The implications of this 'theory' and how it might relate to both farming and ageing more generally is considered in the next chapter.

Chapter 7

Discussion

7.1 Introduction

This chapter considers the contribution that the study comprising this thesis can be said to make to a wider understanding of the experience of Thai older farmers and how they live their lives as they age. The initial focus is concerned with how farming is currently experienced as described by the older Thai farmers who were the participants. A brief summary of how the original research questions were addressed is provided and consideration given to the manner in which these questions evolved as the study unfolded. Discussion is then extended to explore the wider literature on the experience of farming as people age in a variety of settings. Subsequently the discussion is broadened to consider the issue of ageing, and the extent to which some of the insights provided here relate to the ageing experience as described in the wider literature. Although there are clearly significant differences between ageing as experienced in the developed world, and in Thailand, my study would suggest that there are nevertheless some common aspects that shared processes are at work in how older people experience and adapt to ageing. This broadening of the focus away from the substantive area of study and a move towards more 'formal' theory is one of the longer term goals of grounded theory. Prior to considering the wider potential contribution of the study this chapter begins with a reflection on the 'quality' of the work undertaken.

7.2 Assessing the quality of the research

As noted earlier the question of which criteria to apply to judge the quality of grounded theory remains contested. It was argued in the methodology chapter that as this study was informed mainly by Charmaz (2006) then her criteria should apply here. Charmaz (2014) poses various questions and the extent to which these can be considered to have been met are discussed below. These represent a judgement as made by myself but ultimately is for readers of the thesis to decide if they agree or not. However below I provide 'evidence' in support of my assertions that hopefully give some credibility to the claims made. In addition to this a brief overview of the role that reflexivity played is provided based on the framework proposed by Gentles et

al (2014), as described in the methodology chapter. Below Charmaz's (2006) questions are addressed on a point by point basis, beginning with credibility.

Credibility

- **Has your research achieved intimate familiarity with the setting or topics?**

  I believe that it has. The part played by my early years and interests was described in the first chapter. Subsequently my previous work for a Master's degree gave me additional insights into the field of study and this, together with the availability of funding to undertake a doctoral study, provided the motivation for the work. A broad consideration of the literature, and my own prior knowledge helped to provide sensitizing concepts and identify the initial foreshadowed questions. This further enhanced familiarity. I was initially immersed in the research project for around 10 months, and 27 participants were contacted and interviewed. Subsequently, the research population was expanded by the introduction of further participants. All of these factors helped to ensure an intimate familiarity with both the research setting and topic.

- **Are the data sufficient to merit your claims? Consider the range, number, and depth of observations contained in the data.**

  Yes, with the aid of theoretical sampling 27 participants were included into the study to ensure that the data were sufficient to saturate categories, sub-categories and the theory. Furthermore, to ensure the diversity of experiences captured from the participants, a number of the participants with different characteristics, such as types of agriculture were contacted and interviewed. In presenting the findings of this thesis, the participants' own detailed accounts were used to support the categories and sub-categories of the theory. Finally, the significant findings were shared with a number of participants to ensure that the claims made were consistent with the reality of their experience.

- **Have you made systematic comparisons between observations and between categories?**

  Yes, coding procedures, as suggested by Charmaz (2006), were adopted in this study. Constant comparative analysis was applied to further develop higher level codes. Data were repeatedly compared with other data until saturated categories were developed. Subsequently, categories were compared with other categories until the core-category emerged.

- **Do the categories cover a wide range of empirical observations?**

  Yes. Theoretical sampling was employed to ensure that as wide a range of empirical observations as was possible within the resource constraints of the study were made. All of the data gathered were subsequently used to build the categories, drawing on data from all of the participants.

- **Are there strong logical links between the gathered data and your argument and analysis?**

  Yes, as the diagrams in both chapter 4, to demonstrate the data analysis process, and in chapter 5, the findings, illustrate both categories and sub-categories are strongly related to each other. In addition, the quotes from the interview transcripts demonstrate the links between the data, categories and sub-categories. The central processes of becoming, being and balancing capture the temporal nature of the challenges that the older farmers faced and balancing in particular enables an understanding of the often subtle ways in which the older farmers have adapted to change overtime.

- **Has your research provided enough evidence for your claims to allow the reader to form an independent assessment-and agree with your claims?**

  I believe so but ultimately this is a decision for the reader to make. However, as noted above extensive data were used to support the theory and I believe that there is a logical flow that provides a convincing explanation of the claims made.

Originality

- **Are your categories fresh? Do they offer new insights?**

  Given that this is the first study to explore the lives of Thai older farmers the study, by definition, provides new insights. As is explored later in the discussion there is resonance between elements of the 'theory' presented here and the wider literature on ageing that suggest additional insights into the broader experience of ageing that would seem to transcend cultures.

- **Does your analysis provide a new conceptual rendering of the data?**

  Yes. Given the affirmative answer to the question above this almost inevitably follows.

- **What is the social and theoretical significance of this work?**

  I believe that the results have potential social and theoretical significance at a number of levels. Socially the outcomes from this study can be used in a number of ways which are presented more fully when the implications of the work are considered in the conclusion. Theoretically the processes of being, becoming and balancing add new insights not only into the world of older Thai farmers, but as will be explored shortly, also into the experience of ageing at a much wider level. Whilst it is important not to make too many claims for what is a small scale piece of work I nevertheless think that the results can be considered to have both social and theoretical significance.

- **How does your grounded theory challenge, extend, or refine current ideas, and practices?**

  There were very few current ideas/theories on the lives of older Thai farmers prior to this study so by definition those provided here extend rather than challenge or refine. However when the theory is compared with existing theories about the experience of ageing (see later) the study can be seen to extend these ideas to a very different population and to add an element of refinement, especially with respect to 'balancing'.

Resonance

- **Do the categories portray the fullness of the studied experience?**

  Yes, all of the data collected from the interviews were coded and informed the formation of the categories. Thus, the categories fully reflect the data they are created from. The findings draw substantially on the data and illustrate the range of experiences studied. Those participants with whom I shared the results did not wish to add anything to them.

- **Have you revealed both liminal and unstable taken-for-granted meanings?**

  As these are by definition 'liminal' and unstable there is ultimately no way of demonstrating this. However every effort was made to 'check out' taken-for-granted meanings with the participants over time.

- **Have you drawn links between larger collectivities or institutions and individual lives, when the data so indicate?**

  Yes, the lives of individual farmers could not be understood without reference both to larger collectivities and institutions. These operated at a number of levels from the family, the local community to government policies and initiatives. I believe that the findings establish and elaborate upon these links and demonstrate the inherent interdependence that characterized the lives of the older farmers.

- **Does your grounded theory make sense to your participants or people who share their circumstances? Does your analysis offer them deeper insights about their lives and worlds?**

  Both during the individual interviews and especially during phase 2 data collection in Thailand efforts were made to actively engage the participants in the process of shaping the theory. Simple language was used to facilitate this process. I believe that as a result the 'theory' offered participants new insights into their lives and worlds.

Usefulness

- **Does your analysis offer interpretations that people can use in their everyday worlds?**

  Yes, the theory from this study is, I believe, presented in a way that makes it 'understandable' not only to the participants, but also to older farmers and older people generally. Over and above this it highlights a number of key skills that the older farmers have learned to help them balance the demands that they face. These insights could be used to assist future generations of farmers to acquire such skills more rapidly.

- **Do your analytic categories suggest any generic processes?**

  Yes, the categories that lie at the heart of the theory (being, becoming and belonging) are all to an extent generic. The comparison of my theory with other theories of ageing (see later) provide further evidence that such processes, especially that of 'balancing' may be generic to older people more generally.

