The influence of geographical indications on quality in the Chinese agrifood system

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The Influence of Geographical Indications on Quality in the Chinese Agrifood System ------How Power Relationships Influence Agrifood Quality Development Processes in China when GIs are Present

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Abstract

In the last two decades, the production of agrifood products in China has increased dramatically. However, accompanied with rapidly rising quantity, many food scandals were reported. For example, nearly 53,000 children in China were made ill by contaminated milk powder with the industrial chemical melamine in 2008 and an illegal additive used to make some soft drinks for more than ten years was exposed in 2011. To support consumer confidence in the safety of the food supply following numerous "food scares" and to protect rural incomes, developing a "quality" strategy in the contemporary Chinese agrifood market is becoming a topic of political argument and of the focus of research. Firstly, in the face of many food scandals over the last two decades, Chinese consumers are looking for "quality" agrifood products to meet their daily needs. Secondly, Chinese farmers have struggled to adopt a viable way to increase their incomes, pressured by strong market competition. Thirdly, the Chinese government has realised that improving rural incomes and thus reducing the urban and rural income gap may be essential for China's long-term economic security and social stability. Against this backdrop, the GI system which links agrifood quality and production origins tightly has become an attractive issue in the Chinese agrifood sector.

Attention paid to the GI system often relates to the notion of "quality" as GI schemes are often perceived as a means of helping producers to receive higher incomes through raising product quality in the market. Therefore, the emphasis on quality is central to this thesis. In particular, the aim of this research is to evaluate the effectiveness of GIs in terms of developing agrifood quality in contemporary China. As little similar research has been undertaken, this thesis makes a conceptual, methodological and empirical contribution to knowledge in this research area.

By tracing the historical root of the "quality" concept from a management perspective and reviewing different researchers' opinion on agrifood quality, the thesis draws a key conceptual framework for "agrifood quality" based on socio-economic theory, a network approach and concentrating on power relationships between diverse actors. It indicates that "agrifood quality" cannot be defined based only on production or

consumption aspects but can be understood or analysed through exploring power relationships between different actors within quality forming processes based on a given context. Accordingly, focusing on the power relationships, three agrifood systems, namely the industrial agrifood system, the alternative agrifood networks and GI networks, and three GI networks in developed countries, namely Cassis wine, Parma ham and Florida citrus, demonstrate how power relationships influence quality meanings and quality forming processes in different agrifood sectors.

After reviewing the relevant liteature and examining the context of the Chinese agrifood sector, the thesis uses three cases to analyse the quality forming process in the Chinese GI system by adopting documentary techniques and conducting semi-structured interviews. Following the three GI networks, the results show the development of Chinese GI networks is driven by a government with the intention to raise farm and rural incomes rather than in response to consumers' quality requirements, and consequently there remains a focus on economic rather than quality concerns. "Basic" GI standards, inappropriate GI issuing procedures and weak government enforcement on securing quality based on GI standards are becoming unavoidable results. Therefore, an overall conclusion argues that *the quality of Chinese GI products cannot be secured by Chinese GI schemes alone.*

Key words: GIs; Quality; Power relationships; the Chinese agrifood sector; the Chinese GI system.

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Chapter 1 The Connection Between GIs and Agrifood Quality: An Introduction and Outline of the Thesis

"Food is the first necessity of man, and it is the most direct and most important consumption product of mankind. China is a responsible country, and the Chinese government is devoted to working for the benefits of the people. Over the years, the Chinese government has endeavored to improve food quality, ensure food safety and protect consumers around the world. But, it must be pointed out that China is still a developing country, and the overall level of food safety, including the standards and the industrialization level of food production, still lags behind that of developed countries. China has a long way to go to improve the quality of foodstuffs"

(State Council Information Office of the People's Republic of China, 2007)

1.1 Introduction

This research is concerned with understanding the quality forming process in the Chinese GI system as many GI food crises have been uncovered in China over the last decade but almost no research can be found dedicated in this area although GIs are treated as quality marks in the market by many consumers. In particular, the research builds on previous studies that explore "agrifood quality", the GI system and the Chinese agrifood sector (e.g. Murdoch et al., 2000; Goodman, 2003; Harvey et al., 2004; Hughes and Reimer, 2004; Marsden, 2004; Tam and Yang, 2005; Tregear et al., 2007; Bristow, 2007; Engardio et al., 2007; Roth et al., 2008). After building a conceptual framework for agrifood quality and a methodological approach, three sample cases, namely "Gannan navel orange", "Nanfeng mandarin" and "Wuyuan green tea", are explored to evaluate the effectiveness of GIs in terms of developing agrifood quality in China.

Chapter 1 provides a brief context and outlines the main issues will be explored in the thesis. It makes some general connections between Chinese food quality and GIs in order to contextualise the research and indicate the importance of building a

conceptual framework for agrifood quality which underpins the whole research. The arguments outlined here will be discussed in more detail in subsequent chapters of the thesis. Beside the main issues, the aim and objectives of the thesis are also listed to explain the purpose and content of following chapters. Therefore, three main sections are included in this chapter. Section 1.2 summarises the increasing concern about agrifood quality in China and the promotion of GIs as quality certification marks by the government. Section 1.3 focuses on explaining the importance of establishing a conceptual framework for agrifood quality which is a key objective underpinning this research. Following this, section 1.4 clarifies the rationale for the research and outlines the aims and objectives of the thesis. The structure of the thesis is also presented in this section.

1.2 Increasing Chinese food quality concerns and the promotion of GIs

In the last two decades, the production of agrifood products in China has increased dramatically. For example, between 1998 and 2010, fruit production rose from 54.5 million tonnes to 214.0 million tonnes and milk production increased from 7.5 million tonnes to 35.8 million tonnes. In 2010, the gross output value of all agricultural products was 6932.0 billion RMB[1] which was more than 2 times that of 1998 (National Bureau of Statistics of China, 2011). However, accompanied with rapidly rising quantity, many food scandals were reported. 78 primary school children in the southern town of Beihai were poisoned after drinking contaminated soya milk in 2003; transparent "glass" noodles were banned in major Chinese cities after the products were found to contain whitener in 2004; sewage was reported to be used in tofu manufacture in 2007; nearly 53,000 children in China were made ill by contaminated milk powder with the industrial chemical melamine in 2008; an illegal additive used to make some soft drinks for more than ten years was exposed in 2011. Understandably, Chinese consumers' concern for food safety has grown with these high profile food crises. In 2007, a survey published by "Xiao Kang" found that 92.74% of consumer respondents worried about the safety of the agrifood they bought[2]. In 2011, a similar survey was published by "Xiao Kang" again, and the results show 94.5% of consumer respondents questioned the safety level of Chinese

[1] 6.3 RMB = 1 US dollar in May, 2012
[2] The research group of Xiao Kang magazine, 2007

agrifood products (Ouyang, 2011). The number is 1.76% greater than that of 2007. To support consumer confidence in the safety of the food supply following numerous "food scares" and to protect consumers' right to purchase food products with "good quality", securing agrifood safety in the China market is becoming a topic of political argument and of the focus of research.

Normally, consumers lack full or perfect information due to the cost of investigation. It is not easy for them to judge the quality of products and make the right purchase decisions between numerous similar goods in the market (Allaire, 2004; Watts et al., 2005). They may therefore prefer to repeat-purchase the branded products which have previously met their needs, under the estimation that with the same brand, the products have the same features. Brands, as contracts here, link producers and consumers together, and help producers stand out from numerous commercial products in the same category. It is easier for customers to build their confidence with branded products rather than unknown products. Therefore, branding is believed to be an effective way to offer agrifood products with certain stable quality characteristics into the market and thus generate higher financial returns for producers (Henchion and McIntyre, 2000). Even though investments are needed to build brands, producers get financial feedback within this tight producer-consumer relationship. However, in the Chinese agriculture sector, agrifood production is characterised by numerous small-scale producers and businesses (Calvin et al., 2006; National Bureau of Statistics of China, 2011) who often lack capital and know-how to develop brands. To promote "safe" and "healthy" agrifood products into the market and secure farmers' incomes, the Chinese government established GI schemes offering certifications to counteract the effects of quality uncertainty from the 1990s.

GIs have been used informally for thousands of years around the world to indicate the origin of agrifood products and to influence positively consumers' perspectives, such as "French" for wine, "Chinese" for tea, and "Indian" for spices. Consumers rightly or wrongly believe that products from certain areas are of a higher quality than products from elsewhere. Producers and sellers can thus charge higher prices and obtain premium margins by producing and selling products from specific areas (Ilbery and Kneafsey, 2000a, b; Marsden et al., 2000a; Barham, 2003). For instance, the price of AOC cheeses is on average 30 percent higher than their non-AOC counterparts in the

French market (Sylvander, 1998, cited in Parrott et al., 2002). To meet consumers' quality requirements and increase producers' incomes, government and research interest has increasingly focused on agrifood products from specific origins or areas during the last fifteen years (e.g. Storper, 1997; Nygard and Storstad, 1998; Ilbery and Kneafsey, 1999; Acebron and Dopico, 2000; Weatherell et al., 2003; Whatmore et al., 2003; Babcock and Clemens, 2004; Hayes et al., 2005; Treager et al., 2007). According to these researchers, GIs are owned by groups of producers and thus also called "farmers' owned brands". But, they are very different from brands owned by an individual company, although both have been used by producers to overcome information asymmetry in the market, reduce consumer research costs, distinguish their products from competitors' products, and provide an indication of quality for consumers. Anybody, who located in the certain area and makes products meeting the requirements of the certification process, has the right to use GIs on their products after application.

As a product has to show that it has met all the requirements specified by certain rules before using the GI, GIs are supposed to work as signs to indicate certain quality characteristics in the market (Allaire, 2004). However, this system can have two main weaknesses in building trusted relationships between consumers and producers. Firstly, as the process of setting up codes of practice for GIs always involves different individuals and groups, the quality standards of GIs may be "low" or "basic" (Anania and Nistico, 2004). Secondly, GIs are owned by groups or organisations. As a sort of spatially specific public good, GIs cannot be bought and sold, but protect the geographical name of products from a given region. Like some quasi-public products, there is a reduced incentive for individual producers to invest in improving the collective reputation of GIs because the reward is shared by every GIs user. Bad products may thus drive out the good, and a certain amount of fraud or cheating might appear in the GIs market, especially with lax market supervision (the "lemon" market effectiveness) (Akerlof, 1970). These two weaknesses show quality food products cannot be generated by GI schemes automatically and the quality of GI products may vary under different contexts.

Over the last decade, many sub-standard GI agrifood products have been reported in the China market, such as Jinhua ham poisoned by pesticides, illegal food additives to

produce Longkou cellophane noodles, and Baiyangdian duck eggs containing a poisonous red dye. Although the effectiveness of Chinese food safety regulatory system can be questioned due to overlapping and unclear functions of regulatory authorities between different government ministries and administrations (Tam and Yang, 2005; Roth et al., 2008), GI schemes are supposed to offer an extra guarantee of agrifood quality through the certification process. GI agrifood products with an "unacceptable" level of quality appearing in the market show that not only the food safety regulatory system, but also the GI certification stage are not working well. If not tackled, it could lead to "GI" labels becoming worthless indicators. In order to rebuild consumer confidence with GIs and to protect rural economic revenues, evaluating the operation mechanism and analysing the advantages and weaknesses of the Chinese GIs sector on improving quality are becoming urgent.

1.3 Analysing agrifood quality

Exploring Chinese agrifood quality of GIs firstly requires defining agrifood quality. However, previous research papers dedicated to agrifood quality have indicated quality analysis is not a straightforward task because the quality meaning varies under different contexts.

First of all, different actors have different opinions about what agrifood quality is and how it should be measured. For example, for the government, the definition of quality may concentrate on "safety" and "health" (Barling, 2004) through a large number of measurable quality standards indicating a minimum level of food quality below which food products have to be removed from the market (Henson and Caswell, 1999). But, for consumers, quality may be measured by other indicators such as, taste, a very subjective standard and one which can be impacted upon by numerous factors, such as age, gender, circumstances, time, emotion, cultures, social network, nationalities (Ilbery and Kneafsey, 2000b; Parrott et al., 2002; Mansfield, 2003a, b; Sage, 2003; Kotler and Keller, 2006). Compared with consumers, the producers' definition of quality is more likely to reference to measurable standards, like costs, profitability, and consistency (Harvey et al., 2004).

Secondly, agrifood quality has different meanings in different agrifood systems/networks. In the industrial agrifood system, quality is mainly defined by large-scale retailers or giant agrifood companies through measurement standards or grades and definition standards (norms) (Renard, 2005). But, the quality in AAFNs is a very general idea due to complex consumers' quality concerns (Goodman, 2003). It may include products perceived as healthier (e.g. organic products and GMO free products), local (e.g. products with GI labels), with improved animal welfare (e.g. "free range" products), or more sensitive to the ecological environment (Nygard and Storstad, 1998; Winter, 2003a, b). As a branch of AAFNs, GIs concentrated on localised quality because some consumers are looking for more "local" information to judge the agrifood quality and make their buying decisions (Storper, 1997; Ilbery and Kneafsey, 1999; Whatmore et al., 2003). However, such "localised quality" is not uniform as well. The quality meanings of different GI products are very different. For example, the quality of Cassis wine is related to "terroir" and low quantity, whilst that of Florida citrus is related to natural environment, modern technology and consumers' specific requirements.

In face of different agrifood quality meanings in different contexts, establishing a conceptual framework for agrifood quality to enhance the analysis of the influence of GIs on improving quality becomes a critical task for this thesis. It is thus believed to be an important objective for this research.

1.4 Research aim, objectives and structure

Facing many food scandals, more and more Chinese consumers are looking for quality food products in their daily life. In this situation, GIs are promoted by the Chinese government as quality signs to meet consumer expectations and thus increase rural incomes. However, numerous food scandals uncovered over the last decade have proved that food quality *"cannot be completely controlled by government"* in China (MacLeod, 2007). Under the weak government enforcement, the ability of the current government supported GI schemes to guarantee or enhance certain quality characteristics of agrifood products is questionable. So, given that little research has been undertaken on Chinese GI schemes and in order to discover whether the Chinese

GI system can contribute to quality agrifood products, this research is dedicated to evaluating the effectiveness of GIs on developing agrifood quality in China. Through research, a picture of the quality forming process within the Chinese GI system will be presented.

Therefore, the overall aim of this thesis is:
To evaluate the effectiveness of GIs in terms of developing agrifood quality in contemporary China

The objectives of the thesis are:

1. to establish a conceptual framework for analysing agrifood quality;
2. to review shifting quality meanings in the world agrifood sector and the role of GIs in constructing agrifood quality in a range of geographical contexts;
3. to examine the social-economic environment of the Chinese GI system with specific foci upon the food safety regulatory system and GI legislative system in contemporary China;
4. to develop a research methodological approach in order to undertake empirical analysis in three selected Chinese GI networks;
5. to assess the contribution of GIs in the construction of quality of specific Chinese agrifood products through the selected case studies;
6. to provide an overall evaluation of the Chinese GI system in the construction of quality and establish a foundation for the future study through joint conclusions from the case studies.

In order to achieve the aim and objectives, this thesis is divided into two key parts (Figure 1.1): chapters two to four establish an agrifood quality conceptual framework, summarise the key debates on agrifood quality and GIs within the literature, and provide a methodological framework. And, chapters five to nine present an empirical analysis of the three GI case studies and provide a comparative analysis and an evaluation.

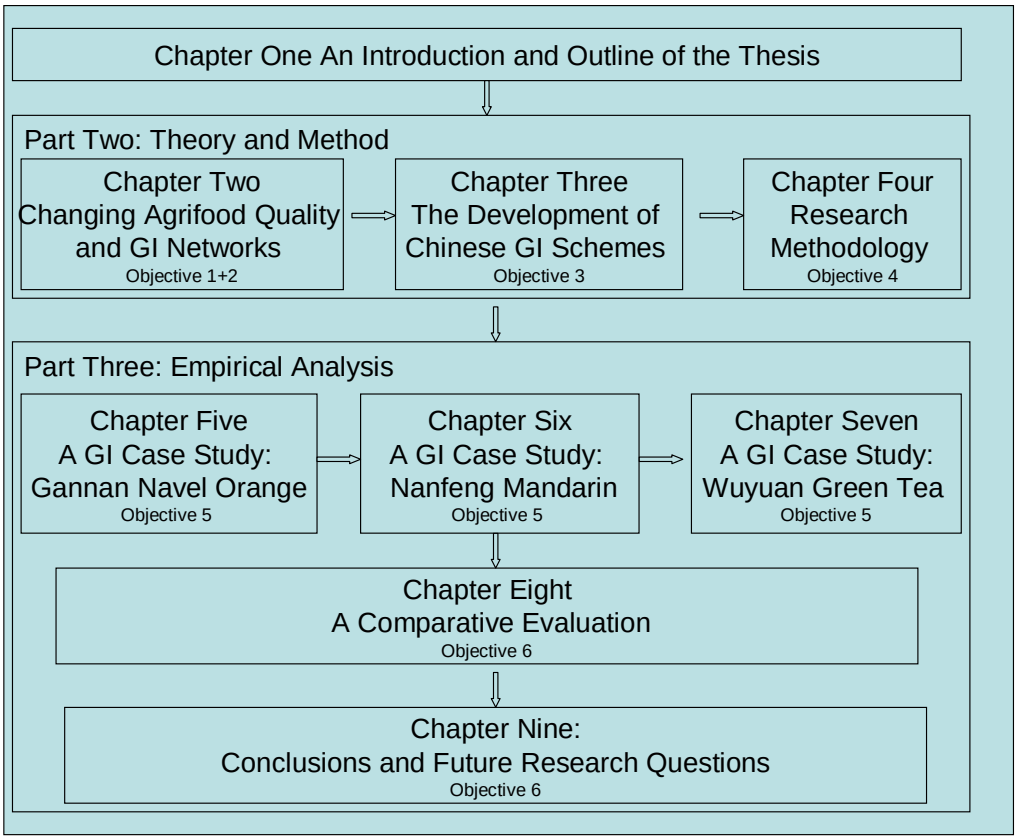

Figure 1. 1: The structure of the thesis

1.5 Chapter summary

This chapter has briefly summarised the key issues on GIs and agrifood quality in the Chinese agrifood sector, provided an overall rationale for the research and explained the importance of establishing a conceptual framework for agrifood quality to underpin the whole research. Based on the indicated aim, the main issues to be explored were outlined and the structure of the whole thesis was listed. According to the objectives, the following chapter will concentrate on exploring the conceptual framework for agrifood quality and explain why the focus should be upon the interrelationships between a diverse range of actors to reach the aim of the thesis.

Chapter 2 Changing Agrifood Quality & GI Networks

"[i]t is about judgement in contexts where there is no final and definitive arbiter of the most relevant quality or the absolute standard whereby better or worse can be identified …" (Harvey et al., 2004 p.2)

"[t]he distribution of power in the agrofoods chain is increasingly associated with definitions of what constitutes a 'good' quality product or 'good' production and/or marketing practice. The assignation of quality in product, production and/or marketing terms implies by extension a setting up of rules of market-access and, also, of market exclusion (Valceschini and Nicolas, 1995). As quality definitions increasingly shape market access, the 'quality economy' likewise becomes a site of negotiation and power"

(Renard, 2005 p.420)

"By the late 1990s, a new geographical diversity of agro-food emerged. While the globalisation of trade in foodstuffs continues apace, Europe has experienced an increasing interest in foods with local and regional identities. Local agri-food production systems have indeed been characterised by various strategies to promote local/regional food products (Murdoch, 2000; Goodman, 2004; Marsden, Banks, & Bristow, 2002; Ilbery & Maye, 2005).

(Negrini et al., 2008 p.1212)

"Social scientists have identified three primary benefits of GI protection schemes. First, economists note that GI products sell for higher prices than their industrially-produced counterparts, and so help farmers to remain competitive in the face of globalisation (Babcock and Clemens, 2004). Second, because GIs are linked to a particular territory, and because GI protection is collectively owned, GIs are credited with having feedback effects throughout rural economies (Belletti and Marescotti, 2002; Albisu, 2002). Finally, by "short-circuiting" industrial supply chains, GIs are said to better connect producers and consumers, providing information (about the place of production, the people involved in production, and the methods employed) that allow the true environmental and social costs of production

to be accounted for (Marsden et al. 2000, Renting et al. 2003, Van der Ploeg and Renting, 2004)"

(Bowen and Zapata, 2009 p.109)

2.1 Introduction

The introductory chapter provided a brief context and outlined the main issues to be explored in this thesis. This chapter will discuss these issues in more detail.

In this thesis, the most important and complex concept to note is "agrifood quality". In the 1980s and 1990s, with the growing interest in economic globalisation, researchers focused on "industrial conventions" to describe and understand agrifood quality based on political economy perspectives (e.g. Friedland et al., 1981; Salais and Storper, 1992; Murdoch and Miele, 1999). As the analysis in this period concentrated primarily on economic and production aspects, the influences of social, ecological and ethical concerns of consumers were ignored (Busch and Juska, 1997; Goodman, 2002; Hughes and Reimer, 2004; Jackson et al., 2006). To understand agricultural activities and agrifood quality appropriately, more and more scholars (e.g. Hughes, 2000; Ilbery and Maye, 2005b; Tregear et al., 2007) turned to socio-economic theory and network approaches, which have enable researchers to explore agrifood quality by deconstructing agricultural systems into multiple complex economic, political and social relationships, described as "power relationships" (Latour, 1987). Drawing on these approaches, agrifood quality in this thesis is understood as the outcome of co-operation between actors within networks. The main actors involved in quality development processes and the power relationships between these actors are thus becoming the key aspects in the analysis of agrifood quality.

After establishing the conceptual framework for agrifood quality, the focus turns to review the shifting agrifood quality meanings in the world agrifood sector through examining the main actors and power relationships involved in quality construction processes. The research shows that "agrifood quality" in different agrifood systems/networks may vary under complex power relationships. For example, in the industrial agrifood system, the quality corresponds closely to "industrial standards"

set by large-scale retailers or giant agrifood companies for maximising economic rewards (Storper and Salais, 1997; Freidberg, 2003). In order to maintain a "shelf place", producers have to produce their agrifood products based on these quality "conventions" (Ngige and Wagacha, 1999; Millstone and Lang, 2003). However, in the GI system, mainly based on the requirement of "quality" consumers, agrifood quality is concentrated on "local" identity which is a very board idea and mainly related to a unique combination of local soil, climate, and cultural resources (Ilbery and Kneafsey, 1999; Overton and Heitger, 2008). As agrifood quality may vary under different power relationships based on various contexts, the agrifood quality under Chinese GI schemes is worthy of being a suitable research topic.

To provide a more detailed review of the recent literature on agrifood quality and GIs, the rest of this chapter is divided into four main sections. Section 2.2 defines GIs. Section 2.3 outlines the conceptual framework for agrifood quality, in which the theory and approach adopted to analyse agrifood quality in this thesis are clarified. Section 2.4 highlights quality construction processes in the industrial agrifood system, alternative agrifood networks and GI networks along with shifting power relationships. To draw a clear picture of the main actors and power relationships involved in the quality construction process in GI networks, Section 2.5 briefly describes three GI networks in France, Italy and America.

2.2 Conceptualising GIs

GIs are defined in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) as follows: *"[G]eographical indications are, for the purposes of this Agreement, indications which identify a good as originating in the territory of a member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin"* (article 22.1) (World Trade Organization, 2009).

Some multilateral treaties were created to define and protect geographical denominations before the advent of TRIPS in 1994. Three main international conventions, the Paris Convention for the Protection of Industrial Property 1883, the

Madrid Agreement for the Repression of False and Deceptive Indications of Source on Goods 1891, and the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration 1958, contain regulations to define related concepts such as *"indications of source"* and *"appellations of origin*". Two multilateral agreements, the Paris Convention for the Protection of Industrial Property 1883 and the Madrid Agreement 1891, deal with "indication of source". Even though both agreements do not present a specific definition for "indication of source", a notion is available in the Madrid Agreement as follows: *"[A]ll goods bearing a false or deceptive indication by which one of the countries to which this Agreement applies, or a place situated therein, is directly or indirectly indicated as being the country or place of origin shall be seized on importation into any of the said countries"* (Article 1.1) (World Intellectual Property Organization, 2010a). According to the World Intellectual Property Organization (WIPO), "indication of source" means *"any expression or sign used to indicate that a product or service originates in a country, region or a specific place"* (1998, P.115). But, a GI product must not only originate from the geographical location indicated, but also have quality characteristics which are essentially attributable to that geographical origin. "Indications of source" do not fulfill the additional requirement. At the same time, the protection of GIs only covers goods, whereas "indications of source" cover goods and services. Another notion, "appellation of origin", is defined by the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration 1958, as *"the geographical name of a country, region, or locality, which serves to designate a product originating therein, the quality and characteristics of which are due exclusively or essentially to the geographical environment, including natural and human factors"* (article 2.1) (World Intellectual Property Organization, 2010b) (Table 2.1). "Appellations of origin" are more tightly defined than GIs, because "reputation" is not a sufficient condition in the definition (Addor and Grazioli, 2002).

Because the numbers of signatory states of these multilateral treaties are limited and protection levels of these multilateral treaties are slight, none of these treaties could have a significant impact on the global market to protect GIs (Addor and Grazioli, 2002; Das, 2006). Therefore, as many as 149 member countries of the WTO including France and the U.S.A, signed the TRIPS agreement in April 1994 at Marrakesh, which includes specific norms and standards for the protection of GIs. This agreement

contains requirements that nations' laws must be met, and also establishes a fundamental basis for individual nations' regulations to protect GI products.

Protected Geographical Denomination	Treaty	Definition
Geographical indications	The Agreement on Trade-Related Aspects of Intellectual Property Rights	"Geographical indications are, for the purposes of this Agreement, indications which identify a good as originating in the territory of a member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin"
Appellations of origin	The Lisbon Agreement for the Protection of Appellations of Origin and their International Registration 1958	"… the geographical name of a country, region, or locality, which serves to designate a product originating therein, the quality and characteristics of which are due exclusively or essentially to the geographical environment, including natural and human factors"
Indications of source	The Paris Convention for the Protection of Industrial Property 1883	
	The Madrid Agreement for the Repression of False and Deceptive Indications of Source on Goods 1891	"All goods bearing a false or deceptive indication by which one of the countries to which this Agreement applies, or a place situated therein, is directly or indirectly indicated as being the country or place of origin shall be seized on importation into any of the said countries"

Table 2. 1: A comparison between GIs, Indications of source, and Appellations of origin

2.3 Conceptual framework for agrifood quality

2.3.1 Defining quality from a general, management perspective

Providing a definition of quality is a difficult task, because producers and consumers have different understandings of quality in different periods of history and contexts.

Before the middle of the 20th century, most producers believed quality was an inherent characteristic and could be measured and controlled during the production process to perform the function of being "useable". Juran and Godfrey (1999, p.24) define this

sort of quality as *"[F]reedom from deficiencies— freedom from errors that require doing work over again (rework) or that result in field failures, customer dissatisfaction, customer claims, and so on"*. Obviously, products with problems would disappoint customers. A buyer may return the problem product and ask for a new one, which is very costly for the producer. Looking to decrease costs, producers' definitions of quality concentrated on reducing the failure rate in factories (Juran, 1951). The quality control department, responsible for inspecting the quality of finished products before they are sold became a very common institution in the factory. Statistical methods also were used in production process, to provide a *"systematic, rigorous approach to quality"* (Bendell, 1989 p.4). Feigenbaum (1956) takes Juran's idea and statistical methods a step further. He argues that all departments (e.g. purchasing department, engineering department, manufacturing department, and marketing department) should share the responsibility for the control of quality because high quality products will never be made if quality only relates to the quality control department or just one of several departments. He presents a new theory called *"total quality control"*, which is defined by Bendell (1989, p.16) as, *"[T]he agreed companywide and plantwide operating work structure, documented in effective, integrated technical and managerial procedures, for guiding the co-ordinated actions of the people, the machines and the information of the company and plant in the best and most practical ways to assure customer quality satisfaction and economical costs of quality"*. However, Feigenbaum (1956) still believes the definition of quality is in the producers' hands, as enhancing quality means decreasing error rates.

In the face of the competitive market of the 1960s, some researchers moved away from producers' opinions to consumers' preferences to define quality. Levitt (1960) stresses that customer satisfaction is the ultimate goal for any business and the most important aspect of the concept of quality should be satisfying consumer needs. Crosby (1979, p.14) defines quality as *"conformance to requirements (of consumers)"*. Juran and Godfrey (1999 p.23) emphasise quality as *"those features of products which meet customer needs and thereby provide customer satisfaction"*. From a marketing perspective, researchers indicate that producers have to explore consumers' quality expectations and incorporate them into production processes, or they will find it is very difficult to sell their products and make profit in the market (Kotler and Keller, 2006). Quality is no longer what the supplier puts in, but what the customer

gets and is willing to pay for.

Focusing on customer satisfaction is a popular way to define quality in contemporary markets because such quality provides a high level of customer satisfaction and thus additional business opportunities for the firm itself. For consumers, however, quality is about judgements in contexts (Harvey et al., 2004). Consumer perceptions of what constitutes quality vary between individuals, regions, and countries. Factors, such as age, gender, circumstances, time, emotion, cultures, social networks, and nationality have great influences on consumer quality perceptions (Kotler and Keller, 2006). The American Society for Quality (2010) thus proposes that quality is *"a subjective term for which each person has his or her own definition"* and indicates evaluating a given product can vary with different customers in different situations. Garvin (1987) tries to summaries various consumers' preferences. He points out that according to consumers' observations, product quality is not a single recognisable characteristic, rather, it is a multifaceted characteristic that appears in many forms. Eight dimensions of product quality in the market are thus described: performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality. He also states that it is impossible for a company to score highly at all levels and meet all customers' needs because different consumers have different needs, and an improvement in one area may only be achieved at the expense of another.

Producers and consumers have fundamentally different agendas[3] and judge quality in different ways[4]. But, producers and consumers cannot be separated to analyse quality in practice. Lancaster (1979, p. 20-21) points out that *"goods are simply a transfer mechanism whereby characteristics are bundled up into packages at the manufacturing point… and opened up to yield their characteristics again at the point of consumption"*. Logothetis (1992, p.82-83) identifies three critical ingredients of quality, which include integrity, a dedication to communication and customer satisfaction, and company-wide policies and operations which support perceived quality trust of consumers. Quality is judged by consumers based on what producers actually offer. Both consumers' requirements and producers' participation cannot be denied when examining and evaluating quality. Meanwhile, the line between

[3] Producers seek profitable products whilst consumers value for money
[4] One is mainly dependent on measurable objective standards and one is mainly based on subjective criteria

producers' and consumers' quality criteria is blurred in the contemporary market. On the one hand, a producer's definition of quality is influenced by consumers. As Crosby et al. (2003, p.18) argue, quality provides a competitive edge, based on the understanding of *"how a company's customers value a given quality dimension"* and *"when and if that quality dimension can increase (or decrease) in importance over time"*. Nowadays, many firms rely heavily on external consumers to improve the quality of their products (Jeppesen and Molin, 2003). On the other hand, consumers' quality judgements are also impacted by producers' standards. For example, the information provided by producers' advertising may change consumers' quality criteria and purchase decisions in someway due to consumers' learning behaviour (Huffman et al., 2007; Sung, 2010). In short, consumers and producers form the quality definition together.

Because quality criteria change over time and both producers and consumers have a great influence on quality definition, Parrott et al. (2002) conclude, quality is difficult to define. The analysis of quality must be set against the context under the specific category.

2.3.2 Agrifood quality

Agrifood is also known as agrofood. According to the dictionary, agri-food is *"used for describing industries that are involved in the mass-production, processing and inspection of food made from agricultural products"* (Bateman et al., 2006). As this thesis is located in China, the definition given by The Center for Agri-food Quality & Safety, the Ministry of Agriculture of the Peoples Republic of China (2008) will be adopted for the purpose of this thesis, which states that agrifood products are *"primary products sourced from agriculture, namely, plants, animals, microorganisms and the products thereof obtained in agricultural activities"*.

Agrifood quality is a really complex term than many other products as not only producers and consumers are involved to define quality but also the impact of the government, natural environment, technological, and social factors have to be considered carefully when exploring agrifood quality. For example, a consumer's definition of agrifood quality may relate to concerns over safety or the taste. Producers may regard agrifood quality as *"a marketing opportunity"* or *"a chance to*

increase sales or gain premium prices" (Morris and Young, 2000 p.104). But, both of them have to conform to the government's biological, chemical, and physical standards to discuss quality[5]. And, the appearance of new technologies, such as the transgenic technology, has changed agrifood quality criteria fundamentally. Many agrifood researchers (e.g. Nygard and Storstad, 1998; Henson, 2000; Parrott et al., 2002; Harvey et al., 2004) have recognised there is a division in agrifood quality between producers and consumers, and different factors may provide various dimensions according to which agrifood quality can be evaluated. For instance, Henson (2000) distinguishes three types of agrifood quality in the market: "product oriented quality" (physical characteristics such as fat content, colour, texture, etc.), "process oriented quality" (characteristics of the process by which the product is made, e.g. organic), and "user oriented quality" (the perception of the product on the part of the consumer), and stresses the first two types of qualities are measured by objective criteria, while the third is a subjective, experiential type linked to the consumer.

Agrifood quality normally has a subjective definition for consumers. Ilbery and Kneafsey (2000a) classify consumers' measures of agrifood quality in four dimensions: certification, association, specification and attraction. Certification, usually represented by a symbol or a quality mark, is a form of regulated quality achieved by satisfying conditions set by the state or by a professional organisation. Association relates to links with a region or local environment (e.g. Scottish Salmon) or with a traditional culture (e.g. Whisky using traditional Scottish production methods or skills). Specification highlights the nature of the production process, such as traditional recipes, the use of high quality raw materials, and the particular skills of the production team. Attraction comes through the food's physical properties of design, texture, flavour, taste, appearance and premium price. The research of Parrott et al. (2002) shows that for consumers, quality is not only determined by physical properties, but also impacted by place and context of production or consumption, as retailers' reputation, purchasing environment, culture, tradition, historical patterns, social relationships and local knowledge system etc. Sage (2003) has similar opinions to Parrott et al. (2002). He indicates three basic attributes that consumers prefer to use when distinguishing a "quality" agrifood product. The first is the sensual attributes of

[5] Or, the product cannot be sold in the market

the product, such as taste and appearance. The second is the ecologically embedded characteristics, such as the natural qualities of raw materials and the methods of production. The final is the socially embedded features, which relate to the social-cultural context. Taylor et al. (2012) also point out that consumers' purchasing criteria are greatly influenced by age, gender, income and education level. Affected by numerous factors, consumers hold very subjective quality criteria to judge agrifood products.

Compared with consumers, agrifood producers' quality is more objective with accountable criteria, such as containing levels of certain materials (e.g. Vitamin A and B) and market rewards. However, producers are a "group" of actors, which normally includes farmers, processors and retailers. They may also have various opinions on agrifood quality. For example, Ilbery and Kneafsey (2000b) list local small-scale producers' quality criteria, such as product differentiation, association with region, traceability of inputs, production method, premium prices, raw materials, involvement of owner, presentation/promotion, and certification/quality mark. Winter (2003a, p.25) announces that retailers may define quality as *"a means of segmenting market and increasing market share"*. Marsden (2004) argues that many local producers treat quality as a tool of economic competitiveness which is closely linked to particular types of products (locally sourced and identified) or comparatively small quantity. Murdoch and Miele (2004) indicate that some producers believe quality is formed by a series of "qualification processes" which mix the intrinsic and extrinsic attributes together and give food products social identity. Focusing on different aspects, different producers have different criteria to define or evaluate agrifood quality. (Table 2.2)

Consumers' quality criteria	Producers' quality criteria
• Certification, association, specification and attraction (Ilbery and Kneafsey, 2000a); • Determined by physical properties, and impacted by place and context of production or consumption (Parrott et al., 2002); • The sensual attributes of the product, the ecologically embedded characters and the socially embedded features (Sage, 2003); • The criteria are great influenced by age, gender, income and education level (Taylor et al., 2012).	• Product differentiation, association with region; customer perception; traceability of inputs; production method; premium prices; raw materials; freshness/appearance; involvement of owner; presentation/promotion; good environmental conditions, and certification/quality mark (Ilbery and Kneafsey, 2000b); • A means of segmenting markets and increasing market share (Winter, 2003a) • Enhancing economic competitiveness: particular types of products or comparatively small quantity (Marsden, 2004); • Qualification (Murdoch and Miele, 2004).

Table 2. 2: Quality criteria of consumers and producers on agrifood products

Agrifood quality not only has various meanings for producers and consumers, but also frequently changes under different contexts. For instance, Ilbery and Kneafsey (2000a, p.219) argue that agrifood quality *"is indeed a social construction and thus dependent on the socio-cultural, political and economic contexts within which production-consumption relations exist"*. Harvey et al. (2004 p.2) believe that agrifood quality is *"about judgement in contexts"*, and impacted by different factors, such as government regulations, the socio-cultural environment, economic context, and organisations (e.g. firm groups and consumer groups) (see also Mansfield, 2003a, b). The influence of contexts cannot be ignored when analysing agrifood quality.

First of all, focusing on "safety" and "health", the government always defines the legally acceptable composition of agrifood products to protect the public from poor quality and diseased foodstuffs (Barling, 2004). The Food Standards Agency in the UK (2011), for example, announces that its aim is *"to ensure you can have trust and confidence in the food you buy and eat"*. Food Standards Australia New Zealand (2011) which *"develops food standards to cover the food industry in Australia and New Zealand"*, states that the government *"makes sure food in Australia and New Zealand is safe and suitable for us to eat"* through the Australia New Zealand Food

Standards Code. Based on scientific rationale, a large number of measurable quality standards are issued and quality controlling and monitoring systems are developed by the government in response to *"both real and perceived food safety problems"* (Henson and Caswell, 1999 p.589). Such objective quality standards can be used to *"define the legally acceptable composition of some goods"*, to detect fraud, to ensure that labels are not misleading, and to correspond with regulations across multiple countries (Atkins and Bowler, 2001 p.191). In other words, the government defines a minimum level of agrifood quality below which agrifood products have to be removed from the market.

Secondly, much research in the area of agrifood quality (Tovey, 1997; Hinrich, 2000; Parrott et al., 2002; Winter, 2003b; Bergeaud-Blackler, 2004; Weatherell et al., 2003; Tregear et al., 2007) shows the significant influence of social-cultural factors on producers' and consumers' quality criteria and thus the agrifood quality forming and judging processes. The research of Bergeaud-Blackler (2004) on the quality of *halal* clarifies how social factors influence consumers' quality perspectives and producers' production activities and indicates that a combination of ethnic identification, commercial competition, religious ambivalence and state regulations create a perception of quality which is recognised, endorsed and socially valued. Teil and Hennion (2004) point out, judgements about taste, which are always used by consumers to define quality, are made under certain contexts, as *"taste becomes a consequence of the practical performance of tasting, and that taste, or what tastes good, is not in any sense given or static. Rather taste is constantly disputed among amateurs, who are obliged to consider the views of others in the community, change their minds, develop their competences, talk about the activity and justify their judgements"* (Harvey et al., 2004 p.8). Weatherell et al. (2003, p.242) believe, *"practical, nutritional and socio-cultural dimensions are critical to understanding them (food products) as items for exchange, usage and consumption"*. Also, Murdoch and Miele (2004, p.159) note that, quality is not a fixed set of characteristics, rather it *"is fluid and malleable, and tends to shift as a good passes from one social context to another"*.

Thirdly, the economic aspect is also critical when analysing agrifood quality. Marsden (2004) emphasises the importance of economic competition in producing "quality"

food products. Although providing quality features usually requires an investment in consumers' requirements and hence involves an increase in costs, quality products can generate profit which is the fundamental motivation to stimulate producers to produce "quality" agrifood products for the market (Marsden, 2004; Tregear et al., 2007). Meanwhile, economic factors, such as price and income, also help consumers to evaluate "quality" in their purchasing decisions. For instance, price has become a way in which quality can be evaluated, because the price of "quality" food products is usually higher than low quality goods (Ilbery and Kneafsey, 2000b). For both producers and consumers, quality cannot be discussed without mentioning economic factors.

Furthermore, other factors, such as organisations, technology and nature also influence agrifood quality in different ways. For example, de Roest and Menghi (2000) investigate the production processes of Parmigiano Reggiano cheese in Italy. To generate products with certain quality characteristics, all producers have entered *"a collective agreement"* regulating production activities to form unique qualities. Mansfield (2003a) analyses the international surimi seafood industry. He indicates that the nature of the biophysical and production technology is very important in the quality assembly process. The research of Ulin (2002) shows the technology and cultural co-influence on quality forming processes. For example, Bordeaux wine producers refused to adopt the science of wine-making (oenology) because traditional processing methods are believed to be a critical factor in producing quality wine and technical interventions may present a modern quality image to the market. The influence of nature can also be found in the research of Macnaghten and Urry (1998) and Murdoch et al. (2000).

Many factors involved collaboratively shape agrifood quality. Marsden and Arce (1995) and Atkins and Bowler (2001, p.197) suggest an alliance perspective — a *"network"* to better understand agrifood quality. Similarly, Goodman (2003) and Watts et al. (2005) also indicate that agrifood quality should be treated as a form of *"collective action"* and that quality perceptions can be understood as a *"relational materiality"* produced by different actors' exchanges and interactions within certain contexts. In other words, agrifood quality should be understood within different co-operation models between various producers (such as farmers, processors, traders

and retailers) and consumers based on certain government regulations and enforcement, cultures, economic context, etc. Therefore, a conceptual framework for agrifood quality is presented here to help understand agrifood quality (Figure 2.1):

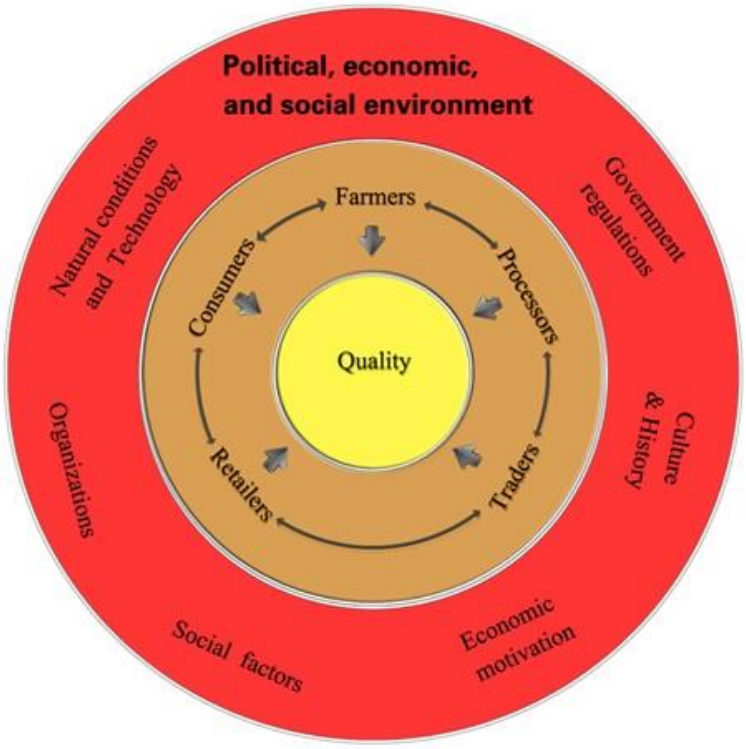

Figure 2. 1: The conceptual framework for agrifood quality

According to this conceptual framework, the agrifood quality is impossible to be defined based only on production or consumption aspects but can be understood or analysed through exploring inter-relationships between different actors within quality forming processes based on a given context. To examine main factors involved in the "context" category and clarify the "inter-relationships" between actors, the following parts will start to explore the theory and the approach underlying this conceptual framework.

2.3.3 The foundation of conceptual framework: socio-economic theory

In the middle of the 19th century, scholars found that producers were mostly motivated by profit to produce their product (e.g. Found, 1971; Thomas and Huggett, 1980). For example, farmers preferred to make their production decisions by calculating their inputs and estimating their economic rewards. Producers are assumed to be totally

rational and economic factors *"set limits within which farmers are able to operate"* (Tarrant, 1974 p.11). With economic stimulation, the agricultural sector focuses on surplus value, runs as a *"relentless mass of the capitalist machine"* (Whatmore and Thorne, 1997 p.290), and leads to *"a restructuring of production in order to maintain acceptable levels of profitability"* at a global level (Cloke et al., 1990 p.14). Within the "restructuring" process, different actors co-operate for long-term planning, growth, and investment provision, and finally present agrifood products filled with industrial quality characteristics. The giant fast food franchise, McDonalds, is a perfect example of this. Economic theory focuses on economic rationality to explore the interactions between various actors but ignores the consequence that capital flows may lead to unbalanced development between different areas and groups (Robinson, 2003). For example, suitable natural environments (such as the plain land with warm climate) may attract capitalist investment and the farmers located in this area may thus prosper. Conversely, as it is difficult for some areas with unfavourable environments (such as mountain areas with cold weather) to maintain their investment, the income of those areas may decline. This situation has made an underdeveloped "area" or "class" (e.g. small-scale farmers) struggle for their rights (such as adopting trade protectionism and setting specific quality standards) and asks for capital redistribution, which introduces a political dimension into the agrifood research (Robinson, 2003 p.37).

As traditional economic theory excludes political factors, it is necessary to find a wider realm to explain how the agrifood quality developed under certain political contexts. Political economy theory is therefore introduced, where the political dimensions provide a structure or context within which the economy operates (Cloke et al., 1990). It suggests that if the relationships between different actors involving quality development processes are to be understood, then *"it is necessary to examine the nature of the economy and the power relationships that it sustains"* (Mannion and Bowlby, 1992 p.15). Political economy theory has been widely adopted in the agricultural sector and agrifood quality analysis (e.g. Marsden, 1988; Cloke et al., 1990; Bonanno et al., 1994) because it is very useful for analysing various activities by exposing *"the new connections and relationships that surround and shape food commodities"* (Murdoch et al., 2000 p.112). However, although Robinson (2003, p. 37) indicates that the *"division of property ownership, both land and capital; the structure and conduct of relationships between employers and workers; the structure*

and conduct of relationships between the sexes and between different ethnic groups; political groupings; and the organisation of state power" are all included in the political economy sphere, many researchers (e.g. Bowler and Ilbery, 1987; Fine, 1994; Castree, 1996) argue that the term "political economy" in the agricultural sector is applied rather loosely. Most of the time, it only *"refers to the management of the economy by the state"* (Robinson, 2003 p.36).

