Sensemaking and Financial Decision-making on Irish Farms

by

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Declaration

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy is entirely my own work, and that I have exercised reasonable care to ensure that the work is original, and does not to the best of my knowledge breach any law of copyright, and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

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List of Abbreviations

ACA	Agricultural Consultants Association
BTAP	Beef Technology Adaption Programme
BSC	Balanced Scorecard
CAP	Common Agricultural Policy
CPO	Compulsory Purchase Order
CSO	Central Statistics Office
DCU	Dublin City University
DEP	Dairy Efficiency Programme
DSS	Decision Support System
EU	European Union
FADN	Farm Accountancy Data Network
FFI	Farm Family Income
FFM	Farm Financial Management
GP	General Practice
GMA	Gross Margin Accounting
ICBF	Irish Cattle Breeding Federation
IFA	Irish Farmers Association
IFAC	Irish Farm Accountancy Co-operative
ISME	Irish Small and Medium Enterprises Association
KI	Key Informant
KPI	Key Performance Indicator
MCS	Management Control Systems
NFI	Net Farm Income
NFS	National Farm Survey
SEW	Socioemotional Wealth
SBOM	Small Business Owner Manager
SFP	Single Farm Payment
SME	Small and Medium Sized Enterprise

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Abstract

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The aim of this study is to achieve a better understanding of financial decision-making on Irish farms. The prior research in this area is scant and has attracted little attention from academic researchers, which demonstrates a research gap. Prior research has indicated that farmers do not appear to engage in farm financial management practices to a great extent. This prominent feature of the literature motivated the researcher to explore this research topic.

An interpretive methodological approach was adopted, as it was deemed appropriate in obtaining insights and an understanding of farmer decision-making. In line with this approach, the semi-structured interview method was the primary research method employed. In addition, a focus group was conducted to probe the interview findings in more detail and to act as a method of triangulation. This interpretive approach was based on a rigorous and robust process of data analysis through the adoption of qualitative data analysis software.

The theoretical framework of sensemaking was adopted as a lens to develop an understanding and an explanation of the process of farmer decision-making. The empirical evidence supports that farmer decision-making can be best explained as a process of sensemaking.

A contribution is provided on a number of levels. Firstly, a contribution to the literature – there is very little research in the accounting literature on farm management and furthermore, the farm management literature has received little attention from an accounting or a theoretical perspective. Secondly, a theoretical contribution – a model of sensemaking and financial decision-making in farming has been developed. Thirdly, a method contribution – this work highlights how sensitive information was elicited from interviewees by designing an effective interview strategy. Finally, a practical contribution – there are lessons for both policy makers and agricultural advisors, in terms of how to design financial advice for farmers.

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Dedication

This thesis is dedicated to my late father, Nicholas Hayden: a farmer, an educator and a sensemaker!

Chapter 1 Introduction

1.1 Introduction

This study explores the financial decision-making process of Irish farmers. To set the context for the study, this chapter first discusses the background and motivation for the study, in Section 1.2. It then proceeds to highlight the overall research question and the research objectives that were established to answer this question, in Section 1.3. Next, a brief description of the research methodology adopted is provided in Section 1.4. Finally, Section 1.5 presents an outline of the remaining chapters of this thesis.

1.2 Background and Motivation

Growing up on a farm in the South-East of Ireland fostered an interest in agricultural activities. Having completed an undergraduate degree and qualifying as a chartered accountant, the role of financial controller in a small and medium sized enterprise (SME) was undertaken. After working as an accountant for a number of years, a career in academia was chosen and, subsequently, this research project was commenced.

While searching for an area to research, preliminary reading was conducted in the management accounting area. The topic of financial management practices in SMEs began to emerge as a keen area of interest. Subsequently, the search for an industry/sector began and, very soon afterwards, the agricultural sector became the focus of enquiry. In hindsight, it was a perfect fit as this research brings together experience gained surrounding financial management practices in SMEs and an interest in the agricultural industry.

Furthermore, the agricultural industry has emerged as an interesting research site in recent years. The Irish economy was in its early years of a recession in Ireland. As a result of the recession and the collapse of the financial services and property markets, the agricultural industry began to prosper in Ireland. It became the focus of investment and expansion, fast becoming a key growth sector in the Irish economy after the collapse of the "Celtic Tiger". At this time, traditional indigenous industries were being primed to stimulate economic growth. As agriculture is the largest of these indigenous industries (Department of Agriculture Food and the Marine, 2010a), it became an industry of great focus and attention at a national and international level. These circumstances all contributed to the agricultural sector being chosen as a very attractive and exciting area to research.

At the outset of this study, Teagasc (Agriculture and Food Development Authority) was approached to discuss possible research topics within the area of financial management in agriculture. A number of potential areas were discussed and explored, including the area of financial decision-making. At this stage, the possibility of research funding was also explored with Teagasc and some funding was granted to support the completion of this research project. The input of Teagasc was to assist in testing the receptivity of the research topic; it did not dictate the research objectives or methods to be adopted.

When the literature in the area of farm financial management (FFM) was being explored, it became apparent that there were relatively few prior studies, not only in the Irish context, but internationally. Jack (2005) and Argiles and Slof (2001) acknowledged the scarcity of the literature in this area internationally, while, in an Irish context, the literature is particularly sparse. Apparently, there has only been one other doctorate completed in the Republic of Ireland in the area of FFM. The literature being sparse posed difficulties and frustration when conducting this research. However, it also demonstrates that there is a gap in the literature that needs to be filled, which provides an opportunity to provide a valuable contribution.

To gain understanding of FFM within the agricultural industry, an in-depth review of the existing literature was completed. Based on a preliminary review of the literature a number of key observations were noted:

- The majority of farmers appear to spend very little time on financial management (Jack, 2004; Byrne, 2005; Boyle, 2012; Irish, 2012);
- Farmers tend to rely on intuition to a large extent when managing their farm enterprise (Ohlmer and Lonnstedt, 2004; Nuthall, 2012).

These prevailing issues in the literature and context were very thought provoking and became issues that were central to the motivation for this study. In essence, these issues were the key motivating factors and ignited the overall research question.

1.3 Research Question and Research Objectives

The overall research question is:

How and why do farmers make financial decisions?

To answer the above research question, it was necessary to gain an understanding of the financial decision-making process of farmers, by outlining some research objectives. The research objectives were formalised following a detailed literature review in the area of FFM and after consideration of the findings from two pieces of preliminary research conducted at the outset of this study, a pilot survey of farmers and key informant (KI) interviews (see Section 7.2). The theoretical framework adopted in this thesis also assisted in framing the research objectives. Throughout the initial stages of the project the research objectives changed, were framed and reframed – an iterative research process was adopted. The focus changed from evaluation of the use of FFM in financial decision-making to querying the whole process of how farmers make sense of such decisions.

The purpose of the study is summarised in two research objectives (ROs):

RO1: To explore the financial decision-making process of farmers by examining:

- The influencing factors on farmer decision-making;
- The role of advisors in farmer decision-making;
- The role of farm financial management (FFM) in farmer decision-making;
- The role of other issues in farmer decision-making – these include a review of demographic factors such as: farm type, age and level of education of the farmer, and other issues such as the role of intuition in farmer decision-making.

RO2: To establish how farmers make sense of their business situations in order to progress with decisions of a financial nature.

It was necessary to unpack the 'how' and 'why' of financial decision-making. This involved an enquiry into the factors prompting the farmer's decision-making process (**RO1**) – the '*why*' question. In this process, the supports provided, such as external advisors and FFM systems, needed to be explored (**RO1**). Also, given that the individual farmer is the active decision-maker, the role of other intrinsic factors, including intuition and demographics, were explored (**RO1**). Both of the latter enquiries assist in answering the '*how*' question. After investigating **RO1**, a natural progression in the research was to attempt to develop an explanation of '*how'* the process of financial decision-making took place (**RO2**). This included an understanding of how the factors explored in **RO1** interacted with this process.

To address the above research objectives, an appropriate research methodology was developed, which is briefly described in the next section.

1.4 Research Methodology

An interpretive methodological approach was adopted, as it is was considered suitable for assisting in the development of an explanation of farmer decision-making. In line with this overall approach, the semi-structured interview method was the main research method

employed. Prior to the primary empirical data collection, via semi-structured interviews, two pieces of preliminary research, a pilot survey of farmers and key informant (KI) interviews, were undertaken. Following a preliminary review of the literature, the pilot survey of farmers was conducted to obtain an insight into the actual financial management practices of farmers. This pilot survey helped to clarify the research objectives and to test the receptivity of farmers to the topic. Subsequently, KI interviews were undertaken due to the sparse nature of the literature in this area. The KI interviews were conducted with members of key stakeholder groups in the Irish agricultural industry, namely: Teagasc, the Agricultural Consultants Association (ACA) and IFAC Accountants. These initial research activities assisted in the building up of a more comprehensive knowledge of the financial management aspect of the Irish agricultural landscape before proceeding to collect the primary empirical data. This consisted of semi-structured interviews with 27 farmers, nine from each of the farm types – dairy, tillage and beef.

Finally, a focus group was conducted to probe the empirical findings in more detail and to act as a method of triangulation. The interpretive methodological approach adopted was also compatible with the assumptions of the theoretical framework of sensemaking, which was adopted in this study as a theoretical lens. Qualitative data analysis software (NVivo) was used to assist in providing a robust, efficient and rigorous process of data analysis. It is important to note that the use of such software is merely as a data management tool and that the process of data analysis was intellectually contributed by the researcher.

1.5 Thesis Outline

Following on from this introductory chapter, an overview of the Irish agricultural industry and of FFM is presented in Chapters 2 and 3 respectively, to provide the background and study context. The Irish agriculture industry is quite unique, with many actors operating in a relatively complex environment. Therefore, a summary of the main aspects of the industry is

provided in Chapter 2, as much of that detail is referred to in subsequent chapters. Similarly, FFM is quite a context specific subject, of which financial decision-making is a component. Therefore, an overview of FFM is set out in Chapter 3, to provide an insight into what FFM entails and to demonstrate that decision-making is an important component.

The next two chapters are devoted to a review of the literature relating to decision-making, in Chapter 4 and sensemaking in Chapter 5. Chapter 4 presents the literature surrounding farmer decision-making and emphasises the notable lack of prior literature surrounding financial decision-making in agriculture. In addition, attention is drawn to how much of the prior literature is focused on how farmers should make decisions and how very few empirical studies have explored the actual decision-making process of farmers. In this study, sensemaking is adopted as a theoretical framework to assist in developing explanation and understanding of farmer decision-making. Chapter 5 provides a detailed insight into the theoretical framework of sensemaking, as documented in the literature.

A brief insight to the interpretive research methodology adopted in this study was introduced in Section 1.4. Chapter 6 provides a detailed account of how this interpretive approach was operationalised through the primary data collection method of semi-structured interviews. The chapter also outlines how a focus group was conducted to probe the empirical findings from the semi-structured interviews in more detail. Qualitative data analysis software (NVivo) was used to assist in the analysis of the interview data. A detailed account of the data analysis process conducted, using NVivo, is provided in Chapter 6.

The empirical findings are highlighted in Chapter 7, followed by an in-depth discussion of those findings in Chapter 8. Chapter 7 highlights some findings from the two pieces of preliminary research, a pilot survey of farmers and KI interviews, and then proceeds to provide a detailed account of the findings from the interviews conducted. Chapter 8

discusses those findings, using the theoretical lens of sensemaking to assist in developing an understanding of the financial decision-making process of farmers.

Finally, Chapter 9 presents the conclusions of the study. It outlines how the findings provide an insight into the financial decision-making process of farmers. Furthermore, it acknowledges the significant contributions that this study makes on a number of levels – contributions to the literature, to theory, a method contribution and a contribution to practice. Chapter 9 also considers the limitations of the study and provides some suggestions for future research in the area.

1.6 Chapter Summary

A brief introduction to the study has been provided in this opening chapter. It began by describing the motivation for and background to the study, highlighting how the agricultural industry emerged as an interesting research context. The lack of attention to this topic in the prior literature was emphasised. A preliminary review of the literature noted that the majority of farmers appear to spend very little time on financial management and, furthermore, farmers tend to rely on intuition to a large extent when managing their farm enterprise – issues that were central to the motivation of this study. Next, the research question and research objectives were highlighted, followed by an introduction to the interpretive research approach adopted to achieve these objectives and answer the research question. Finally, an outline of the remainder of this thesis was provided.

Chapter 2 Study Context: The Irish Agricultural Industry

2.1 Introduction

The main aspects of the Irish agricultural industry are profiled in this chapter to help set the scene for this research study. The industry is quite unique, with many actors operating in a relatively complex environment. Therefore, a summary of the main aspects of the industry is provided, including: an overview of some key statistics (Section 2.2), a review of its future outlook (Section 2.3), a summary of the key regulations (Section 2.4), an introduction to the key players that operate in the industry (Section 2.5) and other aspects which are context-specific (Section 2.6). Much of the detail provided here is referred to in subsequent chapters. Therefore, the aim is to introduce these industry specific aspects before proceeding any further. The content relies to a large extent on secondary research data, in particular industry journals/reports/publications.

2.2 Overview of the Industry

Since 1980, the Central Statistics Office (CSO) has conducted an agricultural census every ten years to provide structural information on the industry. The most recent agricultural census was conducted in 2010 (CSO, 2012). Some key statistics that help demonstrate the size and scale of the industry from that survey are:

- The number of active farms in Ireland is estimated to be 139,860;
- The land area in the Republic of Ireland is 6.9 million hectares, of which 4.7 million are used for agriculture.

In addition to the CSO ten year agricultural census, the Department of Agriculture, Food and Marine publishes an annual report which outlines the importance of this indigenous industry. The most recent annual report published, the *2014/2015 Review & Outlook for Agriculture,*

Food and the Marine (Department of Agriculture Food and the Marine, 2015, p.6), outlined that:

- Employment in the agri-food sector accounted for 163,000 jobs or 8.4% of total employment at the end of 2014;
- The agri-food sector accounted an estimated 7.7% of the gross value added of the Irish economy in 2014.

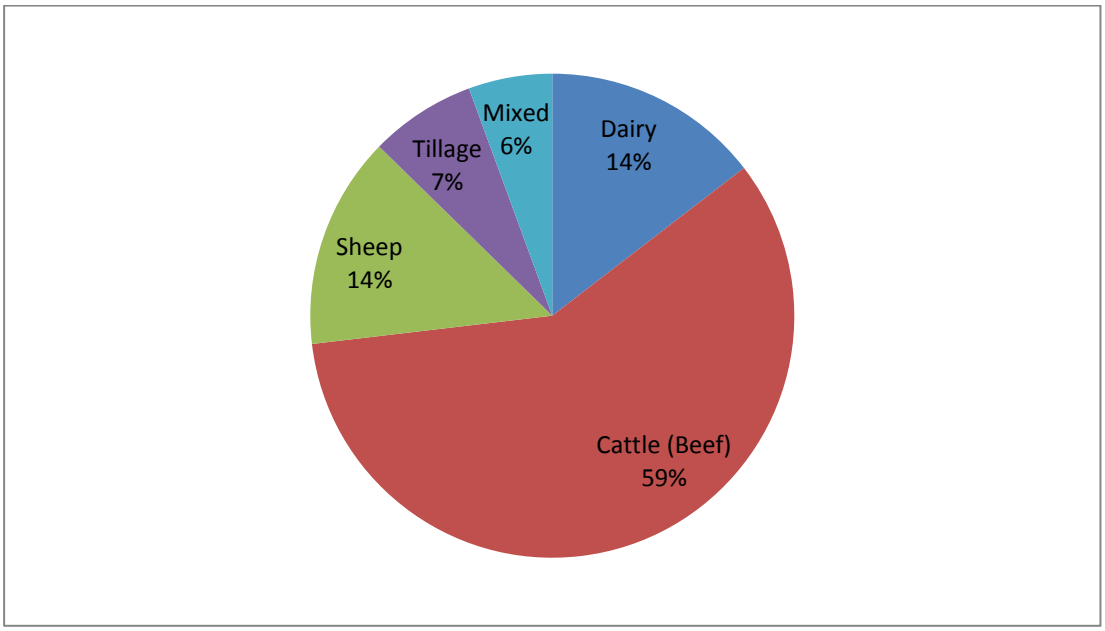
Future ambitious goals are set out for the industry in its *Food Harvest 2020*[1] strategy document (Department of Agriculture Food and the Marine, 2010a). These goals demonstrate that this indigenous industry is very important to the future of the Irish economy, especially when the recent economic crisis that Ireland has gone through is considered.

Another key source of information about the structure of the Irish agricultural industry is the National Farm Survey (NFS[2]). The NFS identifies the following primary agricultural farming types in Ireland: dairy, cattle (beef), sheep, tillage and mixed. As outlined above, the CSO estimated the number of farms in Ireland to be 139,860. Following the publication of the 2010 CSO ten year census, the 2010 NFS (Hennessy *et al.*, 2011) provided a detailed analysis of farm types in operation in Ireland. It estimated that when pigs, poultry and farms with a standard output of less than €4,000 are excluded, this leaves approximately 105,535 farms. Based on this revised total number of farms, the percentage of farms in each farm type is presented in Figure 2.1.

[1] The Food Harvest 2020 report is a report that was commissioned by the Department of Agriculture, Fisheries and Food to provide a draft strategy for the medium-term development of the agri-food (including drinks) fisheries and forestry sector for the period to 2020.

[2] The NFS has been conducted on an annual basis by Teagasc since 1972. The purpose of the survey is to determine the financial situation on Irish farms by measuring the level of gross output, costs and income across the spectrum of farming systems and sizes. The survey is operated as part of the Farm Accountancy Data Network (FADN) of the EU.

Figure 2.1 Overview of Farm Types in Ireland



Source: 2010 NFS (Hennessy *et al*., 2011)

In Chapter 6, it is outlined how farmers selected for interview were chosen from the three farm types of dairy, tillage and beef, to give a cross-sectional view of the decision-making process of farmers. As can be seen from Figure 2.1, dairy, tillage and beef farms, make up 80% of the farm types operating in Ireland. While sheep farming is also one of the primary farming types, sheep farmers do not commonly undertake large investment decisions and thus sheep farmers were not included.

An overview of some key statistics taken from the most recent 2014 NFS (Hennessy and Moran, 2015) for each of the three relevant farm types, is now provided in Table 2.1, to give an insight into the financial situation of each farm type.

Table 2.1 Financial Overview of Farm Types

Farm Type	Average Family Farm Income (FFI[3])	Average FFI per Hectare	Single Farm Payment (SFP) as a percentage of FFI
Dairy	€68,877	€1,252	30%
Tillage	€28,468	€490	84%
Beef	€15,834	€345	133%

Source: 2014 NFS (Hennessy and Moran, 2015)

Table 2.1 shows that dairy farming is the most profitable of the three farm types, followed by tillage and the least profitable, beef. The single farm payment (SFP) is the primary form of subsidy paid to farmers under the Common Agricultural Policy (CAP) and it can be seen that there is a variation in the dependence on this payment. In fact, beef farming is so dependent on this payment that, on average, 133% of the FFI of beef farmers was comprised of this subsidy payment in 2014. This means that the average beef farm in Ireland would have made a loss, if this subsidy payment had not been available. Tillage farmers are also highly dependent on the SFP to generate a viable income, while dairy farming is the only one of the three farm types that can survive independently.

Finally, a number of interesting socio-demographic features of the Irish agricultural industry are highlighted. The 2014 NFS report (Hennessy and Moran, 2015) noted:

- The average farmer age in Ireland is 57 years;
- Fifty one percent of farm households have off-farm employment.

While, other characteristics, according to the 2010 Census of Agriculture (CSO, 2012), were:

- Only 31% of farmers have undertaken some type of formal training and the proportion of farmers with formal training was greatest amongst younger farmers. Furthermore, of the 31% who have completed training, the majority have attained a certificate in farming or completed a farm apprenticeship course, but only 14% have attained a third level qualification in agriculture.

[3] FFI is calculated by deducting all farm costs (direct and overhead) from the value of gross farm output. Factors of production owned by the farmer, such as family labour and land, are not included as costs of production.

- The average farm size in Ireland is 32.7 hectares (approximately 80 acres).

The above characteristics present an interesting profile of Irish farmers. The latter may have a significant impact on farmer decision-making and are probed in both the literature review and in the empirical work.

2.3 Outlook for the Industry

Historically, Ireland has had a strong tradition of agriculture providing employment and contributing to the economic output of the country. The industry has gone though some turbulent times in recent decades. Currently it appears to be in a good place, but in the first decade of the 21st century, the output of this sector was declining and, in 2008, the Teagasc Rural Economy Research Centre (Teagasc, 2008) looked at the medium term outlook for the dairy, tillage and beef farm sectors. It concluded that:

- The number of dairy farms would continue to decline from about 20,000 in 2008 to approximately 12,000 in 2014. It was projected that approximately 8,000 of these would be economically viable businesses.
- Approximately 75% of tillage farms were estimated to be economically viable businesses in 2008. A large number of the economically non-viable businesses may be sustainable, due to the presence of other income in the farm household. However, 15% of tillage farming households were estimated to be economically vulnerable in 2008.
- The average gross margin on beef farms, assuming no change in current production systems and no change in agricultural policy, was projected to decline by 21% between 2006 and 2018. This decline in gross margin is due to increased costs of production.

The bleak outlook across a number of areas, as referred to above, may have contributed to farm diversification, especially diversification into the agri-tourism and organic food sectors. Furthermore, recent developments in the UK and Europe have indicated that the industry

model is changing towards one where farmers are part of agri-food business supply chains, such as those that dominate the US market: the so-called 'gate to plate' model (Jack, 2009a, p.4).

However, in the space of a few years, the general outlook of the industry had moved from that bleak outlook to a much more optimistic and upbeat mood. In 2011, around the time of commencement of this project, the Director of Teagasc gave a speech entitled *Stepping up to the Plate: Capitalising on a Historical Opportunity for the Irish Agri-Food Sector* (Boyle, 2011). He outlined that:

- Ireland is a major exporter of food. Exports were valued at over €8 billion in 2010 and the *Food Harvest 2020* report sets a target of €12 billion by 2020.
- In global terms, Ireland is the 5th largest exporter of beef, 4th largest of butter and 10th largest of skimmed milk powder. In addition, over a short period, exports of infant milk formula from Ireland had grown to account for 16% of the world's supply and, because of recent investments, it was likely to quickly increase to about 20%.
- Ireland's export dependency is unique within the European food sector, with more than 80% of products such as dairy and beef being exported.

Further evidence of this positive outlook was included in a three-part newspaper article series in the *Irish Times* by journalist Kathy Sheridan when she wrote about the developments in the Irish agricultural industry. In her first article, entitled *Yep, it's cool to be a farmer again* (Sheridan, 2011a), she documented that Teagasc training colleges had seen an 80% increase in enrolments in five years and had to turn away 250 people in 2010. It was also noted that the entry grades for the B.Sc. in Agricultural Science at UCD had increased significantly between 2007 and 2010. The second article in the series, called *Living off the land* (Sheridan, 2011b), discussed how "the sons of the soil are coming home to roost". This referred to the contrast of young farmers relying on the family farm to provide them with a

future livelihood (late 2000s to 2011), compared to the boom period (mid-1990s to mid-2000s) when many farmers' sons and daughters overlooked the family farm as a career choice. Instead, they choose to opt for alternative employment options which appeared more enticing, such as the construction sector. Finally, in the third article, called *Who wants to be an agripreneur?* (Sheridan, 2011c), it was discussed how farmers have moved beyond traditional farming and are exploring other options to use the farm to diversify into areas such as restaurants and bio-energy crops.

The above brief overview demonstrates that the agricultural sector in Ireland is very volatile. The outlook changes from decade to decade and sometimes even on a year by year basis. Overall, one can conclude that, at the present moment in time, agriculture is an important industry in Ireland and is in a relatively good place. This is one of the primary reasons that this industry was chosen as a focus for research.

Despite the positive outlook of the industry as a whole, farmers in Ireland increasingly find themselves subjected to pressures related to global trade agreements, climate change and other political issues which are reflected in revisions to national and international agricultural regulation. In this context, a summary of regulation surrounding the Irish agricultural industry is now provided.

2.4 Regulation

Regulation in any industry may be a key factor in the decision-making process of participants within that industry and this is especially true for the agricultural industry (Sutherland, 2010). The presence of quotas, subsidies and environmental guidelines in agriculture may affect many of the financial decisions that farmers make. Irish farmers operate under international and national regulation. A brief overview of both is now presented.

2.4.1 International Regulation

The EU's Common Agricultural Policy (CAP)[4] details the primary regulations that govern Irish farmers. CAP was established in the 1960s to secure Europe's food supply and to stabilise prices to the benefit of both producers and consumers. CAP encouraged a constant supply of home produced food by providing farm price supports. In this way, the instability in world market food prices was avoided through a combination of food import tariffs, export refunds and market management (European Commission, 2013). Over the years, a number of reforms to CAP have taken place, which are summarised in Table 2.2.

Table 2.2 Overview of CAP Reform

Year	Primary Changes
1992	European farmers were asked to produce less, get paid less for what they produce, import more food from outside the Community and in return receive direct compensatory payments from the European Union. In addition, quotas on the production of most farm produce were introduced to curtail production and balance market demands.
2003	The linkage between direct payments and the number of livestock or crops which farmers produce, was abolished. Farmers involved in beef, sheep production and in cereal growing will receive an annual payment based on the average direct payment they received in the three year period 2000-2002. In the case of Irish farmers, this annual payment is fully 'decoupled' from production. In other words, farmers do not have to keep animals or grow crops to be eligible for the payment. The quota system for beef, sheep and tillage was abolished. The milk quota system was to be maintained until 2015. The EU support structure for milk was reduced and farmers were to be paid direct 'compensation' for the reduction in supports.
2013	The major changes were: Direct payments were better targeted by limiting support to those who were actively engaged in agricultural activities. On top of the basic SFP, a green direct payment and possible additional support was introduced to contribute to specific environmental objectives. Faced with an ageing farming population (only 14% of EU farmers are under 40 years of age), from 2015, all young farmers entering the sector will have the opportunity to get an additional payment, which can be complemented by start-up aid.
2015	Milk quotas were abolished.

Source: European Commission (2013)

[4] http://ec.europa.eu/agriculture/cap-post-2013/legislation/index_en.html
After 2013, the vast majority of CAP legislation will be defined under four consecutive Regulations – a significant simplification – covering among others, direct payments for farmers: Regulation 1307/2013

These changes in regulations have brought change in each of the farm types. Most noticeable is the shift of farmers into milk production (dairy) from other farming systems in recent years. According to the *Food Harvest 2020*[1] report, CAP will provide the main policy framework for development of the primary agriculture and agri-food industries to 2020 and beyond. These most recent changes in regulations were underway throughout the course of this project and may have impacted the decision-making process of farmers. This is explored in Chapter 7.

2.4.2 National Regulation

In addition to the international regulation, there are also a number of support schemes available to farmers under national regulations. These support schemes are available to farmers based on their farm type. In the context of this study, there are two important support schemes – the Dairy Efficiency Programme (DEP) for dairy farmers and the Beef Technology Adaption Programme (BTAP) for beef farmers. No such schemes were available for tillage farmers. These schemes are relevant, as they were applicable throughout the course of this research project and both have a financial management focus. Therefore, these schemes may have had an impact on the financial decision-making process of farmers during this period. The schemes were developed to generate efficiencies on farms in a number of specific areas, including financial management. Both schemes were conducted through a discussion group format. Table 2.3 is provided to give a brief overview of these schemes.

Table 2.3 Overview of National Support Schemes

Programme	**Dairy Efficiency Programme (DEP)**	**Beef Technology Adoption Programme (BTAP)**
Period in operation	2010 to 2012	2012 to 2014
Areas where efficiencies were expected	• Grassland management • Breeding • Financial management	• Financial management • Grassland management • Breeding • Herd health • Producing animals to market requirements
Scheme criteria	A farm survey must be completed, which gives a baseline performance for each farm in a number of key areas. Targets for three years must be set out, indicating improvements to be achieved and, thereby, enhancing profitability of the farm enterprise. A *profit monitor* must be completed by each participant prior to the end of year two. Participants required to attend at least nine monthly meetings a year (within discussion group format), including at least one dealing with each of the three key areas. Participants were also required to host at least one group meeting over the three year period.	A farm survey must be completed, which gives a baseline performance for each farm in a number of key areas. Targets for three years must be set out, indicating improvements to be achieved and, thereby, enhancing profitability of the farm enterprise. A *profit monitor* must be completed by each participant prior to the end of year two. Participants were required to attend at least nine monthly meetings a year (within discussion group format), including at least one dealing in three of the key areas. Participants were also required to host at least one group meeting over the three year period.
Incentive to participate	An average payment of €1,000 per participant farmer was envisaged in return for their participation in the programme.	An average payment of €1,000 per participant farmer was envisaged in return for their participation in the programme.

Source: Department of Agriculture, Food and the Marine (2010b and 2012)

2.5 Key Players in the Industry

Key players in the industry that provide advice to farmers are now profiled in terms of their objectives and the support services they provide for the agricultural community. It is

important for such an overview to be provided, as elements of the service that these organisations provide are referred to throughout this thesis. In addition, Chapter 6 details how farmers were selected for interview in conjunction with these organisations.

2.5.1 Teagasc

Teagasc (Agriculture and Food Development Authority) is the national body providing integrated research, advisory and training services to the agriculture and food industry and rural communities. It was established in September 1988 and is a client-based organisation which employs over 1,300 staff at 70 locations throughout Ireland. It has approximately 45,000 members (Teagasc, 2016a).

Teagasc is the main provider in Ireland of further education in agriculture, food, horticulture, forestry and equine studies. It also provides an advisory service via a "Knowledge Transfer" division. This advisory service is commonly referred to as an extension service within the industry. Within this division, Teagasc's *BETTER Farm Programme* (Teagasc, 2016b) aims to empower farmers to make good financial decisions on their farms, resulting in increased farm income and improved long-term viability. A number of financial management services[5] are offered to farmers to assist them in the financial management aspects of their business. These are now discussed.

The eProfit Monitor[5]

The *eProfit Monitor* is an online financial analysis tool that is available to all Teagasc clients. The focus of the programme is to allow users to get a detailed financial breakdown on their business by looking at each enterprise (for example: dairy, tillage or beef) and to analyse each enterprise by its principal unit of production (for example: litre of milk, tonne

[5] https://www.teagasc.ie/about/farm-advisory/advisory-services

of grain or kg of beef). Farm figures can be compared with Teagasc target figures, allowing benchmarking to be performed and areas of weakness/strength to be identified by each user.

Cost Control Planner[5]

The *Cost Control Planner* is a planning and recording computer programme developed by Teagasc. It provides a template that members can use to record and monitor costs incurred in running their business. By using the *Cost Control Planner* in conjunction with the *eProfit Monitor*, a plan for the coming twelve months can be formulated by evaluating each sale and cost item from the previous year and making a best estimate of what can be achieved for the coming year. The net result of estimates is a projected cash-flow – any deviations from budget can be quickly identified and appropriate responses can be made.

Other Ancillary Services[5]

Teagasc have a range of tools and worksheets to help their members with their farm business finances; for example, regular cash-flow recording worksheets and worksheets to assist in working out one's capacity to borrow for future investment. In addition, there is a *Machinery Cost Calculator* which helps farmers determine the cost of the machinery used to carry out their work. These tools can assist in the many finance-related decisions on farms.

Teagasc also publish bulletins/articles from time to time providing information and guidance on developments in financial-related matters, such as:

- Investment decisions
- Financing decisions
- Pension and retirement planning
- Taxation developments particular to the agricultural sector.

Overall, it can be seen that Teagasc is an organisation which has financial management as one of its key areas of focus in terms of overall farm management.

2.5.2 Agricultural Consultants Association

The Agricultural Consultants Association (ACA) of Ireland was established in 1979. It was set up to represent independent agricultural consultants. The ACA have 144 professional members with a further 271 professional, technical and administration staff employed with its members. An independent survey of its membership, conducted by the Irish Small and Medium Enterprises Association (ISME) in 2010, estimated that ACA members advise in the region of 44,500 farmers (ACA, 2016).

The following list is an example of the range of services provided by the organisation:

- Farm accounts and taxation services
- Farm planning, management and consultancy services
- Technical advice in all areas of farming
- Land valuations and forestry consultancy
- EU and Government-related schemes in agriculture and farming
- Insurance claims and legal professional advice
- Farm buildings and yards, layout and planning.

As can be seen from the above list, financial management and information for decision-making forms a core part of the services the organisation provides to its clients.

2.5.3 Irish Farm Accounts Co-operative

The Irish Farm Accounts Co-operative (IFAC) was formally started in 1975. From the very beginning, IFAC was based on a Recorder Service to capture data accurately and computer technology to analyse it efficiently. Therefore, the Recorder Service has been central to the development of IFAC over the years. It is the largest farm accountancy practice in Ireland,

with approximately 14,000 clients, and it operates 26 branches nationwide. It employs 404 accountants and 160 book-keepers (IFAC, 2016).

Some examples of the services it provides to clients include:

- Statutory accounts preparation
- Interim and management accounts
- Recorder service
- Loan applications and bank negotiations
- Tax planning and advice
- Financial management reports including: cost and budget monitoring, profit monitoring and cash-flow forecasts.

The above services are available and, in many respects, can assist farmers in their financial decision-making process.

2.5.4 The Irish Farmers Association

The Irish Farmers Association (IFA) was founded in 1955. It is the country's largest representative organisation for farmers and primary food producers. Its mission is to improve the incomes and conditions of all farm families. The IFA's voluntary officer structure works with a professional staff to improve farm incomes and address issues across the entire spectrum of food production. The organisation has 946 branches nationwide and has an approximate membership of 88,000 (IFA, 2016).

Members can avail of services in the following areas:

- Farm schemes, payments and inspections
- Farm assist and retirement support advice
- Credit advice
- Legal advice

- Mental health advice.

The above services are focused on the farmer's personal and financial needs, rather than specific financial management aspects of the farm. Nonetheless, the IFA can play an important role in the financial decision-making process of farmers.

2.6 Other Context-specific Aspects of the Agricultural Industry

There are a number of other aspects of the agricultural industry which are unique and warrant attention, namely: discussion groups, purchasing groups and operational key performance indicators (KPIs). A brief overview of each is provided, as they will be referred to at various stages throughout this thesis.

Discussion Groups

Discussion groups are used throughout the world, in all agricultural sectors, as a way to transfer knowledge (Bogue, 2013). They provide a forum for sharing ideas, a place for farmers to openly discuss issues and an opportunity to keep up-to-date with new technology – all of which help learning to take place. Farm visits are quite often part of the discussion group model, with individual members of the discussion group holding discussion group meetings on their own farm.

Teagasc has pioneered participatory tools for knowledge transfer in the Irish farming sector (Maher and Donworth, 2012). The discussion group model is acknowledged to be particularly effective in knowledge transfer and adoption, being largely attributable to its facilitation of a farmer-oriented learning process. According to Maher and Donworth (2012), three core principles guide the practice of facilitation:

1. Collecting valid and relevant information;
2. Making a free and informed decision;
3. Ensuring commitment to those decisions.

Collectively, these core principles reinforce each other.

Discussion groups have operated in the Irish agricultural sector for a number of years, but are more prevalent in dairy farming that any other farm type. Jack (2009b) acknowledged the significant impact of discussion groups as a form of benchmarking in agriculture and outlined that the use of such groups dates back to the 1940s in New Zealand and Australia. Discussion groups are sometimes known as "benchmarking clubs" or "business improvement clubs". The use of discussion groups in financial management and decision-making is discussed in more detail in Chapters 3 and 4.

Purchasing Groups

Almost €3 billion worth of fertiliser, feed, fuel and other farm inputs are consumed on Irish farms each year (Irish Examiner, 2010). Inputs on farms are one of the key areas that need to be controlled to develop a sustainable farm enterprise. Purchasing groups are a method employed by some Irish farmers to assist in the controlling of such costs. Agricultural purchasing groups are formed when groups of farmers come together to bulk buy farm inputs. The IFA noted that a very significant price gap for fertiliser developed in 2015 between quotes to individuals and purchasing groups (IFA, 2015). The use of purchasing groups is particularly relevant in the context of operational decision-making in this study.

Operational Key Performance Indicators (KPIs)

In addition to FFM, it is important to acknowledge that the there are many operational KPIs that farmers can monitor to assist them in their overall farm management. These operational KPIs can be specific to farm type; for example: grass management (dairy), soil testing (tillage) and animal weights (beef). Many of the key players outlined earlier assist and guide farmers on implementing best practice in each of the respective farm types, in respect to the various operational KPIs that can be monitored. These operational KPIs are of particular relevance in the context of operational decision-making in this study.

2.7 Chapter Summary

An overview of the agricultural industry in Ireland has been provided. The key actors and the context-specific aspects of the industry have been introduced. The overview of the industry demonstrates its importance to the Irish economy and its volatile nature, while the future outlook provides optimism. The reference to key players demonstrates an extensive range of services available to assist farmers in the management of their businesses (including financial decision-making). Finally, the overview of the applicable regulations portrays the ever-changing and complex environment in which farmers operate. This complex environment reinforces the need for farmers to develop viable and sustainable farm enterprises for the future – a reality that may only be created through sensible and informed financial decision-making practices.

Chapter 3 Literature Review: Farm Financial Management

3.1 Introduction

Financial decision-making is a component of farm financial management (FFM). An overview of FFM is presented in this chapter by: defining the term (Section 3.2), outlining its importance (Section 3.3) and detailing its components (Section 3.4). Finally, a review of the barriers that contribute to the low adoption of FFM, as evident within the industry, is presented (Section 3.5).

At the outset, it is important to note that the literature in the area of FFM is sparse, not only in the Irish context, but internationally. According to Jack (2005, p.60), 'Agricultural academics tend not to be interested in accounting and accounting researchers tend to stay clear of agriculture and related industries'. Furthermore, Argiles and Slof (2001, p.361) noted:

> In spite of its relative importance in the economy of many countries and its growing interrelationships with other sectors, agriculture has traditionally not received much attention from accounting researchers, practitioners and standard setters.

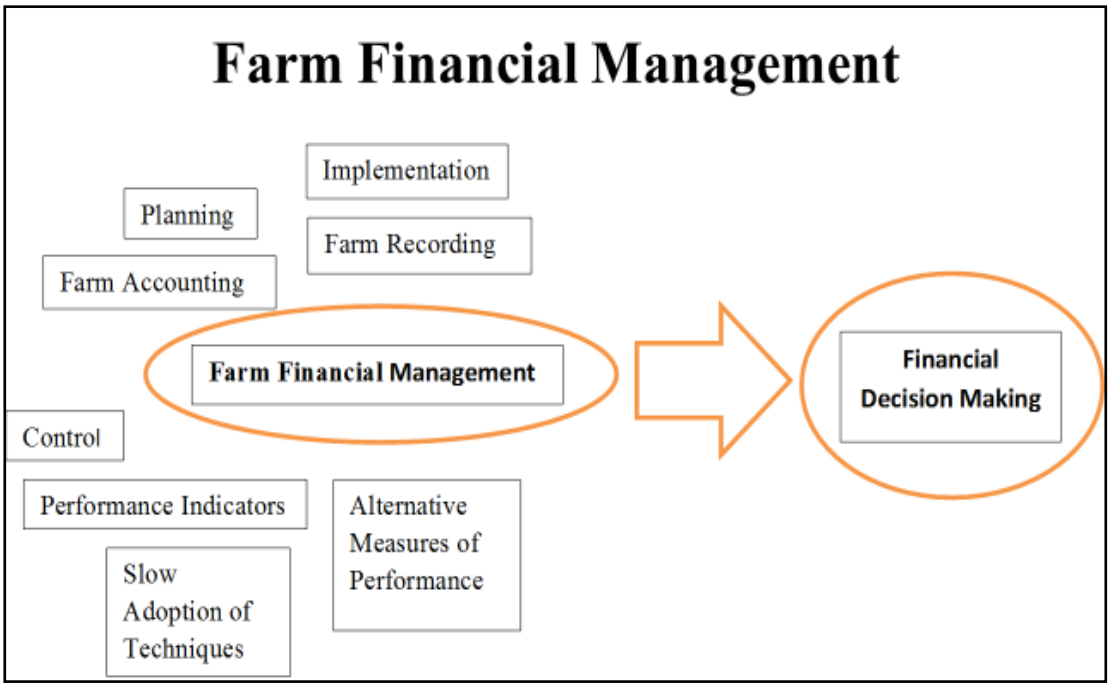
In an Irish context, the literature is particularly sparse; apparently only one other doctorate has been completed in the area of FFM. This was completed by Dr. Ailish Byrne, using an agricultural economics supervisor and, was entitled *An Examination of Farm Financial Management Practices on Irish Dairy Farms* (Byrne, 2005). A number of textbooks have been written in the area of FFM, which have documented the most widely used FFM practices in farming. Some of the text books referenced have been written a number of decades ago, but this does not mean that the literature is out of date. The underlying principles of financial management in the agricultural industry have not fundamentally changed since their publication.

3.2 Definition of Farm Financial Management

Castle and Becker (1962, p.3) defined farm financial management (FFM) as being 'concerned with the decisions that affect the profitability of the farm business'. As this is a very broad definition, other definitions were explored. However, it does highlight the important role of decision-making in FFM. In Chapter 4, decision-making is discussed in detail.

More recently, Byrne (2005, p.4) used the following definition of FFM for the purposes of her study: 'the activities involved in the acquisition and use of resources such as land, labour, capital and equipment by the farm business'. In addition, Byrne noted that financial management encompasses financial planning and control, which involves keeping, analysing and/or interpreting financial data. Byrne visually presented FFM, as shown in Figure 3.1 below.

Figure 3.1 Overview of Farm Financial Management



Source: Byrne (2005, p.8)

Finally, a definition from Warren (author of a farm management text book) is highlighted: 'for the purpose of study, all aspects of financial management can be classified in terms of cash-flow, profit and capital' (1992, p.7). Therefore, FFM is concerned with managing each of these three individual elements. Florey *et al*. (2004) also outlined that cash, profit and capital are the most important elements in a farm business. These various definitions of FFM in the literature provide an insight into what FFM entails. FFM is also referred to in the literature as "farm business management" and "farm planning and control", or variations of these terms.

For the purposes of this current study, the definition adopted for FFM is:

> *Any activity that involves the recording, analysing and/or interpreting of financial data that enables planning, control and decision-making.*

The above activities can vary from well documented formal financial practices to informal financial undocumented practices used by farmers to assist in the financial management of their business. This definition was derived from a review of the various definitions outlined in the preceding paragraphs. The above definition does not include non-financial practices, such as operational metrics, which are acknowledged as influencing factors on farmer decision-making in Chapter 4, Section 4.5.6.

3.3 The Importance of Farm Financial Management

As outlined in Chapter 2, the agricultural industry is of huge importance to the Irish economy. The role of FFM in Irish agriculture dates back centuries. In the work of Clarke (2006), when he reviewed the historical evolution of accounting practices in Ireland, many references are made to the use of financial records in agriculture. According to Clarke, some of the earliest accounting records maintained by the administrators of vast estates 'give minute details of sales of cattle and crops and the cost of building repairs as far back as 1279' (2006, p.2). Furthermore, Clarke (2006, p.5) refers to when the Irish National School

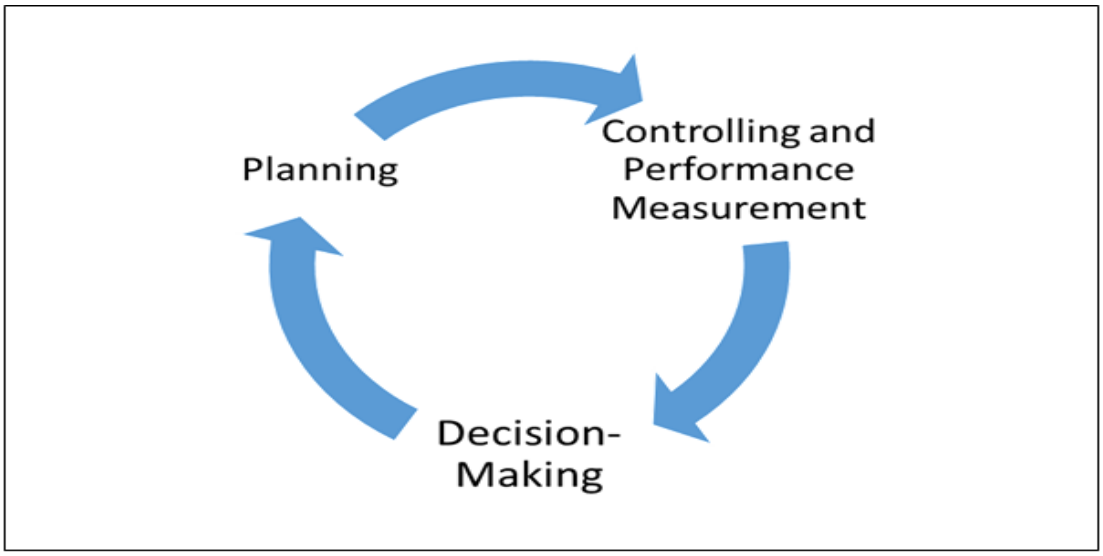
Curriculum was developed in 1831, students were required 'to know how to keep cash, personal, real and *farm accounts* [emphasis added] and to write out bills, shop accounts etc.'. History shows that financial record-keeping in agriculture was one of the earliest forms of accounting practices in Ireland.

Having established that FFM in farming has taken place in Ireland for centuries, an assessment is also needed of its importance. It may be considered important if the maintenance of such records can lead to increased financial or operational performance of the farm enterprise. Byrne *et al*. (2007) found in their study that there was a correlation between the length of time that farmers spend on financial management and the profitability of the farm. In addition, Bogue (2013) revealed that farmers who are members of established discussion groups perform better financially than non-discussion group members. Causality cannot be assumed, but the evidence from these two pieces of research suggests that engaging in FFM activities may be an important element in improving the financial performance of farms. Finally, in the current economic environment and with the reform of agricultural policy at EU level, it can be argued that FFM is even more important than ever in Irish agriculture to develop sustainable farm enterprises.

3.4 Components of Farm Financial Management

The overriding themes prevailing in the literature when FFM is being discussed, are: planning, controlling and performance measurement and decision-making (Castle and Becker, 1962; Warren, 1992; Byrne, 2005). These elements are described in this current study as the components of FFM. In the simplest form, as outlined in Figure 3.2, these variables are part of a continuous process.

Figure 3.2 Farm Financial Management Process



In the sections that follow, each element in Figure 3.2 is briefly discussed, with the aim of illustrating how these elements prime decision-making – which is of central focus.

3.4.1 Planning

In financial terms, the most common way of planning any business is by way of a budget; a budget is essentially a financial plan. In terms of the agricultural industry, the most common type of budgeting is cash-flow budgeting. As outlined in Chapter 2, Teagasc is one of the principal promoters of FFM in the Irish agricultural industry. A *Cash-flow Planner* (budget) is a tool to monitor/plan cash-flows and can ultimately help make informed decisions about how to manage the farm finances. Teagasc provides *Cash-flow Planner* templates to assist farmers in the preparation of such cash-flow management activities. Phelan (2012) outlined that, once a farmer sets about completing a cash-flow plan, it may prompt the farmer to talk to his/her accountant/adviser/bank manager and should allow for evaluation of potential decisions. Overall, the purpose of the planner is to ascertain how much money the farmer needs and when it will be needed. In essence, the cash-flow plan is a decision-making tool.

Despite the active promotion of such FFM tools by Teagasc, Boyle (2012) acknowledges that a significant technology gap does exist in Irish agriculture. In relation to *Cash-flow Budgets*, he specifically noted that research conducted by Teagasc, through a survey of Irish farmers, confirmed that only 6% of those surveyed completed *Cash-flow Budgets*. This provides further evidence of a low level of uptake of financial management by Irish farmers.

According to Jack (2009c), the transition to strategic planning and decision-making is evident through the growing availability of accounting tools such as: benchmarking, value chain analysis and the balanced scorecard. However, she found that these planning tools were only adopted by a minority of primary producers. In summary, planning does not appear to play a large part in financial management in agriculture (Stanford-Billington and Cannon, 2010).

3.4.2 Controlling and Performance Measurement

Controlling involves analysing and evaluating progress over time (Barnard and Nix, 1979). In a farm enterprise, there are a number of key aspects to control, as evident from the literature: cash-flow management, performance measurement and benchmarking. Each of these areas is now discussed.

Cash-flow Management

The monitoring of cash is a key element in controlling farm finances. In its simplest form, cash-flow management involves using bank statements to review the cash-flows in and out of the business during a particular period (Florey *et al*., 2004). According to Connolly (2011), the farm business bank account can be used to track cash-flow, but it does not give a full picture. To get a proper handle on cash-flows, a system to tag and track the sources and uses of cash is needed. Connolly advocates the use of the Teagasc *Cost Control Planner* (see Section 2.5.1) to assist with this task. The use of the latter can assist in producing a cash-

flow budget. Once a budget has been prepared, then the performance of the business can be monitored by reviewing the actual results against the budget.

Irish farm management specialists identified four principal FFM tools most frequently used on Irish farms to aid farmers in making FFM decisions about their business (Byrne *et al*., 2003). Bank statements were one of the four tools identified (with 23% of farmers using bank statements for this purpose). This is a very low percentage, considering the vast majority of farmers have routine access to their bank statements.

In summary, it is evident that the planning, monitoring and control of cash-flows within a farm enterprise is a central part of FFM. This element of cash management within FFM is mirrored within the small business literature. Jarvis *et al*. (2000) carried out research about measurement of performance in small firms. This research found that cash and cash-flow indicators in particular, were frequently stressed as crucial in assessing how well a business was doing.

Performance Measurement

The measuring of financial performance on a farm should, in theory, lead to more informed decision-making. A broad picture of the financial performance of any farm business is provided by three financial statements (Miller *et al*., 2001), which are:

1. A cash-flow summary (cash);
2. A net worth statement (capital);
3. An income statement (profit).

Two of these three elements – the income statement and the statement of net worth – are components of the statutory accounts of a farm enterprise. As noted previously, it is widely acknowledged in the literature that many farmers do not appear to maintain detailed financial records. This lack of detailed financial data inhibits the opportunity to invoke detailed financial performance measurement.

A number of other indicators can be used to measure performance in agriculture. In Ireland, family farm income (FFI) is the principal measure of income used in the NFS, as set out in Table 2.1 (Hennessy *et al*., 2011). In the UK, net farm income (NFI) is the key measure used in government statistics, while the agricultural gross margin is widely used by advisors and consultants (Jack, 2004). In the United States, the operating profit margin is a measure that is universally accepted (Miller *et al*., 2001).

According to Jack (2004), the concept of gross margin accounting (GMA) is the primary measurement of profitability in the agricultural sector. GMA is referred to as: 'a comprehensive, consistent accounting method applied voluntarily across a widespread industry made up of different groups of actors (farmers, advisors, market representatives, civil servants and others) (Jack and Collison, 2007, p.666). Over the years, GMA has become deeply entrenched in the agricultural industry, often referred to as agricultural gross margin. Gross margin effectively measures the efficiency with which variable cost inputs are converted into outputs and is similar to the traditional gross profit margin concept applied in financial analysis. The primary benefit of the calculation of the gross margin is that of comparability. Once individual farmers know the gross margin of their farm enterprise, they can compare from one year to the next and benchmark their performance against other farmers by looking at industry data.

Other Measures of Performance Measurement

Cost Control: When assessing the performance of a business, one tends to focus on the profits and revenues of a business, but an enterprise's performance can be gauged also by reviewing how it controls its cost. This is especially applicable for the agricultural sector, as many farmers are price takers. The price that most farmers get for their produce depends on the market, which makes price an uncontrollable factor. Management accounting theory states that the performance of a manager should be judged, based on the costs and revenues

within his/her control (Clarke, 2010). Therefore, if a farmer is a price taker, control over revenue is absent and the focus of performance management lies with costs.

Teagasc advocates the use of the *Cost Control Planner* as part of its extension service (Connolly, 2011). The first step in cost control is to get farmers to actually write down their costs so that they are aware of them. However, from a review of the level of financial management in agriculture, to get farmers to do this can be challenging. Once farmers document their costs, a formal awareness is created which can start the process of cost management. The business climate in agriculture is placing ever-increasing demands on the production process. This has a huge impact on the cost structures in farm enterprises. The reform of CAP at EU level is one of the contributing factors to this, coupled with the pressure from large multinational retailers who are putting huge pressure on food producers to provide high quality produce at ever-decreasing prices.

The simplest way to measure performance, in cost control terms, is to compare costs against a predetermined budget or to compare them from one period to another. However, there are more sophisticated strategic accounting tools available to assist with cost management. Jack and Jones (2008) reviewed two costing concepts – *target costing* and *relevant costing* – to see how helpful they could be to farming businesses. They concluded that target costing can help farmers to control their costs (and hence improve performance) and relevant costing can help farmers to make decisions to discontinue non-performing activities, in contrast to gross and net margin accounting already discussed. However, the methodologies for implementing these relatively new strategic accounting tools to agriculture need to be developed.

According to Jack and Jones (2008), target costing is essentially a three step process:

1. Identify a target price;
2. Establish a target cost that must be met to ensure a target profit is met;
3. Design processes that will enable these targets to be met.

In agriculture, given that prices are determined by market forces, processes may need to be re-engineered to achieve a profitable outcome. Target cost management has a market, customer-oriented focus that farmers are now experiencing. Theuvsen *et al*. (2005) looked at the role of target costing in livestock and their findings indicated that the decision-making thought process of some farmers was close to the pattern of thinking required in target costing. They concluded that there are clear benefits to implementing target costing in agriculture.

The Balanced Scorecard: The balanced scorecard (BSC) was conceived by Kaplan and Norton (1996), after researching performance measurement techniques. The BSC has been applied in agriculture. Shadbolt and Rawlings (2000) concluded that it can help family businesses in agriculture, by aligning and focusing on implementing strategy. Furthermore, it enables the business to not only put its financial and non-financial goals in perspective, but to better balance the conflict between short-term viability and long-term sustainability. Building on this work, Byrne (2005) set one of the principal objectives of her research as being to apply, test and modify the BSC for the Irish dairy farmer. The overall result of this work was a new framework called the "Dairy Farmer Scorecard". Byrne concluded that the most important aspect of developing the BSC for a farm business is to allow farmers to identify the clear purpose behind the development of their businesses.

According to Jack (2009c), there is little evidence of regular use of the BSC in farming. She noted that, despite the BSC offering many perspectives, both financial and non-financial, farmers are inclined to focus on areas of financial targets and measures relating to production, thus reducing the potential of learning from the other perspectives.

Non-financial measures and operational performance metrics: It is important to acknowledge that a farmer may have high regard for the achievement of non-financial goals, as illustrated by the use of the BSC. In essence, this is down to the individual personal goals of each farmer, which are noted in Chapter 4 as one of the major influencing factors of farmer decision-making.

Furthermore, a farmer may judge performance based on operational performance. Improved operational performance may lead to improved financial performance. This area of operational performance is discussed further under the heading of influencing factors on farmer decision-making, in Chapter 4, Section 4.5.6.

Benchmarking

Benchmarking can be undertaken for a variety of reasons. The focus here is to review it for performance measurement purposes. After collecting 49 definitions of benchmarking, Spendolini (1992, p.6) developed a single definition that would serve as a single generic base line for the term: 'A continuous, systematic process for evaluating the products, services and work processes of organisations that are recognised as representing best practices for the purposes of organisational improvement'. Spendolini (1992) went on to acknowledge that perhaps the simplest phrase that best describes benchmarking is 'learning from others'. This concept of "learning from others" appears to play a pivotal role in benchmarking by agricultural practitioners.

Xerox Corporation is widely recognised as having formally developed the process of modern day benchmarking in the 1970s. The CEO of Xerox stated that 'benchmarking is the continuous process of measuring product, services and practice against the toughest competitors or those recognised as industry leaders' (Camp, 1989, p.7). In essence, if the firm is continually measuring performance against a benchmark and is then making

decisions which moves the firm closer to that benchmark, improved performance should result.

Benchmarking in Agriculture

The literature on benchmarking in Irish agriculture is quite sparse, but benchmarking in farming in the UK (Jack, 2009b) and Australia (Schache and Adams, 2009; Ronan and Cleary, 2000) has been described. According to Jack (2009b), in the UK, agriculture claims to have been using a similar approach to that of Xerox, but about two decades before them, through farm discussion groups. Furthermore, these groups involve a high level of collaboration and networking, and the notion of benchmarking as a learning practice originating in farming is regarded as recent and highly innovative.

The work of Schache and Adams (2009) in Australian agriculture revealed that benchmarking can be a very powerful change agent for advancing on-farm change. They believe that there is little more powerful motivation than peer pressure. Furthermore, they believe that, in agriculture, often it is not against a standard that individuals benchmark themselves, but rather, peer performance is used. Farmers appear to be very interested in knowing how they are doing, compared to their peers.

Finally, according to Ronan and Cleary (2000), a significant part of benchmarking in Australian agriculture has been based on the comparative analysis of financial accounting records of groups of farmers, complemented by physical stock and husbandry records. Comparative analysis is mainly concerned with comparing key financial ratios to review performance and is widely discredited. On the other hand, best practice benchmarking systematically links processes and performance and presents information which enables easy, unambiguous interpretation by farmers. Ronan and Cleary concluded that best practice benchmarking has a legitimate place in Australian agriculture, notwithstanding that it

provides a challenge for all involved in Australian agriculture to ensure standards of best practice are attained.

The above literature on benchmarking in agriculture in both the UK and Australia suggests that benchmarking is practiced. However, the standard of it may not be so good. Following on from the preceding international overview of benchmarking practices in agriculture, a brief overview of benchmarking in Irish agriculture is now provided.

Benchmarking in Irish Agriculture

According to Jack (2009c), in developed countries, the use of pooled data through surveys or client bases, to provide standardised data against which financial and production performance can be measured, is widespread and highly institutionalised in the agricultural sector. In Ireland, the publication of the NFS results annually allows farmers to use these results as a yardstick to benchmark the performance of their own farm enterprise. Another example of the sharing of data is the use of the Teagasc *eProfit Monitor* (as outlined in Chapter 2). The widespread use of this tool allows Teagasc to prepare standardised data and industry averages that can be incorporated into the system, facilitating individual farmers to benchmark their performance against these industry averages. A report entitled *Global Best Practice in Agricultural Benchmarking* (Thelwall and Thelwall, 2006), featured the *eProfit Monitor* from Ireland as one of three case studies that were documented as leading benchmarking systems in agriculture. The report concluded that the *eProfit Monitor* not only scored well, but also provided a comparison where the farming approaches are similar.

After reviewing the literature, it appears that benchmarking in agriculture can be formal or informal. It can be formalised in terms of gathering financial data to measure financial performance and then comparing these results against predetermined standards to establish if those standards have been met, exceeded or not reached. Examples of this formal type of benchmarking is the use of the NFS and the *eProfit Monitor*. On the other hand,

benchmarking can be an informal process where farmers participate in discussion groups or farm visits. Jack (2009b) acknowledges that discussion groups and farm visits are an important element of benchmarking in agriculture. In Irish agriculture, the popularity of discussion groups has grown in recent years, and within some of those groups, benchmarking does take place (Bogue, 2013).

To enable one to compare its performance against a pre-determined standard, there must be a measurement of that performance. Therefore, the processes of benchmarking and performance measurement are intrinsically linked.

3.4.3 Decision-making

Revisiting Figure 3.2, it is clear that decision-making in farming is an intrinsic part of FFM and is connected to planning and controlling activities. Furthermore, in Chapter 4, the literature reveals three main prompts for decision-making:

- From financial management practices, or
- As a result of suggestions from advisors, or
- From the farmer's own knowledge on how to run the business (intuition).

These aspects of farmer decision-making are explored in detail in Chapter 4.

3.5 Barriers to Adoption of Farm Financial Management Techniques

Byrne (2005) acknowledged that farmers are naturally reluctant to seek out information if they cannot see the use of it. She identified a number of factors that contribute to the slow adoption of FFM techniques by farmers, namely:

- *Visual assessments are adequate for achieving goals* – in the absence of using written records, farmers tend to rely on visual assessment.

- *Formality discontinued once skills learned* – this barrier suggests that, once a farmer has learned a skill at the adoption stage and continues to perform this task for a period of time, eventually the practice becomes so familiar that there seems to be no benefit in continuing it. Instead, the farmer may use visual cues to help monitor progress.
- *Farmers never learned skills required* – simply, farmers may not conduct FFM because they were never formally taught these skills, a reason which could be linked to the low level of formal education/training of farmers.
- *Economic benefits of monitoring unclear* – farmers often view paper as non-urgent or unimportant tasks; many note that they are too busy conducting the day-to-day farm operations to devote time to FFM.
- *Monitoring not linked to farm business strategy* – as the goal of the farmer, in many instances, is not purely financially focused, FFM may not be linked to achieving the farmer's non-financial goals.
- *Inadequate data processing* – many farmers do not process recorded data. Technology must allow for key statistics and graphical representations to be performed, for farmers to make best use of available data.
- *Farmers' world view* – farm information systems have historically been developed by researchers or professionals who may fail to appreciate the mentality of farmers, so they may not necessarily adopt FFM tools to the extent intended, as it may not fit the farmer's requirements.
- *Non-standard forms of financial reporting* – there is a lack of standardisation and uniformity between industry bodies in respect to the format of FFM reports, which may cause confusion among farmers and act as a barrier to FFM.

Overall, the work of Byrne (2005) provides an excellent summary of the barriers to FFM. In summary, many barriers to FFM in Irish agriculture do exist and industry stakeholders strive to improve the level of adoption, to encourage more informed decision-making.

3.6 Chapter Summary

An overview and definition of FFM as per the literature has been provided, incorporating elements of best practice of how to plan, control, measure performance and make decisions in the FFM process. The literature suggests that FFM may be an important activity in creating profitable farms. However, many farmers do not appear to engage with this activity to a large extent. While acknowledging that many barriers exist to the adoption of FFM techniques, the impact of conducting such practices in decision-making (to a greater or lesser extent) needs to be explored further in the empirical work. The next chapter examines the primary literature surrounding farmer financial decision-making, which is at the heart of the research question.

Chapter 4 Literature Review: Decision-making in Farming

4.1 Introduction

An overview of the financial decision-making process of farmers as per the literature is now provided. As decision-making is a very broad term, decision-making in farming is first outlined in Section 4.2. Next, an overview of the prior research that has been conducted in the area of farmer decision-making is presented in Section 4.3, with particular emphasis on the lack of prior literature surrounding financial decision-making. A discussion on the models/steps in farmer decision-making that have been developed is then provided in Section 4.4, including an overview of some of the primary characteristics of farmer decision-making. After discussing these initial aspects of farmer decision-making, an overview of the prior literature surrounding the key aspects of research objective 1 (**RO1**) is presented: the influencing factors (Section 4.5), the role of advisors (Section 4.6), the role of FFM (Section 4.7) and, finally, other issues in farmer decision-making (Section 4.8) – primarily, the role of intuition, and the role of information systems and technology adoption.

4.2 Decision-making in the Context of this Study

Decision-making is required for all stages of the management process and results from the thought process of selecting a logical choice from available options. The concept of decision-making has far-reaching implications and, therefore, it is necessary to define the term "decision-making" for the specific purposes of this current study.

Recalling the definition of farm management by Castle and Becker (1962, p.3) from Chapter 3, 'farm management is concerned with the decisions that affect the profitability of the farm

business', it is clear that decision-making is important in FFM. Castle and Becker (1962) also provided a list of some of the decisions that can affect profitability which included:

- What enterprises should the farmer be engaged in?
- How large should the farm be?
- How much should be produced?
- How should the factors of production – land, labour, capital and management be acquired and utilised?
- What practices should be followed – how much fertiliser should be applied?
- How should functions be performed – should new or used machinery be purchased?

The above list shows that technical aspects of farm management (such as agronomy and use of machinery) may also contribute to the financial success of a farm enterprise. The above reference from 1962 is quite old, but this is a common feature of farm management textbooks. Although farm practices may have evolved considerably during the intervening period, the core principles of FFM have not. Furthermore, it is important to point out that almost every decision that a farmer makes could be attributed to having a financial impact. However, it is not possible for all such decisions to be evaluated in this current study. Chapter 6 outlines the specific decisions under review in this research project.

Finally, it is important to note that extensive work has been done in the area of agricultural economic modelling concerning the decision-making process of farmers. Many of these models are based on the assumption that farmers are rational profit maximisers (Edwards-Jones, 2006). This thesis does not attempt to prove or disprove these economic models in any way, but rather explores the *narrative* of decision-making on farms from a management accounting perspective, as opposed to an economics perspective. To this end, the financial decision-making process of farmers is explored and attempts are made to document how farmers make sense of their business situations in order to proceed with decisions of a financial nature.

4.3 Overview of Prior Research on Farmer Decision-making

In order to review the literature on financial decision-making in agriculture, the literature in the area of FFM was reviewed. Kim and Cameron (2013) noted that, of 183 research papers reviewed on farmer decision-making, a paucity of studies into financial management was a key feature, as only 11 of the 183 published research papers related to financial management. This demonstrates that financial decision-making in agriculture is an under-researched area.

The main aspects that have been written about in the farmer decision-making literature include:

- Levels and models of farmer decision-making
- Characteristics of farmer decision-making
- Attitudes, behaviours, objectives and goals in farmer decision-making
- Intuitive farmer decision-making
- Information systems and technology adoption in farmer decision-making.

Another important point to highlight is that most research in this area focuses on how farmers should make decisions, with very few studies focusing on how farmers actually make decisions. This lack of knowledge on how farmers make decisions may be one of the reasons why various decision-making tools available to assist farmers in decision-making are not being used to the extent expected.

4.4 Levels, Models/Steps, Characteristics and Tools of Decision-making

A brief discussion of the levels, models/steps, characteristics and tools for farmer decision-making is now presented, moving from the generic decision-making literature to the specific farmer decision-making literature, where possible.

4.4.1 Levels of Decision-making

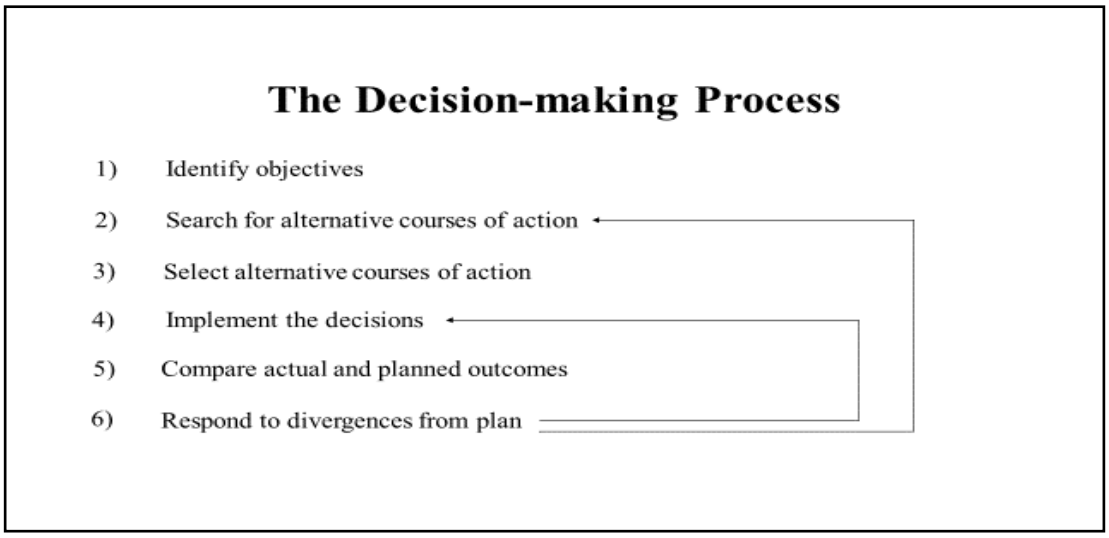
The decisions that farmers face can range from day-to-day routine/operational decisions to major strategic decisions that can have a long term effect on the future of the farm enterprise. Management accounting textbooks refer to decisions being classified as operational, tactical or strategic in nature (Sheppard, 2011). Similar to most businesses, the decisions that farmers make could be classified in this manner. However, the owner-operator farmer is often the sole decision-maker in the business and must assimilate information from many spheres of activity (Parker, 2000). Hence farmers, unlike their corporate colleagues, are faced with making all the decisions and, in the majority of cases, are unable to delegate any managerial tasks to subordinates.

Walker (2002) carried out a study concerned with decision-making in rural resource management and noted that decision-making in agriculture can be fundamentally classified as either strategic or operational in nature. Strategic decisions were described as 'long term decisions on planned directions and strategy', while operational decision-making 'involves routine, though not necessarily trivial, decisions that may be repetitive and formulaic' (Walker 2002, p.115). Furthermore, Fountas *et al*. (2006) looked at both strategic and operational farmer decision-making in their work and developed a model of decision-making and information flows for information intensive agriculture. This prior research affirms the selection of strategic and operational decisions as the focus of enquiry in this current research project. Finally, it is worth re-iterating that the decisions focused on, in this current study, are only those of a financial nature.

4.4.2 Models/Steps in Decision-making

Management accounting literature portrays a rational model of decision-making. For example, Drury (2012) presented the model of decision-making as shown in Figure 4.1. Arnold (1973) made the important point that models force the decision-maker to make explicit relationships and processes that have previously been implicit and have been used intuitively. The models should formalise guidelines or decision rules which may or may not have been implicitly used by the real world decision-maker. However, the uncertainty which surrounds farmer decision-making can impede the use of rational models of decision-making.

Figure 4.1 Model for Decision-making Process



Source: Drury (2012, p.7)

The classical decision-making model, identified above, is an economic model, based on the assumption of rational behaviour in choosing from known alternatives, in order to maximise objectives. Robbins (1988) called this 'the optimising model of decision-making'. It implies that the decision-maker can be fully objective and logical, knowing all options and having full information to rank all alternatives in preferential order, enabling the selection of the alternative that rates highest. According to Daft and Marcic (2001, p.183), this model

represents ‘an ideal, a fanciful notion about decision-making unattainable in the real world’. This observation is confirmed in the context of farmer decision-making by Ohlmer *et al*. (1998).

In reality, as Bennett (1991, p.195) observed, ‘limiting factors must always be taken into account in decision-making procedures’. These factors include elements of uncertainty arising from the lack of complete information about alternatives and their results; time and cost constraints and cognitive limitations in dealing with complex problems (Champoux, 1996). The administrative model of decision-making, which focuses on organisational rather than economic factors affecting decisions, describes how managers actually make decisions in situations that involve uncertainty and ambiguity. Based on the work of Herbert Simon, it proposed the two instrumental concepts of satisficing and bounded rationality (Daft and Marcic, 2001).

Due to various limitations, as outlined above, decision-makers are often not in a position to consider all possible alternatives and so may have to select one that is “good enough” to attain the goal. This process is known as satisficing behaviour, emphasising the search for a satisfactory rather than an optimal solution. The approach accommodates the uncertainty imposed by the environment of the decision. In addition, it takes into account that individuals have only limited cognitive ability, making them unable to consider all conceivable aspects of a complicated decision or all the relevant data. Given these constraints, ‘individuals operate within the confines of bounded rationality’ (Robbins 1988, p.78). These concepts of “satisficing” and “bounded rationality” are quite apt, as the farmer decision-making literature reports that various limitations do apply to considering all possible alternatives in farmer decision-making.

Gasson and Errington (1993) specifically described farmer decision-making as “satisficing”. The reality for managers is that uncertainty is a feature of the decision-making landscape.

The administrative model, which takes this factor into account, together with time and cognitive constraints, seems to reflect the reality of the farmer more accurately than the classical rational model.

In the context of farming, standard farm management textbooks appear to comprise a list of five to eight decision-making steps. Johnson *et al*. (1961), as cited in Ohlmer and Lonnstedt (2004), identified six steps in farmers' decision-making, namely:

1. Problem definition
2. Observation
3. Analysis
4. Decision
5. Action, and
6. Responsibility bearing.

The steps outlined above are somewhat similar to the model outlined above by Drury (2012) – except for the interesting step of "observation", which might imply the use of visual cues by the farmer.

It appears that similar steps are included in the majority of farm management textbooks, except the terminology used may be slightly different. Ohlmer *et al*. (1998) conducted an overview of the farmer decision-making literature and noted eight identifiable functions/elements in decision-making at farm level. The eight functions/elements were: values and goals, problem detection, problem definition, observation, analysis, development of intention, implementation and responsibility bearing. These functions, as described by Ohlmer *et al*. (1998), are presented and briefly outlined, in Table 4.1.

Table 4.1 Steps in Farmer Decision-making

Values and Goals	Values express the farmer's needs and motives; goals and objectives express the means to follow those values. Goal development is wrapped up in people's attempts to satisfy needs and motives related to living expenditures, savings and wealth, competition, profit making and risk taking.
Problem Detection	Problem detection involves scanning internal and external information to become aware of a problem or opportunity. Problem detection is necessary for a person to be motivated to engage in the decision-making process.
Problem Definition	Problem definition is the process of specifying the problem and identifying alternative actions that solve the problem. Information is found in the farmer's memory and, if this is not sufficient, from written material and other sources external to the farm. This information will be used to analyse the causes of the problem, searching for options and doing an initial evaluation of the options.
Observation	Observation includes the collection and processing of information about factors affecting the problem, alternative actions, information needed to plan the actions, and information about the consequences of the actions. New information may cause the decision process to loop back to problem detection or problem definition, go on to analysis, or jump to implementation.
Analysis	Analysis involves planning actions, estimating consequences, evaluating and choosing actions. Several options may be identified, ranked by preference and evaluated one at a time, until a satisfactory one is found. This function is often seen as the "decision event", however, it can also be seen as part of problem definition.
Development of Intention	The development of intention is deciding to implement the chosen action(s). Making a choice does not guarantee implementation. A choice means that the decision maker knows (or has an opinion on) which of the options is best and only the next step involves taking action.
Implementation	Implementation involves acquiring the necessary resources, putting the chosen plan into action, controlling the outcome and evaluating the outcome.
Responsibility Bearing	Responsibility bearing is traditionally the acceptance of the post-implementation evaluation and realisation of who is responsible for having made the decisions.

Source: Ohlmer *et al.* (1998)

Farm management texts either state explicitly, or seem to imply, that the steps in decision-making should be followed in a linear order for every decision. However, one of the key observations in the study by Ohlmer *et al*. (1998) is that they found that decision-makers do not follow the process linearly and, as a result, they refer to the "functions" or "elements" of decision-making as opposed to the "steps" in decision-making. Furthermore, they noted that

each function may be part of an individual decision, but every function is not necessarily part of every decision.

However, the observations of Ohlmer *et al*. (1998) led to a revision of the traditional model of decision-making. They changed the model from a set of eight linear functions to a matrix (as depicted in Figure 4.2) to better reflect the decision-making process of farmers as they saw it. They replaced the eight functions with a combination of four phases and four sub-processes. The phases are: problem detection, problem definition, analysis and choice, and implementation. The four sub-processes are: searching and paying attention, planning, evaluating and choosing, and bearing responsibility.

Figure 4.2 A Conceptual Model of the Decision-making Process

	Subprocess			
Phase	Searching & Paying Attention	Planning	Evaluating& Choosing	Bearing Responsibility
Problem Detection	Information scanning Paying attention	_____	Consequence evaluation, Problem?	Checking the choice
Problem Definition	Information search Finding options	_____	Consequence evaluation, Choose options to study	Checking the choice
Analysis & Choice	Information search	Planning	Consequence evaluation, Choice of option	Checking the choice
Implementation	Information search Clues to outcomes	_____	Consequence evaluation, Choice of corrective action(s)	Bearing responsibility for final outcome, Feed forward information

Source: Ohlmer *et al*. (1998, p.285)

As can been seen from the matrix, some of the eight functions in the original process do not appear. For example, values and goals are not included in the matrix; the reason for this is that the farmers' values and goals should be understood before any decision process begins. Other functions have moved from a phase to a sub-process. For example, observation is included in the sub-process of searching and paying attention. The construction of this matrix means that Ohlmer *et al*. (1998) considered that the decision-making process of

farmers could be reduced to a four phase process from the traditional eight step process. However, within these four phases, four sub-processes were identified to be part of each phase.

In the study conducted by Ohlmer *et al*. (1998), the decision-making process of farmers was evaluated, in the majority of instances, by looking at how farmers adapted their farm to deregulation. In that context, farmers are forced to adapt due to a change in the environment in which they operate. This was quite a specific setting to evaluate the decision-making process of farmers who may have no choice but to adapt, giving rise to a unique circumstance that becomes the motivating factor for the decision event. In this current research project, the case farmers selected for interview are farmers who have made various farm expansion decisions in recent years. The motivation for these decisions may be multi-factorial. In this respect, the current study provides additional insights into the decision-making process of farmers.

Another farmer decision-making model was presented by Fountas *et al*. (2006). A systems-based model was developed to characterise farmer decision-making in information intensive practices. Fountas *et al*. developed a decision-making model, for both strategic and operational decision-making, in the context of cereal production on commercial farms in the US. It is important to note that the scale and size of commercial farms in the US are very different to the farm types operating in Ireland. Furthermore, the strategic decision (type of seed to sow?) and the operational decision (when to sow the seed?) under review in that study were quite different to the decisions under review in this thesis. Therefore, the model developed was very context-specific and lacked applicability in an Irish farming context. However, the method of data collection of the Fountas *et al*. study (interviewing farmers) was similar to the method of data collection in this current research project and assisted in the development of the interview guide.

4.4.3 Characteristics of Farmer Decision-making

It is important to acknowledge that a number of characteristics and complexities of farming make decision-making within the sector quite unique, compared to other non-farming businesses. For example, Kay and Edwards (1999) discussed how farm businesses have unique attributes that make farm business complex, such as: the biological process, the fixed supply of land, the small size and the perfect market. Moreover, in many cases, family and business are intertwined which has a direct impact on farming goals. In addition, farming is often a business that is passed down from generation to generation, which also may impact on decisions undertaken. Furthermore, many farms are family businesses with usually no board and no separation between manager and decision-maker. Therefore, in contrast with non-farming businesses, it is common for farmers to operate in all levels of management, as well as providing labour. All of these features have a direct impact on how decision-making in farming takes place.

The preceding outline of the characteristics and complexities of farming assist in highlighting how decision-making in farming is quite unique. However, it is important also to highlight that there are a number of specific characteristics particular to the decision-making process of farmers, according to Ohlmer *et al.* (1998). In addition to proposing the matrix, as depicted earlier in Figure 4.2, Ohlmer *et al*. (1998, p.286) identified five characteristics of the decision-making process of farmers. These included:

1. Farmers continually update their problem perceptions, ideas of options, plans and expectations when new information is obtained.
2. Farmers often use a qualitative approach to forming expectations and estimating consequences expressed in directions from the current condition.
3. In many situations, farmers prefer a “quick and simple” decision approach over a detailed, elaborate approach.

4. Farmers prefer to collect information and avoid risk through small tests and incremental implementation.
5. During implementation, farmers continually check clues to form their evaluation of long-run actions in a feed-forward and compensation approach, rather than a post-implementation evaluation.

These characteristics provide a useful insight into the decision-making process of farmers and are, in many ways, reflective of the characteristics and complexities of farming which make decision-making in farming quite unique compared to other non-farming businesses, as outlined above. For example, having no board facilitates adopting a "quick and simple" decision approach.

Overall, the characteristics and complexities of farming acknowledged means that there is a wide range of approaches to managing information for decision-making in agriculture. As Fountas *et al.* (2006, p.193) outlined, farmers can be grouped from 'information hogs' (farmers who seek and use a large amount of information) to 'seat of the pants' (farmers who rely on personal intellect and intuition) managers. All of these characteristics make farmer decision-making a very interesting topic to research.

4.4.4 Decision-making Tools

Decision-making can be facilitated using various techniques such as decision trees, game theory, linear programming and programme planning, network analysis or just plain intuition based on experience (Turner and Taylor, 1998). In terms of farmer decision-making, there appears to be very little, if any, evidence in the literature to support the use of these various techniques. Perhaps this is because such techniques can never replace managerial judgement. Ballantine and Stray (1998) emphasised the importance of managerial judgement when they researched the investment decision-making process. Similarly, the role of intuition appears to

be a considerable component in the farmers' decision-making process (Nuthall, 2012) and is discussed in more detail in Section 4.8.1.

Finally, the concept of decision support systems (DSS) is prevalent in the decision-making literature and is closely linked to decision-making tools. It is important to put this term in context. According to Walker (2002, p.114), DSS originated as 'a diverse class of computer technology integrating data-base information and analytical modelling methods to support decision-making'. However, from an agricultural systems perspective, the term DSS is increasingly 'used to indicate any kind of decision aid, whether computer-based or not, and whether the problem it purports to address is more or less well structured. It has become almost synonymous with extension'. Therefore, DSS could be considered any kind of decision-aid used to assist decision-making.

4.5 Influencing Factors on Farmer Decision-making

The decision-making process for the owner of any business can be a complex process with many factors influencing decisions, and that of a farmer is no different. In essence, farming is a business and, therefore, must focus on maximising production and profits. However, Austin *et al*. (1996) noted that, in many different countries and cultures, farmers do not invariably run their farms with the sole objective of profit maximisation. Despite the in-depth discussion of the literature that now follows, surrounding the non-financial influences in farmer decision-making, it is important to stress the point that financial influences also have a significant role to play in farmer decision-making. These financial influences are discussed in Section 4.7.

There are many influencing factors on farmer decision-making, as noted by Edwards-Jones (2006) in a discussion paper which provided an overview of how farmers' decisions are influenced. These factors were grouped under six headings:

1. Socio-demographics of the farmer
2. Psychological make-up of the farmer
3. The characteristics of the farm household
4. Structure of the farm business
5. The wider social milieu
6. The characteristics of the innovation to be adopted.

Although the above were identified when studying the factors that influence a decision about the adoption of new technologies and policies, they are important issues that warrant consideration in the decision-making process of farmers, regardless of the decision event.