- **If so, have you examined these generic processes for tacit implications?**

  Not within the study itself as the research aims were to initially specific to older Thai farmers. However by making comparisons between my theory and wider understandings of the ageing process tacit implications do emerge.

- **Can the analysis spark further research in other substantive areas?**

  Yes, these will be discussed in the concluding section of the thesis.

- **How does your work contribute to knowledge? How does it contribute to making a better world?**

  These aspects will be considered in the section that follow and in the concluding chapter. However I have already argued that as the first study of its kind the work by definition adds to knowledge. The comparison to the wider literature on ageing suggests that it has a wider contribution to make by augmenting and extending current theories on ageing to a wider population. I

will suggest in the concluding chapter that the results have implications with the potential to making a better world, but it is beyond the scope of the study to ensure that they do contribute. However by making the results more widely available there is a greater chance that any potential contribution will be realized.

Having considered Charmaz's (2014) questions attention is now turned to reflexivity in my work and a brief overview is provided.

Reflexivity in my study

As was discussed in the methodology chapter the issue of reflexivity has, until recently, not figured prominently in the literature regarding grounded theory. Whilst, with the growing popularity of constructivist approaches, debates about reflexivity have recently increased, according to Ramalho, et al. (2015) most grounded theorists still do not make their stance in relation to reflexivity clear enough. I was guilty of this myself until I was asked to add a fuller account by my examiners. As noted earlier when reading the recent literature on reflexivity in grounded theory I was particularly taken with the arguments provided by Gentles, et al. (2014), reinforced by those of Ramalho, et al. (2015). Both of these papers described the challenges faced by doctoral students when addressing reflexivity in grounded theory studies and therefore seemed very relevant to my own situation. As described earlier I therefore adopted the criteria proposed by Gentles, et al. (2014), augmented by the work of Ramalho, et al. (2015) to inform my own (retrospective) reflections. I provide a brief summary of these below as a fuller account of many of these questions has already been provided at various points in the thesis. As with Charmaz's quality criteria the questions relating to reflexivity are addressed on a point by point basis.

Gentles, et al. (2014) argue that reflexivity in grounded theory should address:

-**The researcher's influence on the research design and decisions re the type of questions to ask and any preconceptions that they might bring into the study.**

Ramalho, et al. (2015) point out the importance of making fully explicit the role that the literature played in shaping the study.

In the introductory chapter I provided a description of my personal background and motivation for undertaking this study. These comprised a mixture of professional and personal influences. The role of the literature was explored in some detail in the third chapter and my consideration of the literature combined with my own background and preconceptions played a major part in shaping the foreshadowed questions that gave initial direction for this study. I therefore clearly had a significant role in the type of questions that were initially asked. As I later appreciated these were too narrow to fully capture the lives and experiences of the participants leading me to adopt a wider perspective informed by the data.

My influence on the design of the study was perhaps less. My own inclination would have been to adopt a quantitative design but the literature clearly argued for a qualitative approach and thus provided the major impetus in this regard. As discussed earlier my supervisors played an important role in pointing me towards grounded theory (also see below).

-**The nature of the researcher/participant interactions during data collection and analysis, including such issues as; the perceived 'power' of the researcher in the eyes of the participants; how the researcher contacted the participants; how they presented themselves to the participants; how they sought to involve the participants as 'partners' in the research process;**

These aspects of the study were fully considered in the methods chapter. As indicated there I was aware of potential power differences between myself and the participants and tried to reduce these by a variety of means including approaching the participants via familiar people, presenting myself in a friendly and non-threatening manner and using what I believed was accessible language. My initial strategy of using the older peoples' clubs to identify participants proved unsuccessful as I has naively assumed that the busy farmers would have time to attend these clubs. In retrospect I should

have known better as I was aware of the demanding nature of farmers' work. My efforts to involve the participants as partners also had limited success as many of them were not used either to be asked about such issues, or reflecting on what, for some, were quite abstract ideas. This raises questions about how applicable the principles of some constructivist writers (mostly basing their work on contact with western populations) are in other contexts.

--The researcher's influence on data analysis.

Gentles, et al. (2014) argue that the processes at the heart of grounded theory analysis, especially constant comparison and memo writing, automatically encourage reflection on the part of the researcher, something strongly endorsed by Ramalho, et al. (2015). My own efforts to engage in these processes have been described in some detail in the methodology chapter and will not be repeated here. It is perhaps for the reader to judge the extent of the influence that I exerted on the analysis. I believe that the theory was truly grounded in the data and therefore that my own influence was kept to a minimum. Although I attempted to engage the participants in an element of analysis but offering them the opportunity to comment on my interpretations these efforts should be viewed as being relatively limited. However, I would concur with the conclusions of Ramalho, et al. (2015) that in a doctoral piece of work the supervisors play an often extensive, but frequently only partially acknowledged, role in several aspects of the study, including the analysis. This was the case in my study, especially during the early interviews, and in supervision sessions, both face to face and remotely, via email or skype.

-**The researcher's influence on the writing and reporting of the study**

To date the only writing/reporting of the study has been for the purposes of this thesis. As such my own influence has been relatively limited as the institution (in my case the University of Sheffield) provided clear guidelines that I was expected to adhere to in both writing and reporting the thesis. The way in which the findings have been presented is more discretionary and I have tried as far as is possible to follow Charmaz's (2006) advice and use language that is as simple to understand as possible and especially to present the core categories in a way that could be understood by as

wide an audience as possible. Again it is for the reader to decide if I have been successful in this regard.

As English is not my first language I have inevitably required, and been grateful for, editorial support from my supervisors, another aspect of their role that is not often fully acknowledged.

Future publication of the results is more within my control and I hope to disseminate the findings to as wide an audience, using as many media, as possible.

-**The influence of the research on the researcher.**

This is a difficult question to reflect upon for a number of reasons. Firstly a doctoral programme of study is about more than the research study alone, as important as this clearly is. It is also a period of personal growth and development both as an individual, as well as a researcher. Potential changes are even more likely when the PhD involves leaving a secure and familiar role (as a Lecturer in my case), leaving your family and country to spend several years away on a limited budget in an unfamiliar setting. Clearly the considerable influences to which one is exposed are multiple and potentially profound. This was certainly the case for myself. However as Gentles et al (2014) caution one of the potential dangers of reflexivity is that it can lead to introspection and a focus on the self. I do not therefore intend to dwell on the above influences.

However as a researcher the study has had considerable influence and has: exposed me to a far wider array of methodologies and methods than I had used in the past; highlighted the importance of making prior, but often hidden, preconceptions more explicit; and led me to question previously held assumptions about what constitutes 'good' research opening up a range of new possibilities. I believe that these influences have made me a better balanced, and certainly more reflective, researcher.

-In addition to the suggestions of Gentles, et al. (2014), Ramalho and colleagues (2015) make a very powerful additional argument in that for a doctoral student much of their

reflection must (or at least should) take place with their supervisory team. It is the supervisors who hopefully have the experience needed to guide and support what is usually an inexperienced researcher during a difficult period. For these authors the supervisor/supervisee relationship is possibly the primary 'terrain of reflexivity'. This was certainly the case for me and I have highlighted at a number of points the central role played by my supervisors, who, in addition to providing pastoral support, had a key part in: helping me to 'firm up' my research questions; highlighting the benefits and pitfalls of differing methodological approaches; suggesting potential solutions to methodological challenges as they emerged; advising on early attempts at analysis; acting as a sounding board for emerging ideas and helping me to find links between the categories and processes as they emerged; providing helpful editorial expertise in producing the final and subsequently revised thesis.