In general, after the Second World War, the history of global agriculture has become political history as the great impact of the state on agricultural activities (Morgan et al., 2006). For example, French government planning had a great influence on agriculture that ranged from farming regions of large-scale, specialised cereal production in the north, through to small scale livestock farming in the Massif Central, to intensive wine, fruit and vegetable production in the Mediterranean south. And, the government of the former Soviet Union controls its agriculture sector from variety to quantity and from input to price. Indeed Yarwood (2002, p. 13) describes, *"decisions about which crops to grow or which farming practices to follow are influenced more by government ... policy than local farming conditions or local market forces"*. Specifically, agrifood quality is also unavoidably influenced by the state. The CAP in Europe, for examole, defines a minimum level of quality, below which products have to be removed from the market. As Whatmore et al. (2003, p.390) argue that, *"without too much exaggeration, 'quality' has become the hallmark of policy shifts and political realignments"*. Actors within the agrifood production sector (e.g. farmers and processors) have to make sure the quality of their agrifood products is above the state baselines.

The political economy theory crosses from purely economic to the broader political sphere and provides a greater understanding of the agrifood quality. However, this theory has its limitations. First of all, the political economy theory is still over-reliant upon economic rationalisation and the political dimensions are only evaluated as a structure or context (Buttel, 1996). For example, under the driving force of the capitalist economy and market competition, political economy researchers can predicate that an agricultural processing company prefers to cut its costs rather than improve certain quality characteristics of its products to gain a competitive advantage in the market. Just like Porter (1985) indicates, if a firm can produce products with

similar quality characteristics but more cheaply than its competitors, it is more likely to survive and make profit in a competitive market. The costs that a processing company cut could have a dramatic influence on farm-gate prices and hence lead to mass production based on very basic quality standards, because *"mass produced commodities cheapen the inputs"* (Fine, 1994 p.521). It fails to consider the differences between people and places. Therefore, Buttel (1996) criticises political economy theory as not being suited to explain the production activities of family-run businesses because farmers and farming are culturally constructed and farmers are not always focused on maximising economic rewards. Cain and Hopkins (1993) argue that even though capital internationalisation fuels mass industrial agrifood products to the world market, the globalisation process are still based on socially, economically and politically uneven ground. For example, McDonalds has to avoid producing beef hamburgers in India because of local specific religions. And, Tregear (2003) proposes that all "production" aspects, including labour, trade, quality, technology, mechanisation, and the behaviour and motivations of actors, cannot be separated from socio-cultural relationships, such as local production history. Socio-culture dimensions, which are critical ingredients involved in the agrifood quality forming process and have a great impact on quality judgement, are often disregarded by political economy researchers (Robinson, 2003 p.42).

Secondly, in political economy theory, explanations of economic activities are disproportionally focused on the production aspect at the expense of consumers' preferences and buying power (Tovey, 1997). Consumption is *"neglected, under-theorised, treated as an exogenous structural category"* (Goodman and DuPuis, 2002 p.9). Nevertheless, production and consumption are like two-sides of the coin. Both producers and consumers impact upon the quality forming process together. Even the founder of political economy theory, Marx (1958 [1970]), realises that although production is the predominant moment, it is determined by the *"other moment"*. Producers, who only focus on production aspect and overlook consumers' quality requirements, cannot survive in contemporary saturated markets (Kotler and Keller, 2006). As political economy theory is still too focused on economic rationalisation, a new theory which incorporates the socio-culture dimension and consumers' requirements is required to examine agrifood quality.

Investigating the agricultural sector, researchers found many social factors, such as complex social hierarchies (Warde, 1997), culinary habits (Mennell, 1996), changing special interests (Beardsworth and Keil, 1997) and membership of kinship or social groupings (Fischler, 1988), all having profound influences on agricultural activities as well as agrifood quality. Firstly, consumers are living in certain social contexts (Morris and Young, 2000). The consumption of agrifood is not only intensely personal relating to age, gender, and personality but also profoundly social (Loureiro and McCluskey, 2000). As the research of Parrott et al. (2002) shows, consumers' quality criteria in southern Europe are very different from northern Europe because of cultural differences and long-established traditions. For consumers, *"flavour, texture, nutritional qualities and other biological properties are underplayed in favour of social context"* (Atkins and Bowler, 2001 p.5-6). Secondly, *"economic behavior tends to become more embedded in a more complex web of social relations"* (Block, 1990 p. 53). Block (1990) argues that the market only exists when relatively independent actors come together to make economic transactions, but *"transaction ... is social in the broader sense of the term: congealed into every market exchange is a history of struggle and contestation that has produced actors with certain understandings of themselves and the world that predispose them to exchange under a certain set of social rules and not another"* (p.53). In other words, not only consumption but also producing and trading activities are embedded in social practices (Granovetter, 1985; Winter, 2003a). Social embeddedness is *"a convenient shorthand for social ties, assumed to modify and enhance human economic interactions"* (Hinrich, 2000 p.296). Quality forming activities are all embedded in and mediated by a complex and extensive web of social relations. With further consideration of the social aspects, socio-economic theory is introduced into this research stressing that *"markets are socially structured institutions, infused with cultural norms and meaning"* (Hinrich, 2000 p.296). As Callon (1998) implies that there is an ongoing "entanglement" between economic and social relations whilst Krippner (2001, p.800) indicates that agricultural activities are *"complex combinations of multiple dimensions of social life"*.

Agrifood quality has long been recognised as being influenced by social, political, and economic factors (Morris and Yong, 2004). Murdoch and Miele (1999, p.469-470) conclude that food quality not only links to efficiency and cost to producers, but also

relates to *"traditions, tastes and food cultures"* to consumers. Sage (2003) points out that the government defines the minimum level of food quality in the market by its objective biological, chemical and physical standards. And, Harvey et al. (2004, p.193) argue that quality is a multidimensional and contextual concept within which *"the variety of different attributes"* should be considered. Based on these researchers, socio-economic theory is obviously more suitable to analyse agrifood quality as it can involve more factors into the research and thus generate more reliable results. However, although socio-economic theory can help analyse agrifood quality, how various economic, social and political factors influence the agrifood quality forming process remains unknown. The role of these factors will be examined in the following part.

2.3.4 Competing perspectives in the agrifood system: chain and network approaches

In the 1980s and 1990s, with growing interest in economic globalisation, the commodity production processes became very complex. Gereffi et al. (1994, p.1) describe, *"in today's global factory, the production of a single commodity often spans many countries, with each nation performing tasks in which it has a cost advantage"*. By tracing the development of global commodity transactions to establish a relatively coherent paradigm to examine this global commodity system, researchers highlighted the links between the production, distribution and consumption of commodity products as "chain" relationships (Maye and Ilbery, 2006), which Friedland et al. (1981) call a "commodity chain", and Allacre and Boyer (1995) call a "supply chain".

By examining the vertical separation of a given product's trip from design and input to consumption, the chain approach highlights "*how capital intervenes at as many points as possible between production and consumption in order to maximise opportunities for profit and control"* (Lang and Wiggins, 1985 p.53). But, based on the political economy theory, this approach unavoidably not only fails to *"consider how buyers may control and condition the economic fortune of 'the periphery'"* (Hughes and Reimer, 2004 p.3) and treats consumption as a simple outcome of production activities (Fine, 1994) but also neglects social influences and takes social life as a "purified" category having a simplified influence on the act of purchasing rather than producing (Goodman, 2002). Neglecting consumption aspects and social

factors make Cook et al. (1996) criticise the chain approach as only emphasising large-scale agricultural transactions and overlooking the cultural richness of regions. Busch and Juska (1997) blame an over-reliance on political economy theory making it difficult for the chain approach to reflect the increasing complexity of the agricultural sector as a whole, in which social, economic and political interactions hold different actors together. Jackson et al. (2006, p.132) also accuse the chain approach of being *"too linear, too mechanistic and too focused on the simple metric of length as opposed to other issues such as complexity, transparency or regulation"*. These researchers clearly indicate that, even though the chain approach takes researchers beyond the farm-gate to explore the agricultural sector more systematically, its ability in cooperating consumer and sociological factors into the research is limited (see also Krippner, 2001). As both consumers and social factors cannot be ignored when examining agrifood quality, the agrifood quality study has to turn *"towards a more socially inclusive rather than reductionist approach"* (Marsden, 2000 p.22).

Facing the limitations of the chain approach, some agricultural researchers' interest shifted to commodity circuits (e.g. Cook et al., 1996; Cook and Crang, 1996), which follow the commodity from production, processing and consumption with non-linear *"circuits"* rather than a linear chain (Leslie and Reimer, 1999), and examine *"the culturally inflected dynamics of relationships between moments of production, circulation and consumption"* (Huge and Reimer, 2004 p.3). As researchers believe the commodity transformations (in both meaning and form) take place at different "moments" which are inhabited by different social/cultural practices (Johnson, 1996; du Gay et al., 1997), the food commodities are seen as symbolic of the interactions in society through *"the hands they are passing"* (Atkins and Bowler, 2001 p.10). The special research attention is thus paid to *"the system of social division in which each moment is located"* (Leslie and Reimer, 1999 p.406). However, as this approach focuses on socio-cultural influences with *"more contextual understandings of meanings attached to goods in different times, places and phases of commodity circulation"* (Huge and Reimer, 2004 p.3), it has less interest in the connections between producers and consumers and thus fails to systematically incorporate interactions between different factors into a wider framework. For understanding agrifood quality under complex contexts systematically, an appropriate approach is still required.

The network approach based on socio-economic theory, was initially adopted to interpret agriculture globalisation and how the global is related to the response of local actors engaged in the production and distribution processes (e.g. Marsden and Arce, 1995). As this approach encompasses a wide range of influential factors in the agricultural sector and explains the interaction activities successfully, it is accepted by more and more national and local agriculture researchers (Marsden, 2000). According to Callon (1991, P.133), a network is a *"coordinated set of heterogeneous actors which interact more or less successfully to develop, produce, distribute and diffuse methods for generating goods and service"*. Different from linear relationships, the network approach examines ways in which human and non-human entities (e.g. contract, regulation, and agreement) are bound into alliances and indicates that the impact of any actor is dependent upon its interaction with others (e.g. nature, social, technology, human organisation, and government) (Atkins and Bowler, 2001). Any phenomenon cannot be examined appropriately in isolation from the other factors making up the agrifood network (Lockie and Kitto, 2000). It avoids one-dimensional linearity and economic links of commodity circulation and focuses on *"how different kinds of nodes (people, firms, states, places and organisation) are connected to one another in complex and multi-stranded ways"* (Hughes, 2000 P.178) to obtain a comprehensive understanding of various activities within the agricultural sector. Based on the network approach, the agrifood quality research can be extended to include numerous human or non-human actors (e.g. consumer groups, science, technology, and nature), who are connected through both *"vertical commodity exchange relationships"* and *"the multi-directional flows of information and materials that variously support these exchange relationships"* (Hughes, 2000 p.178).

But, some researchers (e.g. Latour, 1987; Murdoch, 1994, 1997a; Marsden et al., 1996; Goodman, 1999, 2001) are critical, and state that over a long period of time, science, technology and nature, these non-human factors have not been considered as a vital part of research on networks. While socio-cultural factors have increasingly been the focus of researchers' attention, those non-human actors, especially nature, are also believed to be critical factors influencing agrifood quality. As Page (1996, P.382) indicates that agrifood quality is always *"conditioned by the natural basis"* and is locally and regionally based, even though the capital always seeks to outflank nature.

To confirm the importance of non-human actors, especially "nature", many scholars turn to Actor Network Theory (ANT) examining agrifood quality. For example, based on the ANT approach, Busch and Juska (1997) explore the impact of technoscience on the quality construction process of rape seed, and Stassart and Whatmore (2003) analyse the Belgian co-operative Coprosain and the changing meanings of quality of its meat product. The ANT approach not only explores *"the same state agencies and similarly large institutions that other approaches to food studies have focused on"*, but also concentrates on *"the status of natural and technological entities within agro-food networks"* and focuses on *"how rural nature is incorporated into food sector studies"* by weighting non-human actors and human actors with an equal importance which differs slightly from the network approach that is mainly based on human actors (Lockie and Kitto, 2000 p.12; Marsden et al., 1996; Murdoch, 2000 p.409). As the agrifood quality is tightly related to the nature and technology aspects, the ANT approach is believed to hold more potential in understanding agrifood quality during the 1990s and the beginning of the 21st century.

However, the ANT approach has its own unavoidable limitations which make some important initial supporters of ANT, such as Marsden, Murdoch and Goodman, question this approach. First of all, how to treat both natural and technology objects and social subjects equally is a problem. Latour (1983, quoted in Murdoch 2001) admits that it is impossible for sociologists to have a full understanding of science unless they study the area of complex ecologies, which Murdoch (2001, p.116) criticises as *"neither feasible nor necessary"*. Benton (1994) describes it as a "daunting" task to do a whole scale combination between sociological categories and natural categories, because this requires sociologists to describe and explain the relationship between science, technology and nature. Based on the research of Burningham and Cooper (1999), Murdoch (2001) also asks *"would not a truly ecological sociology necessarily need to revisit the distinction between the social and the natural so that the boundary between the two domains were, in some sense, dissolved?"* Unsurprisingly, most sociologists prefer to analyse agricultural activities based on socio-economic factors. It is very difficult for them to embrace interdisciplinary thinking which is the ambition of the ANT approach. As Goodman (in Goodman and Dupuis 2002, p.16) admits that *"current efforts to use the resources of actor-network theory … fails to meet this integrative challenge"*. Secondly, the idea

that non-humans actors play central roles in social networks (Lockie, 2002) is debatable. Marsden (2000, p.23) points out that *"it is the social actors who are the only actors who have the power to endow different types of 'actor status' on to natural properties"*. Nature is a socially constructed category, not an entity with full active properties, and always shaped by human intentions. For example, Brazilian farmers work with scientists to change the "natural" content of soil for planting potatoes and agrifood scientists have long been testing and altering agrifood DNA by genetic engineering to change certain quality characteristics of agrifood products. It is better to define nature with socially constructed "environmental" issues rather than "biological" issues (Soper, 1995; Bloor, 1999; Murdoch, 2001). The agricultural sector should be understood as social composites of the various (natural and social) factors (Whatmore and Thorne, 1997). Thirdly, the ANT approach may help and guide researchers to consider what to study, but *"without making any assumptions about how we interpret what we eventually find"* (Marsden, 2000 p.24). For example, it may be easy to explain how human actors possess *"powers of reflection"* to non-human actors and thus change certain agrifood quality characteristics, but it is very difficult or even impossible, to describe how non-human actors provide motivation forces for human actors' actions (Murdoch, 2001). After realising the limitations of the ANT approach, Marsden (2000, p.22) proposes, *"whether it is possible that other approaches, in addition to ANT, are also worthy of consideration in achieving a better grasp of the hybridity of social and natural life?"*. And, Murdoch (2001, p.111) emphasises, *"[W]hile various attempts have been made to link nature and society more closely together within environmental sociology, it now appears as though there is a general acceptance of rather traditional divisions between these two domains"*.

As "nature" part cannot be incorporated into agricultural research by social scholars appropriately, the network approach which focuses on human agency is believed more suitable to do this research, although the important influence of "non-human" factors on agrifood quality forming processes has been recognised. However, as the network approach tries to *"deconstruct"* the agrifood quality by examining *"how relations amongst people and things might be imagined, assembled and translated to effect co-ordination at a distance"* (Larner and Le Heron, 2002 p.417), the specific relationships between actors within agrifood quality construction processes still need to be clarified.

2.3.5 Power relationships involving agrifood quality forming processes

From a marketing point of view, quality is not a condition inherent in a product, but constructed in order to sustain a collective comparative advantage in the market (Renard, 2005). If there is no *"cognitive paradigm"* (co-ordinated with the same quality dimensions in mind) constructed by the actions of various actors, quality will never have fixed features and will become fluid and malleable in the market (Callon et al., 2002 p.199). The direct result will be that quality can never be forecast and long-distance trading will never be maintained. In order to establish a stable transaction system, different quality opinions of actors in the network must be mediated by someone or something to fulfill certain quality characteristics (Busch and Juska, 1997 p.692). After choosing the socio-economic theory and network approach to analyse agrifood quality, how various actors frame or bundle together to develop agrifood products with certain quality characteristics has to be considered.

According to Whatmore and Thorne (1997, p.294), to develop durable quality in the network relies on *"strong fabrics of social organisation at all points in the network, making the patterning of social and environmental practices in particular times and places integral to the business of network enrolment"*. Law (1994, p.40) and Whatmore and Thorne (1997, p.293-294) use the notion of *"modes of ordering"* to describe the relationships that link producers, various organisations and consumers into a network, and indicate that *"modes of ordering"* are both narrative, *"ways of telling about the world ... what used to be, or what ought to happen"*, and material, *"acted out and embodied in a concrete, non-verbal, manner in a network"*. Latour (1987) prefers the word *"power"* to describe such relationships and how actors co-operate or otherwise with each other. He defines power as a relationship performed by mobilising, stabilising and combining people, actions or events to fulfill certain functions in a stable network.

According to Murdoch (1997b), quality is assembled by power relationships between various actors. But, based on income, prestige and status, actors are differentiated which leaves space for some actors to *"dominate the network by defining what form and character the commodity should take, and how the income earned should be distributed*" (Busch and Juska, 1997 p.702). The co-operation activities between

actors may thus be biased in favour of the stronger party and the coercive power relationships, in which the behaviours of a dominated actor align with the dominant actor's will, may appear in the network (Morgan and Murdoch, 2000). Such "coercive power relationships" may express in different ways. Based on Lockie (2002, p.283), power to influence another agent does not necessarily depend on the ability to control them, but may be based on attempts to *"influence either the environment in which they make decisions … or the ways in which they are likely to understand and respond to that environment"*. Allen (2003, p.196) also argues power often presents itself *"through a variety of modes"*, such as the arrangement which can be used to define what counts as legitimate or illegitimate statements and practices, and the authority which *"implies that the more direct the presence, the more intense the impact"* (p.149).

However, it should be noted that power is *"a relational effect of social interaction"* (Allen, 2003 p.2). It is a consequence rather than a cause of action (Latour, 1987) and should not be considered to be in the hands of any actor. Of course, actors with certain resources, such as knowledge, information, and capacities, may put themselves in a strategic position to provide their best interests and distribute economic benefits in their own favour and therefore shape power relationships within networks. For example, holding huge economic buying power, large-scale retailers may set quality standards by themselves and therefore control the whole supply system by forcing producers to produce agrifood products according to these standards. It is not a wise idea to analyse power relationships without taking into account the fact that resources and capacities are often imbalanced in the network. But, the distribution of power resources does not necessarily correspond to the distribution of power (Dahl, 1989). The effects of using resources and capacities *"may be modified, displaced or disrupted depending upon the relationships that come into play"* (Allen, 2003 p.97). For example, the research of Juska and Busch (1994) and Juska et al. (2000) shows that power is negotiable and shifts through time in the network. As power is unstable and reversible in the network (Lockie, 2002), it is very dangerous to see power centered on some actors with certain resources because it may lead to the opinion that the structure within certain networks will never be changed and actors with an unequal position and with fewer resources and capacities will never have a chance to compete for their power. Allen (2003, p. 38) proposes that *"power is an effect which*

is produced through the actions of groups or individuals, then it is not something which may be held in reserve". Power is not structurally given based on resources or abilities or capacities but involved with interaction and interplay of various actors (Lockie, 2002).

In order to present products with consistent quality into the market, actors have to co-operate and stabilise their joint actions. Co-operative activities imply a process of setting rules involving interpretation and negotiation (visible or invisible, conscious or unconscious) between actors about who define quality, how norms and criteria are set, and who assess whether products conform to these norms (Mansfield, 2003a, b; Renard, 2005). Quality thus cannot be examined appropriately in isolation from the power relationships (Fine et al., 1996). All quality forming activities shape and are shaped by power relationships in the network (Morgan and Murdoch, 2000; Lockie, 2002; Renard, 2005). As *"it is not resources but the exercise of power which actually puts us in place"* (Allen, 2003 p.194), the objective of agrifood quality analysis within the network approach should not be emphasising who has resources and the potential to exercise power, rather who exercises power in fact and how the power operates, through which quality is constituted and presented (see also Murdoch, 1995; Lockie and Kitto, 2000; Dicken et al., 2001; Csurgóet al., 2008). Therefore, revealing power relationships between the main actors within the network is becoming a critical issue to explore and understand agrifood quality.

2.4 Quality characteristics and power relationships across different agrifood systems[6]

2.4.1 Industrial agrifood system

Traditionally, the farmer, who sells small-scale agrifood products into the market individually with flexible quality characteristics, is the only actor involved with agrifood production. However, in a contemporary global market, various human and non-human actors, such as wholesalers, retailers, governments, and modern technology, are engaged in the agricultural production sector to improve productivity and present agrifood products with stable quality characteristics. To mediate various

[6] As the notion of "industrial agrifood system" was used very widely by previous researchers, the word "system" is used here instead of the "network"

production activities, several agreements, or "conventions", appear in the agrifood sector as results of power competitions between different actors (Lewis, 1969; Salais and Storper, 1992; Biggart and Beamish, 2003; Morgan et al., 2006).

Lewis (1969) proposes that conventions are solutions to co-ordination problems within an "action framework". He defines conventions as a broad group of mutual expectations. Similarly, Salais and Storper (1992, p.171) indicate that conventions are *"practices, routines, agreements, and their associated informal and institutional forms which bind acts together through mutual expectations"*. Biggart and Beamish (2003, p.444) define conventions as *"shared templates for interpreting situations and planning courses of action in mutually comprehensive ways that involve social accountability, that is, they provide a basis for judging the appropriateness of action by self and others"*. Ponte and Gibbon (2005, p.7) describe conventions like *"a system of reciprocal expectations about the behavior of others"*. According to these researchers, conventions are *"sets of standardised, codified rules and norms that impose conventions across a range of diverse contexts"* (Murdoch and Miele, 1999 p.471) which restrict individual's activities and allow *"production and exchange to take place according to expectations"* (Storper and Salais, 1997 p.16).

The agrifood system includes many types of conventions which cover any form of coordination in economic, political, and social life. For instance, Thevenot et al. (2000) identify *"market performance"* conventions which are based on the economic value of goods and services in a competitive market; *"industrial efficiency"* conventions which lead to a coordination of behaviour in line with long-term planning, growth, investment, and infrastructure provision; *"civic equality"* conventions which take the collective welfare of all citizens as the evaluatory standard of behaviour; *"domestic worth"* conventions, which justify actions with reference to local embeddedness and trust; *"inspirations"* conventions which judge actions based on passion, emotion, or creativity; *"public knowledge"* conventions which refer to recognition, opinion, and general social standing; and *"environmental"* conventions which depend on environmental influences to consider collective actions. In face of so many conventions, based on economic theory, Storpers and Salais (1997) identify four differing productive worlds in the global agrifood sector, namely the industrial world, the market world, the world of intellectual resources, and the interpersonal world.

They also indicate, in today's mainstream global agrifood market, under the driving force of the capital economy, most agrifood products are produced and traded within the industrial world, which distributes low-price industrial standardised agrifood products to the market.

Within this industrial world, giant agrifood companies and large-scale retailers, especially big supermarket buyers who have superior efficiency in making agrifood products widely available and accessible to targeted consumers, have become quality conventions makers. Heffernan et al. (1999) describe large-scale retailers as an "hourglass", whereby thousands of farmers with high output volume feed millions of consumers through a highly centralised marketplace. Huge buying and distribution ability empowers large-scale retailers to set and promote their own quality conventions which farmers and most processors have to agree with in order to get shelf positions in the market (Renard, 2005). For example, by the mid-1990s, supermarkets effectively set the quality standards in the UK market for fresh vegetables. Farmers or producers hoping to enter or stay in this market have to invest to ensure their vegetable products meet set quality norms (Ngige and Wagacha, 1999). There has undoubtedly been a shift in power when defining quality from farmers to large-scale retailers (Tansey and Worsley, 1995; Millstone and Lang, 2003). By setting quality conventions and requiring predictable and sustainable consistency with respect to quality from suppliers, large-scale retailers place strict control on quality forming processes (Marsden et al., 1998; Atkins and Bowler, 2000; Millstone and Lang, 2003).

Quality conventions set by large-scale retailers normally include measurement standards or grades and definition standards (norms) because standardisation has long been believed to be central to large-scale industrial production and economic effectiveness (Renard, 2005). Schaeffer (1993, p.75) and Murdoch and Miele (1999, p.468) indicate that uniformity *"is functional to high volume production and repeat sales"* and *"it is easier to make uniform products with a given technology and relations of production than variegated ones"*. For large-scale retailers, these physical quality standards with measurable characteristics can not only increase productivity and low cost but also provide clarification within exchange processes and thus bring a high economic reward (Morris and Young, 2000; Mansfield, 2003b). By contracting

common quality goals which include sets of physical measurable characteristics that can be worked towards by different actors, agrifood products can be produced a considerable distance from its eventual consumption, even though buyers and producers may "never meet face to face" (Bonanno et al., 1994). The large-scale long distance global trading and agricultural industrial transfer between countries are thus becoming possible. However, as these quality conventions are set by large-scale retailers in their favour, they may bring disadvantages to other "less powerful" actors in the system, such as producers and consumers. Firstly, even though physical standards can overcome deviations between actors and enhance a high financial reward by mass production, Salais and Storpor (1992) criticise the industrial agrifood system as becoming an *"industrial world"*. It means, agrifood quality is defined by "industrial" or "institutionalised" conventions, which serve to assure that production codes are met, despite the ecological and socio-cultural conditions of production that are potentially quite different around the world (Freidberg, 2003). Farmers and processors are therefore treated as "inputs" without power and rights and receive a low income. Secondly, the aim of quality conventions is to make different things uniform, which often imply a lowering of value (Schaeffer, 1993). As large-scale retailers prefer to concentrate on efficiency, cost and price, rather than other actors' preferences (such as consumers) to configure quality standards (Whatmore, 1994), presenting agrifood products with "basic" quality standards to mass markets is the unavoidable result in this industrial system (Murdoch and Miele, 1999).

In industrial conventions agrifood sector, the term "quality" has been appropriated under the economic stimulations of "powerful" actors (Ilbery and Kneafsey, 1999). Unequal power relationships which exist between numerous small-scale producers and individual consumers and relatively few dealers, turn producers into "inputs" and offer agrifood products with "basic" quality standards to consumers.

2.4.2 Consumers' quality re-orientation

During the second half of the 20th century, the industrial agrifood system focused on "efficiency" to produce agrifood products, in conjunction with growth in output and a decline in labour requirements (Allanson, 1992). Most consumers enjoyed a rise in mass agrifood products in the market which were low cost, convenient, consistent, reliable, and predictable (Harvey et al., 2004). However, from the late 1980s, for a

number of reasons, more and more consumers started turning to perceived "quality" criteria to choose what they ate.

Firstly, a number of health and safety concerns with agrifood quality have attracted consumers' attention. Accompanied by the expansion of the global agrifood market, quality is institutionally regulated and mainly reflecting the interests of large-scale retailers and giant agrifood companies (Goodman and Watts, 1997). For several decades, this industrial system distributed standardised agrifood products through grading and classification schemes which specify objective and measurable technical parameters and have met with broad social support (Renting et al., 2003). Consumers have come to rely on *"common definitions of quality"* or *"uniform standards"* to judge agrifood quality (Murdoch and Miele, 1999). However, in the last two decades, food crises such as BSE, Salmonella, chemical contamination and concern over genetically modified agrifoods, have risen in the industrial agrifood sector. The succession of safety problems has actually changed some consumers' opinions and challenged their confidence in mass agrifood products supplied by large-scale retailers and giant agrifood companies, even though these retailers/companies claim that all their agrifood products are "high quality" foodstuffs as a consequence of the strict safety standards set by them and imposed upon their suppliers (Goodman, 1999). Meanwhile, health concerns also drive many consumers to avoid buying industrial agrifood products. When British consumers were asked to describe the *"most important thing for you personally in determining how happy or unhappy you are in general these days*", 59% of respondents said *"health"* (Worcester, 1998). Good health is not just determined by medicine or hospitals. More and more consumers now believe the materiality of agrifood products is a critical part of being healthy, and agrifood ingredients are very important for self-medication and disease prevention (Valentine, 2002). As Fischler (1988) points out, *"we become what we eat"*. But, some researchers have shown that ingredients within industrial agrifood products are questionable. For example, Benbrook et al. (2008) found the content of secondary nutrients and vitamins in conventionally produced fruit and vegetables are lower than organic produce. The agrifood safety crises and the loss of gene pools make some consumers realise that, in the industrial conventions system, quality is treated as a marketing function by producers and what they eat into their stomachs are industrial properties. As Beck (2001, p.273) states, *"many things that were once considered*

universally certain and safe and vouched for by every conceivable authority [e.g. beef] turn … out to be deadly", some consumers no longer tend to unconditionally believe or trust the industrial agrifood system (Renting et al., 2003). For these consumers, industrial conventions distribute the "bad" rather than the "good" into the market (Beck, 1992). With safety and nutritional considerations, there is an increasing demand for "quality" agrifood products (Henson, 1995; Dunant and Porter, 1996; Shine et al., 1997).

Secondly, rising incomes enable some consumers with an opportunity to purchase quality agrifood products rather than "basic" industrial ones. The price of "quality" agrifood products in the market is always relatively higher because providing acceptable quality features usually requires an investment on consumers' requirements and hence usually involves increased costs (Juran and Godfrey, 1999; Mohan, 2002). Normally, consumers with a lower disposable income cannot afford "quality" foodstuff. For example, an investigation (Donkin et al., 1999) found that a healthy diet absorbs over 50% of the income of a single person living on state benefits in London. Dramatically increasing consumers' incomes over the last decades[7] has become a critical factor that leads to the growth of quality demand in agrifood consumption (see also Morgan and Murdoch, 2000).

Thirdly, the expansion of the middle-class around the world has led to more and more consumers purchasing "quality" agrifood products (Watts et al., 2005). Murdoch et al. (2000) point out that most quality consumers *"tend to be well-educated, middle-class professionals"* who perceive themselves to be more *"at risk"* than others (see also Dunant and Porter, 1996; Nelson, 2004). Featherstone (1987) also indicate the middle-class prefer to consume agrifood products with certain quality characteristics, which can help them confirm and portray their social lifestyle[8]. So, even during the years of agrifood shortages in the West, from 1939 to 1945, the sale of luxury agrifoods such as Scottish Whisky or French Wine continued to rise (Winter, 2003a). For middle-class consumers, quality agrifood products are *"consumed both materially and symbolically"* (Lockie and Kitto, 2000 p.15-16). As Bell and Valentine (1988)

[7] The world average Gross National Income per capita rose from 5,120 US dollar in 2001 to 9,097 US dollars in 2010 (World bank, 2003, 2011a)

[8] Agrifood products that are often shared and eaten with others, such as business meals and family celebrations, involve the creation of meaning and identity in society (see also Bell and Valentine, 1997; Lockie, 2001)

argue, we are what we eat, and what we eat produces who we are. With the increasing numbers of middle-class consumers, the market for quality agrifood products, such as specialist cheeses or smoked meats, is growing (Winter, 2003a).

Facing standard industrial agrifood products, more and more consumers have safety, health, and nutritional issues. Growing quality demand is stimulated by consumer anxiety, rising incomes, and the self-identity requirements of the middle class. Although individual consumers may never have the ability to set parameters such as rights, obligations and rules to govern the quality building process (Mulgan, 1989), consumers can still exert their "purchasing power" by influencing other actors' quality construction activities. Over the last three decades, producers have been pushed to become more market-oriented under strong marketing competition, and respond more proactively to consumer demands. With growing consumer interests in "quality" agrifood products, some producers have presented new agrifood quality norms and standards which are very different from industrial quality conventions into the market in order to obtain higher financial returns (Guthman, 2004). Consumption activities do have significant "power" to change society (Allen and Kovach, 2000; Guthman, 2008).

2.4.3 Alternative Agrifood Networks (AAFNs)

The agrifood sector, especially in developed countries, is controlled by giant agrifood companies and large-scale retailers mainly through quality conventions (Goodman and Watts, 1997). Most producers around the world are required to meet standardised protocols to enter the market including demonstrating sets of quality characteristics that can be measured and standardised. Standardised conventions reduce local and seasonal shortages, increase production effectiveness, decrease the market prices of agrifood products, and generate an *"industrial world"* (Storper, 1997) in which minimum quality standards have been *"central to economic approach and their understanding of markets and competition"* (Allaire, 2004 p.61). As *"a unilateral translation of socio-material value from field to plate"* (Whatmore, 2002 P.123), the industrial conventions agrifood system has a primary emphasis upon economic efficiency, but partly overlooks the consumer demand.

Growing quality demand has had an increasing impact on the agrifood sector

(Murdoch et al., 2000). Appadurai (1996, p.68) indicates that *"the small habits of consumption, typically daily food habits, can perform a percussive role in organising large-scale consumption patterns"*. According to modern marketing theory, consumers rather than producers are the driving force in the market (Kotler and Keller, 2006). Quality consumers not only have the ability to pursue quality agrifood products but also are able to dominate the agrifood sector by making their own decisions about *"what form and character the commodity should take"* and *"how the income earned should be distributed"* (Busch and Juska, 1997 p.702). Morgan and Murdoch (2000, P.170) thus argue, *"the consumer tends to assume a more active role"* in the contemporary agrifood market. Based on rising purchasing power, consumers' quality demand has attracted producers' attention and forced some producers to *"shift from a homogeneous agricultural commodity market to a more segmented market"* (Winter, 2003b p.506) in order to obtain the *"differential rent"* (Marsden, 1992).

According to Storper (1997), to respond to consumers' demand and earn high economic rewards, agrifood production has evolved into two categories: *"standardised-generic"* products and *"specialised-dedicated"* products. Agrifood producers not only produce "standardised-generic" products under industrial quality conventions to meet the majority of consumers' quantity needs but also offer "specialised-dedicated" products with "quality" to attract "specialised consumers". Against the homogenising, placeless, industrial modes, the quality of "specialised-dedicated" products is defined by Murdoch et al. (2000) as *"above conventional standard"* and by Ilbery and Kneafsey (2000a, p.218) as *"something which is above minimum standards and which gives a product or service (or process, company or region) a cutting edge on its rivals"*. To show competitive relationships from the more standardised approach, the "specialised-dedicated" production category is also called "alternative" agrifood networks[9] (AAFNs) (Goodman, 2003).

Because consumer quality concerns are the prime motivating factor in moving away from the homogenised conventions to alternative networks (Storper and Salais, 1997), competitive advantage in AAFNs stems not from price, but from the specific quality

[9] Many researchers, such as Maye et al. (2007), indicate the "alternative" in geographic food research is a really widely concept and not only focuses on the quality aspect. This opinion will be discussed in section 2.4.4

attributes. Nevertheless, it should be noted that, there is no clear and simple definition of quality in AAFNs because consumers' quality concerns are very complex (Goodman, 2003). "Quality" may include products perceived as healthier (e.g. organic products and GMO free products), local (e.g. products with GI labels), with improved animal welfare (e.g. "free range" products), or more sensitive to the ecological environment (Nygard and Storstad, 1998; Winter, 2003a, b). As Ilbery and Kneafsey (2000a) indicate agrifood quality criteria has been affected by a range of hybrid economic, social and cultural environments, and contemporary consumers turn toward more individualised and hybrid approaches to choose "quality" agrifood products. Therefore, in AAFNs, "quality" is a very general idea, which *"plays mostly on a contrast with the orientations of the mainstream industrialised agrifood system"* (Harvey et al., 2004 p.4). Based on a range of quality perspectives, AAFNs develop various forms to regain consumer trust through creating hybrid quality attributes, such as direct agricultural market[10] and free-range production[11] (Marsden, 1998; Sage, 2003; Morris and Young, 2004; Eden et al., 2008). The term AAFNs is thus defined as *"a broad embracing term to cover newly emerging networks of producers, consumers, and other actors that embody alternatives to the more standardised industrial mode of food supply"* (Renting et al., 2003 p.394).

In fact, it is not only consumers, who have noticed the problems associated with the industrialised production process, but also other actors, such as farmers and processors. Within the industrial conventions system, producers can only produce the volumes and consistencies of quality required by large-scale retailers or giant agrifood companies. This situation risks the income to farmers and processors. Under the industrial system and the driving force of the capital economy, standardised agricultural production grows faster than effective consumer demand (Mitchell et al., 1997). In face of a saturated agrifood market, large-scale retailers and giant agrifood companies are constantly trying to cut costs, which include the price paid to farmers and processors. As Page (1997, p.137) indicates industrialised production creates *"a better coordinated industry aimed at boosting both physical productivity and labor productivity while lowering the overall costs of production"*. Because it is very easy

[10] As some consumers have more faith in direct, face-to-face interaction with sellers, it brings consumer face to face with producers directly through farmers' markets

[11] Due to quality consumers' preference for smaller scale, more natural agrifood products, free-range production assurance scheme ensures production processes through certification

for large-scale retailers and giant agrifood companies to shift their suppliers in the global market with industrial quality conventions, farmers and processors face increasingly oligopolistic relations with them, have to accept structurally declining economic margins, and are therefore being *"increasingly squeezed by industrialisation"* (Fine, 1994 p.524; Van der Ploeg et al., 2000). For instance, Morgan et al. (2006, p.68) estimate that farmers only "*receive 26 per cent of the retail price for beef, 20 per cent for pork, 21 per cent for chicken, 25 per cent for milk, and only 8 per cent for potatoes"*. And, Pretty (2001, cited by Ilbery et al., 2005) indicates only 7.5% of the final retail price of agrifood products in the UK currently returns to farmers, compared to a figure of 50% over 60 years ago.

The increasing dominance of quality control is a major feature in maintaining competitive space for large-scale retailers and giant agrifood companies in the agricultural sector (Hughes, 1996; Doel, 1996). Farmers and processors, as inputs to manufacture agrifood products, have almost no chance to obtain continuous and sufficient incomes under industrial quality conventions (Renting et al., 2003). How to regain power and subsequently raise financial returns have become important issues for producers. Some producers co-operate and try to influence the legislative and financial structures when political and economic forces have acted against them (Moran et al., 1993). But it is still difficult for a co-operative to resist the efforts of "powerful" large-scale retailers or giant agrifood companies directly in the industrial system because suppliers can be shift around the world. However, the increasing consumer demand for "quality" presents an opportunity for producers/producers co-operatives to move the production of agrifood commodities away from the "industrial mode" (Hendrickson and Heffernan, 2002). Based on specific "quality attributes" presented by producers rather than sellers, producers may have some degree of autonomy when negotiating with other actors and may thus achieve an above-market price that economists refer as a "differential rent" (Marsden, 1992; Ilbery and Kneafsey, 1998, 2000a, b). For example, according to the Soil Association (2010), organic producers earned 50% more than their non-organic counterparts in 2007-08 farming season. Thus, to evade price-based competition and improve profitability, producers are becoming one of the important driving forces of AAFNs (Marsden et al., 2000a; Sage, 2003; Smithers et al., 2008).

As key dimensions of new rural development patterns, AAFNs are also pushed by governments, especially in the Europe, to improve incomes in rural areas. In the U.S.A. where the modern large-scale agricultural system is dominated by industrial conventions, the government encourages producers to increase their agrifood products' international competitiveness through presenting specific quality characteristics or quality images under AAFNs. In the Europe, with highly fragmented farm lands and thousands of small farmers and businesses involved in producing small quantity, typical, traditional agrifood products, AAFNs are also believed to be able to create *"new economic spaces"* and are therefore supported by local governments (Parrott et al., 2002; Goodman, 2003, 2004). The industrial conventions system only opens market opportunities for "industrial" producers, who can achieve significant economies of scale and have the ability to support necessary standard quality schemes[12] (Parrott et al., 2002; Renting et al, 2003; Overton and Heitger, 2008). Some European rural regions that are lagging behind (i.e. economically marginal) cannot therefore be involved in industrial production processes. But, AAFNs offer a chance for small-scale producers and the aforementioned rural regions to achieve higher incomes through two approaches (Murdoch, 2000). Firstly, specific quality attributes different from industrial quality characteristics are the important notions of AAFNs, and are constructed by all parties including farmers, processors, traders, etc. who form "vertical networks". Through offering "quality" products into the market, AAFNs may improve employment opportunities within the network and bring high economic revenues to all actors involved. Secondly, compared with "vertical networks" which increase the incomes of actors within agrifood production processes, "horizontal networks" generate higher income not only along with agrifood production processes, but also expand to the non-agricultural sphere. "Horizontal networks" try to arrange wider networks by putting all existing rural resources to best use, as Murdoch (2000, p.412) indicates, a "horizontal" approach *"implies an attempt to co-ordinate a range of activities located within an area so that the capacity of local actors to gain access to markets and to other economic opportunities is heightened"*. Critical parameters to define the quality in AAFNs, such as the place of production (natural conditions, cultural, gastronomic traditions, etc.) and the production process (artisanal, traditional, less ecologically

[12] The cost of which can be daunting for small-scale producers

extractive, etc.), can all be used as sources to promote other industries, such as tourism (Renting et al., 2003; Murdoch et al., 2000). By developing "horizontal networks", all aspects of rural regions can be integrated into the national and international economy and therefore improve the local economy. Through these two approaches, AAFNs may help less-favoured rural areas shift *"away from its virtually exclusive sectoral emphasis on agricultural production questions towards a wider, more endogenous, and multi-dimensional concept of rural development"* (The Rural Development Regulation 1257/99, cited in Goodman, 2003 p.2).

Consumers can obtain "quality" agrifood products to meet their specific demands through AAFNs. Producers have a chance to gain more from AAFNs than the industrial conventions system by presenting specific (organic, integrated, regional, artisanal, etc.) production codes and establishing new agrifood governance patterns (Winter, 2003a). Government can adopt AAFNs to increase rural incomes, especially for "lagging" rural areas (Ilbery and Kneafsey, 1998; Murdoch and Miele, 1999; Marsden et al., 2000a; Miele and Murdoch, 2002; Marsden and Smith, 2005). All of them are major supporters of AAFNs which use quality as a tool to compete with the industrial agrifood system and thus support a high economic reward for producers and rural areas (see also Marsden et al., 2000b). The notion of quality clearly implies exercise of power between relative actors by building new forms of market governance.

2.4.4 GIs networks

With different forms, such as short food supply chains, farmers' markets, organic farming practices, and place-based production, the concept of "alternative" in the agricultural sector has generated considerable debate. Much of the initial research associated "alternative" with *"shorter"* supply chains than *"long, complex and rationally organised industrial chains"* or fewer intermediate links between producers and consumers including location and processing information (Marsden et al., 2000a p.424; Murdoch et al., 2000; Renting et al., 2003). However, more recent research has begun to question this understanding of the "alternative" and the "conventional". First of all, the research shows the difference between two systems is blurred. For example, Ilbery and Maye (2005a, b) examine the production activities of small-scale local food producers in Scotland and find they co-operate with the conventional system,

such as processors and wholesalers, to market their products. By examining the Australian organic agrifood system, Lockie and Halpin (2005, p.304) also declare *"the Australian organic industry does accord with some aspects of the so-called conventionalisation"*. Secondly, the usage of "alternative" varies in different areas. Based on Goodman (2003, p.2), "alternative" may have different meanings in North American with emphasis on *"wrest(ing) control from corporate agricusiness and creat(ing) a domestic, sustainable, and egalitarian food system"* and in Europe as *"situated within a wide-ranging public debate on food safety, agricultural policy reform and contested trajectories of rural economy and society"*. Because a specific definition of AAFNs is difficult to draw, Slee and Kirwan (2007, p.249) describe AAFNs are *"demand-driven by the emergent markets, a supply response to the cost-price squeeze in contemporary agriculture, a lifestyle choice for some food producers and a policy response to the increased support given to local and regional food initiatives"*. Kneafsey et al. (2008, p.31&37) explain that by focusing on *"product, process and place"*, AAFNs *"attempt to create 'closer' relationships between producers and consumers"*. Based on these explanations of AAFNs, a GI system based on "local" quality identity is becoming a specific branch of AAFNs (see also DuPuis and Goodman, 2005).

For most of human history, agrifood products have been purchased with simple face-to-face trading between producers and consumers at or near its location of production. Farmers grow food and then sell it at local markets. However, with increasing urbanisation, it is becoming very difficult for farmers to face their customers directly. Middlemen emerged to accumulate production from individual farms and to trade with consumers. Meanwhile, in order to support the growing world population, traditional agricultural production (e.g. family farms, face to face producer-consumer relationship) was replaced by a process of industrialisation, which focused on economies of scale and cost-price reduction in the production process (Fine, 1994). With urbanisation and industrial processes, there is a growing separation between production, distribution and consumption. Consumers buy food from urban retailers and rarely have any direct contact with producers. Even though this disconnection in the agrifood system may bring lower price products to the market, it also means that many consumers know very little about where their agrifood comes from, what it is made of, how it is produced, and by whom. However, in face of

numerous food crises in the market, contemporary consumers want to collect more information about their food to make the right decision and protect themselves (Hunt and Frewer, 2001). As a lack of time and knowledge may limit consumers' ability to collect and process useful information, for producers who want to gain high economic rewards in the market, how consumers collect information, judge the quality and form buying decisions are becoming important issues to address.

Countiss and Tilley (1995) examine meat buyers' decisions. They found during the purchasing process, the superior quality (material or symbolic) of a product can outweigh any weaknesses. Carimentrand and Ballet (2004) argue the quality judgement relies on information that reaches consumers and the confidence consumers have in the truth of that information (cited in Renard, 2005). Watts et al. (2005) point out that because it is difficult to gather complete information about product attributes, to detect the qualities in agrifood products, consumers would like to give weights to different pieces (positive and negative) of quality information and then determine products' perceived reliability based on sources of information. In other words, facing confusing information, consumers prefer to rely on more diagnostic information, such as assurances issued by government agencies, and decrease the importance attached to less diagnostic information, such as the shopping environment, to evaluate a product and judge its quality. Both information and the source of information have been found having a great impact on consumers' perceived agrifood quality and thus purchasing decisions.

At the same time, many scholars (e.g. Storper, 1997; Ilbery and Kneafsey, 1999; Whatmore et al., 2003) noted that consumers are looking for more "local" information to judge agrifood quality and make their buying decisions. Firstly, any agrifood product has a geographic origin. The industrial agrifood system which generates a wide range of homogenized agrifood products into the market from nowhere in particular, breeds "symbolic danger" in the form of an absence of trace elements (Fischler, 1988; Goodman, 1999). Agrifood products with clear local provenance which can be traced to a specific place are therefore believed to have an inherently higher standard than "unnatural" industrial products (Nygard and Storstad, 1998; Acebron and Dopico, 2000; Weatherell et al., 2003). Secondly, agrifood quality is believed to be directly related to the location where it is grown. Because some

"invisible" quality characteristics of agrifood products are extremely varied by their vary nature (e.g. the local climate, vitamin levels contained in soils and water), some agrifood products produced in certain geographic origins are thought as being of a higher quality than products from other areas (Renard, 2003). Locally recognisable agrifoods, evoke traceability and nutritiousness quality, have become desirable objects of many consumers (Warde, 1997; Kuznesof et al., 1997; Henson and Northen, 2000; Mansfield, 2003a, b). Quality is *"increasingly being related to products from a specified region"* (Ilbery and Kneafsey, 2000a p.220), and *"seen as inherent in more 'local' and more 'natural' foods"* (Murdoch et al., 2000 p.108).