Hansson and Ferguson (2011) also looked at the factors that influence farmer decision-making. They reviewed the influences on farmers making the strategic decision of developing dairy production. The influences were grouped into four categories of factors: the decision structure (the sources and type of information used), the farm's business structure (farm size, extent of diversification, structure of resources and remoteness of the location), the cognitive structure of the farmer (expectations about the future, values, risk attitude, locus of control and education) and the farm's network structure (the resources available through a network, the intensity of the network's interactions, and the norms and attitudes prevalent in the network). The above list of influencing factors re-affirm that there are many influences on a farmer's decision-making process. The study by Hansson and Ferguson (2011) identified many influences that were common to the Edwards-Jones (2006) study.

The list of influencing factors on farmer decision-making is an infinite one, as each farm business is unique and the influences on all farmers are not universal. To give an in-depth insight into these influencing factors, the work of Edward-Jones (2006) is used to help assist in providing a structured format to the review of literature in this area. The first five categories of influencing factors, as identified in the Edwards-Jones study, are now

discussed. The sixth category was not included as it referred to specific factors in the context of the prior research project.

4.5.1 Socio-demographics of the Farmer

The socio-demographic characteristics of the farmer include factors such as: age, education, gender, attitude to risk and personality. The level of education and the age profile of the farmer are intrinsically linked and both are key factors influencing the decision-making process of a farmer. In general, the older the farmer, the less formal education s/he would have undertaken and furthermore, it is only in recent times that new farmer entrants have to undergo formal training, to comply with regulations. Each socio-demographic factor is now discussed.

Age profile of the farmer: In Chapter 2, it was mentioned that the age profile of a farmer in Ireland is quite old, at 57 years. This may be a factor that acts as a barrier to the adoption of FFM by farmers. When analysing the age profile of SME owners seeking business advice, Doran (2006) noted that the younger generation of respondents (26 to 35 age bracket) wanted to meet with their accountant more often to discuss their business performance and such clients were more willing to ask for outside advice in order to improve their performance. Not only did business owners in this age bracket want to meet their accountant more often, but they were also the most positive regarding the benefit of accounting services at 88%. The 46 to 55 age bracket were the most negative, with 40% saying that the accounting services were not of benefit to their business. These findings show that the age profile of the farmer is a factor in the level of FFM practiced; the younger age bracket business owners should, in theory, be making more informed financial decisions. Similarly, in the agricultural sector, the same findings resonate. Nuthall (1997) acknowledged that new, younger farmers tend to develop and seek more information.

Level of education of the farmer: As noted in Chapter 2, in 2012, only 31% of farm managers had undertaken some form of formal training. However, the proportion of farm managers with formal training was greater amongst younger managers. In the under 35 age group, more than half of farm managers had undertaken formal training (CSO, 2012). It is worth noting that these levels of training are quite low and the level of financial management training within these formal training programmes varies significantly. This means that a staggering 69% of farmers have no formal training in farm management. This may imply that the level of education and formal training are potential influencing factors on the decision-making process of farmers.

Gender: Irish farming is overwhelmingly dominated by males, but females do have a role to play in farmer decision-making. Due to the dominance of males in the agricultural industry, there are very few studies (Wilkening, 1958; McGregor *et al*., 2001; Farmar-Bowers, 2010) covering the area of women in agriculture. These latter studies all discuss the role of women in farmer decision-making (hence they are referred to here under the role of *gender*). However, these papers all place particular emphasis on the role of women in household decision-making. Therefore, discussion of these papers is best situated under the sub-heading *role of women* in Section 4.5.3, where the characteristics of the farm household is discussed.

Attitude to risk: For many strategic and operational decisions, there is a good deal of uncertainty. Uncertainty due to external changes in technology, markets and legislation, as well as internal changes in production, contribute to the risk environment for farmers. Backus *et al*. (1997) conducted a study which looked at farmer decision-making under risk and uncertainty. They noted that most empirical studies indicate that farmers are risk neutral to slightly risk averse and that diversification is commonly advanced as a method of reducing risk. It was noted also that some farmers jump into a new opportunity too quickly, without often really considering the consequences. Backus *et al*. (1997) concluded that measuring farmers' risk preferences does not appear to be a very promising activity for

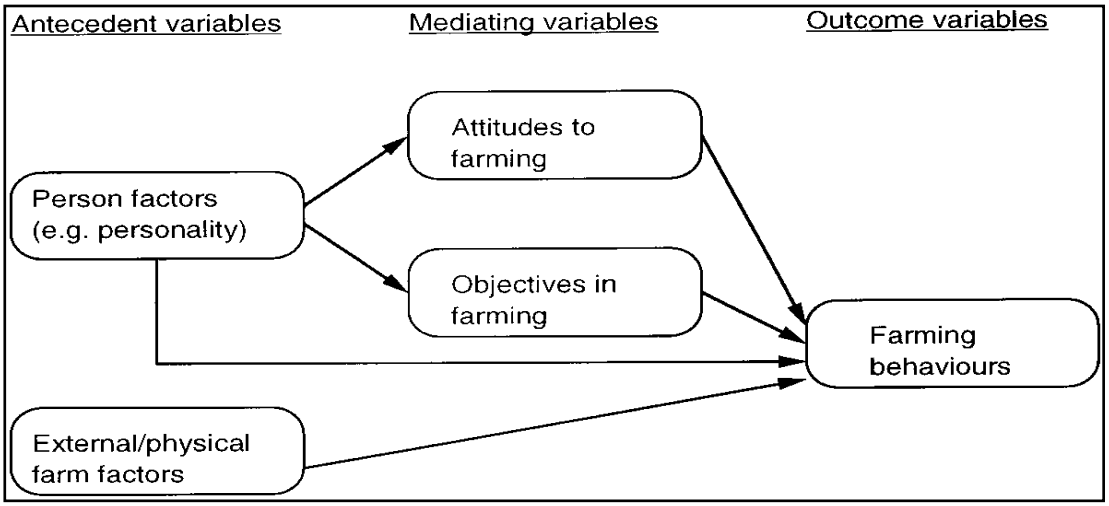
researchers and that the effectiveness of risk management depends to a great extent on the personal qualifications of the farmer and the use of information sources. This thesis does not intend to measure the risk profile of farmers, but it does highlight any key findings noted in this area.

Personality: The personality of the farmer is a very wide and all-encompassing feature and, therefore, presents as a difficult characteristic to discuss precisely. In essence, the personality of a farmer entails the psychological make-up of the farmer. This leads us onto the next section, which outlines the literature in that area.

4.5.2 Psychological Make-up (Mentality) of the Farmer

The psychological make-up of the farmer refers to the goals, attitudes and behaviours of the farmer, which holistically could be described as the farmer's mentality. A well-known study in the psychology of farming literature is *The Edinburgh Study of Decision-Making on Farms* which was conducted by Willock *et al*. (1999) to provide a broader understanding of the vocational behaviour of farmers. The researchers presented a model which predicted that a large range of variables would need to be considered when evaluating farmer decision-making. Their model (as depicted in Figure 4.3) included: antecedent variables (originating factors that affect decision-making, for example, the personal attributes of the farmer and the operating environment); mediating variables (factors that intervene between the originating factors and the outcome of the decision, for example, the farmer's attitudes to farming and the farmer's objectives) and outcome variables (the behaviours of the farmer, i.e., the decisions made).

Figure 4.3 Schematic Relationship among Individual Differences in Personality Traits, Attitudes, Objectives and Behaviour



Source: Willock *et al*. (1999, p.6)

In the study by Willock *et al*. (1999), the attitudes, goals and behaviours of farmers that affect farmer decision-making were identified. These are now presented in Table 4.2.

Table 4.2 Attitudes, Goals and Behaviours in Farmer Decision-making

Attitudes	**Goals**	**Behaviours**
• Risk aversion • Innovation • Diversification • Off-farm work • Environment • Production • Management • Legislation • Stress • Pessimism • Satisfaction	• Job satisfaction • Status • Quality of life • Management goals • Other specific objectives	• Profit maximising • Information gathering • Diversification • Off-farm employment

Source: Willock *et al.* (1999)

Furthermore, in the literature, Ohlmer *et al*. (1998) noted that one of the primary goals of farmers was to stay on the farm and improve it for the next generation. Hansen and Greve (2014), in their research into how farmer values affect their decision-making, and also noted that many farmers feel a duty to take over the farm and pass it on to the next generation in a

better condition than it was, when they took over the farm. Finally, Beedell and Rehman (2000) observed that farmers with greater environmental awareness are more influenced by conservation-related concerns and less by farm management concerns than other farmers. This finding also demonstrates that the attitudes and beliefs of farmers are a crucial influencing factors in farmer decision-making.

Ultimately, the goal of the farmer plays an extensive role in the decision-making process of farmers. A number of academic articles have been written surrounding the goals of farmers. According to McGregor *et al*. (2001, p.64):

> The objective of the individual farm family changes as the internal and external conditions change but normally includes, at minimum, the maintenance or preferably improvement of current activities which achieve a sufficiency of food or cash with minimum variability from year to year, management of debt and consequently economic survival, having appropriate leisure time, and maintaining a position within the local community.

The ultimate decision for any enterprise owner is the decision to engage in the chosen business activity – in other words, what is their goal? Therefore, the first decision that needs to be explored is perhaps – why do people farm? There are probably various explanations that could be provided to answer this question. According to Castle and Becker (1962), people appear to choose agriculture on the basis of the satisfaction it provides or because it represents a way of life with which they are familiar.

In a seminal study by Gasson (1973), 100 farmers were asked to rank a set of attributes representing their values (goals) for being in business in farming. Sixteen attributes were ranked: at the top of the ranking was independence or doing the work you like, while at the bottom of the ranking was job security or belonging to the farming community. Gasson established four dominant values in farming: *economic values* (also called instrumental values) such as maximising income and expanding the business; *social values* such as prestige as a farmer and continuing traditions; *expressive values* such as pride of ownership and meeting a challenge and *intrinsic values* such as enjoyment of work and independence.

Although the focus of this current study is not to directly identify the values (goals) of farmers, the empirical work involves a review of the influencing factors on farmer decision-making to check if some of the goals referred to by Gasson actually do exist.

Jarvis *et al*. (2000) noted that many small businesses are often centred around survival and maintenance rather than maximising growth or profit. Their research noted that the flexible measures of performance used by small business owner managers (SBOMs) are linked closely to their diverse objectives. This finding appears to have particular relevance when reviewing farming enterprises.

Furthermore, SBOMs typically adhere to an idiosyncratic culture (Gooderham *et al*., 2004; Dalley and Hamilton, 2000) and a dominant aspect of this culture is striving to achieve personal non-economic objectives (Greenbank, 2001). An example of a personal goal of an SBOM identified by Dalley and Hamilton (2000) is achieving independence and a flexible lifestyle through self-employment. Farming provides the opportunity for a flexible lifestyle and self-employment, as the majority of farmers in Ireland are owner-managers. According to the CSO (2012), on over 97% of Irish farms, managers were also the holder of the farm. This gives them the flexibility to carry out their work at a time convenient to them and in a manner to suit their lifestyle choices.

In the family firm literature, the term "socioemotional wealth" (SEW) has been discussed when documenting the goals of family firms. Gomez-Mejia *et al*. (2007, p.106) defined SEW as 'the non-financial aspects of the firm that meet the family's affective needs, such as identity, the ability to exercise family influence and the perpetuation of the family dynasty'. In essence, SEW refers to the non-financial goals that a firm may have. The literature suggests that family firms are not only concerned with financial returns, but also with SEW. In fact, it states that family firms are likely to place high priority on maintaining family control, even if it means accepting an increased risk of poor firm performance. The financial

vulnerability of many farms has already been noted in Chapter 2. Also, because family firms must keep the firm from failing, they may act more conservatively by avoiding business decisions that may increase performance variability (Gomez-Mejia *et al*, 2007). The majority of farms in Ireland are family farms and the factor of SEW does appear quite apt when contemplating the factors affecting the decision-making process of farmers. Non-financial factors, such as control and succession, are described in the SEW literature and are also discussed in the farmer decision-making literature.

Overall, one can conclude that a myriad of farmer objectives/goals may exist and each one of these may impact the business to varying degrees. Moreover, farmers' goals and objectives may have a huge influence on their decision-making process in order to attain the specified goals.

4.5.3 The Characteristics of the Farm Household

The characteristics of the farm household factors identified as important by Edwards-Jones (2006) were: stage in family life cycle, level of pluriactivity and the work patterns of the spouse. A related area referred to in the literature is the role of women in farmer decision-making. Each of these elements is now discussed.

Family life cycle: Firstly, a review of the literature on the stage in the family life cycle is now briefly discussed. The farming enterprise has a tendency to exhibit characteristics that are specific to farming and less likely to exist in other sectors. One particular characteristic is the inextricable linkage between business, family and household ownership (Jack and Anderson, 2002). This characteristic creates examples where three generations of a farming family may live and work on the same farm. Farming, unlike many other sectors, is often a multi-generational business. For this reason, the stage in the family life-cycle may have a key impact in farmer decision-making. For example, O'Donnell *et al*. (2011) identified

succession planning as one of the key considerations influencing farmers' attitude to expansion. In addition, Wallace and Moss (2002) noted that goal preferences, reflecting the priorities of farmers at different stages in their life cycle, are shown to result in different patterns of decision-making and farm development.

Pluriactivity and the work patterns of the spouse: The level of pluriactivity and the work patterns of the spouse encompass the level of off-farm income of the farm household, i.e., the farmer and/or the spouse may have off-farm income. According to Kinsella *et al*. (2000, p.494), pluriactivity can be quite complicated to define, but in many instances refers to 'the existence of paid employment, outside the farm, by the farm operator and/or spouse of the farm operator'. If the farmer has other income and operates as a part-time farmer and/or if the spouse has off-farm employment, then these determine the total farm household income. The latter is a key factor in the farmer's decision-making process, as it will influence the level of funds available to invest in the farm enterprise. According to the 2012 NFS (Hennessy *et al*., 2013), the level of farms with off-farm income peaked in 2006, at 59%, and had reduced to 28% by 2012, reflecting the change in the Irish economy from the "Celtic Tiger" era (where off-farm employment was financially more attractive) to the situation during the Irish economic recession (where farming became an attractive enterprise once more). As the level of pluriactivity in agriculture has fallen dramatically in recent years, this may indicate that the influence of pluriactivity on farmer decision-making varies with economic cycles.

Role of women: The role of women in farmer decision-making, as discussed in the literature, is an area that has strong links with household decision-making. As highlighted earlier (Section 4.5.1), only a small number of studies refer to *gender* (the *role of women*) in farmer decision-making. These studies (Wilkening, 1958; McGregor *et al*., 2001; Farmar-Bowers, 2010) all place particular emphasis on the role of women in household decision-making and, therefore, are now discussed in this sub-section.

Wilkening (1958) maintains that the attainment of both farm and family goals requires joint discussion and consensus on the part of husband and wife. He found that, when decisions pertaining to the expenditure of major sums of money or other family resources are viewed by either husband or wife as having consequences for the farm (for which the husband is primarily responsible), or for the home (for which the wife is primarily responsible), there will be an attempt to arrive at some consensus concerning decisions that affect both. Furthermore, McGregor *et al*. (2001), looked at the success of government policies in affecting the decisions farmers make in respect to participating in such policies and in the decision to adopt new technology. They contend that the success depends to a large extent on the manner by which households (of which women are a significant part) respond to those policy interventions. Policy content often does not create the circumstances whereby farm households can satisfy their goals for the farm and family, which may cause frustration and dissatisfaction among the intended beneficiaries of the policy. Both of these studies suggest that women do have a significant role to play in farmer decision-making.

Finally, the work conducted by Farmar-Bowers (2010) is very interesting in the context of this current study as it looked at the strategic decisions women make in farming families. Her study contends that women have a very important role to play in farmer decision-making. She looked at the role of women in strategic decision-making through a set of five lenses. These lenses were:

1. *Personal interests* of the decision-maker;
2. *Family considerations* such as the needs of the decision-maker's family;
3. Knowledge of the *personal components* available with the family;
4. *Social considerations*, such as the norms and ethics relevant to the potential opportunity the decision-maker is thinking of creating;
5. The decision-maker's knowledge of and access to the relevant *external components* such as credit, information, grants, clubs etc.

Overall, the above study concluded that women appear to be getting more and more involved in farmer decision-making, particularly in the first four of the five lenses, where women displayed a high level of influence. The literature here acknowledges that women can play a significant role in farmer decision-making and this aspect is reviewed in the empirical work.

4.5.4 Structure of the Farm Business

With reference to the farm structure, Edwards-Jones (2006) identified the elements of farm type, farm size and debt to assets ratio, as influencing factors on farmer decision-making. A review of the literature for each of these elements is now presented.

Farm type: Farm type may be one of the primary influencing factors in farmer decision-making. Each type of farming is quite different and all involve very different farming practices. In Chapter 2, an overview of farming types was presented which highlighted that each of the farm types reviewed in this current study face different prospects and outlooks at industry level, with contrasting opportunities and threats facing each farm type. These opportunities and threats may have a direct impact on the decisions made by farmers in each farm type and hence may be a key influencing factor. There are many studies in the literature in recent years (Hansson and Ferguson, 2011, O'Donnell *et al*., 2011, McDonald *et al*., 2013) specific to dairy farming (due to the reform of the EU policy, including the abolition of milk quotas). These studies all add to the existing body of knowledge of the influences on farmer decision-making. For example, the study by O'Donnell *et al.* (2011) identified location, quota size and succession planning as important considerations influencing an individual farmer's attitude to expansion. While succession planning may be an influence for all farm types, the influence of quota size is a specific farm type influence. This demonstrates that the farm type may be a primary influencing factor on farmer decision-making. Much of the prior research has focused on one particular farm type, but the research

in this thesis involves a comparison of farmer decision-making across numerous farm types and, thereby, makes a significant contribution to the literature.

Farm size: This is an understandable influencing factor, as the size of the farm may impact on the level of diversification that the farm can undergo. The larger the farm, the greater the potential for increased investment opportunities and, conversely, the smaller the farm, the more limited the farmer is regarding opportunities to invest. Hansson and Ferguson (2011) noted that farm size is undoubtedly an influencing factor in farmer decision-making.

Debt to assets ratio: According to the 2013 NFS (Hanrahan *et al*., 2014), the majority of Irish farms have no farm business-related debt. However, while this varies considerably across farm types, the average borrowings per farm in 2013 were €24,398. Furthermore, the earlier 2011 NFS (Hennessy *et al*., 2012) estimated the total volume of debts on farms in 2011 to be almost €1.9 billion. Overall, this appears to be quite a small number, when you consider the industry as a whole. Grant and McNamara (1996) conducted a study into the relationship between bankers and farmers. They concluded that larger farmers are best able to take advantage of lending opportunities on offer and that there is a long term trend towards the development of larger, more commercial farming enterprises and the elimination of smaller, more marginal units. This finding supports the view that farm size, as referred to in the preceding paragraph, influences the decision-making process of farmers. These findings surrounding the low debt levels in Irish agriculture suggest that Irish farmers, in many instances, are debt averse and that farmers may be unwilling to proceed with investment decisions, unless they have the money to do so and/or if they know that the farm is large enough to provide the debt repayment capacity.

4.5.5 The Wider Social Milieu

The wider social milieu refers to the level of extension (advice), information flows, local culture, social capital, the attitude of trusted friends, the policy environment and, the structure and impact of a range of institutions (Edwards-Jones, 2006). The wider social milieu comprises mainly of the social interactions with others and these issues are incorporated and discussed in the role of advisors section (Section 4.6). The other influences mentioned reflect the environment in which the farmer is operating, one of the primary being the policy environment, which is now discussed.

Policy: Farm management decisions are not only affected by internal factors. External factors, such as changes in farm policy, government and EU legislations and market forces, can have a huge impact on their decision-making process. Sutherland (2010) looked at the impact of environmental grants and regulations in strategic farm business decision-making and found that farmers view grant schemes as opportunities to be grasped. This finding demonstrates that the grant scheme acted as a trigger in the farmer's decision-making process and prompted action. Chapter 2 outlined the main support schemes available to Irish farmers. The support schemes available under CAP have had a significant impact on the structure and income on Irish farms and hence may have a major impact on the decision-making process of Irish farmers. The 2011 NFS concluded that the average family farm income (FFI) was €24,461 and that the average direct payments per farm were €17,729 (Hennessy *et al*., 2012). This means that direct payments equated to 73% of the average FFI. It must be noted that the FFI and the level of direct payment is unique to each farm and there are huge variations in the level of both these criteria, between each individual farm and within each farm type. For example, the average FFI on dairy farms in 2011 was €68,570, while the average FFI on beef farms was only €10,453. As there is a huge contrast within each farm type, the influence of support schemes on the decision-making process of farms may vary within each farm type.

4.5.6 Operational Metrics

One other aspect which warrants attention is how the monitoring of the operational performance of the farm can influence the decision-making process of farmers. This aspect was not highlighted in the Edwards-Jones (2006) study, but in this current study is being referred to as the efficiency of the farmer in managing the resources of the farm to produce increased output (Teagasc, 2016b). For example:

- A dairy farmer could improve performance by increasing the milk yield per cow;
- A tillage farmer could improve performance by increasing the yield of grain per acre;
- A beef farmer could improve performance by increasing the stocking rate per acre.

The improvement of the operational side of the farm could be explained or achieved by an exhaustive list of activities. Where farmers demonstrate usage of operational metrics as indicators to measure overall performance, the empirical work documents those key performance indicators (KPIs) or rules of thumb which are used to manage their farms and prompt decisions.

4.5.7 Section Summary

The above summary of the factors influencing farmer decision-making demonstrates that there has been a considerable amount of research conducted surrounding the influencing factors on farmer decision-making and it suggests that there are many such factors. However, Edwards-Jones (2006) calls for more empirical work in this area to provide further understanding, a challenge now being addressed in this research. Furthermore, much of the prior research uncovered concentrates on reviewing the influencing factors on a specific decision event in a specific type of farming context. The research in this thesis compares and

contrasts the influencing factors across three farm types and across multiple decisions, thereby contributing a unique insight and adding to the existing body of literature.

4.6 The Role of Advisors in Farmer Decision-making

Decisions, varying in nature from the financial, marketing, operational and human resource functions, need to be made on a regular basis. The majority of owner-managed businesses cannot afford the luxury of having in-house personnel in each separate function to make decisions and may from time to time need to engage the services of an external advisor (Blackburn and Jarvis, 2010). The role of a farm manager is no different. It may not be possible for farmers to be competent in all areas of business management and, therefore, external advisors can assist in the decision-making process of farmers. Advice sources exist in both a professional and non-professional capacity. Advice in a professional capacity refers to advice that is paid for, while non-professional advice is not directly paid for by the farmer. An overview of the literature on each source is now provided.

4.6.1 The Role of Professional Advisors in Farmer Decision-making

As outlined in Chapter 2, there are many key players in the agricultural industry in Ireland and some of those give financial advice in a professional capacity. Advice on financial matters may come from private or government-funded organisations. Teagasc is the primary state-sponsored advisor, while individual agricultural advisors (such as members of the ACA) and independent accountancy firms (such as IFAC Accountants) offer financial advice in a private capacity. Byrne *et al*. (2003) conducted a survey to establish the sources from which Irish dairy farmers sought professional farm financial advice. Table 4.3 shows those results. It must be noted that in most cases respondents identified at least two sources of advice.

Table 4.3 Sources of Professional Farm Advice

Sources of Advice	Percentage of Farmers Seeking Advice
Teagasc	46%
Private Agricultural Consultants	21%
Accountants	**93%**
Bank Employees	40%
Other (discussion groups, media/literature)	10%

Source: Byrne *et al*. (2003, p.7)

The results show that nearly all respondents sought financial advice from their accountant, but this high figure may reflect how it is mandatory for all self-employed farmers to keep tax accounts. Therefore, the advice may relate more to taxation requirements than farm management or decision-making issues.

Solano (2003) suggested that agricultural advisors were one of the most preferred sources of advice in the decision-making process of farmers. Another study, that highlighted a list of advice sources that farmers engage with, was conducted in England by Stanford-Billington and Cannon (2010). Their study identified the frequency of use of a range of consultants by farmers. Results of their survey with 144 farmers are now presented in Table 4.4 below.

Table 4.4 Frequency of use of Consultants

	Once a week	Once a month	Once a year	Very rarely	Never	No reply
Agronomist	27.8%	44.4%	6.9%	4.9%	10.4%	5.6%
Accountant	2.1%	30.6%	56.3%	5.6%	1.4%	4.2%
The end user/customer	6.3%	27.1%	23.6%	20.1%	15.3%	7.6%
Other specialist farmers	3.5%	16.7%	17.4%	33.3%	16.7%	12.5%
Farming social networks	2.1%	13.9%	8.3%	25.7%	37.5%	12.5%
Land agent	0.7%	13.9%	16.7%	36.8%	24.3%	7.6%
Farm business consultants	0.7%	12.5%	24.3%	23.6%	27.1%	11.8%
Farm business advisor	1.4%	9.7%	25.0%	27.1%	28.5%	8.3%
Business link	0.7%	0.7%	9.7%	29.2%	47.9%	11.8%

Source: Stanford-Billington and Cannon (2010, p.29)

The studies by Byrne *et al*. (2003) and Solano (2003) were conducted with dairy farmers, while the study by Stanford-Billington and Cannon (2010) surveyed beef and tillage farmers. These combined studies give a more comprehensive list of advice sources for farmers, but do not proceed to provide a comparison of the level of advice sought[6] by each farm type. The research in this current study will conduct such a comparison. Furthermore, the study by Byrne *et al*. (2003) is the only one of the three studies that has been conducted in the setting of Irish agriculture, indicating scope for further studies. Finally, the level of advice availed of by farmers is not explored in these prior studies. In contrast, this research project explores the level of advice availed of by farmers, again developing the literature in this under-researched area.

4.6.2 The Role of Non-Professional Advisors in Farmer Decision-making

Solano (2003) suggested that family members were one of the most preferred sources of advice in the decision-making process of farmers. This study reviewed the information sources of family members, other farmers, technical advisors, farm staff and commercial agents. These sources indicate the involvement of both professional and non-professional advice sources in farmer decision-making.

Discussion groups are a significant source of non-professional advice. These discussion groups are used throughout the world, in all agricultural sectors, as a way of transferring knowledge (Bogue, 2013). The primary focus of a discussion group is to provide a forum suitable for learning to take place. Farm visits are quite often part of the discussion group model, with individual members of the discussion group holding discussion group meetings on their own farm. According to Maher and Donworth (2012), Teagasc has pioneered participatory tools for knowledge transfer in the Irish farming sector. The discussion group

[6] Level of advice sought refers to the extent to which an advisor was involved in the farmer's decision-making process.

model is acknowledged to be particularly effective in knowledge transfer and adoption, largely because of its facilitation of a farmer-oriented learning process.

Finally, as outlined previously, Jack (2009b) acknowledged the significant impact of discussion groups as a form of benchmarking in agriculture and outlined the tradition of using such groups in New Zealand and Australia. Overall, the literature suggests that discussion groups are a prominent source of non-professional advice in farmer decision-making.

4.6.3 Factors Affecting the Level of Interaction with Advisors

According to the literature, it is difficult to engage smaller businesses in the supply of value-added services and many businesses take no external advice at all (Schizas *et al*., 2012). There could be many different reasons for smaller businesses (including farmers) not engaging the services of an external advisor and these are now explored.

The characteristics of the service users: A survey of 1,777 businesses was conducted by Insights (2010) to study the use of advisors by SMEs. In that survey, respondents were asked to name the advisors they used for a number of areas and for each of these areas of advice, respondents were prompted to choose up to three of 11 types of advisor, favouring the one they used most often. Based on the results, a cluster analysis of the data was performed and four distinct groups of SMEs were identified, based on their propensity to seek expert advice and/or employ those resources as a form of business support. The four distinct groups are depicted in Table 4.5.

Table 4.5 Cluster Analysis of the Propensity of Businesses to seek Expert Advice

Distinct Group Category	Percentage of Population in each Group
Confidence Seekers	27.0%
Community Networkers	21.8%
Skeptics	38.9%
Go-it-Aloners	9.5%
Unclassified	2.8%

Source: Insights (2010)

Confidence Seekers were found to value both expert advice and social rapport. Community Networkers were those whose support networks focused largely on social rapport. Skeptics were presented as focused mostly on expert advice, while Go-it-Aloners used almost no external advice. Although the above study was designed to incorporate SMEs, based in a number of different industries and operating in a variety of different countries, it is interesting to relate the findings to Irish agriculture. The findings above are now discussed and contrasted in the context of the Irish agricultural industry. These groupings could be applied to Irish farmers as:

- Expert advice is available from the many professional agricultural advisors;
- Support networks are available through the increased presence of discussion groups;
- There are numerous trade and industry associations from which to seek advice.

Interestingly, less than 10% of the population analysed in Table 4.5 fell into the "Go-it-Aloners" grouping. In contrast, numerous studies indicate that only a small minority of Irish farmers engage the advice of professional advisors for valued-added services. This could mean that the majority of Irish farmers appear to fall into the "Go-it Aloners" category and the increasing popularity of discussion groups could mean that the "Community Networker" category may be the next most popular grouping for Irish farmers.

It appears from the above that many farmers adopt the "Go-it-Alone" strategy in managing their farm. However, the chairman of the Agricultural Consultants Association warned against this, when he noted that:

> To me, farmers get up early and work very hard and sometimes don't meet a whole lot of people during the day. Then they make big decisions, about purchasing the farm next door or renting land. A farmer should not make those types of decisions alone. Your farm adviser, your accountant, your solicitor has probably dealt with the same situation a hundred times before. (Brady, 2012)

A similar view was taken by the Director of Teagasc when he suggested in conference proceedings that: 'the relationship between the farm advisor and the farmer needs to become more embodied' (Boyle, 2012). These statements, by the heads of major agricultural bodies in Ireland, indicate a wish that farmers would take advice from some of the many sources available to them.

Just as Byrne and Pierce (2007) identified culture as a major influence on the role of management accountants in organisations, culture is noted here as a major influence on the level of interaction between farmers and their advisors. However, this culture does appear to be changing. One example of this change is the increasing use of discussion groups as an advisory tool in Irish agriculture. Such groups demonstrate a prime example of "community networkers" evident in the Irish agricultural industry. Finally, Lunneryd (2003) studied information use among Swedish dairy farmers and found that a wide range of information sources, which covered both external and internal information, oral and written, and non-communicative, were used in farmer decision-making.

The role of Trust and Confidence: The literature on business support often refers to accountants (or others) as "trusted" advisors of SMEs, a claim documented by reference to the frequency with which the services of accountants are used by SMEs (Blackburn and Jarvis, 2010). Given that the literature acknowledges that many farmers take no external advice, could this be due to a lack of trust and confidence, by the service users, in those providing the advice/value-added services? Doran (2006), when researching the role of the

accountant as a business advisor, found that a high level of trust and communication was important in maintaining the accountant-client relationship.

Schizas *et al*. (2012) used the work of Insights (2010) to explore the role of trust and confidence, when SMEs are seeking advice from external advisors. It was found that a framework of trust and confidence can help explain the variation in advice-seeking behaviour among SMEs. Some of the conclusions of this study were:

- SMEs are less likely to seek out government-funded advice on financial management as their need for trust and confidence increases;
- Demand for services are driven to a great extent by those business owners who consider their accountant to be a personal friend or confidant;
- A combination of the need for trust and confidence does lead SMEs to seek regulatory advice, as well as prompting them to pay for advice on financial management.

Blackburn and Jarvis (2010) similarly found that this combination of needs is linked to a preference for purchased as opposed to free advice and, therefore, this could be a driver of value-added service use. Other factors outlined by Schizas *et al*. (2012), such as time constraints, education and access to information on the internet tend to influence SMEs' demand for advice from accountants. These factors corroborate the barriers to farmers maintaining their own financial records (as outlined in Chapter 3) and thus help to explain why they turn to external advisors for support.

Finally, Solano *et al*. (2003) talked about trusted advice sources in an agricultural context. They advocate that farmers are most willing to seek and act upon advice from trusted sources. In their study, they found that family members and agricultural advisors are the most used advice sources and, therefore, conform to the basis of being in a "farmer's trusted people group".

The role of communication: It is contended that effective communication is fundamental to a mutually beneficial advisory relationship between accountants and small business. According to Stone (2011), a significant component of effective communication is establishing and utilising the parties' preferred methods of communication. Stone acknowledged that SBOMs prefer direct forms of contact with their advisors and the richness of verbal communication. In the small business advisory literature, Dyer and Ross (2007) maintain that, irrespective of these challenges, the onus is on advisors/accountants to adapt their communication style and content to suit SBOMs requirements.

If this analogy is applied to farmers, given that the goals of a farmer can vary from personal non-financial goals to financially-oriented goals, then professional advisors and accountants have a huge role to play in the decision-making process of farmers. Key elements of this role are: the advisors must communicate information in a format that is preferable to the farmer; the information content is adapted to meet the requirements of the farmer and be understood by the farmer. Furthermore, a considerable number of SBOMs are adamant that their business is unique (Dalley and Hamilton, 2000). This is a primary reason why the literature contends that advisors need to adapt their structured and formal "professional business support systems" communications approach to correspond to the day-to-day communications style of SBOMs (Dyer and Ross, 2007). This perspective could be very apt when providing advice to farmers, as a key phrase used when discussing farm business management is that "no two farms are the same" or "each farmer's business is unique".

There was no specific literature uncovered in relation to the method of communication that farmers prefer, in relation to FFM. However, Gloy *et al*. (2000) conducted an overview of the information sources of farmers and noted that there are inconsistencies in the prior research in relation to the communication methods preferred by farmers. Some farmers prefer written information, while others prefer personal, service-oriented information.

The quality and level of advice provided by the advisor: Much debate surrounds the quality of advice provided by advisors to SME clients. On one hand, the accountants/advisors maintain that clients are only willing to pay for statutory/compliance services while, on the other hand, clients often maintain that they would be willing to pay for advice and value-added services if they believed it was worthwhile. In 2006, Doran noted that interviewees from SMEs reported that:

> …the level of information imparted by the accountant in the period after accounts preparation is minimal and meetings are often very procedural with little discussion or analysis of the financial information, and no suggestions for improving future performance. (Doran, 2006, p.34)

Furthermore, in the same article it was observed that:

> When analysing the uptake of services by clients, it is interesting to note that business advice has a 90 per cent uptake and financing advice has a 91 per cent uptake, when offered. These levels are similar to those for compliance services, but are only offered by 51 per cent and 34 per cent of accountants respectively…
> (Doran, 2006, p.28)

Finally, Doran (2006) found that 28% of respondents called into question the ability of their accountant to provide value-added services adequately.

Similar findings were noted in the work of McChlery *et al*. (2005) when they reviewed the barriers to financial management in the Scottish SME sector. Their findings showed that many owners felt that their accountants focused primarily on the year end accounts and expressed disappointment at the limited support and advice made available by their external accountants, in particular, management accounting aspects. One of the most interesting findings in the work of McChlery *et al*. was that 49.1% of respondents to their survey did not feel that their accountants added any value to their business.

These findings in relation to the role of the accountant in providing advice to the SME sector raise some very important questions. Such questions may not only be relevant to the role of the accountant in providing advice to the SME sector, but are also relevant to the role of the

professional advisor (be that accountant or agricultural consultant) in providing financial advice to the agricultural sector. Questions which come to mind include:

- Are the services offered suitable to the needs of the farm client?
- Are professional advisors merely performing a compliance role or are they offering value-added services?
- Do farmers believe that the level and quality of advice offered by their professional advisors is appropriate?

The role of advisors in farmer decision-making is explored in detail in the empirical findings and addresses some of these questions.

Other factors affecting the level of interaction with advisors: According to Blackburn and Jarvis (2010, p.5), the external sourcing of advice tends to be driven by necessity and take-up of advice is sometimes limited by:

- Its financial cost;
- A reluctance by owner-managers to spend time listening to advisors;
- Some managers viewing it is an outward sign of their managerial weaknesses;
- The quality of advice that is available being irrelevant or poor.

In conclusion, there are numerous factors that affect the level of interaction between the farmer and professional advisors. Many of the factors highlighted are similar to the barriers to adoption of FFM techniques, as outlined in Chapter 3. Some of these factors help us to understand why some farmers may not choose to avail of the services of professional advisors. However, it must be noted that there is a strong case that SMEs (including farmers) require external support and advice, because of the absence of in-house expertise. This is especially the case when there is change within the enterprise, such as growth, succession/takeover or an external environmental change (Blackburn and Jarvis, 2010). As noted in Section 4.5.3, farms tend to remain in the same family for generations. Therefore, fundamental changes may not occur very often within the farm enterprise, which may

contribute to a low demand for external advice. Two contrasting findings were identified in the literature in relation to the use of accountants for advice, when it came to strategic decisions. Deakins *et al*. (2001) found that financial management decisions are often dynamic processes and based on relationships with external advisors, including accountants. On the other hand, Ian-Burke and Jarratt (2004) found that accountants were used for tax, reporting practices and purchasing decisions, but tended to be consulted on strategy only after the event. In other words, accountants were not regarded as credible advisors for strategic matters.

4.6.4 Section Summary

The role of advisors in farmer decision-making can vary considerably, depending on the information preferences of the individual farmer. The literature acknowledges that numerous advice sources exist in farmer decision-making. However, it does not conduct a comparison of the role of advisors across different farm types or within different decision types (strategic and operational). Nor does the literature look at the level of advice sought by farmers from the various advice sources in their decision-making process. These features, which are not addressed in the prior literature, are features of this current study, reflecting a valuable contribution to the existing literature.

4.7 The Role of Farm Financial Management (FFM) in Farmer Decision-making

FFM was introduced in Chapter 3 to outline the various aspects of it and to demonstrate its importance in farm management. Here, the focus is on how FFM practices influence farmer decision-making. There is a body of literature surrounding FFM, but only a limited amount relating to its role in farmer decision-making. Section 4.4.2 outlined the steps involved in the

decision-making process. Accounting information could be used in conjunction with many of those steps. Problem definition was outlined as the first step and it was noted that a problem could be identified as a difference between a perceived and a desired situation. The perceived situation could be based on accounting information. Furthermore, accounting information can be used as a basis for identifying causes of problems and as a basis for planning options to resolve those problems (Kaplan and Norton, 1996).

The role of the accountant is two-fold: to prepare external reports and to prepare internal management reports that enable planning, decision-making and control (Deakins *et al*., 2001). Similarly, there are two primary reasons for keeping records and accounts on farms: for statutory purposes (legal requirements) and for management purposes (decision-making). The legal requirement is to maintain records to enable compliance with relevant tax legislation and regulations surrounding the conditions to avail of grants, subsidies and quotas. The financial records that are maintained for such mandatory purposes are often used as a starting point for management purposes. In most businesses, the information disclosed for statutory purposes tends to be in a summarised format and does not give all the information necessary to make informed management decisions. Therefore, this research project is more concerned with the types of records and financial management tools used for management purposes and decision-making, than those concerned with statutory reporting requirements.

Management accounting relates to the provision of appropriate information for decision-making, planning, control and performance evaluation (Drury, 2012). The majority of farmers appear to spend very little time on financial management. Jack (2005, p.62) commented:

> Only a minority of farmers prepare and use management accounting information. This mainly consists of cash-flow information and budgets, but some do prepare gross margin data and compare it to published figures.

Furthermore, Turner and Taylor (1989, p.18) stated the following when discussing the financial record-keeping of farmers:

> Often seen as a necessary evil by farmers, indeed some may even say that it is an unnecessary evil! They prefer 'the day's work' on the farm to the office work of 'paper pushing'. However, the characteristics of farms as businesses are rarely different to those of other small businesses: book-keeping systems can be relatively unsophisticated, there is a tendency to monitor cash-flow and bank balances and only a minority of businesses maintain management accounting records.

This prior literature tells us that the use of FFM for management accounting and decision-making purposes is quite limited.

Argiles and Slof (2001) carried out a survey, with the aim of finding out whether farmers only prepared reports for the purpose of FADN[7] or if they used them also for additional purposes. Their questionnaire asked whether they had made use of the FADN reports for any of the following purposes:

1. Loan application;
2. Subsidy applications;
3. Income tax filing;
4. Managerial decision-making.

The results were that more than half of the case farms used the information obtained from the FADN reports for some other purpose. Among the farms that made alternative use of the FADN reports, tax filing and managerial decision-making were clearly the most preferred uses. The interesting issue is that 41.6% of the farms used the FADN reports for the purpose of decision-making at least once in the period. This indicates that, if the information is available, farmers may use the reports. However, in many instances, the reports are not available.

[7] The Farm Accounting Data Network (FADN) was established in the context of the Common Agricultural Policy with the aim of gathering accounting data on the performance and income of farms in the EU.

Ohlmer and Lonnstedt (2004) reviewed how accounting information was used in farmer decision-making. They found that farmers used accounting information to detect problems and as a basis for decision-making, especially investment decisions. However, in that same study, it was acknowledged that management information services and tools are developed for an analytical process, whereas many farmers used an intuitive decision-making process.

Irish farm management specialists, working with Irish farmers across all sectors at a Teagasc workshop in 2000, identified the following four principal financial management tools most frequently used on Irish farms to aid the farmer in making FFM decisions (Byrne *et al*., 2003):

1. Farm advisory reports;
2. Output from 'on-farm computer-based farm financial analysis';
3. Annual tax accounts;
4. Monthly bank statements.

However, just over one third of the respondents (36.3%) were using one or more tools for this purpose. The remaining 63.7% of respondents did not use any of the specific tools for this purpose, but used them for tax assessment and loan applications. It is widely acknowledged within the industry that dairy farmers are the most likely type of farmer to maintain financial data and use that data in decision-making. In the above paper by Byrne *et al*., 897 farmers participated in a survey where it emerged that Irish dairy farmers were most likely to use farm advisory reports to aid them in making FFM decisions for their farm business, when compared to other farm types.

In an Irish context, Professor Gerry Boyle (2012), Director of Teagasc, acknowledged that a significant technology gap does exist in Irish agriculture not only in terms of financial management, but across all farming activities. The *eProfit Monitor* and *Cash-flow Budgets* are two of the primary financial management tools promoted by Teagasc, yet, based on the results of a Teagasc survey conducted in 2012, which reviewed the levels of adoption of

specific agricultural technologies or practices on Irish farms, only 12 % of those surveyed used the *eProfit Monitor* and only 7% completed a cash-flow budget. This provides evidence of the low level of uptake of financial management by Irish farmers. The work of Byrne (2005) also demonstrated that the use of financial management among farmers is low, despite heavy investment in extension services to encourage its adoption. Furthermore, the work of Irish (2012) confirmed that, while the awareness of financial management tools by Irish tillage farmers was quite high, the level of adoption was very low. For example, 70% of tillage farmers surveyed were aware of the *eProfit Monitor* as a financial tool, but only 7% of them used it in practice.

Overall, the review of the role of FFM in farmer decision-making reveals that there is little evidence in the literature to support the widespread use of FFM for decision-making purposes. Furthermore, the literature does not elicit any detail in relation to the level of FFM conducted, when farmers do adopt FFM for decision-making purposes. Secondly, a review of the literature does not reveal any evidence into the role of FFM in strategic decision-making, compared to operational decision-making, or evidence in relation to the role played by FFM within each farm type. These are all questions that this thesis explores empirically and, thereby, makes a contribution to the existing literature. Finally, this overview of FFM in farmer decision-making was one of the primary motivations for this study. It is of particular interest to explore how farmers make financially-based decisions in situations where it appears that no formal day-to-day financial management information exists.

4.8 Other Issues in Farmer Decision-making

The greater part of this chapter has been centred on the literature of the three primary aspects of research objective 1 (**RO1**). However, based on a detailed review of the literature, there are a number of "other issues" that are present in the prior literature that warrant separate

attention. These "other issues" include: the role of intuition in farmer decision-making and the role of information sources and technology adaption in agriculture.

4.8.1 The Role of Intuition in Decision-making

Initially, a general overview of the intuition literature is provided, followed by an overview of the specific literature on intuition in agriculture.

The administrative model of decision-making involves the use of intuition (Robbins, 1988, p.82). Intuition refers to the quick apprehension of a situation, using past experience rather than conscious planning or thought (Agor, 1986). This approach is not irrational as it is based on years of hands-on experience and it enables managers to identify solutions quickly. Robbins (1988) identifies eight conditions when intuitive decision-making is most likely to be used. These include: the existence of a high level of uncertainty, lack of predictability, limited 'facts' or data, having a range of plausible alternatives and, finally, time limitations. Many of these conditions are very familiar to farmers.

Intuition has a wide range of terms associated with it. Dane and Pratt (2007) set out to define intuition and came up with the definitions set out in Table 4.6. These help provide insights into what intuition means.

Table 4.6 Definitions of Intuition

Source	Definition of Intuition
Jung (1933: 567–568)	That psychological function transmitting perceptions in an unconscious way
Wild (1938: 226)	An immediate awareness by the subject, of some particular entity, without such aid from the senses or from reason as would account for that awareness
Bruner (1962: 102)	The act of grasping the meaning, significance, or structure of a problem without explicit reliance on the analytic apparatus of one's craft
Westcott & Ranzoni	The process of reaching a conclusion on the basis of little

Source	Definition of Intuition
(1963: 595)	information, normally reached on the basis of significantly more information
Rorty (1967: 204)	Immediate apprehension
Bowers, Regehr, Balthazard, & Parker (1990: 74)	A preliminary perception of coherence (pattern, meaning, structure) that is at first not consciously represented, but that nevertheless guides thought and enquiry toward a hunch or hypothesis about the nature of the coherence in question
Shirley & Langan-Fox (1996: 564)	A feeling of knowing with certitude on the basis of inadequate information and without conscious awareness of rational thinking
Simon (1996: 89)	Acts of recognition
Shapiro & Spence (1997: 64)	A non-conscious, holistic processing mode in which judgments are made with no awareness of the rules of knowledge used for inference and which can feel right, despite one's inability to articulate the reason
Burke & Miller (1999: 92)	A cognitive conclusion based on a decision maker's previous experiences and emotional inputs
Policastro (1999: 89)	A tacit form of knowledge that orients decision-making in a promising direction
Lieberman (2000: 111)	The subjective experience of a mostly non-conscious process—fast, alogical, and inaccessible to consciousness—that, depending on exposure to the domain or problem space, is capable of accurately extracting probabilistic contingencies
Raidl & Lubart (2000-2001: 219)	A perceptual process, constructed through a mainly subconscious act of linking disparate elements of information
Hogarth (2001: 14)	Thoughts that are reached with little apparent effort, and typically without conscious awareness; they involve little or no conscious deliberation
Myers (2002: 128-129)	The capacity for direct, immediate knowledge prior to rational analysis
Kahneman (2003: 697)	Thoughts and preferences that come to mind quickly and without much reflection
Epstein (personal communication, 2004)	The working of the experiential system

Source: Dane and Pratt (2007, p.35)

A perusal of these definitions gives an understanding of what intuition means. In the article by Dane and Pratt (2007), the authors established four characteristics that they believe make up the core of the construct, by collapsing the various definitions in Table 4.6 into four over-arching categories. These are: (1) intuition is a non-conscious process, (2) involving holistic associations (3) that are produced rapidly, which (4) result in affectively charged judgements. The above characteristics are now related to the context of agriculture.

(1) Intuition is a non-conscious process: This characteristic could mean that actions or decisions that have a financial impact are taken without any formal financial analysis of a given scenario. Does the role of intuition explain the lack of formalised financial management practices carried out by farmers in Ireland? Are decisions made based on the intuition gained from past experiences? Are decisions automatically made based on their identity as a farmer, as opposed to rationally thinking through a situation?

(2) Involving holistic associations: This is a process in which environmental stimuli are matched with some deeply held category, pattern or feature. This characteristic could be very relevant in agriculture where decisions are influenced/linked to environmental stimuli; for example: EU policy, peers, industry groups.

(3) Intuition is fast: The speed of intuiting is often seen as a primary motivator for developing and employing intuition at work. In the context of a farmer, this characteristic may help also explain the limited use of financial analysis. Farmers tend to be "busy" individuals that spend their time working long hours outdoors. Time constraints are noted as one of the barriers to the adoption of FFM techniques in Section 3.5. Perhaps if a farmer can rely on his/her intuition, then time does not have to be spent recording/processing and analysing financial data.

(4) Intuition resulting in affectively charged judgements: This means that intuition is a type of knowledge used in the decision-making process that results in actual decisions being made (the outcome of making a decision is referred to as an "affectively charged judgement"). Therefore, the extent to which farmers rely on intuition to make financially-based decisions needs to be investigated.

In summary, according to Dane and Pratt (2007), intuitions are charged judgements that arise through rapid, non-conscious and holistic associations. It could be argued that the opposite of

intuitive decision-making is rational decision-making. Rational decision-making involves the use of systematic procedures designed to thoroughly assess all pertinent information, evaluate costs and benefits and ultimately make a decision based on conscious deliberation (Janis and Mann, 1977). Furthermore, according to Dane and Pratt (2007), intuition draws on our inborn ability to synthesize information quickly and effectively – an ability that may be hindered by more formalised procedures. This concept resonates loudly when discussing the decision-making process of farmers.

Having introduced the concept of intuition and having attempted to relate the characteristics of intuition to farmers, this section now proceeds to review some key agricultural literature in the area of intuition. According to Ohlmer and Lonnstedt (2004), accounting information is developed for analytic decision-making processes, whereas many farmers use an intuitive process (meaning non-financial/rule of thumb approaches). This was a very interesting conclusion, as it is a very good explanation as to why farmers may not engage in FFM practices to a large extent when conducting decision-making.

Another very interesting paper on the role of intuition in agriculture by Nuthall (2012) noted that farmers have available a number of formal tools (stocking rates, animal weights, pasture management using grass measurement) to help manage grazing systems, yet few make use of them. He carried out interviews with three farmers over a three year period, in order to understand the rules used to make animal feeding decisions. As grass was the primary feed source, this allowed the farmers' grazing management system to be explored. He concluded that:

- The rules and systems used by one farmer are not likely to apply to another, due to their uniqueness;
- Farm managers rely on informal systems (such as visual assessment – for example, a farmer may visually estimate animal weight as opposed to actual weighing the animal) to make their decisions;

- Farmers tend to be mentally-based planners;
- Farmers operate a dynamic decision-making process in what is a dynamic environment;
- Each farm has different characteristics and objectives, all leading to appropriate policies and decision rules.

Overall, the Nuthall study revealed that the farmers studied by him had developed systems for observing all factors impinging on their decisions and had created various benchmarks which triggered action. This process could be described as using intuition to make decisions. The work of Nuthall was conducted to understand the rules used to make animal feed decisions in relation to grass management (which are operational issues).

Nuthall's work on formalised grazing systems illustrates farmer intuition in this operational area. Perhaps the same can be said for financial management tools for decision-making in Irish agriculture, but can the low uptake of such financial tools by Irish farmers be explained by the role of intuition? This is an issue that is explored in the empirical findings.

4.8.2 The Role of Information Systems and Technology Adoption

Section 4.6 was specifically devoted to the role of advisors in farmer decision-making. However, this current section concentrates specifically on the information sources availed of by farmers. Although there is some overlap in both areas, the sources of information that are used in farmer decision-making are not limited to the advice sources alluded to in Section 4.6. Information can come from a range of different sources, including the farming press, industry groups and other members of the farming community. The lifeblood of decision-making is useful and accurate information. Information is recognised as a major agricultural resource and its importance in decision-making is well acknowledged (Nuthall, 1997; Byrne *et al*., 2003; Gloy *et al*., 2000; Lunneryd and Ohlmer, 2009).

Byrne *et al*. (2003) acknowledged that farmers rely heavily on external agencies for information and that one of the major factors that determines the information required by farmers, is the farmer's goal or objective. According to Lunneryd and Ohlmer (2009), the more farmers emphasise profitability-oriented goals, the more they consider the collected information in their decision-making. Nuthall (1997) outlined that the farmer's knowledge base and experience influenced the degree of information analysis. New, younger farmers tend to develop and seek more information, until their skills and knowledge base are developed for the particular farm.

One of the barriers to FFM, as noted in Section 3.5, is that the farmers never learned the skills required, which is particularly relevant in the case of information systems. Many farmers may be computer illiterate, as they have never learned the skill of using computers and, therefore, this is an automatic barrier to the maintenance of adequate information systems.

Boyle (2012) acknowledged that a significant technology gap does exist in Irish agriculture, not only in terms of financial management, but across all farming activities. One of the major challenges facing the adoption of such technologies is getting farmers to engage in the activity to see the potential benefits that this adoption may bring. Participation in discussion groups is one of the key methods employed to overcome this challenge. Bogue (2013) noted that the participation in discussion groups through the DEP had a positive impact on technology adoption in the area of financial management. In 2011, 52% of group members completed an *eProfit Monitor,* compared to 29% in 2010.

Lapple and Rensburg (2011) reviewed the adoption of technologies in the context of organic farming. In that study, the researchers found that factors which affect technology adoption included: the level of farming intensity, age, information gathering and attitudes of the farmer. In essence, when a farmer decides to adopt a particular technology, it is part of

farmer decision-making. Therefore, the work in the literature surrounding the decision to adopt new technologies also tells us something about farmer decision-making in general.

Overall, the review of the literature in the area of information sources and technology adoption tells us that there are many information sources available to farmers, which are not limited to the role of advice sources in Section 4.6. Furthermore, a technology gap does appear to exist in Irish agriculture and this may contribute to the low levels of financial management that are noted in Chapter 3.

4.8.3 Section Summary

Fountas *et al*. summarised how farmers manage information very well, when they noted that:

> …farmers can be grouped according to how they manage information, from "information hogs" seeking and using a large amount of information, to "seat of the pants" managers where personal intellect and intuition are the main drivers in making decisions. (2006, p.193)

In this statement by Fountas *et al*., the two issues of intuition and information sources are alluded to, but also it encapsulates the whole decision-making process of farmers, as outlined in the prior literature. Some farmers view decision-making as an insular process, while others are advice seekers and information gatherers.

4.9 Chapter Summary

Overall, it is evident that farmer decision-making is a relatively complex and multi-faceted process. While farmer decision-making has received considerable attention, there has been very little focus on financial decision-making in agriculture, particularly in an Irish context. The work of Byrne (2005) and Byrne *et al*. (2003 and 2007) are some of the key pieces of work conducted in the area of financial management in Irish agriculture in recent times. These prior studies were very important in shedding a light on the financial management

practices of Irish farmers; however, they did not review the financial decision-making process of farmers in detail. Furthermore, the latter studies focused on the study of dairy farmers only and included mainly small farms, thereby providing limited insight into financial management practices of Irish farmers in other sectors. These shortcomings of the prior literature demonstrate a research gap that this current study attempts to bridge.

Many of the seminal papers (Gasson, 1973; Austin *et al*., 1996; Willock *et al.*, 1999; Edwards-Jones, 2006) surrounding the attitudes/behaviours/goals/values of farmers that were discussed in this chapter were studies based on quantitative data or were discussion papers. Therefore, they provide limited insight into the narrative surrounding those aspects of farmer decision-making that may be revealed in a qualitative study. In this respect, the prior literature informed the research objectives and the research design of this current study. It prompted the use of an interpretative methodological approach to document the story of the financial decision-making process of farmers in an attempt to develop explanation and a deeper understanding.

In addition, Ohlmer *et al*. (1998) acknowledged that much of the prior literature has focused on how farmers should make decisions, as opposed to focusing on how farmers actually make decisions. The overview of prior studies also shows that many of them focus on exploring one particular aspect of the farmer decision-making process (for example, Gloy *et al*. (2013) reviewed the sources of information for farmers) and/or one particular decision event (for example, Nuthall (2012) reviewed animal feed decisions) and/or a particular farm type (for example: Hansson and Ferguson, 2011; O'Donnell *et al*., 2011 and McDonald *et al*., 2013, all looked at decision-making in dairy farming). However, this current study explores the entire financial decision-making process of farmers across three farm types (dairy, tillage and beef) and reviews multiple decision events (strategic and operational), thereby contributing a rich and interesting set of empirical findings that will assist in developing the literature in this under-explored area.

Overall, this current study is attempting to address the notable limitations of the prior literature by exploring how farmers make financial decisions and by establishing how farmers make sense of their business situations in order to progress with decisions of a financial nature. By fulfilling these objectives, it is envisaged that this study will assist in developing explanation and understanding of the financial decision-making process of farmers.

Chapter 5 Theoretical Framework: Sensemaking

5.1 Introduction

Sensemaking is adopted as the theoretical lens to help build understanding and explanation of the empirical findings. A detailed perspective of sensemaking is now provided. Firstly, an overview of its origins and its properties is presented in Section 5.2 and 5.3 respectively, with particular focus on the work of Weick, who is the seminal author. Next, the areas where sensemaking has been applied are detailed in Section 5.4, with a particular emphasis on its use in accounting (Section 5.5) and in the context of agriculture (Section 5.6). Subsequently, a reflection on the methodological nature of sensemaking is discussed in Section 5.7, to demonstrate how its application compliments the interpretive nature of this study. Finally, Section 5.8 outlines why sensemaking was considered an appropriate theoretical lens to adopt in this study and other theoretical frameworks that were considered, but ruled out, are discussed.

5.2 Overview of Sensemaking

After reviewing the literature in the area of sensemaking, it is evident that Weick is one of the main authors in the area in the last 30 years. Much of the literature in the area is concentrated around his work and, in some instances, it is even referred to as "Weick's Theory". Weick draws on the work of a number of earlier writers in the sensemaking area. Dervin (1983) provided an overview of sensemaking research and subsequent to this work, the work of Weick has become quite prominent.

In Dervin's (1983) overview, she outlined that sensemaking is a label for a coherent set of concepts and methods to study how people construct sense of their worlds and, in particular,

how they construct information needs and uses for information in the process of sensemaking. Many of the concepts and premises discussed in this latter article are the concepts and properties that have been incorporated into Weick's sensemaking theory. For this reason, the literature review is using Weick's work as a foundation stone.

Weick's (1995) work is based on sensemaking in organisations. He argues that the central activity in all organisations is what he calls 'sensemaking': 'To talk about sensemaking is to talk about reality as an ongoing accomplishment, that takes form when people make retrospective sense of the situations in which they find themselves and their creations'(Weick,1995,p.15). According to Weick, members of organisations extract cues to action from the changing environment in which the organisation finds itself. What is seen as significant will vary and is influenced by previous experiences and underlying values. The action that occurs as a result of these cues will, in turn, change the environment within the organisation and will play a part in determining which cues are noticed in the future. This process is circular; Weick calls it 'ongoing'. In other words, the beliefs that people hold about what their role is will determine which cues they notice in the world around them, which in turn will determine how they behave. How they behave will change the environment in which they are working and will affect which cues they notice in the future as well as their beliefs about their role.

Weick (1995) cited the work of various authors who have researched sensemaking and contributed to its development. Some of the various definitions of sensemaking, as cited by Weick, have been extracted into Table 5.1.

Table 5.1 Definitions of Sensemaking

Definition of Sensemaking	Reference
A thinking process that uses retrospective accounts to explain surprises – a recurring cycle comprised of a sequence of events occurring over time – the cycle begins as individuals form unconscious and conscious anticipations and assumptions which serve as predictions about future events	Louis, 1980, p.241.
Active agents construct sensible events	Huber and Daft, 1987, p.154.
It involves placing stimuli into some kind of framework – when people put stimuli into frameworks this enables them 'to comprehend, understand, explain, attribute, extrapolate and predict'	Starburk and Milliken, 1988, p.51.
It is an interpretive process that is necessary for organisational members to understand and to share understanding about such features of the organisation as: what it is about, what it does well and poorly, what the problems it faces are and how it should resolve them	Feldman, 1989, p.19.
A process in which individuals develop cognitive maps of their environment	Ring and Rands, 1989, p.342.
Sensemaking involves structuring the unknown	Waterman, 1990, p.41.
Sensemaking is a mechanism that organisational members use to attribute meaning to events; mechanisms that include the standards and rules for perceiving, interpreting, believing and acting that are typically used in a given cultural setting	Sackman, 1991, p.33.
The reciprocal interaction of information seeking, meaning ascription and action	Thomas *et al.*, 1993, p.240.

Source: Weick (1995)

A perusal of the definitions in Table 5.1 highlights how the concept of sensemaking evolved over time, from a thinking process (Louis, 1980) to a framework (Starburk and Milliken, 1988), to a mechanism used to attribute meaning (Sackman, 1991). These various prior studies contributed to Weick's development of a comprehensive sensemaking framework.

Weick poses some interesting insight into some of the various definitions outlined above. For example, he noted that Thomas *et al*. (1993) and Sackman (1991) mention "action" in conjunction with sensemaking, while Feldman (1989) insists that sensemaking often does not result in action – it may result in an understanding that action should or should not be taken or that a better understanding of the event or situation is needed. Furthermore, some view it as a more private, more singular activity – a process in which individuals develop cognitive maps of their environment.

Weick (1995) also noted that sensemaking is partially under the control of expectations. Whenever an expectation is disconfirmed, some kind of on-going activity is interrupted. Thus, to understand sensemaking is to understand how people cope with interruptions. He emphasised that sensemaking and interpretation are not the same – sensemaking is much more that interpretation; sensemaking is a process.

5.3 Properties of Sensemaking

Weick (1995) identified seven distinguishing characteristics of sensemaking, which set it apart from other explanatory processes such as understanding, interpretation and attribution. The seven properties of sensemaking, according to Weick (1995, p.17), are:

1. Grounded in identity construction;
2. Retrospective;
3. Enactive of sensible environments;
4. Social;
5. Ongoing;
6. Focused on and by extracted cues;
7. Driven by plausibility rather than accuracy.

In Table 5.2, Weick's seven properties are described and how they potentially apply in the context of farmer decision-making, based only on a review of the literature to date in this thesis, is presented. In the first and second columns of Table 5.2 the properties of sensemaking are noted, along with illustrative quotes of their meaning according to Weick (1995). In the third column, how the literature reviewed on farmer decision-making potentially relates to each property is noted.

Table 5.2 Weick's Seven Properties of Sensemaking and Application to this Study

Property of Sensemaking	Illustrative Quote (Weick, 1995)	Relation to Subject of Study based on Literature Reviewed
1. Grounded in identity construction	Sensemaking begins with a sensemaker. 'How can I know what I think until I see what I say?' (p.18). 'Individuals' self-concepts and personal identities are formed and modified in part by how they believe others view the organisation for which they work' (p.21).	Farmers are individuals who are grounded in their identity. Phrases such as "farming is a way of life", "love of the land" or "farmers are just minders of the land" are phrases that demonstrate farmer identity. With identity comes a culture and norms – farmers tend to follow those cultures and norms when managing their farm enterprise. Therefore, identity has an impact on the decision-making process of farmers.
2. Retrospective	People can know what they are doing only after they have done it. Consequently they can figure out meaning of their actions, but only of actions in their past (p.24). How can I know what we did until I see what we produced? In this reconstruction of past events, newly causal explanations are found and specific meanings arise (p.30).	A farmer tries to make sense of his performance during the past year, retrospectively analysing what has happened. Farming is an activity that often passes from one generation to the next, and with that, the retrospective routines of farm management percolate down. It has been a way of life for them from a very early age – if a farmer has grown up on a farm and they have carried out a particular activity, in a particular way for a number of years, then they may not see a requirement to change their approach. Therefore, it is retrospective, has happened and it makes sense to that farmer. Farmers rely on their experience to guide them in decision-making – guidance from retrospective past experiences.
3. Enactive of sensible environments	People create their own environments and these environments then constrain their actions. They act, and in doing so, create the materials that become the constraints and opportunities they face (p.31). Action is crucial for sensemaking; it is a pre-condition of it (p.32).	The environment in which the farmer operates is very important. At a micro-level (farm level), the farmer needs to consider factors such as: the quality of the land, the size of the farm, the type of farm s/he operates and perhaps personal characteristics such as: age and education. On a macro level (industry level) s/he operates in an environment influenced by EU policy, government bodies and industry stakeholders. This macro environment is quite highly regulated. This means that the presence of subsidies, quotas and environmental regulations are all constraints and sometimes opportunities that exist for farmers (factors that influence decision-making).
4. Social	Sensemaking is never solitary because what a person does internally is contingent on others. Even monologues presume an audience (p.40). What I say is determined by	Farmers traditionally operated in quite a solitary environment. However, the social aspect of farming is continuing to evolve. Discussion groups are used as a modem to transfer and share knowledge among farmers. Discussion groups are a social activity – farmers come together to discuss issues pertinent to their business. Furthermore,

Property of Sensemaking	Illustrative Quote (Weick, 1995)	Relation to Subject of Study based on Literature Reviewed
	who socialised me and how I was socialised (p.62).	there are numerous advice sources available to farmers (for example, accountants and agricultural advisors) which allow farmers to interact socially in their decision-making process.
5. Ongoing	Sensemaking never starts. To understand sensemaking is to be sensitive to the ways in which people chop moments out of continuous flows and extract cues from those moments (p.43). The reality of flows becomes most apparent when that flow is interrupted (p.45).	It could be said that farming is a way of life that neither starts fresh, nor stops cleanly – farming is therefore an "ongoing" activity. Farmers do operate in a rapidly changing environment faced with change on a daily basis. The change can be as simple as the physical change in weather conditions or a change in more complex matters such as EU policy. If farmers are faced with change on an ongoing basis, they have to try make sense of how to cope with those interruptions.
6. Focused on and by extracted cues	Extracted cues are simple, familiar structures that are seeds from which people develop a larger sense of what may be occurring. Cues will serve as a point of reference (p.50).	The beliefs, cultures and routines of farming are instilled from growing up on a farm. These beliefs, cultures and routines of farming influence how they act and behave, which in turn may change the environment in which they operate. A changing environment will require cues to be extracted to act upon, to cope with that change, and these will also be influenced by the beliefs they hold. Furthermore, in order to make a decision, farmers need to be able to monitor activities that give them a cue to act upon. The cues they get can come from a myriad of sources. They can be internal or external cues. Each farmer must build up his own knowledge management process and decide what cues they are going to monitor and act upon, where necessary, in order to create their own sustainable farm enterprise.
7. Driven by plausibility rather than accuracy	Though accuracy may be nice, it is not always necessary in sensemaking (p.60). What is necessary for sensemaking is plausibility, coherence and reasonableness. Sensemaking is about accounts that are socially accountable and credible (p.61).	Given the environment that the farmer operates in, it could make sense not to spend a large amount of time on financial management. This does not mean that the financial element of his business is not important; it may just mean that if s/he is successful in how s/he operates the farm operationally, then this will transcend into improved financial results. Therefore, it may make perfect sense for a farmer not to engage in detailed financial management, if s/he is cognitive of the financial impact of his operational decisions. To make a decision, a farmer may feel that s/he has enough information built up from different sources and from various aspects of his farm management to make a decision. In essence, decisions are based on plausibility rather than accuracy.

The exercise conducted in Table 5.2 outlines how aspects of the literature review potentially apply to the seven properties of sensemaking. This exercise was conducted in an attempt to convey the thought process behind how the researcher deemed the sensemaking framework a potentially suitable theoretical lens to assist in developing an understanding of farmer decision-making. As can be seen from column three of Table 5.2, aspects of the literature can be related to all seven properties of the sensemaking framework. This gave the researcher great confidence that sensemaking could potentially be an appropriate lens to adopt in this study, prior to embarking on the collection of empirical data.

5.4 The Application of Sensemaking

A review of the sensemaking literature highlights that it has been applied across various disciplines, which are now discussed.

5.4.1 Sensemaking in Crisis Situations

Weick's work (1988), dealing with crisis situations, argues that people do not know what the 'appropriate action' is in a crisis situation until they take some action and see what happens. Thus actions determine the situations. Going a step further, he notes that situations often determine 'appropriate action', but more often 'preconceptions' determine appropriate action and, lastly, the judgement of 'appropriateness' is likely to be a motivated assessment constructed to validate earlier reasoning (Weick, 1988, p.306). Overall, he concludes that to sort out a crisis as it unfolds often requires action which simultaneously generates the raw material that is used for sensemaking and affects the unfolding itself (Weick, 1988).

If the above observations are reflected upon in relation to the decision-making process of a farmer, some interesting observations can be made. Perhaps the same analogy could be applied to farmers by substituting the word "crisis" with "a decision event". This may mean that, as the process of decision-making unfolds, various information sources are used to make sense of the situation in order to proceed with decision-making. Moreover, if we consider what a farmer deems to be an appropriate decision, given the situation s/he is in, it may be based on preconceptions in the farmer's own mind and decisions may be undertaken to validate earlier reasoning. If these observations hold true, then Weick's theory would be validated. In the discussion chapter, these issues are explored further.

5.4.2 Sensemaking and Management

Craig-Lees (2001) examined the concept of sensemaking and its application to management disciplines. In her work, two contributions were identified – the validation of the 'agent' and the impact of the adoption of sensemaking on research paradigms, theory and methodology. The validation of the agent refers to property number three in Section 5.3 '*enactive of sensible environments'*, meaning that the actions of the individuals in an organisation are central to sensemaking. The paper by Craig-Lees contended that a central part of management research is the need to understand the wherefore of decisions and behaviour of people in the organisation. This current research project advocates a similar view and is attempting to understand the behaviour of farmers in how they approach and make decisions within their business. As noted earlier in Section 5.2, Weick contrasts sensemaking with interpretation and Craig-Lees re-emphasises this point:

> The central theses that Weick presents is that sensemaking is not a metaphor, that it is something that exists, and that it can be examined. It is not interpretation: it is about the process that culminates in interpretation. (2001, p.514)

In this context, this research project aims to review how sensemaking assists farmers to evaluate their business situation which may culminate with the farmer interpreting how to proceed with decisions.

5.4.3 Sensemaking and Knowledge Management

The work of Cecez-Kecmanovic and Jerram (2002, p.896) researched a sensemaking model of knowledge management in organisations. In this work, they identified the following knowledge types and associated knowledge management processes:

- *Individual knowledge* – involves a person's values, beliefs, assumptions, experiences and skills that enable the individual to interpret and make sense of the environment, his/her own actions and the actions by others.
- *Inter-subjective or collective knowledge* – represents shared understanding that emerges through social interaction. Namely, individuals engaged in communication and oriented toward mutual understanding, interpret events and situations inter-subjectively and create synthesised meanings that transcend individual knowledge.
- *Organisational knowledge* – denotes generic meanings and social structures that emerge in and reproduce an organisation. Typically, such knowledge includes notions of organisational structure, resources, roles, policies, norms, rules and control mechanisms, patterns of activities or actions and scripts or standard plots.
- *Knowledge embedded in culture* – assumes a stock of tacit, taken-for-granted convictions, beliefs, assumptions, values and experiences that members of an organisation draw upon, in order to make sense of a situation and create meanings at all other levels.

In the context of a farm as an enterprise (organisation) and how knowledge is managed using the above knowledge types, the following analogy is made:

- *Individual knowledge* – may represent the knowledge a farmer has as a person with values, beliefs, assumptions, experiences and skills that enable him/her to interpret and make sense of the environment, his/her own actions and the actions by others.
- *Inter-subjective or collective knowledge* – may represent the social interaction of the farmer with other farmers, peers and discussion groups, which enable a shared understanding that emerges through social interaction.
- *Organisational knowledge* – could be denoted by the wider actors in the agricultural industry through its numerous organisations (Dept. of Agriculture, EU policy, Teagasc, ACA, IFAC, and IFA etc.) which provide knowledge through their services to the agricultural community.
- *Knowledge embedded in culture* – may be the industry as a whole which has a very unique/distinctive culture that assumes a stock of tacit, taken-for-granted convictions, beliefs, assumptions, values and experiences that members of the agricultural community can draw upon to make sense of a situation and create meanings at all other levels.

In the empirical work some reflection is necessary as to the need for a farmer to create a personal knowledge management process, thereby exploring the ideas of Cecez-Kecmanovic and Jerram in the specific context of agriculture.

5.4.4 Sensemaking and Actors

Checkland (2007) focused on the area of general practice (GP) in the UK Health Service and sought to investigate why practitioners behave as they do, as little was understood about this. Just as Checkland embarked on investigating why practitioners behave as they do, this thesis

investigates why farmers behave as they do. She found that internal sensemaking arose from interacting factors and the ongoing actions of practice members. It was further noted that these were implicit rather than explicit motivating factors that are embedded in the belief system of the organisation, rather than being followed as 'conscious goals'. The activities of the GP practice members were directed at maintaining organised patient care, good relations between practice partners and seizing new opportunities. This research by Checkland (2007) is very interesting – could the same conclusions be made about farmer decision-making? Are the decisions made by farmers driven by their belief system? Are the motivating factors for decision-making more implicit that explicit? Finally, do farmers follow conscious goals when making decisions of a financial nature? The interview guide probed these questions and the findings chapter discusses the results.

5.4.5 Sensemaking and Organisational Learning and Organisational Change

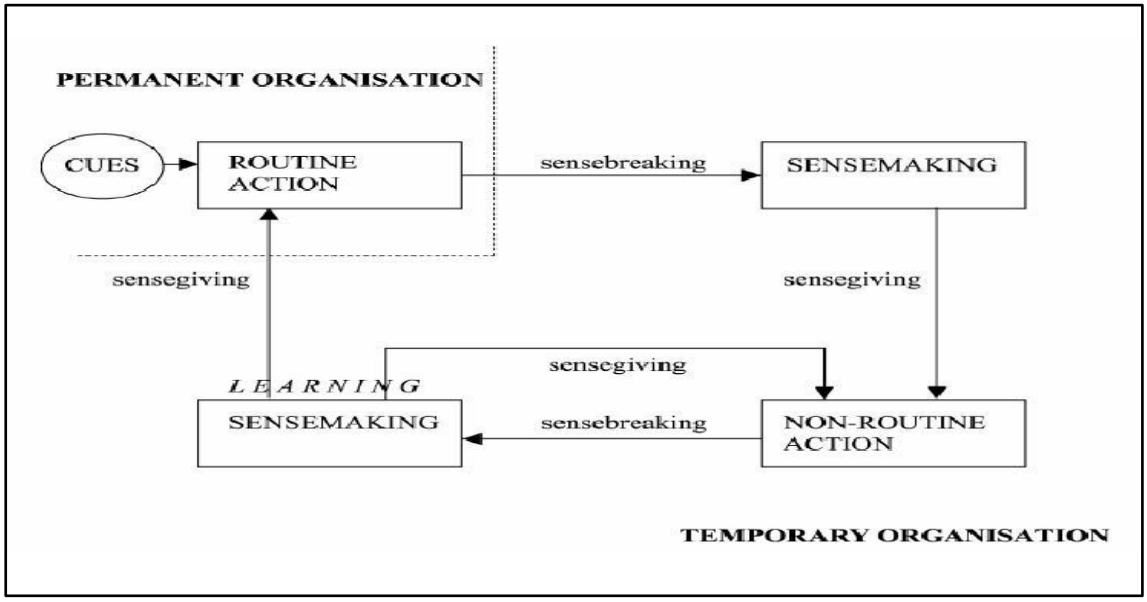
The work of Huzzard (2004) is presented here to show how sensemaking has been applied in the areas of organisational learning and organisational change. Huzzard developed a conceptualisation of sensemaking, sensegiving and learning in a model of organisational change that focuses on learning through exploration in projects, rather that learning through exploitation of routine activities. This change is understood in terms of alterations between the routines of permanent organising and the more temporary actions of exploring new ideas. The processes of learning and sensemaking are at the centre of such alterations and the role of sensegiving can shed light on the micro-processes of change.

Huzzard (2004) developed a model of sensemaking, learning and organisational change in his research, introducing the concepts of sensegiving and sensebreaking. This model is depicted in Figure 5.1. Huzzard articulated the processes of sensemaking, sensegiving and sensebreaking in

an organisational context. He outlined how sensemaking is generally undertaken by leaders in the first place to create meaning and understanding of situations (i.e., to make 'sense' of a situation). This sense or understanding is then disseminated to other actors to guide and define subsequent action – this is the process of sensegiving. Having constructed texts in order to reduce equivocality and subsequently subjected them to interpretation, sense is then disseminated to other actors to define and guide subsequent actions. Sensemaking is an act of thinking by managers and sensegiving is the acts they undertake to mobilise other actors. Sensegiving occurs through discourse. In such situations; discourse has a normalising function and acts as a means for closing down alternative interpretations. It is generally accepted in the literature that sensemaking refers to the process of thought, while sensegiving refers to the process of action. Lastly, the concept of sensebreaking occurs as 'a consequence of a disruption in the predictability and taken-for-grantedness of routines' (Pratt 2000, in Huzzard, 2004, p.355). When the sense associated with a routine is broken, a new situation arises where there are 'too many meanings' for the actor rather than 'too few'. This is a problem of equivocality rather than uncertainty. In order to cope in such situations, people require values, priorities and clarity about preferences rather than more information.

These concepts, as depicted in the model in Figure 5.1, take place in a cyclical process, as organisations are confronted with change and learn from the situations encountered. This continuous process affirms the '*ongoing*' property attributed to sensemaking by Weick (1995). Huzzard asserts that the process is triggered by a cue in the routine actions of an organisation that 'breaks sense' and generates sensemaking which will then lead to action (sensegiving). This action is considered non-routine; sensemaking of this non-routine action will occur, resulting in learning and further sensegiving. This will result in the non-routine action evolving into a routine action and the cyclical process continues when a cue in the new routine actions 'breaks sense' once again.

Figure 5.1 Sensemaking, Learning and Organisational Change – a Model



Source: Huzzard (2004, p.358)

Huzzard (2004, p.357) contends that:

> The concepts of sensemaking and sensegiving can be located in a cyclical model of experimental learning where change processes are conceived in terms of an oscillation between the routines of permanent organising and the more experimental, innovative actions of temporary organising where leaders mobilise actors to explore new ideals.

Furthermore, he states that '… the learning cycle is triggered by a cue received by the permanent organisation that 'breaks sense' and generates sensemaking, leading to the establishment of a new activity – typically a project' (p.357). This leads to a temporary situation whereby sensegiving activities are conducted, learning takes places and this is fed back into the permanent organisation. This is a continuous cyclical process that continues until another cue presents itself and breaks sense once more, leading to another process of sensemaking.

As noted earlier, Huzzard (2004) highlights that people require values, priorities and clarity about preferences, rather than more information, to cope in sensebreaking situations. This point made by Huzzard could be attributed to the '*identity construction*' property of sensemaking. However, one could question whether Huzzard is correct in saying that more information is not

needed, as it could be argued that more information could be helpful in coping with sensebreaking events. In addition, the concepts of sensemaking, sensebreaking and sensegiving all influence or result in decision-making. Just as sensemaking has been applied to organisational change and learning by Huzzard, perhaps it could be applied to farmer decision-making in a similar way. The Huzzard Model was found to be a useful framework that could be adapted to assist in documenting and explaining farmer decision-making. This adaptation of the Huzzard Model forms a central part of the discussion chapter.

Furthermore, perhaps the cyclical process described by Huzzard (2004) could be potentially applicable to both strategic and operational decision-making. The cues in the routine action that cause sensebreaking and sensegiving may result in non-routine action (in the context of this current study that non-routine action could potentially be a strategic or operational decision). If organisational change (as studied by Huzzard) is reconceptualised as being enacted through decision-making (which could be either strategic or operational), then a deeper understanding of farmer decision-making may be achieved. While acknowledging that learning is likely to be more cyclical in operational decision-making and less likely in more ad-hoc strategic decision-making, learning, as referred to in the Huzzard Model, is not a specific focus in this current study. An adapted model which focuses on the cues, sensebreaking and sensegiving aspects of the Huzzard Model endeavours to explore how it applies in the context of strategic and operational decision-making and across different farm types. This adapted model forms a central part of the discussion chapter.

5.4.6 Section Summary

Various authors have applied sensemaking in different contexts. This review of the literature demonstrates that sensemaking is a powerful theoretical framework used to understand, explain

and investigate various aspects of an organisation. The focus now turns to how sensemaking has been used in the context of accounting, thereby moving from the more generic to specific, in terms of this thesis.

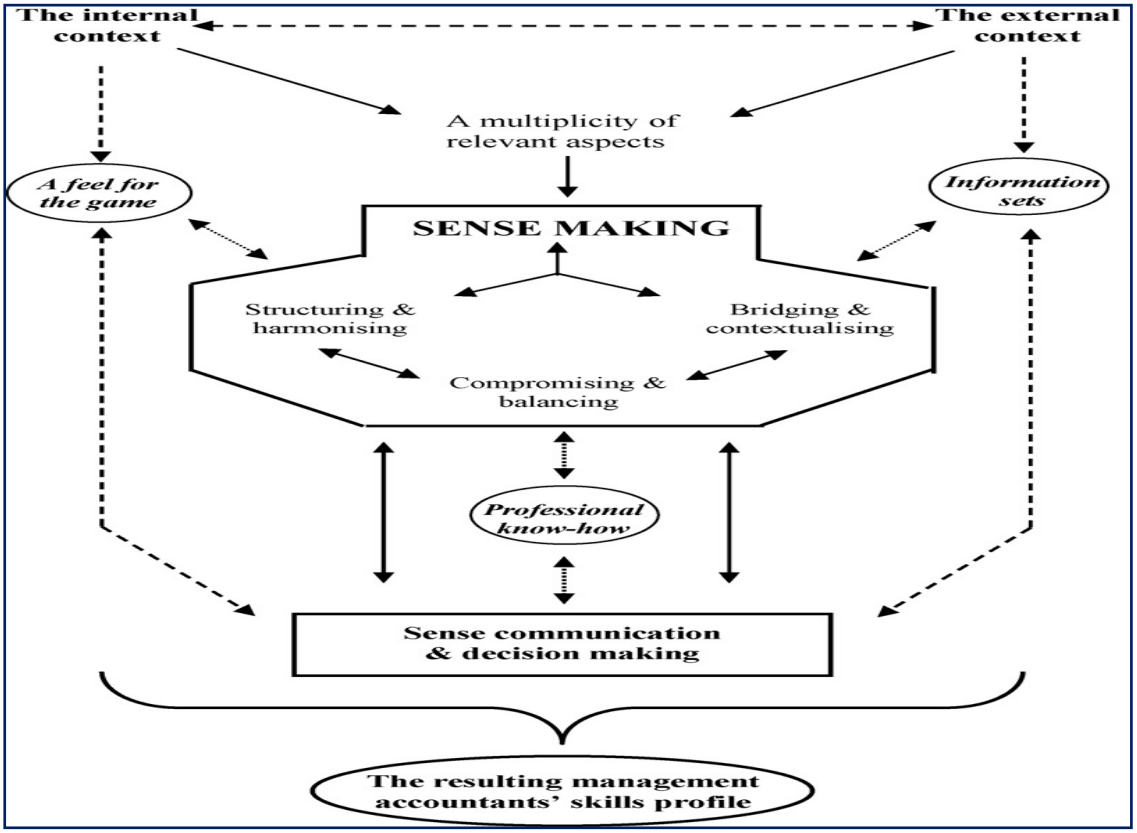
5.5 Sensemaking in Accounting

According to Tillmann and Goddard (2008), the concept of sensemaking has been extensively discussed in diverse organisational fields, but relatively less in the accounting literature. Their work explored what is meant by sensemaking and how management accounting is used to assist that process. The authors believe that the main contribution of their paper is to understand from the participant's perspective that the way in which accounting is used to make sense of complex strategic decisions is at least as important as the specific techniques used. This contribution is of particular interest, given that one of the research objectives in this thesis is, *to establish how farmers make sense of their business situations in order to progress with decisions of a financial nature*. Therefore, it is important to be cognisant that the way in which accounting is used to assist farmer decision-making, may be as important as the specific tools used.