Having considered the relative quality of the theory and reflected upon various aspects of the process as a whole attention is now turned to the extent to which the study has addressed the original questions, how these evolved over time and the potential contribution of the study to enhancing understanding of farming in later life and the wider issue of ageing more generally.

7.3 Addressing the original research questions

The original 'foreshadowed questions' that gave initial direction to the thesis were described earlier and were concerned with:

1. What do Thai older farmers think about the relationship between their health and their work?
2. How do Thai older farmers conceptualise risk and how do they prioritise risk, work and their health? What do they do, if anything, to minimize risk?
3. How do Thai older farmers manage their health problems and medications while continuing to work?
4. What roles do family members play in the working lives and health of Thai older farmers?

5. What motivates Thai older farmers to work beyond retirement age and what factors contribute to them continuing to do so?

As will be apparent these were quite narrowly focused questions, revolving mainly around issues to do with work and health. This in part reflected my own disciplinary background and interests. However, and as was described in the methodology chapter, as the study evolved and I engaged older Thai farmers in conversation it was clear that in order to fully understand their experiences a much wider focus was needed. As was described in detail in the last chapter the 'theory' which eventually emerged was far more inclusive and involved a consideration of the various changes that the participants had lived through and how they had adapted in order to 'balance' the changes in their lives with the resources that that they had and the demands that they faced.

Although the study was informed by the principles of a broadly constructivist approach to grounded theory, rather than being a grounded theory study, the results that emerged nevertheless conformed with what would be expected of a grounded theory. The resultant 'theory' therefore had a temporal dimension, charting the farmers' lives and experiences over time, it identified three main processes (Becoming, Being and Balancing), with the latter being the 'core category' that helped to both explain and provide linkages between 'becoming' and 'being' as these unfolded over time.

How these aspects of the theory related was captured diagrammatically at the start of the previous chapter and this is reproduced again below in order to help better understand the discussion that follows.

BECOMING A FARMER

- **Balancing multiple responsibilities**
- **Balancing expectations**
- **Becoming skilled**

BEING A FARMER: THE EARLY DAYS

- **Living in balance with nature**
- **Balancing the books**
- **Balancing risks**

THE BALANCE SHIFTS

- **Technology becomes important**
- **Money becomes master**
- **Nature becomes out of balance**
- **Policy becomes prominent**

BEING A FARMER IN RECENT TIMES

- **Becoming skilled in Balancing the books**
- **The old ways become redundant**
- **Balancing new risks**
- **Becoming an older farmer**

BEING AN OLDER FARMER

- **Achieving a new balance**
- **What will become of the future?**

The section below considers the extent to which the original foreshadowed questions were addressed. Subsequently attention is given to the relevance of the theory in relation to firstly the literature on farming as an occupation and secondly the much broader issue of how the theory relates, or not, to broader theoretical perspectives on ageing more generally. Consideration is first turned to the initial foreshadowed questions.

7.3.1 What do Thai older farmers think about the relationship between their health and their work?

During the research it was apparent that the relationship between their health status and their ability to continue to work was clearly recognised by the participants themselves. The older farmers had attempted to preserve their health in order to be able to work as usual. This was helped by government initiatives such as the 'gold card' scheme that made affordable health care available to a much wider segment of the population.

Despite their best efforts inevitably, as they aged, some compromise was needed and farmers had to make various adaptations such as: changing the type of farming they were practicing; ensuring that, as far as they could, they worked in the optimal conditions; using labour saving devices and machinery; and if necessary employing others to do the work for them. These provide fairly concrete links between health and work. However, more subtle links also emerged.

For example farmers in large part attributed what they perceived as their good health, relative to their peers, to the fact they had continued to farm and remain active. There was therefore in their minds a positive reciprocal relationship between health and work. Furthermore this extended beyond the participants' physical, and even mental, health and exerted what might be termed a more existential effect. Therefore farming, in large part, helped to define who the farmers **'were'**; it was central to their sense of self and identity. As recent work from the UK as shown one of the greatest challenges of ageing is to maintain a sense of self that is consistent with an individual's values and beliefs (Tanner, 2010; Katz, et al., 2011 and Blood, 2013). Manifestly, farming played this role for the participants and this is something that will be considered in more detail later. It is perhaps ironic that the majority of participants had not actively chosen farming as their occupation but that it had over time become central to their self-esteem and identity. Pivotal to this was the perceived independence and ability to exercise choice that farming provided.

7.3.2 How do Thai older farmers conceptualise risk and how do they prioritise risk, work and their health? What do they do, if anything, to minimize risk?

The nature of the dangers that the older farmers faced had clearly changed over time. In the past dangers related primarily to accidents, often involving farm animals and lo-tech equipment. More recently however the widespread introduction of pesticides and large mechanical farming devices presented new challenges and dangers; the former of contamination, not only of the individual but also of the watercourse and food supply, the latter of accidents that could well result in death. How the participants responded to this varied. Some perceived that farming posed no dangers, while others acknowledged the presence of possible occupational hazards from using pesticides. Most however believed that these was manageable and controllable with the use of proper protection methods so that the impact on their health was minimal. Somewhat perversely, in addition to adopting protective clothing, one of the main strategies to reduce the risks from pesticides was to transfer the risk to others by employing others to apply the pesticides.

If they applied chemicals themselves every participant in the study used multiple approaches to protect themselves. This included: wearing protective gear; spraying pesticides in the right direction; avoiding drinking water or eating food during the task; and cleaning their body immediately after arriving home. These measures were believed to be able to protect the farmers from chemical hazards.

When the study commenced the primary focus was on the health of the older farmers and this question was concerned entirely with issues of physical safety and the challenges that farming posed as the participants got older. However, as data collection was underway it was apparent that a wider definition of safety, as in security, could also be applied and that new challenges had emerged. One of these was in the area of financial security. As was apparent in the data in the past the issue of money, or financial security, rarely, if ever, emerged. By and large money was not needed as the farmers were largely self-sufficient. Certainly the idea of borrowing money from a commercial institution would have been alien to all the participants. Now however borrowing money had become a necessity of life, essential to buy seeds

and fertilisers, to buy, maintain and run farm machinery and to pay for labour. The ability to 'manage' money became essential to maintaining financial security. This was an unexpected finding of the study and one that would not have emerged had the original questions been rigidly adhered to. This is one of the advantages of adopting an emergent research design.

7.3.3 How do Thai older farmers manage their health problems and medications while continuing to work?

Not surprisingly, as yet aged, the participants began to suffer more health problems. But as noted above they generally considered themselves to be both fitter and healthier than their peers who had either had a more sedentary job, had retired early, or both. Consequently they largely viewed their health as good. As noted above they took various precautions to manage the risks they exposed themselves to and because of government policy now had opened up far wider access to affordable health care than had been the case in the past. Many had also made life style changes by modifying their diet or alcohol intake. Most did not consider that they needed to exercise, believing that they were active enough going about their day-to-day business. They therefore took a mainly proactive approach to their health, despite a number of them having long-term conditions.

7.3.4 What roles do family members play in the working lives and health of Thai older farmers?

The data showed that the roles that family members played in the farmers' lives have changed dramatically, especially in relation to the farmers' children.

In the past farming was transferred from generation to generation; from parents to their children. Parents trained their children to be competent in the traditional methods of farming, including making the simple tools used in the farms. Then, land was also provided to the children as a legacy. However, a potential 'downside' of this was that there were few, if any, opportunities for children to go on and become anything other than famers. Wider educational opportunities were not available to them, and even if they were the expectation was, certainly for older children, that they would support their younger siblings by working on the farm. However, this had now

fundamentally changed and farming was no longer seen as a desirable occupation. Moreover, due to educational reforms, there were now far more opportunities to progress beyond basic education. These two factors in combination had witnessed the wholesale move of many children both out of farming and away from the country to big cities. Most of the participants lamented this.