Because both information and the source of information are the main factors used by consumers to judge agrifood quality (Renting et al., 2003) and quality has been intrinsically linked to the location of production (Murdoch et al., 2000), the visual confirmation of agrifood origin through official certification, should have a strong influence on consumers' perceived quality attributes and purchase decisions (see also Ilbery et al., 2005). Therefore, some countries/areas, such the UK, Japan, China, and the EU, offer formal mechanisms to indicate agrifood products with special geographic origins via certification schemes. Examples of this include the French appellation d'origin scheme and the European "PDO" and "PGI" systems.

Based upon regulated and authenticated links between product and local identity, GIs not only meet consumers quality needs but also have the potential ability to increase qualified producers' incomes (Ilbery and Kneafsey, 2000a, b; Marsden et al., 2000a; Barham, 2003). Normally, if producers cannot credibly signal the quality of their products, consumers' perceived quality of the product will be average and producers will only be able to achieve average incomes. Branding is recognised as a common way to distinguish agrifood products (Henchion and McIntyre, 2000). But individual farmers and small-scale processors may not have the resources or skills to develop their own brands. GIs, also called "farmers' owned brands" (Hayes et. al, 2005), are popular choices for these producers to brand and market their agrifood products. Firstly, GIs are normally owned by groups of producers. The co-operative activities can offer the benefit of access to existing resources held by other actors and economies of scale to its members, such as groups of producers being able to employ marketing specialists to analyse the market that an individual producer alone may not

be able to afford (Nygard and Storstad, 1998; Lamprinopoulou et al., 2006). Promoting GIs is thus becoming possible for individual farmers and small-scale processors. Secondly, producers are required to co-operate together to apply GIs with the government based on preset GI certification schemes. Anybody who belongs to the group and makes products meeting the requirements of the certification procedure, has the right to use GIs on their products after application. For consumers, GIs are thus supposed to offer consistent quality guarantees and specify the quality characteristics that make a product unique, like third-party certification (Watts and Goodman, 1997). Even though Parrott et al. (2002) point out, GIs are not a sort of quality mark per se and registration does not involve any quality assessment (other than the quality standards defined by producers in the application process), consumers still believe the agrifood products with GIs *"are somehow defined by their quality attributes"* (p.246) because their qualification process follows a defined code of practice presented by producers in the application process which meets certain standards or quality levels. The qualification process enhances consumers' confidence on the quality of GI products and producers may thus receive a high income. Based on co-operative activities and government support, qualified GI producers obtain a chance to capture extra value in the market by distinguishing GI products from anonymous mass produced goods (Hayes et al., 2004).

Meanwhile, in contradistinction to the 'Fordist' approach that believes rural incomes can increase mainly through increasing total production volume and improving the technical efficiency of production, GIs hold particular promise for the rural development of peripheral agricultural regions by linking products and places more closely (Ilbery and Kneafsey, 1999; van der Ploeg et al., 2000). Firstly, the land owner living in that local area may get economic rewards from land rent. Agrifood products with GIs are sold by emphasising the site which encompasses the unique combination of local soils, climate, and cultural resources (such as growing experiences and inherited techniques) and may lead to unique qualities that cannot be replicated elsewhere. When the demand for certain agrifood products with GIs grows, the demand may be easily transferred to the requirement of higher productive capacity (land). Because the land in certain areas is always limited, the unavoidable result is the price increase of the local land. The price/sales of a GI product and the value of land in GIs' areas are thus interrelated (Overton and Heitger, 2008). For example,

stimulated by the increasing market price of wine from the Gimblett Gravels district in New Zealand, the price of local land at the beginning of the 2000s was more than 6 times of that in 1980s (Overton and Heitger, 2008). And, as the sales of AOC Bordeaux wine decreased in the last decade (from 6.4 million hectoliters in 1998 to 4.88 million hectoliters in 2008), the average price of Bordeaux vineyards in Bordeaux Blanc area decreased from 26,200 Euro per ha to 17,000 Euro per ha in the same period (Datamonitor, 2004; Comité National des Appellations d'Origine, 2010; Wineyard Intelligence, 2010). Protecting and developing GI systems benefit local farmers as it inflates the value of the land. Secondly, in the market, promoting agrifood products with GIs can be extended to promote certain regions. For consumers, GI products are perceived as a combination of the physical environment (e.g. distinctive landscapes, local animal breeds and plant varieties), cultural (e.g. myths and stories), and economic factors (e.g. skilled employment) (Tregear et. al., 2007; Fonte, 2008). The territorial identity and associations with the product form a base to develop perceived territorial quality and promote territorial products rather than the physical outputs of GI products. As Pecqueur (2001) claims, the economic rent of local identity can be distributed to a wider range and promote a "basket" of goods and services in local areas (cited in Tregear et. al., 2007). Aside from the qualified GI producers receiving their premium incomes from GI systems, many residents in the place of origin can also benefit from GI networks. Rural areas are thus encouraged to adopt a GI strategy, in particular the less favoured areas (LFAs) where are becoming increasingly marginal to the productivity regime as they are filled with highly fragmented farms and are thus less able to adopt the intensive and mechanistic approach associated with industrial agriculture (Marsden et al., 1993).

Concentrated on localised quality, the appearance of GI systems is the consequence of power competition in agrifood sector. It develops new co-operation relationships between different actors (see also Nygard and Storstad, 1998). Various "powerless" actors in the industrial agrifood system, such as consumers, producers, and "lagging" areas' residents, may benefit from this power reconstruction. However, according to the conceptual framework, agrifood quality is complex and is assembled under power relationships between diverse actors under a given context. The specific meaning of "localised quality" and the role that GI schemes plays in agrifood quality constructing processes may thus vary in different GI networks. To systematically understand the

quality construction process of GI agrifood products and explore the role of GI schemes in developing agrifood quality, three sample networks, namely Cassis wine, Parma ham, and Florida citrus, will be examined in the next section. The findings will also be used to compare with the Chinese GI system in Chapter 8.

2.5 The role of GIs in constructing agrifood quality

2.5.1 Cassis wine

In France, wine production can be traced back to the 6th century B.C. with the colonisation of Southern Gaul by Greek settlers. Around the 1st century B.C., the Roman Empire licensed regions in the south to produce wines. During the Middle Ages, monks maintained vineyards and developed wine-making knowledge. Today, wine is produced in several regions through France with production totally 42.8 million hectolitres in 2008 (Comité National des Appellations d'Origine, 2010). With a long production history, drinking wine has become *"a traditional habit, a national practice, an expression of French identity, a valorising pleasure, a sensory experience, a part of celebration and a hedonistic joy"* in France (Brown, 2010 p.12).

To protect the rights of wine producers and to combat fraud, the French Law of May 6, 1919 was set up to protect *"appellation of origin"*. According to this law, *"an appellation of origin consists of the name of a country, region or locality that serves to designate a product originating therein, the quality and characteristics of which are due to the geographical environment, including both natural and human factors"* (World intellectual Property Organization, 2004 p.122). *"Appellation of origin"* is defined as a collective ownership associated within a certain territory and shows products which originate from specific areas and owe their specific quality to their place of origin. To improve the level of protection, France created the Appellation d'Origine Controlee (AOC) legislation to protect regional wines in 1935 (Celine, 1998). At the same time, a branch of the French Ministry of Agriculture, the "Comité National des Appellations d'Origine" (National Committee for the Origin Appellation), which became the Institute National des Appellations d'Origine (INAO) in 1947, was set up to manage the production of wines according to AOC regulations. The main responsibility of the INAO include issuing *"the decrees of local*

syndicates[13] *of winegrowers that meet certain requirements"*, *"uncovering and preventing fraud"*, and *"working to help implement quality standards"* (Gade, 2004 p.849). The relevant AOC seal was created later. In France, it is illegal to manufacture and sell wine with AOC controlled GIs if it does not meet the standards of the AOC (Celine, 1998).

More than 300 AOC wines are produced in France (Comité National des Appellations d'Origine, 2010). Appellation Cassis controlee comprising 180 ha of vineyards and fourteen wine growers, is the third oldest and one of the smallest AOC wine producers in the French AOC system. Cassis is a geographical name and located 25 km east of Marseille in the Bouches du Rhone Province. With a long production history which can be dated back to the late Middle Ages, the Cassis syndicate was formed by fifty members included both landowners and sharecroppers and was set up in 1935 under the support of the government. This co-operative is a very "powerful" actor in securing *"certain quality characteristics"* in the network based on its ability of *"proposing"* production and quality regulations to the INAO who encourages AOC wine co-operatives to build a "quality" image by defining appellations' specialness more precisely. Firstly, as the syndicate believes that increasing yields at the expense of quality and over-production will reduce the price and bring significantly lower financial returns for growers, the productivity of Cassis wine is restricted to a certain level through several ways. Such as, even though the Cassis area comprises 2,686 ha of land, according to restriction regulations, only 180 ha vineyards *"from 10m above sea level near the Mediterranean shore to 150m elevation 3.5 km inland"* can be used to produce Cassis wine due to the consideration of the impact of natural environment on quality (Gade, 2004 p.858). To secure the quality and also to limit the output, a plantation density of 4,000 vine stocks per ha and the maximum productivity to 40 hectoliters per ha are also identified by the syndicate. A large production increase is thus impossible in the network. Secondly, to ensure the taste of Cassis wine, the designated alcohol content is regulated to a minimum 12%. And, only eleven grape varieties, such as Ugni Blanc, Marsanne and Clairette, are permitted to be used in Cassis wine blending processes. Winemakers can use as much or as little of these grapes as they wish to make Cassis wine but they are not allowed to use any other

[13] Winemakers' co-operatives

grapes because only indicated varieties are believed to be suitable to grow in the Cassis area. Thirdly, storing Cassis wine in expensive oak barrels of specific sizes which cannot be changed to other materials or other sizes, is mandated as a requirement in the Cassis decree because it is a traditional way to store wine in the Cassis area. Furthermore, to keep an exclusive image, the syndicate even decided to increase its production costs. Although this is not an AOC requirement, all syndicate members have informally agreed to harvest their grapes by hand. The syndicate believes that hand picking is a way to enhance the image of Cassis as an elite wine different from other wines made by machine-harvested grapes. Through establishing strict production regulations, "terroir"[14] is becoming a decisive factor in describing quality (characteristics) of Cassis wine, even though the grape varieties, local weather and techniques of wine-making are very different from the Middle Ages. (Callon et al., 2002; Gade, 2004)

Under the support of the government, a myriad of rigid production regulations have been proposed by the co-operative and set up and regulated by the INAO to control quality forming processes and thus protect the integrity and reputation of Cassis wine. Both the government and the syndicate are "powerful" actors involved in quality forming processes. Under strict decree, small-scale production with a traditional image contributes to the reputation of Cassis wine as a drink reserved for the gods, and enhances high economic rewards for local wine growers (Gade, 2004).

2.5.2 Parma ham

Under the influence of the French AOC system, for protecting and promoting regional agrifood products and increasing rural incomes, Italy also established its own GI regulations in 1963, called Denominazione de Origine Controllata (DOC).

Parma ham is a typical DOC product in Italy. Since Roman times, the special weather of the Parma region has been recognised as ideally suited for ham making (Hayes et al., 2004). Only hams produced and cured in the hills around the Parma area may become Parma hams, other hams cured outside the area may be done in different

[14] "Terroir" describes the special quality of an agricultural product that is determined by the characteristics of the location, as the synergistic effect of varieties, such as soil, bedrock, landforms, climate, and unique human factors acquired from the past, such as the skills or practices passed on from one generation to the next (Gade, 2004 p.849)

environments and will therefore be considered of a lower quality. Since 1970, Parma ham has been protected by the Italian law as a GI product. By law, all Parma ham producers must be located within the geographical boundaries of the Parma production area, at least 5 km south of the Via Emilia, limited to the east by the river Enza and on the west by the river Stirone, and up to an altitude of 900m. (The Parma Ham Consortium, 2007)

The voluntary Parma Ham Consortium, formed by 23 producers initially was set up in 1963 to safeguard the genuine quality of Parma ham and the image represented by the name of "Parma" (O'Reilly and Haines, 2004). Today, the Parma Ham Consortium is entrusted with the legal authority to regulate the production of Parma ham. It sets out rigorous rules to control production activities in every aspect which may influence quality, such as justifying a geographic restriction on production, regulating breeds used and breeding techniques, limiting the hogs for the production of Parma ham, formulating methods and duration of the ageing stage, specifying characteristics of the end product, etc. For example, the consortium limits the pigs to traditional Italian breeds: Italian Landrace, Italian Large White and Duroc, which have to be born and raised in 11 regions of central-northern Italy. The diet of the pig is also specified: a blend of grains, cereals and whey from the Parmigiano-Reggiano cheese production. Regulations impact the breeding farms, slaughter-houses, ham producers and traders, all actors involved in the production process of Parma ham. Meanwhile, the Consortium also supports scientific research and marketing programmes to develop the Parma ham industry. The results show that this type of support is very useful to ensure quality and obtain higher economic rewards. For example, laboratory analysis used in the production process is very helpful in ensuring products meet the requirements of the quality regulations. And, the marketing programmes designed to enhance the image of Parma ham and increase popularity in Italy and abroad, have led to a 20% to 25% premium over generic products in the marketplace. (O'Reilly and Haines, 2004; The Parma Ham Consortium, 2007)

Beside the Consortium, *an independent inspection and quality control agency*, the IPQ (Instituto di Parma Qualita), was approved by the Italian Ministry of Industry, Trade and Crafts to manage the production of Parma ham. Each step in the Parma ham production process, from certified pig breeding farms through to the

slaughter-houses to ham producers, are closely monitored and controlled by this agency based on regulations issued by the Consortium (O'Reilly and Haines, 2004). The ham that passes all of the quality control tests will be fire branded with the official mark of the Consortium, the five-point ducal crown that identifies them as genuine Parma ham (The Parma Ham Consortium, 2007).

Facing relatively small production facilities in rural areas, the Cassis syndicate and the Parma Ham Consortium protect and promote their GI products carefully. Even though the Cassis syndicate sets stricter GI regulations (such as limiting productivity) than the Parma Ham Consortium, both of them ensure quality through the GI production codes (presented by co-operatives) and the specific control system (the INOA in the Cassis wine network and the IPQ in the Parma ham network) (Figure 2.2) and the quality thus links with location, history and culture tightly.

Figure 2. 2: E.U. PDO and PGI system
Source: Hayes et al., 2004

However, in the "new world", such as Australia, New Zealand, and America, the GI system is very different (Hayes et al., 2005). With a relative short history and large-scale commodity production experience, it is not a wise choice for local farmers to create "history and culture" quality and restrict production quantity. Having a relatively short history also limits the ability of the "new world" to build an E.U. style GI system because it will be very costly to set a new GI regulatory system beside general legislative schemes. So, the "new world" has developed a very different way

to construct "quality" of GI agrifood products. To continue to explore the role GI schemes play in developing agrifood quality, the Florida citrus network will be taken as a "new world" example in the next part.

2.5.3 Florida citrus

With the exception of wine, the United States does not have a special legislative system for GI products. If producers want to identify their goods by GIs, they must rely on existing laws for legal protection, for example trademark law (Handler, 2007). Nowadays, protecting GIs within the scope of U.S. law is done mainly through certification marks (Beresford, 1999) which can be defined as *"any word, name, symbol, device, or any combination, used, or intended to be used, in commerce with the owner's permission by someone other than its owner, to certify regional or other geographic origin, material, mode of manufacture, quality, accuracy, or other characteristics of someone's goods or services, or that the work or labor on the goods or services was performed by members of a union or other organization"* (United State Patent and Trademark office, 2010). The certification marks cannot be sold as brands. But, through registration with the U.S. Patent and Trademark Office (USPTO), GI products can obtain full protection from trademark infringement.

Florida citrus, protected as a certification mark is very famous in the U.S. But, citrus trees are not native to Florida. The first time they were farmed commercially in Florida was in the mid-1800s. Since then, Florida's unique sandy soil and subtropical climate have proved to be ideal for growing citrus trees. According to the 2007-08 Florida Agriculture Statistics Services (FASS) Citrus Summary, more than 74 million citrus trees, which produce around 70% (203.8 million boxes of citrus) of the total U.S. citrus production, are grown on nearly 569,000 acres in Florida. Today, Florida citrus is a $9 billion industry. It employs over 76,000 people working in the citrus industry or related businesses, and produces more citrus than any other region of the world, except Brazil. (Florida Department of Citrus, 2008a; Florida Citrus Mutual, 2009)

In 1935, with the legislative passing of the Florida Citrus Code, the Florida Citrus Commission was established by State Legislature. The Florida Citrus Commission is a 12-member board, made up of citrus growers, processors, shippers and packers. The

Commission conducts a wide variety of programmes involving industry regulation, including scientific, market and economic research, advertising, merchandising, and public and industry relations. To carry out commission policies, the Commission eventually led to the establishment of the Florida Department of Citrus (FDOC), which is an executive agency of the Florida government. Under the direction of the Commission, the regulatory responsibilities of the FDOC cover every aspect of the industry in every detail, including research, production, fertilising, maturity standards, harvesting, licensing, transportation, labling, packing and processing. For example, the FDOC asks grove managers to take representative samples of citrus from a particular block of trees, about 40 pieces of fruit for a 40-acre block and test the juice which is squeezed from the sample fruit for two main attributes: brix and acid, both of which are vital in determining the flavour of the juice. If samples cannot pass the test, all citrus in the block where samples come from cannot be picked. (Florida Department of Citrus, 2008b, c)

Scientific and social research has always been a primary pursuit of the Florida citrus industry because it is believed that they can improve and promote quality and thus help obtain more economic rewards. For example, numerous varieties of citrus were introduced to local farmers through scientific research programmes to offer citrus with different quality characteristics to meet consumers' various requirements and encourage smooth productivity around the whole year. Market research projects are underway as well, such as the programme to generate consumers' quality perceptions of the market. Much of the research is supported by the Commission, takes place at the University of Florida's Institute of Food and Agricultural Sciences (IFAS) and Citrus Research and Education Center (CREC), and promoted by the FDOC. (Florida Department of Citrus, 2010)

Many other non-governmental co-operatives also exist in the network but with minimal ability to regulate their members' production activities. Examples of this include Florida Citrus Mutual formed in 1948 and focuses on helping Florida citrus growers produce and market their crops at a profit (Florida Citrus Mutual, 2007) and Florida's Natural Growers founded in 1933 and concentrates on producing citrus

juices[15] (Florida's Natural Growers, 2010).

Significant divergences exist amongst the three sample GI networks in relation to quality "characteristics" and production regulatory system (Table 2.3). With a lot of valuable, historical, and well-known agricultural products, in face of fragmented farm lands and a large amount of small-scale farmers and businesses, the governments of France and Italy adopted very strict production codes set by producer co-operatives to ensure traditional ways are adopted in the production process because it is believed that the image of *"traditional quality"* is essential in generating higher profit (Gamble and Taddei, 2007). Also, the specific legislative systems were built to manage the GI sectors. In America, Florida citrus is protected as a certification mark by the trademark law. It relies on local specific natural conditions, detailed regulations and scientific and marketing programmes, to produce a huge quantity citrus with a *"scientific quality"* image into the market. Producers try to obtain a high economic reward by meeting segmented market demands through large-scale and low-cost production activities. But, although differences between these three samples can be found, similar structures are adopted in three networks to secure the "quality" of GI products. For example, legitimate quality criteria and production rules are proposed by producer co-operatives and confirmed by the government legislative system. And it is always the government department and/or the independent third party to inspect production processes, guarantee the conformity of actors to official norms, eliminate conflict over the use of the GI, and protect the GI against fraud. Quality is thus greatly enhanced by GI schemes in each of the sample GI networks.

[15] Around 90 percent of Florida citrus were processed into juice and the remainder was sold as fresh fruit (Florida's Natural Growers, 2010)

	Cassis wine	Parma ham	Florida citrus
Powerful actors	The government; the Cassis syndicate	The government, the Parma Ham Consortium; the Certifying Body (IPQ)	The government, the Florida Citrus Commission
Laws/Regulations used to protect GIs	AOC	DOC	The trademark law
Quality characteristics/ meanings	Terroir; low quantity	History; location; controllable	Natural environment; modern technology; consumers' specific requirements
Price of GI products	Much higher than generic products	Much higher than generic products	Gaining economic rewards by meeting segmented market demands through large-scale and low-cost production activities

Table 2. 3: The differences between the Cassis wine network, the Parma ham network and the Florida citrus network

2.6 Chapter summary

To evaluate the effectiveness of GIs in terms of developing agrifood quality, this chapter introduced the concept of GIs, established a conceptual framework for analysing agrifood quality, reviewed shifting quality meanings and accompanying power relationships in the world agrifood sector. Furthermore, it also explored the role of GIs in constructing agrifood quality in a diverse range of geographical contexts.

Based on the literature, agrifood quality has been realised very difficult to define but can be understood and analysed through examining power relationships (threads) between different actors (nodes) within certain political, social and economic environments. This conceptual framework indicates, with different networks, the quality characteristics presented into the market may vary even for similar agrifood products due to dissimilar power relationships formed under various contexts. Therefore, the power relationships involved in the quality forming process in the industrial agrifood system, AAFNs and GI networks were examined to review shifting meanings of agrifood quality. Also, to gain a systematically understanding of the quality construction process in GI metworks and influence of GI schemes on quality,

three samples were explored. The findings show, although the “local” information is the critical aspect to form the quality image in all GI networks, the quality meanings and the influence of GI schemes on quality may be different between GI networks with different power relationships based on dissimilar contexts. As the context is essential to analyse agrifood quality, the political, economic and social environments of the Chinese GI system will be examined in the next chapter.

Chapter 3 The Development of Chinese GI Schemes

"Before 1978, China was one of the poorest countries in the world with 60 percent of the one billion people living below poverty, earning less than $1 per day. Almost all of the poor were in the agricultural sector, which provided livelihoods to nearly 75 percent of the total population. Since 1978, the world has seen a different China— a China with an economy growing consistently at red-hot speed. The growth started in 1978 with the implementation of the household responsibility system ... Agriculture, however, which was a clear leader in reform, is now lagging behind other sectors. China's rural economy faces many serious challenges. The gains of economic growth have not been fairly shared between urban and rural residents. Many parts of the agricultural and rural sector remain underdeveloped. ... Land holdings are so small that farming cannot raise enough income for most rural households. The improvement of agricultural productivity is further hindered by the lack of well-functioning credit, land rental, and insurance markets"

(Song and Chen, 2006 p.3)

3.1 Introduction

The previous chapter highlighted the conceptual framework for analysing agrifood quality. It illustrated that the quality of agrifood products is difficult to define but can be understood and analysed through examining power relationships between diverse actors based on certain political, social and economic environments. Therefore, evaluating the effectiveness of GIs in improving Chinese agrifood quality requires a detailed examination of political, social and economic environments involved in the Chinese GI system.

According to the conceptual framework, the rest of this chapter is organised into two main themes. One focuses on outlining the driving force of Chinese governments to develop the GI system through social and economic considerations. The other one concentrates on exploring the political context within the Chinese GI system by analysing the political enforcement on general agrifood quality forming processes and examining the Chinese GIs legislative system.

3.2 The driving force of the Chinese government in developing the GI system

3.2.1 Rapid growth of Chinese economy and the relative decline in farm incomes

Year	China's GDP	Total Rural Incomes
1978	364.52 Billion RMB	105.56 Billion RMB (28.96% of GDP)
1990	1866.78 Billion RMB	557.44 Billion RMB (29.78% of GDP)
2000	9921.46 Billion RMB	1821.58 Billion RMB (18.59% of GDP)
2010	40120.2 Billion RMB	3972.42 Billion RMB (9.9% of GDP)

Table 3. 1: Gross Domestic Product (GDP) of China compares with total rural incomes (rural average income * total rural population) 1978-2010
Source: National Bureau of Statistics of China, 2011

Since 1978, China has been moving from an inefficient, Soviet-style centrally planned economy to a more market-oriented system, and its economy has been growing rapidly. The average annual growth rate of its GDP was 8.5% for the period 1979–1984, 9.7% for 1985–1995, 8.2% for 1996–2000, and 15.57% for 2001-2010 (Figure 3.1). In 2010, China's GDP was more than 110 times that of 1978 (National Bureau of Statistics of China, 2011). Data released by the World Bank shows that China's GDP ranked No.2 in the world in 2010 (World Bank, 2011b).

Figure 3. 1: GDP of China 1978-2010
Source: National Bureau of Statistics of China, 2011

With the fast growth in the Chinese economy, the past three decades have seen a rapid increase in both income and food consumption. In urban areas, the disposable annual income per capita increased from 343.4 RMB in 1978 to 1510.2 RMB in 1990, and up to 19109.4 RMB in 2010. In rural areas, the annual income per capita increased from 133.6 RMB in 1978 to 686.3 RMB in 1990, to 5919.0 RMB in 2010. Engel's Law

predicts that the share of food in total expenditure should decrease as income increases. China is no exception. In 1978, Engel coefficients were 57.5% in urban areas and 67.7% in rural areas. In 1990, they were 54.2% and 58.8%. By 2010, they had fallen to 35.7% in urban areas and 41.1% in rural areas. However, with the rapid increasing personal income, total expenditure for food is still rising in the China market. In 2010, the annual consumption expenditure per capita on food in urban areas was 4804.7 RMB[16], and in rural areas it was 1800.7 RMB, much higher than 1766.0 RMB and 768.2 RMB in 1995. In order to meet the rapidly rising food demand, Chinese farmers produced huge amounts of agricultural products for the market with high growth rates for agricultural productivity. For example, in 1978, China produced only 304.8 million tonnes of grain and 6.6 million tonnes of fruit for the market, and the gross output value of all agriculture products was 139.7 billion RMB. In 1990, the numbers rose to 446.2 million tonnes, 18.7 million tonnes, and 766.2 billion RMB. In 2010, they rose dramatically to 546.5 million tonnes, 214.0 million tonnes, and 6932.0 billion RMB (Figure 3.2). (National Bureau of Statistics of China, 2011)

Figure 3. 2: Gross output value of Chinese agriculture products 1990-2010
Source: National Bureau of Statistics of China, 2011

Before the end of the 1990s, the key factor underlying increasing agricultural output was specific government policy. In 1978, the Chinese government introduced the Household Production Responsibility System, whereby every household received an individual piece of land to farm and where they were allowed to retain leftover produce after selling a fixed proportion to the state at a state-determined price, or by simply paying a tax in cash. This policy allowed farmers to have a degree of freedom

[16] The data is made based on the investigation of 188948 urban residents (National Bureau of Statistics of China, 2011)

in planting crops by partly transferring control of land from collectives back to individual families, and had been proved very effective in stimulating farmers to mobilise rural resources and improve productivity (McMillan et al., 1989). With increasing agricultural production, the income per head in the countryside rose more than 17 folds from 1978 to 1999 (National Bureau of Statistics of China, 2011). However, the growth rate in income slowed in the late 1990s and the beginning of 2000s to 2.23% in 1999 and 1.95% in 2000 (National Bureau of Statistics of China, 2011). Many researchers (e.g. Keidel, 2007; Hu, 2008) believe the reduction in growth was caused by over production. For example, 512.3 million tonnes of grain was produced in 1998, which is significantly more than 304.8 million tonnes in 1978 (National Bureau of Statistics of China, 2010). In a saturated market, grain production volume could no longer be expanded at the same rate given that the price of grain had reduced 42% from 1996 to 2002 (Hu, 2008). After two decades of reform, the energy of the Household Production Responsibility System in increasing farm incomes through improving productivity appeared to be exhausted.

At that time, the government realised Chinese consumers' dietary patterns had shifted with their increasing income (Fuller et al., 2002). The consumption of grain decreased but that of income elastic agrifood products, such as meat, fresh fruits and vegetables had increased. To continue support for increasing farm incomes, many policies were issued by the Chinese government to encourage farmers to produce high income elastic agricultural products, such as fruit, tea, pork, and beef. The results were the land used for fruits increased from 8.5 million ha to 11.5 million ha between 1998 and 2010, and output increased from 54.5 million tonnes in 1998 to 214.0 million tonnes in 2010. In contrast, grain production over the same period decreased from 113.8 million ha in 1998 to 109.9 million ha in 2010 although the harvest increased slightly from 512.3 million tonnes in 1998 to 546.5 million tonnes in 2010 as a consequence of the application of modern technologies (Figure 3.3). (National Bureau of Statistics of China, 2011)

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Figure 3. 3: The total output of fruits and grain 1998-2010
Source: National Bureau of Statistics of China, 2011

However, it is not easy to continue to increase farm incomes by simply producing higher volumes of income elastic agrifood products in China. First of all, reducing the land used for grain is not a wise idea to improve farm incomes for a country filled with 1.4 billion people. Lacking grain supply in the market may become a big political problem. Secondly, China is a country with a large area of mountains and hills and most Chinese farmers still need their own small lands to meet their daily needs. A significant increase in the scale of production through modern industrial agrifood system is thus difficult to achieve because of the fragmentation of land holding in contemporary China (Wan and Cheng, 2000). Thirdly, post-1978 agrifood output growth in China was not only driven by policies, but also pushed by technological factors, for example, progress in biotechnology and increasing use of agricultural chemicals, including a remarkable acceleration in the use of chemical fertilisers (Edmonds, 2006). The U.S. Department of Agriculture even reported that China ranked among the highest users of fertiliser per ha (Calvin et al., 2006). With the rapid increase in fertiliser application over the past three decades, marginal outputs have tended to decline (Keidel, 2007). Fourthly, a continual increase in production of income elastic agrifood products may decrease the market price and thus ironically reduce farm incomes in the future, similar to what happened in the grain market. Therefore, besides growing income elastic agrifood products, farmers have to find other approaches to improve their incomes.

3.2.2 Urban and rural income disparity

Data collected by the National Bureau of Statistics of China (2011) shows that there was some improvement in rural incomes between 2001 and 2010, with the income per head rising by 150.1%. However, the growth that occurred in this period was

misleading as it is not the result of increased earnings from traditional agricultural activities. Under the industrialisation process, a lot of farmers left their farms and moved to the city to earn wages which are higher compared to agricultural activities. However, farmers' personal documents[17] still state their locations as countryside. Even though they work in the city, their wages were calculated as rural incomes by the National Bureau of Statistics of China. In 1990, only 14.0% of farms' incomes were contributed by wages, and the number increased to 22.3% in 2000 and 29.0% in 2010. With a high percentage contributed by wages, the increasing rate of rural incomes contributed by agricultural activities is much lower than 150.1% at the beginning of the 21st Century. Compared with the disposable income per capita in urban areas which rose by 178.6% in the same period, the gap between rural and urban incomes has widened in the last decade (Figure 3.4).

Figure 3. 4: Per capita annual disposable income changing in urban areas and per capita annual income changing in rural areas 1978-2010
Source: National Bureau of Statistics of China, 2011

Scholars (e.g. Tocqueville, 2000; Daly et al., 2001; Fajnzylber et al., 2002; Lee and Bankston, 1999; Wilkinson and Pickett, 2009) have indicated that there is a link between income inequality and social cohesion, such as shorter life expectancy, higher disease rates, homicide, infant mortality, obesity, teenage pregnancies, and emotional depression. Research (e.g. Perotti, 1996; Barro, 2000; Forbes, 2000; Cornia and Court, 2001; Pagano, 2004) has also shown that economic inequality decreases innovation and economic growth rates within a society. For example, Perotti (1996) argues that inequality is associated with a lower economic growth rate and a higher level of fertility. Cornia and Court (2001, p.24) point out that high levels of inequality have a negative impact on economic growth due to *"incentive traps, erosion of social cohesion, social conflicts, and uncertain property rights"*. Clearly, if the widening gap

[17] like ID cards

between rural and urban areas is left unchecked, it *"will hinder overall economic development and even undermine social stability"* (China Daily, 2004).

The agricultural sector (farming, forestry, animal husbandry, and fisheries) forms a vital part of the Chinese economy. Around 300 million people accounting for 36.7% of the total nationwide employment are involved in this sector even though the proportion of agriculture in Chinese GDP reduced to only 10.3% in 2010 (National Bureau of Statistics of China, 2011). Since the mid-1990s, developing a productive and efficient agriculture system and thus raising rural incomes has become an explicit policy objective for the government (Ministry of Agriculture, 1997). In 2007, the government announced that consolidating the fundamental role of agriculture in economic growth was among the eight major governmental economic tasks (XinHua News, 2007b). At the 17th Communist Party of China (CPC) Central Committee Meeting (2008), the nation set the goal of doubling the disposable per capita income of rural residents by 2020 (China Daily, 2008).

To help increase rural incomes, the government repealed all taxes on agricultural products[18] in 2005 and started to offer subsidies to farmers. But these approaches of reducing taxes and distributing subsidies may only marginally benefit farmers. Calculations show that the combination of agricultural subsidies and taxes represent less than 2% of average rural household incomes (Gale et al., 2005). As large-scale modern farming approach is very difficult to develop in rural China, the question of how to increase rural incomes, balance development between rural and urban areas, and integrate rural areas into the overall growth of the Chinese economy, are becoming key policy challenges for the Chinese government.

3.2.3 GIs — improving rural incomes by meeting quality requirements of Chinese middle class consumers

Before the 1990s, as supplies were very limited in China, ration coupons were required to purchase basic agrifood products, such as grain, oil, meat and sugar. At that time, both the production and consumption of agrifood products were dominated by cereals and coarse grains. As consumers had little to spend and there was not much

[18] Except for tobacco

to choose, people's consumption behaviours and patterns were basically identical. Until 1984, the grain output just met Chinese basic consumption needs, achieving around 400 kg per capita for the first time (Ash, 2006). This situation changed in the 1990s with massively increased agrifood production. In the last two decades, Chinese residents, especially in the urban area, have experienced a dramatic transformation in the agrifood sector. The plentiful supplies, the improved transportation and distribution systems, and the increasing privatisation of the retail sector, have led to a much improved selection of agrifood options for Chinese urban consumers as well as offering them a chance to shift their consumption patterns to a more varied diet (Veeck, 2003).

A firm economic base for the consumption of quality agrifood products has also been established in urban China. Firstly, under the urban-based industrialisation development strategy over the last three decades, the average income of urban residents is now more than three times that of rural residents (National Bureau of Statistics of China, 2011). Secondly, income is not evenly distributed in urban areas. From 2001 to 2010, the disposable income for the poorest 10 percent of the urban population only doubled to 5948.1 RMB, while the disposable income for the richest 10 percent more than tripled to 51431.6 RMB (National Bureau of Statistics of China, 2011). With the rapid growth of the Chinese economy and the widening income gap between rural and urban and the rich and poor, a group of wealthy individuals called "middle class" is emerging in urban areas. According to Deng (2005), the size of the Chinese middle class may vary, from 3% (35.18 million) to 14% (170 million) of the entire country's population according to different definitions of the term. Based on the Chinese official description, in 2007, the middle class was around 80 million people, or 6.15% of the population, with *"an annual income between 60,000 and 500,000 RMB"* (XinHua News, 2007a). The Boston Consulting group (2010) even declares that the Chinese middle class will increase to 400 million by 2020.

For these "middle class" consumers, plenty agrifood supplies and increasing incomes have provided them with an opportunity to purchase quality agrifood products instead of inferior ones (Gale, 2006). At the same time, the anxieties about unsafe agrifood products and the desire to demonstrate a certain social position also encourage these consumers to buy quality agrifood products. Along with increasing output and usage

of agricultural chemicals, some Chinese consumers have begun to notice the deterioration of the agroecosystem (see also MacKenzie, 1990). They start to worry about the environment where their food is grown and processed, and if their food is poisoned. Also, food scares, such as the infant milk powder scandal, reflect quality worries as well. Consumers are becoming increasingly sensitive about the quality of the agrifood products they are buying, and so have a strong desire to purchase quality agrifood products for health reasons. An IBM telephone survey noted that in response to environment problems and agrifood scandals, more than 80 percent of Chinese respondents were more and more concerned with food safety issues in their choice of what to eat (IBM, 2008). Moreover, agrifood consumption involves the production of meanings and identities in Chinese society. After a long period of controlled scarcity, the consumption of certain types of agrifood products plays a more significant role in Chinese social life. For example, the consumption of fresh milk in the 1960s and 1970s, imported fruits in the 1980s, and branded agrifood products in the 1990s indicates the social status and wealth of a family. In China, agrifood consumption is related to tangible and intangible personal success or an individual's level of public respect, and thus has become a specific symbolic character of "high income" consumers (Denton and Xia, 1995). For Chinese middle class consumers, agrifood is not just an object, it also presents *"a way of life"*. As Douglas and Isherwood (1980, p.62) stress, *"the essential function of consumption is its capacity to make sense"* in society.

Eves and Cheng (2007) argue that "quality" has become the most important influence on agrifood purchasing processes for middle class consumers, even though quality is a subjective judgement. The agrifood consumption of the Chinese "middle class" has improved not only quantitatively but also qualitatively. This quality approach has caught producers' attention in the market as producing quality agrifood products may not only respond to consumers' needs but also improve producers' incomes by enhancing the competitive ability and the market price (see also Kotler and Keller, 2006).

The Chinese have their particular way of evaluating agrifood quality. They believe that health is the consequence of a natural equilibrium, while illness is the outcome of some imbalance (Jovchelovitch and Gervais, 1999). Eating natural and healthy foods

can help the human body maintain a harmonious relationship with the universe and therefore bring health to human beings. It is called Chinese food "therapy" which dates back as early as 2000 B.C. (Liu, 2006). For the Chinese, there are two essential meanings included in this "therapy". One is freshness (just picked or killed) with the consideration for taste, nutrition, and healthiness (low in additives and preservatives) (Reid et al., 2001; Veeck and Burns, 2005). Another one is location. There is a Chinese saying *"oranges taste different because they grow on different sides of a river"*. They believe agrifood products planted in certain places have unique natural characteristics (ingredients) which are very important in self-medication and disease prevention (Reid et al., 2001). Clarifying geographic origin is thus incredibly important in the agrifood purchasing process of the Chinese. For example, Ginseng produced in the north of China is believed to integrate more healthy ingredients than Ginseng grown in the south, and therefore it is sold with a higher price in the market. This traditional, old fashioned way still influences how agrifood quality is framed in today's Chinese market.

For helping farmers adopt a quality strategy to gain a high income and also meeting Chinese consumers' quality requirements, GI schemes are supported by the Chinese government since the 1990s. The GI system seems very successful in China as the price for many GI agrifood products grew rapidly in the last decade. For instance, between 2001 and 2009, the price of Longjin tea rose 50% (China Quality Daily, 2009). But, the ability of GIs to charge a high price in the market is mainly based on consumers' confidence on GIs which appear to *"guarantee"* that certified agrifood products have been checked against published GI standards and *"make food supply chains legible, traceable, and perhaps less risky"* (Guthman, 2004 p.512). The certification procedure of GIs thus need be managed and monitored carefully to prevent unscrupulous farmers or producers taking advantage. If monitoring is weak, it may be very difficult for producers to receive a high economic reward through the GIs for a long time. Unfortunately, the Chinese general food quality inspection system has been proved ineffective by many researchers (e.g. Tam and Yang, 2005; Calvin et al., 2006; Roth et al., 2008).

3.3 The Chinese food safety regulatory system

Safety is an important aspect of quality. A "quality" agrifood product has to be "safe" to eat. The government always focuses on measurable safety standards to control food quality (see also Section 2.3.2) as health issues in the food industry have been driven to the top of the political agenda by food scares. But, the structure and the effectiveness of the food safety regulatory system vary between countries. The U.K. food safety regulatory system is taken as an example here to compare with the Chinese system.

In the U.K., governmental food safety control and management must conform to the Food Safety Act 1990 and secondary regulations and directives issued by the European Union[19] to protect the health of consumers and to prevent fraud (Mensah and Julien, 2011). To ensure food is safe to eat, an independent government department — the Food Standards Agency (FSA) was set up under an Act of Parliament in 2000 and is responsible for setting detailed food safety and hygiene standards and regulations and *"work(s) with local authorities to enforce food safety rules and have staff who work in UK meat plants to check that the requirements of the regulations are being met"* (Food Standards Agency, 2011; Harvey, 2004). Based on the management of the FSA, the local authority food law enforcement officers, such as Environment Health Officers and Trading Standards Officers, are responsible for making sure food laws or regulations are applied in the food producing and processing process (Atkins and Bowler, 2001). Beside the government agencies, many third party inspectors also play a very important role in the food safety regulatory system in the U.K. According to the Food Safety Act 1990, food companies have an obligation to exercise *"due diligence"* to assure food safety (Atkins and Bowler, 2001). This "due diligence" defense shields food producers in the event of crises, if they have taken all reasonable precaution and exercised all due diligence to avoid committing the offence (Mensah and Julien, 2011). As if producers have exercised "due diligence" then their responsibility to food crises can be limited, this has been the driving force of the appearance of third party inspectors who inspect food safety based on common standards and thus provide 'due diligence' defense for

[19] Such as, The General Food Law Regulation (EC) 178/2002 and The General Food Regulations 2004

producers. The laws, the independent government departments (FSA), the local authority food law enforcement officers, and third party inspectors co-operate to ensure food safety in the U.K.[20]

Compared with the U.K., the Chinese food quality regulatory system is relatively complicated. Firstly, the government has launched a series of laws to ensure food safety over the past two decades, such as the Product Quality Law of the P.R.C., the Food Safety Law of the P.R.C., and Agricultural Product Quality Safety Law of the P.R.C.

Secondly, based on these laws, four ministries and agencies[21] are critically empowered to manage the enforcement of these laws. (Table 3.2)

Ministry/Agency	Law	Responsibilities on ensuring food safety
The Ministry of Agriculture (MoA)	Agricultural Product Quality Safety Law of the P.R.C.	Formulating and enforcing quality standards of agricultural inputs and farm products; organising the supervision and certification of various agricultural products.
The General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ)	Product Quality Law of the P.R.C. ; Agricultural Product Quality Safety Law of the P.R.C.	Formulating and enforcing quality standards of food manufacturing, packaging, and labling; issuing production permits for food processors and producers; supervising licensed food enterprises for compliance with regulations and standards concerning food manufacturing, packaging, and labling.
The Ministry of Health (MoH)	Food Safety Law of the P.R.C.	Formulating and enforcing quality standards of food safety; issuing hygiene licenses to businesses engaged in food production, marketing or sales; monitoring, inspecting, and providing technical guidance on foods hygiene; appraising and publicising the status of food hygiene; investigating and dealing with food poisoning or food contamination incidents.
The State Administration for Industry and Commerce (SAIC)	Product Quality Law of the P.R.C.; Food Safety Law of the P.R.C.	Issuing business licenses; regulating product quality and food safety in the market.

Table 3. 2: The responsibilities of the MoA, the AQSIQ, the MoH, the SAIC on ensuring food

[20] Beside the FSA, the Department for Environment, Food and Rural Affairs (DEFRA) focuses on offering support to agri-environment and rural development, also takes part of responsibility to ensure food safety in farming level, such as the usage of pesticides.

[21] The National People's Congress (NPC) ranks the highest in the administrative system pyramid and the State Council is the chief administrative authority. These four ministries and agencies lie directly under the State Council. And, this structure is replicated at the provincial and county levels.

safety
Source: Tam and Yang, 2005; Ministry of Agriculture, 2010; General Administration of Quality Supervision, Inspection and Quarantine, 2010; Ministry of Health, 2010; State Administration for Industry and Commerce of P.R.C., 2010

From an administrative point of view, responsibilities between these four ministries and agencies are confusing and often overlap. Therefore, as part of the simplifying programmes, the right to control food safety was proposed to the State Food and Drug Administration (SFDA) in 2003, which is authorised to exercise comprehensive supervision over the safety of food, health products, and cosmetics. Two of the SFDA's five specialised departments[22] are dedicated to food safety control: the Department of Food License and the Department of Food Safety Supervision. However, instead of the simplifying purpose proposed initially, these two departments focus on coordinating with other ministries and agencies to set unified food safety standards, investigate food safety incidents, issue food hygiene licenses, and supervise the implementation of food safety regulations at consumption stage in practice (State Food and Drag Administration, P.R.C., 2012b). In other words, the SFDA only concentrates its authority on the coordination and strengthening of law enforcement whilst the regulatory authority over food safety still remains divided among different government ministries and agencies[23] (Roth et al., 2008). (Figure 3.5)

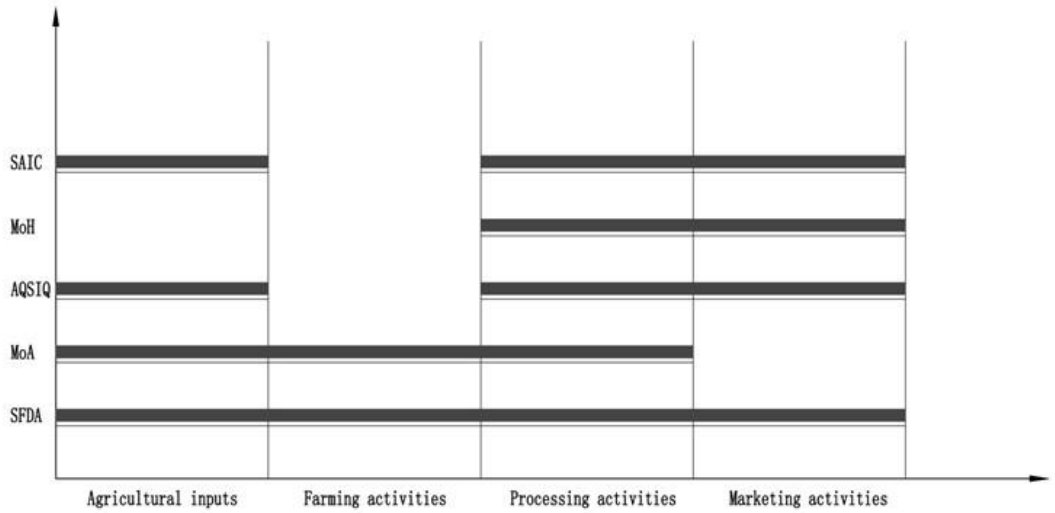

Figure 3. 5: The responsibilities of the five departments involved in control food safety in China

[22] Five specialised departments are: the Department of Food License, the Department of Food Safety Supervision, the Department of Drug Registration, the Department of Medical Device Supercision, and the Department of Drug Safety & Inspection (State Food and Drag Administration, P.R.C., 2012a)

[23] Beside these five ministries and agencies, other bureaucratic ministries and agencies also involve in the food safety control system are: the Ministry of Commerce, the State Environment Protection Administration, the China Petroleum and Chemical Industry Association, and the Ministry of Public Security

The fragmentation of responsibility and regulatory authority for food safety among those government ministries and agencies has a negative impact upon the effectiveness and efficiency of food safety control, because *"[I]n certain aspects, there may be excessive enforcement; in others, shirking of responsibility may be the outcome"* (Tam and Yang, 2005 p.14). The incongruity among the regulations and standards adopted by the different ministries and agencies and overlapping and unclear functions of regulatory authorities, provide some food producers with an opportunity to make and market sub-standard unsafe food products. A *"Lemon Market"* with "bad" driving out "good" and described at the beginning of this thesis may thus appear (see also Akerlof, 1970).