In the study by Tillmann and Goddard (2008), a case study methodology was used to demonstrate how management accountants became part of the sensemaking process when faced with a decision of a strategic nature. Similarly in this current study, the role of advisors and the role of FFM, among others, are explored to review how they appeared to assist in a farmer's financial decision-making process. If financial management is used by farmers to make sense of the decisions facing them, then in what way is it used? If it is not used, how do farmers make decisions in its absence?

Tillmann and Goddard (2008, p.88) depicted sensemaking as shown in Figure 5.2. This figure is intended to describe 'how' sensemaking takes place in an organisation. The authors believe that the need of participants to increase their understanding of strategic situations and enhance organisational transparency is at the core of sensemaking. With this core principle in mind, the organisational search for transparency and understanding begins and it extends across two dimensions which they have labelled 'understanding cause-effect relationships and linkages' and 'grasping the wholeness of situations'. In other words, in order to understand a strategic situation, one must try to gain an understanding of what effect this decision will have as a decision in isolation and then its effect on the organisation as a whole. They found that the search for organisational transparency and understanding was a result of the inherent complexity of both external and internal contexts of strategic situations and in essence, management accountants were the main function within the organisation responsible for creating this transparency and understanding.

Figure 5.2 The Paradigm Model of Sensemaking in a Strategic Context



Source: Tillmann and Goddard (2008, p.88)

As can be seen in Figure 5.2, the concepts of 'structuring and harmonising', 'bridging and contextualising' and 'compromising and balancing' are at the heart of Tillmann and Goddard's model. These concepts are described by them as the interactional strategies that contributes to sensemaking. Firstly, 'structuring and harmonising' refers to how information is presented and analysed for comparison purposes. Information comes from various different sources and needs to be organised in the same systematic way. Management accounting practices were found to be particularly suitable for structuring and harmonising activities. Secondly, 'bridging and contextualising' comprises the bridging of information across time and the contextualising of information across space. Bridging was evident when information was related to past or projected information, while contextualising appeared to be carried out by comparing or benchmarking information. Thirdly, 'compromising and balancing' are very much inter-related

and are viewed as secondary strategies to sensemaking activities. Compromising refers to the making of compromises or adapting to unavoidable circumstances in the best possible way, while balancing relates to the weighting of different issues at stake. The strategies of compromising and balancing were noted when there were issues related to the right information, monetary resources and other limiting factors, such as time. The researchers noted that this balance was not clearly defined but could be experienced through what may be referred to as 'a feel for the game' and 'professional know-how' (Tillmann and Goddard, 2008, p.94). 'Feel for the game' related to managers drawing upon their own experience, while professional know-how came from the management accountants.

In the context of this current study, "how" sensemaking is carried out in farmer decision-making is explored. Perhaps the strategies outlined by Tillmann and Goddard are present in farmer decision-making, but whether the farmer conducts the strategies alone or employs the service of external advisors to carry out these strategies, is explored. There are various management accounting tools/templates available for the farmer to help 'structure and harmonise' information, but whether they are used and to what extent, remains unclear. In addition, benchmarking is a term widely associated with FFM and there is information available to Irish farmers to allow them to benchmark ('bridge and contextualise'). However, to what extent farmers are using benchmarking to make sense of their situations also needs to be contemplated. Finally, 'compromising and balancing' are concepts that resonate loudly when discussing FFM. Farmers often imply that they are "very busy" and "do not have time to maintain adequate financial records" and as a result tend to rely on 'a feel for the game' (intuition) when making decisions or making sense of situations. Many farmers also employ the services of external advisors and perhaps this is where the 'professional know-how' is drawn upon. All of these issues are explored further in Chapter 8.

Boland (1984) also used sensemaking theory in an accounting context. He looked at the premise maintained by sensemaking theory that 'sensemaking assumes management action is a continuous, equivocal stream of experience that can only be understood (or made sense of) when it is viewed in retrospect' (Boland, 1984, p.868). To investigate this premise, accounting reports were prepared to describe a fictitious future scenario for an organisation. This scenario was used to create accounting reports. The management group in that organisation then imagined themselves further into the future, looking back over the accounting data. The reason behind this experiment was to get the management team to try to understand what they had done during this period, why they had done it and how they felt, having done it. This exercise was used as a method to research the planning process.

In addition, Boland (1984) emphasised that there was a growing dissatisfaction with an over-dependence on rational-analytical techniques for addressing questions on organisational design. The planning exercise in his study created a contradiction – the technique the managers used to explore their goals and objectives denied the importance of goals and objectives. The results showed that the sensemaking process can be used as an interactive mode of enquiry in planning or design situations and can lead to a unique perspective on planning problems.

One of the primary reasons why this article by Boland (1984) is interesting is that it links the concept of sensemaking and decision-making. Moreover, the findings of Boland's work emphasise that decision-making does not always take place in a rational and analytical form. This finding is evident in farmer decision-making. However, much of prior literature on farmer decision-making advocates a more orthodox approach to decision-making. One of the main aims of this research project is to develop a deeper understanding of the decision-making process of farmers by analysing the narrative accounts of how they undertake financial decisions in

practice. This deeper understanding may have implications or recommendations for the teaching of decision-making in farming colleges.

Building on the work of Boland, Messner (2013) looked at managers' collective sensemaking in the planning process. Messner conducted his research in a case company, where he explored how a new planning process was being implemented, using interviews and observation of managers at planning meetings. His work concluded that managers make the problem of uncertainty manageable by breaking it down into different sensemaking processes. It was noted also that this process is both a collective and a calculative achievement whereby, by embedding numbers in interactions and combining them with other types of information, uncertainty is rendered manageable and is ultimately managed in the planning process.

Messner's work also drew heavily on the work of Weick, when he emphasised that sensemaking is often implicit and unintentional and that there are occasions for sensemaking in organisations, for example, in the presence of 'ambiguity' and 'uncertainty' (Messner, 2013, p.7). In these situations, sensemaking is adopted. In the case of ambiguity, people engage in sensemaking because they are confused and, in the case of uncertainty, they do so because they are ignorant of any interpretations (Weick, 1995, p.91). An example of when there is a case of ambiguity/uncertainty is in the instance of change in organisations. According to Louis (1980), change often confronts managers with a gap between their experiences and their expectations and this may trigger an occasion of sensemaking.

The above work is again very relevant in the context of this current study. In this thesis, the strategic decisions under review required planning and invoked change. How farmers cope with this change, plan for the changes ahead and make sense of their business situations in order to proceed with decisions of a financial nature, are all important aspects to explore. In Chapter 3, it

was outlined how the process of planning, control and decision-making are interlinked components of FFM. Therefore, when looking at decision-making, it is very relevant to draw upon literature in the area of planning, as planning and decision-making go hand in hand. Given that Messner's (2013) work used sensemaking to understand planning in organisations, perhaps it may be applied also in developing an understanding of farmer decision-making.

5.6 Sensemaking in Agriculture

A review of the literature has demonstrated that the theory of sensemaking has not been applied to the area of agriculture to any great extent. This provides an opportunity for a theoretical contribution in this area. There were a number of authors uncovered during the literature review who had conducted research in the area of sensemaking in agriculture. However, there was no prior empirical research uncovered that studied sensemaking in financial decision-making in agriculture. These latter authors are now reviewed.

Initially, McCown (2005) presented a discussion paper that attributed the concept of sensemaking to the decision-making process of farmers. Next, the work of Amanor-Boadu (2007) demonstrated a link between sensemaking and entrepreneurship, using the case of agricultural value-added businesses. Subsequently, Sneddon *et al*. (2009) looked at on-farm innovation, examining how and why farmers made sense of new technologies and how this sensemaking shaped their use of those technologies over time. Finally, the work of Peirano-Vejo (2012) looked at the connection between sensemaking and knowledge management in the context of an agricultural organisation. Each of these pieces of research is now discussed in more detail and connections are made to other literature that has been previously discussed in this thesis, to demonstrate how sensemaking connects with this body of literature and, therefore, may be an appropriate theory to adopt in this study.

Firstly, McCown (2005), wrote a paper entitled *New Thinking About Farmer Decision Makers* which linked sensemaking and agriculture. The author put forward an alternative theory for understanding decision-making in farming in which managers are purposeful persons making subjective sense of their situations and using their knowledge and agency to cause meaningful and satisfactory actions (McCown, 2005). In contrast to the *normative role* of DSS in decision-making that existed up to this point in time, it was proposed that DSS should be viewed as a *facilitative role* used to support farmers' *sensemaking* in conditions of uncertainty and ambiguity. McCown's paper was not based on empirical findings but was a discussion paper that attributed the concept of sensemaking to the decision-making process of farmers. Therefore, this thesis may extend the work of McCown by gathering empirical data from Irish farmers.

Next, the work of Amanor-Boadu (2007) looked at how farmers make sense of their environment as they consider their options for value-added business ventures. The background to this paper is that farmers in the US were increasingly seeking off-farm employment to supplement decreasing farm incomes. As a result, the US government identified "value-added agriculture" as an option to stem the financial problems of producers. This notion of off-farm income by farmers is referred to in the literature as "pluriactivity" (Kinsella *et al*., 2000). In this context, the work of Amanor-Boadu used a sensemaking model and linked it to entrepreneurship decisions, to explain how producers may make such decisions. This paper applied the sensemaking theory of Weick (1995) to demonstrate that, as producers are confronted with a changing environment and with uncertain outcomes, they use the knowledge and information available to them to progress systematically towards a decision. The author argues that the frames, cues and connections among them facilitate the process of sensemaking. He emphasises the concept of 'frames', which are described as 'the context within which data and information (cues) are received and processed' (Amanor-Boadu, 2007, p.6). He contends that the frames and cues together create the connections that facilitate sensemaking to occur.

The preceding overview of the paper by Amanor-Boadu demonstrates that there are similarities to the work being conducted in this thesis and the research conducted in that paper. The main differentiating factor is the substitution of the word "entrepreneurship" with "decision-making". While Amanor-Boadu demonstrated the relationship between sensemaking and entrepreneurship, this thesis explores possible links between sensemaking and decision-making. Therefore, it is necessary to establish what data and information (cues) are received and processed and, how this information is framed for farmers to make sense of the environment in which they operate which, in turn, allows them to progress with financial decisions.

The third contribution referred to at the start of this section was from Sneddon *et al*. (2009). Their work looked at how the blame for the failure of new technologies is often placed upon farmers. However, they contend that, to engage industry participants in the innovation process, sensemakers' personal identity frames and social context and how these interpretation frameworks relate to the new technology, need to be understood. It was noted that new technologies can trigger sensemaking because they can be uncertain and complex, having multiple possible or plausible interpretations. In the study by Sneddon *et al*. (2009, p.298) it was noted that:

> …the adoption, abandonment, implementation and use of new agricultural technology was conceptualised as an evolutionary, socio-cognitive sensemaking process in which farmers noticed, bracketed and selected salient cues to create a plausible story about the technology that guided their actions toward that technology on-farm.

This prior research is interesting, as it adopts sensemaking as a framework to understand why farmers do not appear to use new technologies extensively. Similarly, this current study is interested in exploring how FFM is used in farmer decision-making.

The final author referred to above, Peirano-Vejo, used sensemaking theory to explain how a farming organisation used knowledge to manage (sensegiving) and understand (sensemaking) change. Her work with Stablein adopted the concept of "storytelling" to study change in an organisation. This work contends that:

> Stories are not epiphenomenal tales told to reassure ourselves of our agency in a truly externally driven world. Rather, our oral and written stories initiate, build, reinforce, threaten and tear down the organisational worlds we live in.
>
> (Peirano-Vejo and Stablein, 2009, p.444)

In the context of farming, this is quite interesting as farmers operate in a dynamic environment and listening to their stories about how they navigate their way through this change, may develop a deeper understanding of the farmer's decision-making process. This reinforces the research design adopted in this current study, as it attempts to document the stories of how farmer decisions, of both a strategic and operational nature, are made. These stories are analysed to make sense of the farmer's decision-making process. This concept is reinforced by Weick (1995), as he identifies stories as an important means of sensemaking.

The organisation studied by Peirano-Vejo (2012) was an Argentinian farming organisation, somewhat similar to Teagasc (see Section 2.5.1). The data were collected via in-depth interviews and ethnographically-oriented observation of meetings. This work showed how an agricultural organisation evolved over a number of decades. In this organisational context, the researcher implied that sensemaking is pervasive and central rather than an important, but occasional activity triggered by discrete change events. There were three main conclusions of her work in terms of sensemaking and knowledge. Firstly, collective knowledge creation and sensemaking are two fairly similar processes and both depend strongly on context. Secondly, knowledge is very much related to sensemaking because, in moments of sensemaking, people tend to realise the knowledge they have acquired. Thirdly, change can be navigated by the way sensegivers deal

with time, identity issues and knowledge flows, because these can provide the elements that others can use to make sense of who they are, or what is happening in their worlds.

These conclusions are worth contemplating. Decision-making is very much concerned with creating knowledge about the decision event and then acting on that knowledge (i.e., making sense of that knowledge) to make informed decisions. Moreover, context is very important in farmer decision-making – the micro environment and his/her individual circumstances are influences on decisions made. Finally, perhaps the organisations and individuals that provide advice to farmers could be considered the 'sensegivers' that help disseminate knowledge to the farmers and help them make sense of decisions facing them.

Peirano-Vejo and Stablein (2009, p.446) summarised farmers' identity very well by noting:

> There is a passion in farming that transcends the working scenario and forms part of the person's identity. These are not men working in farms, these *are* farmers. Like the 'sailors in the sea' … farming implies that nature is a protagonist. Farmers' proximity to their source of production, their visceral relationship with their land, come to influence their sense of being. Farmers have a special bonding with the place where they work (and live) – often given to them by previous generations. They are expected to pass it on as a legacy to their children. Tradition and heritage are important in this context.

All of these characteristics of farmer identity are particularly strong and prevalent in the Irish farming community and there is little doubt that, as much as farmer identity is a property of sensemaking, farmer identity is an influencing factor on farmer decision-making.

An additional concept discussed in the work of Peirano-Vejo is change, which is a distinctive feature of farming life. Peirano-Vejo and Stablein (2009, p.446) cited Berger (1978, p.353) by quoting:

> Farmers live with change, hourly, daily, yearly, from generation to generation. There is scarcely a constant given to their lives except the constant necessity of work. Around this work and its seasons, they themselves create rituals, routines and habits in order to wrest some meaning from a cycle of remorseless change…

Their research noted that, in tandem with change, lies uncertainty in the future: the future is uncertain with continuous change. The challenge is for farmers to face it, while at the same time maintaining a connection with the roots of their identity. Furthermore, it is acknowledged that there has been a transition from the past when information was a scarce resource, to the present where information is everywhere and impossible to process. As noted in Chapter 4, the information sources available to farmers are quite extensive – how can a farmer consume all this information? In theory, all this information should be used to make informed decisions but, in reality, it may not be practical to collect, process and interpret all this available information. This aspect reflects the '*driven by plausibility rather than accuracy*' property of sensemaking.

Finally, Peirano-Vego's work noted that a challenge for industry advisory bodies, who provided scarce information in the past, is to protect farmers from excess information in the future. The farmer's identity and its relation to the past serve a distinct function here; they can be a source of steadiness in an ever-changing environment. Perhaps discussion groups (Bogue, 2013) are also a source of sensemaking in an information-rich environment; here farmers can discuss the "best" or "most useful" sources of information for their specific issues. For example, if a farmer in the group has a particular problem that needs to be addressed, then another farmer could suggest where information/advice was obtained to help with a similar issue in the past, as opposed to the original farmer trying to explore various avenues to address that same problem. This is learning from others, sharing experiences and the conveying of stories to help make sense of the challenges a farmer is facing.

The resistance to bureaucracy and formality resonates with farmer identity, as self-organisers and resistors to paper work (Peirano-Vejo and Stablein, 2009, p 453). This resistance was also noted in the work of Byrne *et al*. (2003), when they looked at the financial management practices of Irish dairy farmers. Farmers tend not to be comfortable around structures and

formalities. These farmer characteristics lend themselves to an increased use of intuition in decision-making. According to Dane and Pratt, 'intuition draws on our inborn ability to synthesize information quickly and effectively – an ability that may be hindered by more formalised processes' (2007, p.33). Nuthall (2012) concluded in his work that farmers rely on intuition in decision-making to a great extent. These findings all indicate that perhaps one of the primary reasons for the low uptake of financial management in farming is a dislike of paperwork and formalised practices. In its place, they may rely on intuition or outsource the financial management activities of their business.

How this information is processed is similar to the concept of "embodied technologies" discussed by Boyle (2012). Embodied technologies refer to those best practice technologies which have become an important and widely adopted practice within the industry. Peirano-Vejo and Stablein noted that 'the present appears symbolised in those technologies already mastered and in those innovations which are already part of today's running of farms' (2009, p.451). Farmers feel secure because they know how these work, they use them every day and they have a sense of control around them.

In the Irish agricultural sector, the challenge for extension service providers, such as Teagasc, is to increase the adoption of such practices. In terms of financial management, examples of the best practice technologies are the *eProfit Monitor*, the *Cost Control Planner* and *Cash-flow Budgets*. Based on research conducted by Teagasc, these practices are not "embodied", whereas Boyle (2012) noted that technologies in other areas such as "The Economic Breeding Index" is embodied. The questions that need to be asked are: why are financial management best practices not being adopted by farmers to a greater extent? Do farmers have the appropriate knowledge or training on how to use them? Are the benefits of these activities clear? Do farmers consider the time necessary to carry out these activities as time well spent?

In summary, in terms of sensemaking in agriculture, the work of all the authors outlined above provide a useful insight into how sensemaking is applied in an agricultural context and has relevance to the objectives of this study. However, there are key differences. This thesis is concerned with the use of sensemaking in decision-making by farmers (supported by empirical findings) which has not been studied previously. Moreover, the work of Peirano-Vejo was concerned with sensemaking in an agricultural organisation, while this thesis is concerned with the sensemaking activities of individual farmers. In addition, these studies were conducted in Argentina, Australia and the US – countries in which farming is quite different to Irish farming.

5.7 Sensemaking – Methodological Overview

In the literature, sensemaking has been described as a concept (Weick, 1995; Craig-Lees, 2001; Checkland, 2007), a process (Weick, 1995; Weick et al., 2005), a model (Dervin, 1983), an analytical approach (Helms Mills *et al*., 2010), and a theoretical framework (Gioia and Chittipeddi, 1991; Huzzard 2004; Weber and Glynn, 2006; Peirano-Vejo, 2012). Therefore, it can be seen that there is some ambiguity surrounding what sensemaking actually is – perhaps it can be argued that it is all of the above. In this current study, it is proposed as a theoretical framework to assist in the development of a deeper understanding and explanation of farmer decision-making.

The ontology and epistemology of sensemaking are slightly contested. In Dervin's (1983) overview of the sensemaking approach, she contended that it cannot be easily labelled in terms of its allegiance to either quantitative or qualitative research disciplines. However, Dervin proceeded to acknowledge that all information is subjective – a term more synonymous with qualitative research. In addition, Dervin's work used interviews as the method of data collection – a method closely affiliated to qualitative studies.

According to Craig-Lees (2001), sensemaking is embedded in constructivism, describing a broad all-encompassing, subjective mental activity whereby individuals make sense of themselves, others and events. Furthermore, Craig-Lees notes that sensemaking, as interpreted by constructionists, is viewed as internal and not able to be wholly communicated or shared by another. However, when 'sensemaking is used as an analytical tool, the narrative becomes a text that can be analysed and the emphasis is on identifying shared meanings and common patterns of thought across individuals' (Craig-Lees 2001, p.518). This means that, by viewing sensemaking as a communicable activity that has common and shared meanings across individuals, the implication is that it is being used within a constructivism worldview. Finally, Craig-Lees (2001), acknowledges that the epistemology of sensemaking is directly linked to interpretivism.

Apart from the observations highlighted above from the work of Dervin (1983) and Craig-Lees (2001), there is not a huge amount written about the methodological roots of sensemaking. Weick himself did not appear to specifically label sensemaking from a methodological, ontological or epistemological perspective. However, his work refers to the terms "narratives", "story-telling", "socially construed" and "constructing meaning", all of which have very strong links to the interpretive and subjective nature of qualitative research. Furthermore, much of the literature uncovered in the area of sensemaking employs interviews and case studies as the data collection methods. To summarise, sensemaking may be deemed to have interpretivist roots and may be used in qualitative research, such as this current study.

5.8 Sensemaking versus Other Theoretical Frameworks

This section is comprised of two central elements. Firstly in Section 5.8.1, a discussion is presented as to why sensemaking was deemed an appropriate theoretical lens to adopt in this

thesis. Secondly, in Section 5.8.2, there is a discussion on two other theories that were considered (institutional theory and contingency theory), but were ruled out.

5.8.1 Sensemaking as an Appropriate Theoretical Lens

Throughout this chapter, a detailed overview of the theoretical framework of sensemaking has been presented. This overview suggests that sensemaking may be an appropriate theoretical lens to apply to assist in the development of a deeper understanding of the financial decision-making process of farmers, in a number of ways.

Firstly, Table 5.2 (as presented in Section 5.3), noted how aspects of the literature reviewed in the area of farmer decision-making potentially apply to the seven properties of sensemaking. Furthermore, in Table 5.3 presented below, the similarities between the characteristics of farmer decision-making, as outlined by Ohlmer *et al*. (1998) in Section 4.4.3, and the properties of sensemaking, as developed by Weick (1995), are presented. It can been seen in Table 5.3 that strong similarities exist when both of those latter issues are compared. This further suggests that the sensemaking framework may be an appropriate framework to adopt to assist in developing a deeper understanding of farmer decision-making.

Table 5.3 Characteristics of Farmer Decision-making Compared to the Properties of Sensemaking

Characteristics of Farmer Decision-making (Ohlmer *et al.*, 1998)	**Properties of the Sensemaking Framework (Weick, 1995)**
Farmers continually update their problem perceptions, ideas of options, plans and expectations when new information is obtained.	Enactive of sensible environments
Farmers often use a qualitative approach to forming expectations and estimating consequences expressed in directions from the current condition.	Focused on and by extracted cues
In many situations, farmers prefer a "quick and simple" decision approach over a detailed, elaborate approach.	Driven by plausibility rather than accuracy

Characteristics of Farmer Decision-making (Ohlmer *et al.*, 1998)	**Properties of the Sensemaking Framework (Weick, 1995)**
Farmers prefer to collect information and avoid risk through small tests and incremental implementation.	Ongoing
During implementation, farmers continually check clues to form their evaluation of long-run actions in a feed-forward and compensation approach, rather than a post-implementation evaluation.	Ongoing

Secondly, in Sections 5.4 to 5.6, a review of the various literature surrounding sensemaking was provided. This overview demonstrated how much of that literature, in particular some of the various models, could be potentially applied to farmer decision-making (including strategic decision-making). The literature also noted that sensemaking has been applied in both accounting and agriculture previously (although not to a significant extent). This shows how sensemaking has the potential to be applied in this subject area, providing further confidence to the researcher of the sensemaking frameworks' potential suitability in this current study.

Finally, and most importantly, it has been highlighted in Section 5.7 that sensemaking is a theoretical framework that sits well with the interpretive and subjective nature of this research project. For all of the above reasons, sensemaking was deemed an appropriate theoretical lens to adopt in this study to assist in the development of a deeper understanding of the financial decision-making process of farmers.

5.8.2 Other Theoretical Frameworks Considered

To explore the financial decision-making process of farmers, two other theoretical frameworks were considered; namely, institutional theory and contingency theory. The application of these two theories, in this study, was ruled out for a number of reasons, as described below. Primarily,

the suitability of sensemaking theory (as outlined in Section 5.8.1) outweighed the potential suitability of both institutional theory and contingency theory.

Firstly, institutional theory – while this study is focused on the decision-making process of the individual farmer rather than focusing on the environment where the decision-making took place, to look at the environment that the decision took place would be an aspect more closely related to institutional theory. Furthermore, an institutional view did not appear relevant, as not everyone appeared to behave in the same way. The idiosyncratic nature of farmer decision-making meant that there were no rules or routines that everyone abides by, characteristics that are central to institutional theory (Moll *et al*., 2006). Another reason why institutional theory was not deemed appropriate is that institutional theory is more suited to studies in the area of public sector research compared to the private sector (Moll *et al*., 2006). Finally, institutions are made up of multiple actor, whereas the study of the decision-making process of individual farmers in this study meant that multiple actors were not present. Therefore, institutional theory was not deemed appropriate – it may be applicable at an industry level, but did not appear to be applicable at farm level.

Secondly, contingency theory – the data collected did not lend this study to the use of contingency theory, as larger scale data would be required. Essentially, contingency theory tends to be more suited to quantitative, as opposed to qualitative, studies (Chenhall and Chapman, 2006). Contingency theory involves trying to design the best management control system (MCS) to fit the context and contingent variables of the firm in which the MCS will be employed (Chenhall and Chapman, 2006). However, the focus of this study is to understand how farmers make sense of financial decision-making, without any implied need to improve it. Finally, while it is recognised that characteristics such as the age of farmer and size of farm were useful (contingency theory), it was felt necessary to move away from focusing on specific contingent

factors and to get into the thought processes of farmers and the use of heuristics by them. This focus led to sensemaking.

In conclusion, sensemaking was considered the most appropriate theoretical lens to adopt in this study as it was considered the most comprehensive of all theories reviewed to assist in providing explanation of farmer decision-making. Furthermore, sensemaking facilitated the development of a model that assists in providing a deeper understanding of financial decision-making in farming, as discussed in Chapter 8.

5.9 Chapter Summary

An overview of sensemaking has been provided by introducing the theory and its seven properties. In addition, an outline of literature was provided, moving from the generic areas to which sensemaking has been applied, to the more specific areas of sensemaking in accounting and agriculture. Next, a methodological overview of sensemaking was provided. Finally, a section outlining why sensemaking was deemed an appropriate theoretical lens to adopt in this thesis was defended, along with a discussion as to why other theories considered were ruled out. Overall, it can be seen that sensemaking has been applied across many disciplines, but to quite a minor degree in the area of accounting and not to any great extent in the context of agriculture. This provides a great opportunity for this study to contribute and assist in filling a gap in this under-explored research area. Most importantly, it has been highlighted that sensemaking has been adopted as a theoretical framework that sits well with the interpretive and subjective nature of this research project. Chapter 6 now follows, which defends the interpretivist methodological approach adopted.

Chapter 6 Research Methodology

6.1 Introduction

A detailed outline of the qualitative interpretive methodology adopted in this study is discussed and defended. Firstly, the research question and research objectives are presented in Section 6.2 as they were the key drivers of the methodological approach adopted. This is followed by an outline of some methodological definitions in Section 6.3. Focus then turns to highlighting the choice of research methodology adopted in Section 6.4 and the research design in Section 6.5. Next, an insight into the data analysis process is provided in Section 6.6, with particular focus on how qualitative data analysis software was used to conduct a robust and rigorous process of data analysis. Finally, a brief reflection on the role of theory in the research approach is presented in Section 6.7.

6.2 Research Question and Research Objectives

The overall research question is:

How and why do farmers make financial decisions?

To answer the above research question, it was necessary to gain an understanding of the financial decision-making process of farmers, by outlining some research objectives. The research objectives were formalised following a detailed literature review in the area of FFM and after consideration of the findings from the two pieces of exploratory research conducted at the outset of this research project – a pilot survey of farmers and interviews with key informants (KI's). The theoretical framework adopted in this thesis also assisted in framing the research objectives.

The purpose of the study is summarised in two research objectives (ROs):

RO1: To explore the financial decision-making process of farmers by examining:

- The influencing factors on farmer decision-making;
- The role of advisors in farmer decision-making;
- The role of farm financial management (FFM) in farmer decision-making;
- The role of other issues in farmer decision-making – these include a review of demographic factors such as: farm type, age and level of education of the farmer, and other issues such as the role of intuition in farmer decision-making.

RO2: To establish how farmers make sense of their business situations in order to progress with decisions of a financial nature.

Throughout the initial stages of the project the research objectives changed, were framed and reframed. A detailed outline of the methodology chosen to achieve the above research objectives and to ultimately answer the aforementioned research question is now provided.

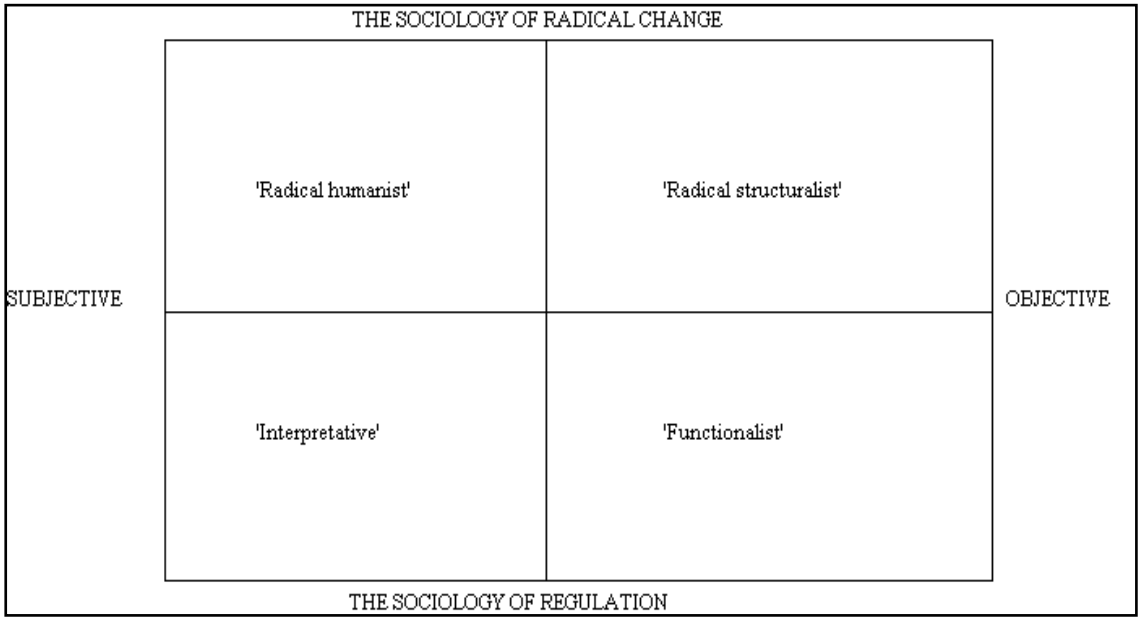
6.3 Methodological Definitions

Before commencing any piece of research, it must be assumed that there is no such thing as a totally objective or value free investigation (Hopper and Powell, 1985). Thus, as researchers are about to embark on an investigation, the personal values and assumptions they hold about the nature of science and the social sciences must be specified. This is axiology (Saunders *et al*., 2009) or the researcher's view of the role of values in research.

From growing up on a farm, the researcher holds certain values and beliefs around farming. According to Abdul-Khalid (2009), it is important to critically reflect on the self as a researcher, on how one's beliefs and values affect the process of data analysis. This is reflexivity. Saunders *et al*. (2009, p.292) describe it as 'self-examination of attitudes and beliefs, reactions to data and findings and interactions with those who take part in the research to overcome barriers to interpretation and gain greater insights'. It is difficult to eliminate bias resulting from values and beliefs; therefore, efforts are made to minimise it as much as possible. In this current study the interpretation of the interviews conducted was based on a desire to understand the farmer's approach to decision-making and any researcher bias introduced in the interview itself or in the findings and discussion has been mitigated by the use of key informants, the inspection of documentation, the use of a focus group, as well as the researcher writing up an empirical diary recalling decisions made about the course of the research.

According to Guba and Lincoln (1994), a paradigm is a set of basic beliefs specifying a particular worldview in terms of principles defining the nature of the world, the individual's place within it, and the range of possible relationships to that world and its parts. However well argued, the beliefs are basic and must be accepted on faith; there is no way to establish their ultimate truthfulness. They represent the best answers that the proponents of a paradigm have been able to devise, given the way they have chosen to respond to the three questions mentioned below that define the paradigms. Advocates of a paradigm can only 'rely on persuasiveness and utility rather than proof, in arguing their position' and 'cannot elevate one paradigm over another, on the basis of ultimate foundational criteria' (Guba and Lincoln, 1994, p.108). Because of this fact, several paradigms are still extant and philosophical debates about them continue to rage. Saunders *et al*. (2009, p.119) illustrate four paradigms which can be used in business and management research: functionalism, interpretivism, radical humanism and radical structuralism. These paradigms were developed by Burrell and Morgan (1979), as depicted in Figure 6.1.

Figure 6.1 Four Paradigms of the Analysis of Social Theory



Source: Burrell and Morgan (1979, p.23)

At the philosophical level, a paradigm reflects basic beliefs about the world while, at the social level, it provides guidelines about how research should be conducted. At the technical level, a paradigm specifies the methods and techniques that should be adopted when conducting research. It is largely on the basis of the paradigm assumptions adopted by the researcher that the methodological approach to the research is determined.

These paradigms have three basic beliefs or assumptions that underlie them – ontological, epistemological and methodological. Ontology concerns the nature of reality. On the one hand, the social world and its structures can be regarded as having an empirical, concrete existence external to, independent of and prior to the cognition of any individual. At the other extreme, reality is depicted as existing only as a product of individual consciousness (Hopper and Powell, 1985), i.e., the subjectivist view that 'social phenomena are created from the perceptions and consequent actions of social actors' (Saunders *et al.*, 2009, p.129). Qualitative researchers contend that the certainty, independence, neutrality and objectivity, prized by positivist

researchers, are a mirage (Parker, 2003). Therefore, the research in this project is qualitative, as the researcher's ontology is subjectivist.

Epistemology is concerned with the nature of knowledge (Saunders *et al.*, 2009). One end of a continuum assumes that knowledge is objective and can be acquired through observation; at the other extremity, knowledge is attributed with a more subjective and essentially personal nature. Finally, research methodology is the science of method and includes the choice of research method(s) deemed appropriate for the gathering of valid evidence. According to Berry (1983), it is not just about data collection and the rules of evidence, but is concerned with the means by which explanations are produced.

These three assumptions can be visualised as answers to three questions: the ontological question (what is the form and nature of reality and what can be known about it?); the epistemological question (what is the researcher's view regarding what constitutes acceptable knowledge?) and the methodological question (what is the process of research?). The above "three questions" are in an order of primacy; the answer given to the ontological question constrains the answers to the other two. Chua (1986) stated that, whatever ontological assumptions are made, they must be made prior to and then govern subsequent epistemological and methodological assumptions. Thus, there is an inter-dependency between methodological and epistemological assumptions and ultimately both of these are guided by ontological assumptions made at the outset.

However, the research objectives precede all of these assumptions. The researcher must define the research questions and research objectives as clearly as possible and then, guided by these three assumptions, in order of primacy, choose the appropriate paradigm to inform and guide the research and related research methods.

6.4 Choice of Research Methodology

The choice of research methodology was guided by the research objectives. The general approach taken is qualitative, frequently referred to in the literature as interpretive or phenomenological (Ahrens and Chapman, 2006). This research approach places the researcher in Burrell and Morgan's (1979) 'interpretive' category that was alluded to in Figure 6.1. The ontological assumption is that the farmer's reality (in regard to how financial decisions are made) is subjective, socially constructed and may change. Epistemologically, it is necessary to explore the subjective meanings motivating the decisions of farmers, in order to understand the farmer's decision-making process. The interpretivist methodology best suits the research question by assisting in the development of an explanation of how farmers make financial decisions. Axiologically, the research was value-bound, the researcher was part of what is being researched and, therefore, was subjective.

In summary, according to Wahyuni (2012, p.71):

> Interpretivists believe that reality is socially constructed by social actors and people's perceptions of it. They recognise that individuals with their own varied backgrounds, assumptions and experiences contribute to the on-going construction of reality existing in their broader social context through social interaction.

This above description summarises very eloquently the research methodology adopted.

To make sense of various methodological concepts and definitions, Table 6.1 has been constructed. The purpose of this table is to provide a guide to the researcher and to map out the various methodological issues that needed consideration and justification. The issues identified in the left hand column were sourced from Saunders *et al*. (2009). In the middle column, various examples of each methodological issue identified are provided and the right hand column outlines the actual choices made in this study.

Table 6.1 Methodological Overview

Methodological Definitions	Examples of each Element of a Methodology	Choices made in this Research Project
Theory A set of explanatory concepts	Institutional theory Contingency theory Sensemaking theory	Sensemaking theory (*Chapter 5*)
Ontology Concerns the nature of reality	Subjective Objective	The farmer's reality is subjective, socially constructed and may change (*Section 6.3*).
Epistemological Concerned with the nature of knowledge	Objective and obtained through observation Subjective and obtained through personal interactions	Subjective and obtained through interviews and personal interaction with farmers including farm tours (*Section 6.3*).
Methodology A general approach to studying research topics	Qualitative (Interpretive) Quantitative (Positivist)	Qualitative (*Section 6.4*)
Method A specific research technique	Interviews, observations, surveys, questionnaires, case study	Semi-structured interviews and a focus group (*Section 6.5*)
Domain A space in which data is collected	Field research Desk research	Field research (*Section 6.5*)
Axiology The personal values and assumptions the researcher holds about the nature of science and the social sciences	Subjective Objective	Researcher is value-bound, was part of what was being researched and is subjective (*Section 6.3*).

Applicability of Interpretive Approach in Accounting

Moving on from the research methodology and paradigm adopted, it is useful to briefly put the use of interpretivism in management accounting in context. According to Chua (1986, p.611), positivism is based on the ontological assumption that 'empirical reality is objective and external to the subject' while interpretivism assumes 'social reality is emergent, subjectively created and objectified through human interaction' (Chua, 1986, p.615). Chua (1986) outlined that positivism was the mainstream ontological assumption adopted in accounting up to the 1980s,

but radical developments were emerging in accounting thought, with interpretivism being viewed as a credible alternative, of which Chua was an advocate.

In more recent times, there are other prominent authors in the accounting arena advocating the use of qualitative research in accounting such as Parker (2003), Ahrens and Chapman (2006), and Hopper *et al*. (2007), ter Bogt and van Helden (2012) and finally, van der Meer-Kooistra and Vosselman (2012). For example, Hopper *et al*. (2007, p.425) identified three primary reasons why we need qualitative research in management accounting which are:

1. Qualitative research takes us beyond a narrow functionalist view of the management accounting phenomenon – referred to as the *textbook view*;
2. Qualitative research protects us against a scientific imperialism that reduces management accounting to an issue of mere economic choice – referred to as the *economics view*;
3. Qualitative research critically scrutinises normative prescriptions for improving management accounting – referred to as the *consultancy view*.

Furthermore, Hopper *et al*. (2007) agree that qualitative management accounting research has an important role to play in the development of management accounting theory – a view which is also acknowledged by Ahrens and Chapman (2006).

Parker (2003, p.16) outlined that:

> Many of the methods employed [in qualitative research] attempt to capture the perceptions and understanding of the actors 'from the inside' so as to better understand how they make sense of, act in and manage their daily work and situations.

The above statement sums up quite eloquently why a qualitative research approach is best suited to this research project. Finally, this research project is very interested in the *how* and *why* questions in order to build explanation of how farmers make financial decisions. These questions

are best answered using a qualitative approach – an approach that has been called upon for further development in the accounting arena (Salvato and Moores, 2010).

6.5 Research Design

The research paradigm chosen is often called the "research philosophy" which is then operationalised through a "research design", mediated by an understanding of how theory will be used (the research approach – see Section 6.7). Research design:

> …is more than just the techniques by which data are collected and procedures by which they are analysed. It is the overall configuration of a piece of research involving questions about what kind of evidence is gathered and from where, and how such evidence is interpreted in order to provide good answers to your initial research question. (Saunders *et al*, 2009, p.126)

The research strategy involved a consideration of constraints on the design (e.g., money, time, access, ethical issues and biases) and what research instrument to use to generate the data (e.g., interviews, survey or case study).

As outlined in Section 1.4, the research design of this project consisted of a number of elements. At the outset of the study, a face-to-face pilot survey of farmers was conducted (*see Appendix A*). This activity was conducted to gain an insight into the actual financial management practices of Irish farmers. The results of this pilot survey are discussed in Section 7.2.1. These results together with the scarcity of the literature on financial management, prompted a need to probe a wider set of issues with members of key stakeholder groups in the Irish agricultural industry. Therefore, key informant (KI) interviews were undertaken with these groups (*see Appendix B for detail of KIs interviewed, denoted as KI/1, KI/2 etc.*). Key insights obtained during these KI interviews are outlined in Section 7.2.2. Both of these initial research activities were very important in the research process as they helped to clarify and refine the research question and the research objectives.

To explore the research objectives, the following data collection methods were adopted:

- *Interviews* – semi-structured interviews were conducted with farmers to explore their decision-making processes, when they are faced with decisions of a financial nature.
- *Focus group* – to give a holistic overview of farmer decision-making and to probe the findings of the farmer interviews further, a focus group was held with representatives from stakeholder groups within the Irish agricultural industry including: agricultural advisors, accountants and members of agricultural associations.

Before proceeding to discuss each of the above data collection methods Table 6.2, below has been compiled to summarise some of the primary research design methods used in a selection of articles, discussed in the literature review. This table demonstrates that the research design adopted is a method that has been used previously in this field of study and, therefore, gives validity to this approach.

Table 6.2 Research Design Methods of Prior Literature

Author	Article	Research Design
Argiles and Slof, 2001	New opportunities for farm accounting	Survey of farmers, and interviews with farmers and an auditor
Byrne *et al.*, 2003	Business Management Practices on Irish Dairy Farms – The Role Played by Extension	Interview survey with farmers
Jack, 2005	Stocks of knowledge, simplification and unintended consequences: the persistence of post war accounting practices in UK agriculture	Semi-structured interviews with farmers, farm secretaries, bank managers and DEFRA representatives
Nuthall, 2012	The intuitive world of farmers – The case of grazing management systems and experts	Interviews with farmers
Ohlmer *et al.*, 1998	Understanding farmers' decision-making process and improving managerial assistance	Case studies of farmers using interviews
Ohlmer and Lonnstedt, 2004	Design of Economic Information. A Pilot Study of Accounting Information in Decision-Making Processes	Interview of farm advisors
Fountas *et al.*, 2006	A model of decision-making and information inflows for information-intensive agriculture	Personal interviews with farm managers
Farmar-Bowers, 2010	Understanding the strategic decisions women make in farming families	Interviews with farmers
Bogue, 2013	Impact of Participation in Teagasc Dairy Discussion Groups	Surveys and focus groups with farmers
Peirano-Vejo and Stablein, 2009	Constituting Change and Stability: Sensemaking Stories in a Farming Organization	Case study on AACREA movement – data collected by review of video recorded meetings, interviews, review of archival data collected by prior research
Messner, 2014	Collective sensemaking in the planning process	Case study – data collected through interviews, meetings attended, review company documents
Tillmann and Goddard, 2008	Strategic management accounting and sense-making in a multinational company	Case study using in-depth interviews
Cecez-Kecmanovic and Jerram, 2002	A sensemaking model of knowledge management in organisations	Case Study using in-depth interviews

6.5.1 Interviews

Quantitative interviews usually comprise responding to a questionnaire, where questions are written in a specific order and are mainly closed. According to Deakins *et al*. (2001), such questionnaires commonly need no interviewer, as they are self-explanatory and need no support. Conversely, qualitative interviews should be open-ended to allow for maximum interviewee contribution. There should be a low degree of structure and a preponderance of open questions which prompts detail and opinion.

A semi-structured interview approach was adopted, using an interview guide (*see Appendix C*). Saunders *et al*. (2009, p.378) note that semi-structured interviews are advantageous in situations where 'there are a large number of questions to be answered; where the questions are either complex or open-ended and where the order and logic of questioning may need to be varied'. According to Sekaran and Bougie (2010), semi-structured interviews allow critical factors identified in interviews to be pursued through "probes" to gain more in-depth information on them, allowing the interviewees to explain, or build on their responses. In the data collection approach in this thesis, first of all, a similar line of questioning was asked to each interviewee in order to reveal patterns across individual interviewee's experiences. Subsequently, probes/additional questions were asked to seek clarification of issues that arose in the course of the interview (something that was allowable with the semi-structured format). For these reasons, semi-structured interviews were deemed to be an appropriate data collection method.

The purpose of an interview is to discuss the interviewee's personal experience with a particular issue. In this study, financial decision-making is the central focus. Therefore, farmers were interviewed in relation to specific strategic and operational decisions that they had made in recent years on their farm. The strategic decisions explored were farm expansion decisions,

while the operational decisions focused on were, the purchase of feed and fertiliser or the purchase of seed and sprays (depending on the farm type being interviewed). The reason for choosing similar decisions as the focus of enquiry in the farmer interviews was to allow comparisons, pattern analysis (Bazeley, 2009), divergent views and/or connections to be made. The latter all allowed for an in-depth and rich process of data analysis to be conducted.

Finally, it is also important to note that the use of interviews is a method of data collection that complements the theoretical framework (sensemaking) adopted. According to Craig-Lees (2001), sensemaking as an analytical construct requires the *individual* to be the unit of analysis and data to be collected via narratives and discourse. The use of individual interviews fulfils these requirements.

Design of the Interview Guide

The formulation of the interview guide was an iterative process and was guided by three key issues: the research objectives, the literature review and the theoretical framework of sensemaking. *Appendix D* provides an insight into how these three issues were linked together in the formulation of the interview guide.

Once the initial interview guide was developed, it was decided to test the guide by interviewing three farmers, one from each of the respective farm types (dairy, tillage and beef). These interviews were tape recorded and transcribed. A number of key lessons were learned from these three interviews:

- The operational decision was not eliciting rich enough data that could be analysed in a meaningful way. As a result, this section of the interview guide was re-drafted to ask more probing questions in this area – to probe the unquestioned assumptions in the farmer's decision-making process.

- Secondly, the initial strategic decision being discussed was primarily the acquisition of land for farm expansion purposes. Looking at the strategic decision of land purchase in isolation did not provide enough data to allow a comprehensive analysis of a farmer's strategic decision-making process. As a result, the interview guide was extended to incorporate multiple farm expansion decisions and each farmer was interviewed about at least two. This resulted in a number of strategic decisions being explored across a broad range of strategic decision categories, as presented later in Table 7.2, Section 7.3.2. By including more diverse decisions, a richer exploration of the decision-making process of farmers in this study was facilitated. It also enabled a comparison of the various aspects of **RO1** and **RO2** for each strategic decision category to be undertaken which assisted in developing a deeper understanding of the decision-making process of the farmers in this study.

Most importantly, it was evident, from an initial overview of the interview data collected, that the theory of sensemaking and its properties were present in the interview findings. These initial interviews corroborated the use of sensemaking theory as a suitable framework to adopt (*see Appendix E)*. This iterative process of designing the data collection instrument was a critical aspect of the research process.

Ethical Approval

At the outset, ethical approval was sought for this research project from the DCU Research Ethics Committee. The research proposal was approved and the study was classified as a low risk social research project. In line with the ethical guidelines, each interviewee was provided with a plain language statement (which outlined what the study involved), prior to commencement of each interview. In addition, a consent form was signed by each interviewee before the interviews commenced.

Format and Content of Interviews

Face-to-face, semi-structured interviews were conducted with farmers, to discuss the process of farmer decision-making. It is not possible to identify an exhaustive list of influences on a farmer's financial decision-making process, as there are a myriad of financial decisions that a farmer can make which can differ in terms of frequency, monetary value and importance. Therefore, the interviews focused on discussing key decisions that each participant had made in recent years in the business. Key decisions of a strategic nature (for example, farm expansion decisions) and an important decision of an operational nature (for example, the purchase of feed and fertiliser annually) were analysed.

In line with the interview guide, the interviews followed a semi-structured format, to help follow a similar line of enquiry with each interviewee. From the literature review, it is evident that financial management may not be widely practiced in the agricultural sector (Jack, 2005). For this reason, the interviews began with a focus on "what financial management practices (both formal and informal) are currently in operation in the farm enterprise?" Once the financial management practices in operation were identified, enquiry as to how those practices assisted in the farmer's decision-making process was undertaken. Equally, if it was found that few financial management practices were used by the farmer (or the tools that were used, are were actioned in decision-making), then it was important to identify how farmers make financial decisions in the absence of using financial management practices. In essence, an attempt to document cues in financial decision-making was made.

In the literature, as highlighted in Table 4.2, it was acknowledged that attitudes, goals and behaviours of farmers affect decision-making (Willock *et al*., 1999). Capturing data surrounding these attributes and other sensitive issues, in qualitative interviews, can represent challenges for researchers. To minimise this challenge, the researcher attempted to establish a good rapport

with each interviewee, before commencing the tape-recorded interviews. The researcher outlined to each interviewee that he came from a farming background and engaged in discussions on some general agricultural-related matters to help to put the interviewee at ease. Furthermore, each interview took place in the home of each farmer. In most instances, this involved the researcher travelling quite long distances and, therefore, upon arrival, most farmers offered a cup of tea (which was gratefully accepted) before each interview commenced. These activities greatly assisted the researcher to establish a good rapport with each interviewee. By establishing a good rapport upfront, the researcher believes that a certain element of trust was built up between the interviewer and interviewee. This resulted in many of the farmers openly discussing sensitive issues. This is evident in the rich and sometimes sensitive data uncovered in the empirical findings. For example, some farmers divulged the amount of money that they had sold and/or bought land for, but immediately afterwards requested the researcher not to divulge such information to anyone.

Similar open-ended questions were asked to all participants but, based on the respondents' answers, other relevant probing questions followed. Some probing questions were built into the interview guide while, on other occasions, probing questions were asked based on farmer responses during the interview process. Through this process, new factors were identified, resulting in a deeper understanding of a given situation. This information was then analysed and interpreted to assist in fulfilling the research objectives. These probing questions were asked to reduce social desirability bias. According to Mitchell and Jolley (2012), social desirability bias is when the participant gives a response that makes the participant look good. In other words, the participants may give a response that they think is a good answer, rather than giving a truthful answer. A thorough review of transcripts was performed to check for any inconsistencies in opinions expressed around similar topics. Additionally, as noted below, field notes were taken which also helped the researcher to reflect on any potential biases that may have arisen. A

possibility with any qualitative study is that biases occur which can be reduced but not eliminated.

The interviews commenced by briefly explaining the aim of the interview and also the confidentiality, anonymity and voluntary nature of the interview was emphasised. Interviewees were then given a consent form to sign and permission for the interviews to be recorded was requested. All interviews were voice-recorded, using a dictaphone. The benefits of recording interviews are well documented (Mattimoe and Hayes, 2003); they essentially eliminate the need to rely on memory or to take notes throughout the interview which can be distracting for both the interviewer and the interviewee. No refusals to allow recording were encountered.

The interviews took place at the farmer's own home, with the majority of the tape recordings being at least one hour in duration. While acknowledging that the interview guide in *Appendix C* appears to be quite long and highly structured, it is important to highlight that, it was a comprehensive guide that the researcher used to prompt questions throughout the interview process. A similar line of enquiry was undertaken with each farmer; however, not all questions were asked to every farmer – in many instances, based upon answers provided, not all questions were necessary. On the other hand, some farmers gave very brief responses to questions asked and, therefore, it was necessary to follow up with more probing questions to elicit sufficient detail about each farmer's decision-making process. Overall, the guide was sufficiently detailed to enable the interviewer to be armed with questions that aimed at getting the maximum benefit from the interview.

A brief description of how some of the sections of the interview guide were utilised is now provided, to illustrate how the interviews were conducted. Firstly, Section 1 of the interview guide consisted of demographic details which were collected through a general conversation

with farmers prior to the commencement of the tape recordings. Section 2 of the interview guide included questions regarding farm financial management. In this section, all farmers were asked 'tell me about how you manage your farm finances'. Some farmers gave very detailed answers to this opening question, while other farmers gave very brief answers. In such instances, further probes were necessary and were included in this section of the interview guide. Section 4 reviewed the relationship with professional advisors. As some farmers did not engage the services of external advisors to any meaningful extent, the opportunities to ask questions from this section were limited. Furthermore, Section 4 included a sub-section on being a member of a discussion group. Many farmers were not members of discussion groups and hence farmers were only asked one or two questions from this section of the interview guide about why they were not a member of such groups. Finally, it is acknowledged that Section 6 on decision-making, was particularly detailed. This was because, in terms of strategic decision-making, farmers could have made a number of strategic decisions and questions were included in the interview guide on each category of strategic decision. However, the majority of farmers only made two of a possible number of strategic decision categories and, therefore, questions were not asked surrounding other categories of strategic decision. Overall, the first five sections of the interview guide were primarily used to build up an understanding of how the farmer managed his/her farm finances and how s/he interacted with advisors. It was Section 6 of the interview guide which was of central focus. This section reviewed both the strategic and operational decision-making process of the farmers interviewed.

Field notes were taken during and immediately after the interviews, to record additional information in the form of research memos. After many of the interviews, farm tours with the farmer were conducted to inspect the strategic investment decisions (for example, farm buildings) that had been discussed during the interview process. In addition, a number of farmers presented documents (for example, costings and budgets) that were prepared by the farmer

during his decision-making process. Such secondary data were obtained to triangulate the findings in order to answer the research questions (Wahyuni, 2012). After each interview, a debriefing was performed and interviewees were given the opportunity to ask questions, make comments or add information that was not discussed.

Sample Size

Following the principles of qualitative research sample size, qualitative studies should generally follow the concept of data saturation (Fusch and Ness, 2015). Mason (2010) wrote a very interesting article on sample size and saturation in PhD studies, using qualitative interviews. He reviewed 560 studies, and his results showed that that the mean sample size was 31, with a significant proportion of studies presenting sample sizes that were multiples of 10. The most common sample sizes were 20 and 27, followed by 40, 10 and 25.

Guest *et al*. (2006, p.59) noted that, 'although the idea of saturation is helpful at the conceptual level, it provides little practical guidance for estimating sample sizes for robust research prior to data collection'. In this latter paper, the authors referred to seven sources they found that provided guidelines on how many interviews should be conducted; those sources being:

- Bernard (2000) noted 27 to 60 interviews for ethnographic studies;
- Bertaux (1981) argues that 15 interviews is the smallest acceptable size in qualitative studies;
- Morse (1994) recommended at least six interviews for phenomenological studies and 27 to 50 interviews for ethnographies, grounded theory and ethnoscience studies;
- Creswell (1998) stated between five and 25 for phenomenological study and 35 for a grounded theory study;
- Kuzel (1992) suggests six to eight interviews for a homogeneous sample and 12 to 20 when trying to achieve maximum variation.

The above figures offer guidance for qualitative researchers when determining sample sizes, but strict rules are lacking. According to Maykut and Morehouse (1994, p.58):

> We cannot decide a priori how many people or settings we must include in our study in order to fully understand the phenomenon of interest. Ideally, we continue to jointly collect data and analyse it in an ongoing process until we uncover no new information.

In theory, these statements appear reasonable but, on a practical level, a researcher must set about collecting data and, until it is analysed, it will not really be known if too little or too much data have been collected. At the outset, it was decided to conduct 27 interviews, a number guided by the literature referred to above.

In the next section, how the sample size of 27, comprised of farmers from each of the primary farming types in Ireland, is discussed in more detail. For now, the focus is on the sample size of nine farmers from each farm type. Saunders *et al*. (2009, p.235) stated that:

> …many research text books simply recommend continuing to collect qualitative data, such as by conducting additional interviews, until data saturation is reached: in other words until the additional data collected provides few, if any, new insights.

This does not provide an answer as to how many interviews to conduct. However, the researcher reviewed an interesting article by Guest *et al*. (2006) which offered some guidance. They carried out a systematic analysis of their own work by examining the codes developed from 60 interviews, in an attempt to assess at which point their data were returning no new codes and was therefore saturated. Their findings suggested that data saturation had occurred at a very early stage. Of the 36 codes they developed, 34 were developed from their first six interviews. Furthermore, Mason (1996, p.97) highlighted the principle that 'your sample size should help you to understand the process rather than to represent (statically) a population' is a good one. Mason (1996) also noted that deciding on how large your sample should be involves asking whether you want to make comparisons which, in turn, should encourage you to reflect upon the logic through which you intend to develop and test social explanations.

Bearing in mind the above literature, the researcher set out to conduct nine interviews with farmers in each farm type. It was felt that, by selecting nine farmers from each farm type, meaningful themes would be uncovered that could be analysed to assist in developing explanation of the decision-making process of the farmers in this study. After conducting the nine interviews in each farm type, it was found that few new insights were being found in the latter interviews conducted in each farm type. Therefore, it was not deemed necessary to conduct any additional interviews.

Finally, in terms of practicalities, qualitative research is very labour intensive. The conduct of 27 interviews involved travelling around the South-East of Ireland, visiting 27 individual farm sites and conducting interviews of approximately one hour in duration with each farmer. Furthermore, analysing a large sample can be time consuming and often simply impractical. These practical factors also contributed to the choice of sample size. In conclusion, the above review of the literature and past qualitative studies demonstrates that the sample size of 27 interviews was reasonable.

Sample Selection

A process of random selection from the relevant study population is generally adopted in quantitative research methods. In contrast, qualitative researchers set out to build a sample that includes people (or settings) selected with a different goal in mind – to gain deep understanding of some phenomenon experienced by a carefully selected group of people (Maykut and Morehouse,1994). With this specific goal in mind, the 27 farmers selected for interview (*Appendix F provides detail on farmers interviewed*) were not randomly selected. By contrast, three criteria governed the selection process and, thereby, guaranteeing that those selected had already made strategic decisions.

Firstly, to make up the total sample size of 27, nine farmers were selected from three primary farming types (dairy, tillage and beef) in Irish agriculture. Farmers from a number of different types were chosen in order to get a cross-sectional view of the financial decision-making process of farmers. Secondly, upon researching the industry, it was clear that there were many farming bodies within Ireland which had a key role to play in the development and evolution of the industry, through the provision of financial management services to farmers (the role of these bodies has been outlined in Section 2.5). It was decided to include nine farmers from each of the three main bodies that provide those advisory services, those being: Teagasc, the ACA and the IFA. Teagasc provided some financial support for this study and so it was felt necessary to include farmers who were not Teagasc clients in the sample selection, to avoid any bias. (*See Appendix G for more detail on farmer selection process*).

Finally, and most importantly, farmers that had previously made a major strategic decision (in excess of €250,000) within their farm enterprise in the past 10 years, had to be captured in the sample, in order to answer the specific research objectives. It would not have proved possible to identify such farmers without the help of the representatives of the three agricultural bodies.

6.5.2 Focus Group

To give a holistic overview of the research and to test the practical usefulness of the findings from the interviews with farmers (the so-what? test of Mitchell, 2002), a focus group was held on 11th March 2016 in Carlow. It was conducted with representatives from the various stakeholder groups that had been involved in the research project, either as KIs or in helping to select farmers for interview. (*See Appendix H for detail on focus group participants, denoted as* ***FG/1, FG/2*** *and* ***FG/3*** *respectively*).

Focus groups, as a form of qualitative research, are basically group interviews, with a reliance on interaction within the group, based on topics that are supplied by the researcher who typically takes the role of moderator (Morgan, 1997). Morgan outlines that the strengths and weaknesses of focus groups flow directly from their two defining features – firstly, a reliance on the researcher's focus, and secondly, a reliance on the group's interaction. In multi-method uses, focus groups add to data that are gathered through other qualitative methods.

Focus groups are a powerful research tool, as they are conducted in real time and do not require recollection (Saunders *et al*., 2009). Furthermore, according to Blaikie (2010), focus groups provide a greater insight into why certain opinions are held. The above merits of using a focus group is particularly relevant in this study, as it allows the researcher to probe members of the focus group on the findings of the interview data and to corroborate (or not) those findings.

Furthermore, it was a way of testing the practical usefulness of the findings that have emerged from the interview data, through the presentation of a summary of the findings to the focus group participants. This is recommended by ter Bogt and Van Helden (2012) who state 'that research findings should be communicated to practitioners via communication channels that are easily accessible to them'. Other eminent academics commented:

> The ultimate purpose of accounting research should be to improve accounting practice, rather than simply to describe or understand or critique it. Hence a gap appears to have emerged between the concerns of policy makers, practitioners and academics as to the need to identify the impact of accounting research and to establish links between research output, practice and social impact. (Parker *et al*., 2011, p.6)

In addition, the use of KIs in a focus group, subsequent to conducting interviews, is a method of triangulation (Wahyuni, 2012), with parties outlining their thoughts on the findings of the research and noting the level of consistency with their experiences of dealing with farmers. Brignall and Ballantine (2004) emphasised the importance of the triangulation of research findings in their research. Focus groups are a research method that is well suited to the

agricultural industry (Bogue, 2013). Agyemang *et al*. (2015) argued that the focus group method offers much opportunity for engaging effectively with all types of stakeholders in social accounting and accountability research. Lastly, as mentioned in Section 6.3, the focus group was one way of mitigating any researcher bias.

6.6 Approach to Data Analysis

The precise process of data analysis is now described and explained, to make it explicit and to illustrate how the tool of NVivo software assisted the researcher in the data analysis process. However, it is important to note that the analytical thought behind the analysis originated entirely from the researcher.

The interview recordings were professionally transcribed and then listened to, to allow some minor corrections. Each transcript was read a number of times directly after it being transcribed, in order to become familiar with the data. Field notes were taken directly after each interview so that they could be used at a later stage of analysis to highlight important issues that were noted in connection with each individual interview.

Traditionally, qualitative researchers used manual methods of coding data. However, in recent years, computers are increasingly used to assist researchers analyse their qualitative data. Having researched the academic debates concerning the appropriateness or otherwise of computer aided systems (Richards, 2005), it was decided to use NVivo (NVivo qualitative data analysis software – Version 10, 2012) to assist in data management and data analysis. It is important to note that coding does not constitute analysis. As noted by O'Dwyer (2004, p.395), '[NVivo] is merely a tool designed to assist analysis'. Data analysis is still very much the responsibility of the researcher as 'the researcher still must ask the questions, interpret the data, decide what to code

and use the computer program to maximise efficiency in these processes' (Bringer *et al*., 2006, p.248).

The process of qualitative data analysis was documented by Maykut and Morehouse (1994, p.121) as 'a fundamentally nonmathematical analytical procedure that involves examining the meaning of people's words and actions'. Taking this guidance into account, it was necessary to develop a method of data analysis which enabled the interpretation of the words and actions of the farmers interviewed. There are various methods of qualitative data analysis identified in the literature and, after a review of those, it was decided to adopt thematic analysis as advocated by Braun and Clarke (2006).

According to Braun and Clarke (2006), thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data. Furthermore, they describe a theme as 'something important about the data in relation to the research question and represents some level of patterned response or meaning from the data set'. After reading the literature around thematic analysis, it was noted that there are no hard and fast rules on how to identify a theme. It is not the case that one can quantify how many times an issue must appear in the data to be labelled a theme; in fact an issue may appear very little in a data set and be labelled as a theme. Therefore, judgement is necessary to determine what a theme is.

It is evident from the literature that thematic analysis has its critics. Braun and Clarke (2006) noted that:

> Thematic analysis can be seen as a very 'poorly branded' method and therefore sometimes it is often not explicitly claimed as the method of analysis, when, in actuality, we argue that a lot of analysis is essentially thematic, but is sometimes claimed as something else such as discourse analysis or content analysis.

In addition, according to Bazeley (2009, p.6), 'too often qualitative researchers rely on the presentation of key themes supported by quotes from participant's text as the primary form of analysis and reporting of their data'. Bazeley argues that qualitative data require and support much deeper analysis and in her work she suggests strategies that might assist researchers to enrich their analysis such as: improving interpretations and naming of categories, using comparison and pattern analysis to refine and relate categories or themes, using divergent views or negative cases to challenge generalisations, returning to substantive theoretical or methodological literature, creating displays using matrices, graphs, flow charts and models, and using writing itself to prompt deeper thinking. Throughout the data analysis stage, the researcher strove to incorporate the above strategies.

To overcome some of the criticisms of thematic analysis, the writings of Blaikie (2010) were found to be very useful. When describing qualitative data analysis methods, Blaikie referred to the work of Dey (1993) in relation to coding techniques. The coding techniques advocated here consisted of three central activities: *describing, classifying and connecting*. The first step involves providing 'thick' or 'thorough' descriptions of the phenomenon being studied. This type of description includes not only merely stating the facts, but also includes description of the context of the action, the intention of the social actors and the process through which social interaction takes place. The second step is classifying and refers to creating categories, assigning categories to the data, and splitting and linking categories. The final step in the process is making connections between categories to discover similarities, variations and exceptions in the data.

Braun and Clarke (2006) developed a step-by-step guide to thematic data analysis which involves six phases, being:

1. Familiarising yourself with your data;

2. Generating initial codes;
3. Searching for themes;
4. Reviewing themes;
5. Defining and naming themes;
6. Producing the report.

Once the data had been imported into NVivo, the step by step guide to thematic data, as advocated by Braun and Clarke (2006), was followed (see Table 6.3). In addition to adopting the data analysis process outlined by the latter, the process endorsed by Blaikie (2010) of 'describing, classifying and connecting' (as discussed earlier) was embraced. Combining these two approaches to qualitative data analysis provided a robust and rigorous process of data analysis. Overall, the data analysis method adopted was an iterative, time consuming process and involved immersion in the data. The focus was on allowing the story of the data in the "raw" state to emerge – the task of drawing theoretical inferences was for later. The use of NVivo assisted in providing an *audit trail* in the data analysis process. The above phases are described in detail in Table 6.3 and the process of data coding and analysis is depicted in Figures 6.2 and 6.3 which now follow.

Table 6.3 Overview of Data Analysis Process

Analytical Process (Braun & Clarke, 2006).	Braun and Clarke Practical Application in NVivo	Detailed Description of how the Data was Analysed in this Study
1. Familiarising yourself with the data	**Phase 1:** Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas. Import data into the NVivo data management tool.	**Phase 1:** The interview transcripts were read and re-read, noting down initial ideas. The interview transcripts were imported into the data management software.
2. Generating initial codes	**Phase 2:** Open Coding Coding interesting features of the data in a systematic fashion across the entire data set, collecting data relevant to each code.	**Phase 2:** This phase was participant-led, descriptive coding that involved the deconstruction of the data from its initial chronology. This inductive process resulted in 227 hierarchical codes being identified **(see Appendix I, Table 1)** across 11 areas **(see screenshot in Figure 1, Appendix J).**
3. Searching for themes	**Phase 3:** Categorisation of Codes – searching for themes Collating codes into potential themes, gathering all data relevant to each potential theme.	**Phase 3:** This phase was both participant and researcher-led and involved: reviewing the open coding, merging, re-naming, distilling and collapsing the initial codes into broader categories of codes. This allowed the data to be constructed into a structure that would enable the objectives to be fulfilled. This phase resulted in 11 empirical themes being generated under strategic decision-making and 10 empirical codes being generated under operational decision-making **(see Coding Tree 1 in Figure 6.2)**. At this stage, a number of codes (88 in total) were made redundant due to the iterative process of data analysis.
4. Reviewing themes	**Phase 4:** Coding on and Reviewing Themes Checking if the themes work in relation to the coded extracts (level 1) and the entire data set (level 2), generating a thematic 'map' of the analysis.	**Phase 4:** This phase involved 'drilling down', a process that included re-coding the text in the initial codes, now re-organised into a coding framework, and breaking them down into sub-codes so as to better understand the meanings embedded therein. **Figure 2, Appendix J** depicts a screenshot taken from the data analysis software to provide an insight into how the data was analysed.

Analytical Process (Braun & Clarke, 2006).	Braun and Clarke Practical Application in NVivo	Detailed Description of how the Data was Analysed in this Study
5. Defining and naming themes	**Phase 5:** Data Reduction – On-going analysis to refine the specifics of each theme, and the overall story [storylines] the analysis tells, generating clear definitions and names for each theme	**Phase 5:** Involves abstraction of the data into a broader thematic framework. It was an inductive process. Firstly, **Phase 5(a):** the data was coded to the four aspects of research objective number 1 (**RO1**) as demonstrated in **Coding Tree 1, Figure 6.2**. Subsequently, in **Phase 5(b)** the raw interview data was re-coded line-by-line, into the thematic framework commonly known as "sensemaking", as demonstrated in **Coding Tree 2** in **Figure 6.3 (Table 2, Appendix I, details the codes generated in this phase of analysis).**
6. Producing the report	**Phase 6:** Generating Analytical Memos **Phase 7:** Testing and Validating **Phase 8:** Synthesising Analytical Memos. The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.	**Phase 6:** This phase involved writing analytical memos to accurately summarise the content of each theme and to propose empirical findings. This is considered good practice and helps the researcher to produce a timely written interpretation of the findings, with the addition of his own annotations and recollections from the interviews. It also provided an important base document to help the researcher draft the findings chapter. **Phase 7:** The researcher could see that the sensemaking concepts seemed to be supported in the empirical findings; therefore, a cross-check was carried out using the NVivo enquiry tool, leading to a visual map of the strength of each concept of sensemaking (Coding Tree 2) vis-à-vis the data from each of the aspects of **RO1** (Coding Tree 1) – see Figure 8.1, Chapter 8. **Phase 8:** The analytical memos that were drafted in Phase 6 were reviewed and "hanging points" or unusual issues in the data were noted for follow-up, yielding a draft of Chapter 7 and partially of Chapter 8.

Figure 6.2 Coding Tree 1: Coding of the Raw Interview Data to arrive at Empirical Themes surrounding Research Objective 1 (RO1) - Phase 5 (a)

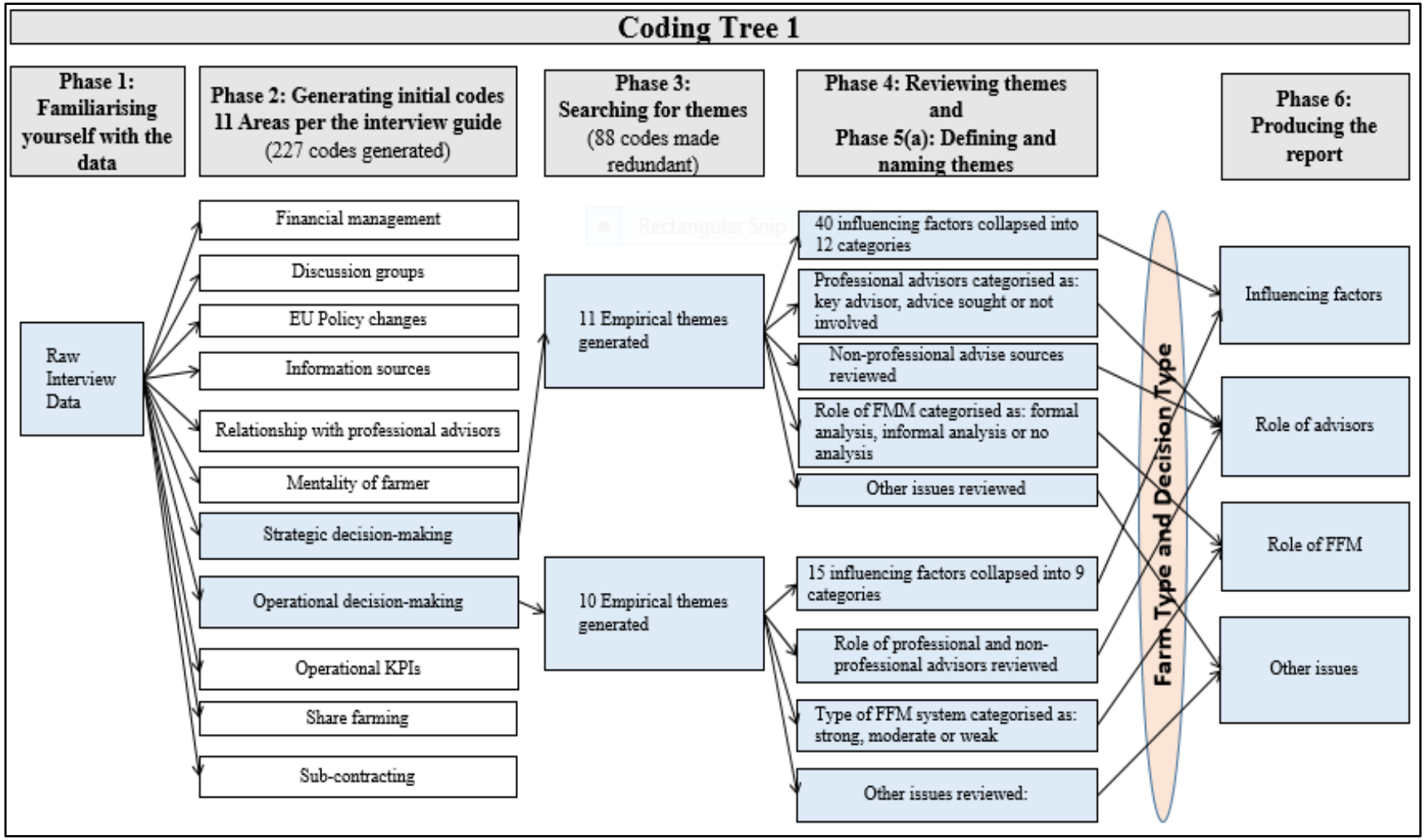
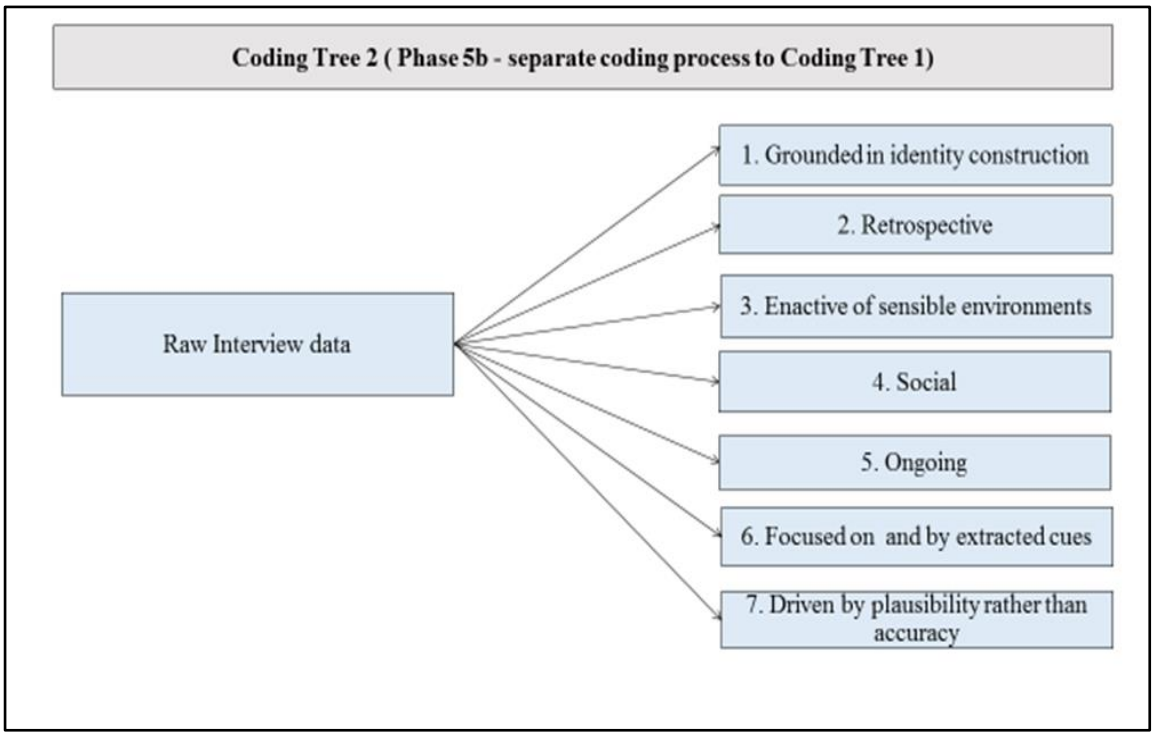


Figure 6.3 **Coding Tree 2: Coding of the Raw Interview Data against the Seven Properties of the Sensemaking Framework – Phase 5 (b) – to Review Support in the Data for Research Objective 2 (RO2)**



In Table 6.3, the step by step process of data analysis that was undertaken is outlined. This data analysis process resulted in two separate coding trees. Coding Tree 1, as depicted in Figure 6.2, illustrates how the raw interview data were coded to arrive at the empirically generated themes surrounding the four aspects of research objective 1 (**RO1**). While Coding Tree 2 in Figure 6.3 (which involved a separate coding process) illustrates how the raw interview data were coded against the seven properties of the sensemaking framework to review the support in the data for research objective 2 (**RO2**). These two coding trees are brought together and form part of the discussion on the findings in Chapter 8, Section 8.3.1.

Overall, the data analysis software was an excellent tool in organising and managing the data. The analytical memos that were written throughout the data analysis process were central to

forming Chapter 7 and allowed for the findings to be written up in a structured and timely manner.

6.7 The Role of Theory and the Research Approach

Theory may not be made explicit in the design of the research, but must be made explicit in the presentation of the findings and the conclusions (Saunders *et al*., 2009). The research approach (*inter alia*) involves the choice of whether theory is used in a deductive or in an inductive way. 'Deduction owes much to positivism and induction to interpretivism' (Saunders *et al*., 2009, p.124). Deduction is the dominant research approach in the natural sciences, involving testing of theory, collection of quantitative data and uses a 'highly structured methodology to facilitate replication' (Saunders *et al*., p.125). This study was interpretive and adopted sensemaking as a conceptual framework. This involved the research approach being inductive and occasionally an abductive (continual cycling between the theory and the data) approach. This involved a small sample of subjects (i.e., the interview of 27 farmers), the collection of qualitative data and a concern with the context of farms.

6.8 Chapter Summary

A qualitative research methodology was justified as best suited to answer the research question posed. In addition, the research methods of semi-structured interviews and the use of a focus group were delineated. This qualitative interpretive approach was essential to assist in gaining an understanding and to assist in providing explanation of the financial decision-making process of farmers. A detailed account of the data analysis process (assisted by the software) was given, which demonstrates that a robust and rigorous process of data analysis was conducted. Finally, it

is important to acknowledge that there are very few empirical studies in the sectoral field of agricultural accounting and, of these, very few use qualitative, interpretive methodologies (Jack, 2005).

Chapter 7 Empirical Findings

7.1 Introduction

A detailed insight into the empirical findings is provided in this chapter. As outlined in Chapter 6, prior to the collection of the primary empirical data (through semi-structured interviews with farmers), two pieces of preliminary research were conducted, a pilot survey of farmers and key informant (KI) interviews. Before discussing the empirical findings from the semi-structured interviews, Section 7.2 highlights some key findings from these two pieces of preliminary research. The remainder of this chapter focuses on presenting the empirical findings from the primary data collection methods of semi-structured interviews with farmers and a focus group with representatives from stakeholders in Irish agriculture.

In Section 7.3, a profile of the farmers interviewed and the data collected is highlighted. In Sections 7.4 to 7.7, the empirical findings are presented in accordance with the four aspects of research objective 1 (**RO1**), namely:

- The influencing factors on farmer decision-making;
- The role of advisors in farmer decision-making;
- The role of FFM in farmer decision-making;
- Other issues in farmer decision-making.

In Sections 7.4 to 7.7, the empirically generated themes surrounding strategic and operational decision-making that were revealed in the data analysis process are uncovered. For strategic decision-making only, it was noticed that the decision category (buildings investment, land purchase etc.) was an important issue that needed to be explored. Additionally, as the themes

were being explored it was noticed that, within both strategic and operational decision-making, patterns appeared in the data in relation to farm type (dairy, tillage and beef). Therefore, it was decided to explore the relationships within themes according to farm type, to see if this illuminated any interesting findings and it did.

The use of NVivo data analysis software provided the opportunity for an in-depth analysis of the themes emerging from the data to be conducted. Furthermore, it allowed relationships in the data, such as farm type and decision type, to be explored. In addition, the use of NVivo enabled many figures and tables to be produced (as presented throughout this chapter and in *Appendices L to O*). It is important to note that these figures and tables are not statistical representations, but are visual presentations that illuminate a high level overview of the issues that were discussed most often in the interview transcripts. As the data were gathered through interviews and so was non-numeric, figures and tables summarise some of the features of the interview data using 'number of farmers' or 'number of references' as the height of the bar charts. This means that the number of farmers that mention a particular theme (for example, see Figure 7.5) or the number of quotes in the data that support a particular property of sensemaking (for example, see Figure 7.7) can be arrayed by NVivo in a bar chart format. This is purely a means of providing support for the number of instances a particular theme was mentioned in the data. These figures and tables present a visual snap shot of the themes identified which acted as a starting point in analysing the themes present in the various aspects of the research objectives, but what is more important is the ensuing narratives in each section that highlight the interpretative analysis of each theme. As outlined in Section 6.6, it is important to reiterate that data analysis is very much the responsibility of the researcher (NVivo is merely a tool designed to assist in the data analysis process). Therefore, the generation of all themes was researcher-led and emanated from the transcripts. These themes were subsequently interpreted.