The main family member who supported the farmers was their spouse, most of whom had worked in tandem with their partner since they had married. Depending on their health status and established patterns of working this relationship often saw partners taking specific roles/tasks or, if necessary, slowly taking increasing responsibility for the day-to-day running of the farm. Many couples were able to maintain an active involvement by 'balancing' the demands they faced with the resources that they had in various ways such as changing the type of produce grown or employing others to do work that was too physically demanding. Thus a largely supportive relationship was maintained.

Although the original focus of the study had been on the role of the family it was also clear that relationships with both the local community and wider society had also changed over time. In the past there was what might be described as a largely symbiotic relationship between the farmers in a given locality. Help and support were provided based on an informal but reciprocal system of exchange. This extended to many aspects of farming, from the preparing of the ground to the sowing of seeds and the eventual harvesting of the crop. Such help was freely given, in exchange for food and drink, but with the clear expectation that it would be reciprocated to each 'helper' in turn when they needed support. Such a system had now largely disappeared and as a result the local community ties were weakened and farmers tended to operate, at least superficially, on a far more independent basis. Yet this too was deceiving. The close proximity of land and the lack of clear boundaries meant that if one farmer ploughed his land then, due to the effects of the furrows caused, those close to him also had to plough their land. Similarly the widespread availability of irrigation systems meant that if one farmer irrigated his land then his neighbours were affected also.

At a wider level government policies, such as the rice pricing system, largely dictated the number of times that rice could be sown each year. Moreover, in order to maintain their financial 'reputation' as a 'good risk' farmers had to manage their finances in a given way, not only to maintain their financial security, but also to ensure they could obtain more loans in the future. Therefore, whilst in some respects, one of the attractions of farming was the degree of independence it afforded in other respects such independence was notional and instead a complex set of interdependent relationships was in evidence.

7.3.5 What motivates Thai older farmers to work beyond retirement age and what factors contribute to them continuing to do so?

As noted above it was one of the paradoxes of the study that initially the participants had little, if any, choice about becoming a farmer but they now saw it as one of the main things that defined who they were. As the data revealed some of the participants had tried other work, often in construction, but all had eventually returned to farming. One of the questions I was initially interested in was, why do farmers, many of whom were old and in failing health continue in a demanding job when they could have retired? It was a testament to the perceived benefits that farming provided the participants with that most of them stated that they would not give up farming, even if they won the lottery and had a large amount of money. As suggested above farming was therefore not simply, or even, a way to earn enough to survive but provided participants with benefits to both their physical and psychological well-being. Beyond this it also served an existential function in helping them to define: 'Who am I?' Small wonder that few wanted to retire.

7.4 Moving beyond the original questions

Based on the above I believe that the original research questions have been addressed. However, as will be very clear by now, as the study evolved the focus expanded considerably beyond these initial questions and a far broader perspective emerged that could not have been anticipated at the outset. Even within the original questions concepts such as safety and the relationships between health and work have had to be expanded considerably to account for the descriptions of their lives that the farmers provided. Therefore the nature of the grounded theory that has emerged was also

different than might have been the case had the study stayed within its original, and rather limited, focus. Whilst clearly the findings have much to say about farming amongst older Thai farmers (and this will be considered in respect of some relevant literature shortly) it also has some important things to say about ageing in Thailand, at least in rural areas. The substantive theory, with its core category of 'balancing', has already been described in detail. This is the primary product of this study. True to its original focus the relevant literature on farming will be considered next. However one of the attributes of a 'good' grounded theory is the extent to which it is modifiable and can be advanced beyond the substantive area and develop to become a more 'formal' theory that addresses similar considerations in a wider set of contexts or extends its gaze to a wider set of phenomena. Therefore, following a consideration of the wider literature on farming, attention will be given to what the study may have to say about ageing.

7.4.1 The perceptions of farmers towards their agricultural work

The way farming is perceived by the Thai farmers links to the work of Amshoff and Reed (2005) in the US. They describe how farmers link the continuing ability to do their jobs to an indication of how healthy they still are. The Thai older farmers saw and described this link – arguing that continuing to do their jobs both indicates and maintains their physical and mental health. The older Thai farmers also compared themselves to non-working peers – using this as a justification for continuing – a feather also present in Amshoff and Reed's work and work by Faber, et al. (2001) in the Netherlands. A similar phenomenon has also been reported in other farming studies – for example, Winter, Reed and Westneat (2009:9) identified American farmers not wanting to 'sit around', identifying how their farming work kept them healthy.

The participants in the current study did not explicitly state that farming was the meaning of their lives as the farmers in the study by Amshoff and Reed (2005) but they described that they felt connected to their farms as they had worked on them for a long period of time and they could not tolerate leaving them. However, the similarities in terms of feeling responsible and gaining a sense of accomplishment was a theme in

both the Thai farmers and their American contemporaries. The Thai farmers remarking that they were pleased when their crops were growing well, while the American farmers used the term ‘a sense of accomplishment’ to describe this matter (Amshoff and Reed, 2005:306).

7.4.2 Mental health of farmers

Farming is often associated with mental health problems. Raine (1999) in the UK and Stallones, et al. (1995) in the USA revealed mental health problems including stress or depression and others have reported high suicide rates in farmers (Gregoire, 2002). There is no data on the rates of suicide among farmers in Thailand – however, it would appear that such severe issues are not as prevalent – at least within the sample in this study. The Thai farmers seemed quite resilient and dealt with some of the challenges of farming in a stoical manner. However, it could be that they felt unable to express such serious mental health problems within the interviews.

What is clear is that the Thai farmers in this study face the same kinds of challenges as their international contemporaries. ‘Financial issues, time pressures, the unpredictability and the seasonal variation in the workload’ as well as managing paper work, particularly without support, were described by Gregoire (2002:472). Many of the farmers in Thailand felt the same way – although the issues of paperwork and regulation did not feature as heavily among Thai farmers. They were not overburdened by ‘red-tape’ as many farmers in the West are and face fewer financial penalties associated with incorrect paperwork etc. The Thai famers also felt that the issues of ‘time pressure’ and ‘seasonal variations in the workload’ were not major challenges. They argued they could work independently and comfortably as their daily working time was controlled by themselves. They could start and stop whenever they wanted. If they felt that their workload was excessive, agricultural workers would be employed to assist them. Although financial issues were mentioned, the Thai farmers seem less pressured than their Western peers as help with managing money and financial support is offered by the government bank of agriculture, which was established to help farmers by the Thai Government.

In this study many Thai farmers gained psychological benefits from farming. When they travelled to the farms and found that the crops were growing well, they felt happy and satisfied with the successful outcomes from their efforts. This is contrary to the circumstances of many farmers in other countries, like the USA, Sweden, France and India, where a large number of suicides were reported (Gregoire, 2002). What makes Thai farming distinctive is the size of the farms. Most are small, modest pieces of land – whereas elsewhere farms are often large and complex. It could be that the size of the land being farmed has an effect on the mental health of the famers.

Finally, lone working has been suggested as a cause for mental health problems in farming – particularly by Raine (1999); with farmers who worked alone more likely to have symptoms of depression. This was not the case with the farmers in the current study – despite most working individually regularly, the problems as stated in Raine (1999) did not happen with them.