Thirdly, building an effective food safety control system to govern production and marketing activities is still work in progress in China (Tam and Yang, 2005; Roth et al., 2008). Marketing research has uncovered that many of the food problems can be traced back to farms where safety is almost uncontrollable at farm level in China (World Bank, 2006). Roberts and Engardio (2006) indicate that obtaining a high profit is difficult in the contemporary competitive Chinese food market because most traders often go to the cheapest supplier. So, food producers would like to cut "useless" costs which may break some rules. For example, in order to decrease the cost, Chinese farmers rely heavily on the use of chemical inputs to increase production and deal with pest pressures (Williams, 2005). However, with a low education level in the use of chemicals, many farmers believe the more chemicals they use, the better their products are (Brogaard and Zhao, 2002; Williams, 2005). Over or wrong usage may thus occur, such as many farmers may fail to wait the prescribed number of days between the last application of a pesticide and the harvest, resulting in excessive residues in the harvested product (Calvin et al., 2006). As rural China is filled with millions of small-scale farms which normally less than 0.8 ha[24] (National Bureau of Statistics of China, 2011), how to secure the safety level of agrifood products through a relatively few number of government inspectors is still a problem. Meanwhile, millions of small-scale food traders, who dominate most of the food trade in the market, often handle small volumes of products and operate on a cash basis with no

[24] (the sown area + the tea plantation area + the orchards area)/(population in rural areas/average family household size) (Chinese National Bureau of Statistics, 2011)

documentation[25] (Calvin et al., 2006; Roth et al., 2008). It is almost impossible for government officers to trace and recall unsafe food products from the market. With no inspection and stimulated by profit maximisation, producing and trading unsafe agrifood products seems an unavoidable consequence in today's Chinese food market. As Roberts and Engardio (2006) argue, the pursuit of profit is not a problem by itself but problems arise when that pursuit takes a short-term orientation and is not kept in check by market or regulatory forces.

Fourthly, in order to increase government tax income and employment opportunities, local governments may protect counterfeiting businesses by laxly enforcing regulations over food safety. As Luo Yunbo, Dean of the Food and Nutrition College of China Agricultural University, asserts, *"if local governments close all the companies that violate food regulations, a lot of workers will lose their jobs"* (Engardio et al., 2007 p.42). There are cases where some food producers are able to obtain legal licenses in spite of poor production conditions. Guanshengyuan, a famous food company in China, was reported making moon-cakes using expired materials in 2001, and Jijihong, a big franchised catering company, was discovered using unsafe additives in food processing in 2010.

The combination of too many laws, a fragmented regulatory system, an ineffective production and marketing monitoring system, and counterfeiting businesses present a challenge to the government and its regulators to secure food safety in China. According to the results of an inspection program run by the MoA to check vegetable pesticide residue level, the noncompliance rates with governmental standards in 2006 was 22.1% in urban markets (Information Office of the State Council of the People's Republic of China, 2007). As it is difficult to ensure food safety by contemporary Chinese food safety regulatory system (see also Bristow, 2007), a topical question appears, can the Chinese GI system offer extra guarantee on food quality?

3.4 The legislative system of GIs in China

With numerous traditional and typical agricultural products, geographical names have

[25] Traditional food supply system dominates the food sector in China rather than the industrial food system

been used for thousands of years to distinguish similar products by Chinese producers. However, China did not establish any regulation to protect and promote geographical origins until the 1980s when China became one of the signatories to the Paris Convention for the Protection of Industrial Property 1883, in 1985. Nowadays, three parallel legislative frameworks, which are established by the SAIC, the AQSIQ and the MoA based on different laws or regulations, are in place to manage the Chinese GI system.

The SAIC founds the first GI framework based on the Trademark Law. In 1993, the Trademark Law was amended by the SAIC to define GIs as collective marks and certification marks. On 27 October 2001, the Trademark Law was amended again to meet the requirements of the WTO. Article 3 of the 2001 Trademark Law points out that *"collective marks"* mean *"signs which are registered in the name of bodies, associations or other organizations to be used by the members thereof in their commercial activities to indicate their membership of the organizations"*, and *"certification marks"* mean *"signs which are controlled by organizations capable of supervising some goods or services and used by entities or individual persons outside the organization for their goods or services to certify the origin, material, mode of manufacture, quality or other characteristics of the goods or services"*. And, article 16(2) defines GI as identifying *"a particular good as originating in a region, where a given quality, reputation or other characteristic of the goods is essentially attributable to its natural or human factors"*. This definition is broadly similar but not identical to TRIPS, as TRIPS refers to *"essentially attributable to its geographical origin"* and the 2001 Trademark Law specifies *"essentially attributable to its natural or human factors"* which is more specific. (Trademark office, 2003; World Trade Organization, 2009)

Alongside the Trademark law, a regulation entitled *"Measures for the Registration and Administration of Collective Marks and Certification Marks"* provides some specific rules and explanations to manage GIs. According to the regulation, the applicants for the registration of GIs can only be societies, associations or organisations and the applications must be made to the Trademark Office. Article 7 of this regulation indicates that any party applying for the registration of a GI as a collective mark or a certification mark must present the following information

regarding *"the special quality, reputation or other characteristics of the commodity branded with the geographical indication; the relation between the natural and cultural factors of the region indicated by the geographical indication and the special quality, reputation or other characteristics of the commodity; and the scope of the region indicated by the geographical indication"*. And, articles 17 and 18 note that *"the collective members of the registrant of a collective trademark may use the collective trademark upon carrying out the procedures stipulated in the rules for administration of the use of the collective trademark; Collective trademarks may not be used by non-collective members"* and *"[P]arties that meet the requirements specified in the rules for administration of the use of a certification trademark may use such trademarks upon carrying out the procedures specified in the rules for administration of the use of the certification trademark, and the registrant may not refuse to carry out the procedures"*. Beside the regulation, a specific GI label was also issed by the SAIC to show the product has been registered as a GI product (Figure 3.6). (State Intellectual Property Office of P.R.C., 2007)

Figure 3. 6: The GI label issued by the SAIC

The second GI framework is established by the former State Bureau of Quality and Technical Supervision according to the *"Provisions on Protection of Designations of Origin Products"*, which is the first *sui generis* protection regulation for GIs in China and was issued in 1999. By the year 2001, two government Bureaus, the former State Bureau of Quality and Technical Supervision and the former State Administration for Entry–Exit Inspection and Quarantine, merged into the AQSIQ. On July 15, 2005, the AQSIQ repealed the "*Provisions on Protection of Designations of Origin Products*" and issued "*Provisions on Protection of GI Products*" and the specific GI label (Figure 3.7). GI products are referred in Article 2 of the later Provisions as *"products*

that originate from a particular geographical region with the quality, reputation or other characteristics substantially attributable to the natural and human factors of the region, and denominated with the name of the region upon examination and approval". The GI products include, *"those grown or cultivated in the region; and those made, wholly or partially, of the raw materials from the region and produced or processed with the particular techniques in the region"*. According to Article 10, to register a GI, the applicant should submit the following documents: *"local government's proposal for the defined limits of the place of origin of the product of a geographical indication; local government's document establishing the application organisation or designating an association or enterprise as an applicant; documentary material proving the product of geographical indication"*. Also, Article 8 indicates the application documents should be submitted by *"an organization designated for the application for the protection of the products of the geographical indication by the people's government at or above the county level or by an association or enterprise appointed by the people's government (hereinafter referred to as the applicant) upon consultation with the departments concerned"*. Clearly, the conditions of applicants here are stricter, and the documents that should be submitted are more complex than the requirements of SAIC framework. In order to use the GI, the manufacturer located in the territory has to file an application to the local AQSIQ and submit the following documents: *"an application for use of the exclusive indication of the products of geographical indication; a certificate issued by the competent authorities of the local government proving that the products concerned originates from the particular area; and an inspection report issued by the relevant product quality inspection department"* (article 20). As a supervisory department, the AQSIQ still has the right to monitor and supervise production processes of GI products, even after registration. (General Administration for Quality, Supervision, Inspection and Quarantine, 2005)

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Figure 3. 7: The GI label issued by the AQSIQ

The third GI framework is set up by the MoA through issuing *"Measures for the Administration of Geographical Indications of Agricultural Products"*[26] and the relevant GI label (Figure 3.8) at the end of 2007. In the Measures, GIs are defined as *"special agricultural product indications which are named by territorial names and are meant to tell that the indicated agricultural products are from a specific area and that the quality and major characteristics of the products mainly lie in the natural and ecological environment as well as cultural and historical factors of the area"* (article 2). And, the applicants applying for the registration of GIs for agricultural products should be *"excellent professional co-operative economic organizations of farmers and industrial associations determined by the local people's government at or above the county level"* (article 8). Article 9 indicates the documents must be offered to apply for a GI are, *"a registration application form; a certificate on the qualification of the applicant; a description on the typical characteristics of the product and a corresponding product quality appraisal report; the environmental conditions of the producing area of the product, the technical norms for production and the technical norms for product quality safety; a document determining the territorial scope, and a distribution map of its producing area; a straight sample or a sample picture of the product; and other necessary descriptive or evidentiary material"*. In the registered territorial scope, an entity or individual may apply to the certificate holder to use the registered GI after supplying the following documents: *"the agricultural product produced or traded by it/him originates from the territorial scope indicated in the registration certificate; it/he has obtained the corresponding qualification for producing or trading the agricultural product concerned; it/he is capable of*

[26] The Measures have been in force since 1 February 2008

conducting producing and trading activities in strict accordance with the prescribed quality and technical norms; and it/he has the capacity for the market development and operation of the agricultural product concerned" (article 15). And, the administrative department of agriculture under the people's government at or above the county level holds the right to supervise and examine the usage of GIs on a regular basis by the Measures. (The Center for Agri-food Quality & Safety, The ministry of Agriculture, P.R.C., 2008)

Figure 3. 8: The GI label issued by the MoA

These three government departments established three parallel GI frameworks according to different laws or regulations (Table 3.3). Although the quality characteristics (including the safety aspect) of GI products can theoretically be secured by the certification process, the overlapping areas of responsibility (such as all three departments have the authority to issue GIs and inspect the quality GI products) and potential conflicts (such as GI products sold in the market may be produced according to different GI standards) between three GI frameworks still give producers the opportunity to produce sub-standard or fake agrifood products with GIs into the market (see also State Intellectual Property Office of P.R.C., 2011). The effectiveness of Chinese GI schemes on securing "pre-set" quality characteristics of GI agrifood products is thus questionable.

	The SAIC framework	The AQSIQ framework	The MoA framework
Law/ Regulations issuing time	1993/2001	1999/2005	2007
Law/ Regulations	Trademark Law; Measures for the Registration and Administration of Collective Marks and Certification Marks (2003)	Provisions on Protection of Designations of Origin Products (1999); Provisions on Protection of GI Products (2005)	Measures for the Administration of Geographical Indications of Agricultural Products
Key Words of Definition	Originating in a region; a given quality, reputation or other characteristic; essentially attributable to its natural or human factors	From a particular geographical region; quality, reputation or other characteristics; substantially attributable to the natural and human factors of the region	Agricultural products are from a specific area; quality and major characteristics; lie in the natural and ecological environment as well as cultural and historical factors
The applicant	Societies; associations; organisations	Organisations; associations; enterprise	Excellent professional co-operative; economic organisations of farmers; industrial associations
Filed information	1. The special quality, reputation or other characteristics of the commodity branded with the geographical indication; 2. The relation between the natural and cultural factors of the region indicated by the geographical indication and the special quality, reputation or other characteristics of the commodity; 3. The scope of the	1. Local government's proposal for the defined limits of the place of origin of the product of a geographical indication; 2. Local government's document establishing the application organisation or designating an association or enterprise as an applicant; 3: Documentary material proving the product of geographical indication.	1. A registration application form; a certificate on the qualification of the applicant; 2. A description on the typical characteristics of the product and a corresponding product quality appraisal report; 3. The environment conditions of the producing area of the product, the technical norms for production and the technical norms for product quality safety; 4. A document

	region indicated by the geographical indication.		determining the territorial scope, and a distribution map of its producing area; 5. A straight sample or a sample picture of the product.
Conditions of users	1. Collective trademark: **User**: Collective members **Condition:** Carrying out the procedures stipulated in the rules 2. Certification trademark: **User**: Parties **Condition:** Meeting the requirements specified in the rules; carrying out the procedures specified in the rules	**User**: A manufacturer locates in the GI's territory **Condition**: An application for use of the exclusive indication of the products of geographical indication; a certificate issued by the competent authorities of the local government proving that the products concerned originates from the particular area; an inspection report issued by the relevant product quality inspection department	**User**: Entity/Individual **Condition**: An agreement on the use of geographical indication with the registration certificate holder of the indication on the basis of production and operation year (the agreement shall bear the quantity and scope of use as well as the relevant responsibilities and obligations)

Table 3. 3: Three GI legislative frameworks in China

3.5 Chapter summary

Through highlighting GIs as a solution to overcoming information problems in the market and thus improving farm and rural incomes, this chapter examined the development of the Chinese agrifood sector, the widening income gap between urban and rural areas, increasing middle class consumers' concerns on food quality, the food safety regulatory system, and the GI legislative system. The findings indicate three main issues.

Firstly, Chinese GI systems are promoted by the government not only to meet consumers' quality requirements but more importantly to improve farm and rural incomes and retain social stability. Secondly, too many laws, a fragmented regulatory system, an ineffective production and marketing monitoring system, and flourishing counterfeiting businesses are the essential reasons causing food scandals in the

contemporary Chinese agrifood market. Thirdly, although an important distinction between GI and normal agrifood products is supposed to be "quality", the ability of complex Chinese GI schemes to guarantee "pre-set" quality characteristics of GI agrifood products is still questionable as three GI frameworks are involved.

According to the conceptual framework of agrifood quality presented in Chapter 2 (Page 22), the quality characteristics of agrifood products may vary based on different networks. Theoretically, the inherent quality of GI products can be secured by the certification process based on strict GI standards under effective government inspection. But, after examining general political, social and economic environments, the ability of the Chinese GI system to secure quality GI products by developing strict GI standards, effective certification processes and effective government quality inspection programmes can be questioned.

There is one further but notable finding, namely there has been a lack of research conducted by Chinese scholars in this field, something which this thesis intends to redress. Nowhere, to the author's knowledge, has there been any refereed academic journal articles published by Chinese academics working in the field in China. Such a gap in the stock of knowledge needs to be addressed. Therefore, the next chapter will review the available research methodologies before selecting an appropriate research methodology to enable empirical analysis to be conducted with respect to the Chinese GI sector and thereby meeting the aim of this thesis, namely evaluating the effectiveness of GIs in terms of developing agrifood quality in contemporary China.

Chapter 4 Research Methodology

"According to Herbert Blumer (1969), methodology refers to the 'entire scientific quest' that has to fit the 'obdurate character of the social world under study'. Thus methodology is not some super-ordained set of logical procedures that can be applied haphazardly to any empirical problem. In short methodology constitutes a whole range of strategies and procedures that include: developing a picture of an empirical world; asking questions about the world and turning these into researchable problems; finding the best means of doing so — that involve choices about methods and the data to be sought, the development and use of concepts, and the interpretation of findings (Blumer 169:23). Methods per se are therefore only one small part of the methodological endeavor"

(Alasuutari et al., 2009 p.1)

"The word qualitative implies an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured (if measured at all) in terms of quantity, amount, intensity, or frequency. Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. Such researchers emphasise the value-laden nature of inquiry. They seek answers to the questions that stress how social experience is created and given meaning. In contrast, quantitative studies emphasise the measurement and analysis of causal relationships between variables, not processes. Proponents of such studies claim that their work is done from within a value-free framework."

(Denzin and Lincoln, 2005a p. 10)

"Some consider "the case" an object of study (Stake, 1995), and others consider it a methodology (e.g., Merriam, 1988). In either situation, case study is an exploration of a "bounded system" or a case (or multiple cases), over time, through detailed, in-depth data collection involving multiple sources of information and rich in context"

(Miller and Salkind, 2002 p.162)

4.1 Introduction

After reviewing the socio-economic theory, the network approach and power relationships to support this research theoretically in Chapter 2 and examining political, social and economic environments involved in the Chinese GI system in Chapter 3, the objective of Chapter 4 is to develop a methodological approach that enables empirical analysis to be conducted of power relationships involved in quality construction processes in Chinese GI networks.

However, developing a methodological approach is not a straightforward task which not only asks for clarifying the approaches to collect and analyse data but also explain the paradigm and methodology supporting the logic of the research. Therefore, the rest of this chapter is organised into two main themes. One discusses research paradigms, quantitative and qualitative research methodologies, and various qualitative research strategies. The other one concentrates on designing the data collection and analysis procedure.

4.2 The philosophical foundation: selecting a paradigm and theoretical framework

All research is based on some underlying assumptions about what constitutes *"valid"* research. In order to identify an appropriate research methodology, it is important to know what those assumptions are, and which one(s) should be selected to undertake this study.

The foundations of social researchers' works are their ontology and epistemology, after which the methodological positions logically follow. Blaikie (2000, p.8) defines ontology as *"claims and assumptions that are made about the nature of social reality, claims about what exists, what it looks like, what units make it up and how these units interact with each other. In short, ontological assumptions are concerned with what we believe constitutes social reality"*. Snape and Spencer (2003, p.1) point out that ontology are researchers' beliefs *"about the nature of the social world and what can be known about it"*. In other words, a researcher's ontological position is his/her

answer to the question *"whether or not social reality exists independently of human conceptions and interpretations; whether there is a common, shared, social reality or just multiple context-specific realities; and whether or not social behaviour is governed by 'laws' that can be seen as immutable or generalisable"* (p.11). It is only after these questions have been asked and answered, that social researchers can discuss epistemology which focuses on explaining *"the nature of knowledge"* (Blaikie, 2000 p.1), and answering the question *"how it (knowledge) can be acquired"* and *"how can we know about reality and what is the basis of our knowledge"* (p.13). Within social research, based on the underlying research ontology and epistemology, Orlikowski and Baroudi (1991) suggest three categories: positivist, interpretive and critical; Guba and Lincoln (2005) highlight four underlying "paradigms": positivism, post-positivism, critical theory, and constructivism; Denzin and Lincoln (2005b) posit four "paradigms": positivist and post-positivist, constructivist-interpretive, critical (Marxist, emancipator), and feminist-poststructural. With these diversifications, three repeating common paradigm categories appear on a regular basis, namely positivism, interpretivist, and critical theory (see also Orlikowski and Baroudi, 1991; Myers, 1997) (Figure 4.1).

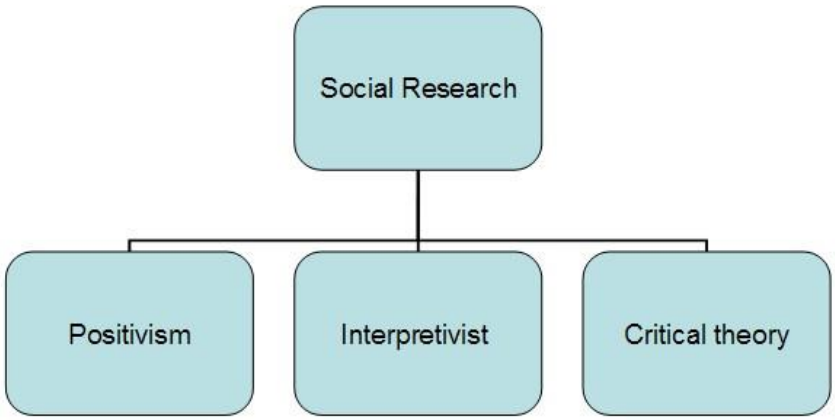

Figure 4. 1: Three common paradigm categories of social research

With reference to ontology and epistemology, positivism believes there is a "real" world out there independent of our knowledge of it. Observers can observe "real" and "objective" relationships between social phenomena (Sarantakos, 2005; Myers, 1997). And this reality can be described by measurable properties which are independent of the researcher and his/her instruments. Positivism seeks an explanation for social phenomena and causality, expects to find regularities in the social world for prediction,

and emphasises quantitative analysis and empirical assumptions (Smith, 1996; Sarantakos, 2005). But the goals of positivism – explanation, prediction, and control – are incomplete since they may lack any understanding of society (Guba and Lincoln, 2005). For example, every venture has a fundamental reliance on human inputs. If the aim is to create a quality product, it is vital that all involved actors are committed to that aim. Based on positivism, unitary quality can be achieved because individual activities would be able to be controlled and all human beings can be governed as simple cogs in a machine. But, it is not possible in the real world. Therefore, within social research, positivism studies are generally used to test theories, in an attempt to increase the predictive understanding of phenomena (Myers, 1997).

Whereas positivism emphasises the explanation and prediction of social phenomena, the interpretivist paradigm seeks an understanding of social phenomena and the meanings actions have for actors. An interpretivist paradigm starts from an ontological position of rejecting the notion that there is a "real" world out there beyond our knowledge of it, and believes that reality does not exist independently of the observer and the social milieu is entirely socially constructed by personal inputs (Sarantakos, 2005). In other words, the world cannot be observed or measured except in our own subjective understanding (Burrell and Morgan, 1979). As social phenomena only exist in the minds of actors and observers, an interpretivist paradigm does not predefine dependent and independent variables but seeks to understand social phenomena and the meanings social phenomena assign to people (Kaplan and Maxwell, 1994). Quantitative methods are therefore rejected here, and qualitative methods are more appropriate to unpack the relevant meanings and approach an understanding of the deep structures of society and how discourse surrounding social phenomena socially constructs "truth" (Moore, 2010).

The non-positivist tradition continues in the establishment of critical theory. Critical researchers assume that *"social reality is historically constituted and that it is produced and reproduced by people"* (Myers, 1997 p.242). Based on ontology of historical realism, and a transactional epistemology, critical researchers believe people can consciously act to change their social and economic circumstances, but their ability to do so is constrained by various forms of social, cultural and political domination (Guba and Lincoln, 2005). Critical research focuses on the oppositions,

conflicts and contradictions in contemporary society, and aims to decrease domination and increase freedom in all forms[27]. Because critical theory tries to explain and offer suggestions to transform all the circumstances that enslave human beings, it holds the hope that research could lead to emancipation rather than knowledge acquisition. In other words, the purpose of critical research is implementing the findings to change social reality by empowering people. This purpose leads the methodology used with critical theory to be qualitative or quantitative or both (Sarantakos, 2005).

As this thesis is dedicated to evaluating the effectiveness of GIs in terms of developing agrifood quality in contemporary China, the interpretivist paradigm is clearly more suited to underpin this research. But many researchers still hold different opinions on how the social phenomenon can be interpreted. Some sub-group of philosophies within the interpretivist paradigm have thus appeared. Burrell and Morgan (1979) consider four distinct but related categories: solipsism, phenomenology, phenomenological sociology and hermeneutics. Schwandt (2000) presents three sub-groups: social constructionism, hermeneutics and interpretivism (Figure 4.2). To draw a clear theoretical framework, for simplicity, Schwandt's idea will be analysed here.

Figure 4. 2: Three sub-groups of the interpretivist paradigm
Source: Schwandt, 2000

The researchers of social constructionism believe, *"there is in practice neither objective reality nor objective truth"*. Reality is constructed *"based on culturally defined and historically situated interpretations and personal experiences"*

[27] i.e. it should help *"to liberate human beings from the circumstances that enslave them"* (Horkheimer, 1982 p.244).

(Sarantakos, 2005 p.37). In other words, what people perceive is not "the reality", but what they have constructed through experiences and interpretations. As there are no absolute truths, all researchers can do is to reconstruct reality. Social constructionism points out that the meaning of any social phenomenon is not fixed and ready to be discovered but emerges when the interaction between people and the world exists. This philosophy is thus *"oriented to the production of reconstructed understandings of the social world"* (Denzin and Lincoln, 2005b p.184). The researchers do not discover knowledge but construct it. Because this philosophy *"refers to constructing knowledge about reality, not constructing reality itself"* (Shadish, 1995 p.67), the results of the research may reflect personal bias and become an individual's/researcher's interpretation of facts (Denscombe, 2002).

Different from social constructionism, hermeneutics focuses on the problem of interpretation and provides *"a theoretical framework for interpretive understanding, or meaning, with special attention to context and original purpose"* (Patton, 2002, p.114). It holds the opinion that, *"what something means depends on the cultural context in which it was originally created as well as the cultural context within which it is subsequently interpreted"* (Patton, 2002 p.113). Traditional hermeneutics refers to the study of interpretation of written texts, such as stories, biblical and legal texts, and to understand intended meaning by placing documents in a historical and cultural context (Kneller, 1984). In modern usage, it involves not only the written text, but any products of the human mind, such as human actions, products, and institutions, which characterise the social and cultural world. A hermeneutic interpretation requires the individual to understand and sympathies with another's point of view, and stress human meaning and intentionality within a context.

In one sense, interpretivism can be characterised as hermeneutic as they both believe understanding particular social action requires a grasp of the situation that human action creates. Schwandt (2000) indicates that human (social) action is inherently meaningful and a particular social action *"can be grasped only in terms of the system of meanings to which it belongs"* (p.191). But in another aspect, how to find the meaning of an action still requires researchers to interpret what the actors are doing. As different researchers may interpret an action in various ways, the difference between interpretivism and hermeneutics appear (Schwandt, 2000). Within

interpretivism, it is believed that a researcher's bias can be removed and unbiased description and understanding can be reached. For example, Denscombe (1998) presents a suggestion that, the best an interpretivist researcher can do is presenting a snapshot of the time and place because the complex social life is arguably impossible to control or replicate. However, hermeneutics researchers argue that investigators cannot be free or distance themselves from the research (Patton, 2002; Schwandt, 2000) and thus unbiased description cannot be achieved.

Interpretivism *"looks for culturally derived and historically situated interpretations of the social life world"* (Crotty, 1998 p.67), and often *"goes beyond identifying the subjective meaning and explores the processes of constructing social situations and everyday structures that guide and explain personal views and opinions, and focuses on the mode of production of social structures"* (Sarantakos, 2005 p.40). As this thesis tries to explore power relationships involved in quality construction processes through examining different actors' actions under the certain contexts, and that the impact of investigators is believed can be minimised by well designed research methods, the interpretivism theoretical philosophy is more appropriate to underpin this research.

4.3 Qualitative methodology and case study strategy

The paradigm not only provides the foundation from which the logic and structure of research is established but also informs the methodology (Sarantakos, 2005). Compared with paradigms, which are sets of propositions that explain how the world exists and is perceived, methodologies are *"a bundle of skills, assumptions, and practices that the researcher employs as he or she moves from paradigm to the empirical world"* (p.25). Two research methodologies can be adopted in the social research. The one is quantitative methodology which concentrates on testing hypotheses using a variety of sampling techniques and has been described as *"a tool for studying social events and learning about them and their interconnections so that general causal laws (which allow society to control events and to predict their occurrence and outcomes) can be discovered, explained and documented"* (p.33). The other one is qualitative methodology, which seeks to construct knowledge (Stake, 1995) and provide meaning to human behaviour based on the interpretation of

non-numerical data.

In agrifood networks, quality is not only impacted by the context but also constructed under power relationships between different actors. Within the interpretivist paradigm, qualitative research methodology that *"explores the processes of constructing social situations"* (Sarantakos, 2005 p.40), helps *"the investigators to interpret and understand, first, the actors' reasons for social action, second, the way they construct their lives and the meanings they attach to them, and third, the social context of social action"* (p.42), and *"born(s) out of concern to understand the 'other' "* (Vidich and Lyman, 2000 p.24), provides a better opportunity than quantitative methodology to meet the aim of this thesis — exploring effectiveness of GIs on improving quality, through an in-depth understanding of actors' quality development activities and the reasons that govern such activities.

But, qualitative methodology is diverse. There is not one, but many qualitative research strategies, such as grounded theory, field research and case study. Grounded theory concentrates on developing theory grounded in data systematically gathered and analysed (Myers, 1997). Martin and Turner (1986, p.141) define grounded theory as *"an inductive, theory discovery methodology that allows the researcher to develop a theoretical account of the general features of a topic while simultaneously grounding the account in empirical observations or data"*. Field research is *"the systematic study of ordinary events and activities as they occur in real-life situations"* (Sarantakos, 2005 p.202). It takes place in a *"natural field"*, which is not constructed for the purpose of conducting research (Lincoln and Guba, 1985). The advantage of field research can be that researchers may have a closer position to the real world by observing real life situations through the eyes of and from the perspective of those living in the field but the disadvantages are it takes a very long time to do the research and the number of samples is normally very small due to the high costs and the time it takes. Contrasted with field research, the case study strategy is less time intensive but may achieve a holistic understanding of interrelated activities of a social phenomenon (Tellis, 1997; Fisher, 2007). Yin (2009, p.18) defines the case study strategy as *"an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident"*. Denzin and Lincoln (2005a) believe the case study strategy

is most likely to answer *"why"* and *"how"* questions and to investigate why and how certain outcomes are achieved. As this thesis tries to explore the influence of GIs on agrifood quality through examining power relationships involved in quality construction processes between different actors (a "how" question) and the boundaries between phenomenon and context are not clearly evident in GI networks (such as the weak government enforcement on securing agrifood safety is a phenomenon and also a context), the case study strategy is most suitable for this thesis with limited research time. In fact, the case study strategy has been widely used in food quality and AAFNs studies by many researchers and proved very successful in these research areas (Table 4.1).

Author (s)	Method (s)	Scope and research purpose
Ilbery and Kneafsey (2000a)	case study (one case)	Examine how producers of regional speciality food products define quality with consumer concerns
Parrott, Wilson, and Murdoch (2002)	Case study (two cases)	Examine the spatialization of food quality
Stassart and Whatmore (2003)	Case study (one case)	Examine the effectiveness of the message carried in certain beef products in decreasing consumers' perceived "risk"
Mansfield (2003a)	Case study (one case)	Analysis of "geography of quality"
Holloway and Kneafsey (2004)	Case study (four cases)	Study the influence of farmers' market on consumers' quality perspectives
Lockie and Halpin (2005)	Case study (one case)	Examine the interrelationships between conventions and alternative agrifood systems
Morgan, Marsden and Murdoch(2006)	Case study (two cases)	Measure the consumption impacts on key Tuscan products
Gamble and Taddei (2007)	Case study (one case)	Analyse responses to market forces in the French wine industry
Kneafsey, Cox, Holloway, Dowler, Venn, and Tuomainen (2008)	Case study (six cases)	Analyse the activities of food producers and consumers in alternative food networks
Danold (2009)	Case study (two cases)	Examine how different notions of "quality" are used to shape food and wine cluster

Table 4. 1: Some studies of agrifood quality and AAFNs adopting the case study strategy

The case study strategy is not uniform. Stake (1995) refers to three types of case study.

The intrinsic (single and in-depth) case study tries to learn about a single unique case only; the instrumental case study is used to provide insight into a general issue or refine a theory using a particular case; the collective case study is adopted when there is less interest in one particular case but in investigating a social issue, phenomenon, group or condition. The disadvantage of the first two types which focus on the uniqueness of individual cases is they may lack capability of providing a generalised conclusion. Hamel et al. (1993) and Yin (2009) also point out that it is not a wise choice to carry out research on a particular phenomenon and assume that the group is self-evident. If researchers would like to understand a general phenomenon, they should choose more than one case to study (Stake, 2005). The more cases studied, a more reliable general picture can be uncovered. As Tellis (1997) explains, by providing detailed descriptions of each case, then presenting the themes within each case (within case analysis), followed by thematic analysis across cases (cross case analysis), and reporting the lessons learned from the investigation and comparison in the final interpretative section, multiple cases could generate a holistic understanding of a social issue or phenomenon and strengthen the results by replicating the pattern-matching. As this thesis focuses on a generalised topic – the Chinese GI system, it is better to examine several different GI networks containing different actors and operating under various socio-economic contexts to gain more reliable results.

How many cases should be chosen to do this research is another question following the choice of "the collective case study". Tellis (1997) and Venn et al (2006) indicate that the collective study normally chooses a maximum of three cases to analyse. Yin (2009) also points out, if similar results can be predicted, a few cases (two or three) would be appropriate. As many previous researches of quality and AAFNs (see table 4.1) also limited their case studies to one to four cases, this thesis will choose three cases to examine.

4.4 Collecting empirical materials

4.4.1 Case selection

After identifying the research paradigm, methodology and strategy, the methods for collecting empirical materials should be considered (Denzin and Lincoln, 2005a).

Vaughan (1992) emphasises the greatest understanding of phenomenon or general condition may be achieved by the careful selection of the case. It is very important to choose the right cases to do the research as the cases are expected to represent a population of cases. Stake (2005, p.451) also declares that the selection offers the opportunity to maximise what can be learned, and the researchers should choose cases *"they feel that can learn the most"*, such as the one most accessible or the one they can spend the most time with. Therefore, based on the social relationships of the researcher, the time restriction and the distribution of GI numbers in China, all three sample cases were chosen from Jiangxi province, China where the researcher lives and is familiar with.

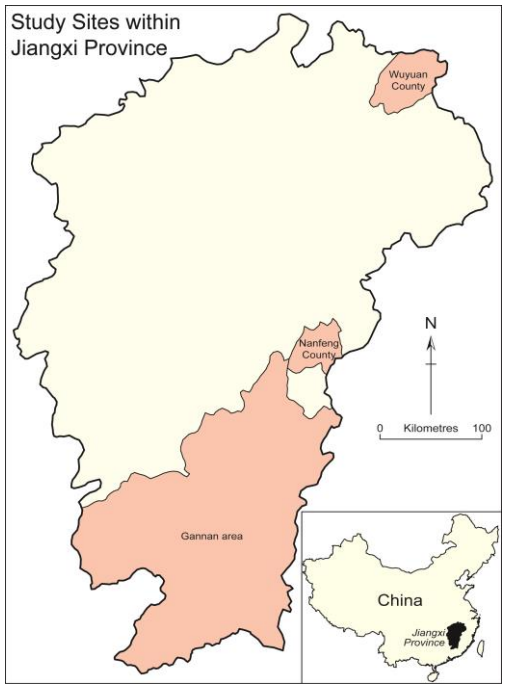

Figure 4. 3: The study sites in Jiangxi province, China

According to the National Bureau of Statistics of China (2011), Jiangxi province is located in the south east of China (Figure 4.3), and is situated in the middle and lower reaches of the Yangtze River. It is landlocked and surrounded by six provinces, Anhui on the north, Zhejiang on the northeast, Fujian on the east, Guangdong on the south, Hunan on the west, and Hubei on the northwest. Mountains surround Jiangxi on three sides, west, east and south.

The ecology condition of Jiangxi province is very good with plenty of sunshine and rain, fertile soil, and mild climate. In some areas, the growing season even lasts 11 months per year. According to government data, almost 9 million people are dedicated to agrifood production (35.6% of total employers in Jiangxi province, 3.2% of total agriculture employers in China) in Jiangxi province. With 2.8 million ha of cultivated land (2.3% of total Chinese cultivated land) and 0.4 million ha freshwater surface (2.3% of total Chinese freshwater surface), Jiangxi province produces 19.6 million tonnes of grain (3.6% of total Chinese grain output), 2.2 million

tonnes of fish (8.4% of total Chinese freshwater aquatic output), 1.1 million tonnes of oil-bearing crops (rapeseed, sesame, soybeans, and peanuts) (3.3% of total Chinese oil-bearing crops), and 2.7 million tonnes of oranges (10.2% of total Chinese orange output) in 2010. With a high agricultural output, Jiangxi province is described as an "agricultural" province in China. However, the total agrifood output value of Jiangxi province is relatively low — it was only 190.1 billion RMB in 2010 (2.7% of total Chinese agrifood output value compared with 3.2% of total Chinese agricultural employees). To improve rural incomes, based on the suggestion of the MoA, in face of self-owned resource advantages, the Department of Commerce of Jiangxi province (2003) started to promote a "quality" strategy in the agricultural sector onwards from 2003, encouraging organisations, associations and county governments to register local agrifood products with the GI system or other certification systems (such as the China Green Food System), with the hope that farmers can obtain a higher economic reward by selling "certificated" agrifood products. (Statistic Bureau of Jiangxi and Jiangxi investigation team of National Statistic Bureau, 2011; National Bureau of Statistics of China, 2011)

Throughout China by the end of 2010, 1,949 products (94.9% of them are agrifood products) have been registered with three Chinese GI legislative frameworks. Some of them are registered with one framework, some of them registered with two frameworks, and only 18 GI products are registered with all three frameworks (Figure 4.4).

Figure 4. 4 The registration situation in three Chinese GI frameworks
Source: BeiJing ZhongJunShiJi GIs Researching Team, 2011

Within these 1,949 GI products, 67 of them are from Jiangxi province which is a little bit higher than the average number of 64 per province/autonomous regions/municipality [28] and 34% higher than the median number of 50 per province/autonomous regions/municipality. If ranked by the output value of GI products, Jiangxi province ranked 10th in China with 34.98 billion RMB in 2008. Compared with the 168.05 billion RMB — the total output value of agrifood products in Jiangxi province in the same year, GI products have become a vital part of the Jiangxi agrifood sector. (Statistic Bureau of Jiangxi and Jiangxi investigation team of National Statistic Bureau, 2011; BeiJing ZhongJunShiJi GIs Researching Team, 2011)

Renting et al. (2003) point out that case studies should be designed to uncover the mechanisms that generate patterns in more extensive studies. It shows that the sample cases should be judged not only by their degree of representiveness but also by the quality and logic of their theoretical reasoning. Therefore, the variation of actors and socio-economic environments are considered as critical criteria when choosing sample cases in Jiangxi province because the conceptual framework presented in Chapter 2 has indicated the agrifood quality is constructed under complex power relationships between different actors within specific political, social and economic environments. Firstly, based on the knowledge generated by Cassis wine, Parma ham and Florida citrus networks, both history and the average farm size have great influences on quality meaning and production codes. However, under the impact of the Household Production Responsibility System that allows every household to have a piece of land to farm and forbids private farm land trading activities, Chinese farming is highly fragmented. So, rather than average farm size, history is becoming the first critical criterion to choose sample cases. Secondly, three parallel legislative frameworks co-exist in the Chinese GI system. As different frameworks may have different requirements and influences on the quality aspect, how many frameworks the GI network involved becomes the second criterion to choose sample cases. Thirdly, the varieties of actors in the GI network are also an important criterion, because some agrifood products may not need to be processed whilst others do and big processing companies always have certain advantages in defining and regulating production activities. Furthermore, consumers' judgement on the quality of GI products is also

[28] 31 provinces, autonomous regions and municipalities exist in China (exclude HongKong, Macro, and Taiwan).

considered as a standard to choose sample cases as consumers are also critical actors involved in the quality forming process (see also Storper, 1997; Morgan and Murdoch, 2000; Goodman, 2003). Their different attitudes on the quality of various GI agrifood products can help to choose suitable sample cases to analyse. (Table 4.2)

To choose suitable sample cases to do the research, a pilot study with experts and consumers was conducted in early 2010. 4 agricultural researchers from Jiangxi University of Financial and Economics and Jiangxi Agricultural University and 12 GI agrifood consumers were involved. The aim of meetings and survey was to provide information on:

- The choice of sample cases;
- Gathering useful sources of information, including potential interviewees for future interviews.

The meeting with experts began with introducing this thesis in terms of the aim, objectives and the conceptual framework for agrifood quality. The experts' suggestions were particularly helpful in choosing sample cases and selecting future interviewees. They indicated that it was better to choose well know GI products because they are "valuable" (with high value of output), "accessible" (many potential interviewees and a large amount of secondary data are available), and "typical" (some small-scale GI networks may be managed by one or two companies). They noted that it was important to contact local government officers at first because GI networks are always supported by the local government (it means, some useful data can only be obtained through the local government officers) and many actors (such as factory managers and drafters of GI standards) may refuse to answer questions without such references. They also predicted the results that the quality construction process of GI agrifood products might be mainly governed by the economic relationships rather than influenced by GI schemes due to a short term view of the county government[29] and a small number of government quality inspectors.

The survey with 12 consumers was very useful in choosing well known GI agrifood products with different quality "reputations". The respondents were 8 GI agrifood

[29] The promotion of government officials is most often linked to the growth of GDP in China

consumers picked in a big supermarket with different ages (21-30, 31-40, 41-50, and 51-60) and gender (4 male and 4 female) and 4 government officers from the provincial agricultural department who not only consume GI agrifood products regularly but also can justify their opinions by objective data. These consumers were asked to list at least 5 well known GI agrifood products located in Jiangxi province and present their personal judgement of the quality "reputation" of these 5 GI products. After 16 GI products in total were mentioned as possible cases by 12 consumers interviewed, based on the secondary data and according to the criteria presented before (history, the number of GI frameworks involved, processor involved, and market reputation), three GI products, namely "Gannan navel orange", "Nanfeng mandarin", and "Wuyuan Green Tea" were selected. The reason to choose two similar products ("Gannan navel orange" and "Nanfeng mandarin") was to enable a comparison to be made between two similar products but with different "quality reputations".

		Gannan navel orange	Nanfeng mandarin	Wuyuan Green Tea
Choosing criteria	History	Short planting history	Long planting history	Long planting and processing history
	Legislative frameworks involved	Register with the SAIC and the AQSIQ	Register with the SAIC, the AQSIQ, and the MoA	Register with the SAIC, the AQSIQ, and the MoA
	The existence of processors	No	No	Yes
	Quality reputation	Stable	Decreasing	Increasing

Table 4. 2: The key criteria for choosing the three sample cases and the differences between them

4.4.2 Data collection

4.4.2.1 Documenting research and semi-structured interviewing

The choice of research strategy influences the way in which the researcher collects data. Tellis (1997), Yin (2003) and Fisher (2007) indicate the case study strategy includes observing, interviewing, and documenting research methods. They specify that more than one method can be used in a case study to produce more valid and reliable results than the use of a single method.

Observation method can study all observable social phenomena. It is one of the oldest methods to collect data within social research, especially with respect to field research. However, even though this method is conducted in a natural setting and can offer data that normally respondents are unable or unwilling to present, adopting this method needs plenty of time and may have ethical issues, because observation often takes place *"without the subjects being aware of it"* (Sarantakos, 2005 p.233). Ignoring ethical issues is not acceptable. Observers should be honest with their intentions. But, "honesty" may bring another problem that researchers may face collecting false data. For example, respondents may change their behaviour when they notice that they are under observation for research. Therefore, in face of time limitations, high ethical risks, and the potential that bias data may be gathered, the observation method is not used in this research.

Interviewing is one of the most popular methods to collect data in social research. The interviewing process *"attempts to understand the world from the subject's points of view, to unfold the meaning of peoples' experiences, to uncover their lived world prior to scientific explanations"* (Kvale, 1996 p.1). Interviews are an important source of information when doing a case study research (Tellis, 1997; Yin, 2009). Foddy (1993) even believes it is sometimes the only way to collect information about behaviour and experiences, motives, beliefs, values and attitudes of people. Interviewing includes a wide variety of forms, such as individual, face-to-face verbal interview[30], face-to-face group interview[31], Delphi interview[32], telephone surveys[33] and so on. Compared with Delphi interview and telephone surveys, more details can be gathered by individual, face-to-face verbal interview and face-to-face group interview (Tellis, 1997). In this research, because it is difficult to gather respondents (such as government officers) together and respondents may be fearful of expressing their opinions about the disadvantages of Chinese GI system within the group which is filled with persons he/she is not familiar with (see also Nichols, 1991), individual, face-to-face verbal interview is adopted to undertake this investigation.

[30] Only one respondent is interviewed at one time
[31] Several respondents are interviewed at one time
[32] Expert respondents are asked to offer information, pass judgements on the issue of question and make relevant predictions. Then the researcher summarises this information and offers a written summary to expert respondents. After receiving a summary, the information is considered again by those respondents, and the new judgement will be sent to the researcher again. This process is continued until the deviation between those respondents is reduced significantly
[33] Interviewing is conducted by telephone

The strengths of the interviewing method are targeted and insightful (Yin, 2003). But the other side of the coin is the risk that both researcher and respondent are biased if the questions are constructed inappropriately. So, even though interviews can be adopted as the main data collection method in the case study strategy, interviewing still needs to be organised carefully. Normally, interviewing is differentiated by the degree of structure imposed upon its format (Healey and Rawlinson, 1993). Fontana and Frey (2003) identify three types of interviews in social science research: the structured interviewing, the semi-structured interviewing, and the unstructured interviewing. In structured interviewing, all the questions are prepared in advance. The interviewer asks all respondents the same pre-established questions in the same order and often with given alternatives for the respondent to choose. It generates little room for variation in response, except where open-ended questions may be used. Nothing is left to chance. Sarantakos (2005, p.268) thus argues, even though this approach *"reduce(s) interviewer bias to a minimum and achieve(s) the highest degree of objectivity and uniformity in procedure"*, it is very difficult for interviewers to gather in-depth information and is more suitable to use in quantitative research. Conversely, the advantage of unstructured interviewing is great breadth, open-ended, and in-depth. Interviewers can answer questions asked by the respondents, and can also ask different questions dependent upon different situations to gather useful information. But, this sort of interviewing still has to be structured in a flexible manner in advance or appropriate respondents may not be found and certain information may not be gathered (Yin, 2003). For example, without an interview guide before interviewing, a grouping of *"topics and questions that the interviewer can ask in different ways for different participants"* (Lindlof and Taylor, 2002 p.195), the researcher's attention may not focus on a given issue (which may cause less details on general concepts and objects) and keeping *"an unbiased manner"* to ask questions may be difficult. To control the interviewing process and gather useful in-depth information, semi-structured interviewing appears to lie somewhere between the structured and unstructured approaches. Yin (2009) indicates the semi-structured interviewing is like a guided conversation instead of a well-structured interview. Fisher (2007) defines the semi-structured interviewing as the interviewer having a schedule to follow to remember the main topics, but with the respondent still answering freely to the unstructured interview. Some aspects of semi-structured

interviews, such as the research topic, purpose, the selection of respondents, and time organisation, are closer to structured interviews. And some aspects, such as new questions being introduced and the evolving communication during the interview, are similar with unstructured interviews. Semi-structured interviews are very popular within qualitative research. They are believed not only to produce details of different actors' opinion and behaviours and to gather relative information that is not yet know, but also to make sure that certain information can be collected within certain time limits (Lindlof and Taylor, 2002). As the semi-structured interviewing method is well suited to research with a framework of themes to be explored but without detailed information (Yin, 2009), it is used as the main research method in this thesis to examine quality development processes in Chinese GI networks.