The analysis of the findings in relation to the aspects of **RO1** (as outlined above) was pivotal to fulfilling **RO2 –** *To establish how farmers make sense of their business situations in order to progress with decisions of a financial nature*. Therefore, once the key findings were presented, the sensemaking framework (which is being adopted as a theoretical lens to assist in providing explanation and understanding of farmer decision-making), was introduced by reviewing its properties (as discussed in Chapter 5) against the empirical findings from the three primary aspects of **RO1** (as completed in Sections 7.4.3, 7.5.4 and 7.6.3 respectively). It was felt important to do this, in order to gain an insight into what properties were supported, thereby assisting in developing explanation of what the findings surrounding each aspect revealed about farmer decision-making. The findings from this element of the data analysis process are brought together and delineated in Chapter 8, Section 8.3.1, as the story unfolds of how the farmers in this study made financial decisions. Before proceeding, the reader is invited to refer back to Table 6.3 and Figure 6.2 which explains the detailed process of data analysis. The ensuing narrative account, in Sections 7.4 to 7.7, represents the interpretive work undertaken.

Finally, as noted in the Chapter 6, there were a number of components to the empirical work undertaken in this study. Initially, there were two pieces of preliminary research undertaken, a pilot survey of farmers and KI interviews. The key findings from these two pieces of preliminary research are highlighted in Section 7.2. Next, the primary empirical data were collected through semi-structured interviews. The findings from these interviews are of primary focus and form the main body of work detailed in this chapter in Sections 7.4 to 7.7. The final piece of empirical work undertaken was a focus group. One of the key reasons for undertaking the focus group was to probe the findings from the interviews in more detail. Therefore, the key findings from this piece of research are woven into Sections 7.4 to 7.7 and located with the associated discussion on the issues that were probed.

7.2 Findings from Preliminary Research Undertaken

Key findings from the two pieces of preliminary research undertaken in this study are now presented. The findings from the pilot survey are detailed in Section 7.2.1 and the insights from the key informant interviews are set out in Section 7.2.2.

7.2.1 Results from Pilot Survey of Farmers

At the outset of this study, following a preliminary review of the literature, a pilot survey of farmers was conducted to obtain an insight into the actual financial management practices of farmers. This pilot survey, conducted at the National Ploughing Championships, helped to clarify the research objectives and to test the receptivity of farmers to the topic. This piece of preliminary research also resulted in a changed focus for the research into explaining how farmers make sense of financial decision-making, of which FFM may be only a part.

The results of the pilot survey indicated that the level of adoption of financial management practices by the farmers surveyed, for day-to-day running of the farm, was quite low. The results of the pilot survey, as presented in Table 7.1, demonstrate that only a minority of those surveyed maintained financial records for day-to-day farm management purposes – of 20 farmers surveyed, 11 maintained financial records to varying degrees.

Table 7.1 Overview of Results from Pilot Survey

Number of Farmers	Description
11	Maintained financial records
9	Did not maintain any financial records
20	Total population of farmers surveyed

Of the 20 farmers surveyed, nine stated that they did not maintain any financial records and relied on their accountant to do all of the book-keeping. In addition, it was found that of the 11 who did maintain financial records, only four of the 11 stated that they would produce budgets or cash-flows to assist in managing their finances and only one farmer mentioned fixed and variable cost analysis. Therefore, only 25% of the farmers surveyed conducted financial management for the day-to-day management of the farm.

In addition, many of the barriers to the adoption of FFM techniques that were noted in the literature review, Section 3.5, were evident in the pilot survey. For example, many of the farmers surveyed noted that they were too busy running the operational side of the farm; as a result they did not have time to spend on FFM. Other farmers noted that they dislike paperwork and also they felt that there was not much support available to farmers to assist them in improving their FFM practices.

Furthermore, the concept of intuition appeared to be a prominent part of the results of the pilot survey. When farmers were asked for reasons as to why they did not engage in FFM activities, phrases such as ‘it’s all in my head’ and ‘no formal methods are needed’ were often provided. In the literature, Section 4.8.1, it was noted that formalised procedures hinder intuitive decision-making. This concept of intuition may help explain why some farmers do not appear to engage in FFM activities.

Initially, the overall research objective of this current study was to explore FFM practices. However, the results of the pilot survey caused the researcher to pursue a new research objective which was to explore how farmers make financial decisions. The impact of this on the research design was that the focus changed to exploring the financial decision-making process of farmers in both strategic and operational decisions. Essentially, due to the apparent low level of formal

record keeping for day-to-day management purposes, from the pilot survey, the researcher pondered how financial decisions were undertaken and, therefore, pursued this research question.

7.2.2 Findings from Key Informant Interviews

The key informant (KI) interviews were undertaken due to the sparse nature of the literature in this area, particularly in an Irish context, and to help prime the direction of the research. These KI interviews were conducted with members of key stakeholder groups in the Irish agricultural industry, namely: Teagasc, the Agricultural Consultants Association (ACA) and IFAC Accountants. These interviews assisted in building up a more comprehensive knowledge of the financial management aspects of the Irish agricultural landscape, before proceeding to collect the primary empirical data. A number of key issues were highlighted in these KI interviews and are now discussed.

<u>Insight into the various Farm Types in Ireland</u>

Firstly, it was noted that some consistent viewpoints were portrayed in respect of the respective farm types during the conversations with KIs. Beef farming was regarded as being under severe pressure for the past number of years and is considered to be an economically vulnerable type of farming. For example, **KI/5** noted how some of his farm clients acknowledge that their beef enterprises are not profitable and try to justify that by saying "there is more to farming than making a profit".

On the other hand, dairy farming is considered to be a profitable and sustainable farming type. This positive sentiment towards dairy was captured when **KI/4**, from the banking sector, noted:

> *"There is a lot of energy on that side … there's great optimism, and that's where most of the lending is going, in the dairy side of the house."*

Furthermore, when judging the performance of a dairy farm, the general rule of thumb was highlighted as being to calculate how much profit is being made per cow or per litre of milk produced, whereas, when judging the financial performance of the other two farm types (beef and tillage), a rule of thumb would be to check that all subsidies remain as profit, leaving all other income to cover costs (i.e., the farm breaks even, excluding subsidies) (**KI/4**) and (**KI/5**).

In addition, **KI/5** noted that approximately 75% to 80% of his beef clients had off-farm income when he stated:

> *"I think, of my clients that come in, nearly 75% or 80% of the households have another source of income, maybe not necessarily the farmer himself, but there is only a handful where the household, where the husband or wife don't have an off-farm income."*

This high percentage is reflective of the lack of profitability in this sector and the need for off-farm income to support the farm household. In relation to tillage farming, there did not appear to be an overall consensus on whether it is a viable/unviable or sustainable/unsustainable farm type. By default, it appears to lie somewhere between dairy and beef in terms of these criteria. While these are general viewpoints held within the industry, it must be noted that each farm needs to be viewed on a case by case basis and the above statements do not hold true for every single farm within each of the respective farm types. Most importantly, these viewpoints are corroborated by the statistics, as outlined in Chapter 2, Table 2.1, and are reflective of the average reality of each farm type.

Level of FFM by Irish Farmers

Secondly, the KI interviews highlighted that, based on their experience gained from interacting with farmers on a day-to-day basis, the level of adoption of financial management practices for day-to-day running of the farm is quite low. **KI/1** estimated that only 5% of all farmers record financial data for management purposes, i.e., many farmers do not maintain any additional

financial records other than those necessary for the preparation of statutory accounts and tax compliance. It is worth noting that the result of 25% as found in the pilot survey earlier, is much higher than the 5% referred to above by **KI/1**. However, the majority of farmers do not appear to use financial management for the daily running of their farm.

Furthermore, according to **KI/2**, many farmers not only use the bank statements to assess their cash-flow requirements, but use them as their sole financial management tool. If they have surplus money in their account, then this could signal performance is good, but when funds are low, action needs to be taken to remedy the situation. They also may compare the amount of funds in the bank at key times during the year (before key events such as the harvest season, the milking season or the calving season) from one year to the next. It was noted that the monitoring of the farm bank account balance is important, but using it in isolation is not recommended.

Finally, the KI interviews reinforced many of the barriers to FFM that were noted in the literature review and in the pilot survey of farmers – these barriers help explain why detailed FFM practices do not appear to be conducted by many Irish farmers. Despite the barriers that exist to FFM, many of the KIs acknowledged that the younger generation of farmer is showing signs of engaging more with FFM. For example, **KI/3** stated:

> *"Now there are guys, the sharper young guys nowadays are doing budgets and cash-flow monitoring and all of that."*

This aspect prompted a review of age in the empirical findings.

Interaction of Irish Farmers with Advisors

Thirdly, the KI interviews highlighted that only a small minority of Irish farmers appear to engage the advice of professional advisors for valued-added services. However, as alluded to above, this culture does appear to be changing. **KI/2** described this change as the arrival of the

"new generation farmer", as younger farmers do appear to be more open to embracing the services available from their professional advisor.

In the literature review, the uniqueness of small business was highlighted and how advisors need to tailor their service to each client. This viewpoint was corroborated by **KI/3** when he outlined that professional advisors need to have an in-depth knowledge of their clients in order to tailor their communication and advice to their individual needs, noting that "no two farms are the same" or "each farmer's business is unique".

Furthermore, the literature review provided an overview of the various advice sources in farmer decision-making. In addition, a review of the factors that affect the level of interaction between farmers and their advisors was presented. In the KI interviews, an interesting question was posed: should farmers maintain their own financial records or employ the services of an external service provider (book-keeper/advisor/accountant)? **KI/3** was of the opinion that "farmers are farmers at the end of the day" and they should concentrate on farming to the best of their ability; book-keeping and financial management are sometimes complex and a farmer cannot be expected to be good at everything. **KI/3** believed that a farmer should not be always expected to maintain his own financial records, but acknowledged that it is very important that farm financial records are maintained, as they have a vital role to play in decision-making. **KI/3** went on to outline some of the issues where farmers may have to make decisions:

- Financial management – dealing with financial advisors and bank managers;
- Tax planning – from income tax to succession planning;
- Technical agricultural issues – including crop and livestock management;
- Legal matters – inheritance;
- Dealing with suppliers and customers – managing contracts and human relations;
- Regulation – complying with various industry specific regulations.

The above list is by no means an exhaustive list, but helps to put in perspective the challenging role a farmer may have in terms of decision-making and the need for external advice sources to assist the farmer.

Finally, much of the literature on FFM emphasises the importance of farm financial records, focuses on exploring why farmers do not maintain financial records and advocates that financial records should be maintained by the farmer. Furthermore, government funded-bodies, such as Teagasc, invest huge resources developing technologies to assist farmers in maintaining their own financial records and strive to increase the uptake of its farm business management products (examples include the Teagasc *eProfit Monitor* and *Cost Control Planner*, as discussed in Section 2.5.1). The aforementioned promotion of FFM tools under the BETTER farm management programme by Teagasc and the literature advocacy of FFM (Section 3.3), as well as the acknowledgement of what actually happens in practice (lack of time spent on FFM by farmers) and the barriers to adoption of FFM techniques (Section 3.5), together with the view held by **KI/3** above, all pose some interesting issues to be borne in mind when analysing the main empirical data in the farmer interviews.

Operational Metrics

The importance of operational metrics in farmer decision-making was not discovered in the literature to any meaningful extent. However, in the KI interviews they received some emphasis. For example, **KI/5** placed considerable emphasis on how a farmer may judge performance, based on operational performance, when he noted:

> *"You're basically looking at* [KPI's] *and there aren't enough of them, we are getting slightly more of them now in the sense that, maybe through the ICBF* [Irish Cattle Breeding Federation] *Report, you are getting the fertility reports on the herd, which is a big thing. The other thing recently we got, and I'm drawing on some slaughter data for some of my clients where the slaughter performance of the stock was tied back to the ICBF Genetic Star Rating."*

As outlined in Section 4.5.6, operational performance in this context is being referred to as the efficiency of the farmer in managing the resources of the farm to produce increased output. Where a farmer demonstrates the use of operational metrics as indicators to measure his overall performance, the empirical work enquires into the key performance indicators (KPIs) or rules of thumb that the farmer uses to manage the farm enterprise, in the absence of financial records.

Farmer Mentality

There was a considerable amount of literature detailed in Chapter 3 surrounding the issue of farmer mentality. The KI interviews corroborated the literature in this area. For example, **KI/2** noted that farmers often have a philosophical view of farming, when he stated:

> *"Some farmers have the attitude that we're on the earth for whatever length of time we're on it, and we're caretakers, but we'd like to pass it on to the next generation a bit better than we have received it."*

Essentially, if they can pass it on to the next generation in a better state, then they have done their duty. A farmer might have inherited 50 acres, if s/he can add to that and pass on 80 acres to the next generation, then something has been achieved. Moreover, farmers tend to be very protective of land that has passed down from one generation to the next; **KI/2** noted that you may often see a farmer buying a piece of land and selling it on again – but farmers are less willing to sell land they inherited. In essence, there appears to be a psychological attachment to land. Lastly, from discussing this research topic with KIs, there appeared to be a common theme weaving through the conversations – phrases such as farming being described as "a way of life" (**KI/2**) as opposed to a job, is a key example. This suggests that the farmer's mentality is an important factor in decision-making.

Linked to the area of farmer mentality is the concept of intuition. In the literature review, the role of intuition in farmer decision-making was highlighted as being important. The concept of intuition was also a prominent part of the discussions with KIs. Phrases such as "it's all in my head" and "no formal methods are needed" were used to explain why farmers may not engage in FFM activities. Essentially the KIs acknowledged that farmers appear to rely on their intuition in their decision-making.

Summary

Overall, the KI interviews were an excellent method of achieving a more comprehensive knowledge of the financial management aspects of the Irish agricultural landscape, before proceeding to collect the primary empirical data. Much of the literature in this area is not Irish-based, therefore it was important to get a specific insight into the Irish context, before proceeding to conduct the farmer interviews. The next section profiles the farmers interviewed and the data collected during the interview process.

7.3 Profile of Interviewees and Data Collected

A profile of the farmers interviewed and an overview of the data collected in the interview process is now provided. In the data collection process, 27 farmers were interviewed in relation to their decision-making process. As outlined in the previous chapter, the sample of 27 farmers was equally represented by farmers from three farm types: dairy, tillage and beef. This attribute of farm type is the over-arching criterion of analysis being used to document the story of farmer decision-making. All farmers interviewed had made significant investment decisions (in excess of €250,000) on their farm in recent years (while all farmers make operational decisions, by contrast, not all farmers make strategic decisions). Therefore, the decision-making process of

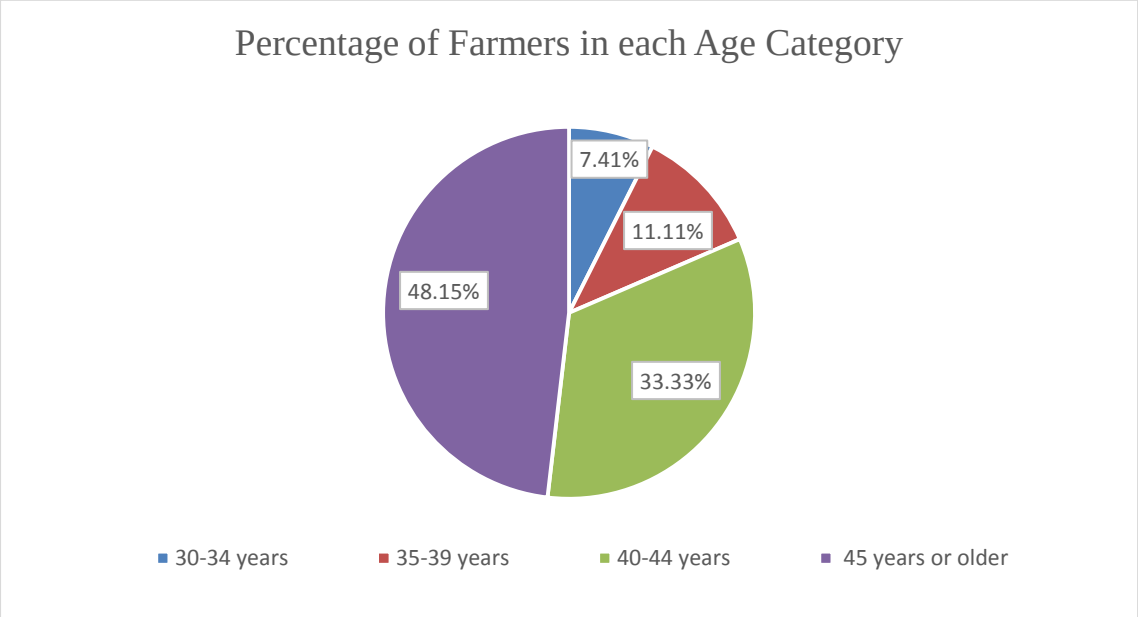
these sample farmers may not be reflective of the decision-making process of all farmers in Ireland. This limitation has been acknowledged in Section 9.4.

7.3.1 Profile of Interviewees

An overview of three demographic features is provided to put the profile of the farmers interviewed in context. These demographics are: age, level of education and the size of the farm under management.

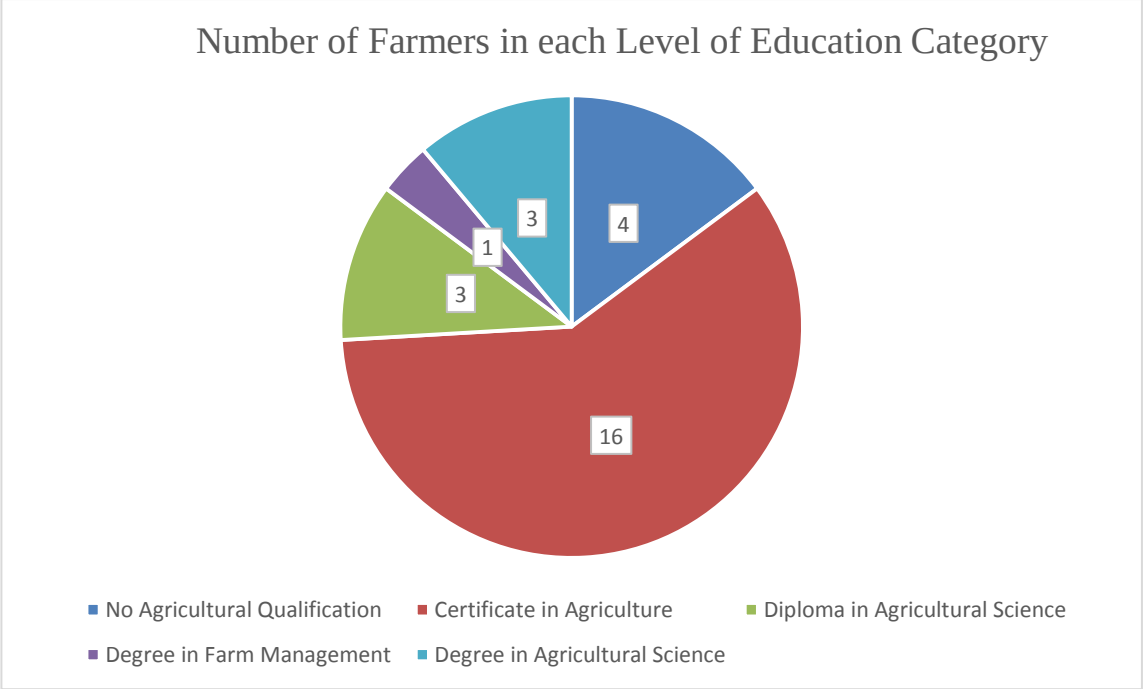
The age profiles of the farmers interviewed were represented in four age categories: 30-34 years, 35-39 years, 40-44 years and 45 years or older. The percentage of farmers in each category is shown in Figure 7.1. This shows that the majority of farmers interviewed were in the oldest age bracket. The percentage of farmers in each category reflect the age profile of farmers in Ireland, according to the 2014 NFS (Hennessy and Moran, 2015), as outlined in Chapter 2.

Figure 7.1 Age Profile of Farmers Interviewed



Next, the level of education of the farmers interviewed was reviewed and is presented in Figure 7.2. The majority of farmers interviewed hold a certificate in agriculture (commonly referred to as a *green certificate*). The primary reason for this is that, to qualify for grants and subsidies, farmers are required to hold this minimum qualification – this criterion was introduced in the reform of CAP in 1992. Four of the farmers interviewed had no agricultural qualification – these were older farmers who would not have been required to attain an agricultural qualification, as they took ownership of their farm prior to 1992. A minority of the farmers interviewed completed further education (Diploma in Agricultural Science, Degree in Farm Management or Agricultural Science) beyond the minimum certificate required.

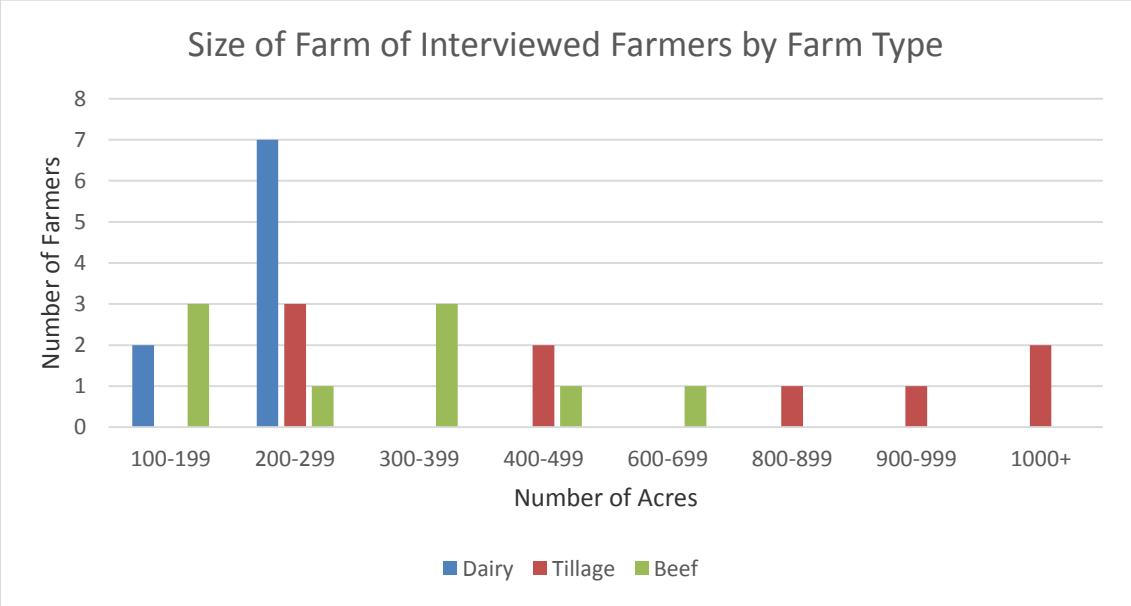
Figure 7.2 Level of Education of Farmers Interviewed



The third demographic reviewed was the size of the farm under management. This demographic, categorised by farm type, is depicted in Figure 7.3 (farms under management were categorised by size in 100 acre intervals). Figure 7.3 illustrates that the tillage and beef farmers interviewed

were most prevalent in the larger farm size categories, while all of the dairy farmers interviewed manage farms in the two smallest farm size categories. The tillage farmers appear in the larger size categories, as scale is important to generate efficiency and utilisation of machinery. It is interesting to observe that the dairy farmers are the farm type with the smallest acreage under management, but they are considered the most profitable of the three enterprise types within this study. The beef farmers lie between the tillage and dairy farmers in terms of farm size.

Figure 7.3 Size of Farm of Interviewed Farmers by Farm Type



It is important to note that the size of farms operating in the Irish agricultural industry is quite broad, with some very small holdings and an average farm size of approximately 80 acres (as outlined in Chapter 2). While acknowledging that the size of farms featuring in this study could be considered quite large (given the average size of a farm in Ireland is 80 acres as outlined above), this study did not set out to explore the decision-making process of a specific size of farm. As a consequence of reviewing farms that made large strategic investment decisions (in excess of €250,000), the farmers categorised above were those that resulted in selection. This is

not surprising, as smaller farms would not tend to undertake large investment decisions. It is important to bear this feature of the sample in mind when contemplating the findings of this study – this issue has been highlighted as a limitation of the study in Section 9.4.

Finally, in terms of the profile of farmers, it is important to acknowledge that these findings and observations are purely to put into context the farmers that were interviewed. These results are not intended to be statistically representative of the total population of farmers in Ireland and merely represent the characteristics of the farmers interviewed. Furthermore, it is important to note that it was not the objective to review the impact of these demographic variables on each theme identified; however, where such factors have been evident as having an impact, this is acknowledged in Section 7.7.1.

To summarise, the sample of 27 farmers consisted of nine from each of the farm types of dairy, tillage and beef. Reflecting the age profile of the population, most (13 of 27) were in the age category of 45 years or older. The majority had a green certificate to qualify for grants and subsidies. Finally, the farm size most commonly represented within the sample was 200-299 acres.

7.3.2 Profile of Data Collected

Each farmer was interviewed about strategic and operational decisions made on the farm in recent years. There were multiple categories of strategic (farm expansion) decisions uncovered and investigated, while a similar operational decision was discussed with all interviewees.

To fulfil the research objectives, one of the primary criteria for the selection of farmers for interview was that, each must have made a significant (in excess of €250,000) farm expansion (strategic) decision in recent years. Each farmer interviewed carried out multiple strategic investment decisions which gave a combined investment of at least €250,000 in the business. A profiling of the value of strategic decisions explored reveals that buildings investment decisions ranged from €50,000 to €500,000, while land purchase decisions ranged from €50,000 to a high of €4.3 million.

There were six categories of strategic decisions identified, namely:

1. Buildings Investment
2. Land Purchase
3. Machinery Investment
4. Land Lease
5. Livestock Investment
6. Off-farm Investments.

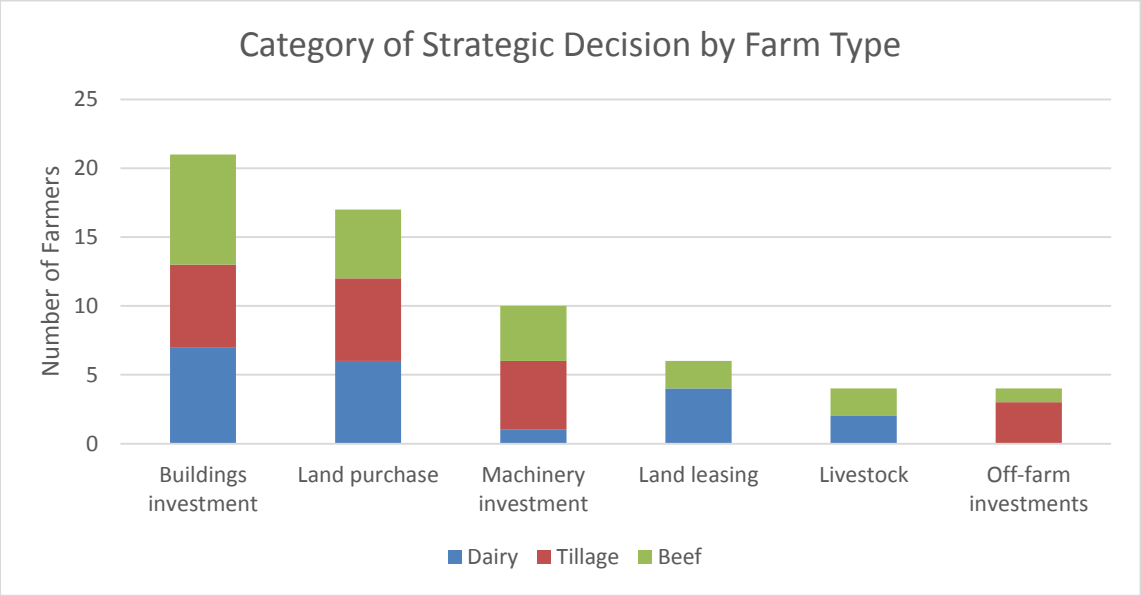
In the 27 farmer interviews conducted, 62 strategic decisions were identified, as each farmer made multiple investment decisions. The number of decisions in each of the six categories is presented in Table 7.2. Buildings investment decisions were the most prominent, followed closely by land purchase. Machinery investment decisions were undertaken by the farmers interviewed on a significant number of occasions, but land leasing, livestock investment and off-farm investment decisions were made on fewer occasions.

Table 7.2 Overview of Decisions Explored in each Category of Strategic Decision

Category of Decision	Number of Decisions
Buildings investment	21
Land purchase	17
Machinery investment	10
Land leasing	6
Livestock	4
Off-farm investments	4
Total	62

To provide an insight into the strategic decisions reviewed, Figure 7.4 presents a breakdown by farm type. This revealed that, in both buildings investment and land purchase decisions, similar numbers were involved in these decisions from each of the farm types. In the machinery investment category, the majority of farmers were tillage, followed by beef and a very small representation from dairy. This is because the majority of dairy farmers noted that they tend to invest very little in machinery and focus purely on milk production. In tillage farming however, crop production is machinery intensive, resulting in the farmers investing in farm machinery regularly. Beef farmers were in-between; some farmers invested extensively in machinery, while others invested very little.

Figure 7.4 Category of Strategic Decision by Farm Type



Land leasing was the next most prevalent strategic decision noted in this study. The majority of farmers in this category were dairy, with a minority from beef. It is important to note that, although no tillage farmers appeared under land leasing, this does not mean that the tillage farmers interviewed do not lease land – in fact, the opposite (most of them do) as land leasing is a common practice in tillage farming and is not considered a strategic investment decision. Similarly, with livestock investment, tillage farmers were not present, as they focus on crop production. A small number of farmers made strategic investments in livestock in recent years and this category was equally represented by dairy and beef farmers. Finally, off-farm investment was present on a small number of occasions – these investments were undertaken by the tillage and beef farmers. Dairy farming is the most profitable of each of the three farm types and, therefore, this may explain why the dairy farmers have not pursued off-farm investments.

The operational decision of the purchase of feed and fertiliser or the purchase of seed and sprays (depending of farm type) was reviewed as this is one of the most significant monetary

operational decision undertaken by most farmers annually. The value of the operational decisions reviewed varied considerably in monetary value from €20,000 to €280,000. Tillage farmers were the farmers who spent the greatest amount on these operational decisions; beef farmers were the farmers who were most prevalent in the lower value categories and the dairy farmers were most prevalent in the mid-range value categories.

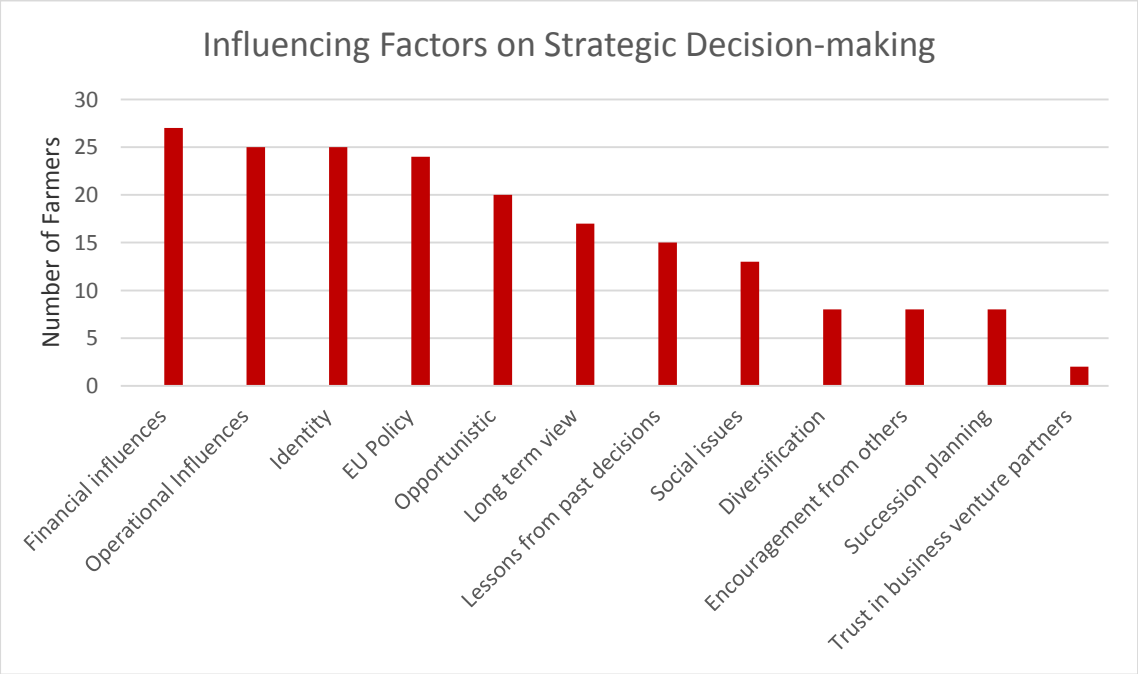
7.4 Analysis of the Influencing Factors on Farmer Decision-making

A myriad of influencing factors on farmer decision-making were identified in this study, as every farmer has his/her own individual reasons for proceeding with decisions. However, patterns do exist, as similar influencing factors were identified by farmers when discussing their decision-making process. Influencing factors are now presented under the headings of strategic and operational decision-making, in Sections 7.4.1 and 7.4.2, respectively.

7.4.1 Influencing Factors on Strategic Decision-making

Initially, approximately 40 influencing factors on strategic decision-making were identified from the transcripts stored on NVivo. Subsequently, these initial influencing factors were analysed and placed into categories by grouping similar influencing factors together into a broader classification. This resulted in 12 categories (themes) of influencing factors that are presented in Figure 7.5 (*Appendix K details the influencing factors that were grouped together to form each category*).

Figure 7.5 Influencing Factors on Strategic Decision-making



The above Figure 7.5 visually presents support for the number of instances that each influencing factor category, identified and labelled by the researcher, was evident in the transcripts. Where these labels connect with a similar concept in the literature, it is indicated in the footnotes that follow. This visual representation merely provides a high level overview of the themes that were present in the data; however, it is the interpretative analysis of these themes that is of most importance. Therefore, subsequent to the identification of the various influencing factor categories on strategic decision-making, as outlined in Figure 7.5 above, the interpretative analysis of those themes began. To give an insight into how these categories were considered an influence on the strategic decisions explored, a deeper analysis of these influencing factor categories was performed and is now discussed.

Financial Influences[8]

Firstly, it is important to point out that, while financial influences were cited most often as an influence on strategic decision-making by the farmers interviewed, a review of interview transcripts revealed that this does not mean that detailed FFM analysis was conducted in those decision-making processes. It may simply mean that the farmer considered a financial aspect when making a decision. The role of FFM in strategic decision-making is analysed separately in Section 7.6.

There was a range of dimensions to the 'financial influences' theme. Some farmers acknowledged that they undertook strategic decisions simply because they 'had money to invest' or similarly, that they had 'no borrowing requirement'. This influence was illustrated when Farmer 23 (tillage), mentioned that he had built new sheds because he received money from a compulsory purchase order (CPO) for some of his land:

"We were CPO'ed for a bypass here and I wanted to reinvest the money."

Another farmer, Farmer 4 (dairy), noted he had some savings that helped him to contribute significantly to the purchase of land. When asked if he had to borrow to finance the acquisition, he noted:

"*No, I had some saved in savings."*

Where farmers noted that they 'had money to invest', in many instances, it was as a result of selling other pieces of land and re-investing the proceeds.

In addition, many farmers referred to how they were influenced by the fact that they knew they had the 'debt repayment capacity' (i.e. an awareness of the need and, therefore, ability to repay

[8] This is a label generated by the researcher that includes eight influences (see Appendix K) which were grouped together to describe the financial reasons, that farmers cited in the interview transcripts, for undertaking strategic decisions.

any loans necessary to finance strategic decisions). This influence was best illustrated by Farmer 7 (beef), when he simply stated:

> *"Obviously repayments is number one, the main thing is you can pay for it."*

The above quote was in the context of financing buildings investment. Similarly, in the case of land purchase, Farmer 11 (dairy) noted that he was influenced by the fact that he believed he was in a position to repay a loan and, therefore, had the debt repayment capacity:

> *"I had to be in a position that it wasn't going to be a millstone around my neck for the next 6 or 7 years."*

Other farmers acknowledged that a financial influence on strategic investment decisions was 'to increase farm income' or conversely 'cost reduction'. Firstly, 'to increase farm income', an example of this influence was Farmer 9 (tillage), when he discussed how he converted his farm buildings from a cattle rearing facility into grain storage that he could rent to a grain merchant:

> *"What influenced me to do that was that I had found, from the return I got from the cattle, by investing €100,000* [in them] *… I had maybe €5,000 to €15,000 for myself* [profit]. *Whereas, now it has developed into this* [grain storage], *it* [profit] *would be €30,000 or €40,000 from rental."*

After the interview with Farmer 9 (tillage), the researcher was taken on a farm tour and the buildings that were converted from cattle rearing facilities to grain storage were seen. This assisted the researcher to triangulate and verify what the farmer had recounted in the interview process. Another farmer, Farmer 5 (dairy), outlined that his decision to lease more land was influenced by the necessity to increase his income:

> *"Because we were at a point in 2008 or 2009 that there wasn't a full-time income for me from the farm, and it was either I go off-farm to get a job, or I would expand."*

Secondly, regarding 'cost reduction', an example of this influence was when Farmer 7 (beef) cited cost as an influence in relation to why he invested in farm buildings:

> *"It was more of a cost thing really.*"

'Tax planning' appeared to be another strong financial influence on the strategic decisions undertaken by the farmers in this study. For example, in relation to buildings investment, Farmer 8 (beef) noted:

> *"The last shed I built they allowed you to write off, I think was it maybe 40% of it or something in the first year, they gave a special* [tax] *exemption because you were building for* [anti] *pollution reasons. So the last shed I built, a high aspect of that was for tax reasons"*

Moreover, 'tax planning' was evident as an influence in machinery investment decisions, as illustrated by Farmer 17 (tillage):

> *"I would have a lot of machinery purchases for different reasons as in tax reasons instead of going for profitability."*

The above quote encapsulates a sentiment that was shared by a number of farmers in this study. They appeared to view spending money (conducting strategic investments) as helping them to avoid paying large tax bills and, even in some cases, farmers believed that, by buying some items (for example, machinery), the taxman was paying for half of it.

Finally, in terms of financial influences on strategic decision-making, off-farm income appeared to be an important issue. A number of farmers mentioned that, by him or his wife having off-farm income, this allowed them to afford investment in strategic decisions. For example, in terms of buildings investment, Farmer 8 (beef) stated:

> *"My wife is working of course which is the icing on the cake for us, so I have money to reinvest back into the farm because of the fact that my wife keeps the house going and does all of that type of thing."*

While Farmer 7 (beef), noted:

> *"I'm working full-time* [off-farm] *and if I was at home full-time, it could be a totally different ballgame. I wouldn't be able to afford to have made some of those investments if I wasn't working off the farm, because you would have to look at things in an awful lot more detail if I was here full-time."*

In terms of livestock investment, the presence of off-farm income was also deemed quite important. Farmer 5 (dairy), referred to how off-farm income facilitated investment in livestock, when he commented:

> *"Our families weren't solely dependent on making a living out of the farm. If they were, you couldn't do that out of cash-flow."*

This reliance on off-farm income, as evident in the interview transcripts, demonstrates its importance in assisting farmers in this study to fund strategic investments.

In summary, the above overview of financial influences on strategic decision-making by farmers in this study illustrates that financial issues appeared to be an important consideration and this is evaluated further in the discussion chapter.

Operational Influences[9]

Farmers interviewed noted that operational and day-to-day farm management reasons were also a strong influence on strategic investment decisions. The fact that farmers faced 'capacity constraint' issues was frequently mentioned. This was best explained by Farmer 5 (dairy), when he noted the following in relation to an investment in farm buildings:

> *"We were in a crux and we needed a house … we were under serious pressure for the previous two winters, for housing."*

And also, Farmer 12 (dairy), when he noted this reason for purchasing land:

> *"Land is our limiting factor and if we could buy another piece nearby of decent quality, we'd be buying it again tomorrow morning."*

The operational rationale to 'improve day-to-day management' appeared to be particularly strong for buildings investment decisions. This was illustrated by Farmer 13 (beef), when he noted the following in respect to buildings investment:

[9] This is a label generated by the researcher that includes nine influences (see Appendix K) which were grouped together to describe operational and day-to-day farm management reasons, that farmers cited in the interview transcripts, for undertaking strategic decisions.

> *"I would be hoping that I would set it up as an easier way of feeding and the cattle would be happier, and there would be more room to feed them."*

Farmer 15 (beef) also noted the following in relation to buildings investment:

> *"If I was being totally realistic, it was for myself. With autumn calving you would be feeding some out here and some up there and you would be the whole day going around and then there were issues like the environment – you can't winter stock out in the fields now the way they used to years ago and it was drudgery … so we said that we would put together a plan and try and build winter accommodation for cows."*

After the interview with Farmer 15 (beef), the researcher was taken on a farm tour and the buildings that were erected 'to improve day-to-day management' were evident. This assisted the researcher to triangulate and verify the farmer's recall that was expressed during the interview.

A number of farmers also outlined how investments would aid them operationally, as it would provide 'flexibility to adapt'. This influence was mostly associated with land purchase decisions. For example, by buying more land, a farmer may have more options in terms of the quantity and variety of feed that he could produce. This influence was encapsulated by Farmer 8 (beef) when he noted the following:

> *"It* [land purchase] *gave me much more flexibility on the farm … I wasn't as pressurised for winter feed and this type of thing."*

Also, Farmer 1 (dairy) noted that the purchase of land gave him more options in terms of herd expansion when he stated:

> *"That is a possibility down the road* [increased herd size]. *It's* [land purchase] *giving us more options."*

Furthermore, an operational reason mentioned by some farmers was 'to replace rented facilities'. This reason was evident in both land purchase and buildings investment decisions. For example, Farmer 18 (tillage) highlighted how he was renting a shed which involved him travelling from his farm to it and hence wasting valuable time. Therefore, this influenced him to build a shed:

> *"Sure, you would be renting the shed and you would be on the road and you would be losing time."*

Farmer 2 (tillage) bought land to replace renting land, reporting:

> *"I am renting a lot of land, and my theory is … we probably can cut out the rental land, because the rental land is killing my business."*

Similarly, the issue of gaining 'extra facilities' was specifically noted in the strategic decision category of land purchase. For example, Farmer 4 (dairy), among others, noted extra facilities made a particular piece of land more attractive to purchase:

> *"There are sheds on it, slatted sheds for cattle and straw-bedded sheds, and there is an old house on it as well."*

Moreover, the fact that a piece of land was of 'good quality' was also specifically mentioned in the case of land purchase by some farmers.

Finally, a number of operational influences were highlighted specifically in respect to the strategic decision category of machinery investment. A number of farmers mentioned that they simply invested in new machinery because they needed to 'upgrade machinery'. In addition, some farmers were involved in conducting sub-contracting work for other farmers and, therefore, needed to invest in machinery to do this. Last of all, a number of farmers cited 'lack of available workforce' as an influence on machinery investment. They were finding it difficult to employ farm labourers and, as a result, invested in machinery to automate processes.

Overall, operational reasons appeared to have quite a strong influence on the farmers in this study in their strategic decision-making, particularly in respect to the strategic decision categories of buildings investment and machinery investment.

Identity Influences[10]

Farmer identity-related influences appeared to be quite a strong influence in the decisions undertaken by the farmers in this study. For instance, many of the farmers cited 'emotive reasons' for proceeding with investment decisions. 'Emotive reasons' is a label which refers to how farmers made decisions based on their love of farming. For example, one particular farmer noted how his love for cattle influenced him to invest in farm buildings:

> *"I love cattle and having cattle as well … I had developed a suckler herd which there was a huge tug on me to. I could have gotten rid of them financially no problem. If I would have gotten a good price for them, I would have, I didn't need to keep them, I just didn't want to, I worked too hard to build the herd."* (Farmer 24, beef)

Similarly, another farmer described how job satisfaction influenced him to build a new milking parlour to develop his dairy herd:

> *"The job satisfaction is fantastic, there is no two ways about it, it's brilliant"* (Farmer 27, dairy)

After the interview with Farmer 27 (dairy) the researcher was taken on a farm tour and the milking parlour that was referred to above was seen. This farm walk helped the researcher to triangulate and verify the farmer's recall that was expressed during the interview. It was clearly evident that the farmer was very happy with his recent decision, as the enthusiasm expressed by the farmer during the farm tour conveyed the job satisfaction sentiment that the farmer alluded to in the interview conducted.

In particular, 'emotive reasons' appeared to be a very strong influence in the case of land purchase decisions for the farmers in this study. There were many instances where farmers highlighted an emotional attachment to the land that they purchased:

> *"I have been passing by it every day of my life five or six times since I was born."* (Farmer 3, tillage)

[10] This is a label generated by the researcher that includes six influences (see Appendix K) which were grouped together to describe farmer identity-related reasons, that farmers cited in the interview transcripts, for undertaking strategic decisions. Identity (Gomez-Mejia *et al*., 2007) refers to issues surrounding what it means to be a farmer – love of the land, taking care of animals and farming is what they love and what they know best.

"It was a piece of land that was sold off of the family farm back about 35 years ago. We tried to buy that back, and that would have simply been the reason."
(Farmer 19, tillage)

"It was my mother's previously and so I wanted to buy it." (Farmer 20, beef)

Another identity-related influence, cited by some farmers, was that they would rather 'stick to what you know' (i.e., remain in farming) than pursue other investments. For example, Farmer 15 (beef) noted:

"We never invested anything off-farm. Anything we did, we did it here on the farm. We had no desire to have a property."

Similarly, some farmers, when asked if they ever pursued other investments, stated they had not, because they would rather stick to what they know:

"I don't know anything about bank shares. I don't know anything about property. I don't know anything about the stock exchange." (Farmer 10, dairy)

"I didn't [pursue other investments], *because I literally know nothing about them, I only barely know a bit about farming."* (Farmer 16, beef)

In this respect, a number of farmers alluded to the property boom that occurred in Ireland in recent times. Some farmers outlined they had made some investments in property that did not go so well and, hence, subsequent investments were concentrated on the farm. Other farmers referred to how glad they were that they did not invest in property during that period, unlike some farmers who did so unsuccessfully.

Pride appears to be an important concept in farming, as a number of farmers referred to this when outlining why they proceeded with certain investment decisions. This concept of 'pride in farmyard appearance' was included as part of the farmer identity influencing category and was captured on a number of occasions in the interviews:

"I am going to build this cattle shed. I have to do the silage pit and I want to have the farmyard in good condition out there." (Farmer 16, beef)

"I have built great facilities. I would take great pride out of that."
(Farmer 24, beef)

Linked to this concept of pride, the influence of 'status – expectations of others' was noted as an identity influence in the strategic decision-making process of some farmers in this study. This was particularly noticeable in land purchase decisions – the influence was more implicit than explicit as farmers did not want to appear to be worried about the opinions of other farmers. For example, Farmer 3 (tillage) mentioned that neighbouring farmers expected him to buy a particular piece of land, but when probed if this was an influence, he noted:

> *"Ah there was pressure* [because neighbouring farmers were expecting him to buy the land]*, but I wouldn't have minded that element of it so much, I was prepared to walk away* [if he had not been able to buy the land at the right price]*."*

Some other farmers noted that 'animal health' issues were high on their priority when making investment decisions, as they felt it was important to look after the welfare of their animals. This connects to an aspect of their identity, as looking after farm animals is so intrinsic to the farmer's nature. A number of farmers cited 'animal health' reasons for proceeding with buildings investment decisions:

> *"If you don't have the right facilities for animals, let's say if they are grouped up too much together instead of being separated into smaller groups, you would end up with problems and diseases and loss of animals."* (Farmer 7, beef)

> *"The animals wouldn't thrive as well in the facilities they had, I would be all for comfortable cows too."* (Farmer 12, dairy)

The final identity-related influence noted on the strategic decision-making category of land purchase was 'access – right of way'. The ownership of land, access and right of way appears to be of importance in the identity of farmers. In this study, although not mentioned on many occasions in the interviews, when it was mentioned, it appeared to be quite a strong influence.

For example, two quotes that demonstrate how particular pieces of land were bought for this reason are:

> *"It was more to stop people going down through my farmyard, it goes* [the piece of land that was for sale] *right through our farmyard."* (Farmer 13, beef)

> *"There was a right of way, your man had a right of way in across the railway up through my land and there was always arguments."* (Farmer 18, tillage)

Overall, in this study, farmer identity appeared to be a very strong theme when the influencing factors on strategic decisions were analysed. It appeared to be particularly strong in the strategic decision category of land purchase.

EU Policy Influences[11]

Next, the issues related to EU policy were explored. These appeared to be another strong influence on the strategic investment decisions reviewed in this study and appeared to be most evident in buildings investment decisions. Many farmers noted that the availability of 'a grant scheme' to support the erection of farm buildings was an influence. For example, in relation to the last two farm buildings that Farmer 11 (dairy) erected, he noted:

> *"I mean, between the two of them I got about €110,000 in grants, they definitely would have influenced it."*

While another farmer, Farmer 23 (tillage), stated:

> *"The other reason was that there was good grants going for grain storage and it made me do it … I was getting 40% of a grant so I felt it was the right time to do it."*

In addition, stringent 'nitrates compliance' issues surrounding effluent management appeared to be an important EU policy influencing factor on the investment in farm buildings, as farmers needed to invest in farm buildings to comply. This influence was illustrated by Farmer 6 (beef), when he noted that:

[11] This is a label generated by the researcher that includes four influences (see Appendix K) which were grouped together to describe EU policy-related (Sutherland, 2010) reasons, that farmers cited in the interview transcripts, for undertaking strategic decisions.

> *"I have a bit of a pollution situation at the back of the farmyard, so I am having to spend about €40,000 to sort it out. But I need to do that if I am going to protect the other payments."*

Also Farmer 13 (beef) noted that:

> *"You would have to have that* [effluent storage facilities] *in place because you wouldn't pass your nitrates or reps inspections because you wouldn't have the storage for to hold all the effluent and slurry and everything."*

Linked to the issue of 'nitrates compliance' just referred to, the protection of a farmer's EU single farm payment (SFP) appeared to be an influence for buildings investment, as noted by Farmer 13 (beef):

> *"That's why I wanted to have the sheds in place as well because the higher the payment went* [SFP], *I feel that I would be at risk of an inspection* [for nitrates compliance]*."*

This influence of 'nitrates compliance' was also evident in land purchase decisions reviewed – for example, Farmer 8 (beef) noted:

> *"It would have increased my area and I would be very conscious of the fact that I am going for a nitrates derogation every year, whereas if I could add a bit more* [land] *and dilute my stocking rates a bit, then I wouldn't have to be going for maybe derogation in the next few years."*

Finally, in terms of EU policy, at the time the empirical data were being collected, milk quota abolition was taking effect for dairy farmers under new CAP regulations. Therefore, dairy farmers were probed if this change in regulation was an influencing factor for strategic investment projects undertaken. There were mixed responses. The response of Farmer 21 (dairy) best illustrates that mixed response. When probed if he would have proceeded with buildings investment if milk quota abolition was not taking place, he noted:

> *"No, I wouldn't be proceeding with it, so EU policy is* [an influence], *but having said that, the potential was on my farm to increase milk by 30% and now the potential is there to increase it by 100% nearly."*

On the other hand, Farmer 10 (dairy) outlined that milk quota abolition was clearly an influence on his decision to buy land when he noted:

> *"Yeah, it* [milk quota] *would, because we were snookered* [limited] *for a long time with quota."*

Overall, EU policy appeared to be a strong influencing factor on the strategic decisions undertaken by farmers in this study. In particular, from a review of the farmer quotes, it appeared to be a notable influence on buildings investment decisions.

Opportunistic Influence[12]

A number of farmers cited opportunistic reasons for undertaking strategic decisions and, in many instances, this influence was referred to in the context of land purchase decisions. It simply meant that some land was for sale (usually adjoining the farmers' existing land holding) and, due to the fact that these opportunities do not present themselves very often, the farmer was influenced to buy that piece of land. A number of farmer quotes that reflect this sentiment in the interview transcripts are:

> *"Well, I would have bought other little bits* [of land] *over the years, now I wouldn't go off a mile down the road and buy a piece, but if anything came up that was joining us, we would nearly always try to buy it."* (Farmer 4, dairy)

> *"If land comes up beside me, as I said, the 30 acres that came up across the river there, I bought that, and if another piece comes up beside me, I will buy it but unless it's joining me now, I'm not going to buy it, because as I say, if I have 150 acres and it's 11 miles away and in hindsight it probably wasn't the wisest thing I ever have done."* (Farmer 16, beef)

> *"This field is actually joining us on three sides and we are looking at it and it's the only reason we bought it."* (Farmer 26, tillage)

This influencing factor was very strong in terms of land purchase; in fact many farmers alluded to the fact that it did not make sense for them to purchase land not adjoining their current land holding.

The influencing factor of 'opportunistic' was also alluded to by some farmers in the case of off-farm investments – in such instances, an opportunity presented itself and was grasped. One

[12] This is a label generated by the researcher to describe situations where farmers noted that a particular strategic investment opportunity presented itself for them to invest and they availed of it – this was a standalone influencing factor with no influences grouped together to form this category.

particular farmer began an off-farm investment by becoming an agent to distribute fertiliser. In this instance, he noted how a fertiliser merchant asked him if he would be interested in becoming an agent for him:

> *"The fertiliser company in Belfast asked me would I sell for them as an agent, so that started that."* (Farmer 26, tillage)

Another farmer described how the opportunity arose for him to convert his sheds to grain storage and rent them to a grain merchant:

> "*The opportunity arose ... how that transpired was, I was making a payment on my account* [with the supplier], *and we had a shed here, where we were going to store our own grain, but then didn't ... So I just asked the merchant would he be interested in storing some grain in our shed, so he said, "yes" and so it transpired from that."* (Farmer 9, tillage)

In summary, 'opportunistic influences' appeared to be quite important factors on many of the strategic decisions that the farmers in this study had undertaken. Quite simply, if the opportunity had not arisen, the investment might not have taken place.

Long-term View Influences[13]

Some farmers did not appear to proceed with their investments for short-term financial gain, but rather proceeded with them with a long-term focus and viewed such investments as a form of long-term financial security. In many respects, this influencing category is quite closely related to the financial influences category noted earlier, but it was felt that this influence warranted separate attention, due to its strong emphasis in the data. In most instances, this influencing category was evident in the case of land purchase decisions. Examples were when farmers stated:

[13] This is a label generated by the researcher to describe two influences (see Appendix K) which were grouped together to describe how farmers referred to a long-term financial planning outlook, when providing reasons for undertaking strategic decisions, in the interview transcripts.

> *"I can sell it* [land] *again if we ever want the money for a pension or whatever."* (Farmer 4, dairy)

> *"It* [land] *will be there in 20 years' time, whereas any machine I buy will be kind of rusted in 20 years' time, so it made sense at the time to buy it."* (Farmer 19, tillage)

In addition, there were instances where the same long-term outlook was taken in buildings investment decisions. For example, Farmer 7 (beef) noted:

> *"Obviously for the first couple of years now when you are paying for it, it's not making money then, but how many years is it going to be there down the road?"*

Overall, this long-term view of investment decisions appeared to be quite strong in this study, particularly, in land purchase decisions.

Lessons from Past Decisions Influence[14]

In many instances, it appeared that lessons learned from past "poor" investment decisions off-farm influenced them to make the current strategic investment decisions on their farm. For example, Farmer 1(dairy) noted:

> *"I invested in other things* [off-farm] *that I have no interest in, and I never made anything on them ... only torment out of the bloody thing, and I have one thing* [off-farm investment] *left and I can't wait to get rid of it."*

Furthermore, Farmer 26 (tillage), noted:

> *"I bought property. I had investments in Ireland and I had investments out foreign and the Irish have done alright, the foreign ones were a disaster ... the foreign ones would definitely put me investing in something that I can see or that I can drive to every day* [land]*."*

On the other hand, lessons learned from past investment decisions on the farm often gave the farmers in this study the confidence to proceed with further on-farm investment decisions, i.e., the strategic decisions reviewed. This influence was best captured when Farmer 24 (beef) stated:

> *"I feel comfortable now making decisions. I wouldn't have in the past. Experience is no load. I made loads of good decisions in the past. I made bad ones, but I made them very*

[14] This is a label generated by the researcher which refers to farmers describing, how previous investment decisions they made in the past, influenced the strategic investment decisions currently under review – this was a standalone influencing factor with no influences grouped together to form this category.

slowly, and I was very bad at decisions. Now I am very comfortable making decisions now. I have a process that I go through."

In summary, this influence of 'lessons from past decisions' appeared to be quite important in the decision-making process of the farmers in this study. In some respects, the fact that poor off-farm investment decisions in the past influenced some farmers to make the current on-farm strategic decisions reinforces the 'stick to what you know' influence under identity influences referred to earlier.

Social Influences[15]

A number of farmers in this study cited 'social influences' as being part of their strategic decision-making process. Many farmers noted that they invested in buildings to upgrade their facilities so as to 'reduce manual labour'. For example, a quote from Farmer 8 (beef), illustrates this influence:

"What influenced that [buildings investment] *was to make my life easier, to have an easier management, to take the total labour out of the whole thing … to make our lives easier."*

Other farmers may have made a particular decision because they wanted to 'spend time with family'. For example, Farmer 13 (beef) noted, in relation to his buildings investment, that:

"I would make it a bit handier for feeding … just for lifestyle, I could free up my time for at home."

Finally, another social influence was highlighted when a farmer noted that he wanted 'to be his own boss', Farmer 27 (dairy) noted:

"I hated working for someone else. At least here it's rewarding if, I'd sooner be milking cows than sitting in an office, it's a great thrill. The challenge is brilliant."

These social influences appeared quite important to the farmers in this study and highlight how the individual personal goals of each farmer may influence decision-making.

[15] This is a label generated by the researcher that includes three influences (see Appendix K) which were grouped together to describe personal and family lifestyle reasons, that farmers cited in the interview transcripts, for undertaking strategic decisions.

Diversification Influence[16]

This influencing category was present in the data when the topic of off-farm investments was being discussed during the interviews conducted. A number of farmers referred to how they undertook off-farm investments to diversify. For example, Farmer 23 (tillage) noted the following, when asked what influenced his off-farm investment:

> *"It was diversification and I wanted to be in* [grain] *storage as well … it's not a bad business to be in, I think."*

Furthermore, Farmer 2 (tillage) stated that the reason he invested in forestry was:

> *"Diversification of enterprises, creates cash-flow."*

Diversification, although not discussed extensively, was deemed an important influence when the farmers in this study made off-farm strategic investment decisions.

Encouragement from Others Influence[17]

It was evident from a review of the transcripts that the farmers in this study discussed their strategic decisions with others. The majority of the findings in relation to this aspect of farmer decision-making are discussed in the role of advisor section (Section 7.5). However, when farmers were asked about the influencing factors on the strategic decisions that they had undertaken, a number of them noted that there were encouraged by others to do so. This encouragement appeared to come from two primary sources, from family members and/or from other farmers in their discussion group. The encouragement from family members was predominately noted in the context of land purchase decisions – for example, Farmer 11 (dairy) noted that his land purchase decision was influenced by:

> *"My father encouraging me and my neighbours encouraging me."*

[16] This is a label generated by the researcher that includes two influences (see Appendix K) which were grouped together to describe diversification-related reasons, that farmers cited in the interview transcripts, for undertaking strategic decisions.

[17] This is a label generated by the researcher that includes two influences (see Appendix K) which were grouped together to describe how farmers were encouraged by family members or other farmers to undertake strategic decisions.

Likewise, Farmer 16 (beef) referred to how his parents encouraged him to buy land, when he noted:

> *"Oh God, yeah, both my mother and father, they would be* [encouraging him]*."*

On the other hand, encouragement from other farmers in their discussion groups was predominately noted when buildings investment decisions were being discussed. For example, Farmer 15 (beef) noted, when discussing a buildings investment decision, that:

> *"I would have run it past our discussion group."*

Furthermore, in relation to buildings investment, Farmer 8 (beef) noted:

> *"You might have an idea you are going to do it this way and, being in a discussion group and going on to another farm and picking up different ideas will influence me anyway."*

Overall, it appeared that 'encouragement from others' influenced the strategic decision-making process of the farmers in this study.

Succession Planning Influence[18]

This influence was mentioned as an influencing factor in the strategic decision category of land purchase decisions and, within that category, it appeared to be quite a strong influencing factor. Many farmers stated that the fact they had children who are, or might become interested in farming, was a big influence on their decision to purchase land:

> *"I have three lads, if two of them were interested in farming, at least we could actually give two of them 100 acres each if they wanted cows."* (Farmer 4, dairy)

> *"I mean, I have five young children and if one or two of them were interested in farming, I would have the second place set up."* (Farmer 11, dairy)

> *"We had a son come up along, he was at the age to think that he wanted to farm as well."* (Farmer 18, tillage)

[18] This is a label generated by the researcher which refers to farmers describing how succession planning was an influencing factor on the strategic decisions that they had undertaken – this was a standalone influencing factor with no influences grouped together to form this category.

Interestingly, some farmers noted the presence of this influencing factor (succession planning) in their decision-making process even though, when probed further, they had no successor in place for the farm.

Trust in Business Venture Partners Influence[19]

This influence was mentioned in the context of the strategic decision categories of off-farm investments and land leasing. For example, one particular farmer interviewed does not own any land – the land he is farming is leased on a long-term lease. To enter into such a lease, trust was deemed to be important. This was highlighted when he stated:

> *"I knew the farm owner from my time working in Minch's* [merchant supplier] *and we always clicked and he said it* [possibility of entering into a lease agreement] *one day and I jumped at the opportunity. But a farm on this scale, 250 acres, there's not too many of them and you need someone extremely trustworthy."* (Farmer 27, dairy)

In terms of off-farm investments, 'trust in business venture partner' was also deemed an important factor. One particular farmer described how he deemed trust to be important when conducting an off-farm investment with a grain merchant, stating:

> *"I built up trust with the merchant I am sowing the grain for. We trust each other to do, a seed grain, and everything has to be kept quite clean and record-keeping and all of that type of thing."* (Farmer 9, tillage)

Although this influence was not discussed extensively in the interviews with farmers, it was nonetheless an important influencing factor on the strategic decisions that some farmers in this study undertook.

[19] This is a label generated by the researcher which refers to farmers describing how the trust that they had in a prospective business venture partner influenced them to undertake a strategic decision in conjunction with that same business venture partner – this was a standalone influencing factor with no influences grouped together to form this category.

Focus Group View of Influencing Factors on Strategic Decision-making

The focus group was used as a probe to test the reasonableness of the findings from the farmer interviews. Selective quotes from the focus group are now included in this section to highlight the views expressed by the focus group participants when the above influencing factors on strategic decision-making were discussed. There was broad consensus with the influences identified and this was acknowledged by **FG/1** when he noted:

> *"There's a lot of factors and any one individual could have any amount of those factors. So I'm not surprised."*

However, **FG/2** highlighted one particular influence that appeared to cause some element of surprise – he appeared to be surprised (given the farmers selected for interview) with how strong the 'identity influence' appeared to be in the strategic decisions reviewed when he stated:

> *"The identity one strikes me as being very strong, considering that you selected a fairly strong group or fairly dynamic group from within the farming community that I thought wouldn't be as tied* [to identity], *would be more commercial rather than tied to the love of the land. It just strikes me as still being quite a strong influence there."* **(FG/2)**

Furthermore, **FG/3** re-iterated this aspect of identity, when he stated:

> "*The most dangerous field, is the field next door.*"

This means that the identity of farmers often compels them to buy adjoining land, even though it may not make financial sense to do so.

Summary

The preceding discussion on the influencing factors on strategic decision-making illustrates that there were many influencing factors on the strategic decisions that the farmers in this study undertook. While analysing those influencing factors, it became apparent from an in-depth review of the transcripts that the category of decision and farm type appeared to be a key factor as to which influencing factors were present in the data. Therefore, further analysis of the influencing factor theme and its 12 categories, based on the criteria of decision type and farm type, was undertaken. The findings from this analysis are now highlighted.

Analysis of the Influencing Factors on Strategic Decisions by Category of Decision

As outlined in Section 7.3, six categories of strategic decision were uncovered in the interview data. When the 12 categories of influencing factors were analysed further, it showed that the decision event (category of strategic decision) appeared to be a key driver as to which influencing factors were present. The two most common strategic decisions uncovered – buildings investment and land purchase – are now used to illustrate this. *(The categories of influencing factors noted for buildings investment and land purchase decisions are shown in Appendix L – Figures 1 to 4).*

An analysis of the influencing factors, in both buildings investment and land purchase decisions, revealed that, although there were similar influencing factor categories cited for each, it appeared that, within each category of influencing factor, the narrative surrounding the various influencing factors was quite different. This is best illustrated with some examples.

Firstly, in terms of the influencing factor category of identity, while this influencing factor category was evident in both buildings investment and land purchase decisions, there appeared to be contrasting sub-category influences referred to, when each decision was discussed. For example, 'emotive decision-making' and 'stick to what you know' appeared to be some of the strongest influences for land purchase decisions. On the other hand, for buildings investment decisions, while 'emotive decision-making' was evident, it did not appear to be as strong an influence compared to land purchase decisions. Moreover, the influence of 'animal health' appeared to be quite an important identity influence in buildings investment decisions and was not referred to in the context of land purchase decisions. In general, there appeared to be some contrasting influences present in both buildings investment and land purchase decisions.

Secondly, contrasting financial influences were evident for buildings investment and land purchase decisions. For example, many farmers cited 'to increase farm income' and 'tax planning' as financial influences for buildings investment while, for land purchase, the strongest financial influences appeared to be that the farmer 'had the money to invest' and 'debt repayment capacity'. This finding in terms of financial influences, was interesting – one would expect that the primary reason for farm expansion would be to increase farm income, but this did not appear to be a strong influence for the farmers in this study, in the case of land purchase.

Finally, in terms of operational influences, there appeared to be more emphasis on some operational influences than others, when buildings investment and land purchase were being discussed. For example, in the case of buildings investment, 'capacity constraints' and the motivation 'to improve the day-to-day management' of the farm were common influences cited. However, for land purchase, the operational influences appeared to focus more on 'replacing rented facilities', with less emphasis being placed on 'capacity constraints'. The above analysis of operational influences demonstrates that there appeared to be contrasting support for the operational influences that were present in both buildings investment and land purchase decisions.

Overall, the above examples suggest that, although there were common influencing factors across different categories of strategic decision, the triggers/cues within each category of influencing factor may not always be the same. When this issue was probed further with the focus group, the participants concurred with this sentiment. For example, **FG/3** stated:

> *"Land seems to drive farmers bananas … guys will be a lot more rational about buildings and sheds."*

The above quote demonstrates how **FG/3** considers 'identity' to be a stronger influence in land purchase decisions compared to buildings investment. Similarly, when the influence

'opportunistic' was discussed, **FG/2** noted how he concurred with how 'opportunistic' was an influence that was strongly associated with land purchase decisions, stating that farmers are often of the frame of mind:

> *"It* [land] *came up* [for sale]. *I had to buy it."*

The above quotes demonstrate how the focus group participants acknowledged that, based on their experience of interacting with farmers, the triggers/cues for each category of strategic decision may not always be the same. This initial finding in relation to the influencing factors on strategic decision-making, by category of decision is followed up and discussed further in Section 8.4.1.

Analysis of the Influencing Factors on Strategic Decisions by Farm Type

An analysis of the influencing factor categories on the strategic decision-making process of farmers in this study was conducted by farm type (*see Appendix M, Figure 1*). Initially, this analysis did not present any significant insights or themes; however, when each of the influencing categories were analysed further, some themes emerged.

Firstly, in terms of financial influences (*see Appendix M, Figure 2*), the influence 'to increase farm income' appeared to be quite strong for both the dairy and tillage farmers compared to the beef farmers. In addition, 'tax planning' did not appear to be as strong an influence for the dairy farmers compared to the beef farmers. Moreover, the dairy farmers did not appear to be influenced by 'no borrowing requirement', while the tillage and beef farmers stressed this influence on a number of occasions. Furthermore, the dairy farmers did not appear to emphasise that they 'had the money to invest', unlike the tillage and beef farmers who cited this influence on many occasions. These findings suggest that the dairy farmers in this study were not averse to borrowing, may not already have the money to invest and make investments with a view to

increasing farm income and less so with a view to reducing tax liabilities. On the other hand, the tillage and beef farmers in this study appeared to be averse to borrowing, had the money to invest and make investments to reduce tax liabilities, as opposed to a focus on increasing farm income. These findings reflect how dairy farming has the highest average FFI of the three farm types, as outlined in Table 2.1, Chapter 2.

Secondly, regarding operational influences (*see Appendix M, Figure 3*), 'capacity constraints' and 'improving day-to-day management' appeared to be quite a strong operational influence for the dairy and beef farmers, while the 'upgrading of machinery' and 'to sub-contract' appeared to be strong operational influences for the tillage farmers. These insights can be explained, as dairy and beef farm types involve the housing of animals and a high level of manual labour, which may result in capacity constraints and the need to upgrade facilities, whereas tillage farming is machine intensive, resulting in the upgrading of machinery. Finally, the reference 'to sub-contract' is because many of the tillage farmers in this study earn additional income by carrying out sub-contracting work.

Identity influences (*see Appendix M, Figure 4*) – 'emotive decision-making' and 'stick to what you know' were referred to as influences by farmers across all farm types. However, when all the identity influences were considered, it appeared that the beef farmers in this study were more influenced by identity reasons compared to the dairy and tillage farmers. This finding would support the observation made earlier under financial influences where it was noted that the dairy and tillage farmers appeared to invest with the objective 'to increase farm income' more often than the beef farmers.

EU policy (*see Appendix M, Figure 5*) – this influencing factor category appeared to be a stronger influence for the beef farmers in this study, compared to the tillage and dairy farmers.

As beef farmers are often very much dependent on EU supports, it would be expected that any changes in EU policy would greatly influence their decision. When dairy farmers mentioned EU policy as an influence, it was primarily in respect of milk-quota reform. However, it was very interesting to note that many farmers noted that the abolition of milk-quotas was not an influencing factor in the expansion of their dairy enterprise, as they would have proceeded with expansion regardless. This illustrated further the issue that many dairy farms are profitable, are not dependent on EU supports and many dairy farmers are motivated to intensify their dairy enterprise. The tillage farmers in this study appeared to be the farm type that was least influenced by EU policy in their decision-making.

An analysis of the remaining categories of influencing factors by farm type did not elicit any significant insights. However, there are two points worth noting in relation to 'diversification' and 'lessons from past decisions'. Firstly, 'diversification' appeared to be an influence for the beef and tillage farmers in this study, with no support noted from dairy farmers. This is perhaps because dairy is the most profitable enterprise and hence there may be no need to diversify, unlike in tillage or beef farming. Secondly, in terms of 'lessons from past decisions', dairy farmers appeared to be the farm type in this study most influenced by this aspect. This may suggest that dairy farmers are frequently making investment decisions, gaining confidence in their decision-making and reaping the financial rewards, thereby allowing them to continue to reinvest.

A notable emerging theme from the above analysis, by farm type, is that the beef farmers in this study appeared to be strongly influenced by operational reasons, identity reasons and were very reliant on EU support schemes to assist them in their farm expansion decisions. On the other hand, the dairy farmers in this study appeared to be more financially focused in terms of profit maximisation, less influenced by identity factors, and less dependent on EU supports in their

decision-making process. Therefore, the dairy and beef farmers appeared to be at opposite ends of the spectrum in regard to many of the influencing factor categories, with tillage farmers most often in the middle. Overall, these findings concur with the sentiment that exists in the industry. This was vouched in the focus group when **FG/2** stated:

> *"I'd be interested in your dairy farmers being less influenced by the identity factors because I would have thought that as well. I would have thought they were sharper and more commercially focused than your guy with a dog and a stick and ten bullocks* [beef farmer]*."*

When this issue of 'identity', in terms of farm type, was probed further with the focus group, **FG/1** alluded to how tillage farmers are often influenced by wanting to replace their machines every few years to have the most up-to-date machinery (which is also an identity issue), as opposed to doing any financial analysis, when he noted:

> *"It's, I change the tractor every three years and I'm going to change it again whether grain price is going to be €110 next September or not and all I need to do is sign a lease."*

These quotes from the focus group participants, coupled with the above analysis of the influencing factors on strategic decision-making by farm type (based on the analysis of the influencing categories identified from the interview transcripts), provide strong support for the premise that farm type is a key factor as to which influencing factors are present in the strategic decision-making process of farmers. This initial finding in relation to the influencing factors on strategic decision-making, by farm type, is followed up and discussed further in Section 8.4.2.

Reasons why Farmers Did Not Proceed with Strategic Decisions

There were many occasions throughout the data collection process where farmers cited reasons why they did *not* proceed with decisions of a strategic nature in the past. A review of these reasons was undertaken, as they can give an insight into the influencing factors on strategic decision-making. From this review, some interesting observations were noted.

Firstly, many farmers in this study noted that they did not proceed with strategic investment decisions for financial reasons. Some farmers noted that this was because they were averse to taking on debt to assist in funding the investment. For example, Farmer 7 (beef) noted the following in respect of how he did not proceed with a land purchase decision, due to the borrowings required:

> *"It will be like a chain around our necks for the rest of our lives ... it's like another mortgage. If either of us lost a job, you're caught."*

Other farmers noted that the weak prospect of a good financial return from a particular investment influenced them not to proceed with that strategic investment decision. For example, Farmer 24 (beef) described how an investment in land would not work for him financially, when he stated:

> *"I can't make it work for me a dry stock farmer ... It's just too long-term, it doesn't seem* [financially] *worth it to me."*

Another financial reason given by farmers for not proceeding with investment decisions was that they could simply not afford the investment. This reason, was best illustrated by Farmer 23 (beef), when he mentioned that he was considering purchasing land but could not afford it:

> *"I would* [purchase land], *there is 20 acres for sale going up beside us, but I was going to go for it, but at the moment I can't really afford it."*

The above financial reasons re-affirm many of the financial influences alluded to earlier as influences on the strategic decision-making process of farmers.

Secondly, a number of operational issues were mentioned as reasons for farmers not proceeding with strategic investment decisions. These operational reasons were: where land came up for sale close to a farmer's existing land holding, it was not purchased because it was of poor quality, and/or due to its proximity, it would not form part of the core farming unit. For example, in terms of land quality, Farmer 12 (dairy) noted:

"No, we were looking at land during the week but the quality wasn't good enough."

Farmer 21 (dairy) noted, in terms of land not forming part of the core farming unit, that:

> *"I have made the decision, that like leasing land, I will not buy land unless now it is going to become part of my milking platform."*

Finally, a number of other reasons were cited as to why the farmers in this study did not proceed with strategic investment decisions. Uncertainty in succession planning was one such social issue highlighted by a number of farmers. For example, Farmer 9 (tillage), who has no children to whom to pass on the farm, highlighted that:

> *"There is no point in slaving yourself and someone else will come along after you and sell the whole lot of it then."*

Another social reason given for not proceeding with strategic investments was that some farmers felt they were too old to invest further. This reason was highlighted by Farmer 15 (beef), when he noted:

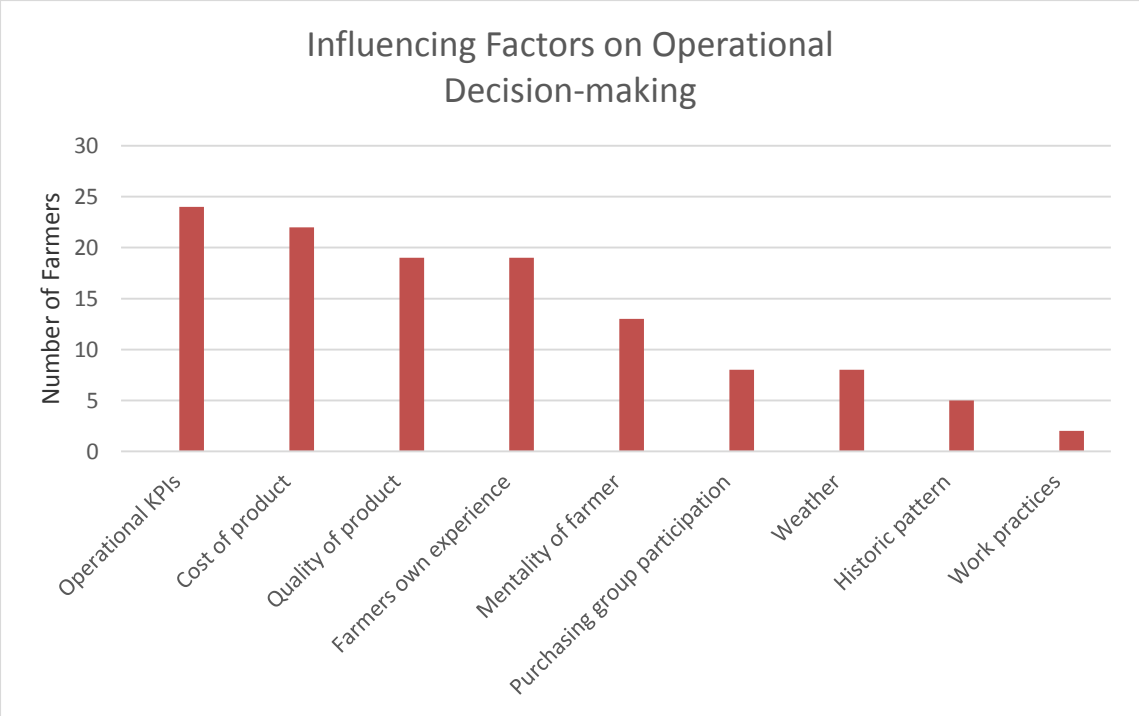
> *"At this stage in my life, I am not going to put that sort of debt on myself."*

A review of the above reasons for the farmers in this study not proceeding with strategic investment decisions revealed that the majority of those reasons provided were in respect of land purchase decisions. In addition, an analysis of the type of farmer presenting those reasons was conducted. In the most instances, it was the beef farmers who cited reasons for not proceeding with strategic decisions. Moreover, the reasons cited by the beef farmers were mainly financial reasons. The dairy and tillage farmers were not as vocal about not proceeding with strategic decisions for financial reasons. Dairy farmers appeared to site operational reasons for not proceeding with strategic decisions, as the financial aspect did not appear to be a barrier.

7.4.2 Influencing Factors on Operational Decision-making

A similar operational decision was discussed with each farmer, to identify the primary influencing factors on operational decision-making. As outlined in Section 7.3.2, the decision under review was the purchase of feed and fertiliser for dairy and beef farmers, and the purchase of seed and sprays for tillage farmers. The interview transcripts revealed that there were nine influencing factors on the operational decision-making process of the farmers in this study, as presented in Figure 7.6.

Figure 7.6 Influencing Factors on Operational Decision-making



It is important to reiterate that the above Figure 7.6 visually presents support for the number of instances that each influencing factor was evident in the interview data. This visual representation merely provides a high level overview of the themes that were present in the data; however, it is the interpretative analysis of these themes that is of most importance. Therefore,

subsequent to the identification of the various influencing factors on operational decision-making as outlined in Figure 7.6, the interpretative analysis of those themes began. To give an insight into how these issues were considered an influence on the operational decisions explored, a deeper analysis of these influencing factors was performed and is now discussed.

One of the strongest influences on the operational decision-making process of the farmers in this study appeared to be the operational KPIs that the farmers monitor as part of their routine farm management (*see Appendix N, Figure 1*). These are standardised practices, embedded within the industry, and are often specific to an individual type of farming, as noted in the KI comments in Section 7.2.1. A number of operational KPI influences were cited by the farmers, including: 'soil testing', 'grass management', 'animal weights', 'silage analysis' and 'stocking rates'. To gain an insight into how each operational KPI influenced the operational decision-making process of the farmers in this study, an example of a farmer quote for each is now highlighted:

> *"Well, that's done* [fertiliser requirements] *really from soil analysis, to know now exactly how much N, P and K we are going to spread on the whole farm."*
> (Soil testing quote: Farmer 19, tillage)

> *"We would measure the grass every month … by continuously measuring, you know if you can slack off a small bit because you know what's out ahead of the cows."*
> (Grass management: Farmer 22, dairy)

> *"We would physically weigh all the time. We are weighing constantly. Every six weeks, we would be dosing calves. We would weigh them as well, and we would be recording them."* (Animal weights: Farmer 8, beef)

> *"We would do silage analysis and stuff like that, to see whatever tweaking would need to be done."* (Silage analysis: Farmer 10, dairy)

> *"What I'm trying to do at the moment is trying to increase the production from the farm, so I would be looking at my stocking rate[20]"* (Stocking rates: Farmer 6, beef)

[20] Stocking rate is the number of animals held per acre/hectare – the higher the stocking rate the more efficient the farm is deemed to be.

Once these KPIs had been established, an analysis of them by farm type was conducted (*see Appendix N, Figure 2*). This analysis of operational KPIs by farm type did not show any unexpected results. For example, many of the farmers who cited 'grass management' were dairy farmers, while all the farmers that cited 'animal weights' were beef farmers. Essentially, the type of farm largely determines the operational KPIs implemented by farmers. Interestingly, the beef farmers in this study were the only farm type that alluded to all five of the operational KPI influences in their operational decision-making, while the dairy farmers cited three of the five operational KPIs and the tillage farmers cited only one of the operational KPIs – soil testing. A possible explanation for this is that the beef farmers in this study appeared to be the farm type engaged in FFM practices least (as highlighted later in Section 7.6), while the dairy farmers appeared to be the farm type that engaged in FFM practices most. Therefore, this may indicate that the beef farmers in this study substitute FFM practices with operational KPIs in order to give them an overview of how their farm is performing.