7.4.3 The risks of farming

Farming can be dangerous, especially for older farmers (Voaklander, et al. 1999). However, in this study occupational accidents were not a serious challenge for the respondents. Even though some accidents occurred they were not serious and only required short-time recuperation before they could return back to their jobs. This could resulted from the fact that normally the farmers have used simple, small and low-powered tools like a small tractor that they were able to buy with their budget. When large agricultural machines were required, the farmers would hire workers with the machines to complete some particular tasks for them. Additionally, many of the farmers reported that they always work carefully.

Browning, et al. (1998)'s quantitative study in the USA also found that older farmers returned to their jobs before making a full recovery from injuries or illness. The participants in this study made different decisions in this issue – with most waiting until they were fully recovered.

7.4.4 Challenges from agricultural chemicals

The Thai farmers were aware of the advantages of pesticides and recognized their increasing use in farming. The use of pesticides to control pests was almost a standard practice among the farmers. They were aware of the dangers and pesticide protection was generally accepted and practiced – a feature amongst studies in the West for example Van Drooge et al.'s (2001) research in the Netherlands. However, work in Thailand found different views on pesticide use amongst farmers. Some avoided the use of protective equipment due to costs – but continued to use pesticides (Raksanam, 2012) The Thai farmers in Raksanam's study were also found that the young farmers also disposed of safety equipment because of discomfort. The difference between this work and the current study is the age of the famers. In Raksanam's study the farmers were young – in the current study with older farmers – although some did report not using safety equipment for comfort – the majority tended to protect themselves better than their younger counterparts.

This may be linked to the relatively 'low' level of risk young farmers perceived to come from pesticide use and the subsequent lack of motivation to protect themselves (Raksanam, 2012). However, the older people in the present study showed a high degree of awareness of pesticide hazards during the interviews from the stories of the deaths or injuries of some farmers due to pesticide toxicity. The older farmers clearly having learned this from their own experience.

The feelings of Thai older farmers about safety varied widely according to data gathered in this study. Some perceived farming as no danger, while others acknowledged the presence of the possible occupational hazards from spraying pesticides, but this issue could be controlled with proper protection methods or by employing younger workers to apply pesticides for them.

7.4.5 Dealing with health problems

Secondary to the risks of farming the effects on general health due to aging was described by many in the current study. Almost all of the respondents have suffered from one or more types of illness. Some described that their health problems have developed, when they have been old and accepted that conditions as natural.

However, the older farmers attempt to take care of their health in order to live and work normally. Many have visited the government health care services which are free of charge. However, some older farmers sought private health care services to avoid length waits in hospital – even though this would need to be paid by their own budgets. The farmers also reported that they tended to adhere quite strictly to the treatment and advice given by the health professionals.

However, for minor illnesses, self-care was evident - with the use of herbal remedies to combat symptoms. This type of practice has been seen in other Asian farmers (Raksanam, 2012) but not in Western studies. The strong beliefs in Thai traditional medicine as effective were resulted from the direct experiences of the treatment. Some of the participants claimed that after long-term treatment with doctors in hospitals, the outcomes were not noticeably improved and by following the advices of Thai traditional doctors, the respondents' symptoms improved.

7.5 Ageing: 'Balancing' as a key attribute?

Some time ago Bengston, et al. (1997) argued that gerontology was 'data rich but theory poor'. In other words whilst we might have a lot of statistical information on the numbers of older people and on how population trends have changed over time, we understand far less about the experience of ageing itself.

Early attempts to do so sought to develop theory at a fairly 'grand' level, one that could be applied to all older people as they aged. There are a number of examples of this, for instance: Activity theory (Bond and Corner, 2004); continuity theory (Bond and Corner, 2004); and disengagement theory (Bond and Corner, 2004). More recently it has been recognized that such 'grand' theories do not capture the individual variation in the ways that people age and there have been moves towards understanding the ageing experience as lived by individuals. At the same time it is argued that developing policies and services to support older people cannot be done on an entirely individual basis and that therefore it is useful to try and discover shared processes that people might adopt as they age. This has been described by Tanner (2010) in the following way:

> '(There is a) need for policy and practice to start with an understanding of older people's lives, in all their richness and diversity, and then, based on that understanding, to consider how services can support older people to live the lives they choose….understanding of the process of managing ageing can only be acquired through uncovering the experiences of older people and the meanings that they give to these experiences' (Tanner, 2010:1)

This study has been about understanding how older Thai farmers experience ageing and what meanings they give to this experience. The core category at the centre of the emerging theory was that of 'balancing'. Interestingly, in a study of how older people in the UK experience ageing, Tanner (2010) identified 'managing' as the main way in which the ageing experience was given meaning. Whilst the terms used ('balancing' as opposed to 'managing') differ I believe that there are similarities between findings such as Tanner's (2010) and other theoretical approaches to understanding ageing developed in the western world, and my own that suggest parallel processes are in play, irrespective of the context in which people age. I will begin with a comparison of Tanner's work (2010) with my own.

Of course Tanner's (2010) study was undertaken in a very different cultural context and her participants were also markedly different. She (Tanner, 2010) wanted to understand how relatively frail older (those who have what are now termed as having 'high support needs' (Blood, 2013) experienced and retained some control over their daily lives. Her participants were therefore much older than mine (ranging from their mid 70's to early 90's), did not work and lived in mainly urban settings. Despite these differences there were also methodological similarities between her study and mine in that she interviewed a small number of people (12) in depth asking them about their experiences of ageing and some clear similarities between her results and those described in my thesis. But given the very divergent contexts and participants is there any value in seeking to compare the findings? I would argue that there is.

Until recently (see later under 'active ageing) there have been remarkably few in-depth studies of the experience of ageing in Thailand, with most of the literature focusing on the impact of the ageing population on policy and services. Indeed, prior to 2014, a google search identified only one qualitative study in Thailand, paradoxically undertaken by Fox (2005) at the University of Sheffield. Using ethnographic and phenomenological approaches Fox (2005) undertook a comparative study of ageing as experienced by older people in Thailand and Australia. He concluded that for both older Thai's and Australian's the experience of ageing involved a complex and on-going process of reflection but that both groups:

> '….. described ageing in terms of their practical engagements and attachments, making comparisons with their earlier lives and cultural norms and expectations..'
>
> (Fox, 2055:494)

This is exactly what both my participants and those in Tanner's study (2010) did. Therefore, despite the differences in the nature of the participants, both in terms of their ages, status and their cultural backgrounds, the studies reveal clear similarities in the ways in which they 'managed' (or balanced) the ageing process and the challenges they faced. This suggests that there may well be common processes involved that could transcend the cultural differences, just as Fox (2005) concluded. The full extent of these common elements can best be appreciated if a more detailed look is taken at Tanner's (2010) findings.

Based on her data Tanner (2010) argued that the primary aim of the older people in her study was to 'keep going' so as to 'sustain the self'. In order to do so they actively managed their ageing in three main areas that Tanner (2010) termed: Keeping active; keeping stable; and keeping balance. Each of these involved differing activities that nevertheless complemented each other. These are briefly outlined below.

- **Keeping active**: this involved occupying time in a meaningful way, pushing yourself to do what you can and findings solutions to problems by seeking alternatives ways of doing things. Central to this was reframing expectations towards realistic but achievable goals.

- **Keeping stable**: required that the older people developed routines to address the challenges that they faced in order that they could maintain the standards that they set themselves.
- **Keeping balance**: this was about ensuring that there was an element of reciprocity in their relationships and that they did not perceive themselves as 'putting on people' but were able to 'give something back'.