Nevertheless, combined with structure and purpose, the semi-structured interview is a conversation and involves the art of asking questions and listening. It is influenced by the personal characteristics of the interviewer and respondent, and bounded by historical, political, and contextual conditions (Scheurich, 1995). Kvale (1996) thus criticises qualitative interviews and states that they are too subjective, person-dependent and not objective. In order to minimise the subjective weakness as much as possible to make empirical data more objective and less subjective, and secure an in-depth understanding of Chinese GI networks, documenting research is also used as another method to collect data in this research. Different from interviewing, which is the empirical study of human activity and the result mixed with description and interpretation, opinion and feeling, documenting analysis and comparison, as reporting from other articles, are credible ways to gain reliability and may help researchers build more objective knowledge. Like Stake (2005, p.457) declares, *"[A] researcher will report his or her case as a case, knowing it will be compared to others"*.

Interviewing and documenting research methods are adopted in this research, because the case study strategy is a process of using multiple perceptions to identify different ways to examine the case (Flick, 1998). Indeed, both methods are also mentioned by Latour (1987) when identifying research methods within case studies in network analysis, as researchers should not only *"follow the actor"* via interviews but also examine inscriptions, such as texts including published local government data, journal

articles, conference papers, presentations, and so on.

4.4.2.2 Collecting primary and secondary data

Based on the documenting method, secondary data is collected at first to build a context for the case study.

Atkinson and Coffey (1997) believe much of social life in contemporary society is mediated by different kind of written texts and documents. For example, GI networks may not exist without the relevant pre-defined standards. Various documents provide a material foundation and documenting thus play a vital role in any data collection in doing case studies (Yin, 2009). However, it has been found not easy to collect useful secondary data of the three sample cases by reading books and articles. Published book concentrating on Chinese GI agrifood products are difficult to find and most articles only focus on the legislative aspect of Chinese GI schemes (e.g. Xiao and Hu, 2005; Wang and Kireeva, 2007). Although a few social researchers dedicate to explore the quality of GI products, almost all of them only present their own opinions without any reference and investigation to the actors, a key difference of research between the West and China. So, the secondary data used in this research is mainly collected through government publications, the internet and personal solicitation. Firstly, the statistical year book published by the government every year. The information contained in these books is very useful to provide a "grounded foundation" for the three cases. And, relevant GI standards and regulations published by the government are also vital to understand quality forming procedure of GI products. Secondly, nowadays, secondary data can also be gathered through websites. For example, the notices of quality inspection programmes are listed on the government websites and provide useful data about quality criteria adopted by the government. Thirdly, because a large amount of information, such as the market average price and the number and size of middlemen in specific GI networks, cannot be found in published materials and websites, preliminary research was conducted with local government officers who were asked to provide relevant secondary data in Nanfeng county in January 2010, in the Ganzhou area in July 2010, and in Wuyuan county in October 2010. Based on the secondary data collected in these ways, developing a profile of each case study is becoming possible.

Before collecting primary data, the specific interviewees have to be confirmed as it is impossible to interview all persons involved in the three GI networks. Some kind of selection method has to be adopted. Within the case study strategy, the main sampling procedure is non-probability sampling, which is also called purposeful sampling because it is about finding a sample from which as much as possible can be learned (Yin, 2009). Sarantakos (2005) lists different types of non-probability sampling, such as accidental sampling, purposive sampling, quota sampling and snowball sampling. Accidental sampling involves samples chosen from part of the population that are readily available and convenient. For example, the researcher may stand at a shopping centre and ask a number of people passing by to participate in the research. But, this technique may not be possible to make scientific generalisations about the total population as the sample chosen in this way may not be representative enough. Purposive sampling technique is choosing samples in a subjective way. The choice of respondents is made by the judgement of the researcher. Adopting this technique thus requires a great deal of knowledge and experience. Quota sampling is a procedure in which the population is first segmented into exclusive sub-groups, and then the choice of actual respondents is left to the researcher. Even though this technique selects non-random samples, which is often found to be unreliable, quota sampling is a very popular way to choose samples, as which minimises the cost of research work and does not require detailed sampling frames. Snowball sampling refers to the researcher choosing a few respondents, and then asking them to recommend other people who meet the criteria of the research and who may be willing to be recruited for the propose of research. This procedure is very useful to locate people of a specific population when they are difficult to locate. As this research involves some respondents who may be difficult to have a meeting with, such as government officers, processing firms' managers, and drafters of the GI standard, snowball sampling is believed more suitable for this investigation. Initially, at least three government officers within each GI network were recommended by four scholars (from Jiangxi University of Financial and Economics and Jiangxi Agricultural University) and four agricultural department officers (who were also interviewed as consumers). Then, these government officers were contacted by telephone and asked if they would like to participate in this research and whether they were able to contact other actors, such as technicians, farmers and middlemen. After obtaining positive answers, the investigation was conducted. In fact, not only government officers but every

respondent was required to introduce more possible participants[34]. Most of the time, with the recommendation of local persons, respondents contacted appeared to talk openly about their experience and were happy to recommended more possible interviewees, even though all interviewees only allowed the interview to be recorded on paper rather than by Dictaphone. The detailed information of selected respondents in each case will be presented in Chapter 5, 6 and 7.

Semi-structured interviewing has been identified as the method to collect primary data in this research. As semi-structured interviews are *"conventions with a purpose"* (Cloke et al., 2004), an interview guide that includes 20 general questions[35] was designed in advance although the respondents were encouraged to engage in a more open and interactive discussion. Before the interview, every respondent was contacted by telephone and asked whether they would like to participate in the research. Within the interview, at the beginning, the respondent was informed that he/she had the right not to participate in the study, he/she was not required to answer every question asked, all the information provided by them would be treated for research purposes only, suitable anonymity would be maintained, and interview transcripts would be available to him/her for confirmation after the interview. Then, the purpose of the research was presented. After that, the semi-structured interview started with the pre-designed guide. The questions generated within the conversation process were also discussed to collect more detailed and reliable data. Each interview resulted in a large volume of qualitative data and all answers were rechecked by the respondent after each interview. But, due to the relatively low education levels, it was not easy for several farmers to understand some questions and words, such as "market technique" and "GIs". A large amount of time thus was spent in the interviewing process with these farmers until they understood these words and questions.

4.4.2.3 Validity, triangulation and reliability

An effective research design is supposed to offer a logical set of statements (Yin, 2009). To ensure true or credible findings, validity has to be integral to the research design process. Guion (2002) indicates, *"Validity, in qualitative research, relates to*

[34] Individual consumers were not investigated as actors in this research as their quality judgement may be very subjective and thus may not be representative enough. Instead, middlemen were interviewed as agencies of consumers because they know consumers/market requirements very well.
[35] A copy of the interview questions is shown in Appendix 1.

whether the findings of your study are true and certain", and points out, *"true"* means the *"findings accurately reflecting the real situation"* and *"certain"* means *"there are no good grounds for doubting the results"*. Validity is a vital part of qualitative research because researchers have to be confident with their research which *"frees data from interference and contamination, control or variable manipulation"* (Sarantakos, 2005 p.86). To guarantee validity of the research, a number of measures are presented in qualitative research. Sarantakos (2005) lists four types of measurements:

- *Cumulative validation*: a study can be entrusted if its findings are supported by other studies. It means the researcher can compare his/her findings with other researchers and make a judgement of the validity.
- *Communicative validation*: authenticity can be confirmed by checking accuracy of data, evaluation of project process, change of goals etc. through the Delphi format, or by employing expert external gatekeepers, or by using triangulation.
- *Argumentative validation*: the validity can be measured by presentation of the finding in such a way that conclusions can be followed and tested.
- *Ecological validation*: a study can be valid if carried out in the natural environment of the subjects, using suitable methods and taking into consideration the life and conditions of the researched.

To enhance the validity of this research, relevant articles and data (published and unpublished) are used to compare the findings, even though relevant research is difficult to find, especially with respect the Nanfeng mandarin case and the Wuyuan green tea case. Also, the ecological validation is considered in the methodological framework development process. For example, respondents are carefully chosen based on snowball method and the interviewing process is not recorded by Dictaphone due to respondents' requirements. Furthermore, as triangulation method is believed a useful way to increase validity, it is used in this research as well.

Triangulation is a practice which employs several research tools within the same research design to *"be thorough in addressing all possible aspects of the topic; increase the amount of research data, and hence increase knowledge; enrich the nature of research data; facilitate a study, where one producer serves as a stepping-stone for the other; allow comparisons (e.g. in longitudinal studies); achieve*

a higher degree of validity, credibility and research utility; to overcome the deficiencies of single-method studies" (Sarantakos, 2005 p.146). Guion (2002) indicates five types of triangulation methods: data triangulation, investigator triangulation, theory triangulation, methodological triangulation, and environmental triangulation. Sarantakos (2005) presents five other types triangulation methods: method triangulation, time triangulation, paradigm triangulation, investigator triangulation, and sampling triangulation. With different opinions, Yin (2009) identifies four types of triangulation methods by adopting the opinion of Patton (2002): data triangulation, investigator triangulation, theory triangulation and methodological triangulation. Within this research, data triangulation and sampling triangulation are adopted.

First of all, according to different researchers, data triangulation means examining the fact or phenomenon by the data collected from multiple sources (Yin, 2009) or by evaluating or comparing the information offered by *"each group or type of stakeholder for the program"* (Guion, 2002). Within this research, not only the data collected by the semi-structured interviews are triangulated with secondary data but also the data generated by different interviewees are compared to gain *"a true outcome"* (Guion, 2002). It is believed that if every interviewee has the same opinion from a different point of view for a certain issue, the finding drawn from that issue is more trustworthy. Secondly, sampling triangulation which employs two or more samples (cases) within the same project (Sarantakos, 2005) is practiced. In this thesis, three sample cases are examined as individual cases. After that, the cross-cases evaluation stage takes all data collected as one case to analyse. The findings generated from cross-case evaluation are also compared to the findings from individual case studies to enhance validity.

At the same time, reliability is also important to consider in the research design processes. Lewis and Ritchie (2003, p.270) indicate reliability concerns *"replicability of research findings and whether or not they would be repeated"*. Yin (2009, p.45) explains that reliability means, *"if a later researcher followed the same procedures as described by an earlier investigator and conducted the same case study all over again, the later investigator should arrive at the same findings and conclusions"*. But, the "replication" in qualitative research may be difficult due to the inevitable impact of

contexts and the complexity of phenomena being studied. So, Lewis and Ritchie (2003) indicate that ensuring reliability may only require minimising the errors and biases in a case study. And, Yin (2009, p.45) notes that the reliability problem can be overcome by clarifying as many steps as operational as possible and developing *"a case study database"* under the case study strategy. Therefore, within this thesis, to ensure reliability, not only are all the main steps of the research specified, but also all documents, primary data and notes are recorded by computer software to form "a database".

4.5 Data analysis

4.5.1 Stages of analysing qualitative data

Within each case, desk based secondary data analysis is conducted to provide a "grounded foundation" and to identify critical actors in the quality forming process. Then, after introducing respondents, the varied and complex datasets contributed by semi-structured interviews and external materials are analysed and interpreted to explore quality development processes.

The data analysis process requires selecting appropriate analytical tools that can deal with variety and complex qualitative information and form a reliable "database". But, before selecting suitable tools, critical analysis stages have to be clarified because qualitative data are not well defined as quantitative data and analytical tools can only deal with the "raw material". Following Kitchin and Tate (2000), qualitative data analysis is preceded in three phases in this thesis, namely transcription, classification, and connection.

1. Transcription concerns the organising of the data in a form that can be interpreted. In the interview, responses to questions/prompts are recorded under each question/prompt for later categorisation and analysis. Once a face to face semi-structured interview is completed, all data are transcribed with description (which would be rechecked by the respondent) and observational notes (such as, tone of voice, body language, how things were said, like a pause and a consideration). As transcription was completed soon after returning from the field, it was able to provide an excellent opportunity to "re-live" each interview again.

In addition, during the transcription, a notebook is used to recode "ideas" generated from the data and "memos" related to the data, which help the researcher organise questions/prompts more effectively in the following interviews.

2. Classification takes the transcription a step further to interpret the data, which involves breaking the data (both primary and secondary data) up into special categories to establish a basis for comparison.
3. After having a basic understanding of data within specific categories, connection tries to identify and understand the relationships and associations between different categories. For example, do farmers located in the same area also possess other common features (e.g. similar farming activities) and if so why? Therefore, connection always involves tracing back through the dataset to see what links can be identified with the text which may lead to continual refining or revision categories (Nykiel, 2007). Connection also means constantly "cross-checking" the conclusions against the original transcripts to ensure an accurate and true reflection of the data and to think in terms of possible alternative explanations, and compare conclusions with those drawn from other similar researches. After the connection stage, by looking for similar/differentiated action patterns, the power relationships involved in the quality development process of the three sample cases can be clear.

In this thesis, the second and third phases were completed with the help of specifically designed software for qualitative data management, called NVivo. It is used to code[36], identify key themes and enable comparison and analysis across the database.

4.5.2 The choice of NVivo

CAQDAS (computer aided qualitative data analysis software), which is the general term for the computer software package, has come into use since the early 1980s (Spencer et al., 2003; Smith et al., 2008). When qualitative research is conducted, especially when the data collected from different resources in the same study need to be compared, managing large volumes of data is becoming a vital problem for researchers. According to Lewins and Silver (2007), CAQDAS can increase the

[36] Marking the segments of data with symbols, descriptive words, or category names

"closeness" and interactivity of researchers to the data as the advantages of CAQDAS are speed and rigour (see also Bryman, 2008). The speed means the data can be most obvious and thus *"the coding and retrieval process (can be) faster and more efficient"* (Bryman, 2008 p.567). Within the research, many pages of transcriptions may need to be coded in a moment. CAQDAS can be very useful in checking data and identifying patterns between data sets. Meanwhile, although Bryman and Burgess (1994) notes that often there is an unclear data analysis process associated with qualitative data analysis, rigour can be reached through CAQDAS which *"force(s) researchers to be more explicit and reflective about the process of analysis"* (Bryman, 2008 p.567). However, facing many types packages, researchers should consider how to place their data into the "right" package to suit the analytical task as no specific software is designed for a particular qualitative analysis and there is "no industry leader" in CAQDAS (Spencer et al., 2003; Bryman, 2008).

According to Lewins and Silver (2007), the main packages within CAQDAS are ATLAS/ti, MAXqda and NVivo. Although three packages have similar functions in organising data (such as coding and retrieval of coded data), many differences still can be found between them. Such as ATLAS/ti5 can directly handle a far greater range of data type than MAXqda2 or NVivo7 but its external database makes the process of saving and moving the data more difficult to manage than the other two packages. MAXqda2 has the best memo retrieval systems for team situations but a lack of code sets limits its ability in comparison when compared to other packages. NVivo 7 has its outstanding ability on coding, such as it offers the most sophisticated possibilities for auto coding repeated structures across databases, its ability to add sources and codes to the same set is incomparable, and the outcomes from queries is always satisfied, although its *see also* linking tool is always criticised. Because coding and retrieving ability are believed as essential abilities for the package to help explore power relationships between different actors, NVivo is adopted to do this research after comparison.

4.5.3 How NVivo8[37] works in the data analysis

Using NVivo8, all primary and secondary data was categorised under the "internal

[37] In 2008, NVivo8 was issued to replace NVivo7.

resources", "external resources" and "memos" categories and prepared for coding. Coding is *"capture what is going on in your data. Bring together similar data according to themes, concepts etc."* (Lewins and Silver, 2007 p.9). Criteria for selecting codes must be conceptually and empirically grounded (i.e. sensitive to the overall aim of the thesis, but with some empirical basis) and interrelated to one another (Nykiel, 2007). After studying the primary data, mainly based on the conceptual framework for agrifood quality, four main categories emerged:

- Impact of government enforcement upon quality
- Impact of organisational influence upon quality
- Impact of economic relationships upon quality
- Impact of other factors upon quality

These categories broadly followed the conceptual framework for agrifood quality to show that production activities are greatly influenced by power relationships between different actors based on given socio-economic environments. The reason why environment and power relationships are not categorised in proper order as shown in the framework is that the environment/context is difficult to analyse separately from the power relationships after examining relevant data. For example, weak government enforcement of GI standards on quality is a certain part of the political environment but it can only be explored by examining relationships between the government and the producers. In other words, the environment does not exist independently of the power relationships.

After close reading of the transcripts, many sub nodes are also developed in an emergent manner under the four tree nodes (four main categories). For example, after reading, the common laws/regulations/standards and the national GI standard — two sub-codes appeared in the "impact of government enforcement upon quality" category in the Gannan navel orange case[38]. But, coding is only the first stage of the data analysis process. The next stage, the connection stage, involves making sense of the codes.

The second stage of analysis is related to questioning the data in order to retrieve texts

[38] Tree nodes and sub-nodes of the three cases are shown in Appendix 2

that might show data connections. For example, why quality standards used in the market are different from the national GI standards can be asked to identify links between nodes and the nature of those links. The code-and-retrieve capability in NVivo8 allows rapid retrieval of transcription and suggests ways in which coded texts might be linked. For instance, if a section of text has been coded under two different nodes, the software can generate a matrix through "queries" to show the co-coded information.

Retrieve coding data is a critical stage in the data analysis process for this thesis. Firstly, the links explored can be used to rethink the suitability of previous nodes. If the links show that data can be coded in a more suitable way, the data can be recoded until satisfied results/codes appear. In fact, qualitative data within this thesis were coded three times as the process of retrieving allows the development of a higher level of understanding of the data. Secondly, data triangulation can be done through retrieve. Such as, different actors' views (including other researchers' views) for a certain issue can be checked by comparison research. Thirdly, with a high level of understanding of the "raw material", the retrieve capability of NVivo8 allows all data of three sample cases to be analysed as one case, cross-case comparisons and evaluation is becoming easier. Finally, although the software itself does not attach meaning to the relevant data which remains the researcher's responsibility to make sense of the "raw data" and construct new ideas, the coding links generated by retrieve stage makes presenting a coherent narrative out of a mass of data relatively simple.

Through coding and retrieving data analysis stages, power relationships between different actors within quality forming processes of the three sample cases can be clear. Following the data analysing, the final stage is assemble the data to display the findings as case studies.

4.5.4 Case studies writing up

According to White et al. (2003, p.287), the writing up stage presents substantial challenges to researchers because there is no prescription in detail about how a case should be reported and writing up case studies requires *"not only to represent the social world that has been researched but also to re-present it in a way which both remains grounded in the accounts of research participants and explains its subtleties*

and its complexities". Bearing the objectives, the nature of the data collected and the likely requirements of the target audiences in mind, the task of writing up is therefore becoming *"an active construction and representation of the form and nature of the phenomena being explored"* (p.287) rather than simply an act that records the outcomes of the coding and analysis.

Many writers indicate the research outcomes should be presented as the "story" (Patton, 2002; Sarantakos, 2005). Sarantakos (2005, p.407) even lists three types of stories: realist tales, self-confessional tales and impressionistic tales. Compared with self-confessional tales that *"entails the researcher being fully involved in and talking from the field"* and impressionistic tales that highlight personal presentation of recalling experiences, realist tales is *"a production of objective reality"* which suggests the author stands as *"an uninvolved observer"* in the background, using the language of the facts and writing in the third person with a realistic style. As the interpretivism underpinning this research believes the personal influence of the investigator can be minimised and unbiased results can be obtained, realist tales are thought to be a suitable way to organise and report the case and their outcomes. Rubin and Rubin (1995) suggest two ways to write realist tales: findings can be organised in terms of existing theory, and findings can be presented through the logic of the research design. Because it can be more sensitive to read a "story" which has the same logic as previous parts (Padgett, 2008), the outcomes are intended to be organised under the conceptual framework for agrifood products with various power relationships categories. Meanwhile, Patton (2002) proposes that a quality report should provide sufficient description to allow the reader to understand the basis for an interpretation. As writing up qualitative evidence can present findings in an accessible form that will satisfy the research objectives and enable the audience to understand them (Lewins and Silver, 2007), the evidence is presented alongside the descriptive, explanatory and interpretative elements in each case study to help and guide readers to know how the tale unfolds and to gain more reliability (White et al., 2003). Just like White et al. (2003, p.298) indicate, the researcher is required to *"take the rich and detailed data that has been collected and present it in a way which effectively guides the reader through the key findings"*.

4.6 Chapter summary

The methodology chapter is a critical chapter in this thesis as it links the theoretical framework to practice. To explain how the research methodology was designed and the data collection and analysis completed to undertake empirical analysis in the Chinese GI system, two main themes were contained in this chapter. Firstly, based on the conceptual framework for agrifood quality, after carefully examining different paradigms and methodologies involved in social research, the interpretivist paradigm, interpretivism philosophy, qualitative methodology and case study strategy were indicated more suitable to underpin this research. Secondly, under the consideration of obstacles may have in data collection processes and the results of a pilot study, the three sample cases were chosen and documenting and semi-structured interviewing methods were selected to collect data. For analysing collected data, based on the characteristics of qualitative methodology and the feature of this research, transcription, classification and connection analysing processes were intended to take under the help of NVivo8 to present case studies as realist tales (using the language of the facts and writing in the third person with a realistic style). According to such a detailed research methodological approach, three sample cases, namely Gannan navel orange, Nanfeng mandarin and Wuyuan Green tea, will be explored in Chapter 5, 6, and 7.

Chapter 5: A GI Case Study: Gannan Navel Orange

"Many economists have called China's emergence a "positive economic shock," unleashing a consumer base and a workforce of nearly 1.3 billion people into the global market. However, China's rapid growth and development has not occurred without setbacks and challenges. A series of globally recognized food safety scandals have brought increased awareness to China's inefficient food certification and inspection system"

(Ortega et. al, 2011 p.318)

5.1. Introduction

Recently there have been numerous articles in both the Chinese and world press about food safety in China. For example, Ortega et al. (2011) note that the impact of the milk powder crisis in 2008 and the pork scandal in 2011 were significant turning points in this debate. As agrifood quality issues often arise from problems of asymmetric information between consumers and producers, third-party certifications, such as GIs, may bridge such information gaps and reduce market inefficiencies. However, the impact of the GI system in enhancing agrifood quality is still questionable in Chinese contexts and hence the focus of this thesis.

Building upon the previous theoretical and conceptual chapters, the following three chapters concentrate on exploring the effectiveness of GIs in developing the quality of specific Chinese agrifood products by providing detailed analysis of the power relationships involving quality construction processes in a number of case studies, namely "Gannan navel orange", "Nanfeng mandarin", and "Wuyuan green tea". Based on secondary data and the perspectives drawn from interviewing a number of actors within the GI networks, the cases provide three comparable examples of who the key actors are, the influence each actor has, and the challenges and limitations that GIs can play on the agrifood quality forming process.

The first case study is "Gannan navel orange" which is based on empirically rich qualitative material and divided into two main themes. One provides a background to

the product. The main emphasis of this theme is the identification of the main actors in the quality construction process based on the documentary research and preliminary research which was undertaken in July 2010. The other theme reports the findings of a series of semi-structured interviews with 15 respondents. The analysis focuses on interviewees' views regarding the quality development process and the motivations for the quality enhancing agenda. Finally, the chapter concludes with a short summary.

5.2 Historical background

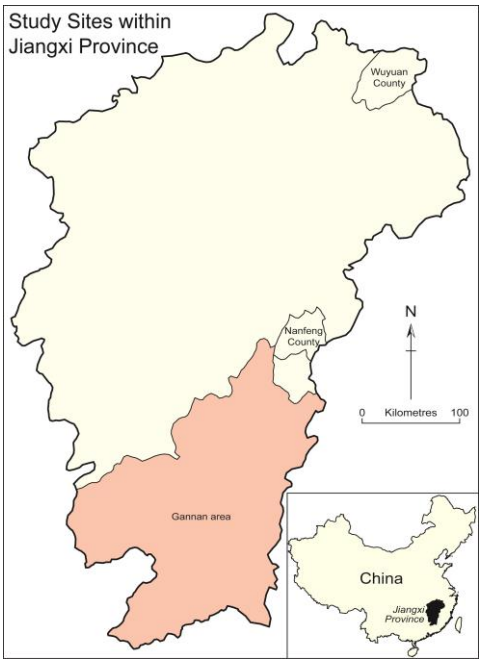

Figure 5. 1 The location of Gannan area in China

According to the Statistic Bureau of Jiangxi and Jiangxi investigation team of the National Statistic Bureau (2011), Gannan (also called Ganzhou), is a large city that governs 15 counties. It is located in the southeast of China and covers the southern third of Jiangxi province with an area of approximately 40,000 square kilometers (Figure 5.1). Based on its unique natural environment, navel oranges produced in the Gannan area are very famous in China because of their excellent taste. In order to protect and promote navel oranges from the Gannan area and thus increase local producers' incomes, under the support of the local government, the AQSIQ issued Notice No. 136 in 2004 to confirm that "Gannan navel orange" would be protected as a GI product. In 2007, the local government also supported the approval of a certification mark for "Gannan navel orange" with the trademark office of the SAIC (Figure 5.2).

Figure 5. 2: The trademark of “Gannan navel orange”

Navel orange trees (Figure 5.3) are not native to the Gannan area. The first time they were farmed commercially in Xinfeng county (located in the Gannan area) was in 1971, when it was found by the scientists that the local unique climate is ideal for growing navel orange trees. Later in 1977, the local government started to export navel oranges to the Hong Kong market. Following on an unexpectedly good market response and a desire to improve farmers’ incomes and earn hard currency, the government was encouraged to establish a further three navel orange exporting bases in addition to Xinfeng county. In 1980, to prepare for further expansion, the government invited the Southern Mountain Area Expedition Team of the Chinese Academy of Sciences to analyse the environmental conditions of the whole Gannan area. After a year’s investigation, the team finally concluded that with suitable longitude (30°N), high annual average temperature (around 19.5°C), high amounts of annual rainfall (around 1600mm), medium annual sunshine time (around 1800 hours), long frost-free days (around 290 days), and special red soil which contains various rare earth elements, all 15 counties within the Gannan area are appropriate sites for producing navel oranges. Soon afterwards and supported by the local government, 8 navel orange varieties, such as Newhall, Bonanza, and Frost, were introduced into the Gannan area by Huazhong Agriculture University. After 30 continuous years of growing, more than 95% of navel oranges produced today in the Gannan area belong to the Newhall variety (Figure 5.4) for the simple reason that the shape and taste are more acceptable to consumers than other varieties. Because this variety is better for

eating than for juicing[39], with limited equipment[40] to keep navel oranges fresh for a long time, almost all Gannan navel oranges are sold fresh and marketed between October and the following February. (Dong, 2008; Huang et al., 2011)

Figure 5. 3: A Gannan navel orange tree

Figure 5. 4: The Newhall variety

The development of the Gannan navel orange network is mainly supported by the government. In 2002, after the Department of Crop Farming within the MoA presented a report entitled, *"Gannan: The Vitality of the Chinese Orange Industry Following the Joining of the WTO"*, the MoA published *"Developing Superior Agricultural Products and Their Regional Distribution 2003-2007"*, within which it was indicated that "Gannan navel orange" was one of the *"superior agricultural products"*, and accordingly announced that it would provide financial support for the development of the Gannan navel orange industry. Later that year, and encouraged by the central government, the local government decided to develop the Gannan area as *"The Orange Capital of the World"*. In 2008, for example, the local government spent 14 million RMB[41] on television advertising, roadside billboards and exhibitions, to promote "Gannan navel orange" in the market. Under the support of the government, the cultivation area of navel oranges has expanded very quickly in the Gannan area (Figure 5.5). It was around 20,000 ha in 2000, 80,000 ha in 2005, and 105,333 ha in 2009. The output has risen even faster. In 2000, 0.05 million tonnes were produced, which rose to 0.48 million tonnes in 2005, and 1.12 million tonnes in 2009. In 2009, the annual output of navel oranges in the Gannan area was just less than Brazil and Florida (National Research Council, 2010).

[39] Different brix and acid criteria are required for fresh eating varieties and juicing varieties
[40] The storage ability of refrigeration warehouses is less than 0.03 million tonnes in the Gannan area — less than 3% of annual output in 2009 (Local government data, unpublished)
[41] The number is higher than the local government income generated by the agricultural sector in that year

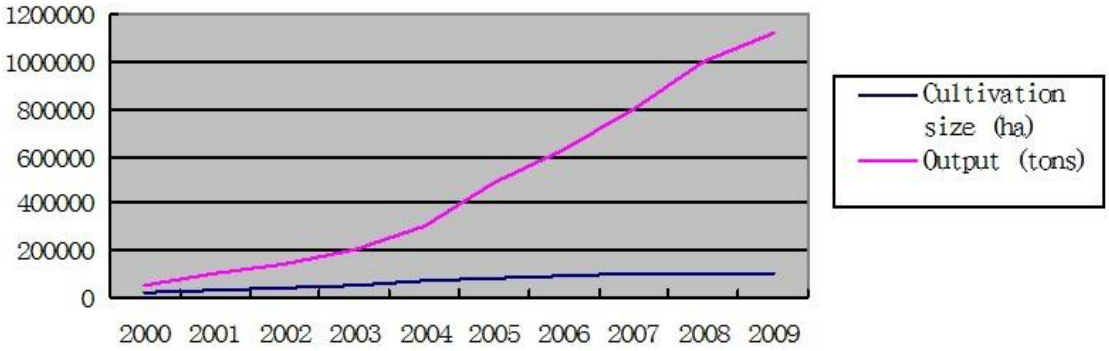

Figure 5. 5: The cultivation size and output of Gannan navel oranges 2000-2009
Source: Local government data, unpublished

Compared with the expanding rate of land cultivation, production is increasing dramatically. The local government believes this result is partly caused by the life-cycle of navel orange trees[42] and partly driven by the application of relevant research. In order to help producers improve production skills, based on the research of various institutions (i.e. Jiangxi Province Navel Orange Research Institute, Citrus Research Institute of the China Academy of Agricultural Sciences, Huazhong Agriculture University, and Jiangxi Agriculture University), relevant standards and regulations have been published and implemented, such as

- **"**The National Standard: Product of geographical indication — Gannan navel orange" (GB/T 20355-2006);
- "Production Technical Specifications for Pollution-Free Gannan Navel Oranges" (GB36/T 390-2003);
- "Production Technical Specifications for Organic Gannan Navel Oranges" (DB36/T442-2005);
- "Pollution-Free Food: Gannan Navel Oranges" (DB36/T389-2003);
- "Criteria for Growing Virus-Free Navel oranges";
- "The Rules of Preventing and Controlling Diseases and Insect Pests";
- "Production Environment Requests";
- "Basic Principles and Requirements for Harvest";
- "Regulations of Storage";
- "Regulations of Post-harvest Processing".

Today, in the Gannan area, fruit disease and pest prevention systems have been enhanced and a nursery stock supply system has been offering quality navel orange

[42] A navel orange farmer can only expect to get his/her first substantial crop in the sixth or seventh year after planting navel orange plantlets

plantlets to farmers for several years.

Two GI frameworks within the Gannan navel orange network are theoretically held by the Gannan Navel Orange Association (GNOA) which is composed of small-size co-operatives[43], farmers/companies whose farms are at least 3.3 ha big[44], technical experts, sellers, and government officers (Longnan county government, 2010). Its aims are managing the Gannan navel orange network, collecting information to help the local government adjust its policies, issuing GI labels, offering technical, legal, and marketing support for producers, and mediating disputes in the network (Ganzhou Navel Orange Association, 2005). But, in contrast to the Florida Citrus Commission, whose aims can be ensured through a specific governmental organisation, the FDOC, the aim of the GNOA is only to make recommendations as no one sub-organisation carries out its decisions. The impact of GNOA is thus limited in the network. Without effective organisation, local farmers have to market their products individually. As most local farmers do not have the time and appropriate abilities to sell their navel oranges to the market at a reasonable profit[45], middlemen are becoming very important actors in the network. Every year, around 80% of naval oranges in the Gannan area are sold by middlemen. The remaining 20% are sold directly to the retail market by farmers or navel orange companies who sign contracts with individual small-scale farmers at the beginning of each farming year to ensure navel oranges with certain quality characteristics can be purchased at the end of farming year with a fixed price[46] (Zeng et al., 2007).

Most Gannan navel oranges are sold into the national market. In 2009, less than 0.03 million tonnes of Gannan navel oranges were exported to international markets, around 2.29% of the total output (Huang et al., 2011). Also, to protect the reputation of the "Gannan navel orange" in international markets and earn hard currency, only companies[47] based on Xunwu, Anyuan and Xinfeng counties can export "Gannan navel orange" to international markets and only after passing strict quality examination programmes based on specific quality standards. As the international

[43] These small-size co-operatives are normally funded by the county governments
[44] The farm land cannot be sold but can be loaned in China
[45] The average size of navel orange farms in the Gannan area is around 0.7 ha (local government data, unpublished)
[46] This form is also called the contract farming
[47] Individual farmers are not allowed to export Gannan navel oranges

market is very small and operating under a different regulatory system from the national market, this thesis only focuses on the national market to explore the quality forming process in the Gannan navel orange network.

Based on documentary and preliminary research, the local government is a critical actor in the network because it is an important supporter of the Gannan navel orange network and has issued many standards and regulations to regulate production activities. Farmers are also main actors in the network involved in the production process. As the relevant research and the application of modern technologies have had a great impact on navel orange production, technicial experts are important actors engaged in the quality forming process too. Furthermore, the role that middlemen play in the network is essential, as they help individual farmers sell navel oranges and may thus influence the quality construction process based on their market knowledge. Finally, because companies which sign contracts with farmers always identify certain quality characteristics they would like to purchase through the contract, they may have an influence on the quality construction process as well. Therefore, government officers, farmers, technicians, middlemen and contracted companies were identified as the main actors to interview with the aim of exploring quality construction processes in the Gannan navel orange network.

5.3 Profile for respondents

4 local government officers, 4 farmers, 4 middlemen, and 3 technicians from the Gannan area participated in this investigation which took place from the 22 November 2010 to 07 December 2010. The reason why no contracted company was interviewed is that all respondents indicated that almost no company signs the contract with farmers directly in today's network due to a lack of a fully developed credit mechanism (both farmers and companies can break the contract without any penalty).

The first government officer interviewed is from a village, he is also a middleman and a farmer who owns a 25 ha navel orange farm and produces more than 300 tonnes of navel oranges each year. The second officer is from a county's SAIC and the county he works for is believed to have not very suitable natural conditions to produce navel

oranges. The last two officers work for the Ganzhou Fruit Industry Bureau and the Ganzhou AQSIQ.

Farmer interviewees were recommended by government officers and middlemen and chosen by the size of the farm, which may have an impact on the ability of farmers to adopt modern technology[48] and thus quality development processes. The first farmer owns a 6.5 ha farm (Figure 5.6). As many of his navel orange trees are less than 4 years old, his output is around 50 tonnes per year. The farm size of the second farmer is around 3.5 ha, which is filled with high productivity navel orange trees and the output is more than 100 tonnes per year. The third farm is 2.5 ha big, and the output is around 60 tonnes each year. The last farmer interviewed has a 0.7 ha navel orange farm in Anyuan county which is a perfect location for producing navel oranges due to specific natural conditions. His farm produces 20 tonnes of navel oranges per year.

Figure 5. 6: The navel orange farm of farmer A

All of the technicians interviewed work for the government because technical service is mainly offered by the local government in the Gannan area. The first respondent works for the Ganzhou Fruit Industry Bureau and also a member of the GNOA. He focuses on the technical aspect to help farmers produce and middlemen process[49] navel oranges. The second interviewee is an officer from a county's fruit and tea bureau. His responsibilities include offering technical support for farmers and processing companies and helping individual farmers apply for bank loans and government subsidies. The last officer works for several villages to solve farmers' technical problems and promote new techniques, such as controlling pests by the

[48] This observation is made based on the preliminary research

[49] As Gannan navel oranges are not suitable to make juice, the processing stage here means washing, waxing and package

fluorescent light.

Four middlemen were recommended by government officers and farmers. The first interviewee is also a farmer who owns a 35 ha farm that produces 300 tonnes of navel oranges every year. With a large output, he sells his products to wholesalers directly and therefore builds his own distribution channel. To maximise the use of the channel, he also purchases navel oranges from his neighbours' farms for selling. Nowadays, his turnover is around 2,000 tonnes per year. The second respondent is a retailer and also owns a farm, which is 30 ha big and produces 400 tonnes of navel oranges each year. As the navel oranges he produces are very famous in the Gannan area due to the excellent taste based on 20 years of extensive production experience, he set his own trademark up 5 years ago. Through purchasing his neighbours' navel oranges that he knows the quality of very well, around 2,000 tonnes of navel oranges are sold under his own trademark (with the GI) in the north of China per year. The third interviewee is a wholesaler and also a retailer. He purchases navel oranges from local small-scale middlemen and farmers and sells middle to low quality navel oranges to retailers under the GI and quality products under his own trademark (with the GI) to both retailers and individual consumers. His turnover is around 50,000 tonnes per year. The fourth middleman has a similar but smaller business to the third one. He sells around 20,000 tonnes of navel oranges to the market. All of these middlemen pointed out that navel oranges need to be graded by size before selling because such activities allow a high income for them (Figure 5.7).

Figure 5. 7: A grading factory

With each respondent, more than 20 questions were asked according to the

semi-structured interviewing guide[50] and focused on quality evaluation criteria in the network, the political, social and economic influences on quality development processes, and the contributions of GI schemes on quality. Each interview resulted in a large volume of qualitative data and all answers were checked by the respondent after each interview.

Respondents	Personal Characteristics
Government officer A	works in a village, owns a 25 ha farm, trades navel oranges as a middleman;
Government officer B	works for a county's SAIC, the county is believed to have not very suitable natural conditions to produce navel oranges;
Government officer C	works for the Ganzhou Fruit Industry Bureau, a member of GNOA;
Government officer D	works for the Ganzhou AQSIQ;
Farmer A	owns a 6.5 ha farm, produces 50 tonnes navel oranges per year, has a junior school certificate;
Farmer B	owns a 3.5 ha farm, produces 100 tonnes navel oranges per year, has a junior school certificate;
Farmer C	owns a 2.5 ha farm, produces 60 tonnes navel oranges per year, has a junior school certificate;
Farmer D	owns a 0.7 ha farm, produces 20 tonnes navel oranges per year, from Anyuan county which is believed as a perfect location for producing navel oranges due to specific natural conditions, has a junior school certificate;
Technician A	works for the Ganzhou Fruit Industry Bureau, a member of the GNOA;
Technician B	works for a county's fruit and tea bureau;
Technician C	works for several villages;
Middleman A	owns a 35 ha farm, sells around 2,000 tonnes navel oranges to wholesalers each year under the GI;
Middleman B	owns a 30 ha farm, sells 2,000 tonnes "quality" navel oranges under his own trademark (with the GI), a member of the GNOA;
Middleman C	purchases navel oranges from local small-scale middlemen and farmers, sells middle to low quality navel oranges to retailers under the GI and "quality" products under his own trademark (with the GI), trades 50,000 tonnes navel oranges per year, a member of the GNOA;
Middleman D	has similar business as the middleman C, trades 20,000 tonnes navel oranges per year.

Table 5. 1: The characteristics of interviewees in the Gannan navel orange network

[50] The semi-structured interviewing guide is shown in Appendix 1

5.4 Quality development processes embedded in power relationships

Based on interviewing guide[51], the data was intended to be organised within three parts according to the conceptual framework (see Figure 2.1): the socio-economic environment, power relationships and the final quality characteristics presented into the market. However, the environment is found to be interdependent with power relationships. In other words, because the environment is also constructed through power relationships, it is difficult to seperate them out in terms of analysis. For example, the political environment includes not only published laws, regulations and standards, but also the government enforcement of these laws, regulations and standards, which cannot be examined seperately from power relationships. Therefore, the data are finally structured into four main parts concentrating on exploring power relationships influencing production activities and thus quality from the perspective of government enforcement, organisational influence, economic relationships and other impacts (Figure 5.8). Meanwhile, depending on the data analysis principles that were discussed in Chapter 4, not only the primary data collected in the interviewing, but also secondary data obtained through various publications, the internet and personal solicitation are used to explore the networks and improve the validity of the findings.

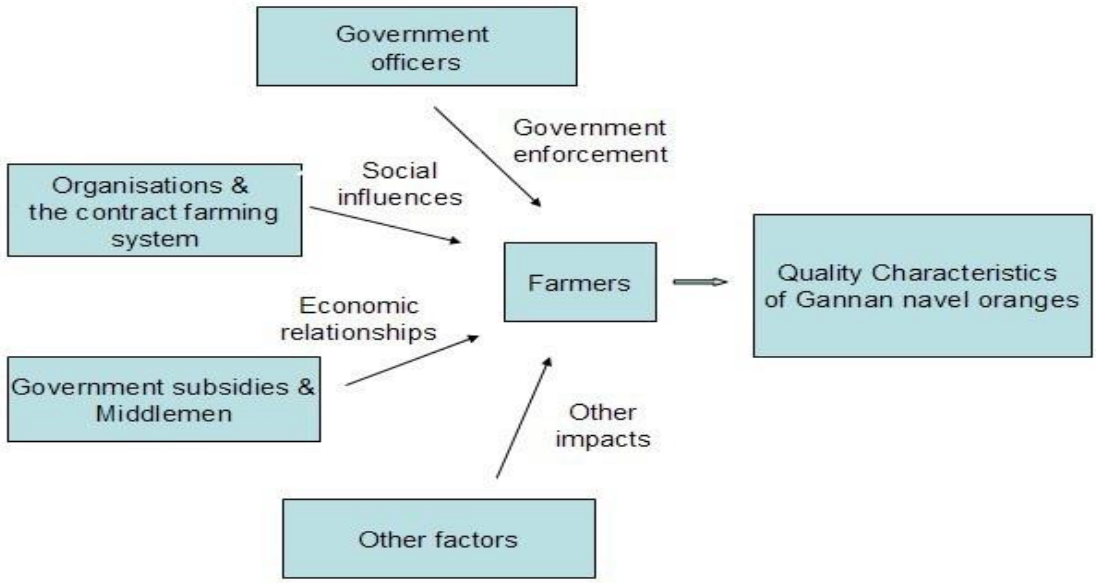

Figure 5. 8: The structure of data analysis section in the Gannan navel orange case

[51] See the Appendix 1

5.4.1 Impact of government enforcement upon quality

Beside the common food quality laws and regulations, such as the Product Quality Law of the P.R.C., the Food Safety Law of the P.R.C., and Agricultural Product Quality Safety Law of the P.R.C., all mentioned in Chapter 3, many specific standards and regulations (listed in the section 5.2) were issued by the government to regulate the production activities of Gannan navel oranges. However, these laws, regulations and standards are not well-known or embedded in the network. As *farmer A* said, *"I heard there were some special standards published. But, I have not read them until now"* and *middleman D* indicated *"I don't know relevant standards at all"*. The government officers and technicians interviewed also showed their limited knowledge,

The interviewer: Are there any laws, regulations or relevant quality standards that producers must obey?
Government officer B: Only some sorts of pesticides can not be used.
The interviewer: Can you list them?
Government officer B: DDT …I don't remember others. All of forbidden pesticides can be found in the Food Safety Law and relevant regulations.

This situation may be caused by several reasons. Firstly, with low education level, small-scale farmers may prefer to produce navel oranges *"in their own way"* (*technician C*) rather than complying with relevant regulations and standards through studying or attending teaching courses. This finding is similar to Wan et al. (2009), who indicate that low education levels make farmers less interested in reading published laws, regulations and standards. Secondly, the overlapping regulatory authorities between different government departments reduce the impact of these laws, regulations and standards in the network. Although *government officer D* introduced *"[T]he responsibility of the local agriculture department is inspecting inputs, the local AQSIQ is supervising production activities, the local SAIC is regulating marketing activities, and the Ganzhou Fruit Bureau is mediating the conflicts between these departments"*, many areas of the responsibility overlap between these departments. For example, *government officer C* (from the Ganzhou Fruit Industry Bureau) believes it is the responsibility of the local SAIC to regulate the pesticide market and therefore secure the safety of navel oranges in the market. But,

government officer B (from the local SAIC) indicated that, it is the responsibility of the agricultural department to control farming inputs, such as pesticides and fertilisers. The direct result of overlapped regulatory responsibilities are, *"I know some sorts of forbidden pesticides can not be used, but some farmers still can and prefer to buy and use them because of the low cost"* (*government officer A*), and *"[T]he picking day*[52] *is decided by the local government every year, but as nobody has been punished for early picking, some farmers still pick navel oranges very early. ... The price may decrease when a large amount of navel oranges appear in the market" (middleman A).* Unclear responsibilities also slow the respondent speed of the government to some accidents. For instance, several tonnes of dyed Gannan navel oranges[53] were found on the market by journalists in the winter of 2010. The *government officer C* (from the Ganzhou Fruit Industry Bureau) complained that,

"It is the Bureau's duty to catch the dealers who dyed and sold these navel oranges. However, there is not any term in relevant laws, standards or regulations against dyeing activities. The material they used is not forbidden according to the Food Safety Law. Also, as my department has no right in law to sentence and make any punishment, I do not know which department, the SAIC or the AQSIQ, would help my Bureau to manage this situation"

Dyed Gannan navel oranges have been found several times on the market over the last decade and the safety level of Gannan navel oranges was thus questioned by consumers. But, until now, the relevant regulation is not in place and the response system is still lacking. Thirdly, due to *"a lack of officers"* and *"it is not necessary"*, the government officers infrequently regulate production activities and check for the quality of Gannan navel oranges. *Technician B* indicated, *"[N]ot many officers work for my department, it is impossible to regulate production activities and check the quality regularly"* and *government officer B* specified, *"[M]y county is located at the edge of the Gannan area with the navel orange farms less than 1,500 ha in total. As the output is not high (compared with other counties), the quality inspection is not a priority task for the county's government".* In fact, none of the farmers or middlemen

[52] Navel oranges do not ripen after removing from the tree. To avoid Gannan navel oranges with bad taste and appearance appearing on the market, the local government decides the picking day every year and asks all farmers to start their harvest after this day

[53] Using staining materials to make navel oranges look better

interviewed announced that their products were inspected by the local government. *Farmer D* said, *"[T]he government does not take care about the quality of my products. ... I use pesticides when I feel it is necessary"*. Fourthly, the limited acknowledgement of government technicians on the safety aspect also weakens government enforcement. *Technician B* believes, *"... the high level of pesticide remaining is not a matter. In most of the time, farmers or middlemen only need to sell their navel oranges later, because pesticide remaining on the peel would decrease as time passes by"*. However, this point is debatable. According to Kang et al. (2002), the chemical material, such as pesticides, can be absorbed by oranges through soil rather than simply remaining on the peel. The attitude of technicians to the safety aspect is also an obstacle in attracting producers' attention to safety and enhancing government enforcement with respect to the safety aspect.