Two other particularly strong influencing factors highlighted in the operational decision-making process of the farmers in this study were: the 'cost of the product' and the 'quality of the product'. These two influences are very closely intertwined. Some farmers noted cost as a key influencing factor, for example:

> *"I may not buy the fertiliser, if they* [supplier] *are competitive* [in terms of price] *I will buy it. But if they are not, I won't."* (Farmer 1, dairy)

> *"The first question I would ask him* [supplier] *is, how much is it?"* (Farmer 11, dairy)

> *"Keep the costs down as low as you can, as regards purchasing feed."* (Farmer 16, beef)

Other farmers emphasised quality as being important, for example:

> *"You pay for what you get, so you would be always trying to buy the quality."* (Farmer 17, tillage)

> *"We would make our* [feed] *decisions just the same every year, based on quality."*
> (Farmer 18, tillage)

> *"I look for high-energy feed, I know depending on what I am doing, how much protein I need in that feed."* (Farmer 21, dairy)

However, many farmers alluded that the price you pay (cost) reflects the quality of the product being purchased. This sentiment was best captured when Farmer 12 (dairy) stated:

> *"Cheapest feed is probably the dearest feed … if you pay rubbish money, you will get rubbish feed."*

In essence, as acknowledged by some farmers, what farmers appear to look for is value for money. Many farmers acknowledged that both cost and quality were influencing factors. However, a number of farmers specifically stated that they would be influenced by quality over cost. Farmer quotes which highlight this issue include:

> *"I would nearly pay for the quality one all the time, I wouldn't go to a cheaper feed, just because, for money reasons, because of the quality of it."* (Farmer 5, dairy)

> *"I would generally go back to the same feed company, because I know what they give me, it may be an extra fiver or tenner a tonne, but I know it's good stuff."*
> (Farmer 6, beef)

An analysis of the cost and quality influencing factors by farm type highlighted a key issue – the beef farmers appeared to be the farm type that emphasised quality most. This may be due to the primary goal of beef farmers being to fatten cattle and the quality of feed would be a primary contributor in weight gain.

The 'farmer's own experience', which could also be referred to as the farmer's 'intuition', was mentioned on many occasions by farmers when discussing their operational decisions. 'Visual inspection' was a key element of this influencing factor. Farmers in this study noted that, based on their experience as a farmer, using intuition and/or by visual inspection, they make operational decisions. For example, Farmer 7 (beef) noted visual inspection in terms of grass management, when he stated:

"I would measure it [grass] *as I am walking around, I would have an idea of how many days I have … I don't need to put it on paper. You know your own circumstances."*

Furthermore, Farmer 8 (beef) stated he would make feed decisions based on his experience:

"*I would know very much from my own experience, I have been farming for over 30 years and I would have been very involved in making up different rations all the time."*

Finally, Farmer 18 (tillage) responded as follows when asked if there were any other influences on his feed decisions:

"No, I would go with my own experience."

When the influencing factor 'farmer's own experience' was analysed by farm type, it was found that this influence appeared to be strongest among the beef farmers in this study, followed by tillage farmers and did not receive much emphasis from dairy farmers. When this issue was probed with the focus group, the consensus was that dairy farmers have a distinct advantage in this area. Essentially, dairy farmers can see the results of improved management techniques in a short space of time as they get information pertaining to milk output and quality every few days – for example, grass management or increased feed can result in increased milk yields within a few days. On the other hand, beef farmers do not have access to information so easily and results are more in the long term – for example, beef farmers may have to wait two years to reap the benefits of selling a calf with improved weight gain. There is also a cash-flow implication here – dairy farmers have regular cash-inflows from milk sales, whereas beef farmers only have cash-inflows at certain times of the year. Overall, this sentiment was captured by **FG/1**, when he noted:

"Dairy farmers can see the rewards sooner and the rewards are bigger."

Furthermore, in terms of the support for the notion that the beef farmers in this study appeared to place a stronger emphasis on intuition, compared to their dairy and tillage counterparts, **FG/2** commented that:

"Very few people have captured this, and it is important to do so."

In addition, **FG/2** went on to say

> *"Beef farmers' reliance on intuition shows that they are more closed in their thinking/ decision-making."*

This study shows that the beef farmers appeared to be less inclined to conduct a detailed assessment of a given situation before making decisions, compared to their dairy and tillage counterparts. Instead they appeared to rely on their 'own experience/intuition/visual assessment', whereas the dairy farmers appeared to rely less on their 'own experience/intuition/visual assessment' but base their decisions on facts and figures.

Some farmers referred to how their mentality as a farmer influenced their operational decisions. This largely referred to situations where farmers adopted the philosophy of 'high inputs to get high outputs' or the opposite 'low inputs to produce outputs at the lowest cost'. For example, Farmer 2 (tillage) represented the mentality of 'high input to get high outputs' when he stated:

> *"I would be talking to Joe* [agricultural advisor] *about new chemicals, pushing it* [crops] *to the limit with fertiliser so that you would keep it standing and to get the best yield."*

In contrast, Farmer 14 (tillage) represented the mentality of 'low inputs to produce outputs at the lowest cost' when he noted:

> *"What I do now is to have the best crops with the best management and the least amount of inputs."*

Overall, most of the farmers that commented in this regard were tillage farmers.

Approximately one third of the farmers interviewed are part of a purchasing group. As the primary objective of a purchasing group is to buy farm inputs in the most cost-effective manner, as expected, being a member of a purchasing group was often cited as an influencing factor in the operational decisions under review in this study. Most of the farmers that were members of purchasing groups bought the majority of their inputs using that forum. However, there were

mixed views about the effectiveness of purchasing groups and this issue is discussed further in Section 7.6.2.

A number of farmers mentioned 'weather' as being an influence in their operational decision-making. This influence was noted mainly by the dairy and beef farmers in this study in relation to feed and fertiliser decisions. For example, Farmer 5 (dairy) noted:

> *"It depends on the weather, feed and fertiliser, the weather is a lot and that's the main one that is hard to pin down right."*

Another farmer, Farmer 25 (beef), noted when discussing his feed decisions:

> *"The weather would be a big factor."*

In essence, the weather can have a major impact on the annual feed and fertiliser decisions of farmers and is primarily out of their control.

Regarding 'historic pattern', some farmers noted that they conducted the operational decision under review for historic reasons – this was the way they had always did it or it was the manner in which their father had previously done it. This sentiment in operational decision-making was best conveyed by Farmer 3 (tillage) when he stated:

> *"This is the way that it has always been done, and the generation before me, so that's the way we went."*

This influence in operational decision-making has close connections with the 'identity' influence in strategic decision-making, i.e., conducting an operational decision in a particular way because previous generations did, suggests that it is part of the farmer's identity.

Finally, the operational influence of 'work practices' was mentioned by some tillage farmers. These farmers had significantly adjusted their work practices in recent years and this was an influence on their level of spend on inputs. For example, one tillage farmer changed from the

conventional method of crop sowing to a more modern method known as 'direct drilling', noting with this change:

> *"It* [new method of crop sowing] *has cut down on cost but it's also got rid of our erosion problem because you don't have this seven or eight inches of loose soil. The ground is much tighter but it has taken significant cost out of it."* (Farmer 19, tillage)

Overall, the analysis of the influencing factors on operational decision-making portrays that it is not a straightforward practice. It is multi-faceted and, similar to strategic decision-making, is influenced by a variety of factors. One of the primary factors appears to be farm type and this finding is followed up and discussed further in Section 8.4.2. Before moving on, one other aspect of operational decision-making warrants attention. This aspect is the 'relationship with merchants'. The operational decisions reviewed elicited a great deal of information about how farmers interact with the merchants that supply the inputs for their farm. As this relationship influences their operational decision-making, a brief overview of the findings from it is now presented.

Relationship with Merchants

It was interesting to discuss the relationship farmers had with merchant suppliers, as it illuminated some interesting findings about a farmer's operational decision-making process. *Appendix N, Figure 3* details the reasons cited by farmers for dealing with the merchant suppliers with whom they choose to deal. Many farmers noted that they deal with specific merchants due to 'personal relationships', i.e., because of the good relationship they have with sales representatives in that merchant business. For example, Farmer 19 (tillage) stated his reason for dealing with a certain merchant was:

> *"I have a very good friend. I went to school with him and he worked for Glanbia. We fight like hell over stuff but … there is a loyalty to him rather than to the company."*

Another important influence for farmers dealing with certain suppliers was 'reciprocal agreement' – some farmers felt obliged to purchase inputs from specific merchants because those merchants purchased outputs from the farmer. For example, Farmer 17 (tillage) noted why he buys his inputs from a specific merchant by stating:

> *"You would be selling the corn to the same merchant as you are buying it from, and they are starting to get very tricky as regards contracts, say for* [example] *seed contracts, if you don't buy the product* [seed] *off them, they are not going to take the corn* [buy the grain from the farmer at harvest time]*."*

However, it was interesting to note that a number of farmers stated the opposite, i.e., some farmers felt it was better to buy their inputs elsewhere. For instance, Farmer 21 (dairy) had quite a strong opinion on this issue when he stated:

> *"I think that as farmers, when we built our co-ops, we made an incredibly big mistake … to allow the people who purchase our goods from us be the same as the people who provide our farm inputs to us. I think that strategically that's a very poor decision to make … I would think that farmers should try not to deal with* [buy inputs from] *the person who purchases their milk* [output]*."*

In general, many of the farmers that regarded 'reciprocal agreement' as being a strong influence on their operational decision-making were tillage farmers who had entered contracts with such merchants for their outputs; therefore, they felt it necessary to purchase their inputs from that same merchant.

Many farmers referred to how they believed that, if they were loyal to merchants, the merchants would look after them in terms of giving them a good quality service and good prices. For example, Farmer 17 (tillage) noted the following when discussing his relationship with his merchant provider:

> *"It works both ways, if you are loyal to him* [merchant]*, he will be loyal to you."*

Essentially, this theme captured how farmers were influenced by 'loyalty' to their suppliers in operational decision-making.

In addition, a number of farmers noted how the 'quality of service' that they received from particular merchants was an influencing factor as to why they trade with those merchants. An example of how 'quality of service' was considered a factor was when many farmers highlighted how they felt that they could ring up the merchant at short notice and receive inputs when required. For instance, this was noted by Farmer 10 (dairy) when he stated:

> *"I know now that if I ring a supplier for feed for tomorrow morning at 9 o'clock, I will have it. He might be charge me €2, €3 or €4 a tonne dearer…"*

As can be seen from the above quote, this particular farmer recognised that this 'quality of service' may come at a cost, but he is willing to pay that extra cost in return for the service.

Other farmers stated that the availability of 'credit facilities' was a reason for dealing with certain suppliers. Interestingly, some farmers acknowledged that they knew they could get their inputs cheaper elsewhere, but they felt that they had unlimited credit with their supplier which outweighed the benefit of the reduced price elsewhere. This was best illustrated by Farmer 5 (dairy), when he noted:

> *"There is nearly no limit on what* [credit] *we can get, because they know it will be paid off ... we are probably giving away a bit in the price, that we could get elsewhere, but the credit thing comes into it a bit."*

Finally, some farmers stated that they dealt with some merchants simply because of the 'location of supplier' – reasons such as convenience and close proximity were noted.

During the interview process, farmers were also probed about reasons why they may have changed supplier in the past. This was pursued as it was felt that the reasons farmers changed supplier could also illuminate some interesting insights into the operational decision-making process of farmers (*see Appendix N, Figure 4*). Two quite strong reasons for changing supplier, cited by the farmers in this study, were 'quality' and 'cost'. Poor quality of the input that they received was mostly cited by the beef farmers, which infers poor quality animal feed being the

reason for change. Another reason cited by a number of farmers was 'poor service'. Examples include: inputs were not delivered when required, they were overcharged for a product compared to a price quoted and, interestingly, one particular farmer was very vocal about changing supplier because his previous supplier would not call to collect payment from him. Lastly, when a 'sales representative' that the farmer dealt with in the merchant business moved to a competitor, it was noted that the farmer moved his business with that sales representative. In essence, the reasons noted for changing supplier reflect dissatisfaction with key criteria that farmers use to choose suppliers in the first place.

The observations noted from the reasons why farmers choose to deal with certain suppliers, coupled with the reasons why farmers changed supplier, provide a greater insight into the influencing factors on operational decision-making. Many of the observations reaffirm the influencing factors on operational decision-making, as outlined in Figure 7.6.

7.4.3 What the Influencing Factors Uncovered tell us about Farmer Decision-making

Section 6.6 of Chapter 6 described the data analysis process. Taking the influencing factors as a theme, which has just been explored in Sections 7.4.1 and 7.4.2, it is useful to reflect what analysis has been done at this stage. The coding of the raw interview data, as per Figure 6.2, which was facilitated by NVivo, has been interpreted into a narrative and points for follow-up in the discussion chapter have been highlighted. This has addressed the influencing factors aspect of **RO1**. Moving to **RO2**, the researcher reflected on the connection between the findings in relation to the influencing factors and the sensemaking properties. Consequently, the researcher felt that there appeared to be elements of the sensemaking properties coming through in the

findings. Thus, the researcher proceeded to code the raw interview data, for both strategic and operational decisions, to the properties of sensemaking. This resulted in Coding Tree 2 as per Figure 6.3. This data analysis process, which facilitated the connections to be made, resulted in Figure 7.7. The process involved the raw interview transcripts being attentively read and re-read by the researcher. Then selected pieces of text were coded to the sensemaking properties (these represent the number of references[21] in Figure 7.7).

Figure 7.7 Review of the Sensemaking Framework against the Influencing Factors for both Strategic and Operational Decision-making

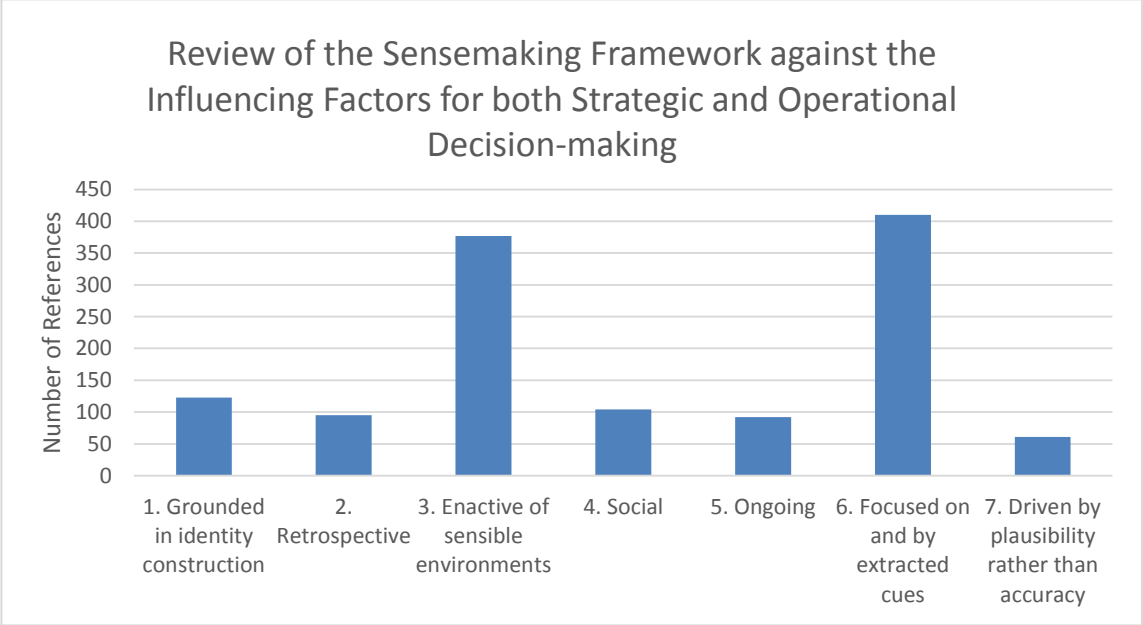


Figure 7.7 resulted from an attempt to identify what properties of sensemaking were supported in the interview transcripts, when the influencing factors were being discussed. It provides a high level overview of the properties that were supported and, thereby, assists in developing an explanation of what the findings surrounding influencing factors tell us about farmer decision-making. It is important to remember that this is not a statistical representation, but a visual

[21] The number of references in Figure 7.7 means the number of quotes that were coded to each property of sensemaking across all farmers.

presentation of the support for each property in the data (Blaikie, 2010), which facilitates a mapping of what the closest links may be between sensemaking and the influencing factors.

What emerged from this piece of analysis was that all seven properties of sensemaking appeared to be supported in the data surrounding the influencing factors on farmer decision-making in this study. However, it is evident from Figure 7.7 that two properties appeared to be most strongly supported. Firstly, '*focused on and by extracted cues*' – this suggests that the influencing factors may be best described as *cues*, i.e., the influencing factors identified may be the cues that trigger the farmer to make a particular decision.

The second property of sensemaking that appeared to be quite strongly supported was '*enactive of sensible environments*'. In the context of a farmer the environment in which s/he operates may have a strong influence on decisions undertaken and it is therefore fitting that this property of sensemaking was well supported in the data. Many of the influencing factors that have been identified reflect the circumstances and environment in which the farmer operates. For example, in strategic decision-making, factors such as EU policy, operational/day-to-day management, and the financial environment of the business were all key influences; while in operational decision-making, factors such as operational KPIs and the weather were cited as influences. All of these factors represent the environment in which the farmer operates and are therefore key influences.

The remaining five properties of sensemaking, which appeared to be less supported from a review of the influencing factors, but nonetheless were present, acknowledge that the sensemaking framework appears to be very apt when attempting to convey an understanding of farmer decision-making. The presence of the remaining five properties suggests that: farmer identity (*grounded in identity construction*), past experiences (*retrospective*), social interactions

(*social*), day-to-day activities (*ongoing*) and the farmer's own intuition (*driven by plausibility rather than accuracy*), all play an important role in farmer decision-making.

Due to the strong presence of two of the properties of the sensemaking framework evident in Figure 7.7, a review of the sensemaking framework against the influencing factors of both strategic and operational decision-making respectively, was conducted (*see Appendix O, Figures 1 and 2*). Interestingly, '*enactive of sensible environments*' appeared to be strongly supported in strategic decision-making, followed by '*focused on and by extracted cues*', while, by contrast, in operational decision-making, the property of '*focused on and by extracted cues*' appeared to be more strongly supported compared to '*enactive of sensible environments*'. This suggests that, in operational decision-making, *cues* such as the operational KPIs identified earlier, may be the triggers for operational decision-making, while for strategic decision-making, the environment in which the farmer is operating may be considered a stronger influence.

One last point about sensemaking and its review against the influencing factors, in conjunction with the sub-section of "relationships with merchants", is that many of the properties of the sensemaking framework also appeared to be supported in that area. The importance of the role of sales representatives supports how the '*social*' property of sensemaking is applicable. The price and quality of the inputs purchased represent the cues that are of central focus. In addition, issues such as loyalty, reciprocal agreements and the fact that the farmer deals with a particular merchant supplier because s/he has always done so (or his/her father before him/her did) relate to the sensemaking property '*identity*'. These are all examples of how the sensemaking framework is very much evident and strongly supported in the role of influencing factors in farmer decision-making.

7.4.4 Section Summary

In this section, Section 7.4, it has been demonstrated that there were many influencing factors on the decision-making process of the farmers in this study. Furthermore, although the influencing factors for each farmer were individual to that farmer, there were explicit patterns which tell us that many of those influences were common across the population interviewed. More importantly, the analysis of the data reveals that certain categories of influencing factors were strongly supported in specific categories of decisions undertaken. Another interesting observation is that a strong thread emerged when an analysis of those influencing factors by farm type was conducted. There is a theme emerging in this study around each of the farm types of dairy, tillage and beef which gives a unique insight into how decisions were undertaken within each farm type. Finally, there is significant support for adopting sensemaking as an appropriate theoretical lens to assist in building an explanation of farmer decision-making. The analysis of the influencing factors in both strategic and operational decision-making highlighted some interesting issues that are carried forward and discussed in Chapter 8.

7.5 Analysis of the Role of Advisors in Farmer Decision-making

An analysis of the role of advisors in farmer decision-making illuminated some interesting points. Some of the farmers in this study appeared to use advisors to a greater extent than others, some decisions appeared to prompt the involvement of advisors more than others, and when advisors were involved in decision-making, the extent to which they were involved was not to the same level in all instances. Furthermore, there were multiple sources of advice availed of by the farmers in this study, with not all farmers availing of the same advice sources in all situations. The role of advisors in farmer decision-making is not as straight-forward as one might

think; therefore, this section attempts to unpack this issue by attempting to develop a deeper understanding of it, based on the empirical data uncovered in this study.

7.5.1 Advice Sources Availed of by Farmers

There were numerous advice sources identified by the farmers in this study when their decision-making process was explored. These advice sources existed in both a professional and non-professional capacity, and are depicted in Table 7.3. Advice in a professional capacity relates to those advisors whose services were engaged by farmers in return for remuneration, while non-professional advice sources were those advice sources which were not paid for.

Table 7.3 Advice Sources in Farmer Decision-making

Professional Advice Sources	Non-professional Advice Sources
• Accountants • Agricultural advisors • Bank managers • Solicitors • Auctioneers • Specialist consultants • Agronomists • Nutritionists	• Fellow farmers/peers • Discussion groups • Family members • Merchant sales representatives • Agricultural contractors • Industry publications

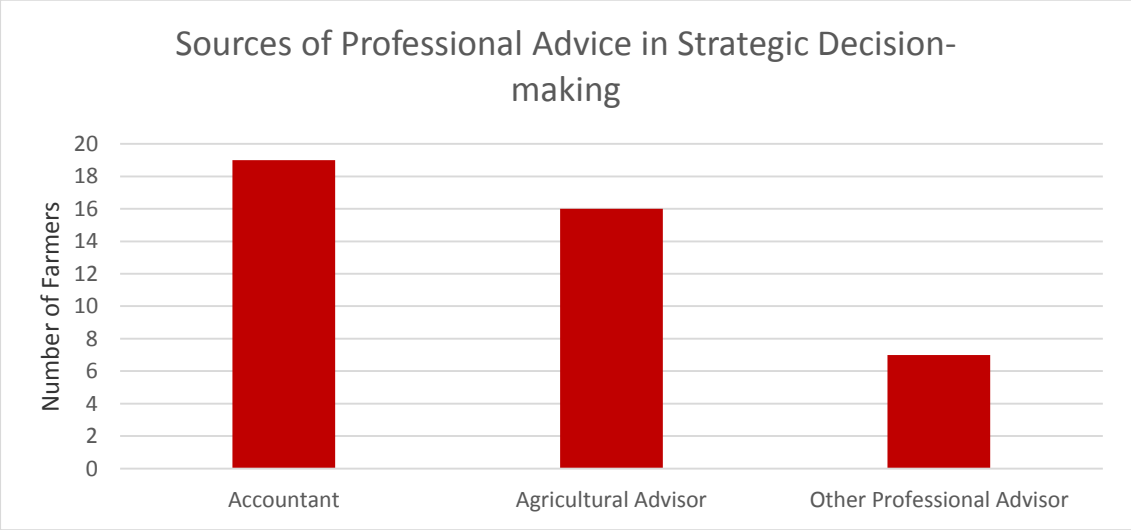
A review of the interview transcripts highlights that the above advice sources were emphasised to varying degrees in the data. The nature of the decision being undertaken appeared to be a key factor in what advice sources were availed of by the farmers in this study. Some advice sources were referred to in both strategic and operational decisions, while others were not. Furthermore, the extent to which farmers engaged the services of these advice sources appeared to vary considerably within each farm type. Therefore, the role of advisors is now discussed, in the first

instance, by reference to the type of decision (strategic and operational) and secondly, by reference to farm type (dairy, tillage and beef).

7.5.2 The Role of Advisors in Strategic Decision-making

The professional advice sources availed of by the farmers in this study in strategic decision-making are depicted in Figure 7.8. This high level overview illustrates that there appeared to be two primary sources of professional advice availed of by the farmers in this study in strategic decision-making, namely: accountants and agricultural advisors. The role of other professional advisors (bank managers, solicitors, auctioneers and specialist consultants) were amalgamated into one category, due to their apparent low level of involvement in the strategic decisions explored in the data.

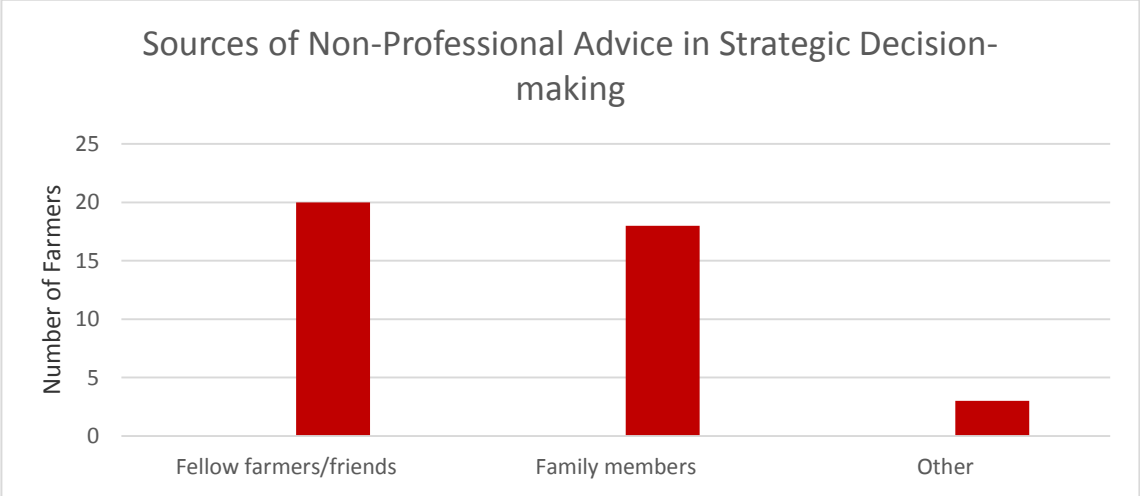
Figure 7.8 Sources of Professional Advice in Strategic Decision-making



In addition to the involvement of professional advisors, a number of non-professional advice sources were referred to by the farmers in this study in their strategic decision-making process. These sources of non-professional advice are shown in Figure 7.9. The analysis of the role of

non-professional advisors suggests that this source of advice may have been considered to be just as important as professional advice sources in the strategic decisions reviewed. This point is emphasised later in this section, under the heading 'level of involvement of non-professional advice sources in strategic decision-making'.

Figure 7.9 Sources of Non-Professional Advice in Strategic Decision-making



In Figure 7.9, the 'fellow farmers/friends' theme includes discussion groups, while the 'other' theme refers to industry publications, such as the *Farmers Journal.* It is important to highlight that Figures 7.8 and 7.9 are presented to provide a high level overview of the number of instances that each source of advice (theme) was present in the interview transcripts. After establishing the professional and non-professional sources of advice availed of by the farmers in this study, the interpretative exploration of these advice sources began.

Level of Involvement of Professional Advice Sources in Strategic decision-making

The initial overview of the role of professional advisors in strategic decision-making, as depicted in Figure 7.8, indicated that accountants appeared to be the primary advice source availed of by

the farmers in this study, followed closely by agricultural advisors. However, this overview did not provide any insight into the level of involvement of each of the advice sources in the decisions under review. Therefore, to explore the level of involvement of these two advice sources, in the 62 strategic decisions reviewed in this study, their role was classified into three categories. These were:

1. 'Key advisor' – the advisor appeared to be a key advisor;
2. 'Advice sought' – advice was sought but the advisor did not appear to be a key advisor; and
3. 'Not involved' – there was nothing to support that an advisor was involved in the decision.

To provide an insight into how the involvement of each advisor was classified[22], some quotes from the interview transcripts are now provided.

Firstly, in the category of 'key advisor', decisions included situations where a farmer expressed the sentiment that their advisor was quite heavily involved in their strategic decision-making process. For example, Farmer 5 (dairy) noted how his agricultural advisor was a key advisor in a recent buildings investment decision:

> *"We would do it* [financial analysis] *ourselves here, in the office and then we would run it by our advisor … he is good now, we would trust him 100%."*

In addition, Farmer 6 (beef) noted, when discussing the role of his agricultural advisor in his decision-making, that:

> *"He* [the farmer's advisor] *would know about it* [the decision under consideration] *… he would definitely be involved in any big decisions alright."*

Furthermore, Farmer 15 (beef) described how his accountant was heavily involved in his decision-making process in terms of buildings investment:

[22] To conduct this interpretative categorisation process, it was necessary to review the interview transcript in its entirety. For example, a farmer may state in one area of the interview that there were no external advisors, while in another area, the farmer may state that a specific advisor was involved.

> *"I would have spoken to the accountant to say, look it, we are looking at this* [buildings investment], *can we do it and if we are going to do it, should I be looking at a three-year, a five year or a ten year loan?"*

The above quotes give an indication of where advisors appeared to be a 'key advisor' in the strategic decisions under review.

Secondly, in the category of 'advice sought', decisions included situations where there was an indication that a farmer sought advice, but the advisor did not appear to be a 'key advisor'. For example, Farmer 9 (tillage) outlined that he would tend to have his mind made up on a particular decision but would still run it by his agricultural advisor:

> *"I will have my own mind 90% made up, and I will run it* [his decision] *by somebody just to pick holes in it."*

Another farmer, Farmer 11 (dairy), referred to how his accountant was not very involved in a recent buildings investment decision but he would have discussed it with him:

> *"I would have discussed it* [buildings investment] *with him* [his accountant], *but I mean, he wasn't in the decision-making process, absolutely not."*

Moreover, Farmer 24 (beef) alluded to how his agricultural advisor was involved in a recent buildings investment decisions from an 'advice sought' perspective, when he noted:

> *"Well, I spoke to the Teagasc advisor about it* [buildings investment], *but he wouldn't have been involved, other than to show him the design of the buildings and that kind of thing."*

The above quotes in the 'advice sought' category provide support for occasions where farmers sought advice, but those advisors did not appear to be 'key advisors' in the strategic decisions under review.

Finally, in the category of 'not involved', decisions included situations where a farmer stated that there was no advice sought or, by default, there was nothing in the interview data to suggest that the farmer sought advice in relation to a particular strategic decision. For example, Farmer 8 (beef) noted in terms of a land purchase decision:

"I wouldn't have gone to anybody for advice. I would have done it [land purchase] *off my own bat."*

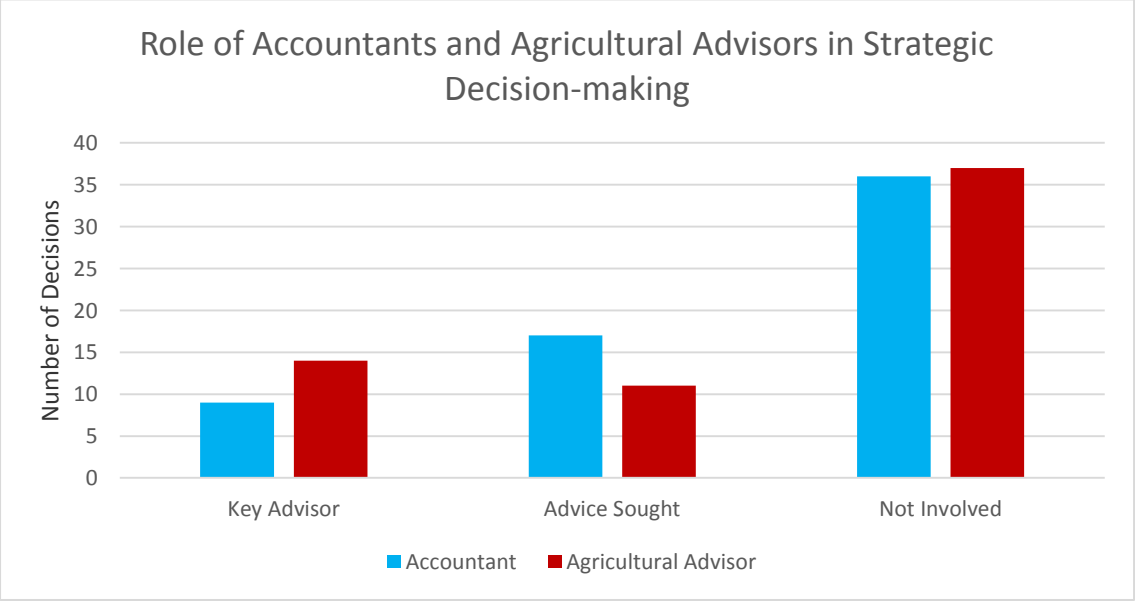
Farmer 12 (dairy), when asked "did you go to anyone for advice?" in terms of a land purchase decision simply stated: *"No, no"*. Finally, Farmer 14 (tillage) noted that he did not seek any external advice in a land purchase decision. When asked, who did he seek advice from, he noted:

"My wife, because it [land purchase] *was going to affect her obviously. That's it really."*

These quotes included in the 'not involved' category provide support for occasions where farmers did not involve their professional advice sources in the strategic decisions under review.

A review of the transcripts resulted in the illustrative quotes above. Next, a high level overview of the role of accountants and agricultural advisors in the strategic decisions explored in this study, was compiled using NVivo and is presented in Figure 7.10.

Figure 7.10 Role of Accountants and Agricultural Advisors in Strategic Decision-making



This interpretative analysis of the role of accountants and agricultural advisors in the strategic decisions explored suggests that, where accountants were involved in the strategic decision-making process of the farmers in this study, they appeared to be a 'source of advice' more often than they were considered to be a 'key advisor'. The opposite appeared to apply to agricultural advisors. Further analysis highlighted that, in many decisions, farmers engaged the services of both their accountant and their agricultural advisor. This emphasises the point that some farmers do seek advice from multiple advice sources when making strategic decisions. However, on the other hand, it is important to note that each farmer made multiple strategic decisions and it is evident that, on many occasions, farmers appeared to avail of the advice of advisors for one category of decision, but did not use that advisor in all strategic decisions undertaken.

Another interesting observation from Figure 7.10 is that, in many instances, there was no support of the involvement of accountants or agricultural advisors in the strategic decision-making process of the farmers in this study. This high level of disengagement may be partially explained by the high level of involvement of non-professional advice sources, as noted in Figure 7.9.

Further investigation into the role of accountants and agricultural advisors, based on the categories of strategic decision and farm type, revealed some interesting observations. Firstly, it appeared that the category of strategic decision was a key factor in terms of the level of involvement of these two professional advice sources. For example, in this study, buildings investment and land purchase decisions presented contrasting levels of involvement of accountants and agricultural advisors. Accountants appeared to be more involved in land purchase decisions and less involved in buildings investment decisions, while the opposite was evident for agricultural advisors. In the other four categories of strategic decision (machinery investment, land lease, livestock investment and off-farm investment), there appeared to be quite

low levels of involvement by both accountants and agricultural advisors. This finding is followed up and discussed further in Section 8.4.1.

Furthermore, the level of 'not involved' of both accountants and agricultural advisors in the strategic decisions reviewed was quite surprising even though, in some cases, it may have been substituted by seeking the advice of another source of professional or non-professional advice. A very interesting observation was that a number of farmers categorically stated that they did not seek the advice of their professional advisor and were probed further as to the reason for this. For example, when Farmer 8 (beef) was asked why he did not involve his advisors in a land purchase decision, he noted:

> *"I had all the information myself, and they* [his advisors] *didn't have, there was nothing they could add to it."*

Another farmer, Farmer 18 (tillage), when asked a similar question about the lack of involvement of his advisors in strategic decision-making, noted:

> *"Sure, if you would go to look for advice, you would go to many lads and then in the finish, you don't know whether you're coming or going."*

Finally, Farmer 23 (tillage), when probed as to why he did not involve his accountant in his strategic financial decision, said:

> *"I did it all myself actually, the whole business plans for the bank and for the grant. I did that because … it's a bit stupid going to an accountant for it, because all it is, is a calculator and figures."*

The above reasons cited by the farmers in this study for not engaging professional advisors indicate that the farmers who did not avail of them simply felt that they had enough information themselves and did not believe that there was any benefit to be gained from involving those advisors. This issue is followed up and discussed further in Section 8.4.1.

A comparison of the role of accountants and agricultural advisors in the strategic decisions analysed by farm type revealed a number of insights. Firstly, the beef farmers in this study

appeared to be the farm type that engaged professional advisors least in their strategic decision-making. In terms of the involvement of accountants, there appeared to be a similar level of engagement from both the dairy and tillage farmers, but in terms of agricultural advisors, the dairy farmers appeared to engage their services more than the tillage farmers. Overall, the dairy farmers in this study appeared to be the farm type that engage professional advisors most in their strategic decision-making. This issue is followed up and discussed further in Section 8.4.2.

The above findings surrounding the role of accountants and agricultural advisors in strategic decision-making, analysed by category of strategic decision and by farm type, were presented and probed further with the focus group. The participants initially noted that they found it unusual that farmers appeared to conduct land purchase decisions without seeking professional advice. However, **FG/2** noted that the findings presented mirrored his own personal experience as an advisor, when he stated:

> *"It mirrors my own stuff that I found, broadly high enough engagement with advisors across the board but a very narrow focus, a lot of it is specific to schemes and when you move into the specialist tillage and the specialist dairy guys, they are using their advisors deeper and wider."*

Essentially what **FG/2** was saying was that he sees a high level of engagement from farmers with advisors, but the focus is very narrow – the majority of his clients use agricultural advisors for form filling and compliance with various schemes such as the SFP. Therefore, he did not find the level of disengagement in strategic decision-making surprising. Furthermore, the fact that beef farmers were not mentioned in the above quote by **FG/2** supports the findings from this study in relation to farm type – beef farmers appear to be the farm type that engage least with professional advisors.

In addition, **FG/3** noted that IFAC Accountants specifically set up a "land purchase field" in their book-keeping system for recorders to highlight to the accountant if land was purchased.

The fact that it was necessary for such a facility to be set-up demonstrates that many farmers were not consulting with their accountant in the land acquisition process. Finally, **FG/3** had experience of advising clients not to proceed with land purchase decisions, based on FFM reasons, but the client proceeded by ignoring his advice – a scenario mirrored in the empirical findings.

Finally, a number of farmers noted, the involvement of 'other professional advisors' in their strategic decision-making process. These included bank managers, solicitors, auctioneers and specialist consultants. Of the references to 'other professional advisors' in this study, bank managers appeared to be the advice source cited most frequently, followed by solicitors, specialist consultants and auctioneers. A number of observations were of particular note when the role of these 'other professional advisors' were explored – bank managers were quite often involved where access to funding was being sought; solicitors were mainly involved in the case of land purchase and land leasing decisions; specialist consultants were involved in buildings investment and off-farm investments; while auctioneers were involved in land purchase decisions. Overall, a review of the interview transcripts highlighted that 'other professional advisors' did not appear to have a significant involvement in the strategic decisions under review. However, it highlighted that, on some occasions, a variety of professional advice sources might be involved in the strategic decision-making process of farmers.

Level of Involvement of Non-Professional Advice Sources in Strategic Decision-making

As noted earlier, the role of non-professional advice sources appeared to be as important as professional advice sources to the farmers in this study, when making strategic decisions. In fact, some farmers categorically stated that they valued the input of non-professional advice sources over professional advice sources. This was best illustrated when one particular farmer answered

"no" when asked if his accountant was involved in a strategic decision undertaken and when probed further in the interview as to the reason why, he noted:

> *"Absolutely not, because they* [accountants] *are conservative. I did* [involve them] *once, and they just said, No, it's not a good idea. So I wondered why did they say that, and of course they would only go for secure, conservative, what seems like the proper thing to do. So no, a business person or a farmer, he would have the gut feeling, he would have his previous knowledge from mistakes and successes of being out there doing it, and that's what you would use."* (Farmer 14, tillage)

This quote illustrates how Farmer 14 clearly valued the advice sources of a non-professional advisor (business person or farmer) over a professional advice source (accountant) in his strategic decision-making process.

Similar analysis was conducted on the role of non-professional advice sources, to that conducted on professional advice sources, based on the category of strategic decision and farm type. This analysis revealed some key observations.

Firstly, many of the farmers in this study appeared to avail of the advice of 'fellow farmers/friends' and 'family members' in both land purchase and buildings investment decisions. Interestingly, in the case of land purchase decisions, many of the farmers appeared to rely on the advice source of 'family members' more than they relied upon the advice source of 'fellow farmers/friends', while the opposite was the case for buildings investment decisions. Furthermore, there was little support of the involvement of non-professional advice sources in three of the other four categories of strategic decision (machinery investment, livestock investment and off-farm investment), while in the category of land lease, non-professional advice sources appeared to have some level of involvement.

Secondly, in terms of farm type, the tillage and beef farmers in this study appeared to acknowledge the advice source of 'fellow farmers/friends' more than the advice source of

'family members', while the dairy farmers appeared to place more emphasis on the advice source of 'family members' compared to 'fellow farmers/friends'. The analysis of non-professional advice sources in strategic decision-making by farm type highlighted that the beef farmers in this study appeared to be the farm type that relied on non-professional advice sources most. This is an interesting finding because it was noted earlier that the beef farmers in this study appeared to be the farm type that availed of professional advice least, while the contrary is evident here. Therefore, it is plausible, based on the insights obtained, that the beef farmers may have substituted professional advice with non-professional advice sources, in order to progress with their strategic decisions.

The above findings surrounding non-professional advice sources in strategic decision-making, analysed by category of strategic decision and by farm type, were also presented and probed further with the focus group. In terms of the finding that the advice source of 'family members' appeared to be relied upon more than the advice source of 'fellow farmers/friends' in land purchase decisions, while the opposite was noted with respect to buildings investment decisions; the focus group participants concurred with this. It was captured when **FG/1** noted:

> *"You talk about it* [land purchase] *within the family and also it's a closed circle that if the land is there for auction ... you're not going down to the neighbour to discuss it, so that makes perfect sense."*

One possible explanation highlighted by the focus group for this was 'secrecy'. **FG/2** noted:

> *"You have it* [land] *bought before anyone knows."*

This means that many farmers tend to be quite secretive about land purchase decisions. The element of secrecy could be more prevalent in the area of land purchase than in the area of buildings investment. Furthermore, another possible reason put forward by the focus group was that the level of investment in each category of decision may be a factor. **FG/3** stated:

> *"There is a difference between the level of investment in land and buildings. Land purchases tend to be big ... and they can have financial repercussions across the family ... for generations."*

Essentially, land purchase is quite often considered a more important decision than buildings investment in terms of the family unit and, therefore, may not be discussed with fellow farmers.

The Role of Discussion Groups in Strategic Decision-making

Discussion groups are one of the primary methods of dissemination of agricultural advice and training in recent years within Irish agriculture (Bogue, 2013). Therefore, the interview transcripts were reviewed to explore the role of discussion group participation as an advice source in strategic decision-making. The majority of farmers interviewed are members of a discussion group. The involvement of discussion groups is classified within 'fellow farmers/friends' in the analysis of non-professional advice sources in Figure 7.9. Many of the farmers mentioned that they spoke to 'fellow farmers/friends' about their strategic decisions. However, upon further review of the interview transcripts, it was noted that few of the latter stated that this was in a discussion group format.

The low level of involvement of discussion groups in strategic decision-making in this study could be due partially to the mentality of farmers and a secrecy element alluded to in the interview transcripts. Also many discussion groups are in their infancy (Table 2.3, Section 2.4.2), as they have been established in recent years through various support programmes. Therefore, farmers may not yet have built up trust and confidence within the groups to discuss such strategic decisions. There is support for this as many of the farmers that mentioned the involvement of discussion groups in their strategic decision-making process have been involved in discussion groups for many years and, furthermore, these groups were established prior to and outside the parameters of the support programmes. This suggests that trust among members had been established. This point was probed further in the focus group and they concurred with the sentiment that many discussion groups were in their infancy and, therefore, trust among

members might not yet have been established. In addition, the focus group participants appeared to concur with the view that discussion groups were more a forum to discuss operational issues as opposed to strategic issues. This was noted when **FG/2** stated:

> *"You need to break out of the group and sit down at the kitchen table and allow some space for that* [strategic decision-making] *because lots of people don't engage in discussion groups. Even if they go, they won't engage and so you need to give them time and space, and develop trust, all that sort of stuff."*

Moreover, **FG/1** added to this sentiment when he stated:

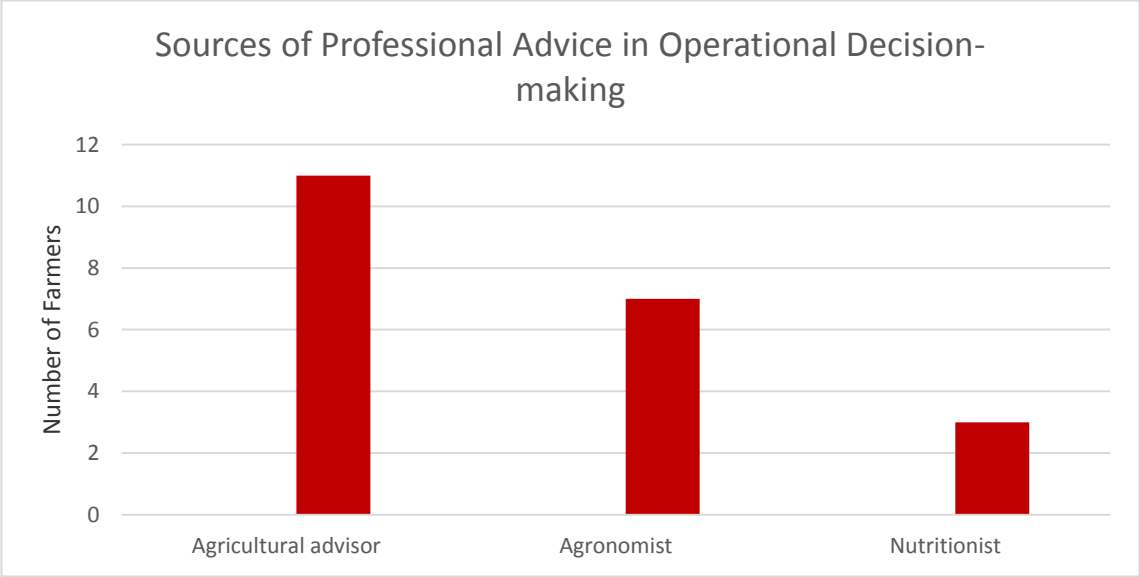
> "*Each business is so personal to an individual that, while we're saying that they will talk at any discussion groups, they won't be telling anybody their bank balance, you know, or their debt loan* [issues associated with strategic decision-making]*."*

These quotes highlight that, when the apparent low level of involvement of discussion groups in the strategic decision-making process of farmers in this study was discussed, the focus group participants noted that this was because farmers need time to develop trust. Also, farmers tend to avoid group discussion when personal information, such as their financial situation, would arise (which is necessary when evaluating any of their strategic decisions).

7.5.3 The Role of Advisors in Operational Decision-making

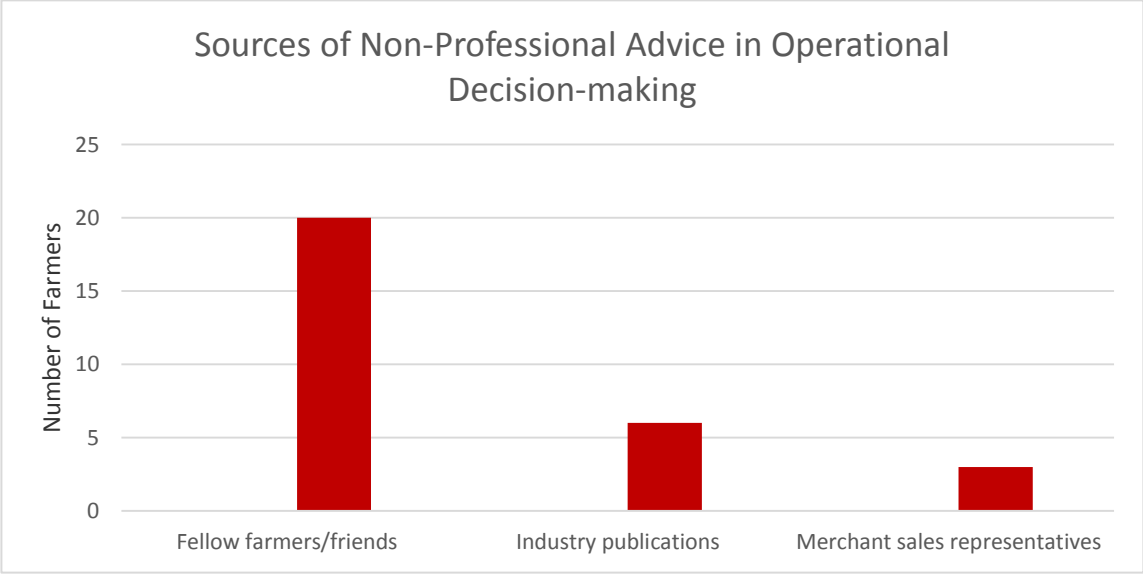
The professional advice sources availed of by the farmers in this study in operational decision-making are depicted in Figure 7.11. This high level overview indicates that there appeared to be three primary sources of professional advice availed of by these farmers, namely: agricultural advisors, agronomists and nutritionists.

Figure 7.11 Sources of Professional Advice in Operational Decision-making



In addition, there were a number of non-professional advice sources prevalent in the operational decision-making process of these farmers. These are presented in Figure 7.12, and include: 'fellow farmers/friends' (including discussion groups), 'industry publications' and 'merchant sales representatives'.

Figure 7.12 Sources of Non-Professional Advice in Operational Decision-making



Comparing Figure 7.12 and Figure 7.9 earlier, family members are not listed in Figure 7.12 as farmers do not tend to seek advice on operational issues from family members due to the technical nature of such decisions. Once again it is important to highlight that Figures 7.11 and 7.12 are presented merely to provide a high level overview of the number of instances that each source of advice (theme) was present in the interview transcripts. After establishing these sources of non-professional advice, the focus turned to the interpretation of these themes by analysing the level of involvement of these respective advice sources in the farmer's operational decision-making process.

Level of Involvement of Professional Advice Sources in Operational Decision-making

The three sources of professional advice in operational decision-making noted in Figure 7.11 are: agricultural advisors, agronomists and nutritionists. Agricultural advisors, in this context, refer to generic agricultural advisors, while agronomists and nutritionists are specialist consultants who purely give advice to farmers in their respective specialist areas of agronomy and animal dietary management. Interestingly, as can be seen from Figure 7.11, there was nothing in the interview data to support the role of accountants in operational decision-making to any meaningful extent, despite these operational decisions often involving the most significant financial outlay annually. A number of farmers noted that accountants would comment if there was a significant variation in the amount spent annually on the specific areas in the annual accounts affected by the operational decision under review, but that appeared to be the extent of their accountant's involvement. For example, Farmer 18 (tillage) noted how his accountant would comment on variations in the level of spend on operational decisions:

> *"There was a lot of feed bought, that would have been the worst* [highest cost] *for a while … our accountant would say, "Oh, you bought an awful lot of such-and-such" and that's the way he usually goes through it with me."*

In strategic decision-making, the level of involvement of professional advice sources was split into three categories: key advisor, advice sought and not involved. This level of analysis was not possible in the area of operational decision-making, as the difference between a professional advisor being considered a 'key advisor' or being in the 'advice sought' category was so subtle that no meaningful insight could be drawn from such analysis. However, the interview transcripts revealed that, where farmers got the input of these professional advice sources in operational decision-making, it appeared that it was valued and taken on board. For example, Farmer 8 (beef), commented how his agricultural advisor is quite involved in his operational decisions, when he noted:

> *"My Teagasc advisor, it* [feed requirements] *is one part of the farming where we would have long discussions on, on all the different ingredients that we would need for different types of animals."*

In addition, Farmer 21 (dairy), illustrated how his agricultural advisor is also quite involved in his operational decision-making process surrounding feed decisions, when he stated:

> *"The efficient key physical aspects of farming, that's what he's* [agricultural advisor] *on. No interest whatsoever in Single Farm Payment, he has no interest in buildings, or anything, it's just on issue around cows, how many cows you carry per acre, how much feed you have to grow from those acres, how and where you need to import feed, what is the cheapest way you can afford feed, all that - the key skills of a dairy farmer."*

The above quotes suggest that professional advisors do play a key role in the operational decision-making process of the farmers in this study.

An analysis of the professional advice sources availed of by the farmers in this study in operational decision-making, by farm type, was conducted. Some of the main observations were: the farmers who availed of the advice source of the agronomist were all tillage farmers, the farmers who availed of the advice source of the nutritionist were a mix of dairy and beef farmers and the farmers who availed of the services of their agricultural advisor were predominantly the dairy and beef farmers, with a small number from tillage. The small number of farmers from tillage could be due to the fact that many of the tillage farmers engaged the specialist services of

an agronomist; therefore, they may not see the need to consult their agricultural advisor also. Overall, the level of involvement of professional advice sources in operational decision-making did not appear to be as notable as it was when the role of professional advice sources in strategic decision-making was explored. This finding is followed up and discussed further in Section 8.4.2.

Level of Involvement of Non-Professional Advice Sources in Operational Decision-making

A key observation to note, which was briefly alluded to earlier, is that non-professional advice sources appeared to play a more important role in the operational decisions reviewed, compared to the strategic decisions reviewed, in this study. 'Fellow farmers/friends' appeared to be quite a strong source of non-professional advice in operational decision-making, while 'industry publications' and 'merchant sales representatives' were not emphasised as a source of advice as much. The category of 'fellow farmers/friends' includes situations where farmers noted that they discussed their operational decisions with other farmers and within their discussion group. The category of 'industry publications' refers to where farmers noted that published industry data were used as an advice source in operational decision-making. Finally, the category of 'merchant sales representatives' refers to where such individuals provided advice to farmers in terms of actual operational decisions being made.

The high level of reference to fellow farmers in the interview data suggests that the opinion of other farmers appeared to be a key non-professional advice source in the operational decision-making process of the farmers in this study. This issue was discussed with the focus group participants and there was broad consensus, as **FG/2** commented:

> *"There's a kind of a strong sense of dealing within their own community, their immediate community coming through here ... that they talk, they go to the mart, they go to the match, they go to the creamery and they talk amongst themselves."*

Essentially, **FG/2** was highlighting how, based on his experience, he believed farmers discussed operational decisions with their fellow farmers quite often.

When the role of non-professional advice sources was analysed by farm type, farmers from each of the three farm types appeared to emphasise each of the non-professional advice sources to a similar level. However, an analysis of the role of discussion groups, by farm type, highlighted some interesting observations which are now discussed.

The Role of Discussion Groups in Operational Decision-making

As noted earlier, in Section 2.6, discussion groups are one of the primary methods of dissemination of agricultural advice and training in recent years within Irish agricultural. In addition, it is important to reiterate that the majority of farmers interviewed were members of a discussion group. Figure 7.12 shows that many farmers sought advice from 'fellow farmers/friends' in their operational decision-making process. Further analysis of this showed that, in many of those situations, such conversations took place within discussion groups. This suggests that discussion groups do provide a valuable platform where farmers can come together to discuss operational issues and assist them in their decision-making.

Further analysis on the level of involvement of discussion groups in operational decision-making, by farm type, found that many of the dairy and beef farmers referred to these groups as a source of advice, while the tillage farmers appeared to place less emphasis on the latter. This finding could be explained by the discussion group format being more prevalent in the dairy and beef sectors, where programmes (DEP and BTAP discussed in Section 2.4.2) have been established to promote discussion group participation, compared to the tillage sector, where no such forums are established.

In contrast to strategic decision-making, where it was evident that there appeared to be a low level of involvement of discussion groups, the contrary has been established here – discussion groups appear to be a forum often used to discuss operational issues. As noted earlier, under the heading 'the role of discussion groups in strategic decision-making' at the end of Section 7.5.2, the focus group participants concurred with this finding which is followed up and discussed further in Section 8.4.1.

7.5.4 What the Role of Advisors tells us about Farmer Decision-making

Similar to the data analysis process described in Section 7.4.3 in relation to the influencing factors theme, a similar process of data analysis was conducted for the role of advisors aspect of **RO1**. This process, which facilitated the connections between the findings in relation to the role of advisors and the sensemaking properties to be made, resulted in Figure 7.13.

Figure 7.13 Review of the Sensemaking Framework against the Role of Advisors

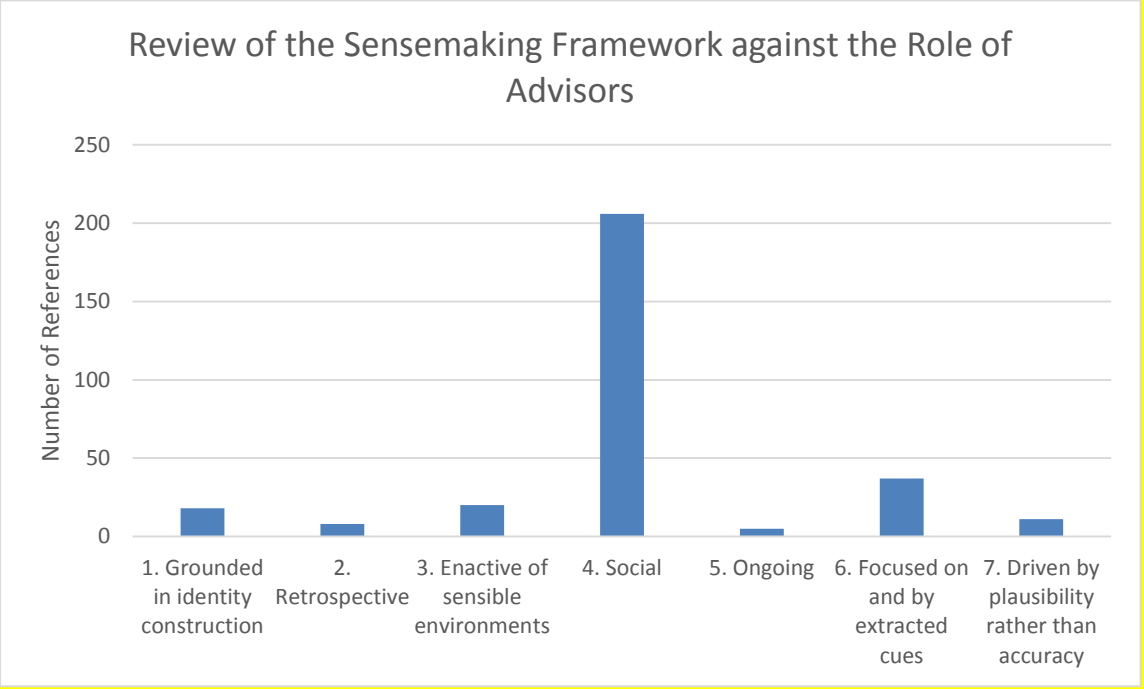


Figure 7.13 provides a high level overview of the properties that were supported and, thereby, assists in developing an explanation of what the findings surrounding the role of advisors tell us about farmer decision-making. This is not a statistical representation, but a visual presentation of the support for each property in the data (Blaikie, 2010) which facilitates a mapping of what the closest links may be between sensemaking and the role of advisors. A similar explanation has been included for Figures 7.7 and 7.16 to emphasise how these figures have been interpreted.

The sensemaking property that was strongly supported, when the role of advisors was reviewed, is the 4th property, '*social*'. Weick described sensemaking as a social process when he noted that 'sensemaking is never solitary because what a person does internally, is contingent on others. Attributes of the social aspect of sensemaking can imply to talk through something, to discuss it with others' (1995, p.39). In essence, the whole area of the role of advisors could be summarised in this one word, *social*.

In the past, farming was traditionally operated in quite a solitary environment. However, in Section 7.7.1, this study reveals that younger and more educated farmers appear to be more open to seeking advice. This increase in advice-seeking suggests that decision-making is increasingly becoming a social practice. The analysis of decision-making, in the context of both strategic and operational decision-making, demonstrates that both types of decision appear to be a social practice, with little evidence of farmers acting in isolation. Interestingly, there were some contradictions evident in the data; when a number of interviewees were asked "from whom did you seek advice?" initially they stated that they did not seek advice from any source but, when probed further in the interview, it became apparent that advice had been sought. For example, Farmer 15 (beef), when asked from whom he sought advice on a buildings investment decision he initially responded:

"The sheds are totally my own design."

But, when the decision was probed further, he stated:

> *"I would have run it past our discussion group and one of the guys that would have done the building for me."*

All of the above demonstrates that, although there were varying levels of advice and sources of advice, their enactment was not uniform across the types of decision reviewed. It is clear that, in the words of Weick, farmers in this study appeared to 'talk things through' and 'discuss them with others' before proceeding with decision-making. Hence, the decision-making process of the farmers in this study appears to be a social practice.

Social was the most supported property of the sensemaking framework, when the role of advisors in decision-making was reviewed. However, it is important to highlight that the other six properties of sensemaking were also supported in the data, which highlights some interesting observations. Firstly, '*grounded in identity construction*', Weick explains that 'individuals are formed and modified in part by how they believe others view the organisation for which they work' (1995, p.21). In a farming context, this could imply that farmers like to bounce their ideas/decisions off others; essentially they seek advice. Furthermore, their identity as a farmer may determine the level of advice sought in their decision-making process, because as Weick noted also, in reference to the property of '*grounded in identity construction*', sensemaking begins with the sensemaker and that the sensemaker is at the focus of the process.

Throughout the empirical work, it was noted that there were two aspects of farmer identity evolving – there was the *individual identity* of the farmer, which was at the heart of decision-making, but there was also a *collective identity* evolving around each of the farm types. The role of advisors in strategic decision-making in this study support this premise of collective identity, as:

- The dairy farmers appeared to be the farm type that engaged professional advisors most in strategic decision-making.
- The beef farmers appeared to be the farm type that availed of the services of non-professional advisors most in strategic decision-making.
- The dairy and beef farmers appeared to be at opposite ends of the spectrum when analysing advice sources, with the tillage farmers usually somewhere in between.

The interview transcripts also suggest that the *individual identity* and mentality of the farmers in this study, appeared to be central to how they make decisions and, to a large extent, often determined the level of advice sought. The extent to which farmers in this study sought advice was not uniform in all cases – some farmers appeared to automatically seek out advice when making decisions, while others appeared to have a more insular decision-making process. This raises the question: why do some farmers seek advice and others do not? There does not appear to be any clear answer to this question, as it is largely dependent on the mentality of each individual farmer. However, after a thorough analysis of the data, where farmers stated that they did not seek any advice when making decisions, but rather relied on their own experience and intuition, the majority of those farmers were in the older age category of 45 years or older. This feature suggests that there may be a shift in the identity of farmers, in terms of the practice of seeking advice, as farms pass from one generation to the next (as noted by KI/2 on bottom of page 165). The younger farmers appeared to be engaging in advice-seeking practices more, in comparison to their older counterparts. The demographic of age is discussed in Section 7.7.1.

In Section 7.5.2, the element of secrecy in farmer decision-making was mentioned. This is another aspect that is linked to the area of farmer identity. Observations from the empirical findings suggest that the level of advice sought may be linked to the category of decision undertaken. For example, in this study, the non-professional advice source of 'family members'

appeared to be relied upon more than 'fellow farmers/friends' in the strategic decision of land purchase. This suggests that, in many instances, part of the identity of being a farmer may be that one tends not to seek advice from external parties who are not considered to be from a trusted source. The elements of trust and secrecy are closely intertwined. Furthermore, as discussion groups appear to be a forum to discuss operational decisions, as opposed to strategic decisions, this reinforces the secretive aspect in the identity of farmers and suggests that it may influence the level of advice sought by farmers.

The word trust was mentioned in the preceding paragraph and it was mentioned on numerous occasions when discussing the role of advisors throughout the interview process with farmers. The propensity to trust advisors appeared to be particularly important where farmers were engaging the services of professional advisors. In Section 7.5.2, where the role of professional advisors in strategic decision-making was categorised, those advisors who were considered to be involved in decision-making from a 'key advisor' perspective, in many cases were, in a context where farmers had built up a long and trusting relationship with their advisors. Equally, there were examples where farmers stated that they believed that their professional advisors (both accountants and/or agricultural advisors) were not deemed appropriate to give advice in certain decision-making scenarios (i.e., the farmer had neither trust nor confidence in the advisors' input). For example, Farmer 11 (dairy) stated why he does not involve his accountant in many of his decisions, simply because:

"My accountant doesn't know much about farming."

This sentiment was shared by a number of farmers when the role of professional advisors (particularly accountants) was being discussed. This suggests that belief in the competency, as well as trust in outside advisors, is another component in the identity of the farmers in this study (see Section 4.6.3).

The third and final property of the sensemaking framework that is worth highlighting, based on a review of the role of advisors, is '*driven by plausibility rather than accuracy*'. Weick (1995, p.62) contends that 'one needs to understand enough about a situation to allow them to get on with it, rather than know every single micro element accurately'. In respect of the role of advisors, this suggests that, rather than farmers researching and analysing every micro detail of information available in relation to a particular decision, they may seek advice to give an overview of that situation to provide the necessary information to make an informed decision.

There are a myriad of advice sources available to farmers, as presented in Table 7.3 earlier. In an ideal world, perhaps a farmer should consult with all the various advice sources and make the most informed decision possible. However, this would take a considerable amount of time and result in an expensive consultation process. Therefore, farmers may choose the advice sources that they deem most appropriate to assist them in their decision-making process. The interview data revealed that some farmers relied on professional advice sources, while others tended to value non-professional advice sources and in many cases, farmers tended to avail of both. However, no farmer reported consulting with all the various advice sources. This suggests that it was not possible to explore every advice source available, but rather the farmers in this study chose to gather information from those advice sources that they deemed most appropriate. In essence, this implies that the farmers appeared to gather enough information to make *a plausible rather than accurate* decision.

7.5.5 Section Summary

Professional and non-professional advice sources were availed of by the farmers in this study when making the decisions reviewed. The findings here continue to develop the themes that were emerging from Section 7.4 – *the type of decision* and *farm type* are two criteria which

appear to be key factors in the decision-making process of the farmers interviewed. This analysis of the role of advisors reveals that some advice sources appear to be more associated with specific categories of decisions undertaken than others. Furthermore, these findings reveal that the thread emerging from the analysis of the data by farm type, continues to permeate through this section. As we move from one section to the next, the narrative surrounding each of the farm types of dairy, tillage and beef is enlarged to further capture how decisions were undertaken within each farm type.

Finally, the information gathered from a review of the role of advisors, when evaluated against the sensemaking framework, continues to demonstrate how sensemaking is an appropriate theoretical lens to help build explanation of farmer decision-making, due to the support of its properties (with particular emphasis being placed on the property of '*social*') in the data. A review of these professional and non-professional advice sources availed of in strategic and operational decision-making highlighted some interesting issues that are carried forward and discussed in Chapter 8.

7.6 Analysis of the Role of Farm Financial Management (FFM) in Farmer Decision-making

To explore the role of FFM in farmer decision-making is a key aspect of research objective one (**RO1**) of this research project. FFM has been defined in Chapter 2 as *any activity that involves the recording, analysing and/or interpreting of financial data that enables planning, control and decision-making*. This definition uses the words 'any activity' which means that the FFM activity could be of a formal or informal nature. At the outset of this section, it is important to note that, in Section 7.4, all farmers interviewed acknowledged that their decisions were

influenced by financial issues. Those findings do not mean that all the farmers conducted financial analysis in their decision-making process, but it does highlight that financial influences appeared to be an important consideration. The section will now proceed to examine the role of FFM in both strategic and operational decision-making.

7.6.1 The Role of FFM in Strategic Decision-making

As a starting point, the level of FFM that farmers conducted in their strategic decision-making process was established. To do this, the FFM activities conducted in the strategic decisions undertaken were classified into three categories, namely:

1. 'Formal analysis' – the farmer appeared to conduct formal FFM analysis;
2. 'Informal analysis' – the farmer appeared to conduct some informal FFM analysis; and
3. 'No analysis' – there was nothing to support that the farmer conducted any financial analysis.

To provide an insight into how the level of FFM conducted was categorised[23], some quotes from the interview transcripts are now provided.

Firstly, the category of 'formal analysis' referenced situations where there was support in the interview data indicating that the farmer appeared to conduct formal FFM analysis in the decisions undertaken. For example, Farmer 5 (dairy) outlined how he conducted detailed budgets before proceeding with a buildings investment decision, when he noted:

> *"All the budgets would be done out with all different sets of figures for four to five years."*

[23] To conduct this categorisation process, it was necessary to review the interview transcript in its entirety, rather than focusing on individual interview quotes, as contradictions in the interview data were evident on occasions. For example, a farmer may state in one area of the interview that there was no financial analysis completed, while in another area, that farmer may state he did sit down and do some financial analysis.

After the interview with this farmer, the researcher asked the farmer if he could see the budgets that were referred to above. The farmer then proceeded to open an excel spreadsheet on his computer which showed the projections expected over five years as a result of undertaking the proposed investment. These projections included a sensitivity analysis of how the projections may fluctuate, based on a range of possible milk prices in the future. A review of those budgets provided evidence of how formal analysis was conducted on the strategic decision under review.

In addition, Farmer 8 (beef) acknowledged how he conducted detailed financial analysis before he proceeded with a land purchase, when he stated:

> *"I looked very much so into what would it* [land purchase] *mean, what my extra profit would be … I went into two or three other different avenues and said if I put this money into something else, what would the financial return be, and what would the implications be on my lifestyle? I weighed it up."*

Farmer 21 (dairy) noted 'formal analysis' when he spoke of how he reviewed how much he could afford to invest in buildings by reviewing his borrowings per cow. He stated:

> *"I did need to borrow* [to finance a buildings investment]*, but I was very aware that by benchmarking with fellow farmers, that my borrowings per cow were not in anyway excessive."*

The above quotes give an indication of how farmers appeared to conduct formal FFM analysis in the strategic decisions under review.

Secondly, the category of 'informal analysis' referenced situations where the farmer appeared to conduct some informal FFM analysis. For example, Farmer 10 (dairy), when discussing the financial analysis he conducted before proceeding with a land purchase decision, expressed a sentiment of 'informal analysis' when he noted:

> *"We did a few figures ourselves and felt that we would be able to pay for it* [land]*. We knew it wasn't going to be easy."*

Another farmer, Farmer 13 (beef), acknowledged that he did not conduct 'formal analysis' but undertook some element of financial reasoning on his decision to purchase land, when he noted:

> *"€10,000 an acre would be the most I would go* [pay for land] *and that was it … I didn't do any financial return or over how many years, what would I get back?"*

Moreover, Farmer 23 (tillage) outlined how he conducted some element of financial analysis, but it did not appear to be a significant amount, when he stated:

> "*I would have done some crunching numbers, I'd be trying to see how can I cover the payments, or how do I justify the payments on it and that's all I would do."*

Finally, Farmer 24 (beef) outlined how he conducted some informal analysis of a buildings investment decision when that he calculated some figures on the back of a "Weetabix box":

> *"We got it out on the table, Claire* [farmer's wife] *and myself, and we had it* [figures] *done on the back of a Weetabix box …"*

After this point in the interview, the farmer went over to a press in his kitchen and took out that same Weetabix box and showed it to the researcher. On the box were some costs detailing estimates of what the farmer expected the proposed building to cost him. This review of documentary evidence by the researcher provided support of some informal analysis being conducted on the strategic decision under review.

The above quotes in the 'informal analysis' category provide support for occasions where farmers appeared to conduct informal financial analysis only on the strategic decisions under review.

Finally, the category of 'no analysis' referenced situations where the farmer stated that he conducted no FFM in the decision-making process or by default, there was nothing in the interview data to support that the farmer conducted FFM. For example, when Farmer 6 (beef) was asked if he conducted any financial analysis before proceeding with a buildings investment decision, he replied:

> *"No, that's the straight answer, no!"*

Similarly, when Farmer 12 (dairy) was asked the same question in relation to a land purchase decision, he noted:

> *"The honest answer is, it was in the account* [money] *and the land was for sale, no we didn't."*

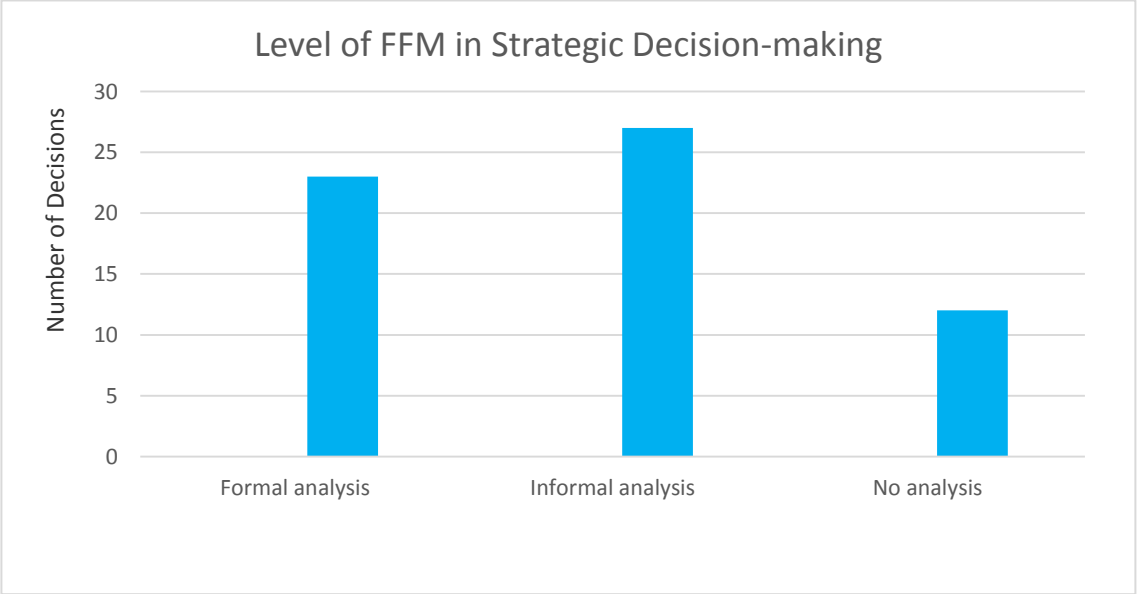
Finally, Farmer 18 (tillage), when asked about his financial analysis in relation to a land purchase decision, responded:

> *"I had done nothing, I bought it and that was it."*

These quotes included in the 'no analysis' category provide support of farmers conducting no financial analysis in the strategic decisions under review.

A review of the transcripts resulted in the illustrative quotes above. Next, a high level overview of the level of FFM conducted in the strategic decisions explored in this study, was compiled using NVivo and is presented in Figure 7.14. It is important to note that each farmer engaged in multiple decisions and it was evident that, while on many occasions each farmer appeared to conduct a similar level of financial analysis on all decisions undertaken, there were some occasions where farmers appeared to conduct varying levels of financial analysis for separate categories of strategic decisions undertaken.

Figure 7.14 Level of FFM in Strategic Decision-making



The above interpretative analysis of the level of FFM conducted in each decision explored in this study highlights that, in many of the decisions reviewed, farmers conducted some form of financial analysis (formal or informal), which is a positive sign. In terms of the category of 'no analysis', some farmers noted that, in at least one of their investment decisions, no financial analysis was conducted. Upon further analysis of this group of farmers, it was noted that many of them appeared to conduct 'no analysis' on all of their investment decisions. A review of the source data for these farmers indicated that:

- One of the farmers sold land for development purposes for a significant amount of money, which may have negated the necessity to conduct any financial analysis.
- Two of the farmers were in the higher age bracket, which may suggest that there is a link between the age of the farmer and the level of FFM conducted. This is explored further in Section 7.7.1.

- Another farmer's wife was an accountant, who was very much involved in the farm management and investment decisions. Therefore, it is surprising to note that, apparently, no financial analysis was conducted in their strategic decisions.

Level of FFM in Strategic Decision-making by Category of Decision

In order to delve deeper into the level of financial analysis conducted in the strategic decisions undertaken, the level of FFM in each of the six strategic decision categories was analysed (*see Appendix P, Figure 1*). This analysis highlighted some interesting issues.

Firstly, buildings investment – 'formal analysis' appeared to be conducted in many of the buildings investment decisions that were reviewed in this study. However, 'informal analysis' appeared to be the category of FFM that was most emphasised. In addition, some farmers acknowledged that they conducted 'no analysis' in their buildings investment decisions.

Next, land purchase decisions – many of the farmers in this study outlined how 'formal analysis' was conducted in their land purchase decisions, while some others acknowledged that 'informal analysis' was conducted. Overall, 'formal analysis' appeared to be quite a strong theme in land purchase decisions. Although the interview transcripts highlighted that land purchase decisions were a strategic decision, which many of the farmers in this study felt warranted some level of financial analysis, there were some farmers who acknowledged that 'no analysis' was conducted in their land purchase decisions. Upon further analysis, it was noted that the farmers who acknowledged that 'no analysis' had been conducted all appeared to have the money available for investment, which may have negated the requirement for FFM to be conducted.

In terms of the strategic decision category of machinery investment, a similar observation to that noted in buildings investment was evident – 'formal analysis' appeared to be conducted in many of the machinery investment decisions reviewed in this study. However, 'informal analysis' appeared to be the category of FFM that was most emphasised. In addition, some farmers acknowledged that they conducted 'no analysis' in their machinery investment decisions.

Finally, in terms of the latter three categories of strategic decision (land lease, livestock investment and off-farm investment), no significant insights were achieved when they were analysed. However, it is worth noting that the strategic decisions conducted in the categories of land lease and livestock investment appeared to involve some form of financial analysis. This may be explained by the fact that such investments were often financed from cash-flow and, therefore, farmers needed to analyse their finances to ensure that they could afford such investments. Finally, financial analysis appeared to be quite a strong element of the decision-making process of the farmers in this study when the strategic decision category of off-farm investments was discussed.

Overall, the analysis of the level of FFM in strategic decision-making by category of decision, suggests that the farmers in this study considered financial analysis an important component for many of the strategic decision-making categories. However, it was apparent that the decision category appeared to be a key factor in the level of FFM conducted. For example, the purchase of land appeared to be a decision that many of the farmers in this study felt warranted 'formal analysis', while buildings investment decisions appeared to be a decision where 'informal analysis' was more strongly emphasised. This may be because land purchase is considered a major farm expansion decision; it involves the outflow of a significant amount of money, it is a long-term decision and, quite often, one of the most important farm expansion decisions that a farmer makes. On the other hand, while buildings investments can be a big decision also for

farmers, they are undertaken more frequently and may not involve as significant an outflow of money. Furthermore, it was apparent from the interviews conducted that, where farmers made once-off major buildings investment decisions, as opposed to a gradual investment in their farm buildings, those decisions involved much more consideration of FFM issues.

When the above findings surrounding the level of FFM in strategic decision-making were presented to the focus group participants, they noted that they were not surprised with the reasonably high level of FFM conducted, bearing in mind the context of the farmers that participated in this study (farmers who had made significant farm expansion decisions). **FG/3** estimated that, based on his experience of dealing with farm clients across a broad spectrum on a day-to-day basis, quite a low percentage of his clients conduct FFM, when he stated:

> *"I would say five to 20%, five to 10% max."*

This is a statistic that is acknowledged in the literature; therefore, the overall level of FFM (both formal and informal) conducted by the farmers in this study appeared quite high, but was not surprising, given the context of farmers interviewed. Despite this, participants initially acknowledged they were somewhat surprised at the level of 'no analysis' conducted in the strategic decisions explored but, on reflection, **FG/3** went on to say:

> *"Well, no-one really does a return on investment figure. We wouldn't even do return on investment figures for clients … its more I need a shed. It has to go up. I've a nitrates issue. The advisor says I have to do it."*

In his experience, advisors do not conduct a return on investment calculation for clients, as it simply boils down to the farmer wanting to undertake a particular investment and how it can be afforded. These initial findings surrounding the level of FFM in strategic decision-making, by category of decision, are followed up and discussed further in Section 8.4.1.

Level of FFM in Strategic Decision-making by Farm Type

The level of FFM in the strategic decisions undertaken, by farm type, was also analysed (*see Appendix P, Figure 2*). This analysis highlighted that the dairy farmers in this study appeared to be the farm type that placed the strongest emphasis on the role of FFM in their strategic decision-making process. Many of the dairy farmers appeared to conduct either 'formal analysis' or 'informal analysis' in the decisions undertaken, with little evidence of 'no analysis' being undertaken. The tillage farmers appeared to be not far behind the dairy farmers in their level of FFM activities, except they appeared to focus more on 'informal analysis' than 'formal analysis'.

The most notable issue observed from the analysis of the level of FFM by farm type is that the beef farmers in this study appeared to be the farm type that placed the least emphasis on the role FFM in their strategic decision-making process. Some of the beef farmers appeared to conduct 'no analysis' when making strategic investment decisions and, furthermore, where the beef farmers acknowledged that financial analysis was conducted, they appeared to focus more on 'informal analysis' than 'formal analysis'.

These findings, based on the role of FFM in strategic decision-making by farm type, add to the picture that is developing in this study. Once again, the dairy farmers appeared to be at the forefront, followed by tillage and, lastly, beef farmers. A similar theme was emerging in terms of the influencing factors and the role of advisors – for example, the dairy farmers appeared to be the farm type that engaged with advice sources most, followed by tillage and then beef. These initial findings surrounding the level of FFM in strategic decision-making by farm type are followed up and discussed further in Section 8.4.2.

Analysis of how Strategic Decisions were financed

How a strategic decision is financed may have an impact on the level of FFM analysis that a farmer would undertake before proceeding with a particular decision. For this reason, an analysis of how the two most prominent types of strategic decision reviewed in this study – buildings investment and land purchase – were financed, was undertaken. A notable observation from this analysis was in terms of land purchase decisions. Where such decisions were financed by borrowings, it appeared that formal or informal FFM analysis was emphasised more, compared to any other category of financing (*see Appendix P, Figure 4*). A similar theme was noted in terms of buildings investment decisions (*see Appendix P, Figure 3).*

To provide some further insights, an analysis by farm type, of how strategic decisions were financed, was undertaken. Strategic decisions were financed in a number of ways, namely: debt, accumulated profits, money from the sale of other land, off-farm income, EU payments and hire purchase/leasing. When an analysis of these funding options was conducted by farm type, some notable points were revealed.