By engaging in the above active processes of managing older people were able to meet the 'threats' posed by their own failing health and dwindling resources, aided by maintaining their close relationships, both within the family and the wider community. In addition to the practical activities involved in the above various forms of 'keeping', managing also comprised a cognitive element by which the older people could 'stay me'. To do so they drew on their past lives and experiences and actively sought to recast how they now saw themselves in light of their prior experiences. Doing so allowed them to believe that they were 'doing well'. Creating and sustain a perception of 'doing well' required, but went beyond, the processes of 'keeping' and involved the cognitive process of self-affirmation which was achieved by:

- Making positive comparisons with the past
- Making positive comparisons with their peers
- Modifying their attitudes and expectations
- Believing that overall they were 'lucky' and that things could be a lot worse.

Although the language used is clearly different the similarities with the experiences described by my participants are in many ways quite striking. My participants also sought to keep active, keep things as stable as possible and maintain some reciprocity if their lives. Moreover, as with Tanner's (2010) participants, they actively sought solutions to the challenges they faced but were also prepared to reframe their expectations as necessary. What is perhaps even more apparent was the central importance to both groups of being able to 'stay me' and 'affirm the self' by making positive comparisons. The need to 'stay me' speaks to the existential dimensions of

ageing referred to earlier and what emerged most forcibly from my data was that 'being a farmer' and 'being me' were virtually synonymous.

If we consider the substantive theory described in this thesis and the substantive theory developed by Tanner (2010) in a very different cultural context and with a diverse group of participants it seems that there is some evidence here for the beginnings of a more formal theory. Of course it would be premature to make too much of this but there are also distinct similarities between some of the processes described above and the earlier and more quantitative work undertaken by Brandstadter, et al. (1993).

Based on extensive empirical work these researchers concluded that in order to maintain their psychological well-being and a sense of self identity in older age older people need to achieve a **balance** between three sets of processes, which they describe as follows:

- Assimilation; The efforts which people make to continue to perform activities that are meaningful to them;
- Accommodation; The extent to which people are prepared to modify their expectations re performing an activity without losing the meaning that the activity has for them;
- Immunization; The extent to which people 'downplay' things that are seen as a threat to their 'core identity' components. That is those aspects or activities that define 'who they are'.

According to Brandstadter, et al. (1993) older people who have the best psychological well-being and retain a clear sense of self are those who are able to maintain important elements of their identity but are also prepared to modify their expectations without seeing this as a sign of failure and a threat to their identity.

Once again the language used is very different but the central message is broadly consistent with my findings and those of Tanner, suggesting that the need to maintain

a sense of self and the processes required to do so are central to well-being in later life, and that to do so requires seeking and maintaining a balance between demands, resources and expectations. 'Balancing' appears central to this and whilst contexts vary many of the processes seem to be shared, leading to a better understanding of the potentially common aspects of ageing. Such an understanding is essential if global policies, such the World Health Organisations' (WHO 2002), active ageing initiative are to have widespread relevance. Attention is now briefly turned to this initiative and any implications that the study might have for its fulfillment.

7.5.1 Active ageing

Active ageing is defined by WHO (2002) as 'the process of optimizing opportunities of health, participation and security in order to enhance quality of life as people age. It applies to both individuals and population groups' (p.12). Active ageing is not seen to apply only to older people who are still working or involved with physical activities, but also includes 'older people who retire from work, are ill or live with disabilities' (p.12). The theory generated from this research is consistent with the concept of active ageing, as is Tanner's and this suggests that the desire to help people remain 'active' is one that is relevant across countries and cultures.

The participants in this study wanted to remain active and still be involved in many spheres of life such as economic, cultural, societal and civic affairs in order to preserve their health and well-being. Indeed the main reason that many older people chose to remain in farming was the degree of independence it gave them, allowing them to exert some control. They therefore did not wish to 'retire', even if their children encouraged them to, for the concept had little meaning for them. This is again consistent with one of the primary goals of active ageing as stated by WHO (2002) that of 'maintaining autonomy and independence for the older people as a key goal in the policy framework for active ageing' (p.12).

According to WHO (2002) one of the other main attributes of individuals who are able to age actively is the ability to solve problems and adapt to change and loss. The full extent of the changes that my participants faced has been described in the prior

chapter, as have the strategies that they have developed to 'balance' the demands that they face against the resources that they have and, if necessary, to change their expectations of themselves. Once again it was primarily the fact that they remained as farmers that enabled them to develop these strategies and this again attests to the role farming played in creating a positive experience of ageing.

Since my study has been completed a qualitative research study conducted in Thailand has identified six dimensions of active ageing (Thanakwang, Isaramalai and Hatthakit, 2014). These were: being self-reliant; being actively engaged with society; growing spirituality; maintaining a healthy lifestyles; actively learning; and managing later life security. Once again, but with less emphasis on spirituality amongst my participants, all of the above can be seen as consistent with my findings, and with those of Tanner (2010). It would appear that 'active' ageing is a policy with potential to enhance the ageing experience across contexts and cultures but to reach its potential we need a better understanding of how active ageing is to be realized based on real life accounts.

What the theory generated here provides is greater insights into the specific methods that the older farmers applied to keep themselves actively engaged. Moreover, despite the differences between my study and that of Tanner (2010), it seems that whilst the nature of the activities in the two studies clearly varied the 'core' processes involved share many similarities. A deeper understanding of how older people 'manage' their old age and 'balance' their responses to the challenges they face is clearly central to making a reality of policies such as active ageing. It is hoped that this thesis has made a modest contribution to this. Of course my participants were still employed, something that does not relate to the majority of older people, at least in the developed world. However, even here, where retirement is a social expectation, remaining employed can be seen to confer benefits.

For example the positive benefits of remaining in work for maintaining health was considered by Gessa and Grundy (2014) who conducted a study called, 'The relationship between active ageing and health using longitudinal data from Denmark, France, Italy and England' to explore the link between remaining in work and

depression. They found that older people who did paid work ('employed or self-employed') were more likely to have good health. The authors concluded that the 'power, prestige, status and emotional gratification' that the older people gained from work was directly correlated with better psychological health. Whilst such a correlation could not be established from my study there was little doubt about the various forms of gratification that my participants described. Moreover, Gessa and Grundy (2014) noted that paid work provided an income that enhanced material well-being and health. Whilst money was not the primary goal in my study there is also little doubt that maintaining an income contributed to the participants' sense of independence. Gessa and Grundy (2014) noted a reciprocal relationship between work, activity and health in that those who remained in work were more likely to be active and healthy and those who were active and healthy were more likely to remain in work. The same could be said of my participants. Here again we see similar findings emerging from very differing contexts. It seems therefore that in addition to recent economic challenges that have seen the retirement age rise in developed countries, that there may well be a range of other benefits for encouraging and enabling those older people who wish to continue working to do so.

Of course active ageing is a complex concept and subject to a wide range of factors. The WHO (2002) identify six primary influences as follows:

- Personal determinants
- Behavioural determinants
- Social determinants
- Health and social services
- Economic determinants
- The physical environment

All of the above, to a greater or lesser extent, emerged from my study. There were the personal characteristics of the older farmers, as captured, for example, in their 'fighting spirit'. There was a wide range of behavioural aspects reflected in the various types of 'balancing'. There was the change in the social status of farming as a desirable

occupation and the effects this had on the next generation of farmers. The role of government policy in relation to the health care system was clearly apparent, as was the changing economic environment, the greater importance of managing 'money' and policies such as rice pricing. Most of the participants believed that the physical environment had changed, both locally as a result of irrigation and the construction of dams, and more widely as in terms of climate changes.