Although the low education level of farmers, overlapping responsibilities between different government departments, few quality inspection programmes, and limited knowledge of technicians weaken the influence of relevant laws, regulations and standards on quality, GI schemes are supposed to offer an extra insurance of quality because products have to be proved that they have met "pre-set standards" before being sold under the GI.

Both AQSIQ and SAIC frameworks adopt "The National Standard: Product of geographical indication — Gannan navel orange" (GB/T 20355-2006), which was written by the Jiangxi Association of Standardisation[54], the Ganzhou Fruit Industry Bureau, and the Ganzhou Bureau of Quality and Technical Supervision, to define quality characteristics and regulate production activities of Gannan navel oranges in the network (General Administration of Quality Supervision, Inspection and Quarantine and Standardisation Administration of the People's Republic of China, 2006). According to the national standard, the quality of Gannan navel oranges can be officially evaluated by reference to four aspects: appearance[55], physical contents[56], pollution-free[57], and net weight[58]. The methods of choosing samples from a certain

[54] A technical association formed by technological experts and administrated and funded by the government
[55] Shape, size, colour, peel smoothness
[56] Soluble solids content, total acid, edible rate — related to the taste aspect
[57] Fenitrothion, Quinalphos, Cyhalothrin, Deltamethrim, Fenvalerate, Chlorpyrifos, Isocarbophos, Carbendazin, Cs, Pb, and Cd, remaining level — related to the safety aspect
[58] How to calculate the net weight and show it on the package

batch and checking appearance, physical contents, pollution level and net weight of samples are also specified in the national standard. But, even though this national standard should be enforced in the network, interviewees indicated it is not enforced in practice.

In China, the standardisation system includes compulsory standards and recommended standards (General Administration of Customs of the People's Republic of China, 2011). All producers have to produce products according to compulsory standards. For example, "The Standards of Growing Environment for Pollution-free Oranges" (NY 5016-2001) is a compulsory standard. It means, all orange producers have to ensure their farms have met listed requirements in this standard to produce oranges, or the producer will be punished. But, recommended standards are not compulsory for producers, unless the producer voluntarily accepts. For instance, only when a producer wants to sell his/her navel oranges under the name of "Gannan navel orange", "The National Standard: Product of geographical indication — Gannan navel orange" is imposed. In other words, only for producers of "Gannan navel orange", this national standard is compulsory. However, all respondents (including all government officers and technicians interviewed) did not realise it. *Technician A* said, *"... there are many standards, such as the national standard and green food production standards. But, all standards are not compulsory"*.

Because the national standard is not imposed, trading quality criteria do not meet the regulatory standards. For example, according to the national standard, the ideal size of Gannan navel oranges is between 7.5cm and 8.5cm diameter with a round or ellipse shape (depending on different varieties). But, *middleman D* indicated, *"[D]ifferent sizes are sold with different prices on the market. For example, the price of navel oranges with 6-8cm diameter is higher than bigger and smaller navel oranges"*. And, *government officer B* pointed out,

"...the national standard is only a guideline. For example, the bigger size (diameter around 8.5cm) is believed to be a sign of quality in the northern market, and small size (diameter around 6.5cm) is believed to be a sign of quality in the southern market ... navel oranges are graded by different criteria and sold into different markets"

According to interviewees, it can be seen that the production activities in the Gannan navel orange network are not effectively governed by general laws/regulations/standards and "pre-set" GI standards mainly due to weak government enforcement and an incorrect interpretation of "The National Standard: Product of geographical indication — Gannan navel orange".

5.4.2 Impact of organisational influence upon quality

Theoretically, various forms of co-operatives should have a critical influence on the quality development process in GI networks because the GI is a collective intellectual property, supposed to offer the benefit of economies of scale to its members through co-operative activities. But, as Chinese farmers were not encouraged to co-operate until 2006 when the "Law of the People's Republic of China on Specialized Farmers Cooperatives" was issued, the influence of co-operatives is very limited in the Gannan navel orange networks partly due to a lack of accumulated knowledge.

With the support of the local government, the GNOA, formed by *"government officers, farmers (not many), and sellers*" (*government officer A*), is the largest association in the network. The regular works of the GNOA are *"helping farmers improve farming skills"* (*technician A*), *"offering a place for farmers and middlemen to communicate and trade navel oranges"* (*middleman A*), *"remaining farmers watering navel orange trees in time and picking navel oranges after the certain date"* (*farmer A*), and *"purchasing pesticides and fertilisers for farmers (not free)"* (*farmer D*). It is also the GI holder of both GI frameworks (set by the SAIC and the AQSIQ)[59]. However, even though the GNOA is supported by the local government and entrusted with the legal right to issue GI labels, under government controlling GI issuing procedures, its abilities in regulating production activities according to the national standard are limited. Based on the local government data, applicants who want to apply the GI on their products are asked to fill the application form and hand it into the local Fruit Industry Bureau. After holding the permit of the city government, the applicants can buy[60] GI labels from the GNOA for one year. Within this process, the

[59] With same GI holder and same "pre-set standards", differences cannot be found between these two frameworks. Thus, registering with the third GI framework set by the MoA is indicated *"useless"(government officer C)*

[60] *"… 0.006 RMB for an orange lable and 0.1 RMB for a package lable"* (*government officer C)*

quality checking stage is not involved. As *middleman B* indicated,

"…the GI label is useless. Everybody can get it very easy… I hand an application form every year, and then I can buy as many GI labels as I want. I have to pay 0.1 RMB for a label on the package box that is what the local government asks for"

Without the authority to regulate producers' activities through the GI issuing procedure, the GNOA is described as a branch of the local government, operating under the local government requirements, dealing with issues that are *"not suitable to do by government departments (such as applying the GI)"* (*government officer D*), and preferring to *"get more government money to spend"* (*government officer C).*

Beside the GNOA, small-scale co-operatives formed by individual farmers can also be found in the network. However, these co-operatives were indicated simply combined under the government support and always very small. As *middleman A* pointed out, *"[T]he local government offers subsidies to support the setting up of co-operatives", technician C* announced, *"[T]he GI label can be bought through co-operatives (individual farmers cannot get the permit from the local government)*", and *technician B* described *"… around 80% to 90% of local co-operatives are formed by less then ten farmers".* Because it is very difficult for a small size co-operative to negotiate with middlemen and thus help its members obtain a high economic reward, regulating members' production activities is becoming an impossible mission for these co-operatives. As *farmer B* questioned *"[W]hy do I have to work according to others' requirements?"*

Another type of "organisations" formed by trading companies and farmers, also called contract farming was mentioned by many interviewees. Within this type of "organisation", trading companies have to pay a certain amount of deposit to farmers at the beginning of the farming season for reserving navel oranges with certain quality characteristics at a fixed price in the autumn under the contract. Then, to ensure quality, technicians are sent to contracted farms regularly. At last, when navel oranges have matured, the farmers sell their navel oranges to contracted trading companies under the contracted price. In this way, the quality can be secured by the trading

companies and the market risks can be reduced for both. However, according to the interviewees, contract farming does not work well in the network due to a lack of a fully developed credit mechanism (e.g. although contracted trading companies pay a certain amount of deposit to farmers in advance, farmers can break the contract without any penalty). For example, if the market price is higher than the contracted price, the farmers will sell their navel oranges to market rather than contracted trading companies. Even if the market price is the same as the contracted price, the farmers still will sell "quality" navel oranges to middlemen who offer a higher price, and give contracted trading companies "low-quality" navel oranges under the contracted price. Unless the market price is lower than the contracted price, the farmers will sell their products to contracted trading companies. As the local court always protects farmers' rights and does not support the trading companies' compensation requirements, the trading companies raise rather than decrease their risks by contract farming. This situation happened before, and the result was that the trading companies, such as the Ganzhou Fruit Industry Company, got neither navel oranges nor compensation at the end of the farming season. Therefore,

"Less and less trading companies sign contracts with farmers because they may receive nothing at the end of the year. Also, last year, as the market price was too low, many contracted trading companies refused to buy navel oranges under the contracted price as well. Contract farming will be very difficult to be found in the future" (government officer B)

The fieldwork Wan et al. (2009) also shows the disappearing contract farming in the Gannan navel orange network, as most farmers only have very simple trading relationships with their purchasers (both of them may change their minds without any compensation) and only 0.11% farmers declare that buyers offer technical support to them. A lack of a fully developed credit mechanism makes it is difficult to retain a long-term relationship between buyers and sellers in the Gannan navel orange network.

In short, the influence of the GNOA, small co-operatives, and contract farming on the quality forming processes is limited in the network. Farmers' activities are not impacted by any organisations even though the GNOA is entrusted with the legal right

to issue GI labels.

5.4.3 Impact of economic relationships upon quality

The total output value of Gannan navel oranges increased very quickly from 0.5 billion RMB in 2003 to 1.3 billion RMB in 2005 to 2.24 billion RMB in 2009 whilst output rose from 0.2 million tonnes in 2003 to 0.48 million tonnes in 2005 to 1.12 million tonnes in 2009. But, the data also shows, after "Gannan navel orange" registered with the AQSIQ as a GI in 2004, the average price of Gannan navel oranges decreased, rather than increased (Figure 5.9).

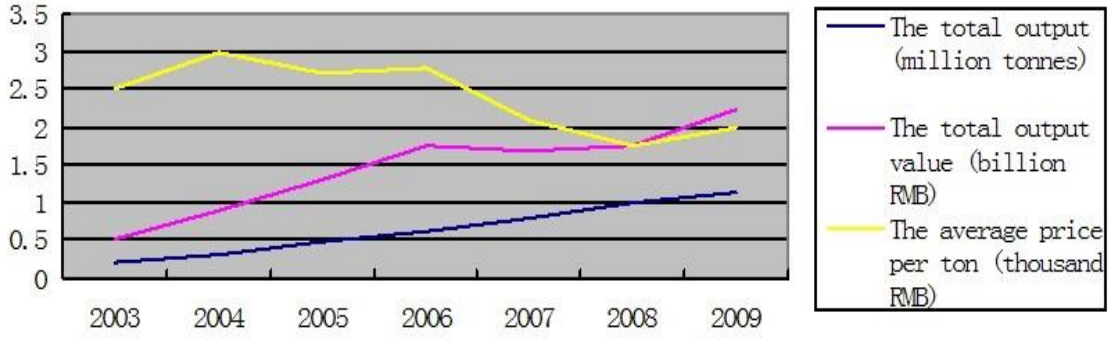

Figure 5. 9: The total output, output value and average price of Gannan navel oranges 2003-2009
Source: Local government data, unpublished

According to interviewees, farmers have to pay around 15,000 RMB per ha (the cost does not include the personal input as small farms are always run by families) to raise their navel orange trees (pay for plantlets, irrigation, fertilisers, and so on) for the first 6 years. From the seventh year, navel orange trees start to produce large quantities of navel oranges which are around 50KG per tree and 20 tonnes per ha, and the variable cost from the seventh year is also increased to almost 21,000 RMB per ha per year or 1.05 RMB per KG (the cost also does not include the personal input. If the personal input is included, the cost will rise to around 32,000 RMB per ha per year or 1.6 RMB per KG). As the average market price of Gannan navel oranges was less than 2 RMB per KG in 2008 and 2009, some farmers' income *"cannot even cover their inputs"* (*government officer B*). To secure farmers' income, the local government invested *"several million RMB per year from 2006"* (*technician A*) and *"14 million RMB in 2008 (1.3% of total output value)"* (*government officer C*) on television advertising, roadside billboards, and exhibitions to promote "Gannan navel orange". However, the average market price still decreased rather than increased between 2006 and 2008.

Although the price rose in 2009, it was believed to have been mainly caused by *"the changing navel orange supply in the market"* (*farmer C*) rather than improved market reputation, because *"[M]ore and more trademarks are appearing in the network. Sellers want to distinguish their products from normal Gannan navel oranges"* (*government officer C*). As quality is also believed to be one variable influencing market price, the local government started to provide subsidies and co-operate schemes with the local banks to offer small-amount loans to farmers for *"purchasing modern farming equipment (to improve quality)"* (*government officer A*). But, such financial support does not influence farming activities great because *"[I]t is not necessary to purchase modern farming equipment with an average farm size of 0.7 ha in an area filled with hills"* (*government officer A*) and *"the application process of bank loans is too complicated, such as fill the form, find another three farmers to guarantee, and pay a high interest … I never borrow the money from local banks"* (*farmer B*).

To secure farmers' income, the local government has tried to improve market reputation and quality of Gannan navel oranges through promotion programmes, subsidies and loans, but the impact of these is minimal on both market price and production activities. Compared with the local government, middlemen's "purchasing power" is indicated having a more significant influence on quality development processes by interviewees.

In the network, middlemen set their own quality criteria based on their market knowledge. As *middleman D* announced,

"I purchase navel oranges from farms and process them after purchasing, such as washing, grading, waxing and packaging. Then, different navel oranges will be sold to different markets/consumers. …What consumers take care about and how much they would like to pay decide my quality criteria and purchase price"

Although quality criteria for Gannan navel oranges have been listed in the national standard (appearance, physical contents, safety level and net weight), and farmers interviewed showed their different quality preferences from middlemen, the farmers admitted that they have to produce navel oranges according to middlemen's

preferences for obtaining a high economic reward. Firstly, the good taste was believed to be a certain quality characteristic of Gannan navel oranges, but middlemen pointed out that their purchasing decision is not simply taste.

"…the taste of Gannan navel orange is always better than navel oranges from other areas due to local special environments. Consumers thus prefer to buy and pay a high price for 'Gannan navel orange'[61]*. For me, all navel oranges I purchase from the Gannan area can be sold in the market because of good taste. The taste is thus not a critical purchasing standard" (middleman A)*

Therefore, although farmers announced that taste is critical to evaluate the quality of navel oranges because everybody likes tasty oranges, they focus instead on decreasing inputs on taste as the good taste cannot bring an extra income to them. F*armer B* explained,

"If you mention taste, I would like to say, I do not have any incentive to improve quality at all, because a few buyers pay a higher price for better taste. … Even though some buyers pay a higher price for better taste, compared with increased inputs, such as using organic fertilisers instead of chemical ones … I cannot get a fair profit at all"

More and more chemical fertilisers rather than organic fertilisers are thus used to increase production regardless of the taste in the production process. Some consumers *"started to complain that the taste of Gannan navel oranges is not as good as several years ago" (middleman C).* As decreasing market reputation may have a direct impact on the market price, not only middlemen interviewed prefer to set their own trademarks but also some counties in the Gannan area, which can produce navel oranges with better taste than other counties under excellent natural conditions, started to register and promote their own collective/certification marks, such as Sanbaishan, Xin feng navel orange (Figure 5.10) and Anyuan navel orange, for helping local farmers obtain a relatively high economic reward in the market (Zeng et al., 2007).

[61] "Based on the good taste, the average price of Gannan navel oranges can be 100% higher than other navel oranges" (*middleman B)*

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Figure 5. 10: The certification trademark of Xinfeng navel orange

Secondly, compared with the taste, the appearance is a more important criterion to evaluate the quality for middlemen. For instance, in the Ganzhou Gannan Navel Orange E-Market[62], the only criterion to distinguish Gannan navel oranges is the size (this market only trades Newhall variety) (Ganzhou Gannan Navel Orange E-Market Co. Ltd, 2011). In the same delivery date (01, Dec., 2011), the average price for navel oranges with a diameter from 7.5cm to 8.0cm was 11,980 RMB per ton, but the price for navel oranges with a diameter from 8.0cm to 9.0cm was only 5,720 RMB per ton in 29, July, 2011. As the price differentiation between good and bad appearance navel oranges is significant in the market, farmers indicated, *"I make my production decisions based on their (middlemen's) standards ... if they prefer to buy medium-sized navel oranges, I have to think how to prune my trees to produce medium-sized navel oranges"* (*farmer D*) and

"If you mention appearance, I do have incentive to improve quality. It is not difficult for me to adopt certain techniques to produce navel oranges with the appearance that buyers prefer to pay a high price for... there is a 20-30% price difference between navel oranges with a good or bad appearance ...middle size navel oranges can be sold around 4 RMB per KG on the market. And unattractive, small navel oranges can just be sold around 2.5 RMB per KG on the market" (farmer B)

Thirdly, although the safety criteria are listed in the national standard and all interviewees showed that they want to buy safe agrifood products in the market, the

[62] This E-Market is supported by the GNOA and focuses on offering market information in time

safety aspect was not indicated as quality criterion in the network. *Middleman C* explained, *"…it is difficult to judge the safety. … Even though products should be produced according to government safety standards, the safety issue in the retail market is not important at all"*. As middlemen do not take care of the safety aspect in their purchasing processes, none of the farmers interviewed pay special attention to the pesticides they used.

Middlemen control more than 80% outputs of Gannan navel oranges. The affluent market knowledge gives them a space to make their own quality criteria and thus maximise their profit in the network. Based on the local government data, the total agriculture output value has increased 237.72% from 2001 to 2010 in the Gannan area, but the farmers' income only rose by 197.92% in the same period. Middlemen interviewed also admitted that they received a *"high"* and *"low risk"* income compared to farmers. As *middleman A* said, *"[I]n this year, the price of Gannan navel oranges in the retailer market is around 30%-40% higher than similar products. But in wholesaler market, it is only around 20% higher"* and *middleman C* specified, *"[I]f the price difference between wholesaler market and retailer market is suitable, I will trade navel oranges. If not, I will stop my business"*. Facing a high and low risk economic reward, with certain market knowledge, all large-scale farmers interviewed[63] also trade navel oranges as middlemen in the network.

When focusing on the economic relationships in the network, production activities in the Gannan navel orange network are found greatly impacted by the quality criteria set by middlemen due to their huge "purchasing power". Although the local government also wants to influence quality forming processes through offering subsidies/loans, the effect of these activities is limited because of the local natural and social contexts.

5.4.4 The impact of other factors upon quality

Beside the political, organisational and economic relationships between the main actors in the network, producers' production activities as well as quality development processes, are also impacted by many other factors, such as the natural environment,

[63] Government officer A, middleman A and middlemen B

the farm size and the cultivation experience.

Firstly, although the quality of Gannan navel oranges is always influenced by farming activities, such as the usage of fertilisers and the picking time, the impact of local unique natural conditions and carefully picked varieties cannot be ignored when examining quality. *Government officer C* explained,

"Orange trees have been planted in the Gannan area for more than 1500 years. But, due to unsuitable varieties (other varieties from today), most farmers could not earn a living from orange production till the end of the 1970s ... specific natural environment and certain varieties are combined to produce tasty Gannan navel oranges"

Thus, *farmer D* prefers to sell his products under the name of "Anyuan navel orange" rather than "Gannan navel orange" because the taste of navel oranges from Anyuan county is better than that from many other counties in the Gannan area due to specific natural conditions. And, *farmer B* has no interest in improving the taste of his products because navel oranges with better taste and a relative low price (compared with his inputs on improving the taste) can be offered by farmers from several counties with excellent natural conditions in the Gannan area.

Secondly, the small-scale farm size may limit the ability of many farmers to improve the quality of navel oranges through increasing inputs. According to the data offered by the local government officers, the average profit per navel orange farm was only 6,400 RMB in 2009 (the fixed cost for the first 6 years is not calculated) — the average farm size is only 0.7 ha, the average output was 20 tonnes per ha, the average input was 1600 RMB per ton, and the average market price was only 2,000 RMB per ton. In the face of a low economic reward, improving quality through increasing inputs is not a wise choice for farmers.

Thirdly, farming experience also has a certain impact on the quality construction process. For example, *middleman B* established his private trademark based on more than 20 years farming experience. He said, *"I have a special way to cultivate my orange trees. And, I teach my neighbours to plant their navel oranges because I also purchase their navel oranges for selling. Tasty navel oranges with good appearance*

are the market advantage of my company". And, *farmer A* indicated,

"The taste of my navel oranges is OK, not good and not bad, because I have only owned my navel orange farm for 4 years. I am not experienced in managing my farm, such as when pesticides and fertilisers should be used and how to take care of navel orange trees during flowering time. In fact, management skills have certain influences on the appearance and the taste. But, because the Gannan area is a good place to grow navel orange trees, the taste of my products is OK"

Natural factors, farm size, and cultivation experience all have a certain impact on the quality development process of Gannan navel oranges. Also, it should be noticed that many other factors may also have an impact too. Such as, the number of technicians sent to villages. Although farmers may refuse to read technological books and attend relevant courses, technicians can help them cultivate their navel orange trees in a right way and thus improve the quality of Gannan navel oranges. And, the increasing attention of journalists to the scandal of dyed navel oranges and consumers greater awareness of the safety, may also result in more and more farmers harvesting their crop on the appropriate day and not earlier[64].

5.5 Conclusions

Supported by the government, the GI appeared in the market to help producers obtain a high economic reward through offering certain quality characteristics that consumers prefer to pay a high price for (Watts and Goodman, 1997; Parrott et al., 2002). Securing certain quality characteristics is thus becoming an essential task in GI networks. In Europe and America, the relevant standards and regulations were proposed by various co-operatives, issued by the government and enforced by the government and/or the third party to regulate actors' activities and ensure quality. However, this investigation has shown the pre-set quality characteristics of Gannan navel oranges cannot be secured because the national standard is proposed mainly by government officers and not imposed by the local government. Also, the GI holder, the GNOA, does not have the authority to regulate production activities through GI

[64] Early picked navel oranges have to be dyed before selling because of green peel

issuing procedures. In other words, there is no powerful quality inspector in the network. The effectiveness of GIs in securing quality in this network is thus limited.

The findings also indicate that small-scale farmers' incomes cannot be improved by GIs automatically. To secure the income, farmers have to cultivate their navel orange trees based on middlemen's quality criteria. With weak government enforcement and limited organisational influences, the "quality" is thus presented into the market reflecting economic rationality (i.e. producing navel oranges under "purchasing power") rather than the national GI standard, and decreasing taste and safety levels are becoming unavoidable results.

5.6 Chapter summary

The first theme of the chapter provided a background to the network. The main actors involved in the quality forming process were indicated at the end of this theme. The second theme of the chapter concentrated on exploring quality development processes in the network based on the power relationships. The results show that GI schemes have a limited impact on quality construction processes of Gannan navel oranges and middlemen are the "powerful" actors in the network to dominate quality forming processes through their "purchasing power".

The quality development process of Gannan navel oranges has been analysed in this chapter. However, more GI networks still need to be explored as power relationships involving agrifood quality construction processes in different GI networks may differ under different contexts. To obtain more generalised results, the Nanfeng mandarin network operating in very different socio-economic environments, such as a longer planting history and less suitable natural conditions, will be examined in the next chapter.

Chapter 6: A GI Case Study: Nanfeng mandarin

"With the globalization of the agro-food system, agro-food quality and safety has been the focus of increasing public concern in China (Huang & Gale, 2006) and around the world. Indeed, it has been argued that "[g]overnment policies and regulations on labeling, in conjunction with input, process, and performance standards for food products, significantly influence how markets for food quality function and develop" (Caswell & Mojduszka, 1996, 1248). In addition, third party certification of food and agricultural products has become common place in both industrial and developing nations (Fulponi, 2006; Hatanaka, Bain, & Busch, 2005; Ponte & Gibbon, 2005)"

(Fan et al., 2009 p.627)

6.1 Introduction

Chapter 5 provided a detailed analysis of quality construction processes in the Gannan navel orange network through revealing power relationships between different actors to evaluate the effectiveness of GIs on developing agrifood quality. The results show that economic relationships govern the quality construction process in the Gannan navel orange network whilst the pre-set GI standard has little or no impact on the quality forming and the GI issuing processes. The local government and the GI holder, the GNOA, are "powerless" in managing and regulating production activities. However, according to the conceptual framework presented in Chapter 2, quality meanings and involved power relationships between different GI networks may not be the same under different contexts. Therefore, the aim of Chapter 6 is continuing to explore the quality development process in Chinese GI networks under a different context.

The socio-economic environment of the Nanfeng mandarin network is completely different from the Gannan navel orange network. For example, compared with less than 40 years production history of Gannan navel oranges, farmers have cultivated Nanfeng mandarin trees for more than 1,300 years. And, unlike the Ganzhou government who limit the growing area of Gannan navel oranges within the GI

protection area, the Fuzhou government which Nanfeng county belongs breaks GI schemes by expanding the cultivation area to unprotected counties. Also, different from the Gannan navel orange network which only contributes 0.07% of local government income in 2010, more than a third of Nanfeng county's GDP is generated by the Nanfeng mandarin network. The case of Nanfeng mandarin offers a useful comparison with the Gannan navel orange case and makes it possible to analyse the influences of history, government policies and strong economic pressure on the quality of GI products. Further useful insights of the quality forming process and the effectiveness of GI schemes on developing quality in Chinese GI networks can thus be generated.

Similar to the last chapter, Chapter 6 explores quality construction processes in the Nanfeng mandarin network through two main themes. One focuses on describing the background to the network based on documentary research and preliminary research which was undertaken in January 2010. The main actors involving the quality development process are indentified at the end of this theme. The other theme concentrates on primary data analysis. The power relationships involved in the quality construction process are explored with reference to government enforcement, organisational influence, economic relationships and the impact of other factors. Finally, the chapter concludes with a short summary.

6.2 Historical background

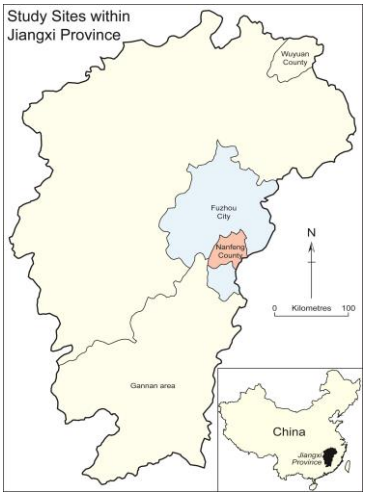

Figure 6. 1: The location of Nanfeng county in China

Nanfeng county is located to the east of Jiangxi province, between latitudes 116°09'E and 116°45'E and longitudes 26°51'N and 27°21'N, and governed by Fuzhou City (Figure 6.1). According to the local government, Nanfeng county is a good place to grow mandarin trees with a high average temperature (18.3°C), long average annual sunshine hours (1928.2 hours), and 271 frost-free days.

"Nanfeng mandarin" is one of the smallest and

oldest mandarin varieties in China and has been produced for more than 1,300 years in Nanfeng county. With a golden colour, thin peel, good taste, small shape (25-50g) and unique fragrance, it was offered to the Chinese Emperors as a tribute in the old times (Figure 6.2). However, despite the comments from the local government, the annual output of Nanfeng mandarins before the 1980s was very low due to unstable local temperatures (only the temperature around the town is relatively stable) and government policies that discouraged trading activities.

Figure 6. 2: Nanfeng mandarins

According to the records, around 5,000 tonnes Nanfeng mandarins were produced every year before the end of 19th century (Huang, 2007a). Then, the annual output decreased very quickly during the war period (from the end of the 19th century to 1949). In 1949, the annual output of Nanfeng mandarins decreased to only 895 tonnes and the cultivation area fell to 174.4 ha (Zhu, 2007). After the establishment of the People's Republic of China in 1949, the output and cultivation area of Nanfeng mandarins only increased to 2,101 tonnes and 185.9 ha in 1971 because all farm land in China was owned by the state and collectively used by people's communes[65] and private trading activities were not permitted by the government (Zhu, 2007). The situation changed after the introduction of the "Household Production Responsibility System" in rural China in 1978 which encouraged farmers to produce agrifood products on their "own" land and allowed farmers to obtain the economic rewards from trading their products after handing a certain amount to the government, or by simply paying a tax in cash. In 1991, the numbers were more than 17 times that of

[65] Collective units in rural areas with economic and political functions

1971, reaching 34,838 tonnes and 4,307.5 ha. Despite the winter of 1991, when the temperature dropped to -10.8°C and 80.27% Nanfeng mandarin trees died, the annual output still climbed to 35,000 tonnes in 1997 (Zhu, 2007). In 2009, 0.8 million tonnes of mandarins were produced in 34,700 ha of farming land in Nanfeng county (Figure 6.3).

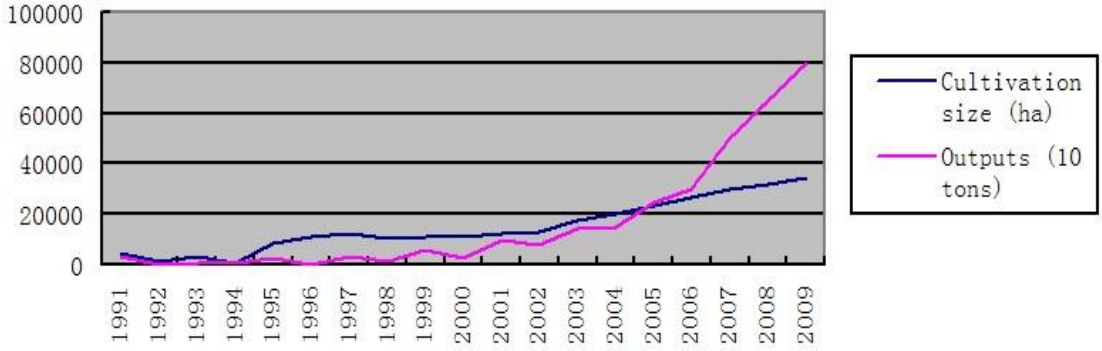

Figure 6. 3: The cultivation size and output of Nanfeng mandarins 1991-2009
Source: Local government data, unpublished

The rapid growth in production is believed was stimulated by the high economic reward. Between 1997 and 2006, the price of Nanfeng mandarins doubled from 1.6 RMB/ per KG to 3.2 RMB/ per KG, whilst the cultivation area expanded from 12566.7 ha to 26666.7 ha. The direct results of quick expansion are that more than 90% local farmers are involved in and more than 80% of the local farmers' income is generated by mandarin production (Nie, 2008; Nanfeng county Government, 2011a, b). Nanfeng mandarins have become a major agricultural product in Nanfeng county. However, the price of Nanfeng mandarins decreased sharply from 2007. It was 3.0 RMB/ per KG in 2007, 1.6 RMB/ per KG in 2008, and 1.8 RMB/ per KG in 2009 whilst the output continued to increase from 0.5 million tonnes in 2007 to 0.8 million tonnes in 2009 (Figure 6.4).

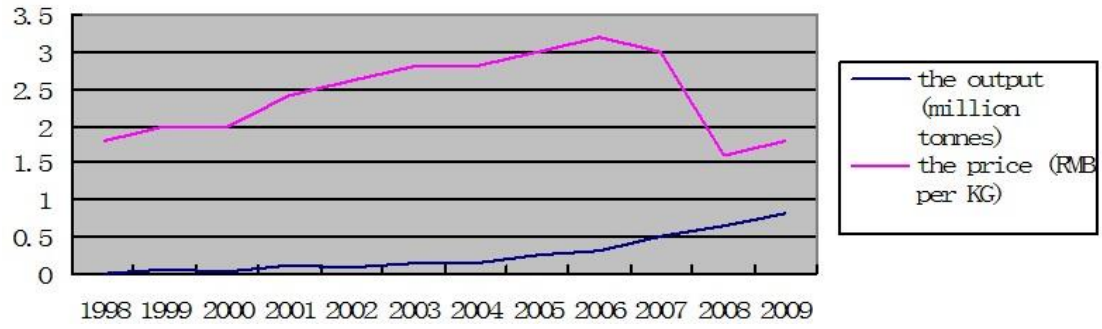

Figure 6. 4: The output and price of Nanfeng mandarins 1998-2009
Source: Local government data, unpublished

Many articles (e.g. Liang et al., 2008; Fang et al., 2009; The People's Government of Fuzhou, 2009; Huang et al., 2009) indicated that the supply is not the sole reason to explain the decrease in market price but also concerns over quality. For instance, it was noted that Shatang mandarins (which has a similar shape and taste as Nanfeng mandarins but is not a GI product) whose output increased in the same period but whose price rose from less than 3.0 RMB/ per KG in 2007 to 4.4-4.6 RMB/ per KG in 2009 (Huang et al., 2009). This interesting phenomenon caught the attention of the local government. To regulate farming activities, secure consistent pre-defined quality characteristics, and thus protect the market reputation and increase market price, the county government refined the national standard of Nanfeng mandarins in 2008.

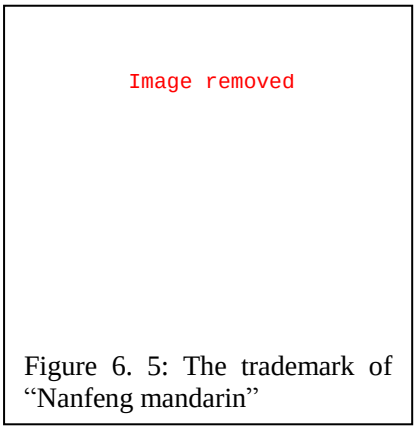

Figure 6. 5: The trademark of "Nanfeng mandarin"

In fact, the first vision of the national standard of Nanfeng mandarins appeared very late in the network. In 1998, the trademark office of SAIC approved "Nanfeng mandarin" as a certification mark by the application of the Citrus Technology Centre of Nanfeng County (Figure 6.5). On 12 February, 2003, following the application of the Association of Quality and Technical Supervision of Nanfeng County, the AQSIQ announced "Nanfeng mandarin" is a GI product. One month later, "The National Standard: Product of destination of origin or geographic indication — Nanfeng mandarin" (GB 19051-2003) was written out by the Jiangxi Provincial Bureau of Quality and Technical Supervision, the Fuzhou City Bureau of Quality and Technical Supervision, the Nanfeng county Bureau of Quality and Technical Supervision, the Jiangxi Province Fuzhou City Nanfeng Mandarin Research Centre, and the Citrus Technology Centre of Nanfeng County, and issued by the AQSIQ. The 2003 national standard shows the protected area (whole Nanfeng county), defines the quality characteristics of Nanfeng mandarins, identifies the quality standards, sets the grading criteria, clarifies sampling methods, and specifies the production codes. In 2008, to correct some mistakes in the 2003 national standard, for example, it was issued as a compulsory rather than a recommended standard, and to meet new requirements in the network, "The National Standard: Product of geographic indication — Nanfeng mandarin" (GB/T 19051-2008), was written by the

same drafters and issued by the AQSIQ to replace the 2003 national standard.

The critical changes in the 2008 national standard are the definition of "Nanfeng mandarin", the quality evaluation standards, the grading criteria, and certain production codes (Table 6.1). Firstly, in the 2003 national standard, "Nanfeng mandarin" was defined as *"... produced in the protected area, with oval shape, orange to orange yellow colour, shiny peel, soft, juicy, sour and sweet taste, strong fragrance, seldom or no core, C.reticulata mandarin small size variety"*. In the 2008 national standard, "Nanfeng mandarin" is now defined as *"... produced in the protected area, with oval shape, orange to orange yellow colour, shiny peel, soft, juicy, sour and sweet taste, strong fragrance, seldom or no core, C.reticulata mandarin small size Nanfeng special variety"*. The production area does not change between the two standards, but the local mandarin trees have been confirmed as a special variety[66] under specific government requirements. Secondly, in the 2003 national standard, Nanfeng mandarins have to meet three criteria: appearance, physical content (edible rate, soluble solids content, and total acid), and hygiene standards. But, hygiene standards are changed to safety standards (the pollution-free standards are added) in the 2008 national standard. Thirdly, Nanfeng mandarins can be graded into three levels according to the criteria in both national standards. But, the indices in the 2003 national standard are stricter than the 2008 national standard. For example, the soluble solids content is an important index in the 2003 national standard but does not appear in the 2008 national standard. And, the bruising damage should not be found on the peel of the top level Nanfeng mandarins according to the 2003 national standard. But, it is allowed in the 2008 national standard. Furthermore, the organic contents and PH value of the soil are specified, black-spot disease is mentioned, and planting density is lower in the 2008 national standard. These changes clearly show that the quality standards in this network were not consistent. Local governments' intention (on the definition), producers' requirements (on decreasing grading indices), and consumers' needs (on the safety aspect) all impacted upon the 2008 national standard. This refined national standard was also used by the Nanfeng Mandarin Association (NMA) to register "Nanfeng mandarin" as a GI product with the MoA in 2010. (General Administration of Quality Supervision, Inspection and Quarantine and

[66] This change allows the cultivation area of "Nanfeng mandarin" to expend to other counties which will be explained later

Standardization Administration of the People's Republic of China, 2003, 2008)

	The National Standard: Product of destination of origin or geographic indication — Nanfeng mandarin (GB 19051-2003)	The National Standard: Product of geographic indication — Nanfeng mandarin (GB/T 19051-2008)
The definition of "Nanfeng mandarin"	... produced in the protected area, with oval shape, orange to orange yellow colour, shiny peel, soft, juicy, sour and sweet taste, strong fragrance, seldom or no core, C.reticulata mandarin small size variety	… produced in the protected area, with oval shape, orange to orange yellow colour, shiny peel, soft, juicy, sour and sweet taste, strong fragrance, seldom or no core, C.reticulata mandarin small size *Nanfeng special* variety
The grading criteria	The soluble solids content is included; the bruising damage should not be found on the peel of top level Nanfeng mandarins	The soluble solids content is not included; the bruising damage is allowed on the peel of top level Nanfeng mandarins
Quality standards	The appearance, physical contents (edible rate, soluble solids content, and total acid), and hygiene standards	The appearance (no change), physical contents (no change), and safety standards (the pollution-free standards are added)
Production codes	Does not mention the organic contents and PH value of the soil and black-spot disease; planting density is high (495-750 trees per ha)	The organic contents and PH value of the soil and black-spot disease are specified; planting density is relatively low (495-630 trees per ha)

Table 6. 1: The differences between the 2003 and 2008 national standards
Source: "The National Standard: Product of destination of origin or geographic indication — Nanfeng Mandarin" (GB 19051-2003) and "Product of Geographic Indication — Nanfeng Mandarin" (GB/T 19051-2008) (General Administration of Quality Supervision, Inspection and Quarantine and Standardization Administration of the People's Republic of China, 2003, 2008)

To ensure the implementation of the national standard in the network, many notices and regulations were issued by the local government (Huang, 2007b; Wang et al., 2011), such as

- "Notice: The Usage of GI labels and the Packages of Nanfeng Mandarins";
- "Notice: Enhancing Quality Supervising Activities in the Harvest Season";
- "Managing Production Processes of Nanfeng Mandarins according to the National Standard";
- "The Technique Advices for Producing Nanfeng Mandarins";
- "Regulations of Producing Nanfeng Mandarins as a GI Product".

Meanwhile, to enable co-ordination between different departments and avoid duplication of work under the three GI frameworks, the Quality Inspection and Marketing Regulation Office of Nanfeng Mandarins was established in 2004, formed by the local Police and the officers from the local AQSIQ, the local SAIC, the local agriculture department and other relevant departments, with the aim of inspecting the quality of Nanfeng mandarins on the market in the harvest season (between October to the following February). In 2006, to manage the network more effectively, the Jiangxi Province Fuzhou City Nanfeng Mandarin Research Centre and the Citrus Technology Centre of Nanfeng County were merged into the Nanfeng Mandarin Industrial Bureau. The responsibility of the new bureau is to co-operate with other government departments, such as the local AQSIQ, the local SAIC and the local agriculture department, to regulate production, research and promotional activities in the network. Furthermore, to help producers adopt modern technologies and involve in the GI system more effectively, two associations were set up with the support of the local government. The NMA (funded by the local government and middlemen) was formed in 2006, which is composed of farmers, processors, sellers and technology researchers and focuses on offering technological assistance to individual farmers and regulating marketing activities. In the following year, the Nanfeng Mandarin Research Association (NMRA) was established by government officers, researchers and technicians and concentrates on scientific research and promotes modern farming and storage technologies in the network.

In practice, however, these government activities are not very useful in improving quality because of the great influence of natural factors and the weak scientific research abilities (The People's Government of Fuzhou, 2009; Zhu, 2007). Firstly, as a GI product, certain characteristics of Nanfeng mandarins, such as shape, size and taste, are greatly determined by natural conditions, and thus are remarkably different according to location. Even within Nanfeng county, some areas are perfect for producing "quality" Nanfeng mandarins, and some areas are not. The ideal cultivation region (the suitable area) is around the town (the traditional growing area). In this area, the elevation is less than 100 metres, the soil is sandy and contains various organic compounds and the annual average temperature is higher than 18.1°C. To the east and west of this area, the annual average temperature decreases to between 17.6°C and

18.0°C and the elevation rises to 250 metres. With heavy rainfall, these areas (the less-suitable area) are less suitable for Nanfeng mandarin trees. In the rest of the territory in Nanfeng county (the unsuitable area), the average temperature drops to between 15.8°C and 16.7°C and the elevation reaches 400 metres, all of which are unsuitable conditions to produce "quality" Nanfeng mandarins at all (The People's Government of Fuzhou, 2009). The expansion of the cultivation area in the last three decades to the whole of Nanfeng county thus brings a large amount of "low quality" Nanfeng mandarins into the market. Secondly, keeping the original characteristics of Nanfeng mandarins in the plantlet breeding process is not an easy task. It is one of the reasons why the cultivation area and annual output were limited to a small number before the 1980s (Zhu, 2007). Even though the government funded technical research centres (e.g. the Jiangxi Province Fuzhou City Nanfeng Mandarin Research Centre and the Citrus Technology Centre of Nanfeng County) advise farmers with respect to "better" plantlets, none of them can guarantee certain characteristics due to unstable generic properties. Stimulated by a desire to obtain a high income in a short period of time, a large amount of plantlets with unstable generic properties were planted over the last 3 decades (Yan, 2006; Liang et al., 2008).

Most of Nanfeng mandarins are sold into the national market. According to the local government, only 7.45% output (0.06 million tonnes), which is controlled by a very different quality inspection system[67] from the national market, was exported to international markets in 2009. Because more than 90% mandarins were sold in the national market and the quality inspection system is very different between national and international markets, this thesis only focuses on the national market to do the investigation.

Within the national market, around 70% of annual output was sold to final consumers directly by more than 25,000 farmers[68] and the rest around 25% annual output was traded by 54 trading companies in 2009 (Figure 6.6). Traditional face to face trading activities still dominate the network. Meanwhile, most Nanfeng mandarins are sold fresh between October to the following February because few companies have

[67] Only 19 companies passed the special inspection programme run by the local AQSIQ and thus can export Nanfeng mandarins

[68] 43,000 farms exist in the network. Some farmers not only sell their own products but also help their neighbours sell mandarins through charging a small amount admission fee

refrigeration warehouses to store mandarins and Nanfeng mandarins are not suitable to make juice or other products based on its small size and not very sweet taste. This analysis is supported by preliminary research conducted in January 2010 — many processing companies were closed down and the factory that the Huiyuan Group wanted to invest for making orange juice in 2007 was not constructed until 2010.

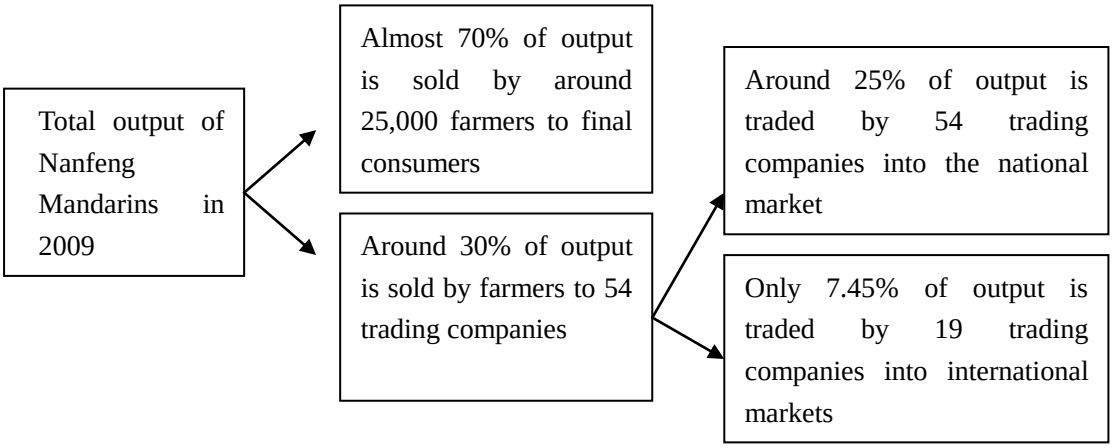

Figure 6. 6: The trading pathway in the Nanfeng mandarin network
Source: Local government data, unpublished

Based on documentary and preliminary research, the local government is an important actor in the quality construction process of Nanfeng mandarins because it is the national standard maker and executor. Farmers are also main actors in the network involved in the production and thus quality forming processes. Some farmers even work as intermediaries to trade Nanfeng mandarins. The influence of technicians on quality cannot be ignored because the responsibilities of technicians are stabilising generic properties of plantlets and helping farmers cultivate mandarin trees. These technicians are also the main actors of the NMA and the NMRA even though both associations are criticised as having no authority in regulating its members' activities (Huang, 2007b). Furthermore, trading companies are essential actors as they trade around 25% of annual outputs into the national market and may thus partly influence the quality forming process based on their market knowledge. So, government officers, farmers, technicians and intermediaries/trading companies were interviewed as the main actors in this investigation to explore quality development processes and the effectiveness of GI schemes on improving quality in the Nanfeng mandarin network.

6.3 Profile of respondents

The interviews were conducted face to face with 3 government officers, 4 farmers, 3 technicians, and 4 intermediaries/managers of trading companies from 04 November, 2010 to 16 November 2010, in Nanfeng county.

The three government officers work for the local AQSIQ, the local SAIC, and the Nanfeng Mandarin Industrial Bureau. One of them contributed to the draft of the 2008 national standard.

The farmers interviewed were recommended by government officers and technicians and chosen by the location ("suitable" and "less-suitable" areas and the "unsuitable" area) rather than the size[69] because location is believed to be the key factor influencing the quality of Nanfeng mandarins. Two farmer interviewees are from the unsuitable area. The first respondent owns a 0.3 ha farm and produces 3 tonnes of mandarins per year. With more than 20 tonnes of annual output, the size of the second farm is around 1.5 ha. The other two farms are located in "suitable" and "less-suitable" areas[70]. 800 Nanfeng mandarin trees[71] are cultivated by the third farmer. The output of this farm is 25-35 tonnes per year which are all sold to local government officers directly due to the excellent taste. The last farmer has a 3.3 ha farm and produces around 200 tonnes mandarins per year.

The technical service is mainly offered by the local government in the network. So, two technician interviewees were chosen from the local government technical offices, and one respondent was selected from a trading company which sign contracts with individual small-scale farmers and thus need technicians to ensure the quality. One officer is from the local AQSIQ, and another officer works for the Nanfeng Mandarin Industrial Bureau. Two of them are members of both the NMA and the NMRA.