The farm type that acknowledged availing of the funding source of debt finance most was dairy, followed by tillage, while many of the beef farmers appeared to be averse to borrowing to fund investments. For example, Farmer 13 (beef) mentioned his dislike of borrowings when he noted:

> *"I would prefer to have the money up front, to pay it and then I wouldn't get a loan for it … it would just put me under too much pressure, I don't like loans."*

In addition, Farmer 24 (beef) highlighted how he was debt averse, when he stated:

> *"I know my limitations financially. That's one thing I'm good at, I suppose I'm a little bit afraid, we did go through a troubled patch, my father and myself … in the 1980s, like a lot of farmers did, high interest rates, borrowings."*

This finding supports dairy farming being the most profitable of the three farm types (as outlined in Chapter 2) and, therefore, dairy farms may provide the underlying debt repayment capacity to support such borrowings.

The funding sources of off-farm income and EU payments were emphasised mainly by the beef farmers, thus suggesting that the beef enterprise itself may not have been able to sustain the investment and, therefore, off-farm income sources may have been necessary. Another notable point was that leasing/hire purchase was cited by the tillage farmers in the funding of machinery investments, while there was little emphasis placed on the funding sources of accumulated profits and money from the sale of other land.

These findings, once again, highlight the earlier reference (Section 2.2) to dairy farmers being the most financially stable of the three farming types under review, as they can demonstrate the confidence to fund investment decisions with debt finance, based on the strength of underlying cash-flows. This sentiment was captured in the focus group, when **FG/2** noted:

> *"The dairy guys have money every month to splash around on new toys and tools that the beef guys don't."*

On the other hand, beef farmers are quite often required to use off-farm investment funding sources, to proceed with investments.

7.6.2 The Role of FFM in Operational Decision-making

As operational decisions are made on an ongoing basis, it proved more difficult to gain an understanding of what level of FFM is undertaken in these situations, compared to strategic investment decisions. However, while analysing the influencing factors on operational decisions, it was evident that the 'cost of the product' was quite a strong influence. This suggests that a

financial issue was an important element of the operational decision-making process of the farmers in this study.

The level of FFM in operational decision-making may be intrinsically linked to the FFM system that each farmer has in operation. To gain an insight into the FFM systems operated by the farmers interviewed, the type of FFM system in operation by each farmer interviewed was split into the following categories:

1. 'Strong' – the farmer appeared to operate a strong FFM system;
2. 'Moderate' – the farmer appeared to operate a moderately strong FFM analysis; and
3. 'Weak' – the farmer appeared to operate a weak FFM system.

To provide an insight into how the involvement of each advisor was classified[24], some quotes from the interview transcripts are now provided.

Firstly, the category of 'strong' – farmers that appeared to operate 'strong' FFM systems were included in this category, for example, farmers that used farm accounts packages, industry computer based templates or detailed manual book-keeping systems to keep control of their finances. For instance, when some farmers were asked to describe the financial records that they maintained in their business, they noted:

> *"We have a computer on the farm. It's the Irish Farm Computer's package, and every so often then I would just put in the figures into it, and then every year I would tidy up all the accounts … I also do the Profit Monitor."* (Farmer 4, dairy)

> *"I would do a profit monitor, a very strict profit monitor with Teagasc. My Teagasc advisor and myself would get together for a full day and we would go through all the inputs and all the outputs for the year, I have been doing profit monitors for Teagasc for years, and that is the main management tool that I have, and also the fact then, I would do with my accountant as well. I would be working closely with my accountant on costings and that type of thing as well."* (Farmer 8, beef)

[24] To conduct this interpretative categorisation process, it was necessary to review the interview transcript in its entirety to gain a holistic understanding of the farmer's FFM system (see Appendix C, Section 2 of the interview guide).

Another farmer outlined how he used a computer-based programme (developed by Teagasc), called *E-crops*, to determine the profit/loss he made on each crop in each field annually. He noted:

> *"I do the E-crops thing with Teagasc, we do each field … regards* [to determine] *Profit and Loss."* (Farmer 2, tillage)

After the interview with this farmer, a printout from the *E-crops* system showing the profit made on three different crops in three different fields was presented to the researcher by the farmer. Similarly, documentary evidence was reviewed when a farmer outlined that he had information available for the researcher to review. He noted:

> *"I have them* [financial records] *out today because you are here."* (Farmer 22, dairy)

The information made available for review consisted of printouts prepared by the farmer from his *eProfit Monitor* system, detailing all the income and expenses of the farm for the preceding year. The review of this documentary evidence, for the latter two farmers, are examples of how support was gained by the researcher, of strong FFM systems being in operation.

The above farmers outlined how they maintain quite detailed financial records and, therefore, were categorised as having a 'strong' FFM system in operation.

Next, the category of 'moderate' – farmers that appeared to operate 'moderate' FFM systems were included in this category. For example, when some farmers were asked to describe the financial records that they maintained in their business, they noted:

> *"I'm registered with VAT, so every two months I am making a VAT return, so that would basically make me look through all my chequebook stubs and sales, so from that perspective, I would keep a fair idea of what's going on."* (Farmer 6, beef)

> *"First of all there is the taxation side of the accounts where we keep all the invoices and all the normal stuff, we would do that ... but now that we are moving towards doing the profit monitor and stuff, that's probably negating the management of accounts to some*

degree anyway. And the profit monitor is new to me to a degree to be fair now … It's not that I don't do paperwork, and do I know what it costs to run the farm?"

(Farmer 24, beef)

Essentially, farmers here appeared to engage in some level of FFM activities but did not appear to have a 'strong' FFM system in operation.

Lastly, the category of 'weak' – farmers that appeared to operate 'weak' FFM systems were included in this category. Essentially, they appeared to engage in limited financial record-keeping. For example, when some farmers were asked to describe the financial records that they maintained in their business, they noted:

"Well, I would keep all the sales and purchases dockets in a folder … I used to have a spreadsheet on the computer when I would come into work, I would try and keep a track of inputs and outputs, outgoings and, but usually as the year goes on, I get too busy and then that is kind of left, I could get to March and then it's left there, but I keep all the dockets in a folder at home and I kind of keep a track of it that way."

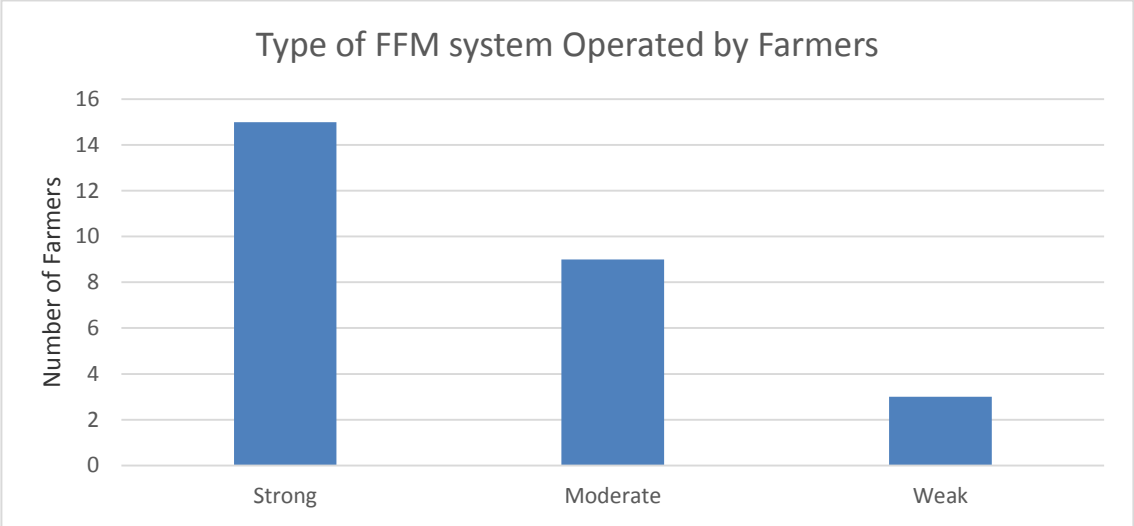
(Farmer 13, beef)

"IFAC accountants, that's basically it… I keep a record of every transaction in a folder, I keep all the invoices for everything, I try and keep them." (Farmer 16, beef)

Both of the above farmers outlined how they keep all the paper work in relation to income and expenses of the business and then hand them over to their accountant at the end of the year to produce a set of accounts. That appeared to be the extent of their FFM activities.

A review of the transcripts resulted in the illustrative quotes above. Next, a high level overview of the type of FFM systems that appeared to be operated by the farmers in this study, was compiled using NVivo and is presented in Figure 7.15.

Figure 7.15 Type of FFM System Operated by Farmers



Overall, the FFM systems in operation on the farms in this study varied considerably and initially, the type of FFM systems operated were quite surprising. The reason for this surprise was based on a review of the literature where much of the prior research suggested that the level of FFM operated by Irish farmers is low. The opposite is evident here, as many of the farmers operated 'strong' to 'moderate' FFM systems. Upon reflection, perhaps this finding is not surprising, given the context that all of the farmers interviewed had developed their businesses by investing large sums of money in recent years. Therefore, to enable farmers to develop and invest in their farm, they would be expected to have a good understanding of the financial performance of their business.

Some of the farmers had what appeared to be quite weak FFM systems in operation. Upon analysis of this group, it was noted, that two of the farmers had sold development land during the "Celtic Tiger" period in Ireland, resulting in millions of euro being received. Perhaps this can explain their lack of a concern about the financial performance of their day-to-day operations.

Another farmer in this group was engaged in full-time employment off-farm and the operation of the farm enterprise appeared to be more a hobby than anything else – an expensive hobby!

An analysis of the FFM systems operated by farm type was conducted (*see Appendix P, Figure 5*). This analysis showed that the dairy farmers in this study appeared to be the farm type that were most focused on operating 'strong' FFM systems, followed closely by the tillage farmers. On the other hand, the beef farmers in this study appeared to be the farm type least focused on operating 'strong' FFM systems. The focus group was probed for a potential reason for this and **FG/1** explained:

> *"The benefit to the beef farmer of taking up the technology* [grass management for example] *in hard cold cash is less because intrinsically, the dairying is more profitable, so for the grassland management or the dairy farm, you get a bigger quantum of cash than if you apply the same technology to a beef farm."*

Essentially, beef farmers do not appear to see any great benefit in spending time on FFM.

Overall, these findings suggest that the farmers in this study appeared to be quite aware of the financial implications of their operational decision-making. But, despite the high level of FFM conducted by many farmers, a number of them noted that, regardless of their level of FFM, they had limited control over the cost of their operational decisions. For example, when farmers were asked how they controlled the cost of their operational decisions, Farmer 11 (dairy) noted:

> *"I look at anywhere I can cut it* [spend on feed and fertiliser] *because it's a massive cost, but I still have to feed my cattle. I am running a highly stocked farm so I have to feed them … every year I sit down and think, it's huge, I am turning* [spending] *between €300,000 and €400,000, if I can try and reduce it, I am looking for ways, and I have yet to find one."*

Another farmer, Farmer 12 (dairy) stated:

> *"Every day we would get up and we would try to do our best. Circumstances change. If the weather is bad, you have to look after the cows … you're definitely not going to be firing it* [feed] *at them for the sake of giving it to them."*

Furthermore, many farmers acknowledged the importance of FFM in the operation of their farm enterprise, but many also felt that there were many uncontrollable factors such as the market price of both inputs and outputs, weather and fuel costs. Therefore, whether a year is considered to be good or bad financially, in many respects, is out of their control. In this instance, farmers can only concentrate on operating the farm to the best of their knowledge and operational experience, in order to maximise output and profit. When this issue was discussed and probed further with the focus group, it was emphasised that ownership of FFM needs to be taken by farmers, in order to make informed decisions. Farmers should not deem too many issues to be outside of their control, as noted by **FG/1**:

> *"It's to control the controllables and that's what farm financial management allows them. There's a lot of uncontrollables out there, policy and disease and weather … But to control the controllables is what you would always say is to mind what's inside the farm gate … What you can control is what you should be measuring and trying to improve … if you can focus on the efficiencies on the farm, you're in a better position to mitigate against those uncontrollables."*

In summary, the participants in the focus group noted that the level of FFM in farming evolves around the culture (identity) in farming, many farmers believe that spending a lot of time on FFM is not farming. As **FG/2** expressed it:

> *"Farming is getting oil on your hands."*

This refers to farming being viewed as working outside in the farmyard, not indoors conducting FFM. Despite this view of FFM within the industry, the farmers in this study appeared to operate FFM systems that were strong to moderate in most instances. This finding is followed up and discussed further in Section 8.4.1.

While examining the area of FFM in operational decision-making, there were two important issues that evolved through the discussions with farmers: the importance of implementing purchasing best practice and the role of purchasing groups. Each of these is now discussed.

Purchasing Best Practice

Purchasing best practice refers to farmers obtaining a number of quotes for the price of their inputs from a number of separate merchant suppliers, before proceeding with their operational decisions. The general consensus among farmers interviewed was that they do tend to shop around and compare prices between merchants. This suggests that many of the farmers in this study do appear to spend some time considering FFM issues, before proceeding with operational decisions.

However, it was surprising to note that many of the farmers categorically stated that they knew they could obtain the inputs from an alternative merchant at a cheaper price, but they continued to purchase from their existing supplier for other reasons. For example, Farmer 5 (dairy) admitted that he could get his inputs cheaper elsewhere, when he stated:

> *"We are probably giving away a bit in the price* [paying more], *that we could get elsewhere."*

But, when probed further as to why he would buy them when he knew he could get them cheaper elsewhere, he noted:

> *"The credit thing comes into it a bit, and the service."*

The above quote illustrates two issues. Firstly, credit facilities were deemed to be worth the higher price paid and, secondly, the level of service was a strong influence in the operational decision. Some farmers in this study believed that their merchant provided a good service (for example, delivering inputs at short notice) and this might justify an increase in costs. These features suggest that non-financial reasons may be as important as financial reasons for the farmers in this study when making operational decisions.

Purchasing Groups

Purchasing groups were found to be an important aspect of the operational decision-making process of the farmers in this study. The primary objective of purchasing groups is for farmers to join together and purchase the inputs that they require in the most cost effective manner. Therefore, being part of a purchasing group is an FFM activity. Many of the farmers in this study are members of purchasing groups, but the majority are not.

Overall, there were mixed opinions given by farmers in relation to purchasing groups. Those that were part of a group broadly thought they were a good approach to purchasing their inputs, but noted that some problems do exist. For example, Farmer 6 (beef), noted that it is not always straightforward to gain consensus within a group, when he stated:

> *"It can be hard to organise farmers to all go down the same route."*

In addition, farmers that were not part of a group cited some reasons for not joining a group. Some thought the purchasing power they had on their own was just as good as what they would get from being part of a group. For example, Farmer 12 (dairy) noted:

> *"I would get as good a price as any discussion* [purchasing] *group."*

Others felt that they would prefer to do their own bargaining/negotiating on price rather than having someone else from a group representing them. For example, Farmer 8 (beef) noted:

> *"I would prefer to do my own bargaining … because I felt I was able to do it better on my own."*

Finally, a number of farmers noted that the opportunity to join a group never presented itself. This was highlighted by Farmer 3 (tillage) when he said:

> *"I was never approached or asked* [to join a purchasing group]*."*

A review of the interview transcripts of the farmers that were part of a purchasing group revealed that the extent to which purchasing groups were involved in the farmer's operational decision-making varied considerably. Some farmers noted that they were only part of a

purchasing group for some basic inputs such as feed/fertiliser/seed/sprays, while other farmers acknowledged that the remit of their group extended to areas such as animal medicines, farm insurance and banking facilities. An analysis of the farmers that were members of purchasing groups was conducted by farm type, but this did not present any significant insights. This brief analysis of the role of purchasing groups acknowledges that they appear to play an important role in FFM, in the operational decision-making process of the farmers in this study, but notes that they do not always operate smoothly.

7.6.3 What the Role of FFM tells us about Farmer Decision-making

Similar to the data analysis process described in Section 7.4.3 in relation to the influencing factors theme, a similar process of data analysis was conducted for the role of FFM aspect of **RO1**. This process, which facilitated the connections between the findings in relation to the role of FFM and the sensemaking properties to be made, resulted in Figure 7.16.

Figure 7.16 Review of the Sensemaking Framework against the Role of FFM

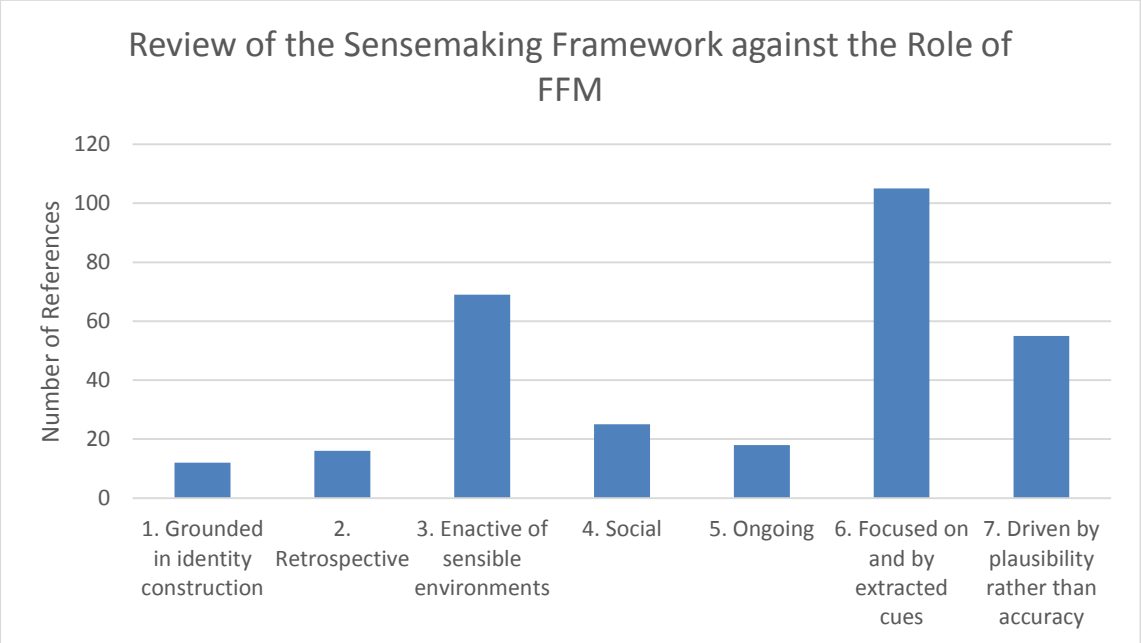


Figure 7.16 provides a high level overview of the properties that were supported and, thereby, assists in developing an explanation of what the findings surrounding the role of FFM tell us about farmer decision-making. It is important to remember that this is not a statistical representation, but a visual presentation of the support for each property in the data (Blaikie, 2010), which facilitates a mapping of what the closest links may be between sensemaking and the role of FFM. A similar explanation has been included for Figures 7.7 and 7.13 to emphasise how these figures have been interpreted.

All seven properties of sensemaking appeared to be supported, when the framework was reviewed against the role of FFM in farmer decision-making. However, as is evident from Figure 7.16, three properties were strongly supported. The most supported property was '*focused on and by extracted cues*'. This suggests that perhaps the FFM activities that farmers engage in are the "cues" that prompt decisions to be made.

Another property of sensemaking that was strongly supported in the role of FFM is '*enactive of sensible environments*'. The level of FFM that a farmer engages in, is very much dependent on the environment in which s/he operates. For example, the level of borrowings on the farm, the level of cash reserves and market prices that exist for his inputs and outputs, all may affect the level of FFM undertaken. These factors, along with many others, may affect the level of FFM that a farmer undertakes in decision-making and, therefore, the FFM analysis is '*enactive of sensible environments*'. To illustrate that point further, as a number of farmers had large profits built up on their farm and low borrowings, the level of FFM that they needed to conduct when deciding to invest further in the farm, was limited. The farmers simply had the money to invest or had the debt repayment capacity. On the other hand, where a farmer had existing borrowings and low cash reserves, it may have been necessary to conduct more detailed financial analysis to ensure that the debt repayment capacity was evident to enable the investment to proceed.

A third property of sensemaking that was strongly supported in the role of FFM is '*driven by plausibility rather than accuracy*'. This property is very apt when discussing the role of FFM in farmer decision-making. Many of the farmers noted that they disliked spending time recording, analysing and maintaining financial records. Therefore, often farmers may tend to look at some key financial metrics or benchmarks to guide them in decision-making, rather than looking at every bit of financial data possible. The presence of this property of sensemaking supports this premise. Furthermore, there are instances confirming that, once farmers have learned a specific practice, they often fail to conduct that practice on a continuous basis, as they have learned to rely on their own gut feeling or judgement as opposed to carrying it out routinely, i.e., rather than measuring in detail, the farmer gets an idea of what is plausible rather than accurate.

The remaining four properties of sensemaking, which were less supported in the role of FFM in farmer decision-making, but nonetheless present, acknowledge that the sensemaking framework is an appropriate lens to assist in developing an understanding of farmer decision-making. The support for these remaining properties suggests the following:

- *Grounded in identity construction* – farmers traditionally dislike conducting FFM activities and this is a collective trait/identity with farmers interviewed.
- *Retrospective* – many FFM activities are retrospective; one such activity prevalent in farming is benchmarking – there is a consensus in the data that farmers compare their performance to previous periods.
- *Social* – there is a social element to the FFM activities – farmers collate information and discuss it with their advisors.
- *Ongoing* – by their nature, many FFM activities are ongoing. For example, the most common FFM activity undertaken by farmers was the ongoing review of the bank balance as a guide for business performance.

It has been noted that non-financial reasons (for example, identity) often supersede financial reasons, particularly in the case of strategic decision-making. In essence, a decision to proceed with a particular decision may not make financial sense, but may make perfect sense in other respects. A number of farmers explicitly stated that the decisions that they undertook did not make financial sense. For example, Farmer 3 (tillage) stated:

> *"The decision wouldn't make sense at practically. It didn't make sense financially."*

In addition, Farmer 8 (beef) stated:

> *"I did financial* [analysis] *on the investment of it, and it made no sense, but I bought it because I said, "It will never again* [be for sale]*, it's there beside me", and my stocking rates were so high."*

Finally, Farmer 11 (dairy) noted:

> *"Most of them, I suppose, don't make sense financially what I have done, because they are not making a return on the investment that is put in. I mean €300,000, you are talking about a 5% return on that?"*

The above farmer quotes demonstrate that the decision they undertook did not make financial sense. Therefore, it must have been proceeded with on the basis of other over-riding criteria. For example, the decision could have made sense on the basis of property number three – '*enactive of sensible environments'*. However, the above farmer quotes do not mean that the farmer did not conduct any FFM on the decision under review. In fact, in the majority of those decisions, detailed FFM was conducted, but the decision was proceeded with for other non-financial reasons. This suggests that whether a particular decision makes sense (or not) may depend on that individual farmer's values/goals or identity.

Overall, it can be concluded that these observations support the properties of sensemaking that have been shown as being applicable to the role of FFM in farmer decision-making. The strong support in the data for the properties of '*focused on and by extracted cues*', '*enactive of sensible environments*' and '*driven by plausibility rather than accuracy*' all indicate that FFM is

important, but can often be superseded by non-financial considerations in the decision-making process of the farmers in this study.

7.6.4 Section Summary

In summary, there is significant support for FFM being an important element of the decision-making process of the farmers in this study. Many of the farmers operated reasonably good FFM systems and this assisted them in their decision-making process. However, it emerged that farmers did not always conduct a high level of FFM analysis in their decision-making. In fact, FFM tended to be more on an informal than on a formal basis on many occasions. Furthermore, these findings suggest that some of the farmers did not conduct in-depth FFM analysis themselves and often supplemented or replaced this with external advice.

The findings here continue to develop the themes that were emerging from the findings in Sections 7.4 and 7.5 – the *type of decision* and *farm type* are two criteria which appear to be key factors in the decision-making process of the farmers interviewed. The analysis of the data surrounding the role of FFM reveals that some categories of decision appear to involve more FFM than others and, furthermore, these findings reveal that the level of FFM conducted by each farm type in decision-making, is not uniform. It was found that, once again, the dairy farmers in this study are to the forefront, followed by tillage and lagging behind, is beef – a theme that was emerging also when the influencing factors and the role of advisors were analysed.

Finally, the review of the role of FFM against the sensemaking framework continues to demonstrate that sensemaking is an appropriate theoretical lens to help build explanation of farmer decision-making, due to the support for its properties. The analysis of the role of FFM in

both strategic and operational decision-making highlighted some interesting issues that are carried forward and discussed in Chapter 8.

7.7 Analysis of Other Issues in Farmer Decision-making

This section highlights some 'other issues' that came to light during the data analysis process. Firstly, an analysis of the farmer's demographic profile on farmer decision-making is provided. Secondly, the findings in relation to the role of intuition in farmer decision-making are presented. Finally, an overview of the role of women in farmer decision-making, as observed in this research project, is highlighted.

7.7.1 The Impact of the Farmer's Demographic Profile on Farmer Decision-making

A number of demographic characteristics were analysed to observe if they highlighted any interesting findings in relation to farmer decision-making, namely: farm type, age and level of education of the farmer and the monetary value of the decision. Each demographic characteristic is now discussed in sequence.

Analysis of the Characteristic of Farm Type

Throughout the preceding three sections, farm type has been a central part to the analysis of the findings. That analysis highlighted an important theme in the data, when each of the farm types were reviewed. The dairy farmers in this study appeared to be the most engaged in each, while the beef farmers appeared to be the least engaged and the tillage farmers were in-between. The interview data suggested that: many of the influencing factors for the dairy farmers were

financially orientated towards the aim of increasing farm income, the dairy farmers appeared to engage with advisory services most in their decision-making, and the dairy farmers were the farm type that appeared to be most focused on FFM in their decision-making. The beef farmers were the least engaged in each of the areas reviewed, with the tillage farmers in the middle. Farmer quotes are now presented, which support these observations at an overall industry level.

Farmer 7 (beef), when asked about the level of FFM conducted in his operational decision-making, noted:

> *"It's an awful different story, when you're comparing beef to the dairy farmer, his* [dairy farmer] *figures can be a lot more exact, it's all, I guess, his costs are down to cents per litre and there's no variables, there's no changes. They can be a lot more exact on their figures, to a certain extent."*

Another farmer, Farmer 15 (beef), stated the following when asked about the advice sought from his agricultural advisor:

> *"The dairying guys are far more out there compared to the beef end of things. It's* [beef farming] *probably the poor relation."*

Furthermore, Farmer 25 (beef), when asked about the level of record keeping and FFM conducted on his farm, noted:

> *"I'd say with the mixed farming, the tillage, it's* [FFM] *easier to do … and the dry stock end of sheep and cattle farming I would say that there is a big lacking of accurate records and figures."*

The above three farmer quotes, which ironically are all provided by beef farmers, corroborate the viewpoint within the Irish agricultural industry and highlight the narrative unfolding in respect to each farm type.

Overall, in the focus group, there was a considerable amount of rhetoric around the demographic of farm type and how contrasting findings were presented when the interview data were analysed by farm type. For example, the low level of FFM that appeared to be conducted by the beef farmers in the study was corroborated on a number of occasions. **FG/3** noted how a significant

number of his beef farming clients specifically do not want their accounts posted to them, as they do not want to know how badly the farm is performing. Moreover, **FG/3** noted how IFAC used to show a statistic in its beef clients' accounts which showed the percentage of profit generated from SFP and it was forced to take it out, due to the number of complaints it received – beef farmers did not want to see how badly the farm was performing. In addition, **FG/1** reported he had the experience of finding it difficult to arrange a time to meet a beef farmer client. Eventually the farmer said to the advisor that he had to come when his wife was not present, as he did not want her to know how badly the farm was performing. Lastly, **FG/2** quoted a Professor of Agricultural Science who maintained that "*there is great pleasure in big cattle*", meaning, that's all, as they are not profitable.

Finally, it was outlined in the focus group how the contrasting findings around farm type could be explained by the concept of *'identity'* which was discussed in the influencing factors section (Section 7.4.1) earlier. This was highlighted in the context of how it was noted that some farmers appear to invest significantly in machinery while others do not. **FG/1** noted:

> "*That's back to identity. They* [dairy farmers] *identify themselves as being a low-cost farmer … I'm a low-cost farmer and I'm not going to spend money on a depreciating asset."*

Essentially, the focus group participant suggested that, while identity is a strong issue in farmer decision-making collectively, it is also quite a strong issue within each farm type. This suggest that within each farm type, an individual sense of identity is often present.

Analysis of the Age Profile of Farmers

Firstly, it is important to bear in mind that the age profile of farmers in Ireland is quite old. The average age of a farmer in Ireland, according to the most recent NFS (Hennessy and Moran, 2015), is 57. As detailed in Section 7.3.1, the age profile of the farmers interviewed was

separated into four groups: 30-34 years, 35-39 years, 40-44 years and 45 years or older. The majority of farmers in this study were in the oldest age bracket, with fewer in each of the lower age brackets (see Figure 7.1).

Age Profile by Farm Type

An analysis of the age profile of farmers interviewed, by farm type, revealed that the majority of the tillage and beef farmers were in the highest age bracket (45 years or older). On the other hand, the majority of the dairy farmers were in the 40-44 age bracket. This may be due to dairy farming being considered the most viable of the three farming types and hence younger farmers are attracted to farm expansion in this sector. Next, the age profile of the farmers that were represented in the findings of the three primary aspects of **RO1** were reviewed.

Influencing Factors on Farmer Decision-making by Age Profile

Firstly, strategic decision-making – an analysis of the influencing factors by age category did not provide any significant insights. Some minor observations were available from this analysis. For example, no farmers from the youngest age bracket were present in the influencing factors of 'lessons from past decisions' and 'encouragement from others'.

Secondly, operational decision-making – this analysis revealed that the older farmers in this study appeared to emphasise how they make operational decisions based on their own experience as a farmer and appeared to be less influenced by purchasing groups, compared to the younger age categories of farmer. Other minor observations were: farmers in the two older age brackets were the only categories of farmer who cited 'weather' and 'work practices' as influencing factors, while the younger farmers did not highlight the influencing category of 'historic pattern'.

The Role of Advisors in Farmer Decision-making by Age Profile

An analysis of the role of advisors, by age profile, elicited some interesting observations. Firstly, farmers in the younger age brackets appeared to be more willing to engage the services of professional advisors in strategic decision-making, when compared to older farmers. A similar insight was noted in relation to the farmers who reported the involvement of the professional advice source of the agricultural advisor in operational decision-making. However, in regard to the involvement of the professional advice sources of 'agronomists' and 'nutritionists' in operational decision-making, the opposite was noted – farmers in the oldest age bracket appeared to be the age category that emphasised these advice sources most.

Secondly, in regard to the farmers who noted the involvement of the various sources of non-professional advice in strategic decision-making, there was no significant insight when analysed by age. However, in terms of those farmers who noted the involvement of the various sources of non-professional advice in operational decision-making, the farmers in the younger age bracket, once again, were in the category who emphasised these advice sources most.

Overall, the observations noted from a review of the impact of age on the propensity of the farmers in this study to seek external advice, demonstrate that the farmers in the younger age brackets appeared to be more engaged with external advice sources, compared to the farmers in the older age brackets.

The Role of FFM in Farmer Decision-making by Age Profile

The most notable observation, from an analysis of the level of FFM conducted in the decision-making process of the farmers in this study, by age category was that all of the farmers who reported conducting 'no analysis' in their strategic decision-making were from the oldest age bracket. This finding suggests that the age profile of the farmer does impact the level of FFM

conducted in strategic decision-making. The older farmers in this study appeared to be less inclined to conduct FFM analysis in their strategic decision-making, in comparison to the younger farmers.

However, it is important to highlight that, despite many of the farmers in the older age bracket having what is considered to be a 'strong' or 'moderate' type of FFM system in operation, many of those farmers appeared to conduct 'no analysis' in their strategic decision-making. This finding, combined with the finding that many of the farmers in the older age bracket, do not appear to engage with the advice sources available to them, suggests that older farmers may rely to a large extent on their intuition in decision-making. This rationale is corroborated when the older farmers in this study emphasised the role of intuition in strategic decision-making in Section 7.7.2.

When the above findings surrounding the demographic of age, were presented and discussed with the focus group, there was overall consensus with them. This was captured when **FG/1** noted:

> *"There's no surprises there anyway."*

However, when these findings were being discussed, **FG/3** asked:

> *"Were there any farmers that had a son that was coming through already, was there a farmer in his sixties and the son was in his twenties?"*

By asking this question, the focus group participant suggested that there may be a link between the impact of age on the farmer's decision-making process and succession planning. On reflection of the findings in this regard, many of the older farmers who appeared to engage with advisors and employ FFM most in their decision-making process quite often had active successors identified.

Analysis of the Level of Education of the Farmer

An overview of the level of education of the farmers interviewed was presented in Figure 7.2. The focus here is on analysing the level of education of the farmers, to uncover support for how it may impact farmer decision-making. Similar to the analysis conducted on the demographic of age, the 'level of education' will now be considered in terms of the three key aspects of **RO1**.

Influencing Factors on Farmer Decision-making by Level of Education

An analysis of the influencing factors on strategic decision-making, by level of education, did not provide any major insights. On the other hand, the influencing factors on operational decision-making highlighted some subtle observations. For example, it seems that the farmers with 'no agricultural qualification' appeared to prefer to make operational decisions based on their own experience as a farmer, compared to the younger age categories of farmer. This finding suggests that the less educated farmers in this study may rely more on their own experience/intuition as a farmer compared to the more educated farmers.

The Role of Advisors in Farmer Decision-making by Level of Education

An analysis of the role of the professional advisor in strategic decision-making showed that the farmers with 'no agricultural qualification' appeared to emphasise the role of professional advice sources less, compared to the farmers in the other levels of education categories. However, in operational decision-making, this observation was not evident. The farmers with 'no agricultural qualification' appeared to emphasise the importance of professional advice sources to a level similar to their more educated counterparts. Similar insights were noted when the role of non-professional advisors, in both strategic and operational decision-making, by level of education was analysed. These findings suggest, the farmers in this study with no agricultural qualification, are less inclined to seek external advice in their decision-making processes from either

professional or non-professional advice sources, compared to the farmers interviewed that hold a more formal agricultural qualification.

The Role of FFM in Farmer Decision-making by Level of Education

An analysis of the level of FFM in strategic decision-making, by level of education, highlighted that many of the farmers that appeared to conduct 'no analysis' were farmers from the education category of 'no agricultural qualification'. This finding is similar to the finding noted when the role of FFM was analysed by age category. This seems plausible, as the farmers included in the category of 'no agricultural qualification' are made up of farmers in the older age bracket. It is important to note that (similar to the point raised in the section above on the age profile of the farmer) the farmers in the level of education category of 'no agricultural qualification' appeared to conduct low levels of FFM in strategic decision-making, despite having 'moderate' to 'strong' types of FFM systems in operation on their farms. These findings again suggest that the farmers in this study who have no agricultural qualification and who are the older farmers in this study, appear to rely on their own experience and intuition as a farmer in strategic decision-making, as opposed to conducting detailed financial analysis.

The above findings surrounding the demographic of level of education were presented to the focus group. On reflection of the focus group proceedings, there was not a long discussion on this demographic, but overall, the focus group participants appeared to concur with the findings in this regard.

Analysis of the Monetary Value of Decisions Undertaken

The monetary value of a decision under consideration may affect the level of advice sought and the level of FFM conducted in relation to that decision. Therefore, the interview data were reviewed to investigate if there were any notable themes or patterns in the data in this respect.

Firstly, the role of advisors in each strategic decision was analysed in the context of the value of the decisions under consideration but it did not highlight any significant insights. For example, an analysis of the data for both land purchase and buildings investment decisions revealed that some of the higher value[25] strategic decisions did not appear to involve external advice sources, while some of the lower value investments appeared to involve quite a high level of interaction with external advice sources.

Secondly, the level of FFM conducted in each strategic decision was analysed in the context of the value of the decision under consideration, but here again, this did not show any significant insights. For example, for land purchase decisions, some of the higher value investment decisions appeared to have 'no analysis' conducted, while some of the lower value investments appeared to have 'formal analysis' when analysed in terms of the level of FFM carried out. However, in buildings investment decisions, it appeared that FFM was emphasised more when higher value investment decisions were discussed, compared to when lower value investment decisions were discussed.

Overall, the value of an investment may impact the level of FFM conducted and the extent to which advice is sought, but the data in this study did not reveal any significant support for that

[25] The monetary value of each strategic decision was noted during the interview process – the higher value and lower value decisions noted in this section refers to the decisions which were at the higher or lower value ends respectively, when considered in the context of the monetary value of all strategic decisions undertaken.

premise. However, it is important to note that in Section 7.6.1, where an analysis of how investments were financed was conducted, it showed that the way the investment was financed appeared to have an impact on the level of FFM conducted.

7.7.2 The Role of Intuition in Farmer Decision-making

The role of intuition in farmer decision-making has been discussed quite extensively in the literature and, therefore, it was important to remain conscious of this issue while analysing the interview transcripts. A number of findings supporting how the decision-making process of the farmers in this study appears to be an intuitive process are discussed below.

Firstly, the analysis of the influencing factors on farmer decision-making conducted earlier highlighted that the intuition of the farmer was an influence in decision-making. In operational decision-making, it was observed that the influence of 'farmer's own experience' (which to a large extent relies on the farmer's visual assessment) was a strong influencing factor. Furthermore, in relation to strategic decision-making, the influencing factors of 'lessons from past decisions' were cited on many occasions as being important. Burke and Miller (1999, p.92) defined intuition as 'a cognitive conclusion based on a decision maker's previous experiences and emotional inputs'. Therefore, the support in the data surrounding 'past experiences' as an influence in farmer decision-making suggests that the role of intuition is present. The above definition also refers to the words 'emotional inputs' – there was a notable pattern in the data surrounding the influencing factors of 'emotive decision-making' being present, which further suggests that the decision-making process of farmers in this study is intuitive.

Secondly, many farmer quotes implied that intuition was a part of the decision-making process of the farmers in this study. Some noted that they rationalised particular decisions 'in their head'; for example, Farmer 2 (tillage) noted:

> *"I would have a fair idea that I was going ahead with myself first because … being here for so many years now, I would have the knowledge of what a building is going to cost."*

Farmer 8 (beef) noted:

> *"I would have rationalised that in my head from the fact that I would know for sure that the labour, it* [buildings investment] *would decrease my labour costs. It would make the management of the farm much less laborious, which would mean that I would have less time which I would regard time as money … and also the fact that I would know for sure that giving more space to animals in sheds that I would get better weight gains."*

Other farmers referred to how they had 'a gut feeling' that a particular decision was right. For example, Farmer 11 (dairy) noted:

> *"Gut instinct … financial analysis didn't come into it."*

Farmer 14 (tillage) noted:

> *"I had a gut feeling that it was going to work out."*

Finally, some farmers referred to how they relied on their experience as a farmer in the decisions they made. For example, Farmer 8 (beef) noted:

> *"It's my own experience, I would know very much from my own experience, I have been farming over 30 years and I would have been very involved in making up different rations all the time."*

Farmer 23 (tillage) noted:

> *"At this stage, it's based on our own experience … I would be questioning it, listening to some lads who I might listen to and see what are they saying."*

The above farmer quotes containing phrases such as: 'in my head', 'a gut feeling' and 'my own experience', all provide support for intuition being present in the decision-making process of the farmers in this study.

A thorough review of the interview quotes which related to the concept of intuition revealed that the role of intuition appeared to be more widespread in operational decision-making, compared

to strategic decision-making. Many farmers acknowledged that intuition had a role to play in their operational decision-making process, while this concept appeared to be less evident in strategic decision-making. This was an interesting finding. A deeper analysis of the instances where farmers appeared to rely on intuition in strategic decision-making was undertaken to see if this would highlight additional insights.

Initially, it was presumed that the farmers who appeared to rely on intuition in strategic decision-making were substituting low levels of interaction with professional advice sources and low levels of FFM with intuition. To investigate this, the level of professional advice availed of and the level of FFM conducted by those specific farmers, in the strategic decisions under review, was explored. In terms of the role of professional advisor, none of those farmers appeared to involve either their accountant or agricultural advisor from a 'key advisor' prospective; some appeared to involve both advice sources from an 'advice sought' perspective, while many appeared to acknowledge that both advice sources were 'not involved' in the strategic decisions under review. Furthermore, in terms of FFM, many of those farmers appeared to conduct 'informal analysis' or 'no analysis' and very few appeared to conduct 'formal analysis' in their strategic decision-making. These observations support the initial thoughts noted above that many of the farmers in this study who mentioned the involvement of intuition in their strategic decision-making process appeared to seek little or no external advice from professional advice sources and they did not appear to conduct detailed financial analysis on the decisions under review.

Finally, the demographics of farm type, age and level of education of the farmers that were alluding to intuition as being part of their decision-making process, were analysed. The role of these demographics was analysed in terms of both strategic and operational decision-making. These findings suggest that the profile of farmers in this study who appeared to rely most on

intuition in their decision-making were the farmers in the beef and tillage sectors, the farmers who are in the oldest age bracket of 45 years or older and the farmers that have no agricultural qualification or those that hold the minimum level of education required. These findings support observations made earlier where it was found that the farmers who appear to engage in low levels of FFM and the farmers who do not appear to rely on advice from external sources, had similar demographic characteristics to the farmers identified above as employing intuition in their decision-making. This adds further support to the notion that the farmers in this study who do not appear to engage in high levels of FFM and who do not appear to rely on external advice, often tend to substitute these activities with their own 'intuition'.

When the subject of intuition was discussed in the focus group, it generated some debate. Participants initially noted their surprise at the substantive presence of intuition appearing in the findings. However, upon further discussion of the issue, **FG/2** highlighted that it did not appear that surprising and it was interesting to see such findings, as very few studies have attempted to capture this element in farmer decision-making, when he noted:

> *"Yeah, and you're right. I mean, we are as intuitive about it as they are … Very few people have actually gone in and tried to capture this."*

Furthermore, **FG/2** went on to say:

> *"Farmers are quite conservative, they stay close to their comfort zone – land, cows and machinery etc."*

The above quote was put forward as a possible explanation as to why farmers may rely on their intuition to quite a high level in decision-making.

Overall, from a thorough analysis of the interview data, it appears that 'intuition' in farmer decision-making is not an isolated issue, but a concept that is embedded in the farmer's decision-making process. The concept of intuition appears to have a strong relationship with the sensemaking framework – this issue is discussed further in Section 8.4.3.

7.7.3 The Role of Women in Farmer Decision-making

This issue was not explicitly stipulated in the other issues section of **RO1**; however, it emerged from the empirical data as an important issue. Retrospectively, this prompted a review of the literature on decision-making in agriculture. Firstly, it is important to note that all of the farmers in this study were males, with the farmer being accompanied by his wife in the interview process on four occasions. Of the 27 farmers interviewed, the majority (22) were married, with 18 of the spouses earning off-farm income. On many occasions, the spouse earning off-farm income was specifically highlighted as an influencing factor by farmers, thereby highlighting the significant role that women play in farmer decision-making, indirectly. For example, Farmer 8 (beef) noted:

> *"Number one, my wife's salary. She is the principal in a school and my wife's salary pays for holidays, she buys her own car, she runs the house … so I have money left over on my farm then to reinvest all the time."*

The role of women in operational decision-making was not referred to extensively in the interviews conducted. Perhaps this is because such operational decisions relate to the day-to-day management of the farm, and each farmer is himself the farm manager. On the other hand, the role of women in strategic decision-making appeared to be quite important. Many farmers acknowledged that their wives played an important role in their strategic decision-making process. This role was most notable in the category of land purchase decisions and was less apparent in buildings investment decisions. Land purchase decisions are often considered more a family/household decision, as issues such as succession planning are often a key influence. Therefore, it is understandable that women appeared to be most involved in this decision category.

As noted above, in four of the interviews conducted the farmer's wife was present. Interestingly, of the four wives, two of the wives were accountants and the other two were heavily involved also in the book-keeping of the farm enterprise. This suggests that where the farmers delegated

the book-keeping activities of the farm enterprise to their wife, the wife tended to be more involved in their decision-making process, compared to other farmers in this study who maintained their own financial records.

Another interesting aspect noted, in relation to the role of women in farmer decision-making, is that the women referred to in this study appeared to be quite cautious in strategic decision-making. For example, Farmer 11 (dairy) noted the following in relation to the involvement of his wife in the strategic decision to buy land:

> *"Myself and my wife would sit down here and I would present her with the figures and try and convince her … my wife was initially, we nearly fell out after the landlord that died, she knew it* [land] *was going to be coming up for sale, and she said "You're not buying that", I remember that distinctly. My wife is debt-averse, which has been good for me through the noughties and when things were going well, it kept me grounded."*

Farmer 19 (tillage) noted the following influence of his wife in strategic decision-making:

> *"Well, she* [farmer's wife] *would be the cautious one, whereas I would be … she would be a steadying hand alright."*

Finally, the wife of Farmer 7 (beef) noted in the interview (when a discussion was held about why the farmer did not proceed with a land purchase decision):

> *"It* [borrowings to purchase land] *will be like a chain around our necks for the rest of our lives. It's like another mortgage. If either of us lost a job you're caught and then you have a second mortgage to pay it off."*

These quotes demonstrate that, on many occasions, women appeared to play an important role in the decision-making process of the farmers interviewed. Some women appeared to stop farmers from rushing into a strategic decision. This suggests that, if those farmers want to proceed with a strategic decision, they may have to present a strong case to their wives to convince them that the decision is a good decision, in terms of financial aspects and in terms of the family unit. Furthermore, these findings illustrate that the strategic decisions undertaken in this study were often a joint decision between a farmer and his spouse.

7.7.4 Section Summary

The above summary of 'other issues' that were deemed to warrant attention, highlights a number of issues that provides further insights into the decision-making process of the farmers in this study. This section suggests that the demographic factors of farm type, age and level of education of the farmer and the monetary value of the decision appeared to be important aspects of the decision-making process of the farmers in this study. Furthermore, this section acknowledges that the decision-making process of the farmers in this study appeared to be an intuitive process on many occasions. Overall, these findings highlight that women played an important role in the decision-making process of many of the farmers in this study. Finally, many of the findings surrounding these other issues were corroborated by the industry experts who participated in the focus group.

7.8 Chapter Summary

A significant number of findings have been observed from a comprehensive analysis of the interview data collected. The analysis of findings in line with the three key aspects of **RO1**: influencing factors, the role of advisors and the role of FFM, have all elicited some interesting findings. The findings from these areas were all reviewed against the sensemaking framework and were found to strongly support it. The key findings from these three aspects, along with the findings from the 'other issues' section, are carried forward to Chapter 8, to frame a discussion which will assist in developing an understanding of farmer decision-making.

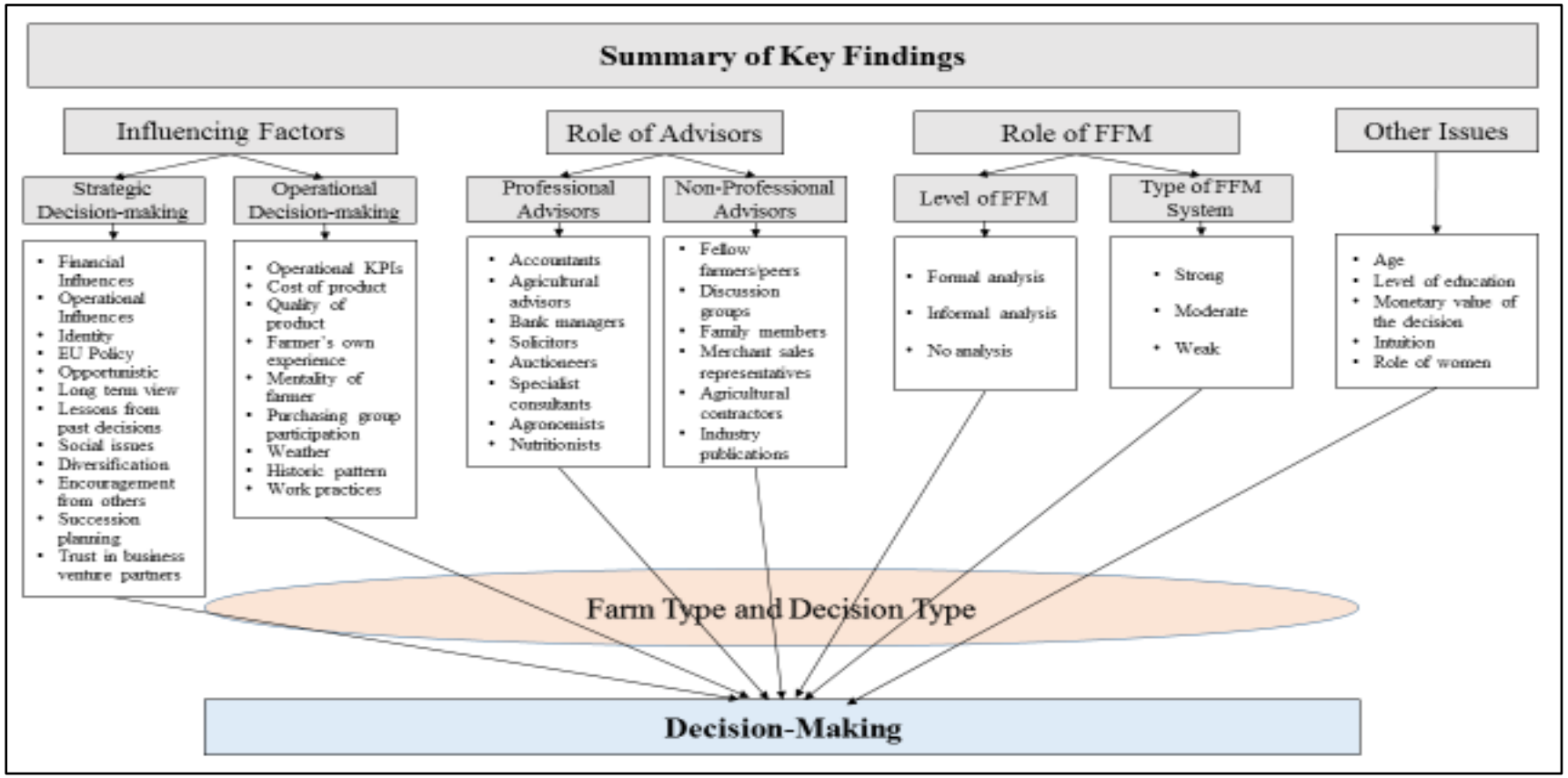
Chapter 8 Discussion

8.1 Introduction

A discussion of the key findings that were highlighted in the preceding chapter is now provided. This discussion is centred on three broad issues. Firstly, a comparison of the empirical findings to the prior literature is performed in Section 8.2. Secondly, the theoretical framework of sensemaking is used as a lens to assist in developing an understanding of the decision-making process of farmers in Section 8.3, resulting in the development of a model, as discussed below. Thirdly, the sensemaking framework is adopted to assist in providing explanation of the empirical findings in Section 8.4.

Before proceeding to discuss the key findings, Figure 8.1 is now presented to provide a high level overview of the key themes that were illuminated in Chapter 7, when the decision-making process of the farmers in this study were explored. Figure 8.1 recalls the influencing factors on both the strategic and operational decisions explored. Also, it highlights the various sources of professional and non-professional advice sources availed of by the farmers in their decision-making. Moreover, Figure 8.1 highlights how the role of FFM in the decision-making process of the farmers interviewed was analysed in this study. In addition, the other issues that were analysed in the decision-making process of the farmers in this study are highlighted in Figure 8.1. Finally, Figure 8.1 depicts how the two important issues of farm type and decision type were central aspects of the empirical findings generated.

Figure 8.1 Summary of Key Findings



In Section 8.2, a comparison of the empirical findings to the prior literature is conducted to establish the links between these two areas by highlighting; areas where *novel findings* were evident, issues that were well supported (*strong threads*) and issues that were not so well supported (*weak threads*). The most significant aspect to emerge from this comparison relate to the novel findings. There were three primary novel findings from the analysis of the decision-making process of farmers in this study: farm type was identified as a factor in their decision-making process, the level of FFM conducted in their decision-making was illuminated and an insight into the level of advice sought from advice sources in their decision-making was provided.

Furthermore, in Section 8.3, a review of the theoretical framework of sensemaking against the empirical findings outlines how a model called *Sensemaking and Financial Decision-making in Farming – a Model* has been developed to assist in providing a deeper understanding of farmer decision-making. Lastly, by applying a sensemaking perspective to the empirical findings, explanation of the financial decision-making process of the farmers in this study is provided.

8.2 A Comparison of the Findings to the Prior Literature

After conducting a comprehensive review of the literature, it is evident that this research project is novel in a number of respects, namely:

- Much of the prior literature surrounding farmer decision-making focuses on how farmers should make decisions, but this study focuses on how farmers *actually* make decisions.
- The majority of prior studies focus on exploring one particular aspect of the decision-making process (for example, there are many studies surrounding the values and goals of

farmers in decision-making), whereas this study explores the entire process of financial decision-making.

- Furthermore, many of the prior studies concentrate on one farm type (for example, many recent studies concentrate on decision-making in dairy farming); however, this research reviews decision-making across multiple farm types.
- Finally, much of the prior literature focuses on one particular decision event, whereas this thesis compares and contrasts decisions of both a strategic and an operational nature.

All of the above factors contribute to a rich and interesting set of research findings.

Although there are significant *novel findings*, there are also some *strong threads* evident which support the prior literature. Other prior literature was not supported by the empirical findings to a great extent as only *weak threads* were evident that linked to findings in the prior literature. The areas where strong threads, weak threads and novel findings were of particular note, are now presented in Table 8.1, followed by a discussion of each.

Table 8.1 Summary of Links between Empirical Findings and Prior Literature

Novel Findings	**Strong Threads**	**Weak Threads**
Farm type may be a key factor in farmer decision-making	Farmer mentality	Steps in farmer decision-making
FFM – types and levels of use	Household decision-making	Socio-demographic factors
Level of advice sought from advice sources	Policy/regulations	Factors that may affect the level of interaction with advice sources
	Advice sources	
	Intuition	

8.2.1 Novel Findings from this Research that Contribute to the Literature

Most importantly, there were a number of *novel findings*. They are novel because they did not feature in the prior literature to any meaningful extent and, therefore, provide a valuable contribution to the literature. An overview of these areas is now provided.

Farm Type may be a Key Factor in Farmer Decision-making

One of the most important findings is that farm type was revealed as a key factor in both the strategic and operational decision-making process of the farmers in this study. There has been a paucity of literature comparing the decision-making process of farmers across various farm types. Edwards-Jones (2006) acknowledged that farm type was an influencing factor on farmer decision-making. However, the majority of prior studies on farmer decision-making concentrated on evaluating specific decisions in the context of one particular farm type. For example, numerous studies in recent years have concentrated on decision-making in dairy farming (Hansson and Ferguson, 2011; O'Donnell *et al*., 2011; McDonald *et al*., 2013). The strong support of how farm type is a key factor in farmer decision-making is discussed further in Section 8.4.2.

Level of Advice Sought from Advice Sources

The prior literature outlines the frequency with which farmers interact with their various advice sources and the percentage of farmers that avail of each advice source (Byrne *et al*., 2003; Solano, 2003; Stanford-Billington and Cannon, 2010). Although the prior research does acknowledge which advice sources appear to be most important, it neglects to explore the extent of usage of these advice sources in the farmer's decision-making process. Therefore, this research project goes a step further; not only does it identify the various sources of professional and non-professional advice availed of by the farmers in this study, it also explores the extent to

which those advice sources were availed of in their decision-making process. In addition, a comparison of the extent to which those advice sources were availed of across the various decision types and farm types was performed.

FFM Types and Levels of Use

Firstly, it is important to note that a review of the literature highlighted little in the area of FFM in farmer decision-making and, of those studies conducted, mixed results were evident. The work of Byrne (2005) concluded that the majority of farmers did not use FFM tools in their FFM decisions, while Argiles and Slof (2001) noted that almost half of the farmers in their study used FFM reports in their decision-making process. The findings of this research project also produced mixed results. In terms of strategic decision-making, it was found that many of the farmers appeared to employ either formal or informal FFM analysis. By contrast, in operational decision-making, it was found that, although many of the farmers appeared to have a strong to moderate FFM system in operation on their farm, many of them noted that this had very little impact on the level of FFM conducted. Overall, this study demonstrated that the farmers in this study appeared to conduct a considerable amount of FFM in strategic decision-making and that the farmers had relatively good FFM systems in operation on their farms.

While aspects of this project supported the prior literature in terms of FFM, the vast majority of the prior literature in the area of FFM highlights a lack of engagement of farmers with FFM-related activities – a finding that is not supported in this thesis. These findings need to be considered in the context of the farmers interviewed, as these were farmers who had made significant farm expansion decisions. Therefore, they may not reflect the typical level and types of FFM conducted by all farmers in their decision-making process.

8.2.2 Findings that Strongly Support the Prior Literature

These *strong threads* demonstrate how the prior literature is supported by the empirical findings. A brief overview of each area where these strong threads exist is now presented.

Farmer Mentality

A number of prior studies are devoted to reviewing the various influences on farmer decision-making (Edwards-Jones, 2006; Hansson and Ferguson, 2011). This literature acknowledges that there are a multitude of influences on farmer decision-making; however, the vast majority have centred around what is referred to as *the mentality of the farmer* (Gasson, 1973; Austin *et al*., 1996; Willock *et al*.,1999; McGregor *et al*., 2001). The mentality of the farmer encompasses: goals, objectives, attitudes, behaviours and the identity of farmers. The literature advocates that the mentality of the farmer plays a significant role in farmer decision-making. The data gathered in this study demonstrate strong support for this premise. The empirical findings highlighted that the mentality of the farmer was evident when issues such as: 'identity', 'emotive decision-making', 'stick to what you know' and 'farmer mentality' were all strongly emphasised in the data, when the influencing factors on farmer decision-making were analysed.

Household Decision-making

In the literature, it was found that the characteristics of the farm household are important influencing factors in farmer decision-making. More specifically, the stage in family life cycle, the level of pluriactivity and the work patterns of the spouse, all play an important role in farmer decision-making (Jack and Anderson, 2002; Wallace and Moss, 2002; Kinsella *et al*., 2000; Farmar-Bowers, 2010). The prior literature is supported by the empirical findings in this regard. For example, 'succession planning' and 'off-farm income' were specifically cited as influencing factors on strategic decision-making. In addition, the role of women was highlighted as a key

feature of decision-making for many farmers. These features show explicit support in the data of the importance of the farm household in farmer decision-making. In terms of the stage in family life cycle, there was also some implicit support of its presence. For example, a review of the social influences on strategic decision-making revealed that a number of the younger farmers cited reasons such as 'spending more time with family' as being an influence, while, on the other hand, a number of the older farmers cited reasons such as 'to reduce the level of manual labour'. These influences noted by the farmers in this study suggest that the stage in the family life cycle is an influencing factor in farmer decision-making.

Policy/Regulations

Sutherland (2010) researched the environmental grants and regulations in strategic farm business decision-making and found that farmers view grant schemes as opportunities to be acted upon. Similarly, in this thesis, EU policy and regulations appeared to be a strong influence on the decisions explored. For example, many farmers cited 'grant schemes' and 'nitrates regulations' as reasons for undertaking decision-making. These empirical findings corroborate the prior literature in this respect.

Advice Sources

A number of prior studies have established the many advice sources of farmers (Byrne *et al*., 2003; Solano, 2003; Stanford-Billington and Cannon, 2010). This study acknowledges the use of various sources of both professional and non-professional advice sources in farmer decision-making, with many of those sources already referred to in the existing body of farmer decision-making literature. While a strong thread links the various advice sources availed of per the prior literature to the sources of advice identified in the empirical findings, the prior literature does not explore the extent to which those advice sources are being availed of in the farmer's decision-

making process. Therefore, Section 8.2.1 referred to the novel research findings in the context of the level of interaction with advice sources.

Another element of the literature that is well supported by the research findings surrounding the role of advisors is in relation to the factors that affect the level of interaction between the farmer and professional advisors. In the farmer decision-making literature, as there was very little narrative on the factors that affected the level of interaction between the farmer and the professional advisor, the small business literature was explored for guidance. An interesting study conducted by Insights (2010) outlined four distinct groups of SMEs, based on their propensity to seek expert advice and/or employ those resources as a form of business support. The four groups were: Confidence Seekers, Community Networkers, Skeptics, and Go-it-Aloners. Table 8.2 provides a brief description of each group as outlined in the Insights study, and demonstrates how the empirical findings support how those categories could be attributed to farmers.

Table 8.2 Application of Empirical findings to the Insights (2010) Study

Distinct Group Category	**Findings in this Thesis to Support the Categorisation of Farmers into Similar Categories**
Confidence Seekers – value both expert advice and social rapport.	Many of the farmers in this study could be described as confidence seekers as they sought advice from numerous advice sources, both professional and non-professional.
Community Networkers – those whose support networks focused largely on social rapport.	Some of the farmers noted that they consider their discussion group (network) an important part of their decision-making process.
Skeptics – were presented as focused mostly on expert advice.	Other farmers valued professional advice over non-professional advice and largely relied on this in their decision-making.
Go-it-Aloners – used almost no external advice.	Lastly, some of the farmers appeared to avail of no external advice and could be classified as "Go-it Aloners".

The above categorisation process is a useful method of explaining the propensity of the farmers in this study to seek expert advice. However, this research project found that, in many instances,

farmers interviewed appeared to value non-professional advice over professional advice. Therefore, the above categorisation would need to be expanded to take account of both professional and non-professional advice sources in order to explain the role of advisors in farmer decision-making more comprehensively.

Intuition

Ohlmer and Lonnstedt (2004) concluded that accounting information is developed for analytical decision-making, whereas many farmers use an intuitive process. While Nuthall (2012) confirmed that farmers adopt an intuitive decision-making process, he noted that farmers have a number of formal tools to help manage grazing systems but few make use of them. The empirical findings concur with this prior literature, as they provide strong support for the decision-making process of the farmers in this study being an intuitive process. A number of features of the data signified this intuitive process. Firstly, farmers noted that they relied on their 'own experience' and 'lessons from past decisions' in decision-making (both a reliance on one's own experience and past experience are features of intuition as acknowledged in the literature). Secondly, 'emotive decision-making' and 'farmer identity' were acknowledged by the farmers as having a strong involvement in their decision-making, which further suggests the presence of intuition. Finally, there were many examples of farmer quotes which directly supported the existence of intuition in farmer decision-making, as outlined previously in Section 7.7.2. Overall, the findings concur with the prior literature in its premise that farmer decision-making can be an intuitive process.

8.2.3 Prior Literature that is Weakly Supported in the Findings

A number of areas were noted where *weak threads* exist between the empirical findings and the prior literature. These weak threads do not discredit the prior literature in any way, but are

highlighted to outline how some of the findings of the prior literature are evident, but not supported to a large extent. An overview of the areas where these weak threads exist is now presented.

Steps in Farmer Decision-making

One of the first issues discussed in the literature review is how farm management texts outline steps in farmer decision-making and how those steps should be followed in a linear format in farmer decision-making. One of the seminal authors in this area is Ohlmer (Ohlmer *et al*., 1998; Ohlmer and Lonnstedt, 2004). His work looked at the steps/functions/elements in farmer decision-making. He initially identified eight steps in farmer decision-making and later created a model of farmer decision-making which consisted of a matrix of four phases and four sub-processes. This model suggested that farmers go through quite a structured process of: identifying a problem, searching for alternative courses of action, choosing the selected course of action and post-implementation evaluation. There are similarities identified in the empirical findings to the work of Ohlmer, as elements of the model presented were evident. However, the empirical findings do not indicate that the decision-making process of the farmers in this study is encapsulated in such a model. The data here suggest that the decision-making process of the farmers interviewed did not appear to be structured, did not appear to take place in a linear format and did not appear to be best explained in a matrix format.

Socio-demographic Factors

A considerable amount of the literature surrounding farmer decision-making referred to how the socio-demographics of the farmer are key factors in farmer decision-making (Wilkening, 1958; Backus *et al*., 1997; McGregor *et al*., 2001; Edwards-Jones, 2006; Farmar-Bowers, 2010). Socio-demographics such as age, the level of education, gender and attitude to risk, were all identified in the literature as being influencing factors in farmer decision-making. This study was

not designed to determine the extent to which the socio-demographic factors of the farmer impacted on the decisions explored. However, where insights in the data were observed in relation to such socio-demographics, the findings were highlighted. The empirical findings suggest that factors such as age and the level of education had an impact on the decision-making process of the farmers in this study.

Factors that may affect the Level of Interaction with Advice Sources

The small business management literature tells us that the role of trust and confidence in advisors is one of the primary influences of the level of interaction with advice sources (Blackburn and Jarvis, 2010; Schizas *et al*., 2012). While the role of trust and confidence may be important factors on the level of interaction of a farmer with advice sources, there was no explicit support of that in this study. However, it is acknowledged that, while farmers used the words "trust" and "confidence", on occasion, when discussing the role of their advisor in farmer decision-making, the data here were not strong enough to support the literature in any meaningful way.

Other factors, as identified in the literature (Deakins *et al*., 2001; Ian-Burke and Jarratt, 2004; Blackburn and Jarvis, 2010), that affect the level of interaction of small business owners with external advice sources are: its financial cost, a reluctance by owner-managers to spend time listening to advisors, a sign of their managerial weakness and the quality of the advice viewed as being poor. This research project did not have the objective of exploring reasons why farmers did not interact with their advisors, but rather focused on the role of advisors in the farmer's decision-making process. However, many of the above reasons, as cited in the literature, were evident. An interesting reason, which is common to the literature and the empirical findings, is that: 'for some managers it is an outward sign of their managerial weakness' (Blackburn and Jarvis, 2010, p.5). This is one of the key explanations put forward as to why different types of

farmers engage with advisors to varying levels (see Section 8.4). In this study, beef farmers were the farm type that appeared to interact with external advice sources least. One of the primary reasons for this appeared to be that beef farming, in many cases, is not a profitable enterprise and, therefore, many beef farmers may not want to face up to this reality and be reminded of their managerial weakness when they interact with advice sources.

Finally, in relation to the level of interaction with advice sources, there were some contradicting views noted in the small business management literature. For example, Deakins *et al*. (2001) found that financial management decisions are often dynamic processes and based on relationships with external advisers, including accountants. On the other hand, Ian-Burke and Jarratt (2004) found that accountants were used for tax, reporting practices and purchasing decisions, but tended to be consulted on strategy only after the event – in other words, accountants were not regarded as credible advisers for strategic matters. There was support in this study for both of these views – some farmers noted that their accountant was a key advisor in farmer decision-making, whereas other farmers categorically stated that many of their strategic decisions were made without their accountant, as they were only consulted afterwards. These contrasting views support why the theoretical framework of sensemaking is an appropriate lens to explore farmer decision-making – sometimes, it makes sense for farmers to engage with their accountant in decision-making and sometimes it does not. It really depends on the farmer's own sensemaking process.

8.2.4 Section Summary

The above comparison of the prior literature to the empirical findings highlights that, while there are elements of the findings that are supported in the literature, there are some aspects of the empirical findings that do not appear to any great extent in the prior literature. This demonstrates

that the research findings do uncover a deeper understanding of farmer decision-making by highlighting issues that are not prevalent in the prior literature. Furthermore, it acknowledges how this research project has a valuable contribution to make to the existing body of literature in farmer decision-making.

8.3 A Sensemaking Perspective of Farmer Decision-making

After consideration of a number of theoretical frameworks, as outlined in Chapter 5, sensemaking has been adopted as the theoretical framework to assist in providing a deeper understanding of farmer decision-making. This section discusses the empirical findings, using the sensemaking framework. At the centre of all decision-making is the decision-maker – ultimately the farmer in this study. Therefore, the human element is fundamental to farmer decision-making. Every farmer has his/her own story to tell about the sensemaking process involved in particular decisions being made. Firstly, the sensemaking process of one farmer may be very different to the sensemaking process of another. Secondly, in management accounting, it is common to view decision events from a financial and a non-financial perspective. Similarly, decisions may or may not *make sense* from a financial and/or a non-financial perspective.

In an ideal world, farming is a business and, from a purely financial management perspective, the primary goal of any business is to maximise shareholder wealth. Farming is an enterprise that is often described not only as a business, but as a way of life. In this regard, the maximisation of wealth is often not the primary goal of farmers. The decisions that farmers make are dependent on the goals/ambitions/objectives of each individual farmer. Therefore, depending on the goal of the farmer, in turn, this will determine the amount of profits that the farm needs to generate in order to achieve those goals. On the other hand, many farmers are happy to remain as they are and may not want to change. Farmers who wish to expand, intensify or diversify may need to

engage much more in decision-making. What that decision-making process involves will depend on what *makes sense* to an individual farmer.

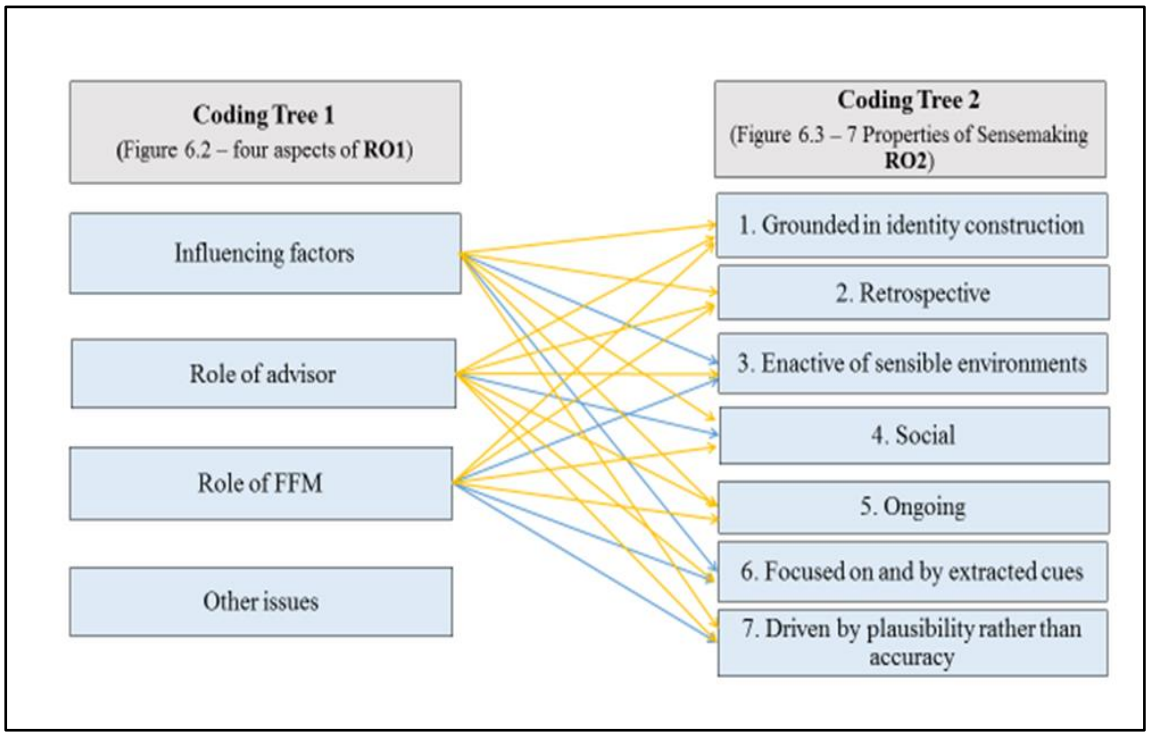
As described in Chapter 5, how an individual *makes sense* of a particular issue is not as straightforward as it may seem. Recalling some aspects of the definitions of sensemaking from Table 5.1, it is a process, involving placing stimuli into a framework and structuring the unknown. Therefore, throughout the remainder of this section, the financial decision-making process of farmers is unpacked and presented as a process of sensemaking.

8.3.1 The Adoption of the Weickerian View

As mentioned previously, Weick (1995) is considered the seminal author on sensemaking, so much so that his work is often referred to in the literature as the *Weickerian view*. Therefore, Weick's work was taken as a starting point when discussing farmer decision-making in the context of sensemaking. In the preceding chapter, connections were made between the seven properties of the sensemaking framework, as devised by Weick (1995), and the three primary aspects of **RO1** – influencing factors in Figure 7.7, the role of advisors in Figure 7.13 and the role of FFM in Figure 7.16. Here, the review of the sensemaking framework against each of those three aspects individually, is merged together to present a holistic overview of the framework, as it applies to farmer decision-making. In doing this exercise, the researcher was checking the extent to which the aspects explored in **RO1** flowed into the overall decision-making process of farmers (**RO2**), thereby making the connection between **RO1** and **RO2** explicit. This holistic view is now presented in Figure 8.2 and was generated by merging the two separate coding processes completed, namely Coding Tree 1 (Figure 6.2) and Coding Tree 2 (Figure 6.3), described previously in Section 6.6. Furthermore, by conducting this exercise, the researcher was attempting to establish the links between the properties of sensemaking and the

individual aspects of **RO1**. Figure 8.2 is the result of the mapping process that was conducted to emphasise those links. It is acknowledged that these links were based on the level of incidence of how each property was supported in the interview data, but it is important to bear in mind that it was the interpretative coding of the quotes in the farmer interviews by the researcher which facilitated this mapping process.

Figure 8.2 Review of the Sensemaking Framework against the Empirical Findings[26]



As can be seen from Figure 8.2, the sensemaking framework is well supported in the empirical data – all seven properties of sensemaking are present within the three primary aspects of **RO1**. The *blue lines* correspond to the properties of the sensemaking framework that were strongly supported when each of the three primary aspects of **RO1** were reviewed, as presented in

[26] The fourth aspect of **RO1**, other issues, was not analysed against the sensemaking framework because it included a number of issues that were not explored in detail in the interview transcripts but rather were issues that were compared and contrasted against the three primary aspects of **RO1**. Other issues include demographic factors such as farm type, age and level of education. It also includes a review of the role of intuition in farmer decision-making which is discussed separately in Section 8.4.3.

Figures 7.7, 7.13 and 7.16, respectively. While, the *yellow lines* represent the properties less supported, nonetheless, all properties were supported in the data.

Essentially, by using the power of NVivo to explicitly map the links between the properties of the sensemaking framework in the data with the individual aspects of **RO1**, after the interpretive narrative discussion of how each property of sensemaking appeared to be supported in each aspect of **RO1** (as outlined in Sections 7.4.3, 7.5.4 and 7.6.3), this gave the researcher more confidence that sensemaking was an appropriate framework to adopt, to assist in developing explanation of farmer decision-making. Once the above review of the sensemaking framework against the empirical findings was completed, the empirical findings were considered in the context of building a sensemaking model specific to farmer decision-making.

8.3.2 Development of a Sensemaking Model of Farmer Decision-making

The theory behind the models of Weick (1995) and Huzzard (2004) was adopted to draw out an explanation of the empirical findings. Up to this point, it has been demonstrated that many of the properties of sensemaking identified by Weick (1995) apply to farmer decision-making and were supported in the data collected. In Chapter 5, there were numerous researchers who presented models and explanations which helps one gain a deeper understanding of the sensemaking framework. It is not possible to explore how all of that prior research applies in the context of farming. Therefore, following a detailed review of the literature, the model developed by Huzzard (2004) was deemed to be the most appropriate model to adopt to explore farmer decision-making. While other models were supported by the empirical findings to some extent and were kept in mind when interpreting the findings, the Huzzard Model was adopted because it was assessed to be the most comprehensive model to explore farmer decision-making.

Other models were only useful in exploring certain aspects of farmer decision-making. These are presented in Table 8.3, including an explanation of why they were not adopted individually or combined with the Huzzard Model.

Table 8.3 Reasons why other Sensemaking Models were not Adopted or Combined with the Huzzard Model

Other Sensemaking Models Discussed in Literature Review	Reasons for not Adopting these Models in this Study
The Paradigm Model of Sensemaking in a Strategic Context by Tillmann and Goddard (2008)	This model concentrated on how management accountants were called upon to assist the organisation to understand the situation and to make it more transparent. This was unsuitable as its focus was on the accountant and not the farmer.
A Sensemaking Model of Knowledge Management by Cecez-Kecmanovic and Jerram (2002)	This model presents various knowledge types and knowledge processes. It may help with the explanation of individual farmer decision-making; however, it became apparent that the story of groups – dairy, tillage and beef – was more focal in this current study. Essentially, this model did not fit the results and, therefore, it was not deemed appropriate to adopt.

Upon reflection on the alternative models in Table 8.3, they were ruled out as they were unlikely to give a more comprehensive explanation of farmer decision-making than the Huzzard Model chosen. The Huzzard Model takes into account the many elements of farmer decision-making that are explored in this study, thereby overcoming the deficiencies that were attributed to other models. Therefore, this section is now dedicated to developing the discussion of how the Huzzard Model (which was presented and discussed in detail in Section 5.4.5) assists in providing a deeper understanding of farmer decision-making.

Huzzard's Model developed a conceptualisation of sensemaking, sensegiving and learning in a model of organisational change. The whole environment of farming and farmer decision-making is in a continuous state of organisational change. The environment in which farmers operate is subject to a high degree of change. Changes in policies and regulations that must be complied

with, volatile markets and changes in working conditions due to weather are just a few examples of where such changes emerge. This is another reason why this model was deemed appropriate to act as a lens to explore the empirical findings.

Furthermore, when the process in the Huzzard Model was reflected upon, it became evident that the concepts and the process involved (as described in Section 5.4.5) were strongly supported in the context of farmer decision-making. Huzzard's model was used in the context of learning, but when the same concepts are applied and the word 'learning' is replaced with 'decision-making' (farmer decision-making in this instance), then the model can be demonstrated as a useful tool to assist in developing an understanding of farmer decision-making. Table 8.4 is now presented to demonstrate how the findings in this research project support those concepts.

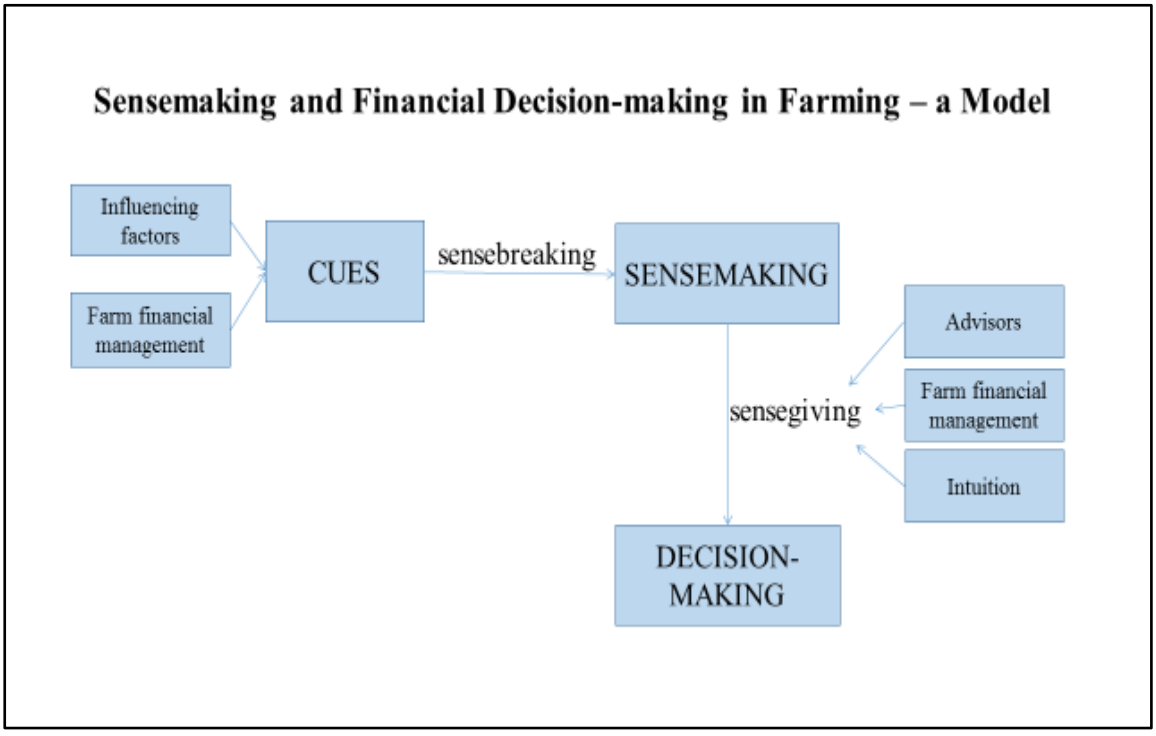
Table 8.4 Huzzard Model Concepts and Application to this Study

Concepts Presented in Huzzard Model (2004)	**Findings in this Research Project to Support Huzzard Concepts**
Sensebreaking – occurs as a consequence of a disruption in the predictability and taken-for-grantedness of routines.	These may relate to the influencing factors in farmer decision-making identified in this study; examples include: • Changes in EU policy • Operational issues – capacity constraints • Financial issues – money available to invest • Opportunities arise – land for sale • Social issues – age of farmer, young family • Succession planning FFM can also cause sensebreaking and act as a cue.
Sensemakers who provide sensegiving	Perhaps the advisors who were noted as providing advice to the farmers in this study are the sensemakers who provide sensegiving; examples include: • Professional advisors – accountants, agricultural advisors, specialist consultants. • Non-professional advisors – family members, other farmers, discussion group participation. In this study there is support for the farmer's FFM activities acting as a form of sensegiving. In this study it is revealed also that the farmer's intuition, tacit knowledge and experience as a farmer may also act a form of

Concepts Presented in Huzzard Model (2004)	Findings in this Research Project to Support Huzzard Concepts
	sensegiving.
Learning	The learning concept in the Huzzard Model is being replaced by decision-making in the context of this research project.

The above table demonstrates how the three key aspects of **RO1**: the influencing factors, the role of advisors, and the role of FFM, are evident in the Huzzard sensemaking model. Therefore, when the process described by Huzzard is taken and applied to decision-making (replacing learning), then a much deeper understanding of farmer decision-making is achieved. Based on the findings in this study, the Huzzard Model has been adapted to assist in developing explanation of financial decision-making in farming. This adapted model is now presented in Figure 8.3.