Therefore, whilst the substantive theory developed here has begun to provide more insights into the importance of activities such as 'balancing', a key message to emerge is the complex and interdependent nature of ageing. Despite this individuals can make choices that will, in large measure, help to shape the nature of their ageing experience.

7.6 Summary of the chapter

This chapter has had several aims including: a consideration of the quality of the theory arising from the study and reflections on several aspects of the research process; a comparison of the study results with the original foreshadowed questions; a comparison of the results with the wider literature on farming; efforts to integrate the results with the wider literature on the experience of ageing. As such the chapter provides a distillation of the key aspects of the thesis as whole. Having done this the final chapter looks at the potential implications of the study along a number of dimensions.

Chapter 8

Conclusions

8.1 Introduction

From an original focus on the health and safety of older farmers in Thailand the research described in this thesis moved on to provide broader insights that might help to inform not only future thinking about older farmers in Thailand and ageing in Thailand generally but also the discipline of gerontology. The results of this study reveal that most of the participants dealt with the challenges that farming posed successfully by an active process of 'balancing' in various ways. These forms of balancing lie at the heart of the middle range theory that helped to understand the lives of older farmers and the key role that work played in defining who they were. Interestingly, the process of managing as described in a very different context by Tanner (2010) closely mirrors the process of balancing described in my theory. In the last chapter the similarities that emerged between my work and wider theories of ageing were linked to a discussion about recent global responses to the challenges of ageing and particularly the WHO policy goal of active ageing and recent qualitative work in Thailand that has begun to elaborate on the dimensions of active ageing in Thailand (Thanakwang, et al., 2014). Clearly such work is in its early stages but nevertheless a greater understanding of how Thai's experience ageing is starting to emerge and this thesis makes a contribution to that debate but there is obviously the need for further empirical work. This will be considered later after the implications of the study have been addressed. As one of the aims of a grounded theory approach is to generate new theoretical insights that have potential practical implications it is important that these are reflected upon. Such reflections follow below.

8.2 Implications of the research

8.2.1 Information for health professionals

This study provides some valuable insights into the lives of older farmers that will be helpful to health professionals;

- The fact that work had some beneficial effects on the farmers illustrates that health professionals should be cautious when advising older farmers to stop work for health benefits. Many of the participants linked a sense of mental wellbeing with carrying on working. Helping them to do this should be an objective of care.

- Health professionals should be aware of the importance of family support in older farmer's lives and monitor for any problems related to this and recognize the role of others in the maintenance of the health status of older farmers.

- The data revealed some false health beliefs were held – particularly in relation to preventing risks from pesticides. Health professionals should be aware of this and try to address any misconceptions of this nature by providing accurate information.

- The older farmers were often good at adapting their work to accommodate chronic health conditions. Health professionals need to explore these strategies and work *with* older farmers to help them develop and maximize their coping mechanisms.

- The manner in which the older farmers in this study think about 'risk' will be useful to health professionals by helping them understand the factors involved in the decision making of older farmers around such issues as pesticide use and the use of machinery.

- As the farmers preferred to attend to any illness or injury themselves before attending hospital, health professionals could provide them with basic first aid knowledge.

- The farmers in this study did not want to participate in the older people's clubs'. However, social and peer support could be beneficial. Health professionals should explore if these clubs or variations of them could be made more accessible.,

8.3 Policy recommendations

The data in this study revealed how farmers balance the factors involved in being an older farmer. However, there are some conditions that older farmers cannot control or influence and these require new government policies – one being the price of rice. Rice is different from other commodities such as vegetables or livestock as the price is heavily affected by the global market. There should be efforts made by government ministries to look at measures to protect the income of rice farmers.

There is a drive to promote more organic farming in Thailand. The data from this study suggests that older farmers prefer being given concrete examples of the benefits of changing their practices rather than 'abstract' reasons. In order to promote their cooperation with this policy, clear examples of the benefits of organic farming should be provided. For example, visits to successful organic farms.

8.4 Suggestions for further research

- The current study has focused on older farmers in one particular area. Further research in other areas would strengthen the findings of this study. Similarly, research that includes data collected from other stakeholders such as government officials, policy makers and public health professionals would enable this issue to be understood from a wider perspective.

- It was beyond the scope of this study to interview older farmers who have left the industry – this could add important additional insights into the lives of older farmers.

- How the theory in this study might apply to other areas of farming – for example fish farming, would be a useful potential research project.

- Quantitative research methods could be used to test the theory that originated from this study. For example, a questionnaire could be used to develop and test some of the findings with a larger sample of older farmers.

- According to both Tanner's (2010) work and the findings from this study older people in diverse settings make considerable efforts to 'keep going' and 'stay me' using broadly similar processes to the notion of 'balancing'. There is a need for further work to test the findings of this study and its conceptual findings in other settings and different populations of older people.

8.5. Limitations of the study

- Most of the participants in this study owned their own farms which may impact on decisions not to retire from farming at an earlier age. Given the challenges of access it was not possible to interview farmers who had left farming but this may have added additional dimensions leading to a better understanding of Thai farming. However, this could form the basis of further study.

- Although efforts were taken to ensure a suitable interview location – usually in their own homes – it proved very difficult to make appointments with some people, who failed to keep appointments – therefore some potentially valuable participants were lost.

- Efforts to re-interview some participants in response to memos and theoretical sampling was not always successful as participants had moved to work in difficult to reach locations or were too busy to be re-interviewed.

- Some farmers were better at communicating their life experiences than others due to their limited vocabulary and communication skills. Although attempts were made to allow more time, offer explanations and prompts, inevitably it was the richer interviews that provided more data for analysis.

- The study also relied on the individual farmer's recollection of their farming lives. Therefore, one limitation could be the extent to which participants were able to recall distant life events clearly. The impact of 'nostalgia' may have provided a 'rosy glow' to some of the negative aspects of their younger farming days – maybe impacting on their perceptions of farming today.

- This study did not cover every type of farming in Thailand. The main type of agriculture represented in this study was rice, vegetable and livestock farming. There are other types of farming such as shrimp farming and fishery undertaken in provinces near the sea. This grounded theory would benefit from further testing with this group of older Thai farmers.

Despite these limitations and the relatively small scale of this study it is one of the few qualitative studies to have explored the experience of ageing in Thailand. As such it is hoped that it has made a modest contribution to enhancing our understanding of ageing in Asia, whilst also highlighting similarities with studies such as Tanners (2010) that hint at common and shared dimensions that help to understand the aging phenomenon in a much wider context.

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Appendix

The University Of Sheffield.

The School Of Nursing And Midwifery.

Mr Weerachart Kaewanan
Postgraduate Research Student
School of Nursing and Midwifery
University of Sheffield

Dean of School
Professor Anne M Peat

School of Nursing and Midwifery
Barber House
387 Glossop Road
Sheffield S10 2HQ

Telephone: +44 (0) 114 2222042
Email: j.flint@sheffield.ac.uk

29 November 2012

Dear Weerachart

ERP 127: Occupational Health of Thai Older Farmers

I am pleased to inform you that on 29 November 2012 the School's Ethics Reviewers **approved** the above-named project on ethics grounds, on the basis that you will adhere to and use the following documents that you submitted for ethics review:

- Research ethics application form (revised-1)
- Participant information sheet (version 2)
- Participant consent form (version 2)
- Upgrade report
- Interview guide (version 1)

If during the course of the project you need to deviate from the above-approved documents please inform me. The written approval of the School's Ethics Review Panel will be required for significant deviations from or significant changes to the above-approved documents. If you decide to terminate the project prematurely please inform me.