In contrast to the Gannan navel orange network, contract farming works well in the

[69] Small-scale farms (the average farm size is 0.8 ha and 80% of farms are smaller than 0.67 ha in the county) and numerous hills limit the usage of modern industrial farming techniques in the county (Wang et al., 2011)
[70] The edge between the suitable area and the less-suitable area is not very clear. And, the size of the less-suitable area is relatively small when compared to the suitable area and the unstuitable area
[71] This farmer does not have an idea about how big his farm is, but according to the density criterion in the national standard, the size of his farm should be around 1.5 ha

Nanfeng mandarin network because unique quality characteristics of Nanfeng mandarins[72] cannot be duplicated in other areas. In other words, as Nanfeng mandarins with certain quality characteristics can only be produced in a small area, buyers prefer to pay a high price for such quality which enforces the performance of the contract. Therefore, one trading company owner, one retailer (as intermediaries), and two managers (one is a factory manager and one is a large farm manager) were interviewed. Three of them were recommended by the government officers and the retailer was introduced by a technician. The trading company sells 5,000 tonnes of mandarins (all from "suitable" and "less-suitable" areas) under its own trademark every year. The retailer runs a small corner shop and helps his family (his family has a small farm which is around 0.7 ha and is located in the unsuitable area) and family's neighbours sell the products under the GI. Around 100 tonnes of Nanfeng mandarins are sold by his shop every year. The first manager interviewed takes charge of a packaging and grading factory which processes around 200 tonnes of "quality" mandarins per year. These "quality" mandarins are produced by contracted farmers who are located in the suitable area and sold under the factory's own trademark rather than the GI. Another manager runs a 300 ha farm which is located in the suitable and less-suitable areas, farmed by contracted farmers and produces 4,000 tonnes of mandarins per year. All mandarins produced by the farm are also sold under a private trademark rather than the GI into the market.

With each respondent, more than 20 questions were asked according to the semi-structured interviewing guide[73] and focused on quality evaluation criteria in the network, the political, social and economic influences on quality development processes, and the contributions of GI schemes on quality. Each interview resulted in a large volume of qualitative data and all answers were checked by the respondent after each interview.

[72] Quality Nanfeng mandarins can only be produced in the suitable and less-suitable areas
[73] The semi-structured interviewing guide is shown in Appendix 1

Respondents	Personal Characteristics
Government officer A	from the local AQSIQ, a member of the NMA;
Government officer B	from the local SAIC;
Government officer C	from the Nanfeng Mandarin Industrial Bureau, contributed to the draft of 2008 national standard, a member of both the NMA and the NMRA;
Farmer A	from the unsuitable area, owns a 0.3 ha farm, produces around 3 tonnes of mandarins every year, has a primary school certificate;
Farmer B	from the unsuitable area, owns a 1.5 ha farm, produces around 20 tonnes of mandarins every year, has a junior school certificate;
Farmer C	from the suitable area, owns 800 mandarin trees, produces 25-35 tonnes of mandarins every year, sells all his mandarins to local government officers, has a primary school certificate;
Farmer D	from the less-suitable area[74], owns a 3.3 ha farm, produces around 200 tonnes of mandarins every year, did not attend school;
Technician A	from the Nanfeng Mandarin Industrial Bureau, a member of both the NMA and the NMRA;
Technician B	from the local AQSIQ, a member of both the NMA and the NMRA;
Technician C	works for a trading company, a member of the NMRA;
The trading company owner	sells 5,000 tonnes of mandarins (produced in "suitable" and "less-suitable" areas) per year under his own trademark;
The retailer	sells 100 tonnes of mandarins (under the GI) per year for his family and family's neighbours;
The factory manager	manages a packaging and grading factory which signs the contract with individual small-scale farmers, sells 200 tonnes "quality" mandarins per year under the private trademark;
The farm manager	manages a 300 ha farm which is farmed by contracted farmers and produces 4,000 tonnes of mandarins per year, sells mandarins under the private trademark, a member of the NMA.

Table 6. 2: The characteristics of interviewees in the Nanfeng mandarin network

6.4 Quality construction processes embedded in power relationships

Similar to the previous case, this section is structured into four main parts. Concentrated on power relationships which influence production decisions and thus the quality, quality construction processes are explored from the perspective of government enforcement, the influence of organisations, economic relationships and other factors (Figure 6.7). Meanwhile, based on the data analysis principles discussed

[74] As the edge between the suitable area and less-suitable area is not clear, a part of his farm can also be seen as located in the suitable area

in Chapter 4, not only the primary data collected in the interviewing, but also secondary data obtained through various publications, the internet and personal solicitation are used to explore the network and improve the validity of the data.

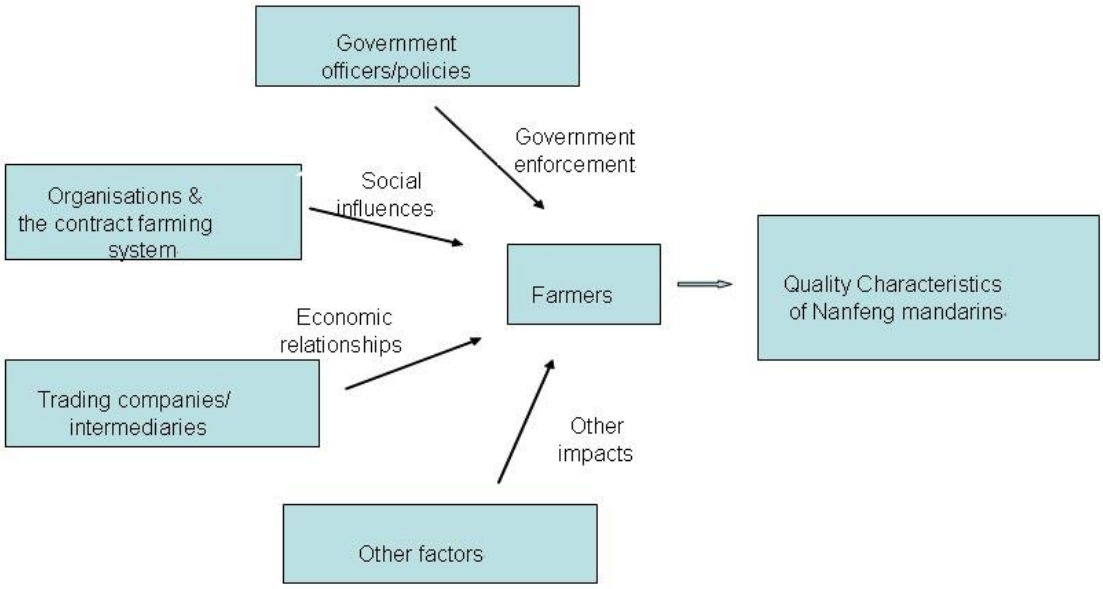

Figure 6. 7: The structure of power relationships analysis section in the Nanfeng mandarin case

6.4.1 Impact of government enforcement upon quality

Beside the common food quality laws and regulations, such as the Product Quality Law of the P.R.C., the Food Safety Law of the P.R.C., and Agricultural Product Quality Safety Law of the P.R.C., all mentioned in Chapter 3, the national standard is issued by the government to regulate production activities and set the minimum standards that Nanfeng mandarins have to meet. Many specific regulations (listed in Section 6.2) were also published by the local government to ensure the implementation of the national standard. However, not only do most producers know little of these laws, regulations and standards but also their executors — government officers and technicians are not very familiar with them. As *government officer B* said,

"Producers have to obey mandatory terms to produce their products. For example, some pesticides are not allowed in the production of Nanfeng mandarins according to the Food Safety Law… (but) only the Food Safety Law rather than others is mandatory in regulating producers' activities in the county"

For the local government, the purpose of developing the Nanfeng mandarin network is increasing local incomes. As "*[M]ore than half of GDP of Nanfeng county is contributed by the Nanfeng mandarin industry"* and *"[S]trict quality inspection programme may increase inputs and thus decrease producers' incomes and the local government income" (government officer A),* "*[N]othing needs to take special attention except the food safety law because the food safety crises has caught consumers' attention" (government officer B).* However, even though it is believed that only the safety aspect should take special attention, the local government enforcement on ensuring safety is still very weak due to the lack of officers and the unreliable sampling processes. As *government officer C* announced,

"In 1979, the central government started to allow farmers growing and selling agrifood products individually. After that time, it was very difficult to regulate production and marketing activities (as there are too many small-scale farmers and sellers)"

And, *Technician B* indicated,

"…the local AQSIQ, SAIC, agriculture department, the Nanfeng Mandarin Industry Bureau, and the Quality Inspection and Marketing Regulation Office of Nanfeng Mandarins always ask big farms, companies and wholesalers to send mandarin samples for checking rather than choosing random samples by the officers or the third party … under such incredible sampling procedures, the results of the examination cannot be trusted"

Except two managers and *farmer C* who sells his products to government officers, no other interviewees (except government officers) announced that the government officer had regulated their production activities or checked the quality of their products. Even for two managers and farmer C, the quality inspection programmes were described as very weak: *"government standards are too basic"* (*factory manager*), *"my consumers' requirements are stricter than government standards"* (*farm manager*), and *"I was asked to send my samples (rather than the government selecting) to quality inspection offices every month"* (*farmer C*). Thus, some forbidden pesticides are used by farmers. As *the factory manager* pointed out,

"…certain pesticides can not be used when growing mandarin trees, such as DDT. But, depending on my knowledge, some farmers still use it. It is one of the reasons why I said enhancing government enforcement is the most important thing for securing quality"

With weak government enforcement, many producers even retain a wrong perception that chemical materials are very important to improve quality, such as keeping the peel smooth, and that all materials which are sold in the market are safe to use regardless of the amount used. For example, many farmers use special chemical materials to store mandarins because mandarins are not easy to be stored for more than 2 months without specific equipment, such as refrigeration warehouses, or chemical materials. But, as *"producers have no idea how to use them"* (*technician C*) over usage may occur.

"I always use a sort of special chemical to store my mandarins. After using this chemical, my mandarins can be stored for more than two months, and the color will be changed to red. …I do not know the name of this chemical. But, it is not harmful for consumers' health. …It can be sold in the corner shop (if it is harmful, it cannot be sold). And it is the sellers' recommendation" (farmer B)

Besides the general laws and quality inspection programmes, GI schemes are supposed to offer extra quality assurance to the market because the GI is a certification mark proving the products have met pre-set standards (Watts and Goodman, 1997; Parrott et al., 2002). However, all respondents pointed out that the quality checking stage is not included in the GI issuing procedure.

As three GI frameworks co-exist and three labels are applied by different organisations (see Section 6.2), the local government established Nanfeng County Protection Office of Nanfeng Mandarins to manage three GI frameworks (including issuing GI labels) and to minimise the duplication of work. But, the ability of this office on ensuring quality through the GI issuing procedure is questionable. Farmers

interviewed indicated that they can get GI labels for free[75] without application or quality checking stages, and trading companies/ intermediaries announced they are required to hand the application form in and pay for GI labels but without proceeding through the quality checking stage as well. Government officers and technicians explained it is because the quality characteristics are defined too flexibly in the national standard, relevant production codes are not very useful in improving certain quality characteristics, the financial input that the national standard required is unaffordable for most of farmers, and the national standard is not forcibly adopted. Firstly, the purposes of issuing the national standard are to develop the GI network and thus effectively "*increase[ing] rural incomes*" (*government officer A*). So, in face of *"rapid expansion of the planning area and quick changing genetic properties"*, because *"lacking relevant research ability to well define Nanfeng mandarins"* (*government officer C*), the local government has no choice but define the quality characteristics of "Nanfeng mandarin" very flexibly with reference to the national standard to ensure all mandarins produced in Nanfeng county meet the standard. Ironically such an approach fails to distinguish fake from genuine Nanfeng mandarins as a consequence of the government's need to improve incomes of local producers.

"... the office sends samples to the laboratories for examining the level of remaining pesticide and the physical indices, such as the sweetness, acidity, and soluble solid materials contamination ... Depending on my experience, no samples fail the examination. It does not mean the quality of these mandarin samples is good. Due to very flexible standards, it is impossible for the most of Nanfeng mandarins, even for mandarins growing outside of Nanfeng county, to fail it" (Technician A)

Secondly, the effectiveness of the national standard on improving certain quality characteristics, such as the taste, is questionable. The natural factors rather than farming technology/skills have been proved to have a greater impact on the taste.

"Several national standard testing districts have been set up from 2005 ... The quality (taste and appearance) of Nanfeng mandarins from these districts are better than mandarins produced in neighbouring areas because the plantlets are carefully chosen

[75] The government officers send GI lables to different villages and farmers can use them as many as they like

before planting, a large amount of financial input has been paid to these districts to build modern agricultural systems, and these districts are carefully managed according to the national standard. But, compared with Nanfeng mandarins from the traditional planting area, the taste is still not so good. …The trees planted in the old time always produce tastier mandarins than new trees (due to the quick changing generic properties). And the natural environment around the town is more suitable to produce Nanfeng mandarins" (*Government officer A)*

Thirdly, the financial input that the national standard required is difficult to afford for most small-scale local farmers. Many mandarin farms in Nanfeng county do not even have the necessary electric power to set up a modern irrigation system. The local government and banks also refuse to offer financial support because of a lack of a full developed credit mechanism. *Technician B* specified,

"Several years ago, the government asked local banks to provide a loan for farmers to buy farming equipment, which is around 30,000 RMB for each farm. But, most farmers use this loan to buy what they want to buy, such as motor bikes. The worse thing is a lot of farmers refuse to pay their loan back. Today, it is difficult for local farmers to borrow money from the bank"

Furthermore, the national standard is even broken by the government. For example, in order to bring a high income for more farmers,

"*… the Fuzhou city government, which Nanfeng county government is managed by, announced that 'Nanfeng mandarin' is a variety*[76] *rather than a GI product. The expansion policy thus issued in 2007 encouraged all 10 counties governed by Fuzhou city to produce Nanfeng mandarins*" *(technician C)*

Under this circumstance, *government officer B* pointed out, *"the national standard is not forcibly adopted as 'Nanfeng mandarin' is believed to be a variety".*

[76] This opinion is added into the 2008 national standard

Based on respondents, the production activities in the Nanfeng mandarin network are not limited by general laws, regulations and the GI standard mainly because of an ineffective quality inspection system, missing quality checking stage in the GI issuing procedure, worthless production codes and the wrong opinion that the national standard is voluntary rather than compulsory. As the quality development process is not greatly influenced by the national standard, almost all interviewees (include government officers and technicians) indicated the GI works as a sort of marketing technique rather than a certification sign in the network. Many producers thus refuse to apply GI labels on their products because *"...everybody can use them to show their mandarins are Nanfeng mandarins even for those mandarins from other counties. It is totally meaningless"* (*farmer A*).

6.4.2 Impact of organisational influence upon quality

Funded by the local government, two associations — the NMA and the NMRA, were established in the network[77]. The NMA is formed by *"technical officers, suppliers (pesticide, fertiliser, machine and plantlets sellers), farmers, and middlemen" (technician A)* and the NMRA is formed by *"government officers and technicians" (technician C)*. Even though these two associations were formed by different actors with different purposes initially — the NMA was formed to apply the GI and manage the whole network and the NMRA was formed to enhance the scientific research and modern technology distribution, both of which focus on technology diffusion (which is one of the government departments' responsibilities) in the contemporary network according to the respondents. The responsibilities of NMA are *"sending 2 notices to each village per year to help farmers cultivate their mandarin trees in a more scientific way*" and organising the members of the association to *"investigate different villages twice per year, which normally relate to technique issues"* (*technician A*), and the responsibility of the NMRA is *"distributing relevant technical information to farmers"* (*technician C).* Two associations are thus described as *"government branches"* and have a minimum impact on production activities because *"with little financial fund from the government and few officers" (government officer C)* producers *"can not get any benefit from these associations"* (*government officer B*).

[77] The Association of Quality and Technical Supervision of Nanfeng County was set only for GI application

In the research, registered co-operatives formed by individual farmers were not found as local farmers are used to produce and sell mandarins by themselves[78]. But, contract farming was found in the network and is believed to be an effective way to regulate production activities and thus ensure certain quality characteristics by many interviewees, especially government officers.

Two investigated contract farming companies are located in the suitable and less-suitable areas because *"[T]he unsuitable area is not able to produce tasty mandarins"* (*farm manager*). Both companies sign contracts with individual farmers each farming year. Under the contract, farmers can only use the fertilisers, pesticides, and other farming materials purchased by the companies, and cultivate their mandarin trees according to the requirements of companies' technicians who inspect the farms regularly. To ensure that contracted farmers sell their products to the companies rather than other middlemen, the contracted price paid to farmers is always *"around 20-30% higher than the average market price"* (*farm manager*). In some years, when the market price is too low, the companies even pay a higher than the contracted price to maintain good relationships with farmers.

"… my company pays a high price to purchase mandarins produced by contracted farmers. Last year, the price was more than 50% higher than the average market price because the average market price was too low which could not even cover farmers' inputs. But, if a farmer breaks the production codes, my company will stop buying his products. It means he has to sell his products to market at a relatively low price" (factory manager)

If farmers produce mandarins according to contracted production codes, both farmers and companies will obtain satisfactory incomes by this production model. On the one hand, farmers can receive a high economic reward under the contract. Based on local government data (unpublished), contracted farmers sold their products around 2.8 RMB per KG in 2009 while the average market price was 1.8 RMB per KG. On the other hand, the companies can get "quality" products through contracted farmers. As such "quality characteristics" can meet specific consumers' requirements (undertaken

[78] The cultivation history of Nanfeng mandarins is very long. But, as the output historically was very low, local farmers prefer to sell their mandarins individually (Tang, 2006)

carefully market investigation) and thus charge a relatively high price in the market, contracted companies can also obtain a high profit.

"With detailed market investigation, my company has made its own production codes and quality standards to regulate contracted farmers' activities ...If the quality of my products increases, I can sell the products for an even higher price on the market ... last year, the highest price consumers paid for my mandarins was 28 RMB per KG ... So, for me, it is not difficult to pay a high price to farmers" (*farmer manager*)

As farmers' activities can be regulated through commercial contracts effectively, this approach is believed to be an appropriate way to secure the quality of Nanfeng mandarins by government officers,

"I would like to expand this model around the county ... contract farming is an effective way in securing and improving quality. Participators are combined by contracts very tightly and companies can totally control farmers' activities according to contracts" (*government officer A*)

However, there is a big problem with the expansion of this model. Not many modern companies choose Nanfeng county to locate their business because *"25 million tonnes of similar products are produced in China every year"* (*government officer C*) and *"most of the area in Nanfeng county is unsuitable for growing Nanfeng mandarins"* (*farm manager*). As almost all local trading companies are too small to afford the detailed market analysis programme (*trading company owner*)[79], less than 8% annual outputs were produced through this model in 2009.

Within the Nanfeng mandarin network, contracted companies have a greater influence on the quality forming process than government funded associations. However, as both investigated companies set their production codes and quality criteria based on consumers' requirements through market investigation and sell their products under private trademarks rather than the GI, the specific impact of GI schemes on enhancing quality through the contract farming system is still highly limited in the network.

[79] 54 trading companies deal with less than 0.3 million tonnes of Nanfeng mandarins in 2009 (Local government data, unpublished)

6.4.3 Impact of economic relationships upon quality

In 2003, only 30% of local farmers' income was generated by Nanfeng mandarin production (Liu and Qiu, 2006). In 2009, the number had risen to 80% (Nanfeng county Government, 2011a, b). As Nanfeng mandarins have became the most important agrifood product for local farmers and it is difficult to continue to expand the farming area in the county (limited lands), how to increase its market price is becoming a critical issue in the network.

The decreasing price is believed not to have been caused by the increasing output but relative lower quality in comparison to similar products, such as Shatang mandarins, by researchers and the government (e.g. Liang et al., 2008; Fang et al., 2009; The People's Government of Fuzhou, 2009; Huang et al., 2009). However, farmers from the unsuitable area refuse to improve quality through inceasing inputs (such as establishing a modern irrigation system) due to unchangeable natural conditions and the cost of investment. Based on the data offered by the local government officers, the average income that a mandarin farm can generate was 32,496 RMB per ha in 2008 and 41,526 RMB per ha in 2009. But the average farms' input for pesticides, fertilisers and workers was 27,000 RMB per ha in 2008 and 29,700 RMB per ha in 2009. As the average mandarin farm size is less than 0.8 ha in Nanfeng county, without any financial support from the government and the local banks, there is little incentive for farmers to improve quality by increasing the input. Indeed, the income of farmers located in the unsuitable area is even lower because what buyers pay for mandarins from the unsuitable area is always lower than average price due to the "low quality" (bad taste). Some farmers only received 1.2 RMB per KG[80] in the market in 2009 (*technician A*). Meanwhile, as the average price of Nanfeng mandarins is believed also to be influenced by the total mandarin supply in the national market (high supply causes low average price in the market), increasing output of Nanfeng mandarins from other counties[81] further decreases the incentive of risk adverse farmers (see also Hennessy, 1998) located in the unsuitable area to improve the quality of their products. As *farmer B* complained,

[80] The average market price was 1.8 RMB per KG in 2009

[81] According to the local government data (unpublished), the cultivation area of Nanfeng mandarins in Fuzhou city had reached 0.69 million ha whilst the production area was only 0.03 million ha in Nanfeng county in 2009

"The price is decided by the market (total supply) rather than me. And, no matter what I do, the quality of my mandarins is always not as good as mandarins from certain areas…quality can be partly improved by increasing the input, but, I do not know whether the increased cost can be covered by future income"

Therefore, two farmers from the unsuitable area declared they never water their trees and do not use organic fertilisers at all, as they *"may not get a suitable income by increasing the input"* (*the retailer*). A negative taste forming circle in the unsuitable area is formed (Figure 6.8).

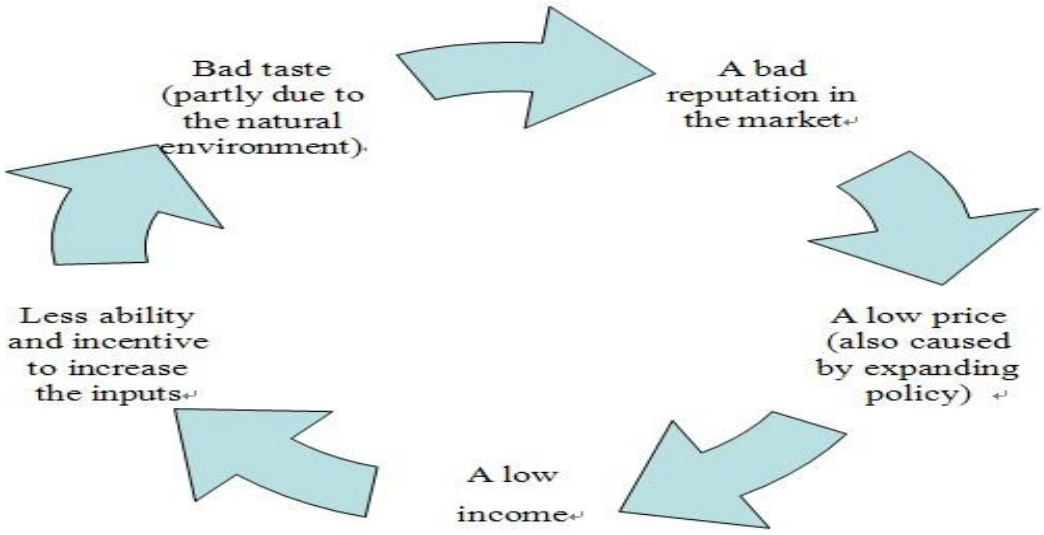

Figure 6. 8: The negative taste forming circle in the unsuitable area

Only farmers from more suitable areas prefer to improve the quality of their products through increasing the input because even though the average market price is low, final consumers and trading companies/intermediaries still prefer to pay a high price for tasty mandarins. Their inputs can be totally covered by price differentiation. As *farmer C* explained,

"I never sell my mandarins to wholesalers. There are a lot of local consumers who prefer to pay a high price for my products because they know the taste of my products is great, even if my price was double or triple average market price. All of my mandarins are sold very quickly each year … (in this year) the average price for

Nanfeng mandarins is around 3.6 RMB per KG due to the weather (which influences the total output). But, my mandarins can be sold around 8-12 RMB per KG"

Thus, two farmers from suitable and less-suitable areas *"choose good plantlets"* and *"use organic fertilisers"* to cultivate their mandarin trees for a high economic reward.

For all farmers interviewed, quality is identical to taste rather than the safety or the appearance which is listed in the national standard. Firstly, they are not forced to ensure safety of their products under weak government enforcement. And, securing safety is not perceived as the means to bring high income for them because consumers and trading companies/intermediaries never check the safety level of their products. As *trading company owner* indicated, *"I have no ability to check the safety level of mandarins. And, consumers do not have such ability either although they prefer to buy safety mandarins"*. Secondly, quick changing consumers' preferences on appearance make farmers realise it is difficult to catch consumers' appearance preferences and thus obtain a high income. As *farmer D* specified,

"In my farm, the price for quality mandarins is 8 RMB per KG, and for low quality mandarins is around 4 RMB per KG. The price difference is mainly based on colour rather than size. … Some years ago, mandarins with a small size can be sold with a high price. But, in the last three years, my consumers prefer the red colour rather than the small size"

In the Nanfeng mandarin network, the quality forming process is greatly influenced by actors who hold "purchasing power" as farmers always make their production decisions after carefully calculating the input and future incomes. It is also the reason why contracted farmers prefer to produce their products according to contracted companies' requirements. Although many production codes have to be obeyed, contracted farmers can obtain a high income at the end of the farming season.

6.4.4 Impact of other factors upon quality

Beside the political, organisational and economic relationships between main actors in the network, producers' production activities as well as quality development processes,

are also impacted by many other factors, such as natural factors, the education level of producers, and the local individual selling culture.

All respondents indicated the location and unstable generic properties are critical factors which influence quality as defined by taste and appearance of Nanfeng mandarins. For example, old mandarin trees always produce Nanfeng mandarins of a small size, and tasty mandarins are always produced in the suitable area. Even though natural factors can be shaped by human intentions, such as picking mandarins in three batches can change the colour of some mandarins by increasing exposure to the sun and mandarins with good taste can be produced by carefully choosing plantlets, like a GI product, the natural influence on quality cannot be ignored. As *technician C* described,

"If Nanfeng mandarin trees move to other counties, the taste will be changed (due to the changing natural environment) ... The taste of Nanfeng mandarins which grow around the town is better than that from other areas, because there are many old trees, the soil contains a lot of organic materials, and the weather is more suitable for producing mandarins than other areas"

Under a great natural influence, combined with economic consideration, production activities are therefore different between more suitable and unsuitable areas.

Meanwhile, all farmers interviewed have a low education level. The low education level and their accompanying short term view make it is difficult for local farmers to attend technical introduction courses, to familiarise themselves with different pesticides through reading relevant materials and to co-operate together to investigate the market. As *Technician A* declared, *"it is difficult for farmers to learn or think something unless they can get economic rewards immediately"*. And, *farmer D* said, *"[S]ome introduction courses were run in the village in the last year. But I did not attend the course because I will not be paid for attending"*.

Also, as local farmers prefer to sell their products individually, it is not easy for trading companies (rather than contracted trading companies) and intermediaries to impact production activities through their market knowledge and thus obtain a higher

economic reward in the network. Only contracted trading companies, who control less than 8% annual outputs in 2009, can manage quality construction processes under pre-set production codes through a high payment to contracted farmers. Like of effective middlemen in the network may limit the response speed of local farmers to market requirements. Thus, *farmer C* and *farmer D* announced *"catching consumers' needs is difficult"* and *"[I]t is worthless to change the appearance of my products to meet quickly changing consumer needs"*.

Natural factors, producers' education level and the local culture, all have a certain impact on production activities and thus the quality characteristics of Nanfeng mandarins. But, it should be noticed that the quality may also be impacted by many other factors. For example, the cultivation experience may influence the production activities and thus products' taste level. And, the number of government technicians may also have a certain impact on quality.

6.5 Conclusions

As a product with more than 1,300 years production history, "Nanfeng mandarin" was registered as a GI product in 1998, 2003 and 2010 with three Chinese GI frameworks under a desire of the government to increase local farmers' income. However, the data has shown that GI status alone cannot bring a high income to its producers automatically in the Nanfeng mandarin network. A premium income can only be generated by "superior quality" aligned to management and organisational skills influenced by the market.

Although the network developed under local government support, government enforcement on securing certain quality characteristics based on the national standard and relevant laws and regulations is very weak. As government funded associations also cannot regulate production activities and the quality checking stage is not involved in the GI issuing procedure, the quality characteristics of Nanfeng mandarins is mainly decided by the economic relationships in the network despite the influence of other factors, such as the natural environment. Contracted companies are thus becoming powerful actors in the quality development process based on their

“purchasing power”. Compared with contracted trading companies, the impact of normal trading companies/intermediaries on quality forming processes is much weaker under individual selling culture and weak marketing research abilities.

6.6 Chapter summary

Similar to the last case study, the first theme of the chapter focused on introducing the background of the Nanfeng mandarin network and identifying the main actors involved in the quality forming process based on documentary and preliminary research. The second theme of the chapter concentrated on examining power relationships between different actors to explore the impact of GI schemes on developing quality. The results show that under weak government enforcement and inappropriate GI issuing procedures, most producers only focus on economic rewards to provide “quality” characteristics. The effectiveness of GI schemes on improving quality is highly limited in this network.

The analysis raises several important issues with respect to the quality of Chinese GI agrifood products. Firstly, the influence of long production history on the quality may vary in different contexts. Secondly, compared with GI schemes, contract farming with conventional production codes may be a more effective method in securing certain quality characteristics especially when the local government and associations struggle to regulate individual production activities based on GI standards and when a high price is paid to contracted farmers by purchasers. Thirdly, the local government may yet play a critical role in the Chinese GI system. Its political orders can add to or weaken the national standard. These findings seems very different from the previous case of “Gannan navel orange” in which middlemen are “powerful actors” involved in quality forming processes, contract farming does not work well, and the impact of local government on quality is limited. To continue to explore the effectiveness of GI schemes on developing quality and obtain a more comprehensive understanding of GI networks in China, another product — green tea, will be examined in the next chapter.

Chapter 7: A GI Case Study: Wuyuan Green Tea

"Legend claims that tea was discovered in 2737 B.C. by an ancient Chinese emperor. ... In modern Chinese culture, tea is consumed all day long both for its ceremonial and cultural significance, and for its taste. The three most common types of tea used are Black, Green and Oolong. ...The light and mildly sweet flavor of Green tea contrasts sharply with the heavier taste of Oolong and Black tea"

(Prokosh, 2004 p.12–13)

7.1. Introduction

GI schemes are supposed to secure certain quality characteristics of agrifood products but Chinese GI products may be an exception. Based on socio-economic theory and networks approach and focusing on power relationships, Chapters 5 and 6 have provided a detailed analysis of quality construction processes in the Gannan navel orange network and the Nanfeng mandarin network and have revealed the ineffectiveness of GI schemes on developing quality in these two cases. However, the investigation also shows, under different contexts, quality construction processes in GI networks may not be the same. To obtain a comprehensive understanding of quality development processes of Chinese GI agrifood products and further develop this empirical contribution, Chapter 7 chooses a very different product from oranges and mandarins to extend this investigation.

The Wuyuan green tea network is very different from the previous two networks. Firstly, processors are involved in the network. Secondly, a long co-operation culture between producers and sellers in the Wuyuan green tea network may enhance the influence of contract farming on quality. The role that history/culture plays in quality forming processes can be further examined. Thirdly, dissimilar to oranges and mandarins, green tea products are drunk directly without peels. The safety aspect may thus attract more attention in this network rather than the previous two. As Wuyuan green tea may offers several interesting counterpoints to oranges and mandarins, further useful insights of quality forming processes in Chinese GI system may be explored through this case study.

As with the last two chapters, Chapter 7 provides a comprehensive analysis of quality construction processes in a GI network of Wuyuan green tea based on the socio-economic theory and network approach and focuses on power relationships. Again, two main themes are presented in this chapter. One provides a background to the product mainly based on documentary research and preliminary research which was undertaken in October 2010. Key actors involved in the quality forming process are indentified at the end of this theme. The other one is dedicated to data analysis. After examining 14 respondents' interviews, the power relationships between the main actors are explored to show the quality development process of Wuyuan green tea. Finally, the chapter concludes with a short summary.

7.2 Historical background

China was the first country in the world to cultivate tea trees. Six counties (Jixi, Qimen, Wuyuan, Xi, Xiuning, and Yi) called the Huizhou area are located in or near the northeast of Jiangxi province, and are traditional areas to grow tea trees in China. In these six counties, Wuyuan county is described as the "hometown of the green tea" because green tea products produced in Wuyuan county was recorded in "Tea Classics" in the Tang Dynasty (1300 years ago) and was called "a fantastic product" in the Song Dynasty (1000 years ago) (Cheng and Li, 2006).

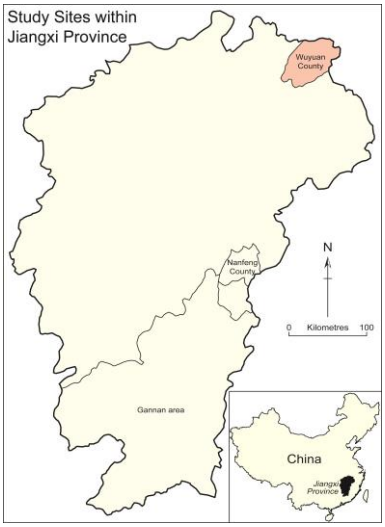

Figure 7. 1: The location of Wuyuan county in China

Wuyuan county is located in the northeast of Jiangxi province between latitudes 117°22'E and 118°11'E and longitudes 29°01'N and 29°35'N (Figure 7.1). According to the government, with more than 500 meters average altitude (more than 80% area in Wuyuan county is filled with mountains and hills), high annual average temperature (16.8°C), short annual average sunshine time (1715.1 hours), and high annual average rainfall amounts (1962.3mm), the county is a perfect place to grow tea trees.

Tea is an important agrifood product for local farmers to earn their living in the Huizhou area. Since the 18th Century, green tea products from this area have been sold into international markets under the name of "China green tea". With frequent trading activities, the small-scale co-operatives appeared from 1878 to enhance the communication between local traders. To be able to obtain a high economic reward in the market, encouraged by the government, small-scale co-operatives in this area were merged into the "Tea Co-operative of Huizhou" in 1930. With large quantity outputs (several thousand tonnes per year), this co-operative controlled several large cities' tea markets in the south of China, such as Shanghai and Guangzhou, through setting a monopoly price and forcing its members to co-operate. Stimulated by a high monopoly income, the tea output in the Huizhou area increased sharply. For example, the annual green tea output in Wuyuan county was 800 tonnes in 1930 but 1250 tonnes in 1936. This monopoly profitable tea market attracted the government's attention. In 1939, the "Tea Production and Distribution Co-operative" was set up by the government instead of the "Tea Co-operative of Huizhou". According to the government policy, all tea products produced in the Huizhou area had to be sold to the new co-operative and the co-operative also was obliged to purchase these tea products. Under this mass buying policy, the output increased even quicker than before, as annual green tea output in Wuyuan county jumped from 1250 tonnes in 1936 to 2300 tons in 1938. More than 90% of farms in Wuyuan county were involved in the tea industry in this period. However, accompanying the dramatic increase in output, the average quality and the market price of tea products from the Huizhou area declined. Facing an unprofitable market, the "Tea Production and Distribution Co-operative" disbanded in 1940. Without mass buying policy, the annual green tea output in Wuyuan county decreased steeply to around 1,500 tonnes in 1941, and continually dropped over the following years to 750 tonnes in 1949. After the establishment of the People's Republic of China in 1949, as a state monopoly policy for purchasing and marketing tea products was issued, tea production in Wuyuan county rose again to 2,500 tonnes in 1976, and increased faster after the introduction of the "Household Production Responsibility System" to 4,350 tonnes in 1986. But, at the beginning of 1990s, the monopoly policy was cancelled because the Soviet-style centrally planned economy was replaced by the market-oriented system in China. It means local tea farmers have to find their consumers by themselves. As individual small-scale

farmers[82] do not have suitable abilities to develop and protect the market, the market price and output of Wuyuan green tea decreased. At the end of the 1980s, more than half of the county tax was contributed by green tea production. But, in 2004, only less than 7% of local GDP (0.13 billion RMB) was generated by the local green tea industry. (Lv, 2001; Gu, 2005; Cheng, 2006; Xiong, 2007; Hong and Yang, 2009)

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Figure 7. 2: The trademark of "Wuyuan green tea"

In order to increase local farmers' income and GDP, the local government decided to develop the green tea industry at the beginning of the 21st Century through increasing the input (2 million RMB per year — 1.58% of local government income in 2004) and establishing the Tea Industry Development Committee (which is supervised by the Mayor directly) and the Wuyuan County Tea Association (WCTA) to regulate the farming, processing and marketing activities. Registering "Wuyuan green tea" as a GI was also considered as an effective way to promote Wuyuan green tea products in the market and thus improve farmers' incomes. In 2005, supported by the local government, "Wuyuan green tea" was approved as a certification mark by the trademark office of the SAIC through the application of the WCTA (Figure 7.2). In 2008, following the application of the Tea Industry Centre, the AQSIQ issued No.122 notice which announced protection "Wuyuan green tea" as a GI product (General Administration of Quality Supervision, Inspection and Quarantine, 2008). In 2010, "Wuyuan green tea" was registered as a GI product in the GI framework run by the MoA through the application of the Wuyuan County Tea Technology Promotion Center. Within the application processes, 8 provincial production and processing standards of "Pollution-free Wuyuan Green Tea" and "Organic Wuyuan Green Tea" were issued in 2006. They are:

- "Quality Requirements of Organic Wuyuan Green Tea" (DB36/T 494-2006);
- "Management System of Organic Wuyuan Green Tea" (DB36/T 495-2006);
- "Labeling and Marketing Organic Wuyuan Green Tea" (DB36/T 496-2006);

[82] The average tea farm size in Wuyuan county is around 0.51 ha in 2010 (The Statistic Bureau of Jiangxi and Jiangxi investigation team of the National Statistic Bureau, 2011)

- "Producing Technique Standards of Organic Wuyuan Green Tea" (DB36/T 497-2006);
- "Processing Technique Standards of Organic Wuyuan Green Tea" (DB36/T 498-2006);
- "Producing Technique Standards of Pollution-free Wuyuan Green Tea" (DB36/T 499-2006);
- "Processing Technique Standards of Pollution-free Wuyuan Green Tea" (DB36/T 500-2006);
- "Quality Standards of Pollution-free Wuyuan Green Tea" (DB36/T 501-2006).

The pre-set GI quality standards of Wuyuan green tea were made based on these provincial standards. For example, "Quality Standards of Wuyuan Green Tea" issued by the AQSIQ is a simplified copy (less than 1,000 words) of the three provincial standards of "Pollution-free Wuyuan Green Tea" (General Administration of Quality Supervision, Inspection and Quarantine, 2008).

With the support of the local government, the average market price, cultivation size and output of Wuyuan green tea increased very quickly over the last decade. The average price was 27,800 RMB per tonne in 2002, 53,103 RMB per tonne in 2006, and 103,659 RMB per tonne in 2010. The cultivation size was 8,800 ha in 2002, 9,180 ha in 2006, and 11,000 ha in 2010. The output was 4,000 tonnes in 2002, 5,800 tonnes in 2006, and 8,200 tonnes in 2010 (Figure 7.3). In 2010, the green tea industry contributed 17.82% annual GDP of Wuyuan county.

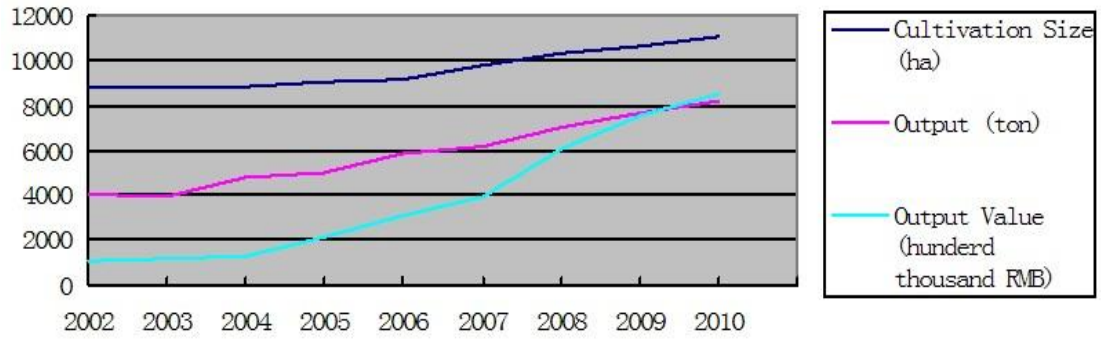

Figure 7. 3: The cultivation size, output and output value of Wuyuan green tea 2002-2010
Source: Local government data, unpublished

Local farmers' income also increased when the output value rose. In 2005, the green

tea production only contributed 520 RMB (15.47%) to the average local farmers' income. In 2010, this number rose to 1250 RMB (23.68%). Today, more than 85% local farms are involved in the Wuyuan green tea network. In the northern mountain area of the county, 50% of rural incomes come from green tea production and distribution.

Two product categories are included in the Wuyuan green tea network. One is called the supreme green tea which is made by the shoots with one, two or three tender leaves (Figure 7.4). With a low output (16.1% of annual green tea output in 2010) and a good taste, it can be sold at a high price in the market (several hundred RMB per KG to 40,000 RMB per KG in 2010). Another type is called the refined green tea which is made by normal tea leaves (Figure 7.5). With a high volume output (83.9% of annual green tea output in 2010) and "modest" taste, it can only be sold with a low price in the market (10 to 200 RMB per KG in 2010) (Figure 7.6).

Figure 7. 4: The supreme Wuyuan green tea

Figure 7. 5: The refined Wuyuan green tea

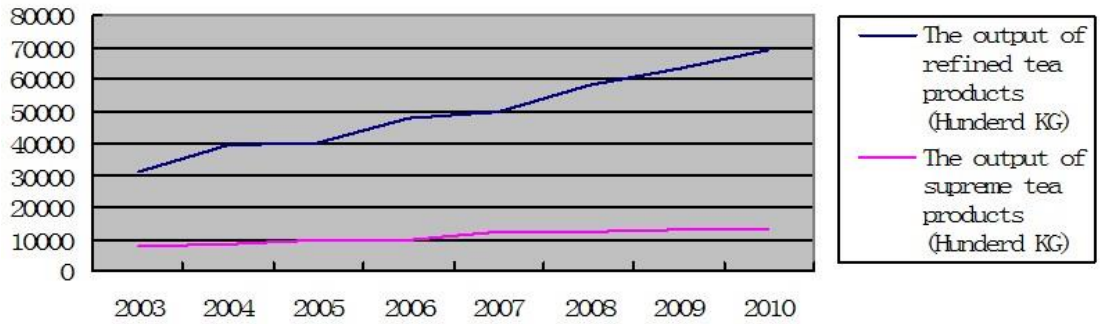

Figure 7. 6: The outputs of supreme and refined Wuyuan green tea products 2003-2010
Source: Local government data, unpublished

In fact, the price of the refined green tea has barely changed from the end of 1980s to

the middle 2000s. According to the research of Yan (2007), the average price of the refined Wuyuan green tea was 8.8 RMB per KG in 1987. Over two decades, the average price rose by only 14% to 10 Yuan per KG in 2006. Compared with pork, the price of which rose more than 10 times in the same period, the price of refined Wuyuan green tea products was relatively static. Therefore, the local government decided to adopt an organic strategy to promote the refined Wuyuan green tea based on the market investigation. After publishing 5 provincial standards of organic Wuyuan green tea in 2006, the local government started to encourage local farmers to accept these standards by offering subsidies from 2007. Stimulated by the subsidies and a relatively high market price (more than 50% higher than non-organic products), the output of organic Wuyuan green tea increased very quickly, from 1,800 tonnes in 2005 to 3,100 tonnes in 2010. The output value rose even faster under the government promotion, from 40 million RMB in 2005 to 105 million RMB in 2010.

Harvested fresh tea shoots and leaves have to be processed before selling (Figure 7.7 and 7.8). In today's network, almost all refined tea products and most supreme tea products are processed by machines and only some top quality supreme tea products are still processed by hand[83]. As green tea products have to be processed as quickly as possible due to the consideration of taste, and because it is impossible for small-scale farmers to buy processing machines individually, more than 100 processing factories/companies appear in the network. On the one hand, these processing factories/companies help farmers not only to decrease cost but also simplified the processing stage (many farmers lack a relevant experience of processing tea products, especially supreme tea products). On the other hand, machine-made supreme tea products are always criticised by some consumers because of "inappropriate" techniques compared to the traditional way. With more than 1000 years' tea drinking history, drinking tea products in China has developed its own art form called "Chinese Tea Culture". Within this culture, drinking hand making supreme tea products is believed to bring a better individual experience based on shape, smell, colour and so on. Therefore, small amount of top supreme green tea products still processed by hand of experienced farmers to meet some consumers' requirements and obtain a high economic reward.

[83] According to Xun et al. (2010), only 2% farmers still process green tea products by hand in a village located in Wuyuan county

Figure 7. 7: The processing process of the supreme Wuyuan green tea
Source: "Processing Technique Standards of Pollution-free Wuyuan Green Tea" (DB36/T 500-2006) (Jiangxi Province Bureau of Quality and Technical Supervision, 2006)

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Figure 7. 8: The processing process of the refined Wuyuan green tea
Source: "Processing Technique Standards of Pollution-free Wuyuan Green Tea" (DB36/T 500-2006) (Jiangxi Province Bureau of Quality and Technical Supervision, 2006)

In the most of time, Wuyuan green tea products do not sell to final consumers directly by farmers because of low consumption quantity per person in China — 0.76 KG per person per year in 2009 (Guan and Qiu, 2011; National Bureau of Statistics of China, 2011) and local trading history. Therefore, middlemen are becoming important actors in the network. In fact, not only does traditional middlemen but some processors trade green tea products as middlemen in contemporary network. But, according to the local government, the average output value of most of middlemen and processors is less than 0.5 million RMB, and only 35 companies' annual revenue was higher than 5 million RMB in 2010. According to Xiong (2007), small-scale middlemen/processors prefer to trade their products under the GI because the price of Wuyuan green tea is higher than similar products[84]. But, many middle to large-scale middlemen/processors would like to sell their products under their own trademarks (with or without the GI), such as Linsheng, Yayu, Yuanfa, Wulongshang, and Dazhangshan, as the quality of Wuyuan green tea sold by small-scale middlemen/processors are very unstable. These

[84] For example, the average price of green tea products produced in Fuliang county which is next to Wuyuan county was 58.47 RMB per KG and that of Wuyuan green tea products was 103.66 RMB per KG in 2010 (Local government data, unpublished)

small-scale middlemen/processors are criticised only focusing on their own profit, rather than the whole industry, to market their products.