Figure 8.3 Sensemaking and Financial Decision-making in Farming – a Model



The following analogy may help to put the revised model in context – if a farmer is conducting his/her farm business on an ongoing basis and something happens (*a cue*) which causes him/her to pause and consider a change (*sensebreaking*) in his/her ongoing activities (a strategic decision for example), then s/he enters a state where s/he must look at his situation and evaluate possible courses of action (*sensemaking*). In the process of evaluating alternatives, the farmer may seek advice and/or use the information at his/her own disposal to help him/her make an informed decision (*sensegiving activities*). Once this decision has been made, once again, s/he continues with his business as normal. This is a continuous process in the farmer's ongoing management of the farm enterprise. This analogy provides a description of how the revised model can be adapted to the decision-making process of farmers. A more comprehensive discussion of how the findings in relation to the key aspects of **RO1** are reflected in the revised model, is now presented.

Firstly, the role of influencing factors – in the empirical findings, it was outlined how the decision-making process of the farmers in this study is influenced by a multitude of influencing factors. These factors can now be described as the *cues* in farmer decision-making. The *cues* that farmers note in their environment act as triggers which cause sense to breakdown (*sensebreaking*) and initiate the farmer to undertake *sensemaking* activities. Furthermore, when the seven properties of sensemaking, as identified by Weick, were reviewed against the influencing factors in Section 7.4.3, it was noted that the property of '*focused on and by extracted cues*' was strongly supported in the interview data, along with the property of '*enactive of sensible environments*'. This support reinforces how it is appropriate to describe the influencing factors as *cues* and how the environment in which the farmer operates often provides the origin from where these *cues* begin. In addition, Weick's work and much of the other literature in the area of sensemaking evolves around research in crisis situations. The *cues* (influencing factors) referred to above (for example, a change in EU policy or a situation of

capacity constraints) could be considered to be a crisis situation for the farmer, and hence a sensemaking occasion presents itself.

Secondly, the role of advisors – the findings chapter demonstrated that the farmers in this study availed of advice from many different sources. In terms of the adapted sensemaking model, these advice sources provide a *sensegiving* role to farmers to aid them in their decision-making process. According to Huzzard, sensegiving occurs through discourse – in this research project, farmers discussed their decisions with others in order to progress with them. This discourse helps advisors to understand the farmer's situation and enables the advisors to provide advice to farmers (*sensegiving*). It is clear from the interview data that, in many instances, farmers turned to advisors to help them make sense of their business situations in order to progress with decision-making. Furthermore, when the sensemaking properties were reviewed against the role of advisors in Section 7.5.4, the sensemaking property of '*social*' was strongly supported. The farmers in this study appeared to discuss their decisions and talk them through with others. This illustrates that the decision-making process of the farmers in this study was a social practice in many instances. Sometimes, this discourse took place with professional advisors (such as accountants and agricultural advisors) and at other times, the discourse took place with non-professional advice sources (such as family members or other farmers). In essence these advice sources can be described as the *sensegivers* who provided *sensegiving* to farmers, when they were evaluating decisions under review.

Finally, the role of FFM – the findings concluded that many of the farmers in this study appeared to conduct FFM in their decision-making process. However, it was noted that this FFM was conducted in both a formal and an informal capacity and, in some instances, decisions were undertaken with no FFM undertaken. In the context of the Model, the influencing factors have been renamed as *cues* which may cause *sensebreaking* and the role of advisors renamed as

sensegivers who provide a *sensegiving* role. The role of FFM does not appear to be as clear cut. In fact, the role of FFM could be said to have a dual role – firstly, the farmer's ongoing FFM practices may act as a *cue* that causes sense to break (*sensebreaking*) and may act as a trigger for a decision to be made, and secondly, the farmer may undertake FFM activities during his process of sensemaking in order to fulfil a *sensegiving* role. These observations on the role of FFM in the model were supported when the sensemaking properties were reviewed against the findings on the role of FFM in farmer decision-making in Section 7.6.3. It was evident that the properties most supported were '*focused on and by extracted cues*' and '*enactive of sensible environments*' (to support how FFM acts as a cue) and '*driven by plausibility rather than accuracy*' (to support the role of FFM as a sensegiving role).

In summary, this study suggests that there can be both financial (as evident from the role of FFM in farmer decision-making) and non-financial influences (as evident from the many other influencing factors on farmer decision-making identified) on farmer decision-making. Either of these sources may act as a *cue* which triggers the process of decision-making and the process of *sensemaking*. Both of these sources can cause *sensebreaking* which may initiate the farmer to review his/her business and take action. While the farmer is reviewing his/her options, s/he may need direction and looks for sources of *sensegiving*. One of the primary adaptations of the Huzzard Model is that *sensegiving* may not only occur through discourse, in the context of farmer decision-making, but *sensegiving* may come from a number of sources: from advisors and/or from the farmer's FFM activities and/or from the farmer's intuition/own experience as a farmer (the intuition element is discussed in Section 8.4.3).

8.4 A Sensemaking Perspective of the Empirical Findings

It was noted in the findings chapter that there are two overarching variables uncovered in this study that may impact the decision-making process of farmers: the *decision type* (strategic or operational) and the *farm type* (dairy, tillage or beef). These two issues are now discussed in the context of sensemaking in Sections 8.4.1 and 8.4.2. In addition, in Section 8.4.3, a sensemaking perspective of the role of intuition in farmer decision-making is provided. Finally, in Section 8.4.4, some exceptions to sensemaking in farmer decision-making that were noted in this study are highlighted. It is important to point out that the principal findings, as identified in Chapter 7, are brought forward as discussion points and are presented in text boxes throughout the remainder of this section, followed by a brief discussion on each.

8.4.1 The Impact of Decision Type on Farmer Decision-making – a Sensemaking Perspective

The empirical findings presented a significant number of findings in respect to *decision type*. It was evident that both the strategic and operational decision-making processes of the farmers in this study were different in many respects. Furthermore, within strategic decision-making, the category of decision (buildings investment, land purchase etc.) in which the farmer engaged in, presented some insights that were of particular interest. A sensemaking perspective on the intricate nuances prevalent in the data for each decision type in now presented.

Common influencing factors existed across the different categories of strategic decision; however, the triggers/cues within each category of influencing factor did not appear to be emphasised to the same extent.

This finding was particularly evident when the influencing factors on the two most prominent strategic decisions explored in this study – buildings investment and land purchase – were compared in Section 7.4.1. It was noted that the three most emphasised categories of influencing factors for both of these decisions appeared to be: operational influences, financial influences and identity influences. However, the level of support for each of these categories of influencing factors varied considerably within both categories of strategic decision. Furthermore, within each category of influencing factor, the emphasis on individual influences appeared to vary, depending on the category of strategic decision.

Weick (1995, p18) argues that the seven properties serve as a rough guide for enquiry into sensemaking. This means that they are not an exact prescription of what sensemaking is and also suggests that not all properties are evident in all sensemaking activities to the same extent. This was the case when the empirical findings highlighted varying levels of support for each of the sensemaking properties when the framework was reviewed against the influencing factors on farmer decision-making in Figure 7.7 (Section 7.4.3).

It is important to note that the identification of the *cues* in farmer decision-making provides support for the notion that, while there are many occasions (different types of decision) for sensemaking, similar influencing factors appear to exist for specific categories of decision. For example, land purchase appeared to be strongly influenced by '*farmer identity'* (property one of

the sensemaking framework) while buildings investment appeared to be strongly influenced by EU policy (part of the fourth property '*enactive of sensible environments*'). This is an interesting finding in itself – it highlights that the *cues* for the different types of decision may be different, but there were strong patterns in the data to show that there were common influencing factors within categories of decision (buildings investment, land purchase, etc.) in a specific decision type (strategic decision-making). Therefore, the influencing factors identified illuminate an understanding about the *cues* that may cause *sensebreaking* to occur, and that may initiate the *sensemaking* process in farmer decision-making.

Contrasting levels of involvement of the various sources of professional and non-professional advice were noted within each decision type.

The application of the Huzzard Model (2004) demonstrates how the role of advisors is that of a *sensegiving* role. The empirical findings highlighted that the role of advisors, when analysed by decision type in Section 7.5.2, presented contrasting levels of involvement of advice sources. For example, from a strategic decision perspective, while accountants appeared to be heavily involved in the land purchase decisions reviewed and less involved in the buildings investment decisions, the opposite was evident for agricultural advisors. The reason for this variation appeared to be that, on many occasions, agricultural advisors were involved in the design and planning and of the buildings, as opposed to the financial aspects of the decision.

The varying levels of involvement of advice sources was evident also in the operational decisions explored. While it was evident that there appeared to be a low level of involvement of discussion groups in the strategic decisions reviewed in this study, the contrary was established in terms of the operational decisions explored. The reason for this variation is understandable, as

the role of discussion groups is for farmers to come together to discuss day-to-day repetitive operational management issues, as opposed to discussing once-off major (and sometimes sensitive) strategic decisions of individual farmers.

In essence, the role of advisors in the decision-making process of the farmers in this study was a social practice, whereby farmers discussed their decisions with others. The interview data demonstrated that the sources of advice and the level of advice sought varied among the decision types of strategic and operational decision-making. This shows that the level of *sensegiving* sought by farmers in their decision-making process can vary considerably, depending on the decision type under consideration but, most importantly, the findings demonstrate that advisors can provide an important *sensegiving* role. Overall, many of the farmers in this study engaged with external advice sources to make sense of their business situations to progress with decisions of a financial nature.

At this point it is important to note that there was a high level of disengagement also with external advice sources, by some of the farmers in this study in their decision-making, as discussed in Section 7.5.2. This means that in the absence of turning to external advice sources, farmers may rely often on internal *sensegiving* sources. For example, their mentality (*identity*), their past experiences (*retrospective*), their day-to-day FFM activities (*ongoing*) and the farmer's own intuition (*driven by plausibility rather than accuracy*) can all play an important role in farmer decision-making – all of these properties were supported, when the sensemaking properties were reviewed against the influencing factors on farmer decision-making. These findings further develop the premise that farmer decision-making is a sensemaking process.

Another internal source of *sensegiving* was identified, when the role of women in farmer decision-making was analysed in Section 7.7.3. The farmers' wives/spouses were significantly

involved in farmer decision-making on many occasions and helped the farmer make sense of the business situation to proceed with decision-making. Phrases such as "she kept me grounded" and "she would be a steadying hand" were used by farmers to describe the input of their spouse in the decision-making process. These suggest that farmer's wives can often provide a *sensegiving* role in farmer decision-making. This finding was not surprising, as farming is a type of business that is uniquely concentrated around the family unit – so much so that farmer decision-making is often described as household decision-making in the literature.

Contrasting levels of involvement of FFM activities were noted within each decision type.

The above issue was highlighted on a number of occasions in the findings. Applying the Huzzard Model (2004), we note that FFM activities can provide a *sensegiving* role in farmer decision-making, as FFM activities can help a farmer *make sense* of a decision under consideration. For example: can the farmer afford to proceed with the investment? Does the cost of the investment out-weigh the benefit of the investment? Is there an adequate return on the farmer's investment? These are all questions that can be addressed by conducting FFM activities. Such FFM activities can take place in a formal or informal capacity – the farmer can sit down and formally conduct activities such as budgets, cash-flow forecasts etc. or s/he can informally prepare a few calculations on the back of an envelope.

It was observed that some of the farmers in this study engaged in "informal analysis", while many engaged in "formal analysis", in strategic decision-making. The type of decision that the farmer was undertaking was a key factor in the level of FFM conducted, as identified in Section 7.6.1. For example, in strategic decision-making it was noted that the purchase of land appeared to be the strategic decision on which the farmers in this study conducted the most FFM.

Buildings investment decisions also appeared to have a considerable level of FFM conducted on them, but it was apparent that, where farmers made once-off major buildings investment decisions, as opposed to a gradual investment in their farm buildings, this decision appeared to involve much more consideration of FFM issues.

These findings suggest that larger scale or once-off investments (such as the purchase of land or a major farmyard expansion) were the decisions in this study that involved the highest levels of FFM. Also, how such investments were financed was a key influence on the level of FFM conducted. For example, it was found that, where investment decisions were financed by borrowings, many of them had more FFM analysis (formal and/or informal) conducted, compared to any other category of financing.

If we ask the question: why do farmers sometimes conduct formal FFM, at other times informal FFM and sometimes do not conduct any FFM in strategic decision-making? A better understanding of farmer decision-making may then be achieved. The simple answer is: it depends on what *makes sense* in the individual farmer's circumstances. For example, if the farmer has to borrow to fund the investment, s/he must ensure s/he has the debt repayment capacity and hence, may feel it necessary to conduct FFM activities to satisfy himself that s/he does have that repayment capacity. On the other hand, if the farmer has the money to invest, there may not be any need to conduct such FFM activities.

Furthermore, the objective or goal of the farmer was identified as a key factor that appeared to impact the level of FFM that the farmers in this study conducted, when making strategic decisions. For example, when the financial influences on strategic decision-making were reviewed, it was observed that the strong influences for buildings investment were: 'to increase farm income' and 'tax planning' while, for land purchase, the financial influences most

emphasised were: 'the farmer had the money to invest' and 'debt repayment capacity'. One would expect that the primary reason for farm expansion would be to increase farm income, but this appeared to be secondary in the case of the land purchase decisions explored in this study. This suggests that the goal of the farmer may be the *cue* that triggers the decision-making process of a farmer. Similarly, the goal of the farmer could be considered to be the *cue* in the sensemaking process of the farmer – such *cues* may determine the level of FFM that needs to be conducted in order to fulfil the *sensegiving* role for the farmer, before proceeding with decision-making.

The previous paragraph refers to how the farmers in this study appeared to look upon the objective of 'being able to afford the investment' as being of primary importance, and the objective 'to increase farm income' as secondary, in the case of land purchase decisions. This suggests that farmers may often buy land, not with the goal of profit maximisation in mind, but with other non-financial goals in mind. This aspect of farmer decision-making is represented in the '*grounded in identity construction'* aspect of sensemaking. If a farmer's reason for proceeding with a strategic decision is motivated by non-financial reasons, then it appears plausible that FFM activities may not play an integral role in that farmer's decision-making process.

Finally, the level of FFM in operational decision-making may be closely linked with the type of FFM system that each farmer has in operation in its farm enterprise. The empirical findings highlighted that the majority of farmers in this study had "strong" or "moderate" FFM systems in operation on their farms. This was initially quite surprising, as the literature portrays that the majority of farmers in Ireland operate what could be considered quite weak FFM systems. However, when one considers the farmers that were interviewed, the findings in relation to the type of FFM systems in operation is not surprising – the farmers that participated were farmers

who had large strategic investment decisions in their business in recent years and, as a result, may have had a greater tendency to engage in FFM activities.

An interesting observation from the findings, in regard to the level of FFM in operational decision-making in Section 7.6.2, was that many farmers appeared to conduct low levels of FFM in their operational decision-making, despite having strong FFM systems in operation. While the interview data suggests that farmers were quite aware of the financial implications of their operational decision-making, many of them noted that, regardless of their level of FFM, they had limited control over the financial aspects of their operational decisions. This observation was most notable when farmers highlighted that they have little control over the cost of their inputs or the market price of their outputs. If farmers feel that they have very little control over the financial aspects of their operational decisions, then it appears logical that they will not engage extensively in FFM activities when making such operational decisions. In these instances, farmers may believe that if they farm to the best of their ability, they will maximise their output, which, in theory, should lead to increased financial performance. To these farmers, it may *make sense* not to conduct high levels of FFM in operational decision-making – instead they may rely on their own knowledge and experience as a farmer (aspects represented by the '*grounded in identity construction'* and '*retrospective'* properties of the sensemaking framework).

Overall, the findings in this study suggest that the decision type has a significant impact on the level of FFM conducted in farmer decision-making. However, it was evident that not all decisions explored involved high levels of FFM analysis and perhaps there is nothing wrong with this – in fact, in some circumstances it may make perfect sense. All too often, it is presumed that farmers should be conducting high levels of FFM in order to improve financial decision-making, but there are occasions when FFM may not be necessary in farmer decision-

making. In these situations, other elements of the farmer's sensegiving process may be relied upon to a greater extent.

Now that a sensemaking perspective has been presented on the intricate nuances prevalent in the data, for each decision type, it is important to reflect upon how the sensemaking framework and the adapted model in Figure 8.3, apply to both strategic and operational decision-making. It is acknowledged that both strategic and operational decisions can be different in many respects. This was evident from the subtle differences present (as outlined above in this section) when the sensemaking perspective was applied to the various aspects of **RO1** (influencing factors, role of advisors and role of FFM). However, the model depicted in Figure 8.3 serves as an overarching model which encapsulates the sensemaking process of the farmers in this study, when faced with both strategic and operational decisions. It could be argued that a different model could be developed for each type of decision but, in this study, it was felt best to develop one model only to assist in developing explanation of farmer decision-making. Essentially, this study contends that, although the *cues* (influencing factors) may be different for both strategic and operational decisions and the type of *sensegiving* (advisors and/or FFM and/or intuition) may not be the same for both strategic and operational decisions, the process navigated by the farmers in this study when making both strategic and operational decisions is best described as a process of sensemaking.

8.4.2 The Impact of Farm Type on Farmer Decision-making – a Sensemaking Perspective

The empirical findings highlighted that there were a significant number of findings presented in relation to the impact of *farm type* on farmer decision-making. It was evident that the decision-

making process of farmers within the three farm types in this study of – dairy, tillage and beef – were different in many respects. Perhaps this means that each farm type has its own unique sensemaking process when engaging in farmer decision-making. A sensemaking perspective is now applied to the intricate nuances prevalent in the data, analysed by farm type, in relation to the decision-making process of farmers.

Farm type may be a key factor that influences farmer decision-making.

In the empirical findings, a notable theme was emerging in the data as the influencing factors on farmer decision-making were analysed by farm type, in Section 7.4.1. For example, in terms of strategic decision-making, it was observed that the beef farmers in this study appeared to invest for operational (day-to-day management) reasons and identity reasons and appeared to be very reliant on EU support schemes to assist them in their farm expansion decisions. On the other hand, the dairy farmers appeared to be more financially focused in terms of profit maximisation, appeared to be less influenced by identity factors and less dependent on financial support from the EU in their decision-making process. Therefore, the dairy and beef farmers appeared to be at the opposite ends of the spectrum when reviewing these influencing factors, with tillage farmers most often in the middle.

Secondly, in relation to the influencing factors on operational decision-making, the analysis by farm type in Section 7.4.2 also revealed some noteworthy patterns. For example, the beef farmers in this study were the farm type that emphasised operational KPIs most in their operational decision-making, while the dairy farmers did not appear to be guided by as many operational KPIs in their operational decision-making. Lastly, the tillage farmers appeared to rely only on the operational KPI of soil testing in their operational decision-making. In addition,

the farmers noted that many of their operational decisions were based on: their experience as a farmer, their intuition and/or by visual inspection. When these influencing factors were analysed by farm type, it was found that the beef farmers in this study were the farm type that emphasised these aspects most in their decision-making, followed by the tillage farmers, while the dairy farmers were the farm type that appeared to place least emphasis on these aspects.

The analysis of the influencing factors of the decision-making process of the farmers in this study, by farm type, demonstrates that the dairy farmers were the farm type that appeared to be most influenced by financial influences and least influenced by non-financial reasons. The opposite applied to the beef farmers, while the tillage farmers appeared to be influenced by both financial and non-financial influences. The reason for this is most likely due to dairy farming being the most profitable of the three types of farming in Ireland, while beef is the least profitable and tillage is in-between.

Farm type may be a key factor on the level of engagement of farmers with external advice sources.

The emerging theme surrounding farm type continued to develop when the role of advisors in farmer decision-making in this study was explored. In strategic decision-making, it was noted in Section 7.5.2, that the beef farmers were the farm type that appeared to engage professional advisors least, followed by the tillage farmers, while the dairy farmers were the farm type that appeared to engage with professional advice sources most. Interestingly, on the other hand, the beef farmers appeared to be the farm type that availed of non-professional advice most. These findings provided some significant insights into the role of advisors within each farm type.

A question worth considering is: why do farmers in the various farm types appear to avail of the various advice sources to varying degrees? The answer is not straight forward; however, some possible explanations are proposed:

- At industry level, there is a consensus that a superior advisory service is available to dairy farmers, compared to tillage and beef – this sentiment was alluded to by Farmer 15 (beef) on p.272. This is perhaps because it is the most profitable and, therefore, the industry provides more resources to this farm type.
- Beef farming is often considered to be economically vulnerable, and on many occasions throughout this research project, both farmers and farm advisors noted that beef farmers often fail to engage with external advice sources because they do not wish to face up to the reality that beef farming is not a profitable enterprise. This sentiment was best captured in the focus group, when **FG/3** noted how IFAC used to show a statistic in their beef clients' accounts which showed the percentage of profit generated from SFP and they were forced to take it out, due to the number of complaints they received – essentially, farmers did not want to see how badly the farm was performing.

In Section 7.5.3, the role of advisors in operational decision-making also provided support for farm type as a key factor in farmer decision-making. However, these findings were not very insightful, as the reasons were not unexpected. For example, the findings that the tillage farmers availed of the advice source of agronomists and the beef farmers availed of the advice source of nutritionists most, were not surprising. Another observation was that non-professional advice sources appeared to be emphasised more in operational decision-making than in strategic decision-making. This was mainly attributed to the fact that many of the farmers sought advice in operational decision-making within discussion groups. This was no surprise either, as farmers tend to talk quite freely to other farmers/peers about non-sensitive day-to-day management issues, thereby learning from each other and sharing knowledge.

An interesting findings that emerged from the analysis of the role of advisors in operational decision-making, in Section 7.5.3, was that it highlighted the lack of discussion group participation in the strategic decisions under review. Some of the farmers in this study highlighted that their discussion group was a strong influence on their decision-making, but further analysis highlighted that, in these instances, the farmers had been members of their discussion group for many years. This was interesting; many of the farmers involved in discussion groups were involved for only a few years, as their discussion groups had been set up more recently under schemes established to promote the use of discussion groups. However, the farmers that cited the greater involvement of their discussion group, had been involved with their group for many years. As a result of the longevity of the group, farmers appeared to have built up trust and confidence with other group members and so were involved in the farmer's decision-making process.

This reference to trust is important. The farmers in this study did not appear to engage extensively with external advice sources, unless they had built up trust and confidence with that advice source. The finding of "trust" being an important factor was evident in discussion groups, but, upon reflection, it was recollected that many farmers used the word trust and how they had confidence in their advisor when they mentioned their advisor's involvement in decision-making. This was particularly evident in the interview data when farmers noted that their advisors were considered a "key advisor" as described in Section 7.5.2. Following on from the possible reasons for farmers engaging with external advice sources, as noted above, perhaps another reason is that farmers who have established trust and confidence in their advice sources are those who engage with them most.

Farm type may be a key factor on the level of FFM conducted in farmer decision-making.

The strong thread weaving through the three key aspects of **RO1** continued to develop when the characteristic of farm type was analysed in the role of FFM in farmer decision-making in this study, in Section 7.6.1. In the strategic decisions explored, it was noted that the beef farmers appeared to be the farm type least involved in FFM – more of the beef farmers in this study were observed as completing no financial analysis, in comparison to the dairy and tillage farmers. Furthermore, when financial analysis was conducted by the beef farmers, in many instances it appeared to be on an informal basis, rather than on a formal basis, while the opposite was noted for both the dairy and tillage farmers.

Similarly, a question worth considering is: why do farmers in the various farm types appear to conduct varying levels of FFM? There is no definitive answer to this; however, based on conversations with farmers and focus group participants, some possible explanations are proposed:

- Profitability – as dairy farming is the most profitable farm type, perhaps farmers in this category want to ensure that they maximise the profit available by engaging in FFM activities. On the other hand, beef farming is considered economically vulnerable for many farmers and they may be unwilling to engage in FFM activities as they do not want to face that reality (see insight provided by **FG/3** on p.321).
- EU supports – dairy farmers do not receive a high level of financial support in the form of EU payments compared to other farm types (as confirmed in Table 2.1 on p.11) and, therefore, in order for dairy farmers to remain profitable, they may need to engage in FFM activities more extensively. Conversely, beef and tillage farmers tend to avail of

quite large EU support payments and this cushion may negate the reason to conduct FFM activities.

- Culture – a culture, at industry level, appears to have evolved within each farm type, whereby it is expected that dairy farmers engage in FFM activities to a large extent, while, on the other hand, for beef and tillage farmers, no such expectation exists. This sentiment was conveyed by **FG/2** when he stated:

  > *"beef farmers are more closed in their thinking than the other guys* [dairy and tillage farmers], *they are narrow in their thinking in that they don't allow outside influences in to the same extent?"*

- Advisory service available – as noted in the role of advisor section on p.322, there appears to be a superior advisory service at industry level available to dairy farmers, compared to beef and tillage farmers. Within the industry there is a huge focus on the dairy sector due to the significant expansion of that sector. In this regard **FG/1** noted, specifically in respect to dairy farming, that schemes such as the Dairy Efficiency Programme (DEP) has assisted in increasing FFM in this sector, stating:

  > *"There's been a good increase in profit monitors* [FFM activity] *and a lot of it has been based around the schemes* [DEP]*."*

  This indicates that dairy farmers appear to make use of the services available to them to assist them in their FFM activities, more than their beef and tillage peers.

After discussing the possible reasons of why farm type appears to be a key factor in farmer decision-making, we ask, what does sensemaking tell us about decision-making by farm type? Perhaps it tells us that there are different types of sensemaking within each farm type. Each farmer may conduct *individual sensemaking*, but within each farm type, there may be *collective sensemaking*. At industry level, there is a collective identity that goes with each farm type. For example, there are many different farming organisations that exist in Ireland which are unique to

each farm type. This may imply that each type of farming may have its own sensemaking process, when conducting decision-making.

While sensemaking is an appropriate theoretical framework to explore farmer decision-making, it is important to note that, within sensemaking, the various concepts may play varying roles within each farm type. Firstly, regarding the *cues* that cause *sensebreaking*, while acknowledging that many *cues* do exist, in this study there were clear patterns that existed within each farm type suggesting that certain influencing factors are more strongly associated with each farm type. Secondly, if we consider the advisors who provide *sensegiving*, the analysis of the data in this study suggests that, within each farm type, similar levels of advice appeared to be availed of by the farmers within each farm type. In addition, similar advice sources appeared to be availed of by the farmers within each farm type. Finally, in relation to the role of FFM, the analysis of FFM by farm type in this study suggests that, within each farm type, similar levels of FFM are practiced and furthermore, similar types of FFM systems appear to operate within each farm type. These similar type of FFM systems in operation within each farm type may provide a *sensegiving* role to aid the farmer in his decision-making process.

In summary, these findings suggest that each farm type appears to have its own sensemaking process, when engaging in farmer decision-making. While a sensemaking process is clearly evident in the decision-making process of each farm type, the *cues* that cause *sensebreaking* to occur and the activities that provide *sensegiving* can all play varying roles and are prevalent to varying degrees within each farmer's own decision-making process.

8.4.3 Intuitive Farmer Decision-making – a Sensemaking Perspective

In Section 7.7.2, it was demonstrated how the role of intuition was present in the decision-making process of the farmers interviewed. It was concluded that "intuition" in farmer decision-making may not be an isolated issue, but a concept that is embedded in the farmer's decision-making process. Furthermore, it was suggested that the concept of intuition appears to have a strong relationship with the sensemaking framework. This issue is now explored.

After an in-depth review of the literature on both intuition and sensemaking, it is evident that a strong relationship exists. Initially it was thought that intuition could be proposed as an eighth property of the sensemaking framework. However, upon reflection, that did not seem appropriate. In fact, intuition does not appear to be a specific property of sensemaking, but more a concept that is embedded *throughout* the sensemaking process. To reinforce this premise, Table 8.5 is presented to highlight how many of the properties of sensemaking can be linked with various definitions of intuition, as per the literature.

Table 8.5 Linkage of Sensemaking Properties to Definitions of Intuition

Sensemaking Property	Definitions of Intuition as per the Literature
Grounded in identity construction	An immediate awareness by the subject, of some particular entity, without such aid from the senses or from reason as would account for that awareness (Wild, 1938, p.226).
Retrospective	A cognitive conclusion based on a decision maker's previous experiences and emotional inputs (Burke & Miller, 1999, p.92).
Enactive of sensible environments	The subjective experience of a mostly non-conscious process – fast, alogical, and inaccessible to consciousness – that, depending on exposure to the domain or problem space, is capable of accurately extracting probabilistic contingencies (Lieberman, 2000, p.111)
Focused on and by extracted cues	A preliminary perception of coherence (pattern, meaning, structure) that is at first not consciously represented but that nevertheless guides thought and enquiry toward a hunch or hypothesis about the nature of the coherence in question (Bowers *et al*.,1990, p.74).
Driven by plausibility rather than accuracy	The act of grasping the meaning, significance, or structure of a problem without explicit reliance on the analytic apparatus of one's craft (Bruner, 1962, p.102).

The above table demonstrates that intuition and sensemaking are closely related. This does not mean that intuition or sensemaking could be used interchangeably to provide explanation of farmer decision-making – they should be used in tandem with each other. Intuition is a concept that is prevalent in farmer decision-making, based on the data analysed, but it does not adequately explain a farmer's decision-making process. Alternatively, sensemaking is a framework that assists in providing a rich explanation of the process of farmer decision-making. In addition, sensemaking goes much deeper in its explanation of farmer decision-making, compared to intuition.

In Section 7.7.2, a number of interesting findings were highlighted surrounding the role of intuition in the decision-making process of the farmers is this study, namely:

- Intuition was acknowledged by the farmers as an influencing factor in both the strategic and operational decisions explored; however, it appeared to be emphasised more in operational decision-making.
- Some of the farmers appeared to substitute seeking advice from professional advice sources and conducting FFM in strategic decision-making, with a reliance on intuition.
- The profile of farmers who appeared to rely on intuition most in the decisions explored in this study were the farmers in the beef and tillage sectors, the farmers who were in the oldest age bracket of 45 years or older and the farmers that had no agricultural qualification.

The question here is: what do these findings tell us about farmer decision-making? They tell us that intuition is an important aspect of farmer decision-making and its significance may be influenced by a number of factors. According to the empirical findings, its significance may be influenced by: the type of decision (strategic or operational), the farm type (dairy, tillage or beef) and the socio-demographic factors of the farmer (age and level of education). These findings

surrounding the role of intuition concur with the primary findings that have emerged surrounding farmer decision-making and, therefore, support the premise that farmer decision-making is intuitive. Overall, it can be concluded that, in this study, intuition is a concept that was revealed as important in farmer decision-making and sensemaking is a useful framework that helps to unpack this concept in farmer decision-making.

8.4.4 Exceptions to Sensemaking in Farmer Decision-making

It is important to acknowledge that, while sensemaking is put forward as an appropriate framework to assist in developing an understanding of farmer decision-making, it is not without its shortcomings. No framework can fully explain an issue and sensemaking is no different. The application of the sensemaking framework has assisted in developing a deeper understanding of farmer decision-making. However, the seven properties of sensemaking and the sensemaking model adopted are not perfect at explaining farmer decision-making in all situations. The sensemaking model fits well, but one has to be careful with models, as not everything fits neatly.

There were a number of instances in the interview data where the sensemaking framework did not seem to apply. For example, the first property of the framework refers to '*grounded in identity construction*' – there were examples in this study where farmers went against their identity in their decision-making process. Farmer 9 (tillage) noted the following when he discussed converting his farm buildings from a beef rearing facility to grain storage:

> *"*[to get rid of] *the cattle was one of the biggest decisions, it was disheartening actually, because my first love were the cattle and always were … it was a hell of a decision, I knew the cattle business and I could put a bunch of cattle together, and I knew I was good at what I was doing. But I wasn't good at making money at it."*

This farmer was a beef farmer for most of his life and, after many years of making losses in his beef enterprise, he converted to tillage farming. However, it is clear from the above quote that

his identity as a beef farmer was important to him and he found it very difficult to go against that identity. Similarly, Farmer 14 (tillage) noted the following, when he converted his tillage land to forestry:

> *"I was almost ridiculed by the group and I can understand that too because what an arable farmer does is he cuts down trees to grow food, but to do the opposite then is very strange."*

Furthermore, when farmer 14 (tillage) was asked if he found the above decision difficult, he stated:

> *"Yes, definitely, yeah."*

Similarly, these quotes demonstrate how a farmer went against his identity, but found it quite a difficult decision to do so.

The topic of selling agricultural land for development purposes was discussed with a small number of farmers in this study and resulted in some mixed reactions. Linking to the sensemaking property *'grounded in identity construction'* one may expect that farmer identity may discourage farmers from selling land for development purposes. This sentiment was expressed by Farmer 19 (tillage) when he noted:

> *"There was an auctioneer who came here and said … I have a man that wants to buy your farm, and I said … it's not for sale. Then he said, everything is for sale – this man will write you a cheque, whatever you want."*

When this farmer was probed further as to why he did not consider selling the land, he noted:

> *"I wouldn't, I inherited this farm, I love it, it's our farm. What would I do?"*

This reaction from Farmer 19 (tillage) demonstrates how identity was important to him. On the other hand, there were some farmers who went against their identity and sold development land, when the opportunity arose. These farmers appeared to acknowledge that these decisions went against their identity but, due to the large amounts of money offered, they felt that it would be

unwise to decline. For example, Farmer 16 (beef) received millions of euro by selling some of his farm for development purposes and he justified it by saying:

> *"Wouldn't I have been a bigger fool to turn around and say no."*

However, where farmers in this study sold land for development purposes, quite often they bought other land in replacement. This demonstrated that the identity of being a farmer was still important to them.

Not only did some farmer decisions not neatly fit into the framework, but there were some examples of where farmers sought advice from *sensegivers* (social property of sensemaking), but ignored it. For example, Farmer 2 (tillage) stated the following, when asked about the involvement of his accountant in a land purchase decision:

> *"The accountant would have ruled it out completely."*

Another farmer, Farmer 19 (tillage), noted the following when he described his accountant's role in his strategic decision-making process.

> *"He'd be always trying to hold me back from investing any more, in maybe, on the farm."*

These examples demonstrate that while the *sensegiving* role is an important one, it was not always adopted by the farmer in his decision-making process.

Exceptions existed in the data when the sensemaking framework was applied to farmer decision-making. However, the data analysed strongly support the presence of the sensemaking framework. Therefore, there is little doubt that the sensemaking framework is an appropriate lens to explore and develop explanation of farmer decision-making.

8.5 Chapter Summary

It is important for farmers to have a good financial understanding of their business in order to make informed financial decisions. This does not necessarily mean that the farmer must spend a significant amount of time engaged in FFM activities. However, it is important for farmers to develop their own knowledge management process that will assist them in making informed financial decisions. This knowledge management process may not be uniform for all farmers. For some farmers, it will involve a considerable amount of internal book-keeping and, therefore, perhaps a lesser need for extensive engagement with external advice sources. While for others, it may involve a significant reliance on external advice sources, with a low level of internal book-keeping. The knowledge management process should allow for *cues* to be observed that will trigger when decision-making is required – *sensebreaking* then occurs, which, in turn, opens up the farmer to activities that will provide *sensegiving* which will result in *sensemaking,* in order for the farmer to proceed with decisions of a financial nature. In essence, a farmer must develop a knowledge management process that *makes sense* to his/her own individual requirements – a process that is best encapsulated in the *Sensemaking and Financial Decision-making in Farming* model that has been developed.

Chapter 9 Conclusions

9.1 Introduction

The financial decision-making process of Irish farms was explored. To conclude, a number of issues are now discussed. Firstly, the research question is addressed in Section 9.2. Next, significant contributions are highlighted in Section 9.3. This is followed by an acknowledgement of the limitations of this study and how they were addressed in Section 9.4. Finally, areas for further research are presented in Section 9.5, followed by some concluding comments in Section 9.6.

9.2 Addressing the Research Question

The research question presented was:

How and why do farmers make financial decisions?

The answer to this research question lies within Chapters 7 and 8 and is brought together here. Firstly, it is important to highlight that the empirical findings demonstrate that many farmers in this study appeared to use financial management to assist them in their financial decision-making process, while others did not. However, the empirical findings suggest that, where financial management was used to assist financial decision-making, in many instances the level of financial management conducted was not very detailed.

Essentially, the financial decision-making process of the farmers in this study was found to be a multi-faceted process and financial management was only one aspect of it. Based on the data

collected, there are a number of potential reasons why the farmers did not appear to use financial management to guide financial decisions to do so, namely:

- A myriad of factors that influence farmer decision-making were identified, many of which were non-financial influences; therefore, a financial perspective may not have been the primary concern.
- Many of the farmers relied on external advice sources to assist them in their decision-making and this often superseded their own financial management. Essentially they appeared to outsource their financial management.
- Many of the farmers appeared to rely on intuition in their decision-making. In the literature it is noted that intuitive decision-making is a process that is not best suited to the analytical process of financial management.

Overall, the exploration of financial decision-making in farming conducted in this study demonstrates that there are a number of components that farmers can draw upon to assist them in their decision-making process. The three primary components identified in this study were: advisors, the farmer's own FFM practices and intuition. The extent to which each farmer relied upon these components did not appear to be universal and was dependent on a number of factors. Primarily, it depended on the influencing factors that underpinned why a particular decision was being undertaken.

This study contends that the extent to which each individual farmer relies upon each of the above components in his/her financial decision-making process depends on what *makes sense* to that individual farmer – a process called *sensemaking*. A model has been developed to provide explanation of this process and is depicted in Figure 8.3 (Section 8.3.2) – *Sensemaking and Financial Decision-making in Farming – a Model*. This model contends that influencing factors and/or FFM may act as a *cue* which cause a *sensebreaking* activity – the farmer then enters a

process of *sensemaking*. Next, the components of advisors and/or FFM and/or intuition are drawn upon, to provide a *sensegiving* role. The process culminates in a decision being made.

The model developed serves as an over-arching model to explain how the financial decision-making process of the farmers in this study was undertaken. The empirical findings highlight that the role played by each of the three components (advisors, the farmer's own FFM practices and intuition) was influenced by the decision type (strategic or operational) being undertaken and the farm type (dairy, tillage or beef) in operation.

The data gathered and analysed in this study suggest that it is important for farmers to have a good financial understanding of their business in order to make informed financial decisions. This does not mean that farmers must spend a significant amount of time engaged in FFM activities. However, it is important for farmers to develop their own knowledge management process that will assist them in making informed financial decisions. The knowledge management process should allow for *cues* to be observed that will trigger when decision-making is required. *Sensebreaking* then occurs which, in turn, opens up the farmer to activities that will provide *sensegiving* which will result in *sensemaking* and allows the farmer to proceed with decisions of a financial nature. In essence, a farmer must develop a knowledge management process that *makes sense* to his/her own individual requirements.

9.3 Contributions

In addition to the above findings, a number of significant and unique contributions are provided to knowledge.

Contribution to the Literature

In the literature review, a number of academics noted the apparent lack of attention that this important topic of research has received. While farmer decision-making has received some attention, a paucity of literature lies in the accounting realm. Furthermore, within the farm management literature, there has been a deficiency from an accounting and a theoretical perspective. This research project is bridging gaps that exist in both the accounting and farm management literatures.

In addition, much of the prior literature focuses on how farmers should make decisions as opposed to focusing on how farmers actually make decisions. In essence, prior studies have developed models and steps in farmer decision-making that may assist farmers in their decision-making process. This research project did not attempt to do this; it set out to explore and document the financial decision-making process of farmers – an aspect that had not been previously discussed in the literature. By documenting the financial decision-making process of farmers, an understanding and explanation of how farmers actually make decisions has been achieved. This in itself, represents a significant contribution to both knowledge and the literature.

Finally, the overview of prior studies in the literature showed that the vast majority focus on exploring one particular aspect of the farmer decision-making process and/or one particular decision event and/or a particular farm type. In contrast, this research project explores the entire financial decision-making process of farmers across three farm types and using multiple decision events. These features have resulted in a rich and interesting set of empirical findings that make a significant contribution to developing the literature in this under-explored area.

The specific findings surrounding *decision type* and *farm type* that have been highlighted in this study, but not captured previously in the literature, thereby demonstrating an important contribution, are:

- Common influencing factors existed across the different categories of strategic decision; however, the triggers/cues within each category of influencing factor varied. For example, the buildings investment decisions and land purchase decisions had common categories of influencing factors, but the components of these varied.
- Contrasting degrees of involvement of the various sources of professional and non-professional advice were noted within each decision type. For example, in the strategic decisions reviewed, accountants appeared to be more involved in land purchase decisions and less involved in buildings investment decisions. The opposite was evident for agricultural advisors. Furthermore, for discussion groups, there appeared to be a high level of involvement in operational decision-making, whereas there appeared to be a low level of involvement in strategic decision-making.
- Contrasting levels of involvement of FFM activities were noted within each decision type. Many of the farmers appeared to conduct a high level of FFM in strategic decision-making. However, many farmers appeared to conduct low levels of FFM in their operational decision-making, despite having relatively strong FFM systems in operation.
- Farm type may be a key factor that influences farmer decision-making. For example, the beef farmers in this study appeared to be strongly influenced by identity (emotive) influences, operational influences and appeared to be very reliant on EU support schemes in farmer decision-making. On the other hand, the dairy farmers appeared to be more financially focused, less influenced by identity and less dependent on EU supports, when making financial decisions.
- Farm type may be a key factor in the level of engagement of farmers with advice sources in decision-making. The dairy farmers in this study appeared to be the farm type that

interacted most with advice sources, while the beef farmers were the farm type who appeared to interact with advisors least and the tillage farmers appeared to lie somewhere between dairy and beef in this regard.

- Similarly, farm type may be a key factor in the level of FFM conducted in farmer decision-making. The dairy farmers appeared to be the farm type that conducted the most FFM analysis, while the beef farmers appeared to be the farm type who conducted the least FFM. Again, the tillage farmers appeared to lie somewhere between the dairy and beef farmers in this regard.
- Finally, farm type and decision type were found to impact the role of intuition in farmer decision-making. The beef farmers were the farm type that appeared to highlight intuitive decision-making most, followed by the tillage farmers, and least often, the dairy farmers. Furthermore, intuition was found to be more emphasised in operational decision-making compared to strategic decision-making.

These findings surrounding *decision type* and *farm type* make a significant contribution to knowledge, as they provide a significant insight into the financial decision-making process of farmers.

Theoretical Contribution

A model of sensemaking and financial decision-making in farming has been developed. This model brings together sensemaking and decision-making to assist in developing a deeper understanding and to assist in providing explanation of the financial decision-making process of farmers. The model visualises the financial decision-making process of farmers. By bringing all the elements of that process into a model, *Sensemaking and Financial Decision-making in Farming – a Model*, an important contribution to knowledge is presented. This study represents the first time that sensemaking has been applied to financial decision-making in farming, using

empirical data. In doing so, it not only makes a theoretical contribution to sensemaking, but also makes a theoretical contribution to farm management (accounting).

The application of sensemaking tells us a great deal about the role of accounting in farm management and financial decision-making. It tells us that, while FFM may be an important aspect of financial decision-making in farming, it is not always the case. On many occasions, other non-financial reasons (for example: identity – which is a key aspect of the sensemaking framework) may be considered equally (or sometimes more) important. Furthermore, the sensemaking framework explains that, when a farmer is trying to make informed financial decisions, it may not be important/necessary for that farmer to conduct a significant amount of FFM activities. What is important is that the farmer develops a knowledge management process that will assist in making informed financial decisions that *makes sense* to that farmer's own individual requirements. This process may differ across farmers. It can range from detailed internal book-keeping and a lesser need for engagement with external advice sources for some farmers, to a low level of internal book-keeping and a stronger reliance on external advice sources for others.

The study of sensemaking in the context of farming also tells us something about sensemaking. A sensemaking model developed by Huzzard (2004) was adapted to develop the *Sensemaking and Financial Decision-making in Farming* model in this study. The adaptation of this model emphasises two important aspects that the Huzzard Model does not. Firstly, in relation to sensegiving. Huzzard portrays that sensegiving is conducted by actors (individuals); the model developed in this study (based on the empirical data) contends that sensegiving may not only be provided by actors (professional and non-professional advisors), but it can also be provided by FFM activities and/or intuition. Secondly, the Huzzard Model does not specifically document where the *cues* for sensebreaking originate from; the model developed in this study specifies that

the *cues* may originate from the influencing factors on farmer decision-making and/or from FFM activities. Therefore, by studying sensemaking in the context of farming, an adapted model has been developed with aspects that represent a theoretical contribution to sensemaking.

Method Contribution

As noted in Section 6.5.1, discussing sensitive issues during interviews undertaken in a research study can pose difficulties for researchers. The culture of farming is quite secretive, particularly when financial matters are being discussed. In this study, the financial decision-making process of farmers was discussed. This involved important and sometimes private, family farm household decisions being discussed with the interviewees. Therefore, it was important for the researcher to build up trust with interviewees to elicit as much information as possible during the interview process. In addition, the fact that interviews were being tape recorded may have added to the lack of trust that some interviewees had.

To build up trust with the interviewees and, thereby, increase the opportunity of eliciting rich data during the interviews, the researcher developed an effective research strategy. It was found that the opening minutes of the interview were critical. The farmers had already agreed to be interviewed, therefore, it was important to build on this initial interest in the research topic to create a positive relationship. Firstly, the researcher deliberately decided to interview all farmers in their own home, helping to put them at ease in their own environment, before commencing the interview. Upon arrival at the farmer's home, the researcher began by engaging in a positive rapport (quite often these conversations took place over a cup of tea which greatly assisted the researcher in establishing a good rapport with each interviewee). This involved the researcher outlining how he comes from a farming background and he conversed about general farming-related matters, before the tape recorded interviews began. Next, the researcher provided an overview of what the research project was about and emphasised the absolute confidentiality and

anonymity of interviewees in the study. Finally, the researcher stressed to the interviewees that he would not be asking any questions surrounding the individual farmers' profitability or bank balance, but that the focus of the study would be to concentrate on the actual financial decision-making process of the farmer. Finally, the initial sections of the interview guide (*see Appendix C*) were designed to ask relatively straight-forward questions, to help ease the farmer into the interview, before proceeding with more detailed and pertinent questions which were at the heart of fulfilling the research objectives.

The researcher believes that the above research strategy was effective in eliciting information, from the farmers interviewed, which they might not normally discuss with a stranger (i.e. the researcher). This is evident in the rich and interesting set of findings uncovered. This aspect of the research design of this study provides a valuable insight about method that other researchers could learn from and adopt in future research projects.

Practical Contribution

There are lessons for both policy makers and agricultural advisors, in terms of how to design financial advice for farmers. Firstly, agriculture is an industry which has a significant amount of policy attached to it, at both national and EU level. How policy is developed should reflect how those affected by that policy make decisions. Therefore, the development of an understanding of financial decision-making in agriculture should assist policy makers in the development of policies surrounding financial management in agriculture.

One area that EU policy makers could review is the link between the financial supports provided to farmers and the level of FFM conducted on their farm. While acknowledging that such a move may cause controversy within the industry and could be difficult to monitor, the findings of this study do show that the farmers who are making investments in their farm do have

relatively strong FFM systems in operation on their farms. Therefore, it could be argued that farmers who are attempting to expand and develop their business are the type of farm enterprises that should be supported financially, in order to develop a viable and sustainable agricultural industry for the future. An example of this is the discussion group model where financial incentives were given to farmers provided they participated in discussion groups under the DEP and BTAP programmes – a criterion of this programme was to complete financial management activities. Perhaps this model could be expanded to link EU support payments to financial management practices.

Secondly, agriculture is an industry that has a considerable amount of advisory services attributed to the area of financial management. The explanation of farmer decision-making provided can assist agricultural advisors in gaining an understanding of financial decision-making in agriculture and thereby assist them in adapting their financial management advisory services to meet the decision-making requirements of farmers.

9.4 Limitations of this Study

There were a number of limitations to the research approach adopted. The qualitative approach adopted involved interviews, which presents several inherent limitations. Such limitations cannot be eliminated, but they can be mitigated. A brief discussion on the limitations of this study and how they were mitigated is now provided.

Firstly, as with any qualitative study, a limitation arises from the necessary judgement and subjectivity in the analysis of findings (Smith, 2011). Qualitative data analysis software was used to implement a robust and rigorous data analysis process, as outlined in Section 6.6, which assisted in implementing a consistent approach to data analysis.

Secondly, the sample size of 27 farmers means that the findings are not statistically generalisable (Mason, 2010). However, being qualitative in nature, this was not the objective. The objective was to document the financial decision-making process of farmers in this study, to assist in the development of a deeper understanding of the financial decision-making process of farmers. Furthermore, the size of farms featuring in the study could be considered quite large (given the average size of farm operated in Ireland, as outlined in Section 7.3.1). Therefore, it is important to bear this feature of the sample in mind when contemplating the findings of this study – essentially the generalisability of findings is limited in this regard.

Another limitation of this study is that all the interviews were conducted with three specific farmer types, all located in the South-East of Ireland – this is arguably a unique setting to study farming. It is therefore possible that a different set of findings could have been achieved, if farmers from other farm types and from different locations were studied.

In addition, the empirical findings surrounding farmer decision-making are presented, based on the perspective of farmers themselves; therefore, this is only one perspective. It is possible that a different perspective of farmer decision-making could be obtained by interviewing other stakeholders within the industry. For example, if agricultural advisors or accountants were interviewed about specific farm decisions with which they have been involved, then a different perspective of farmer decision-making might have been achieved. However, the focus group acted as a method of triangulation in this instance. By presenting the key findings to the focus group and getting feedback, a brief insight into the perspective of other stakeholders was obtained.

Furthermore, the interview findings are based on each farmer's recall and may not be a true account of how the decision-making process was actually undertaken. To triangulate the

farmers' accounts, farm tours and the inspection of documents took place during the interview process, as highlighted in Chapter 7. These activities assisted in verifying the retrospective accounts of each farmer's financial decision-making process. In addition, the empirical findings were presented and discussed in a focus group with industry stakeholders. The general consensus in the focus group was that the empirical findings were an accurate reflection of how the participants viewed the financial decision-making process of farmers.

In this study, there was no attempt to identify if the decisions undertaken were successful or not, from the farmer's perspective. However, there was some probing into decisions that were not proceeded with (particularly in the influencing factors section where reasons why farmers did not proceed with strategic decisions was discussed) which provided additional insights into the decision-making process of farmers. The absence of focusing on whether a decision was successful or not is a limitation of this study and future research in this regard is called for, in Section 9.5.

It was acknowledged in Section 6.5.1 that capturing data surrounding sensitive issues in qualitative interviews can represent challenges for researchers. Furthermore, in that section, it was noted how that challenge was minimised in this study. Nonetheless, capturing data surrounding these issues posed some difficulty in this study and this limitation is acknowledged here. Lastly, future research is called for to develop the strategies that were employed in this study (as outlined in Section 6.5.1) to help overcome this challenge, as discussed in the next section.

Finally, it was not possible to *randomly* select farmers for interview, as farmers who had made significant farm expansion decisions on their farms had to be targeted to achieve the research objectives (Guest *et al*., 2006). This meant that assistance was needed in the identification of

such farmers from industry representatives who had knowledge of such farmers. Therefore, there may have been a certain amount of bias in the farmer selection process, as farmers were known to the various farming organisations. To reduce the bias in the farmer selection process, farmers were selected for interview, using three separate industry organisations. Furthermore, within each organisation, there were a number of different approaches adopted to choose farmers for interview, due to the individual organisational structures within each organisation (see *Appendix F).* This resulted in a diverse and unrelated group of farmers for interview which assisted in reducing the associated bias.

9.5 Areas for Further Research

Due to the limited amount of research in the area of financial decision-making in agriculture, a call for a significant amount of further research in this area is warranted. However, only areas that have been noteworthy in the context of this study are now presented.

One of the most significant contributions of this study was the development of a sensemaking and financial decision-making model. Further studies could be conducted to apply or test this model in other areas of farmer decision-making. Furthermore, the model could be used in areas outside agriculture to review its application to decision-making in other industries; for example, owner-managed family businesses.

In this study, there was support for past decisions influencing the current decisions under review. For example, in strategic decision-making, 'lessons from past decisions' was identified as an influence in Figure 7.5 while, for operational decision-making, 'historic pattern' was identified as an influence in Figure 7.6. These influences support the retrospective property of sensemaking, as depicted in Figure 7.7. However, when farmers were asked in the interviews

about how they conducted post-decision analysis of the decisions that they had undertaken (for example, questions 16 & 17 of Section 6 of the interview guide in Appendix C), there were very little data uncovered as to what, if any, post-decision analysis was conducted after they made their decisions. On reflection, this is an area that could have been explored further in the interviews; therefore, future research is called for in this area. By exploring post-decision analysis, possible links with the learning element of the Huzzard Model (which was referred to in the discussion chapter) could be made, thereby extending the model developed in Figure 8.3 and assisting further in the development of an understanding of farmer decision-making.

As noted in the limitations, there was no attempt to identify if the decisions undertaken were successful or not. Future research in this regard (particularly the case of reviewing unsuccessful decisions) is called for, as it may provide deeper insights and lessons to be learned in farmer decision-making.

As discussed in Section 6.5.1, the strategies that were employed in this study to help overcome the challenge of capturing data surrounding sensitive issues during qualitative interviews, were outlined. Future research, adopting these strategies to elicit data from interviewees surrounding sensitive issues, is called for in order to develop these strategies further to benefit future researchers.

The size of farms featuring in this study could be considered quite large (given the average size of farm operated in Ireland as outlined in Section 7.3.1). Therefore, given the large number of smaller farms in Ireland, it would be interesting to see future studies investigate the decision-making process of farmers in this category. With this in mind, financial management should be interpreted as including both formal and informal FFM activities and researchers should be aware that, although farmers may have developed formal FFM systems within their business,

they may not always use them in financial decision-making. They may rely on informal FFM activities and/or intuition and/or operational metrics, due to the presence of many uncontrollable factors (weather conditions/EU policy/market prices) in the environment that they operate. It would be worthwhile for future studies to comprehensively document such informal FFM activities and operational metrics as well as probing and unpacking any intuitive mentality that small farmers, in particular, may use to help them with their financial decision-making.

An important recommendation on the use of thematic analysis in future studies is for researchers to be cognisant that an issue can be mentioned on very few occasions and be labelled an important theme. For example, in strategic decision-making, 'trust in business venture partners' was labelled a theme in the influencing factors identified in Figure 7.5. This was because it was emphasised as an important influence for off-farm investments undertaken, even though only two farmers cited this influence. Similarly, in operational decision-making, 'work practices' was labelled a theme in the influencing factors identified in Figure 7.6, even though only two farmers cited this influence. Furthermore, another recommendation for studies using thematic analysis is the questioning of 'negative cases', whereby discussing information that contradicts the theme can provided a more realistic account. For example, in this study, the question of why farmers did not proceed with strategic decisions under consideration uncovered some important themes that were used to assist in developing an understanding of the influencing factors on strategic decision-making. Such recommendations should be borne in mind by researchers in future thematic analysis studies.

In Section 7.5, the attributes of trust and confidence were identified as important aspects in the role of advisors in farmer decision-making in this study. The findings surrounding these attributes may connect with an important wider body of Business Partner literature. The exploration of this body of literature was deemed to be outside the scope of this study, but

further research connecting farmer decision-making to the Business Partner literature is warranted and could be explored in future studies.

Finally, this study focused on exploring the holistic financial decision-making process of farmers to develop understanding and explanation in this under-researched area. This holistic process is multi-faceted and future research could concentrate on studying any one aspect of this process in more detail, for example:

- The influencing factors on the financial decision-making process of farmers were explored and an understanding of those influences was provided. There was no attempt made to rank these influences in order of preference, i.e., farmers were not asked to state what factors influenced their decisions most. Future studies in this area could shed further light on this aspect of farmer decision-making.
- The role of advisors in farmer decision-making was explored from the farmer's perspective. It would be interesting for future research to focus on the role of advisors in farmer decision-making from the advisor's perspective. How do accountants and/or agricultural advisors view their role in farmer decision-making?
- FFM in the financial decision-making process of farmers was explored, to review its level of involvement in decisions undertaken. Future studies could concentrate on the extent and the way in which specific FFM tools or FFM practices are being used to assist in the financial decision-making process of farmers.

Overall, there are many aspects of the financial decision-making process of farmers that could be explored in future studies – the above overview acts as a starting point.

9.6 Concluding Comments

After conducting an exploration of the financial decision-making process of farmers, it was discovered to be a relatively complex issue. This complexity presents itself on a number of levels. Firstly, no two farms are the same; for example they differ in terms of size, farm type and land quality. Furthermore, no two farmers are the same; for example, each farmer has his own individual goals and an "own farmer" mentality and the environment in which they operate, can vary considerably. Lastly, farmers are faced with change on a continuous basis; for example: changes in market prices, changes in agricultural policy and a change in weather conditions.

Despite the complexity of the issue, this study endeavoured to develop explanation and a deeper understanding of the financial decision-making process of farmers. This was primarily motivated by two issues: the lack of literature existing in this area and the apparent lack of FFM conducted by farmers in the management of their enterprise.

Explanation and a deeper understanding of farmer decision-making has been achieved. This has been achieved through a discussion of the rich empirical findings and by conducting a rigorous and robust process of data analysis. The most significant findings were that *decision type* (strategic or operation) and *farm type* (dairy, tillage or beef) were key factors that appeared to impact the financial decision-making of farmers in this study. They impacted the influencing factors, the role of advisors and the level of FFM conducted, as outlined in the contribution to the literature, in Section 9.3.

The application of the theoretical lens of sensemaking to the findings allowed the development of the *Sensemaking and Financial Decision-making in Farming* model. This over-arching model illuminates how the farmers in this study made sense of their business situations in order to

proceed with decisions of a financial nature. This model assists in developing an understanding of the complex issue of farmer decision-making in a relatively simple, yet informative, manner. Ultimately, the farmers in this study embarked on a process of sensemaking when making financial decisions, a process which has been unpacked in this thesis.

Appendices

Appendix A: Pilot Survey

Background questions

1. Which of the following farming categories are you involved in?

Dairy _____
Tillage _____
Suckler herd _____
Sheep _____
Mixed (specify percentage of each)_____
Other: please specify:_____

2. Which of these ownership structures apply to your business?

Sole trader _____
Partnership _____
Limited liability company _____

3. What Age bracket applies to you?

Less than 25 _____
26 to 35 _____
36 to 45 _____
46to 55 _____
>56 _____

4. What is the final level of education undertaken by you?

Primary school _____
Inter/Junior/Group Certificate _____
Leaving Certificate _____
Post Leaving Cert course _____
National Certificate _____
National Diploma _____
Undergraduate Degree _____
Professional qualification _____
Other: please specify: _____

5. How many people work in the business?

Just myself _____
Myself and Partner _____
Other family members _____
Other please specify _____
Do you work outside the farm and to supplement farm income; Yes_____ No_____
If yes, please specify hours/ part time full time etc. _____

6. How long have you been managing your business?

Less than 5 years _____
Between 5 and 10 years _____
Between 10 and 20 years _____
More than 20 years _____

7. Please specify size of your farm

Less than 50 acres _____
Between 50 and 100 acres _____
Between 100 and 200 acres _____
More than 200 acres _____

8. Since starting your business have you diversified?
If so, please specify and outline what influenced this decision:_____
_____

Farm finances
9. How often do you review your farm finances?
Every day _____
Once a week _____
Once a month _____
Once every quarter _____
Once a year _____
Comment on time spent on financial management: _____
_____

10. A) Does your business use a computerised accounting package?
Yes _____ (Please specify the name of the package) _____
No _____

B). If yes, to what degree is this accounting package utilised within your business?
The package is used for receipts and payments only _____
Maintenance of bank account _____
The package is used for receipts, payment, cash-flow, profit and loss accounts • _____
The accounting package is fully integrated with the running of the business _____

11. What financial records do you maintain?
Income and expenditure _____
All receipts and payments _____
Bank reconciliations _____
Profit and loss accounts _____
Other please specify:_____
_____

12. What management accounting practices do you carry out to monitor financial performance?
eProfit Monitor tool _____
Budgets _____
Cash-flow projections _____
Monitor costs _____
Compare with industry benchmarks _____
Monitoring of performance against budget _____
Other please specify: _____
_____

13. What encouraged you to carry out the financial management practices that you do engage in or where did you hear about these practices?
Accountant/business advisors _____
Peers/other farmers/discussion groups _____
Teagasc/IFA/other membership of other association _____
Participation on a course, please specify _____
Other please specify_____

14. Did the introduction of management accounting practices influence any decision-making in your business?
Diversification _____
Down scale specific activities/sectors _____
Increase investment in specific activities/sectors _____
Other please specify_____

15. If no management accounting is undertaken, how do you know if the business/each section of the business is performing well or poorly?_____

_____

16. What are the barriers to carrying out financial management?

Time:	I am too busy running my business to record details	_____
Cost:	The additional services are too expensive	_____
Need:	I do not feel that I require these services	_____
Competence:	I do not feel that I have skills to carry this out	_____
Culture:	Have never done it in the past/ not many people do it	_____
Age:	Too old, have never done it, never bothered	_____
Lack of support:	No support/advice available	_____

Other:_____

Relationship with your accountant

17. How often do you meet with your accountant to discuss your business?

Annually - when the accounts have been finalised _____
Quarterly _____
Monthly _____
Never _____

18. Is your accountant a specialised farm accountant such as IFAC

Yes _____
No _____

19. Which of the following services have you been offered by your accountant, and which do you avail of?

	Offer	Avail
Statutory Accounting services:		
Record keeping	_____	_____
Accounts preparation	_____	_____
Tax returns	_____	_____
Payroll and PAYE	_____	_____
Non-Statutory services:		
Tax consultancy	_____	_____
Business advice	_____	_____
Management accounting e.g. product costing	_____	_____
Information technology consultancy	_____	_____
Financing advice e.g. banking or lending	_____	_____
Succession planning	_____	_____

Other services: please specify_____

20. Do you feel that the services provided by the accountant are of benefit to your business?

Yes _____
No _____
Comment:_____
_____

21. How would you rate your understanding of the information produced by your accountant?

Easy to understand _____
Reasonably straightforward _____
Difficult to understand _____
Very difficult to understand _____
Comment on what could be done to improve the situation:_____

22. Do you ask your accountant for advice when making critical business decisions?
Yes: _____
No: _____

23. Which of the following alternative sources are you likely to take advice from?
(please rate in order of importance, where 1 to 5)
Personal friend or family member _____
Other farmers/business people I know _____
Bank or other lending institution _____
Management consultant _____
Alternative accounting firm _____
State agency e.g. Teagasc Enterprise Ireland or County Enterprise Board etc. •
Business membership organisation (e.g. Chamber of Commerce, Small Firms Association, Trade or industry association
Other: please specify: _____

Other industry groups
24. Are you a member of any of the following organisations?

Teagasc	Yes _____	No_____
IFA	Yes _____	No_____
Macra na Feirme	Yes _____	No_____
Co-operatives	Yes _____	No_____
Purchasing groups	Yes _____	No_____
Agricultural consultants association	Yes _____	No_____
Discussion Groups	Yes _____	No_____
County Enterprise Board etc.	Yes _____	No_____

How does the role of your membership in any of the above organisation give good support for financial management, what could they do to help you with financial management. _____
_____
_____

General Issues:
25. What would you say are the main issues facing your business today? (Rank in order 1 to 5)
Cash-flow and obtaining finance _____
Prices for produce _____
Regulations _____
Taxation _____
The economic environment _____
Keeping up with new technology _____
Other: please specify
_____
_____

26. Any other comments:
Is farming is a way of life and or a business:_____
Is farming a viable enterprise for the future:_____
How would you rate the future outlook of the farming industry: _____
Other:_____
_____

Appendix B: Key Informant (KI) Details

KI/1: IFAC Accountants Representative
KI/2: Teagasc Financial Management Expert
KI/3: Agricultural Consultants Association Representative
KI/4: Agri-Lending Specialist – Banking Representative
KI/5: Teagasc Beef Advisor
KI/6: Teagasc Dairy Advisor
KI/7: Teagasc Tillage Advisor

Appendix C: Interview Guide

Tillage Farmer Interview Guide Interviewee No: ____

Section1: Background questions - demographic information:

Note: this section of information will be collected by the interviewer before the tape recorded interview commences.

1. Is your farm type all Tillage?

Mixed or other (specify percentage of each) _____

2. Which of these ownership structures apply to your business?

Sole trader _____
Partnership _____
Ltd company _____

3. What age bracket applies to you?

25 to 30 _____
30 to 34 _____
35 to 39 _____
40 to 45 _____
45 plus _____

4. What is the final level of education undertaken by you?

Primary school _____
Inter/Junior/Group Certificate _____
Leaving Certificate _____
Post Leaving Cert course _____
National Certificate _____
National Diploma _____
Undergraduate Degree _____
Professional qualification _____
Other: please specify: _____

5. What is the level of agricultural education undertaken by you?

None _____
180 or 300 Hour course _____
Green Cert _____
Certificate in Farming (Level 5) _____
Advanced Certificate in Agriculture_____
Degree in Agricultural Science _____
Other (please specify) _____

6. How many people work in the farm business?

Just myself _____
Myself and Partner _____
Other please specify _____

7. Do you work outside the farm and to supplement farm income; Yes_____

No_____

If yes please specify hours/ part time full time, % if income etc._____

Does wife /partner work outside the business to contribute to the household income?

If yes please specify hours/ part time full time, % if income etc._____

8. How long have you been managing your business?

Less than 5 yrs _____
Between 5 & 10 yrs _____
Between 10 &15 yrs _____
Between 15 & 20 yrs _____

9. Please specify size of your farm

Less than 50 acres _____
Between 50 and 100 acres _____
Between 100 and 200 acres _____
More than 200 acres _____
What percentage is owned versus rented? Owned _____ Rented_____

10. Have you identified an active business successor for your farm? Yes _____
No_____

11. Do you employ the services of an external accountant Yes _____ No_____
Is it IFAC accountants Yes _____ No_____

12. Do you employ the services of an agricultural advisor Yes _____ No_____
Is the advisor Teagasc _____
ACA _____
Other _____

13. Are you a member of a discussion group? Yes _____ No_____

14. Are you a member of a purchasing group? Yes _____ No_____

15. How did you acquire the farm?

Inherited from parent _____
Inherited from other relative _____
Purchased _____
Long term lease _____
Other _____

16. Have you been involved in farming all of your life? Yes _____ No_____
If no, please specify how long you have been involved _____

Before I begin the tape recorded interviews I will explain to the farmer that:

- When we are discussing "financial management" we mean any financial information that is recorded in any way - which can vary from formal cash-flows, budgets etc. to figures written down on the back of an envelope, and
- When we are discussing "operational activities" we mean crop production, livestock management, machinery management etc.
- Outline of operational and strategic decision

- Is there more than just the current interviewee involved in financial management and DM.

Tape recorded interview questions
Section 2: Farm Financial Management (Chapter 3 – Record keeping, planning control and performance measurement)

Tell me about how you manage your farm finances

1. What financial records do you maintain in your business?

2. What activities do you undertake to monitor your farm finances?

3. How often do you review your farm finances and how much time do you spend at financial management?

4. Do you use a manual or computerised book keeping system?

5. Are you registered for VAT – who does bi-monthly returns?

6. Who in the farm household maintains the books and records?

7. How do you measure how your farm is performing well (cues): How would you judge if you had a good /bad year on the farm. What information would you look at? **Ask for examples**
    - What information do you look at?
    - What key pieces of financial information do you review?
    - Are you familiar with what profit margins you are achieving? Or how do you determine if financial performance is increasing or decreasing?
    - Do you rely more on operational data (e.g. yields) or financial data?
    - Are there any visual assessments that help you do to gauge your performance?
    - Are there any other routines or rules of thumb that you use to measure performance?

8. When you monitor your financial performance do you benchmark that performance?
    - If yes - what measures do you benchmark and against what information?
    - If no – have you heard of benchmarking and why don't you do it?

9. Do you view financial management as part of your weekly, monthly work load?

10. If you were having a hard time financially how would you detect this?

11. How do you control your costs?

12. Do you set financial targets in terms of capital, profit or cash?

13. What are the barriers to carrying out more detailed financial management?

14. What is your opinion on the tools available to help farmers, Cash-flow Planners, and eProfit Monitors, etc.

15. Do you use the templates available from advisors, why or why not?

16. Have you undertaken any financial management tasks in the past, budgets etc. but no longer do so – if yes, why did you stop using them.

17. What is your view - should farmers be completing profit monitors and cash-flows. i.e. sitting down reviewing their finance etc.

Check list:

- Bank statement and Cash-flow Planners
- eProfit Monitor
- Cost Control Planner
- E-crops – a programme used to record all inputs on a field by field basis
- Machinery cost control planner

Section 3: Sources of information

Please outline where you obtain information from to help your run your farm

1. What would you consider your main sources of information as a farmer?
    - What people do you get advice/information from?
    - What professional advisors do you employ the services of?
    - What agencies/government bodies do you interact with to gain information?
    - What industry publications do you read?
2. How do you keep up to date on developments in EU Policy, such as CAP reform?
3. There appears to be a large number of sources of information, with various industry bodies who act as intermediaries, various advisory service providers and numerous industry publications – How do you as a farmer decide:
    - Who to seek advice from?
    - What industry associations to become a member of?
    - What industry publications to read?

Section 4: Relationship with professional advisor (Chapter 4- literature review - Role of the advisor)

Accountant

Tell me about the services that your accountant provides for you

1. How often do you meet with your accountant?

2. What would your reasons be for communication with your accountant?

3. What services does your accountant provide for you apart from statutory accounts and tax returns?

4. Do you review the information that the accountant provides to you.
   If yes:
   - Do you analyse your accounts when provided by the accountant?
   - What are the key pieces of information you look at?
   - How do you make sense of the information that your accountant presents to you?
   - Do you make use this information in any way?

   If no:
   - Why do you not review this information?
   - Do you rely on the accountant to explain what this information means to you?

5. Do you feel that the services provided by the accountant are of benefit to your business?

6. How would you rate your understanding of the information produced by your accountant?

7. How would you rate the value of your accountant's advice in assisting in operating your business?

8. What are the barriers to using business advice services of your accountant?

9. What could be done to improve the financial management services that you receive from your accountant?

10. How long have you been dealing with your current accountant and how would you describe your relationship with the accountant?

11. How would you rate your accountants understanding of the operational side of your farm?

12. Do you take on board and implement the advice that your accountant provides?

13. Do you rely more on your own internal bookkeeping and records than those of your accountant to see how your business is performing?

<u>Agricultural advisor</u> *(Confirm if farmer has any advisor apart from the Teagasc Advisor)*
Tell me about the services that your agricultural advisors provides for you, specifically in relation to financial management.

1. How often do you meet with your advisor?
    - Is the meeting on a one to one basis or in a discussion group setting?
    - If a mixture of both, how does your one-to-one compare to the discussion group meeting, which is of more benefit and why?

2. What services does your advisor provide in terms of financial management?

3. Do you review the information that the advisor provides to you.
   If yes:
    - What are the key pieces of information you look at?
    - How do you make sense of the information that your accountant presents to you?
    - Do you make use this information in any way?

   If no:
    - Why do you not review this information?
    - Do you rely on the advisor to explain what this information means to you?

4. Would you consider your advisor to be more used for operational advice as opposed to financial advice?

5. Do you feel that the services provided by the advisor are of benefit to your business?

6. How would you rate your understanding of the information produced by your advisor?

7. How would you rate the value of your advisors advice in assisting in operating your business?

8. What could be done to improve the financial management services that you receive from your advisor?

9. How long have you been dealing with your current advisor and how would you describe your relationship with that advisor?

10. Do you use the financial management tools that your advisor supports (e.g. eProfit Monitor). If not, why not?

11. Do you regard the eProfit Monitor as a recording tool to assist with your bookkeeping or do you actively use it to monitor how the farm is performing financially

Discussion groups

If farmer is a member: **Tell me about your participation in a discussion group**

1. How often do you participate in the group?
2. Why did you join the discussion group?
3. What do you get out being a member of the group?
4. Do you find it more useful as a forum to discuss operational issues as opposed to financial management issues?
5. Does your group compare financial results within the group, if so what data is compared. Could I see a comparison sheet used?
6. Do you feel the group facilitator/advisor provided valuable guidance on financial-related matters?
7. Does being a member of the group influence how you run your business and the decisions that you make? – Could you provide an example of a decision that was influenced?

If farmer is not a member:

8. Have you ever been a member of a discussion group? - If yes, why did you leave?
9. Is there any particular reason why you have never joined a discussion group?

Section 5: Farmer's mentality / Intuition (Chapter 4 of literature review – role of intuition)

What do you consider to be the key aspects to running a successful farm enterprise?

1. What would you consider to be your primary goals?
2. Have you a formal strategic plan that you would like to achieve over the next number of years?
3. Would you describe your goals as mainly financial or non-financial?
4. How would you describe your farming business/career? Is it rewarding, a lifestyle choice etc.
5. What is your view on the phrase "farming is a way of life as opposed to a business"?
6. Why did you choose to become a farmer?
7. If you were not making money from farming would you move away from it?

8. Do you think farming is rewarding financially?

9. Would you consider that you rely on intuition/ gut instinct to a large extent in managing your business?

10. To what extent do you rely on visual inspection as opposed to quantifying/measuring activities?

Section 6: Decision-Making (Chapter 4 of literature review)

Strategic Decisions

Can you tell me how the farm has grown or evolved over the years?

- Has it increased in size?
- Has the type of farm changed in any way?
- What major investments have been made?

Potential strategic decisions:

Purchase of land
Long-term lease of land
Erection of farm buildings
Large investment in machinery
Expansion of herd size
Purchased milk quota
Change of farm type involving large capital outlay

Please describe the major financial strategic decision that you have made on your farm

1. Why did you decide to undertake this decision?

2. What influenced you to carry out this decision?
   - People
   - Financial tools
   - Other rules of thumb/KPI's, (cues)

3. Whom did you seek advice from when making this decision?

4. How was this decision financed? If borrowing was security pledged?

5. How did you evaluate the investment financially before proceedings with it?

6. What were the main issues you considered before making this decision?

7. Was the decision taken as part of an overall farm strategic plan?

8. Did your financial situation at the time of making the investment decision have a large role to play in triggering this decision?
   Describe how you evaluated your financial situation before you proceeded with the decision?

9. What activities did you undertake to analyse the financial costs and benefits of this decision?
    - Did you write down costs and extra revenues? (Was a physical plan part of this)?
    - Was this investment made in the view to expand current production - increase sales and profits on the farm? If not why not?

10. What was the value of the investment and how was this decision financed?
    If bank finance was received, did you need to present a business plan to avail of finance?
    - Who prepared the business plan?
    - Was the plan achieved - what was detailed in the business plan?
    - Was the plan abandoned once the finance was granted or did you follow it through?

    If cash reserves were used, was it from accumulated farm profits?

11. Whom did you discuss the decision with before proceeding with it:
    - To what extent did you rely on your agricultural advisor to assist you in this decision? If not to a large extent why not?
    - To what extent did you rely on your accountant to assist you in this decision?
    - Was your bank manager consulted in the decision? Why not?
    - Did you consult your Solicitor on this decision? Why not?
    - Was the matter discussed with Family members in great extent? Why not?
    - Did you discuss the decision with other farmer (discussion group members)? Why not?
    - Was anyone outside the farming community spoken to? Why?

    Were all of these people in favour of the decision? If some were not, how did you rationalise these issued and proceed with the decision?

12. Do you consider some of the decision was based on gut instinct (intuition) as opposed to financial analysis?
    Did you have a feeling it would work out in your favour as opposed to conducting detailed financial analysis? Why did you not conduct detailed financial analysis to reinforce your gut instinct?

13. Was EU policy a factor in your decision to invest in your business? Was there any EU support to assist financially with the decision? - Was this a motivating factor?
    Does EU supports (SFP) give you a cushion to make decisions, how reliant are you on SFP, what component of your income is it? If large does this effect farm expansion decisions?

14. Were there any other influences on this decision?

15. In terms of your goal as a farmer, would you describe this decision being undertaken more to achieve personal non-financial goals as opposed to achieving financial goals?

16. Was this the first major farm expansion you undertook? If no:
    - Did previous farm expansion decisions have any influence on the current decision?
    - Did you do anything differently second time round?
    - Did you learn any lesson from those previous decisions?
    - Did you ever consider expanding the farm previously but did not – what was the reason for not expanding?

17. Evaluation process :
    - Did you look back on this decision to see if has achieved the financial results you expected? Did farm sales and profits increase? Why not?
    - Are you achieving a good return on your investment?
    - Did you look back at decision to see if was good or bad in financial terms, if so how?
    - Were there any unexpected costs incurred in the investment decision?
    - With the benefit of hindsight, if you were to make this decision again would you follow the same procedure? If not, what would you do differently?
    - With the benefit of hindsight, do you think that there should have been more financial analysis done before this taken that decision?

18. Were there previous strategic decisions contemplated in recent years not proceeded with? Discuss these decisions and particularly why did you not proceed with them?

Additional specific Strategic Decision scenario questions (note all the above questions will be asked for each individual strategic decision under analysis and the questions below pertain to specific additional questions for each individual type of decisions)

Purchase of land - Was there any house/ farm buildings/yard included? Did this affect the decision in any way?

Lease of land - Do you know how profitable the leased part of your farm enterprise is? How do you evaluate this?

Erection of farm buildings - Was there any financial assistance provided to help with the financial cost? Was this a motivating factor? Was the decision carried out to conform to environmental regulations?

Machinery - Did depreciation and capital allowances calculations by accountant influence the decision? Was taxation a motivating factor?

Expansion of herd size - How did you decide on the herd size to expand to? Who assisted/advised you in this decision? In order to increase the herd size what planning did you have to carry out? Did you have to build extra sheds, rent extra land, increase silage ground etc. what was the financial impact of all of this?

Purchased milk quota - How did you decide on the level of milk quota to expand to? Who assisted/advised you in this decision? In order to increase the milk quota what planning did you have to carry out? Did you have to buy extra cows, build extra sheds, rent extra land etc. what was the financial impact of all of this?

Change of farm type involving large capital outlay - How does the financial success of the new farm enterprise compare to the previous one?

<u>Operational financial decisions</u> – Evaluation of the decision to buy feed and fertiliser or seed and sprays

Please describe the routine financial decision of purchasing feed and fertiliser that you undertake each year on your farm?

1. How much would you spend on feed and fertiliser each year approximately?
2. How do you decide upon?
    a. What products to buy?
    b. What quantities to purchase?
    c. The quality of the products you purchase?
    d. Are these issues discussed in your discussion group?

3. Are there a number of alternative suppliers in the locality?
    a. Do you tend to deal with the closest in proximity suppliers in your area?
    b. Do you tend to deal with the same suppliers for the same products every year?
    c. How do you compare the products/ services you get from various suppliers?
4. Would you have various merchant sales representatives calling to your farm to try and promote and sell their products? Would they influence your decision?

5. How do you finance the purchases - what are the terms of payment/credit offered on this transaction?
    a. Cash purchase?
    b. On account? How often do you clear? Do you incur interest?
    c. Do you sell any of you produce to this merchant and net-off costs against sales?
    d. Do you take out bank overdraft or short term loans to finance this in any way?
    e. Do you use merchant finance?

    How do you evaluate if this is the most cost effective way to finance the arrangement?

6. Are you aware of alternative ways to finance this type of decision and how do you chose among alternatives? Is there any particular reason why you have not opted for those alternatives?

7. Whom do you seek advice from when making your feed and fertiliser decisions?
    a. To what extent do you rely on your accountant to assist you in this decision?
    b. To what extent do you rely on your agricultural advisor to assist you in this decision?
    c. Does your bank manager have any influence on this decision?
    d. Do other farmers/ piers/ discussion group participation influence your decision - would you discuss your options with others?
    e. Does your relationship with merchant reps/employees have an impact of this decision? Do you rely on their advice in choosing products?

    Why do you not consult with some of the above people?

8. What are the main issues you considered before making this decision?
    a. Is cost of product the most important factor?

b. Is the quality of the product important? Does this vary depending on what supplier you purchase from?
c. Is the service you get from the merchant an important factor when doing business with that merchant?

9. How do you know if you are getting value for money when carrying out this decision?

10. Do you ring around for 3 prices before you purchase goods that you would consider to be of large monetary value? Would you have any informal limits in place?

11. For how many years have you carried out this activity in this particular way?
    a. Did your father before you deal with the same suppliers and carryout this activity in the same way?
    b. Do you do carry out this activity in this particular way because you have always done it this way?
    c. Do you ever take time to review if this is the best way do carryout this particular decision?
    d. Do you rely on your gut instinct to tell you that this is the best way to do it?

12. Would you consider loyalty to suppliers as important?

13. Have you ever changed supplier:
    If yes: Why did you change?
    Was it the correct decision?
    Have you every changed supplier and reverted back as quality of product or the service provided by the supplier was not as expected?

    If no: Why have you never changed?
    What aspects of the current service do you value that has not caused you to change?
    What circumstances would cause you to change?
    Do you consider that it would be too much hassle to change supplier?

14. Are you a member of a purchasing group? Yes _____ No_____
    If yes: Why did you join?
    What are the benefits?

    If no: Why have you never joined?
    Were you ever part of one and left? If so why did you leave?
    Would you like to join a purchasing group?
    What would encourage you to joining a purchasing group?

15. Evaluation process – do you look back at how you carry out this decision to see if was good or bad in financial terms, if so how?

16. Are there any other reasons/ influences behind this decision?

Checklist:

- Purchasing group
- Use of merchant/co-op credit – do you buy feed and sell milk to the same company
- Is cost the first and foremost consideration
- Is quality of product important
- Is the service provided important

Section 7: Operational management issues (see Chapter 3, Section 3.4.2):

What aspects of crop management do you monitor in order to ensure you maximise your financial performance?

1. How do you determine what crops to sow and which field to sow different crops in?
2. Do you monitor the yield per acre or per field?
3. Do you monitor moisture content?
4. Do you measure the KPH (kilograms per hectolitre)?
5. Do the yields and results you get one year determine what to sow next year?
6. Do you rely a lot on visual assessment in terms of knowing when to harvest the crops?
7. How do you decide what pesticides etc. to spray, does it depend on cost/ quality of spray/ advice form advisor?
8. How do you determine when is the best time to harvest your crops?
9. Do you feel that if you do all the operational side of things to the best of your ability then the increased financial rewards should correspond regardless of how much time you spend at financial management?