Yours sincerely

Jane Flint

Jane Flint
Ethics Administrator

cc Dr S Hinchliff, ERP Chair
Prof M Nolan, supervisor
Prof M Hayter, supervisor

Version no. 1
University of Sheffield

Participant Consent Form

Title of Research Project: Occupational Health of Thai older farmers
Name of Researcher: Weerachart Kaewanan

Participant Identification Number for this project: **Please initial box**

1. I confirm that I have read (or have had the sheet read to me) and understand the information sheet dated explaining the above research project and I have had the opportunity to ask questions about the project. ☐

1. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline. Contact number of the researcher: 055-311177 ☐

2. I understand that my responses will be kept strictly confidential. I give permission for members of the research team to have access to my anonymous responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research. ☐

4. I agree for the data collected from me to be used in future research ☐

5. I agree to take part in the above research project. ☐

Name of Participant (*or legal representative*)	Date	Signature
Weerachart Kaewanan Lead Researcher	Date	Signature

To be signed and dated in presence of the participant

Copies:

Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form, the letter/pre-written script/information sheet and any other written information provided to the participants. A copy of the signed and dated consent form should be placed in the project's main record (e.g. a site file), which must be kept in a secure location.

Date: 24th September 2012 Name of Applicant: Weerachart Kaewanan

Information Sheet for Older farmers and Family

1. Research Project Title: Occupational Health of Thai Older Farmers

2. Invitation paragraph

You are being invited to take part in a research project. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please do not hesitate to ask me or contact me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

3. What is the project's purpose?

I am a PhD student at the University of Sheffield in England. I am carrying out a study to find out what Thai older farmers think about their working lives. Many older farmers may have a higher risk of accidents and injuries, compared with younger farmers. Farmers have also been affected from other challenges, including pesticide toxicity and other health problems. The results from this study can be used to develop practical programmes, guidelines or plans to help Thai older farmers.

4. Why have I been chosen?

I have been told by a member of an older people' s club and other older farmers that you may be interested in helping with this study. I would like to invite you to take part in this research. You may participate now or call me later when you are ready so that we can make an appointment for an interview. If you have any question about this study you can ask me at any time.

5. Do I have to take part?

No. Taking part in the research is entirely voluntary. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. Even if you agree to take part, you can change your mind at any time. You do not have to give a reason for your withdrawal.

6. What will happen to me if I take part?

If you agree to take part in the study, we will meet at a time and place of your choice and talk for about an hour about your experiences of working as a farmer and how it affects your life and health. In order to make an accurate record of our conversation I would like to ask your permission to use a tape recorder. However, if you don't want me to use the tape recorder, please just let me know and I will take notes during our discussion. You will be free to choose not to answer or talk about any questions or topics, and be free to stop the interview at any time. I may ask to interview you on more than one occasion.

7. Will I be recorded, and how will the recordings be used?

The recordings of the interviews made during this research will be used only for analysis and for illustration in publications, conference presentations and lectures. No other use of them will be made without your written permission, and no one outside the project will be allowed access to the original data. Your name will not be used and it will not be possible for anyone to recognise any of the quotes that may be used.

8. What do I have to do?

Taking part in this study does not involve any restrictions or changes to your usual routines and lifestyle. You will be asked to spend your time when comfortable for the interview.

9. What are the possible disadvantages and risks of taking part?

No serious disadvantage is expected to occur from your participation. However some questions may make you feel uncomfortable or unpleasant when discussing feelings or experiences associated with your health. However, you will be free to choose not to respond to any questions, and also free to stop the interview or the tape recorder at any time.

10. What are the possible benefits of taking part?

Whilst there are no immediate benefits for those people participating in the project, it is possible that this work will create new knowledge related to health and safety at work for Thai older farmers. Furthermore after the dissemination of the outcome of this study, it can be used to design practical plans, guidelines or programmes by related organizations to improve Thai older farmers' working conditions and safety. By participating in this research you and other participants will be contributing to an increased and in-depth understanding of the experiences, feelings, perceptions and perspectives of Thai older farmers over their health and safety.

11. What if something goes wrong?

You can contact me at Sirindhorn College of Public Health. The address is 653 Moo 8 Phitsanulok-Wangthong Road, Wangthong, Phitsanulok, or the telephone number: 055-311177.

12. Will my taking part in this project be kept confidential?

All the information that we collect about you during the course of the research will be used for research purposes only and be kept strictly confidential. Your identity, including the identity of the persons, places and events about which you speak will be protected. You will not be able to be identified in any research reports, writing, or publications arising from this research. All the tapes and relevant information about your identity will be stored in a locked file with access restricted to the researcher only.

13. What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?

With the information obtained from interviewing you and other Thai older farmers, we can understand the situations and reality from the views of Thai older farmers. Then an explanation will be created to explain those events which is the ultimate result following the objective of the research project. This result can be used by other researchers to develop further knowledge in this subject or by both governmental and non-governmental organizations aiming to help older farmers.

14. What will happen to the results of the research project?

I will use your account of your description to prepare a written report and also a thesis for my PhD. You will have the opportunity to read and comment upon the summary of this report in order to ensure that my interpretation is valid following your outlook. In addition, the results are used solely for research purposes, and are likely to be published in professional and scientific journals after the study is completed, and you can obtain a copy of the published results from the researcher if you so wish. However, what you have told me during the interview will be treated as confidential and you will not be identified personally in any reports or publications arising from the study.

15. Who is organising and funding the research?

The research is carried out by Mr. Weerachart Kaewanan, a PhD student of the University of Sheffield. The interview cost and any other expenses from the research will be funded by his own fund.

16. Who has ethically reviewed the project?

This project has been ethically approved via the ethics review procedure of The School of Nursing and Midwifery at the University of Sheffield. The University's Research Ethics Committee monitors the application and delivery of the University's Ethics Review Procedure across the University.

17. Contact for further information

Please contact me for further information: Mr. Weerachart Kaewanan, a PhD student of the School of Nursing and Midwifery, The University of Sheffield, Barber House, 387 Glossop Road, Sheffield, S10 2HQ, United Kingdom. My telephone number is 07749116589.

My phone number in Thailand is 055-311177 which you can contact me when I have been in Thailand.

Mike Nolan
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Email address: M.Hayter@Hull.ac.uk

You will be given a copy of the information sheet and a signed consent form to keep.

Thank you for taking the time to read this information sheet.

The interview guide

Instruction

This is the semi-structure interview guide for interviewing the participants, Thai older farmers and their families. The questions will explore the following aspects:

<u>For older farmers</u>

1. Health and work

-Type of work

-Importance of health for work

-The effects of their work on both of their physical and psychological health

-How they make decisions whether to stop their work temporarily if they have an accident or injury

-Early returning to work before fully recovery from injuries or illness

2. Working conditions and safety

-Experiences of accidents and injuries

-The ways to protect themselves from accidents and injuries

-Values of work when compared with their health and safety

-The possible risks of their work from their perspective

-Occupational health and safety training

3. Work retention of older farmers

-The contribution work makes to older farmers' lives

-Reasons for work retention

-The challenges found in their work

-When or under what conditions they would decide to completely stop working

-Their feelings about lives without working

-The satisfaction from their jobs

Date: 17 th October 2012
Name of Applicant: Weerachart Kaewanan

4. Influences of health problems and medications

-Their effects to older farmers' work

-Their management of these issues

-The use of health care services

-The role of health professional for working safety management

<u>For older farmers' families</u>

1. Roles of older farmers' family

-For working lives

-For older farmers' health

2. Their feelings about older farmers' working

-The appropriateness that older farmers continue their work

-When older farmers should stop working

Remark: This interview guide is primary for the interview process. It can be developed by new ideas or issues found after the analysis of the data from the interview.