Concluding comments:

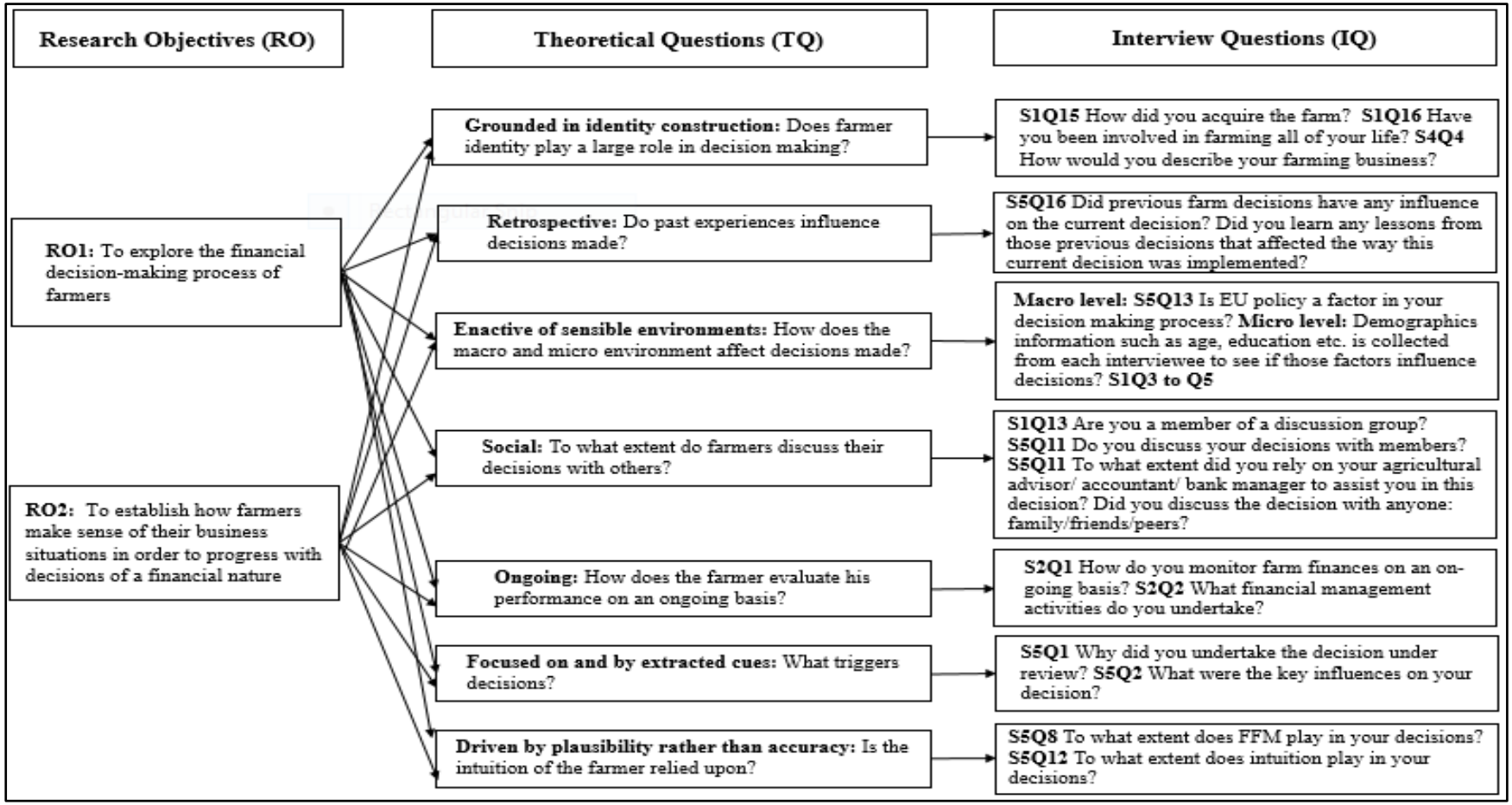
1. Is there anything not discussed that you feel may be important to the research?
2. Is there anything discussed that you wish to elaborate on?
3. Do you have any questions or concerns?

Information to gather when interview is over

Can you provide any sample documents that you use to maintain your records?
- Manual records/ hard copy books
- eProfit monitor
- Cost control planner
- E crops
-machinery cost calculator

Appendix D: Insight to how the Research Objectives, Theoretical Questions and Interview Questions are Linked Together in the Formulation of the Interview Guide

Note: interview question reference refers to question number and section in interview guide, for example, S1Q15 refers to Section 1, Question 15 of interview guide.



Appendix E: Research Seminar Presentation, July 2014, Demonstrating Suitability of the Sensemaking Framework, based on the first three Farmer Interviews Completed

Properties of Sensemaking	**Interview quotes**
Grounded in identity construction	**Interviewee No. 1**: When asked what influenced him to purchase land he answered: *"I have a thing for land for starters*" also, when asked about the price of the land he stated: *"I will never get that out of it, but the next generation will"* **Interviewee No. 2**: when asked if he would leave farming if he was not making money he noted: *"Ah sure look, we have to make the farm make money, you have to work hard … like I have gone through years that I have made no money but you stick with it to educate yourself for to giddy up and get on and make, keep it going"* **Interviewee No. 3**: When asked what influenced him to purchase land he answered: *"I would be conscious of we'll say, we are farmers for generations, but if, when I think back, it looks, every generation seem to have doubled the number of acres going forward, not I don't think I will have a hope of doing that with the way things are."* Also, when asked why did you choose to be a farmer, he stated: *"Well, sure, I loved it and I grew up as a child on the farm and it's just the only thing I ever wanted to do"*
Retrospective	**Interviewee No. 1**: When asked what influenced him to purchase land he answered: *"I invested in other things that I have no interest in and I never made anything on them"* also *"I had been offered a piece of land before and I decided not to go for it because it did not make sense, but in hindsight, it would have made a lot of sense"* also *"when I was about 12 or 13, 34 acres of land came up for sale beside us, my father bought it – if he hadn't bought it, I wouldn't be farming because it wouldn't be worth my while farming"* **Interviewee No. 2**: When asked how much he paid for the land acquired, he noted: *"I gave 415,000 for it, but I tried to buy it before, eight years before it had made 1.5 million, I dropped out at 0.5 million, luckily enough this time it came around I was in a slightly better position to go for it".* **Interviewee No. 3**: When asked if he had purchased land before and did this influence this decision in any way he noted: *"We bought land when my brother was going out on his own, that worked out well in the long run, it looks very cheap now"*
Enactive of sensible environments	**Interviewee No. 1**: When asked what influenced him to purchase land he answered: *"I was in a position to do so financially"* he also stated: *"It was an opportunity, it was a parcel of land, the size suited me, I liked the land"* **Interviewee No. 3**: When asked what influenced him to purchase land he answered: *"We were surrounding the particular field in that, I had land on two sides on a lane … I have been passing it every day of my life five or six times since I was born"*

Properties of Sensemaking	**Interview quotes**
Social	**Interviewee No. 1**: When asked whom he sought advice from: *"Well, obviously the bank manager, you know, to get finances for it. I was talking to my Teagasc advisor and I was talking to my accountant and my brothers as well"* **Interviewee No. 2**: When asked whom he sought advice from: *"I have a couple of friends, I have a farmer friend, we would meet one another have a chat, I would talk to him about things I wouldn't talk to other farmers and I have a business friend and I would bounce things off of him now and again because he is dealing with farmers"* **Interviewee No. 3**: When asked whom he discussed the decision with: *"I had talked to a lot of older people and the thing, well they were, as they keep saying 'will you regret it in 10 years' time, if, you will never get the chance again".*
Ongoing	**Interviewee No. 1**: When asked if similar investment decisions were made in the past and if any lessons were learned, he noted: *"I would have bought a piece of land back in the 1990's, it was 11 acres … at the time, sure that could never pay for itself … it turned out that it was actually a very good investment … it gives you confidence."* **Interviewee No. 2**: When asked if similar investment decisions were made in the past and if any lessons were learned, he noted: *"If a farmer makes a profit, a farmer will spend money … but if there is one thing about farmers, they don't hoard money, they do turn it around, they will buy a tractor, build a shed, put down concrete or buy a bit of land."*
Focused on and by extracted	The cues that appear to be triggering the decision for farmers are very similar to the issues listed under enactive of sensible environments. The opportunity of land for sale came up in close proximity to farmers existing holding, they had money to invest and felt they could afford the purchase.
Driven by plausibility rather than accuracy	**Interviewee No. 2:** When the farmer was asked who he would seek financial advice from when faced with a decision he noted: *"If I am going to plan out something, like say, building a shed, I would decide myself if I could afford it … I would have it all cost out first like, you know, you would have the cost of the shed, the concrete work with each contractor … but I would have a fair idea that I was going ahead with myself first because I would have it, do you know, after being here so many years, I would have the knowledge of what a building is going to cost"* **Interviewee No. 3**: When asked if he taught the price he paid to acquire land was reasonable he noted: *"it didn't make sense financially, if it was 100 yards down the road I wouldn't have gone near it"* and also noted his accountant: *"didn't rule it out but he definitely wasn't encouraging it"* I then asked if he got his accountant to do any financial planning with him for it and he said: *"not as such, I mean, I knew myself kind of whether I could, and I budgeted that I could handle, we'll say two bad years, but like, I wouldn't we'll say have a worst case scenario kind of situation"*

Appendix F: List of Farmers Interviewed in order of Completion

Interviewee	Farm Type	Age Category	Level of Education
1	Dairy	45+	Certificate in Agriculture
2	Tillage	45+	Certificate in Agriculture
3	Tillage	35-39	Certificate in Agriculture
4	Dairy	45+	Degree in Farm Management
5	Dairy	40-44	Certificate in Agriculture
6	Beef	40-44	Diploma in Agricultural Science
7	Beef	35-39	Certificate in Agriculture
8	Beef	45+	Certificate in Agriculture
9	Tillage	45+	Certificate in Agriculture
10	Dairy	40-44	Certificate in Agriculture
11	Dairy	40-44	Degree in Agricultural Science
12	Dairy	45+	Certificate in Agriculture
13	Beef	30-34	Degree in Agricultural Science
14	Tillage	45+	Certificate in Agriculture
15	Beef	45+	No Agricultural Qualification
16	Beef	45+	Certificate in Agriculture
17	Tillage	35-39	Certificate in Agriculture
18	Tillage	45+	No Agricultural Qualification
19	Tillage	45+	Certificate in Agriculture
20	Beef	45+	No Agricultural Qualification
21	Dairy	40-44	Diploma in Agricultural Science
22	Dairy	40-44	Diploma in Agricultural Science
23	Tillage	40-44	Certificate in Agriculture
24	Beef	40-44	Certificate in Agriculture
25	Beef	45+	No Agricultural Qualification
26	Tillage	40-44	Certificate in Agriculture
27	Dairy	30-34	Degree in Agricultural Science

Sub-analysis of Age Profile of Farmers Interviewed by Farm Type

	Age Category			
Farm Type	**30-34**	**35-39**	**40-44**	**45+**
Dairy	1	0	5	3
Tillage	0	2	2	5
Beef	1	1	2	5
Total	**2**	**3**	**9**	**13**

Sub-analysis of Level of Education of Farmers Interviewed by Farm Type

Farm Type	No Agricultural Qualification	Certificate in Agriculture	Diploma in Agricultural Science	Degree in Farm Management	Degree in Agricultural Science
Dairy	0	4	2	1	2
Tillage	1	8	0	0	0
Beef	3	4	1	0	1
Total	**4**	**16**	**3**	**1**	**3**

Appendix G: Detail of Farmer Selection Process

As documented in the methodology chapter (Section 6.5.1), semi-structured interviews were conducted with 27 farmers as the primary data collection method. It is important to note that farmers that had previously made a major strategic decision within their farm enterprise in the past ten years were essential in order to answer the specific research questions of this study. Therefore, the required access to such farmers was achieved by engaging the help of the representatives of the agricultural bodies, who could identify farmers who had made major strategic decisions on their farm in recent times. These farmers were selected in conjunction with three main bodies that provide advisory services to farmers in the Irish agricultural industry, namely: Teagasc, the Agricultural Consultants Association (ACA) and the Irish Farmers Association (IFA). It is also important to note that in order to get a cross-sectional view of the financial decision-making process of farmers in Ireland, they were selected from three primary farming sectors – dairy, tillage and beef.

The organisation structure of each organisation is quite different and, therefore, the process by which farmers were selected for interview was not identical within each organisation. The remainder of this appendix documents how farmers were selected for interview within each organisation.

Teagasc farmers selected for interview

At the commencement of this study, Teagasc (the state agency responsible for knowledge transfer) were contacted in order to identify potential areas of research. Based on this initial contact, the primary contact for the researcher in Teagasc was the Director of Knowledge Transfer. The organisational structure within Teagasc facilitated the identification of farmers through a logical chain of command structure. The Director of Knowledge Transfer provided names of three regional managers within the South-East of Ireland. Contact was made with the three regional managers and further to this communication, each of the managers directed the researcher to three agricultural advisors (one from each of the farming sectors of dairy, tillage and beef), in their respective areas, who were to be responsible for identifying farmers for interview. This resulted in nine agricultural advisors, each providing one farm client, culminating with an interview population of three dairy farmers, three tillage farmers and three beef farmers being selected for interview, in association with Teagasc.

Agricultural Consultants Association (ACA) farmers selected for interview

At the early stages of this study the President of the Agricultural Consultants Association (ACA) was interviewed as a key informant (**KI/3**). At this interview, the President of the Association confirmed that this research project was one which the association would be interested in participating. During the intervening timeframe, between the early stages of the thesis and the data collection stage, the President of the Association had changed. When the researcher re-established contact with the original (interviewed) President, he was directed to the current Vice-President of the Association to get assistance in farmer selection. Contact was made with the Vice President and the farmer selection process began. The organisational structure within ACA is very different to Teagasc – it is simply an organisation that individual private agricultural advisors are affiliated to; therefore, a different farmer selection process to that of Teagasc was necessary. The Vice President of the Association sent an email to all the agricultural advisors, who were members of the Association, which endorsed this research project and encouraged members to participate in the study. As a result of this email, two agricultural members contacted the researcher directly and agreed to provide farmers for interview. In order to proceed with data collection, the researcher randomly retrieved the contact details of another seven agricultural advisors, who were contacted and agreed to provide a farmer for interview. This process resulted in nine private agricultural advisors each providing one farm client, culminating with an interview population of three dairy farmers, three tillage farmers and three beef farmers being selected for interview in association with the ACA.

Irish Farmers Association (IFA) farmers selected for interview

Originally, it was intended that the final batch of nine farmers be selected in conjunction with IFAC Accountants, but due to client confidentiality reasons, IFAC deemed that it would not be appropriate for it to participate in this research project. However, the CEO of IFAC suggested that the Irish Farmers Association (IFA) would be willing to participate in this study and he provided a point of contact in the IFA. The researcher arranged to meet the IFA representative and following the representative's consent for the Association to become involved, the farmer sample selection process began. The researcher liaised with the same point of contact throughout the process, while that representative liaised with other individuals within the IFA, who specialised in each of the farm sectors. The individual within each of the farm sectors selected three farmers for interview, this individual informed the researcher's point of contact, who then informed the researcher of the farmers that had been selected for interview. This process resulted

in an interview population of three dairy farmers, three tillage farmers and three beef farmers being selected for interview in association with the IFA.

The above three selection processes resulted in a total interview population of 27 farmers, nine from each of the farm types of dairy, tillage and beef.

Appendix H: Focus Group Participant Details

FG/1: Teagasc Representative	This focus group participant is a senior person in the Farm Management and Rural Development Knowledge Transfer Department in Teagasc. He previously worked as a Financial Management Specialist with Teagasc and prior to his position in that department he spent many years working as an agricultural advisor to Teagasc clients.
FG/2: Private Agricultural Consultant	This focus group participant is the joint-owner of a private agricultural consulting business. He has over 25 years experience as an agricultural advisor and is an active member of the Agricultural Consultants Association (ACA) at national level. As a private agricultural consultant, he focuses on helping his clients manage and improve their farm enterprises.
FG/3: IFAC Accountants Representative	This focus group participant is a senior agri-support manager with IFAC Accountants. As an agri-support manager, he focuses on helping IFAC's members and clients achieve their farming goals. He joined IFAC after spending a number of years as an agricultural consultant. He has over 20 years experience of dealing with farm clients on a daily basis.

Appendix I: Detail of Codes Generated During the Data Analysis Process – Extracted from NVivo and Presented for Audit Trail Purposes.

Table 1 Detail of initial codes generated from Phase 2 of the data analysis process

Phase 2 - Generating initial codes	Interviews	Units of meaning coded
Influences of level of FFM	12	23
FFM activities	27	198
FFM Tools	27	80
Performance measurement	27	101
Role of advisor in FFM	10	22
Benchmarking	25	61
Barriers to FFM	22	67
Comments by farmer on level of FFM	26	72
Frequency of FFM activities	21	36
Agricultural advisors	20	31
Media sources	22	33
Off farm employment	2	3
Does not seek external info to a great extent	3	3
Other farmers	10	15
Discussion group participation	9	9
Government agencies	11	12
Accountant	4	4
Agronomist	3	3
Nutritionist - dietician	1	2
Merchant sales rep	1	1
Banks	1	1
Farmer Goals	23	38
Identity	18	39
Business versus way of life	25	44
Reasons for becoming a farmer	15	17
Financially rewarding	27	49
Intuition	26	62
Animal welfare	3	3
Secrecy	15	20
Genetics breeding	17	21
Animal weights	9	26
Grass management	15	24
Visual inspection	18	23
Stocking rates	3	3
Soil testing	9	11
Suckling rates	1	1
Milk recording	8	16
Crop yield maximisation	5	10
Silage analysis	3	4
Calving spread	1	1

Phase 2 - Generating initial codes	Interviews	Units of meaning coded
Fuel consumption	2	2
Minimum tillage and direct drilling	2	3
Agricultural advisors (2)	27	143
Accountant (2)	27	207
Agronomist (2)	7	10
Nutrionist	5	5
Bank Managers	3	3
Financing of operational decision	17	26
Influencing factors for operational decisions	24	109
Information sources	0	0
Operational KPI's	5	11
Post decision analysis	0	0
Purchasing best practice in operational decision making	22	44
Role of advisors in operational decisions	20	40
Role of FFM in operational decisions	0	0
Types of operational decisions	21	30
Intuition (2)	12	19
Purchasing Group	25	39
Grain forward selling	6	9
Inputs forward purchasing	1	1
Lessons for operational DM	2	2
Financing of strategic decision	26	72
Influencing factors for strategic decisions	27	548
Information sources (2)	2	2
Operational KPI's (2)	1	3
Post decision analysis (2)	8	19
Purchasing best practice in strategic decision making	4	4
Role of advisors in strategic decisions	27	168
Role of FFM in strategic decisions	0	0
Types of strategic investments	27	97
Reasons for not proceeding with strategic decisions	13	29
Intuition (3)	6	6

Table 2 Detail of 7 codes in Phase 5(b) of the data analysis process

Phase 5 - Defining and naming themes	Interviews	Units of meaning coded
1. Grounded in identity construction	27	344
2. Retrospective	26	250
3. Enactive of sensible environments	27	562
4. Social	27	701
5. Ongoing	27	234
6. Focused on and by extracted cues	27	863
7. Driven by plausibility rather than accuracy	27	241

Appendix J: Screen shots taken from the Data Analysis Software (NVivo)

Figure 1 **Screen shot of 11 areas where 227 hierarchical codes were identified in the data analysis process**

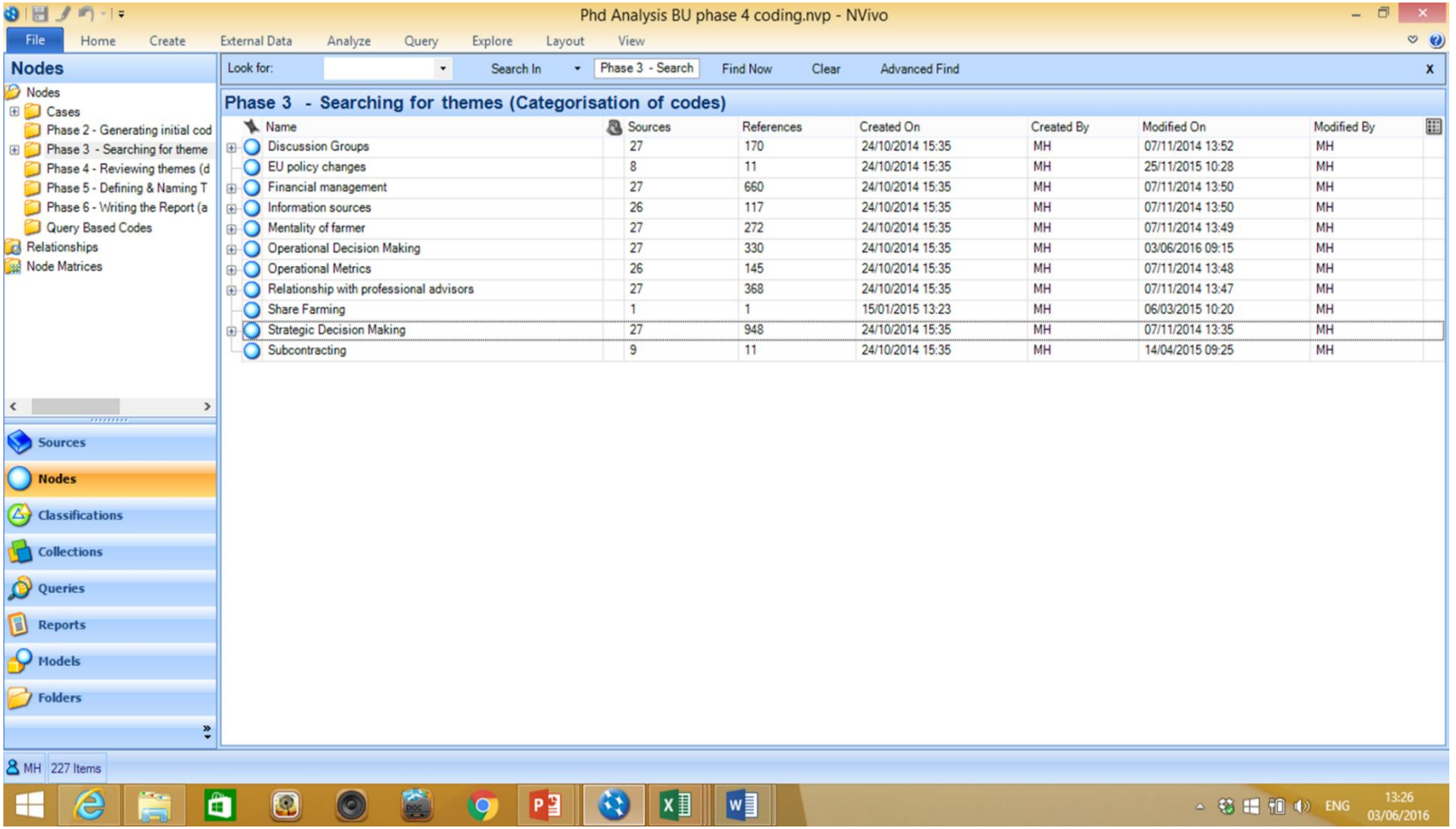
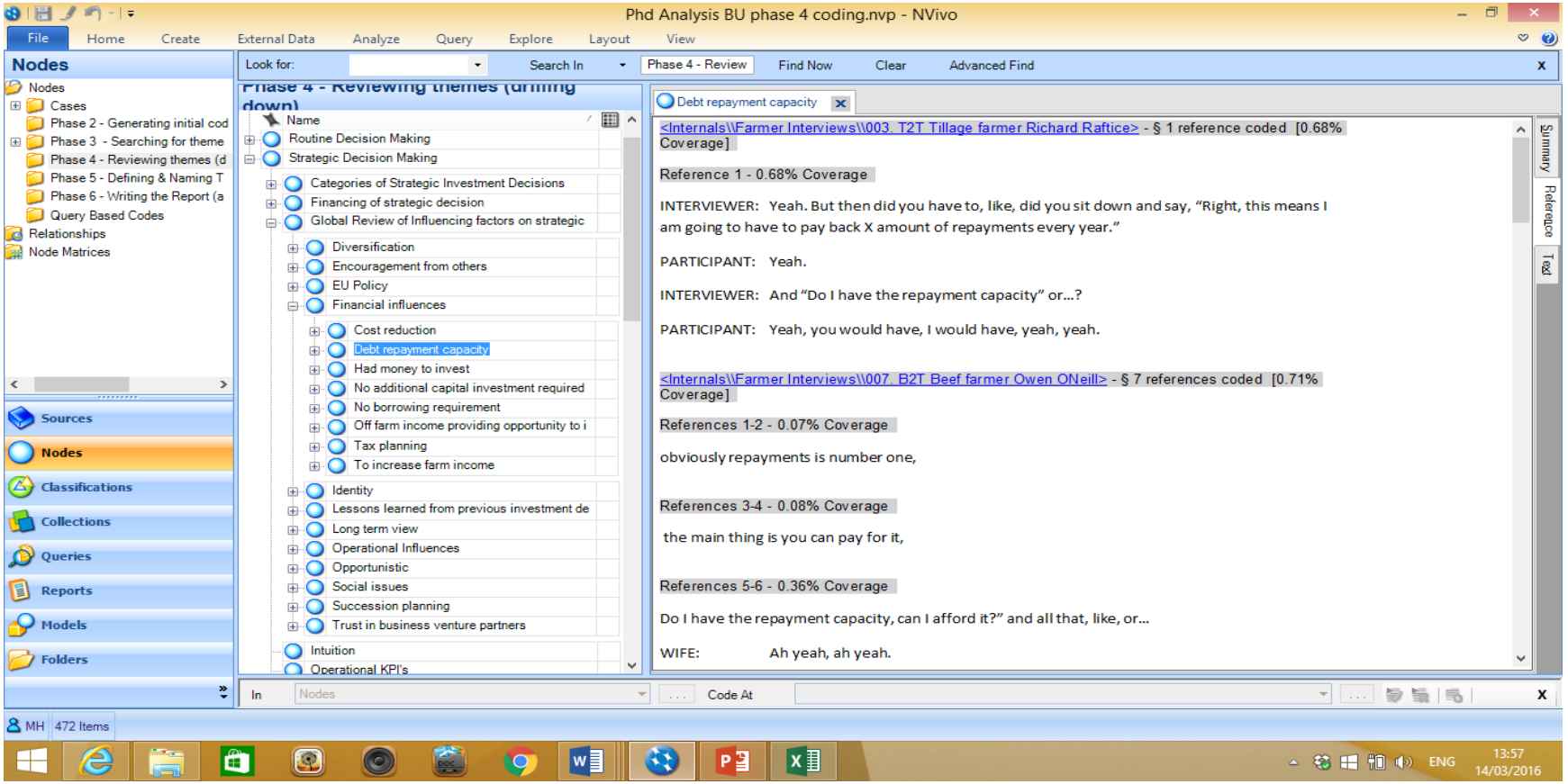


Figure 2 Screen shot of "debt repayment capacity" being noted as a financial influence on strategic decision-making

Note: The screenshot below shows that under the heading of "strategic decision-making", there is a section for the "influencing factors". Within these influencing factors, there are 12 categories, as described in Section 7.4.1. Within those categories, there are sub-categories, whereby similar influencing factors were grouped together (**See Appendix K**). For example, as seen below, there were 8 sub-categories of influencing factors included in the category of "financial influences". On the right hand side of the screen shot below, one can see the interview data that was included within the financial influencing factor of "debt repayment capacity".



Appendix K: Overview of the Influencing Factors that were Grouped Together to form each Category of Influencing Factor in Figure 7.5

Category of influencing factors	Influencing factors included in each category
Financial influences	• To increase farm income • Had money to invest • Tax planning • Debt repayment capacity • Off-farm income providing the opportunity to invest in farm • No borrowing requirement • Cost reduction • No additional capital investment required
Operational influences	• Capacity constraints • Improve day-to-day management • Upgrading machinery • Replacing rented facilities • Good quality land • To subcontract • Flexibility to adapt • Extra facilities on acquired land • Lack of available workforce
Identity	• Emotive decision-making • Stick to what you know • Animal health • Pride in farmyard appearance • Status – expectations of others • Access – right of way
EU Policy	• Grant scheme • Subsidies • Nitrates compliance • Milk quota abolition
Opportunistic	Sub-category on its own
Long term view	• Long term outlook • Security
Lessons from past decisions	Sub-category on its own
Social issues	• Reduce manual labour • Time to spend with family • To be own boss
Diversification	• Diversification • Farmer likes a challenge
Encouragement from others	• Discussion group participation • Encouragement from family
Succession planning	Sub-category on its own
Trust in business venture partners	Sub-category on its own

Appendix L: Analysis of the Influencing Factors on Strategic Decision-making by Category

Figure 1 **Influencing Factors on Buildings Investment Decisions**

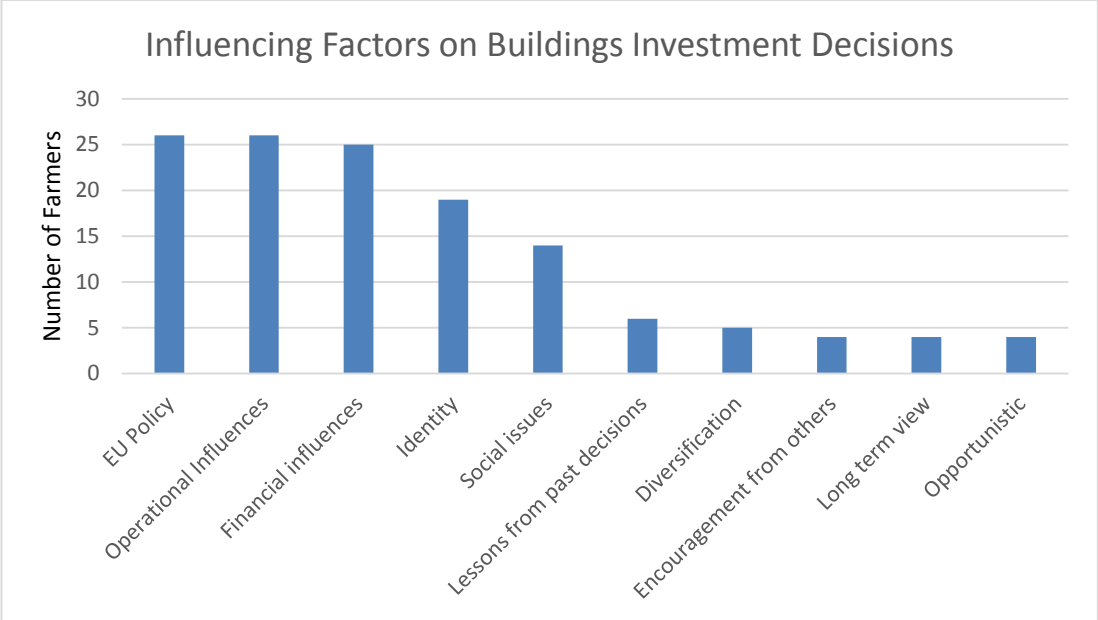


Figure 2 **Influencing Factors that were grouped together to form the Categories of Influencing Factors on Buildings Investment Decisions in Figure 1 above**

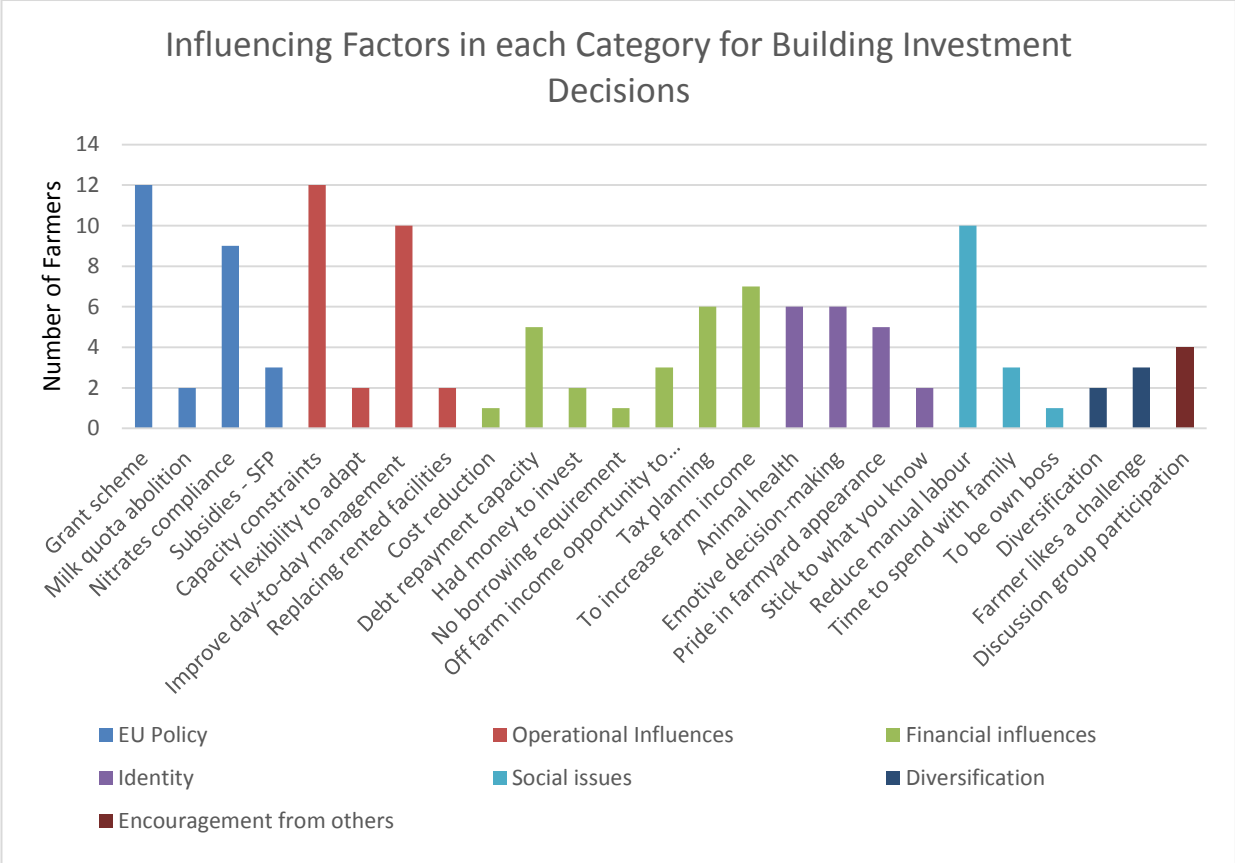


Figure 3 **Influencing Factors on Land Purchase Decisions**

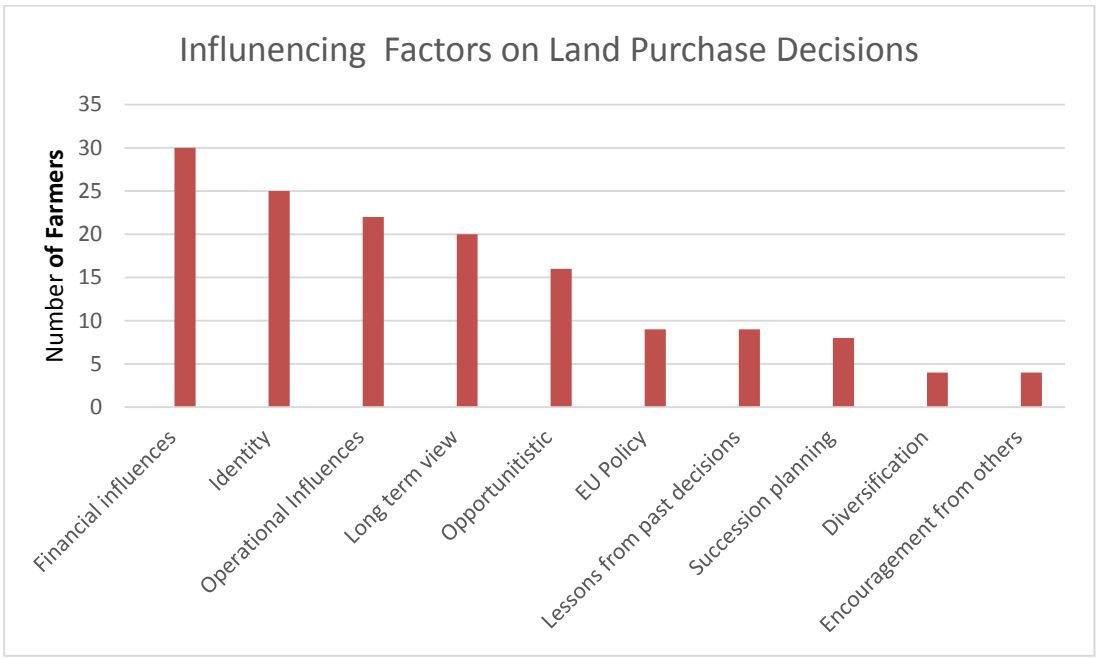
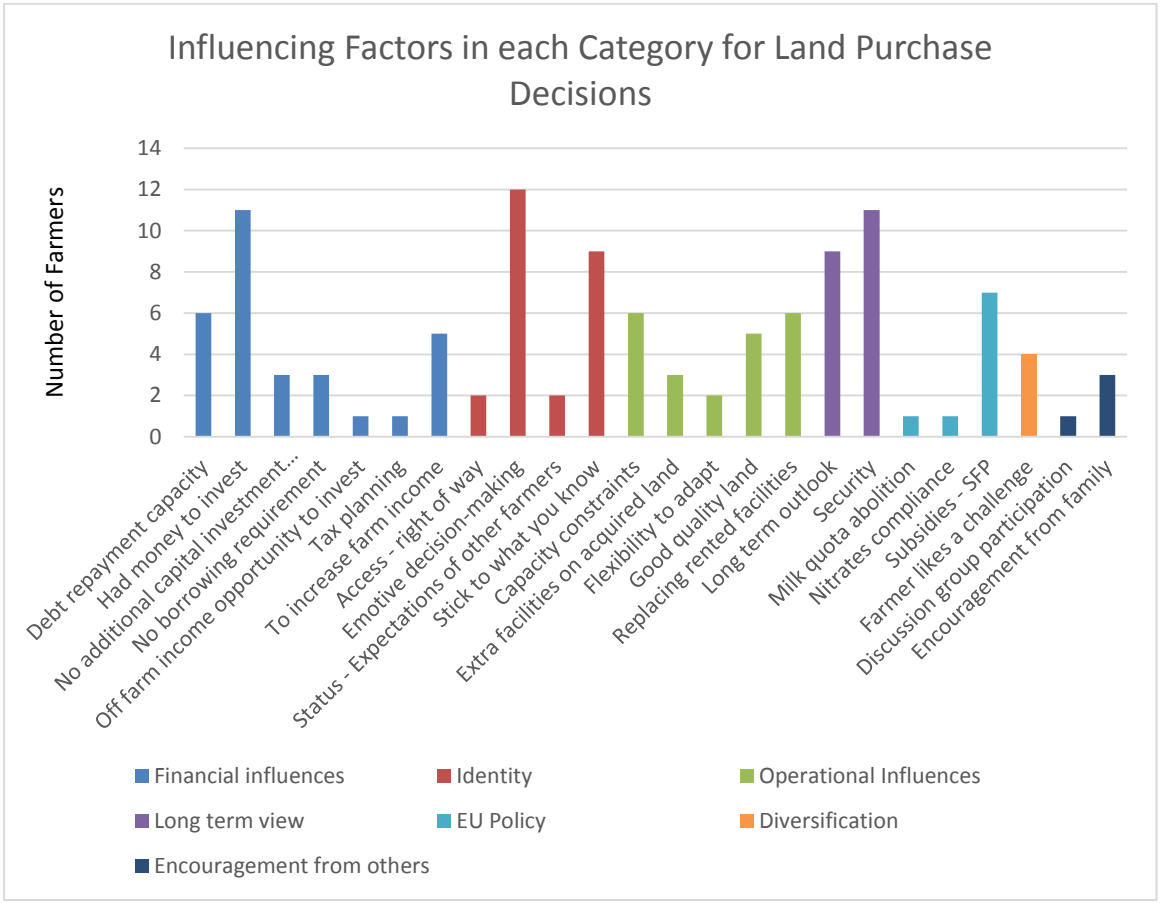


Figure 4 **Influencing Factors that were grouped together to form the Categories of Influencing Factors on Land Purchase Decisions in Figure 3 above**



Appendix M: Analysis of the Influencing Factors on Strategic Decision-making by Farm Type

Figure 1 **Influencing Factors on Strategic Decision-making by Farm Type**

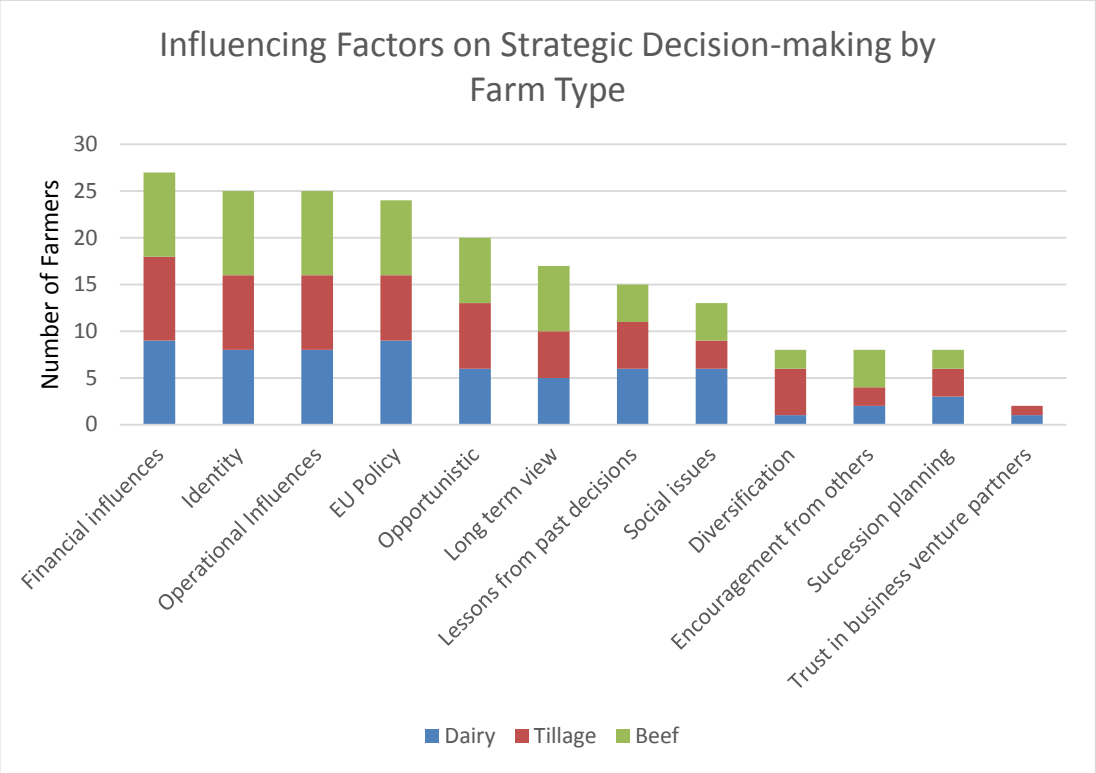


Figure 2 **Financial Influences on Strategic Decision-making by Farm Type**

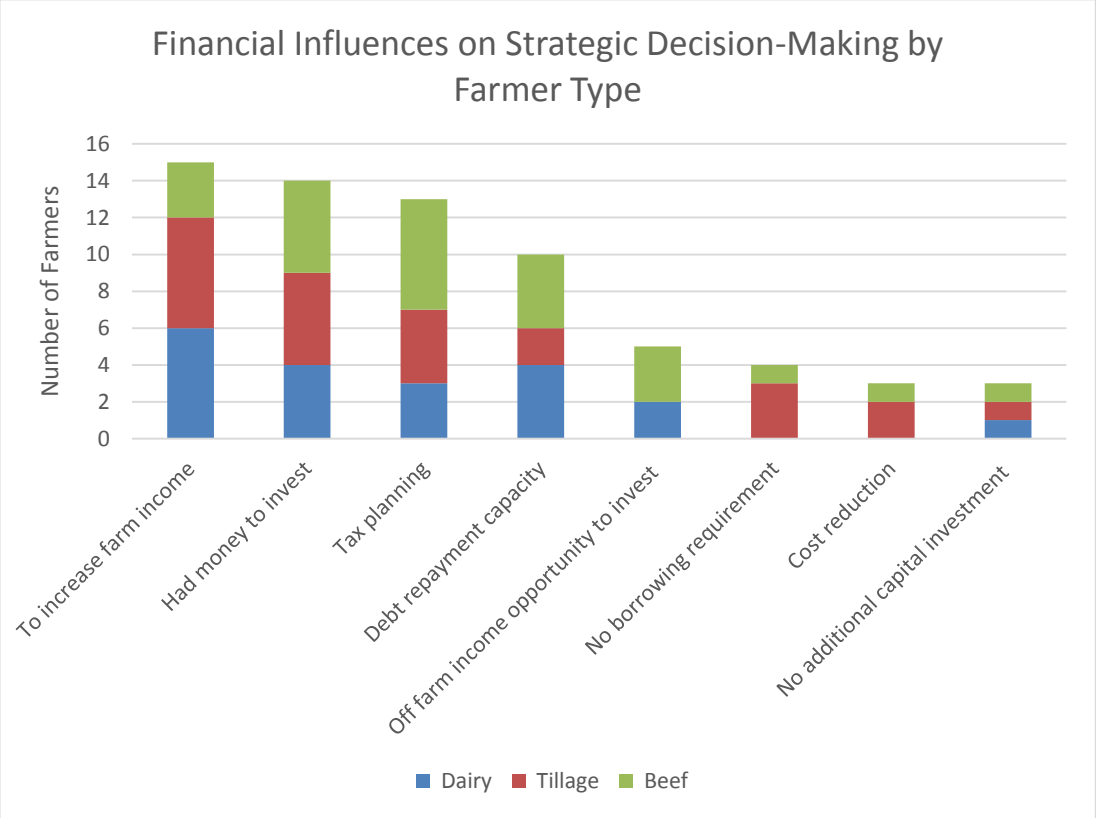


Figure 3 **Operational Influences on Strategic Decision-making by Farm Type**

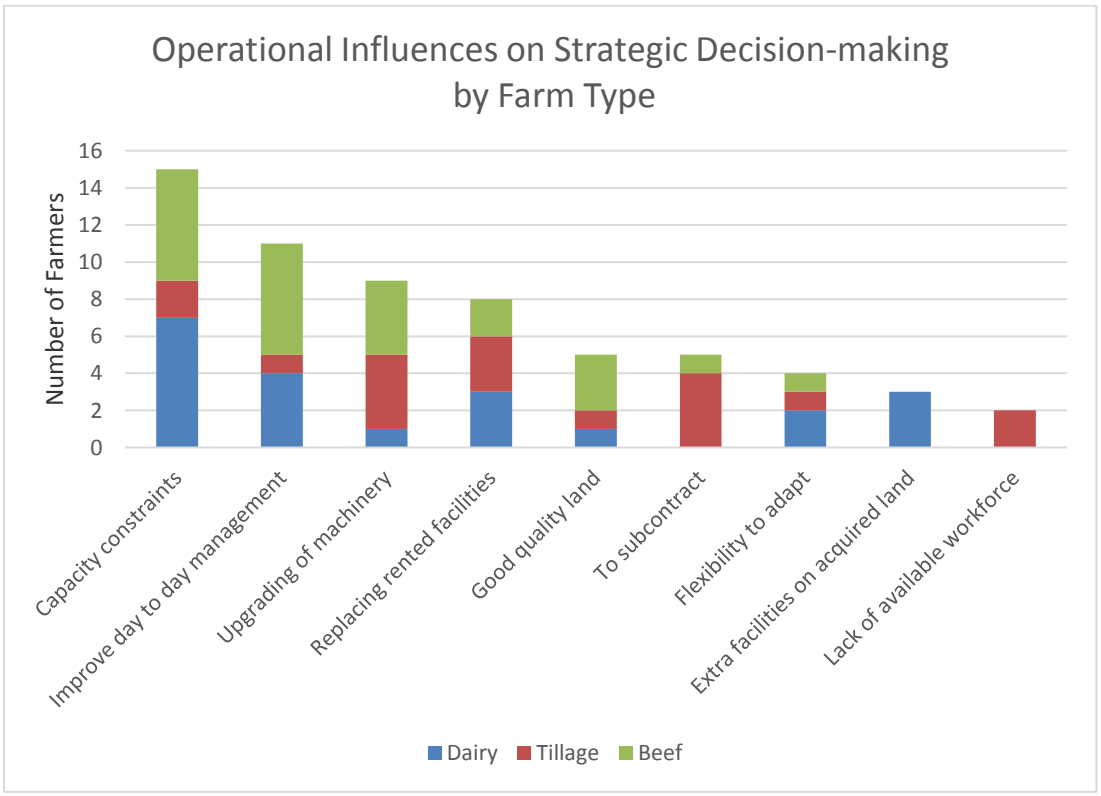


Figure 4 **Identity Influences on Strategic Decision-making by Farm Type**

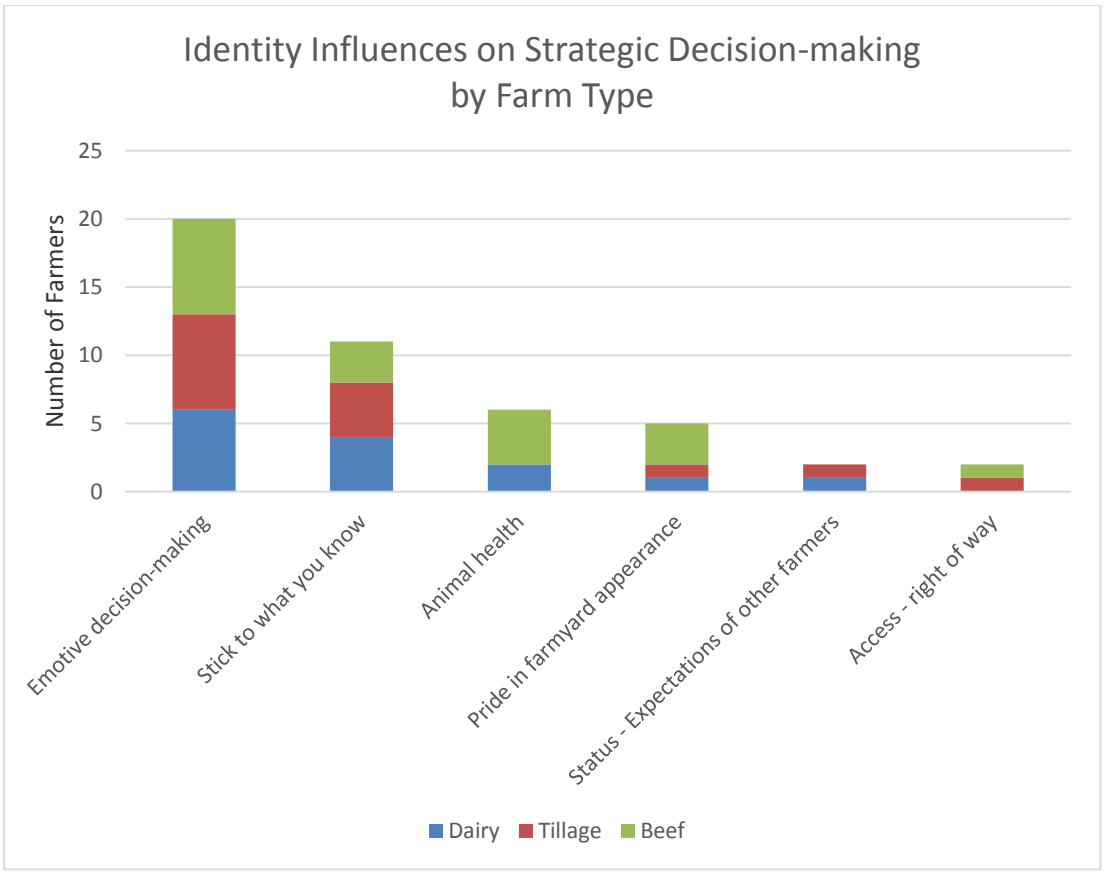
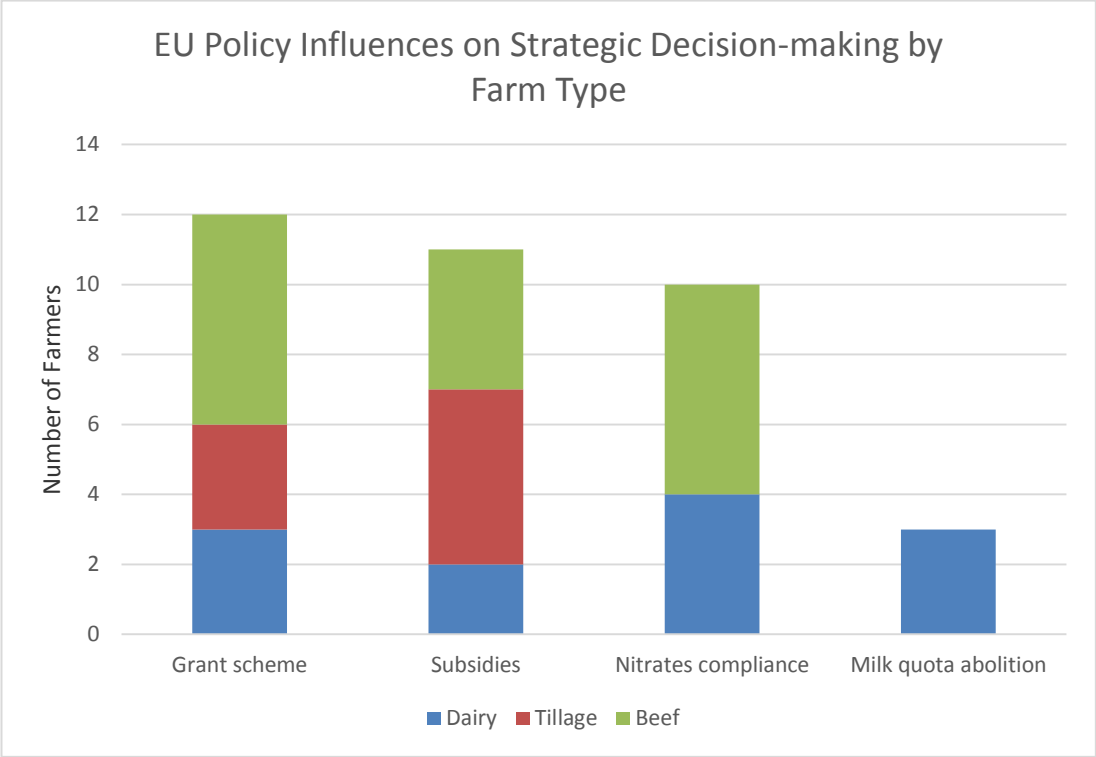


Figure 5 EU Policy Influences on Strategic Decision-making by Farm Type



Appendix N: Analysis of the Influencing Factors on Operational Decision-making

Figure 1 Operational KPI Influences on Operational Decision-making

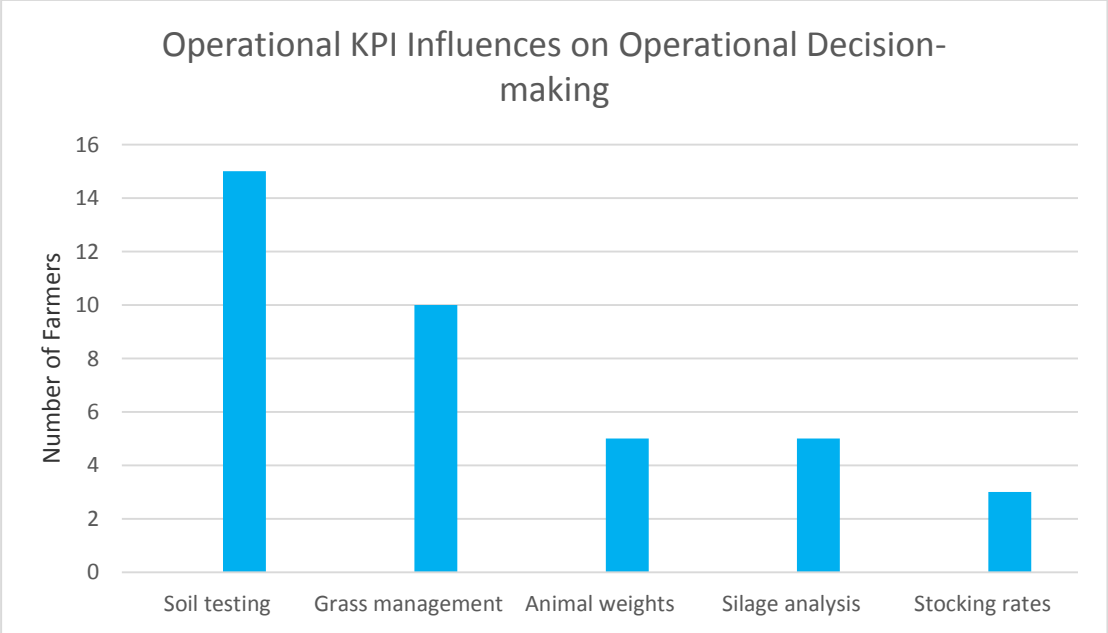


Figure 2 Operational KPI Influences on Operational Decision-making by Farm Type

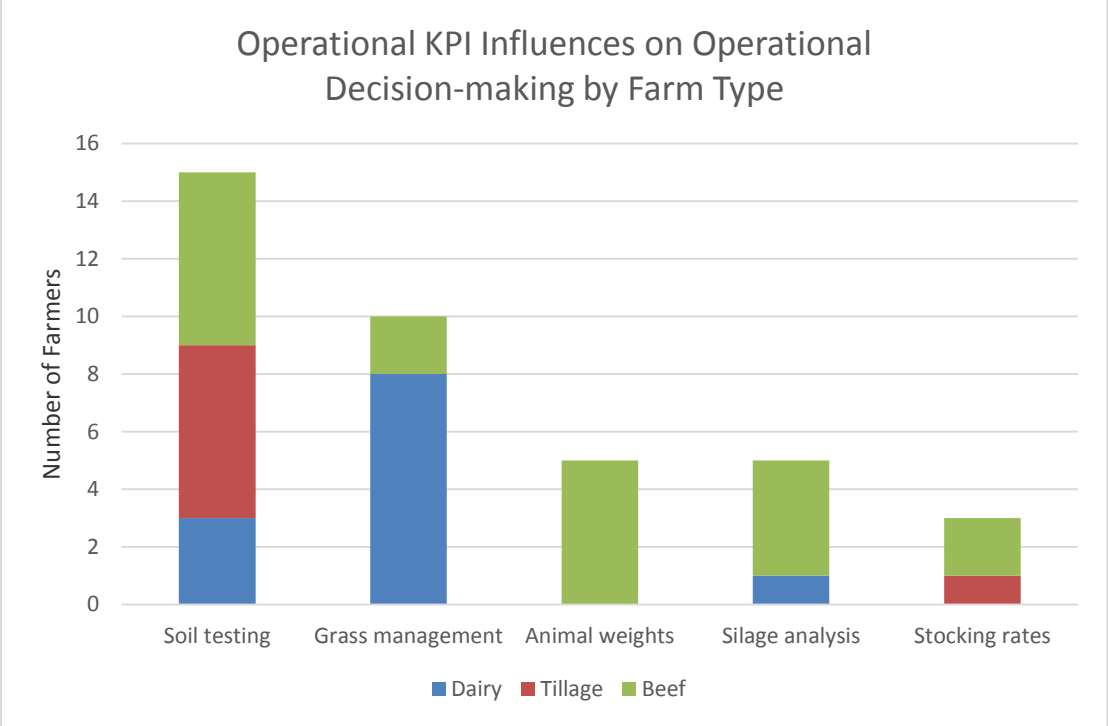
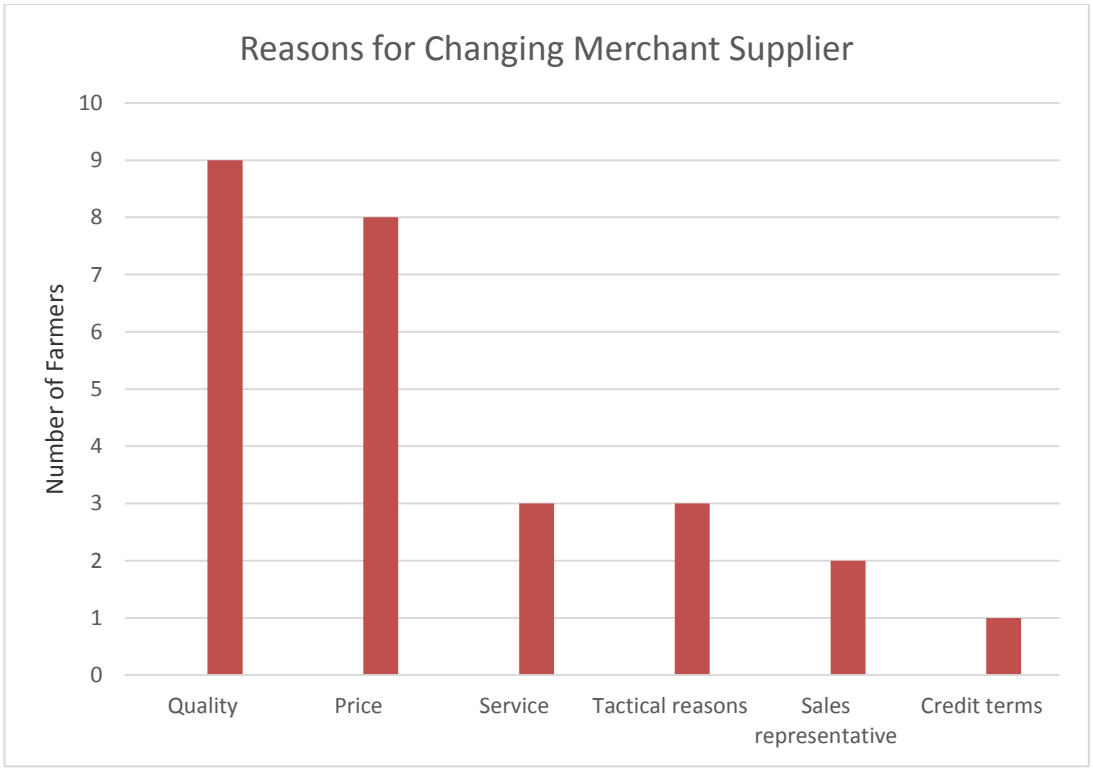


Figure 3 Reasons for Farmers Dealing with Merchant Supplier

Figure 4 Reasons for Farmers Changing Merchant Supplier



Appendix O: Review of the Sensemaking Framework against the Influencing Factors on Farmer Decision-making

Figure 1 **Review of the Sensemaking Framework against the Influencing Factors on Strategic Decision-making**

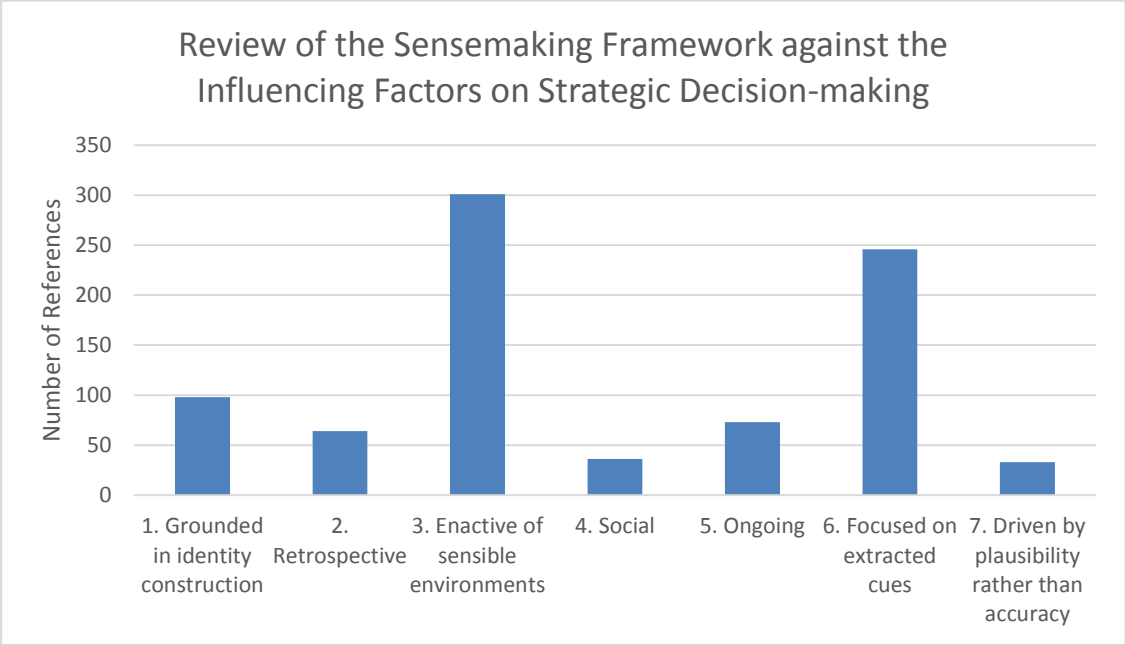
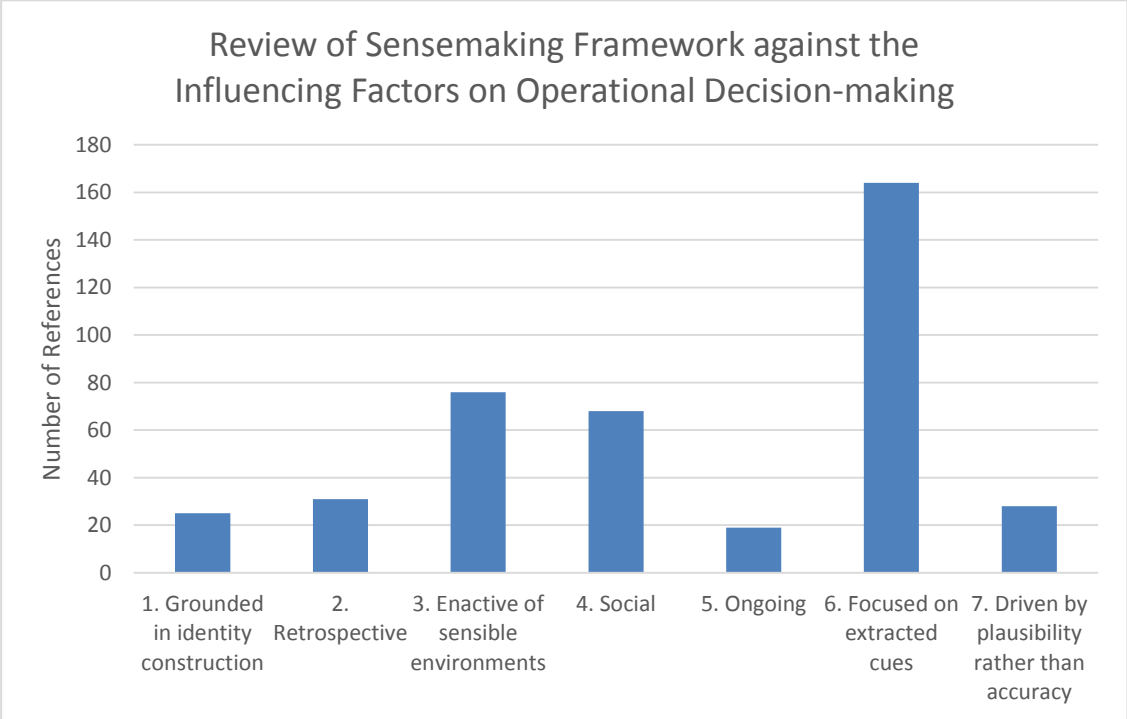


Figure 2 **Review of the Sensemaking Framework against the Influencing Factors on Operational Decision-making**



Appendix P: Analysis of the Role of FFM in Farmer Decision-making

Figure 1 Level of FFM in Strategic Decision-making by Category of Investment

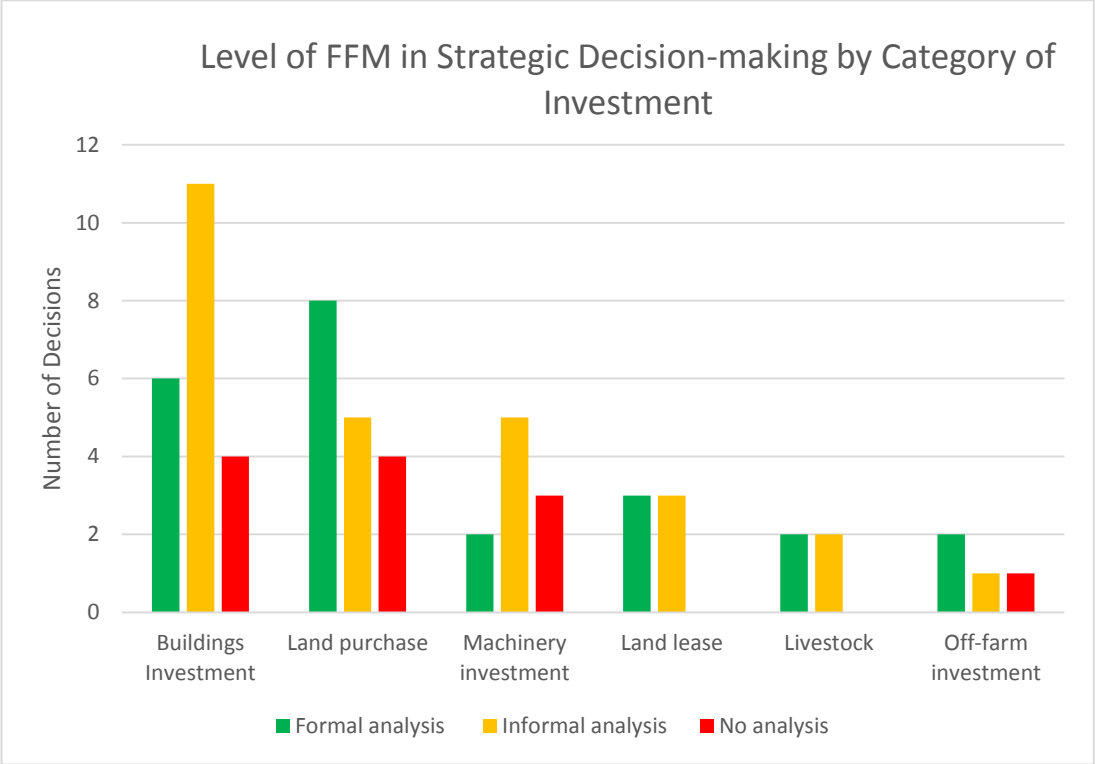


Figure 2 Level of FFM in Strategic Decision-making by Farm Type

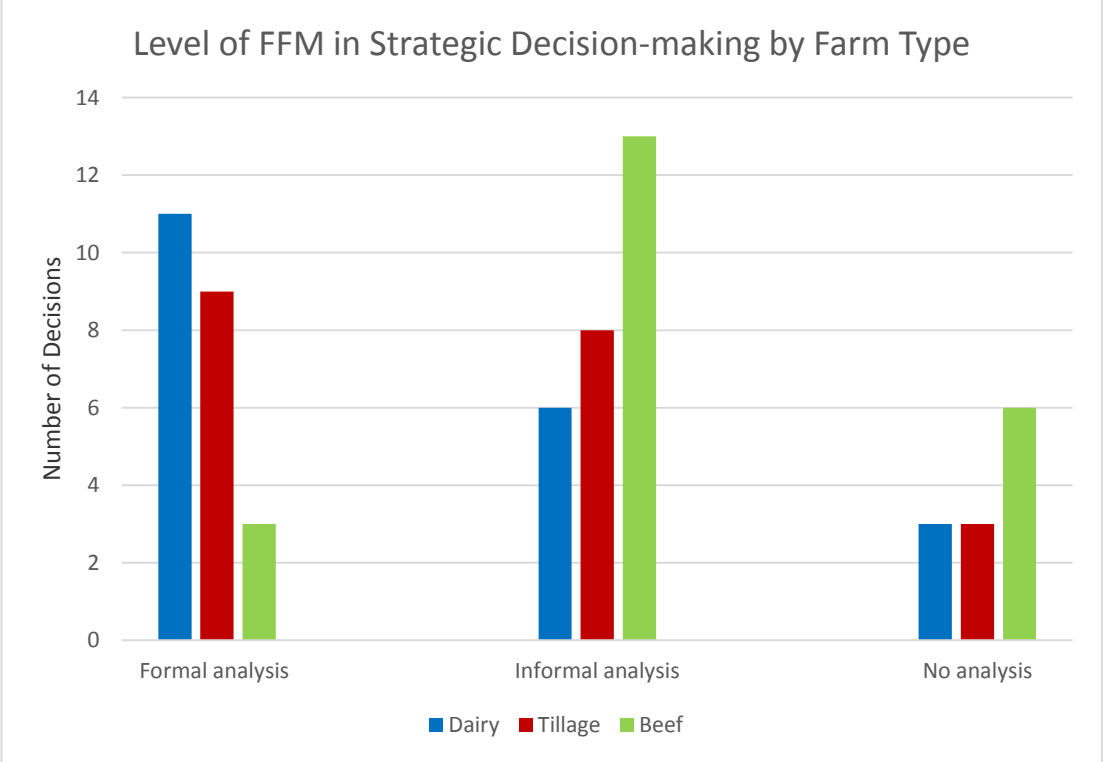


Figure 3 **Level of FFM in Buildings Investment Decisions by Method of Financing**

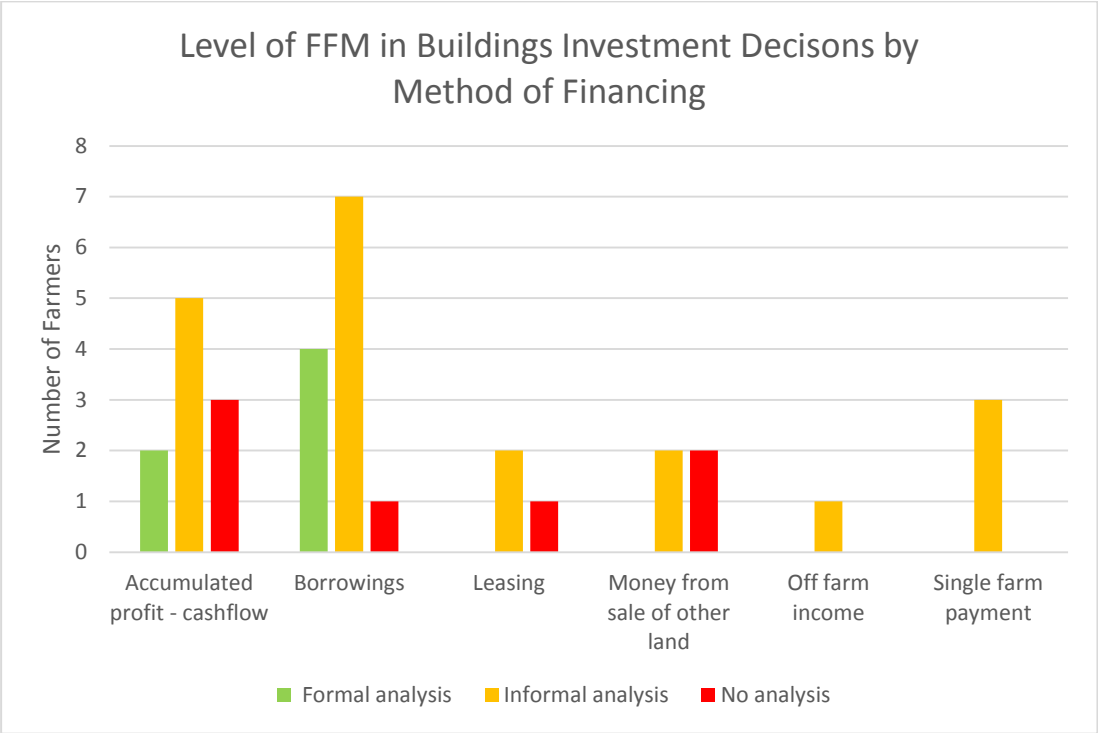


Figure 4 **Level of FFM in Land Purchase Decisions by Method of Financing**

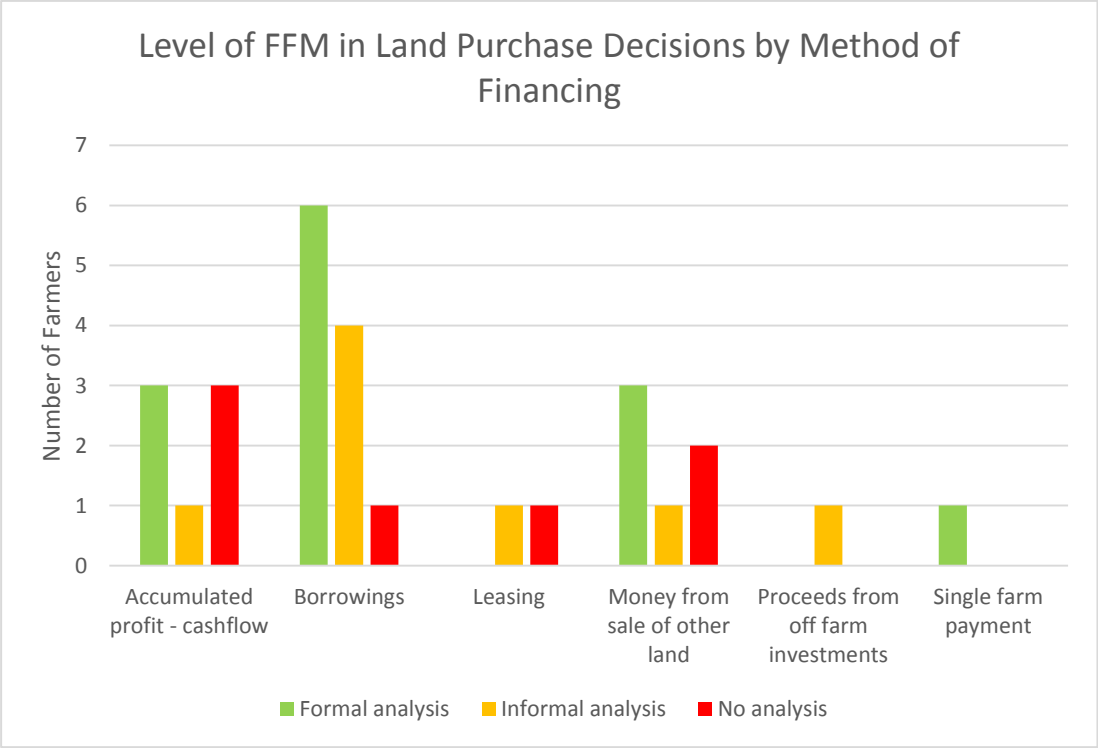
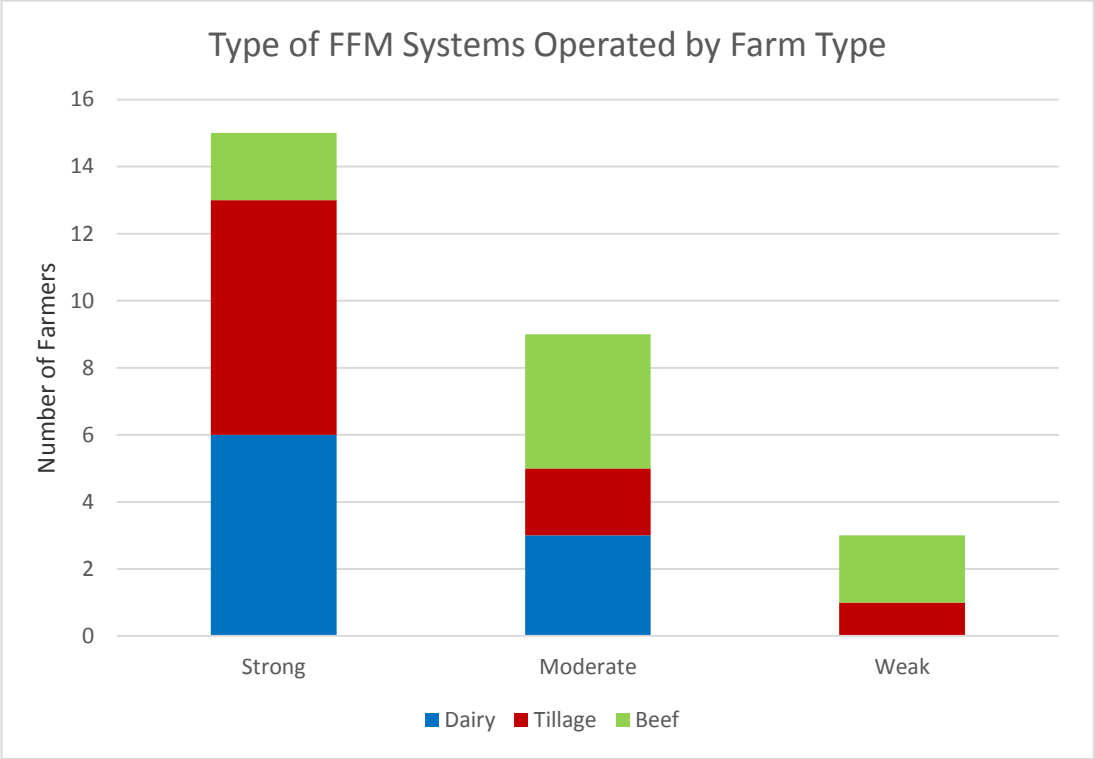


Figure 5 Type of FFM Systems Operated by Farm Type



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