Based on documentary and preliminary research, the main actors involved in quality construction processes of Wuyuan green tea are: government officers, farmers, processors, middlemen, and three GI application organisations who are GI holders and may thus influence quality forming processes through the GI issuing procedure. They were intended to be interviewed as the main actors in this investigation to explore the quality development process of Wuyuan green tea and the effectiveness of GI schemes on enhancing quality. Like the last two cases, as only 12% of the annual output value was contributed by international markets in 2010 by only 6 exporting companies who were accredited by the local AQSIQ and thus running under very different quality regulatory system, this case study only focuses on the national market.

7.3 Profile of respondents

This investigation was conducted face to face with 5 government officers, 3 farmers, 3 processors, and 3 middlemen from 15 December, 2010 to 28 December, 2010, in Wuyuan county as all three GI applicants are not independent and managed by and located in the Tea Industry Bureau of Wuyuan County.

The first government officer interviewed is from a village located in the flatland area where most farmers do not rely on tea production to live because quality/high price green tea products can only be produced in the mountain area due to natural conditions. Two officers are from the Tea Industry Bureau — one is a leader of the bureau and also in charge of managing the GI system and another one is a technical officer who attended all three GI application processes. The last two officers are from the local AQSIQ and the local agriculture department. The one from the local agriculture department contributed to the draft of the provincial standards.

Government officers and processors recommended five farmers for the investigation. But, as winter is not a suitable season to get into the mountain area, only two farmers

from the mountain area and one from the flatland area were interviewed. The first farmer has a 0.3 ha farm located in the mountain area. All his products, 500-600 KG fresh organic tea shoots and leaves per year, are sold to contracted processors. The second farmer is also from the mountain area. His village was mentioned by many respondents as an ideal place to grow tea trees due to the specific natural environment (Figure 7.9). This farmer processes the refined green tea by machine and the supreme green tea by hand and sells his products around 250 KG per year (1 KG processed green tea product is normally made by 4 KG fresh tea leaves) to middlemen. The last farmer is located in the flatland area (Figure 7.10). His 0.3 ha farm produces 400-500 KG fresh tea shoots and leaves per year which are all sold to contracted processors. All of these farmers are small-scale farmers because under the "Household Production Responsibility System", with large numbers of local farmers, large-scale farms are difficult to find in the county (*government officer B*).

Figure 7. 9: The tea farm of farmer B
Source: Offered by farmer B

Figure 7. 10: The tea farm of farmer C

All processors are recommended by government officers with medium to large production scale because almost all small-scale processing factories have a very limited influence on the quality aspect[85]. The first respondent is a manager of a big processing company which is contracted with local farmers and processes 0.3 million tonnes of fresh tea shoots and leaves each year. More than 7,000 tonnes of processed green tea products which are worth several hundred million RMB are sold to tea drink making companies by this processor every year. The company that the second interviewee has worked for 15 years focuses on processing organic green tea products

[85] These small-scale processing factories only offer old semi-automatic machines for farmers to process fresh tea leaves or shoots. After paying an admission fee, individual farmers still need to control the processing process by themselves

according to its buyers' requirements. Less than 20 tonnes of organic green tea products, which are worth around 2 million RMB, are sold to wholesalers by this company per year. The company that the last respondent manages not only processes green tea products but also has several retail tea shops. The turnover of this company is 2,000 tonnes and 100 million RMB per year. All these processors are contracted with local farmers and sell green tea products under their own trademarks with or without the GI.

Three middlemen interviewed were introduced by farmers and government officers. The first middleman focuses on trading supreme green tea products between local individual small-scale farmers and retailers in Zhejiang province. His sale volume is around 500 KG per year and sale value is less than 0.3 million RMB. The second respondent purchases supreme and refined tea products from local farmers and processors and sells them to Hunan and Hubei provinces. With one shop in Wuyuan county, his turnover is less than 1 million RMB per year. The last middleman is a retailer who owns several retail tea stores in Jiangxi province. He purchases around 500 KG supreme and refined green tea products from local farmers directly and sells them to final consumers through his retail shops. All interviewed middlemen prefer to sell their products under the name of "Wuyuan green tea" because it can help them charge a high price in the market.

With each respondent, more than 20 questions were asked according to the semi-structured interviewing guide[86] and focused on quality evaluation criteria in the network, the political, social and economic influences on quality development processes, and the contributions of GI schemes on quality. Each interview resulted in a large volume of qualitative data and all answers were checked by the respondent after each interview.

[86] The semi-structured interviewing guide is shown in Appendix 1

Respondents	Personal Characteristics
Government officer A	from a village located in the flatland area;
Government officer B	a leader of the local tea bureau, in charge of managing the GI system;
Government officer C	a technical officer works for the local tea bureau, attended GI application processes;
Government officer D	from the local AQSIQ;
Government officer E	from the local agriculture department, contributed to the draft of the provincial standards;
Farmer A	located in the mountain area, sells fresh organic tea shoots and leaves to contracted processors, has a junior school certificate;
Farmer B	located in an ideal place of growing tea trees, processes the supreme green tea by hand and the refined green tea by machine, has a junior school certificate;
Farmer C	from the flatland area, sells fresh tea shoots and leaves to contracted processors, attended primary school;
Processor A	manages a big processing company which produces more than 7,000 tonnes green tea products each year under the own trademark, signs contracts with local farmers and sells most of products to tea drink making companies;
Processor B	works for a company which processes less than 20 tonnes organic green tea products, signs contracts with local farmers and sells products under the own trademark;
Processor C	manages a company which not only processes tea products but also has its own tea shops in the retail market, sells around 2,000 tonnes green tea products per year under the own trademark with the GI, and signs contracts with local farmers;
Middleman A	concentrates on trading supreme green tea products as a wholesaler, without any shop, sells products under the GI;
Middleman B	purchases supreme and refined green tea products from local farmers and processors, has one shop in the county, sells products to retailers under the GI;
Middleman C	purchases supreme and refined green tea products from local farmers, owns several retail tea shops in Jiangxi province, sells products under the GI.

Table 7. 1: The characteristics of interviewees in the Wuyuan green tea network

7.4 Quality construction processes embedded in power relationships

Similar to the previous two cases, based on the conceptual framework, this section is structured into four main parts. The power relationships which influence production decisions and thus quality are explored from the perspective of government enforcement, organisational influence, economic relationships and other factors (Figure 7.11). Meanwhile, based on the data analysis principles discussed in Chapter 4,

not only the primary data collected in the interviewing, but also secondary data obtained through various publications, the internet and personal solicitation are used to explore the networks and improve the validity of the data.

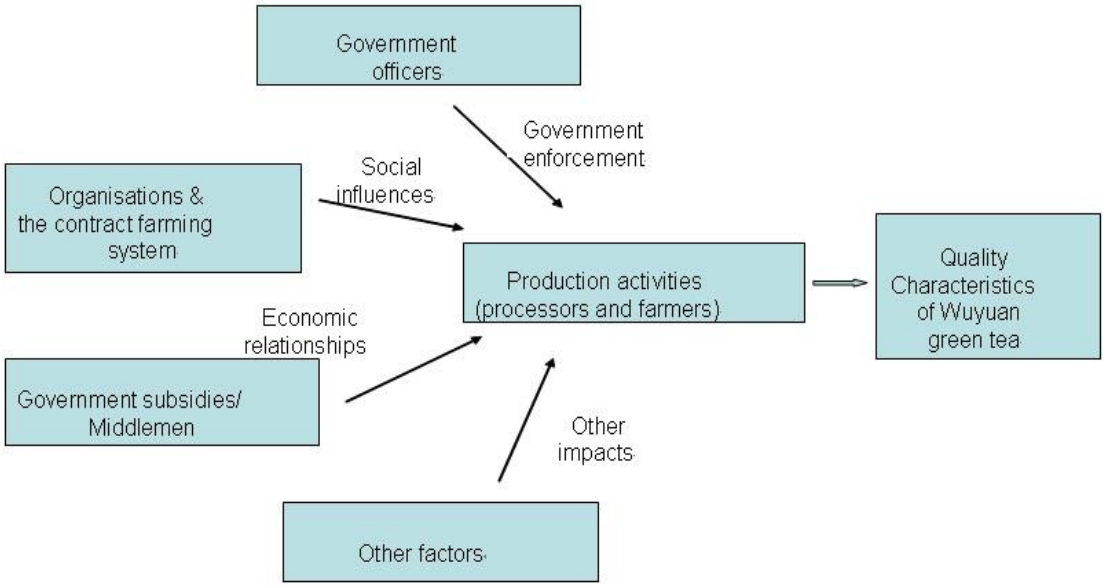

Figure 7. 11: The structure of power relationships analysis section in the Wuyuan green tea case

7.4.1 Impact of government enforcement upon quality

Beside the common food quality laws and regulations, such as the Product Quality Law of the P.R.C., the Food Safety Law of the P.R.C., and Agricultural Product Quality Safety Law of the P.R.C., all mentioned in Chapter 3, the quality requirements of Wuyuan green tea are listed in the GI application materials. The provincial standards were also issued by the government to help producers regulate their farming and processing activities[87]. However, only the food safety law was referred to by farmers as *"the local government officers stick the notes on the board to tell farmers what sort of pesticides can not be used"* (*farmer A*).

This situation may have been caused by two reasons. Firstly, with low education level, pride in a long history and doubt over the usefulness of relevant production codes in improving quality, farmers prefer to farm their tea trees in their own way. As *farmer A* claimed, *"[I]f these laws and standards are useful, many farmers should already know because quality products can be sold with a very high price in the market"*, and

[87] Unless producers sell their products under the name of "organic Wuyuan green tea" or "pollution-free Wuyuan green tea", the provincial standards are encouraged rather than imposed

farmer B announced *"I do not know the standards. I do not want to read it. I have more than 20 years' production experience"*. Secondly, the weak government enforcement decreases the incentive for farmers to adopt relevant laws and standards. All of the farmers interviewed indicated that their products had not been checked by the local government over the last decade, as, "*The quality was checked long time ago. It was before the 1990s when the government buying policy existed. Nowadays, nobody takes care of the quality and checks it"* (*farmer C*). Government officers' explanations of this situation were *"a lack of officers"* and farmers cannot be punished with small quantity production.

"... for individual farmers, I have to admit that these laws and standards are not very useful, especially for farmers who process green tea products by themselves. It is easy for government to regulate companies' activities rather than individual farmers. No punishment is available for farmers, even they break the laws, such as using forbidden pesticides, the government can do nothing. ... Normally, they are very poor and the government thus cannot take their property. Also, according to the laws, the government can not put them into the jail due to the small quantity production" (*government officer B*)

Because farmers' farming and processing activities are not regulated by the government, forbidden chemical pesticides and herbicides may be used in the farming process, and the sanitary aspect did not attract individual farmers' attention in the processing process. For example, individual farmers process most of their products in small processing factories which charge a hiring fee through offering processing equipment. Even though the hygiene condition in these small-scale processing factories is questionable (Figure 7.12), no farmer respondent believes it is really a problem as *"it is the traditional place farmers process their tea leaves"* (*farmer A*).

Figure 7. 12: A small semi-automatic processing factory beside the road

But, even though *"[T]here is not any requirement on farmers' farming and processing activities"* (*government officer D*), the government quality inspection programmes are running more frequently for processors and middlemen. *Government officer B* pointed out,

"My department focuses on processors and sellers to check the quality rather than farmers. Normally, my colleagues go to market around 5 to 6 times from March to September each year, and 1 to 2 times in the rest of the year"

The government officers indicated checking the quality of products processed by processors or sold by middlemen is a good way to ensure quality because *"[O]nly a few farmers sell their products to final consumers by themselves"* (*government officer* E). Under the strict government enforcement, *"processors and middlemen have to ensure their products meet relevant requirements or they will be punished"* (*government officer D*), such as *"pay a fine"* or *"stop running for a while"*. Therefore, processors interviewed are very familiar with compulsory laws/regulations[88] of green tea products and announced that *"[A]ll standards within my factory are made based on government compulsory food safety and hygiene laws/regulations"* (*processor A*). But, as *"the government standards on the safety aspect are too basic"* (*processor A*) and *"the requirements of my consumers' on organic products are stricter than government compulsory laws/regulations"* (*processor B*), the compulsory laws/regulations are believed to have had a limited influence on the processing

[88] Compulsory laws/regulations are always concentrated on the safety and hygiene aspects

process when compared with buyers' requirements. Meanwhile, although middlemen know compulsory laws/regulations very well because *"if the pesticides remaining are in excess of the allowance level, I will have to pay a fine"* (*middleman C*), the respondents showed that the government enforcement level on middlemen is much weaker than on processors. Compared with processors who announced local government officers go to their factories *"two or three times per year"* (*processor B*), *middleman A* said that his products had not been checked and the remaining two middlemen pointed out that their products were checked at most once per year. *Processor C* (he is also a retailer) also complained about the ineffective inspection programmes on middlemen,

"... all samples they checked in the market were provided by sellers. Even though government officers pay for these samples, sellers know them and know the reason why they want to have these samples (therefore, the checking results are not reliable)"

Beside the compulsory safety and hygiene laws/regulations, all farmers, processors and middlemen interviewed showed their limited knowledge on the GI standards, because the standards are *"not very detailed and too basic"* (*government officer C*). For example, within the AQSIQ framework, the pre-set quality standards of "Wuyuang green tea" are less than 1,000 words which relate to varieties, natural conditions of planting, production codes, harvest requirements, processing codes, and quality standards (grading criteria, physical contents and safety standards). All information contained in these 1,000 words is not very detailed, such as harvest requirements: *"... according to the growth condition of the tea trees and the requirements of the final tea products, under the principle of picking, considering of quality and quantity, picking shoots with one leaf, two leaves, three leaves or without leaves"* (according to the provincial standards, the leaves can also be picked alone to produce "pollution-free Wuyuan green tea" and "Organic Wuyuan Green Tea") and the safety requirements: *"... the safety characteristics have to meet the relevant national requirements for similar products"* (similar products are not specified). In practice, even green tea products that are produced in neighbouring counties can meet these very basic standards. Therefore, *processor C* said, *"all my products are sold under the GI. But I do not remember any special quality requirement for the GI*

products". Government officers explained that issuing such basic standards is an unavoidable result because the local government is stimulated by the economic rewards to apply GIs (ensuring these standards can be met by all local tea products) and the scientific research ability of the local county is still very weak. *Government officer D* noted that the GI standards were made *"under farmers' and processors' experience"* rather than the results of detailed scientific research and *government officer C* specified,

"Only several aspects, such as water and ash content levels, can be checked in the county's laboratories. The important quality characteristics that can be used to grade Wuyuan green tea products still can be only judged by personal experience. It is even impossible to distinguish the green tea products produced in Wuyuan county or neighbouring counties by laboratory tests"

According to respondents, the safety aspect of green tea products processed by processors can be secured if there were regular government inspection programmes. However, it still needs to be noted that the government enforcement of compulsory laws/regulations on middlemen and farmer levels is very weak as samples are chosen by middlemen rather than through scientific methods or with the third party, and individual small-scale farmers' production activities are not regulated by the local government at all. The safety aspect of Wuyuan green tea produced by these individual farmers and sold by middlemen thus cannot be ensured in the network. Meanwhile, because the GI standards are too basic and not very detailed, the ability of GI standards to regulate production activities and ensure certain quality characteristics is questioned. Most actors interviewed thus believed that the GI is a type of promotion technique rather than a certification mark.

7.4.2 Impact of organisational influence upon quality

Theoretically, the quality of GI products can be secured by GI holders through GI issuing procedures. But, with basic GI standards and inappropriate sample selection methods, the influence of GI holders on ensuring quality is very limited in the Wuyuan green tea network.

From 2005, several government funded organisations set up to apply for GIs[89] and manage the network. The first one is the WCTA, which was set up to apply the certification mark of "Wuyuan green tea" in 2005 and was originally made up of twenty-one members – three government officers, sixteen processing or trading company managers, one technician, and one teacher from the local tea school. This association is located in and managed by the local tea bureau[90], and concentrates on *"protecting the legal right of Wuyuan green tea products in the market, helping the local government manage the network, collecting relevant information for the local government and members, enhancing the communication between members, offering assistance in standards' writing and issuing processes, and helping members regulate their own producing and marketing activities" (government officer B).* According to *"The Measurements of the Certification Trademark of Wuyuan Green Tea"* that was issued by the WCTA in 2005, within 60 days after receiving the application, the WCTA should check the 15 index (such as the moisture, ash, power, lead, copper, DDT, dicofol, benzene hexachloride, decamethrm and methamidophos content) of the applicant's samples. If the samples can pass the examinations, have been processed through *"fixation"*, *"rolling"* and *"drying"*, the three processing steps, and *"no other contents, no strange smell, no red branch, taste and smell good, with fresh green colour and soft green leaves outlay"*, the applicant can obtain the certification trademark on their package for three years after paying a management fee. As all examining indices are made based on the national mandatory standards for tea products and the sample selection method is not clarified (according to *processor C* and *middleman C*, samples are sent by applicants) all applicants can get the permit from the WCTA very easily. The second one is the Tea Industry Centre. Even though the Centre is the GI applicant of the AQSIQ framework, the AQSIQ GI holder is the "GI Protection and Management Committee of Wuyuang Green Tea" which was built in 2009 under the local government order. Formed by government officers and managed by the leader of the local tea bureau, the responsibilities of this Committee are, *"managing and promoting the GI, encouraging the adoption of the provincial standards in the network, offering suggestions on the packaging, and accomplishing the work that the government requires" (government officer B).* According to *"The*

[89] According to the requirements of three Chinese GI frameworks, GI applicants are limited to societies, associations, organizations, enterprises, and excellent professional co-operatives

[90] The government officers who are members of the association manage the association for the bureau. Thus, *government officer B* described the WCTA works as a *"sub-organisation of the local tea bureau"*

Measurements of Protecting and Managing the GI of Wuyuan Green Tea" that was issued by the Committee, the applicants have to be the companies. After handing in an application form, an application explanation letter, the relevant certification of the company (such as the business license), an government certificate of the products' production area, a quality examination report of the product, a statement of predicted production and selling quantity, and an announcement of managing the GI labels according to the Committee's requirements, signing the contract with the Committee, and paying a management fee, the applicants can show the GI on their products for one year. As the application materials asked by the AQSIQ framework are much more than the SAIC framework, and the certification mark appeared earlier, *"most producers prefer to use the SAIC one rather than the AQSIQ one"* (*processor C*). The last GI applicant and holder is the Wuyuan County Tea Technology Promotion Center, which is also an organisation managed by the local tea bureau. According to *government officer C* who attended the GI application process, the local government was forced by the higher level government department to apply for the third GI.

"... the application fee is 200,000 RMB each for the SAIC and AQSIQ frameworks. In 2009, the MoA set another GI framework up, and asked my bureau to register with it. Even though it was free to register, my bureau still thought it was useless. In Wuyuan county, most companies prefer to use the GI label issued by the SAIC rather than the AQSIQ. It is impossible to force producers to use the third one. ... But, the officers from the provincial agriculture department phoned us and asked my bureau to register with this system" (*government officer C*)

Because the third GI framework had not caught the attention of the local government and was issued in 2010, nothing has been published by the local government to manage the usage of this GI label in the network.

Under too basic standards and inappropriate sampling methods, the specific influence of the WCTA on regulating production activities and ensuring quality through GI issuing procedures is very weak. Meanwhile, as not many actors use the other two GI labels, the impact of the GI Protection and Management Committee of Wuyuang Green Tea and the Wuyuan County Tea Technology Promotion Center on quality are also limited. The quality of Wuyuan green tea is thus difficult to ensure through GI

issuing procedures by GI holders.

At the same time, because the Chinese government did not encourage farmers to co-operate before 2006 and individual small-scale farmers can process their fresh tea shoots and leaves by hand or by renting processing machines, in face of numerous middlemen in the network, there was no reason for local farmers to co-operate until middle to large-scale processors appeared in the network over the last few years. Compared to GI holders, these processors have a greater impact on the quality forming process through the contract and based on the local culture.

According to respondents, contract farming is working well in Wuyuan county because processors need a large amount of fresh tea shoots and leaves every year, and it is not a wise choice for local farmers to process green tea products (especially for large quantity low value refined green tea products) and find buyers individually considering processing and channel costs. But, contract farming in this network is always formed under the contract between processors and villages rather than individual farmers. On the one hand, with a long co-operative history, farmers believe that if all farmers in the village co-operate together, they will get a better price than negotiating with processors individually (*farmer A*). On the other hand, the processors prefer to discuss the terms of the contract with the whole village rather than individual farmers because it saves costs and the quality requirements listed in the contract can be also secured by the local culture (*processor B*). For example, as villages in Wuyuan county are always formed by big families[91], the head of the village can not only express the common opinions of farmers but also convince individual farmers to agree the terms in the contract. It simplifies the contract discussion and signing processes. And, with a long co-operation history, the terms in the contract can also be implemented by local farmers automatically.

"My company co-operates with several bases/villages. Each year, my company sign the contract with these bases, and indicates what sort of tea shoots and leaves my company wants to purchase. If the farmers who belong to these bases break the contract and sell sub-quality products to my company, they will be blamed and

[91] It means most males in a village have the same surname

isolated by the rest of the farmers in his village. Both contract and local culture help my company to ensure the quality of fresh tea shoots and leaves" (processor A)

Contracted farmers also admitted that their farming activities can be secured by contracts and the local culture together. Firstly, the taste can be secured by the local culture. For example, only organic fertilisers should be used to cultivate tea trees because the usage of chemical fertilisers may *"lighten"* the taste. But, many farmers still prefer to use chemical fertilisers because of the cost. As it is impossible for processors to examine farming activities every day and judge the taste of tea products before processing, the local culture plays a critical role in limiting the usage of chemical fertilisers. Both *farmers A and C* who sign contracts with processors pointed out that they never use chemical fertilisers to increase their output, otherwise they will be blamed by their neighbours. *Government officer A* explained,

"... if a farmer use chemical fertilisers to increase output ... and is found out by his neighbours, he will be blamed, because local farmers are very proud of a long and stable relationship with the processor who brings a high income for the village. The activities that may break the good relationship are believed to be unacceptable in the village"

Secondly, the appearances can be ensured through the contract. The appearance of harvested fresh tea shoots and leaves is related to personal experience and input. For instance, tea leaves can be harvested by machine or by hand. Even though farmers need to spend more time to harvest fresh tea leaves by hand, the appearance of tea leaves harvested in this way is better because those harvested by machines may mix full leaves with branches and crushed leaves. As the appearance is easily distinguished by eye, detailed fresh tea shoots and leaves grading criteria are listed in all contracts. Economic motivation drives farmers to make their farming decisions based on the contract, as *"I would like to harvest tea leaves by tools in summer and autumn because of the low price that processors pay"* (*farmer C*). Thirdly, the safety issue can be secured by both contracts and the local culture. The safety in farming processes is generally related to the usage of chemical materials, such as pesticide and herbicide. To ensure a low chemical material residue level, the processors set strict chemical examination programmes after purchasing fresh tea leaves from contracted

farmers. If a farmer's tea shoots/leaves can pass all examinations, he/she will receive an extra 30% to 50% premium according to the contract.

"Many villages sign the contract with processors as a whole. The contract regulates farmers' activities and indicates the quality standards that fresh tea shoots and leaves have to meet. If a farmer's products can pass all examinations and be proved as organic shoots or leaves, the processor will pay an extra 30%-50% premium to the farmer. The contract not only protects processors' right to have a quality input, but also brings a high economic reward for farmers" (government officer E)

In practice, the usage of chemical materials is restricted by not only the premium but also the local culture. If any farmer breaks the contract and sells sub-quality products to contracted processors, he will be *"blamed and isolated by the rest of the farmers in his village"* (*processor A*), and *"some benefits, such as special bonus, that he can have as a villager may be cancelled by the head of the village"* (*farmer A*). Therefore, even though *farmer C* knows the usage of pesticides can increase the output, he claimed that he only spread pesticides once or two times per year according to the suggestion of contracted processor's technicians.

Enhanced by the local culture, farmers have realised that regulating their own farming activities according to the contract is their obligation if they wish to sustain a long stable relationship with contracted processors who generally offer high prices for "quality" products. The quality thus can be ensured by the contract farming system in the network. However, as all three managers investigated announced that GI standards are *"too basic"* to be adopted in their companies and the products of two processors are sold under private trademarks rather than the GI, the specific impact of GI schemes on enhancing quality of Wuyuan green tea is still highly limited.

7.4.3 Impact of economic relationships upon quality

To increase local farmers' incomes, the local government invested in both marketing promotion and quality improving programmes to increase the market price of Wuyuan green tea. As *government officer B* introduced,

"Wuyuan green tea is a traditional agrifood product for local farmers. … In the last several years, the local government invested around 10 million RMB per year into the Wuyuan green tea industry to encourage farmers to plant quality tea trees and promote 'Wuyuan green tea' in the market through TV advertising, exhibitions, and magazine advertisement. Farmers can get quality green tea plantlets for free from the local tea plantlet breeding centre funded by the local government. If farmers agree to build or re-build their tea farms according to the provincial standards, they will get an extra subsidy of around 6,000-10,050 RMB per ha from the local government"

This quality improving programmes had a great influence on farmers' production activities as farmers can not only obtain free green tea plantlets and subsidies from the local government but also earn a high income through upgrading tea trees and farms according to the local government's requirements. Such as *farmer C* indicated, *"[A]ll farmers in my village change the varieties of tea trees because new varieties offered free by the local government can produce more tea shoots and leaves than the old one"*, and *middleman C* announced

"… upgrading tea farms focuses on using organic fertilisers and controlling the planting density. Both of them are critical to produce organic green tea products which can be sold with a high price in the market. Stimulated by the government subsidies and future high incomes, farmers prefer to upgrade their farms"

Increased quality (through changing varieties and upgrading farms) combined with effective promotion programmes have enhanced the price of Wuyuan green tea in the market which is *"at least 10% to 20% higher than green tea products from neighbouring counties"* (*middleman B*). The average local farmers' annual income generated by green tea production thus more than doubled between 2005 and 2010 from 520 RMB to 1250 RMB. However, according to unpublished local government data, local farmers only obtained 28.82% of the total output value of Wuyuan green tea in 2010, but the processing stage took 49.41% of it and middlemen acquired the remaining 21.76%. Because green tea products are not suitable to sell individually, based on advanced market knowledge, processors and middlemen have made their own quality criteria to maximise their profit in the network and force farmers to accept them.

All processors interviewed set their own quality criteria according to their consumers' requirements. They explained, *"[M]y consumers have special requirements for green tea products. I have to meet their requirements …The taste, smell, appearance, contents and safety aspects are all (have to be) examined"* (*processor A*) and *"under the own trademark, my company has to offer green tea products with consistent quality that consumers prefer to buy and thus I can charge a high price in the market"* (*processor B*). In practice, these criteria are not only imposed very strictly in the contract to control farming activities but also regulate processors' own processing activities. For example, all managers interviewed announced that their companies bought modern full automatic tea processing machines to process tea products under consumers' requirements.

"… the standards referred in the provincial standards are too basic, my consumers have different quality requirements, which are stricter than the provincial standards. I have to process my products according to their requirements. … The reason why consumers want to buy my product is my products can perfectly meet their requirements. Securing quality is the only way to improve market share and obtain a high economic reward … To ensure stable quality characteristics, my company purchased full automatic processing machines. Although they are very expensive, but they are necessary" (Processor A)

Not only processors but also middlemen set specific quality criteria based on their market knowledge thereby influencing individual farmers' farming and processing activities through their "purchasing power". For example, even though *farmer B* would like to drink the green tea made by old tea trees (the taste of which is stronger than new varieties), he cultivates new varieties in his farm mainly because the new varieties can produce more early spring tea shoots, that middlemen prefer to pay a very high price for, than the old varieties and accordingly he is rewarded with a high income in the market.

Middlemen's quality criteria primarily focus on detectable characteristics such as taste and appearance rather than undetectable attributes such as safety and hygiene because they face individual consumers who *"prefer to drink quality green tea products with*

good taste and appearance" (*middleman A*) and *"[I]t is very difficult for them to identify the safety and hygiene levels of green tea products"* (*middleman C*). Therefore, for individual un-contracted farmers, chemical fertilisers, pesticides and herbicides are used to increase the output, special attention has been paid to harvest fresh tea shoots, and old semi-automatic processing machines are adopted to process almost all refined green tea products. For instance, after evaluating the input and possible future income, pesticides and herbicides and a small amount of chemical fertilisers were used by *farmer B* to increase output, as

"Cultivating my tea farm is very simple. I never irrigate my tea trees due to local natural conditions. But, I use chemical fertilisers to improve the output. ... Using chemical fertilisers can increase the output (with low cost) and all farmers in my village prefer to obtain a higher income by using them. ... The taste does not change a lot with a small amount usage and it is not easy to be found by middlemen ... pesticides and herbicides have to be used to secure the output. ... I do not know what sorts of pesticides and herbicides I used. They are recommended by sellers. ...They are used three to four times per year when I believe they should be used"

And, stimulated by the price middlemen paid, different ways were adopted by farmers to harvest and process their tea shoots and leaves. Fresh tea shoots were harvested very carefully by farmers because quality supreme green tea can be sold more than 1,000 RMB per KG. To obtain a higher income, farmers even grade fresh tea shoots to *"shoots, shoots with one leaf, shoots with two leaves, and shoots with three leaves"* (*middleman C*) based on the preferences of middlemen before processing. Conversely, as the price of refined green tea products is normally under 100 RMB per KG, carefully picking activities were described as *"worthless"* (*farmer B*) and old semi-automatic machines were used to process these tea leaves under the consideration of the cost.

"There is a processing factory in my village. It was set up by the local government before the 1990s. Now, if a tea farmer wants to use these machines to process their fresh tea leaves, he will be asked to pay a processing fee ... it is impossible to process refined tea products by hand. The price of refined tea products is always less than 100

RMB per KG. But, processing 1 KG refined green tea needs at least 4-5 hours by hand. The personal input is even higher than the price middlemen paid" (farmer B)

Through offering free plantlets and subsidies, the impact of the local government on enhancing quality based on the provincial standards cannot be ignored. Also, depending on advanced market knowledge and "purchasing power", middlemen and processors have a great influence on production activities and thus quality through the specific quality criteria they made. The quality of Wuyuan green tea is greatly shaped by economic relationships between different actors.

7.4.4 Impact of other factors upon quality

All respondents indicated that the impact of natural factors cannot be overlooked when analysing quality of Wuyuan green tea products. For example, the appearance (colour and smell), taste (freshness) and safety level (pesticides remaining) of green tea products from the mountain area are always better than that from the flatland area because *"[T]he weather in the mountain area is very different from the flatland area"* (*farmer B*), *"[T]he contents in the soil are very different"* (*government officer A*), *"(in the mountain area) better ecology environment can decrease the usage of pesticides"* (*processor B*). Even though *"[T]he quality of green tea products is not only decided by the local environment, but also greatly impacted by farming and processing activities"* (*middleman B*)", the influence of natural factors on quality is still significant in the network. Therefore, middlemen/processors pay a high price for mountain tea leaves/products and a relative low price for that from the flat area. Accordingly, tea farmers in the flat area *"have less interest to pick their tea shoots and leaves carefully" (government officer A).*

Meanwhile, the low education level of farmers also has a certain influence on the production activities and thus quality. For example, individual farmers ignoring safety and hygiene aspects in production processes is caused not only by weak government enforcement and middlemen's quality criteria, but also by the low education level of farmers. Such as *middleman C* specified, *"[F]armers believe all germs can be killed by hot water used to make tea drink … it is difficult to change their opinion"*. And, *farmer B* indicated, *"[A]ll pesticides can be evaporated through heating in the processing process. How much I use is not a matter"*. But, according to Sood et al.

(2004, p.2123), not all pesticides can be totally evaporated in the processing process, *"the decreases in residue levels were different for different pesticides"*. Because of wrong opinions, safety and hygiene levels are difficult to improve with respect to individual farmers.

Also, the quality is partly decided by the personal processing experience as well. Hand making supreme Wuyuan green tea products requires not only traditional tools, such as iron pan and bamboo tablet but also extensive experience on controlling the time and the temperature.

"The hand-made Wuyuan green tea is always better than the machine-made one. Different fresh tea shoots and leaves are needed to be processed at different temperatures with different times. For example, fresh tea shoots harvested in the early morning need to be processed with different temperatures from that harvested in the afternoon …The green tea has its own life, only experienced processors know how to deal with it. It is what the machine cannot do" (farmer B)

The specific processing skill some local farmers have is an important historical heritage. It is why the high quality hand-made supreme Wuyuan green tea can be sold 40,000 RMB per KG in the market.

The natural factors, producers' education level and personal processing experience have a great influence on production activities and thus the final quality characteristics of Wuyuan green tea products. But, it should be noticed that many other factors may also have an impact too. Such as lacking government loan for small-scale processing factories on upgrading processing machines and environments may also influence the quality of Wuyuan green tea.

7.5 Conclusions

The quality development process is more complicated in the Wuyuan green tea network than the previous two cases because more factors/actors are involved, such as different tea product categories and processors.

According to the standards listed in the "The Management of the Certification Trademark of Wuyuan Green Tea" and "The Measurements of Protecting and Managing the GI of Wuyuan Green Tea", the quality of Wuyuan green tea can be subjectively judged by appearance and taste, objectively judged by physical criteria, safety criteria, net weight measurement error, and certain processing procedures. However, producers interviewed prefer to judge the quality of Wuyuan green tea through appearance and taste, and also the safety issue as referred to contracted farmers and processors. Different quality judging criteria demonstrate the weak influence of GI schemes on quality of Wuyuan green tea in the network.

According to the interviewees, contemporary quality evaluating criteria are mainly developed by processors and middlemen and enforced through their "purchasing power". Although the impacts of government enforcement (on processors), government subsidies, local culture, natural factors, farmers' education level, and processing experience cannot be ignored when examining quality development processes of Wuyuan green tea, contracted processors and middlemen have an unavoidable significant impact on production activities as well as quality. Compared with processors and middlemen, the influence of GI schemes upon quality is rather minimal.

7.6 Chapter summary

The first theme of the chapter mainly focused on secondary data to provide a background of the network. The main actors involved in the quality development process were indicated at the end of this theme. The second theme of the chapter concentrated on exploring power relationships between main actors to examine the quality contraction process and the influence of GI schemes on quality. The results show that the quality forming process is mainly influenced by economic relationships and the impact of GI schemes is limited.

The conclusions raise some interesting questions that need to be examined, such as which system — GI or "industrial" — can provide "quality" agrifood products into

the market. The GI system is believed by many researchers (such as Watts and Goodman, 1997; Barham, 2003; Tregear et. al., 2007) to offer "quality" agrifood products rather than the industrial agrifood system. But, the research in the Wuyuan green tea network shows the contract farming operating under "industrial conventional codes" is an effective way to secure certain quality characteristics. The "industrial agrifood system" within this case provides a better (especially in the safety aspect) and more stable "quality" than the GI system. This interesting point will be discussed in more detail in Chapter 8, which pulls the empirical analysis of the three GI networks together.

Chapter 8: A Comparative Evaluation of the Chinese GI System Based on Three Sample Cases

"The third concern of producers is the dissemination of information on GIs and their promotion as a tool for sustainable development. In several countries (especially developing economies and LDCs), in spite of the tremendous potential arising out of local products, the concept of GIs is not properly grasped by policy-makers and producers. The emergence of specific problems (lack of marketing skills, poor legal framework) reduces the chances for the communities to take full advantage of local products"

(Vittori, 2010 p.309)

8.1 Introduction

The introductory chapter of this thesis established six inter-related research objectives. Chapter 8 is concerned with the final objective, namely to provide an overall evaluation of the Chinese GI system in the construction of quality and to establish a foundation for future study. This chapter attempts to bring the review-based and interviewing-based parts of the thesis together. It does this by comparing the empirical material presented in Chapters 5, 6 and 7 and revisits the main concepts and contexts outlined earlier in Chapter 2 and 3.

To develop a comparative and conceptual analysis, which moves from the in-depth empirical material towards broader theoretical concerns associated with the social, political and economic relations that are built around the Chinese GI system, the rest of this chapter is composed of three sections. Section 8.2 focuses on identifying the *uniformity* and *diversity* of power relationships involved in quality development processes among the three sample cases. The empirical analysis has illustrated the quality construction process inherent in the three sample cases individually through examining power relationships. But, they have not been compared to draw reliable results. Section 8.3 returns to the main issues outlined in Chapter 2 and 3. Based on the results in the comparison section (Section 8.2), this evaluation section comments upon "the industrial agrifood system" "consumers' quality re-orientation" "alternative

agrifood networks" and "the impact of GI schemes" in Chinese GI networks. This links the analysis with broader theoretical debates and thus lays a foundation for future analysis. Finally, Section 8.4 provides a short summary based on the findings.

8.2 A comparative evaluation of the three case studies

Three case studies have been presented in Chapter 5, 6 and 7. It has been found that analysing agrifood quality under Chinese GI schemes is a contested and contradictory process with many differences between different GI networks. Table 8.1 summarises some different characteristics of the three sample cases. First, the production history is significant. Gannan navel oranges have only been cultivated for less than 40 years, selling *new* products within a *new* network. The other two products are *old* products with more than 1,000 years of production history. Secondly, the main producers involved are different between the three sample cases due to the varied nature of the products. Thirdly, the trading behaviours of the three GI networks are not same.

The GI product	Production history	Main producers	Trading behaviour
Gannan navel oranges	From 1971	Farmers	Through middlemen
Nanfeng mandarins	Since 1,300 years ago	Farmers	Individual trading
Wuyuan green tea	Since several thousand years ago	Farmers and processors	Through middlemen and processors

Table 8. 1: Some differences between the three sample cases

In the face of the many differences within the socio-economic environment, and in order to gain a reliable common conclusion of the influence of GI schemes on quality in the Chinese GI system, this section tries to identify commonalities and differences between the three sample cases through a detailed comparative assessment focusing on power relationships and based on the structure of the previous studies.

8.2.1 Comparison of the impact of government enforcement upon quality

	Gannan navel oranges	Nanfeng mandarins	Wuyuan green tea
The initial purpose of local government to develop GI network	Protecting and increasing local incomes	Increasing local incomes	Increasing local incomes
Main drafters of "pre-set" GI standards	Government officers	Government officers	Government officers
GI issuing processes	The local government makes the issuing decision, not involved with quality checking stage	The local government makes the issuing decision, not involved with quality checking stage	The local government makes the issuing decision, involved with inappropriate quality checking stage
Attitude to "pre-set" standards	Not enforceable	Not enforceable	Enforceable but with very basic standards
Quality inspection programmes	Seldom	Seldom	Regularly on processors level based on compulsory laws/regulation
GI frameworks involved	The AQSIQ and the SAIC	All three frameworks	All three frameworks

Table 8. 2: Major differences of political factors between the three sample cases

Through comparing the political factors involved in the three cases (Table 8.2), it can be seen that the political environment within the three GI networks is not the same. Many differences can be found, such as the GI issuing procedure, the frequency of the quality inspection programmes and how many GI frameworks are actively involved. However, according to respondents, the limited impact of local government on production activities according to compulsory laws/regulations/standards is quite similar in the three cases. For example, most farmers do not need to consider government compulsory laws, regulations and standards to produce their products as they can almost discount the probability that their products will be examined by government officers. In spite of a few farmers, some middlemen and processors announcing that their products were checked by the local government, inappropriate sampling methods and very "basic" quality standards suggest that the quality inspection results are "unreliable" and that few producers were punished due to

“sub-quality”.

When focusing on GI schemes, government enforcement on quality is also weak and minimal in the three cases. Although GIs are supposed to be certification marks which prove products have met “pre-set” GI standards, GI producers do not need to pay special attention to ensure the quality of their products as the quality checking stage is not involved in the GI issuing procedure in the Gannan navel orange and the Nanfeng mandarin networks and the GI standards are “too basic” in the Wuyuan green tea network. Weak government enforcement on regulating producers’ activities as well as ensuring certain quality characteristics may be caused by the structure of the Chinese GI system. The government plays three roles in all three GI networks — the “legislator”, the “executor”, and the “judiciary”. Firstly, the main drafters of GI standards are local government officers. Secondly, the decision to issue GI labels is made by the local government or government officers. Thirdly, the quality inspection programme is also run by the local government. There is neither separation of duties nor independence between the legislator and regulator. This situation is very different from European “PDO” and “PGI” systems and the Florida citrus network (see Section 2.5), within which the GI production codes are proposed by co-operatives, applied under specific control systems and regulated by the government. Without independent oversight to monitor the three sample GI networks, and with a desire to increase local incomes, the local government is encouraged to adopt policies that may increase local incomes even if that contravenes GI standards. For example, the Fuzhou government decided to expand the cultivation area to unprotected counties because such a policy may benefit more farmers and will not bring any result/punishment to decision makers. Basic GI standards and “low quality” GI products are becoming the unavoidable results in the three sample cases. As a consequence, many businesses have started to build their own trademarks within the GI network and almost all interviewees believe GIs are a sort of promotional tool rather than a quality sign.

8.2.2 Comparison of the impact of organisational influence upon quality

	Gannan navel oranges	Nanfeng mandarins	Wuyuan green tea
Main Government funded organisations	The GNOA	The NMA and the NMRA	The WCTA; the Tea Industry Centre; the Wuyuan county Tea Technology Promotion Center
Small-scale co-operatives between farmers	Many	None	None
Contract farming	Seldom and difficult to find	A few	Many

Table 8. 3: Major differences of organisational factors between the three sample cases

When focusing on organisational influence (Table 8.3), many common issues can be found between the three cases. Firstly, although many associations are funded by the government for a variety of purposes, none of them have a strong influence on the quality forming process in the network. They (including GI holders) are all controlled by the local government with no authority to regulate its members' activities, and thus are described as "government branches" by interviewees. Secondly, although many formal small-scale co-operatives formed by farmers exist in the Gannan navel orange network and none of them has been found in the other two networks, these small-scale co-operatives have a very limited impact upon their members. In fact, as farmers were not encouraged to co-operate until 2006, it is almost impossible for low educated farmers to co-operate, propose GI standards, or regulate their production activities effectively within a short co-operation history. Hence, GIs are applied by government funded associations and GI standards are proposed by government officers in each of the three cases.

Contract farming, however, is the main difference between the three sample cases when examining organisational influences on quality. Contract farming may have a profound influence on quality through enforcing farmers to accept conventional production codes by the use of contracts. But, it has been proved that the effectiveness of contract farming on quality may vary under different contexts, such as the precondition of the existence of a fully developed credit mechanism, uniqueness of GI products and the local culture. For example, in the Gannan navel orange network, as a

large amount of similar products exist in the national market[92], there is no specific reason for middlemen to purchase Gannan navel oranges with a high price. A relatively low pre-set purchasing price combined with a lack of a fully developed credit mechanism (both farmers and companies can break the contract without any penalty) make it difficult to regulate farmers' production activities under the contract. The influence of contract farming on quality is thus minimal. Conversely, with unique natural conditions and weak research ability in securing specific generic properties, alternative products of quality Nanfeng mandarins cannot be found in the market. Therefore, contract farming works well in "suitable" and "less-suitable" areas (natural conditions in these areas are different from others and thus the quality characteristics of Nanfeng mandarins from these areas are better) commanding a high price offered by middlemen/companies. And, in the Wuyuan green tea network, the production activities and thus quality characteristics can be totally controlled by contracted processors because local farmers have realised that ensuring quality is their obligation if they wish to sustain a long stable relationship with the processors who generally offer high prices for "quality" products.

The impact of formal organisations on quality is limited whilst the influence of contract farming may vary under different contexts. But, it should be noticed that with a lack of a fully developed credit mechanism, the relationship which binds farmers and contracted middlemen/companies/processors together and encourages farmers to produce their products according to certain production codes is the economic relationship allied to the local culture rather than political enforcement, as in the Wuyuan green tea case.

[92] Many areas in China produce navel oranges with good taste. Some products are even registered as GI products, such as "Zhigui navel orange" and "Fengjie navel orange".

8.2.3 Comparison of the impact of economic relationships upon quality

	Gannan navel oranges	Nanfeng mandarins	Wuyuan green tea
Total output	Increased	Increased	Increased
Total output value	Increased	Increased	Increased
The average price	Decreased from 2004	Decreased from 2007	Price doubled from 2005
The important of the network to the local economy	Generated 0.07% of the local government income in 2010	Generated more than 80% of the local farmers' income, and contributed 31.79% of the county GDP in 2009	Generated 23.68% of the local farmers' incomes, and contributed 17.82% of the county GDP in 2010
Government investment and bank loans on enhancing quality	Offering subsidies and loans to farmers for purchasing modern farming equipment	Refuse to offer financial support to farmers	Government invests several millions RMB per year to improve quality (offering quality plantlets and encouraging farmers to upgrade their farms)

Table 8. 4: Major differences of economic factors between the three sample cases

Although the importance of GI networks for the local economy and farmers' incomes are different in the three GI networks (Table 8.4), as discussed in previous chapters, the data analysis shows that producers primarily focus on the economic aspect when making their production decisions. In other words, the quality forming processes in the three cases are strongly influenced by economic relationships between different actors.

Firstly, the influence of the local government on farming activities through offering subsidies/bank loans depend on the economic reward they can bring. For example, in the Gannan navel orange network, the government encourages farmers to buy modern farming equipment. But, modern equipment is difficult to use in the Gannan area characterised by hills and small-scale farms. With limited ability to yield a high income, government subsidies/bank loans have a minimal impact on farming activities as well as quality. Conversely, in the Wuyuan green tea network, the local government has a great influence on farming activities by offering subsidies to encourage farmers to upgrade their tea trees and farms according to provincial standards, because upgrading tea trees and farms can not only increase output but also

improve the quality of fresh tea shoots/leaves and thus raises farm incomes. Therefore, the influence of the government on quality through offering subsidies/bank loans varies depending on the additional income which can generate to farmers.

Secondly, after registering as GI products, the average prices of the three GI products changed in different ways for many reasons. As the GI itself cannot generate a high income to producers automatically, farmers have to calculate their inputs and estimate future incomes carefully. Middlemen/contracted companies who hold the "purchasing power" are thus becoming "powerful" actors in the quality forming process based on the quality criteria they initiated. Farmers are forced to accept these quality criteria to obtain a high income in the market. For example, based on quality criteria made by middlemen in the Gannan navel orange network, farmers have less interest in securing taste but prefer to change the appearance of their products because price is reflected in the appearance rather than the taste. And, in the Wuyuan green tea network, individual farmers do not take care of the safety level of their products because it is not a quality criterion for middlemen.

Under weak government enforcement, quality forming processes within the three cases are mainly regulated by economic relationships between different actors. But, beside economic relationships, the influence of other factors, such as the natural environment, also cannot be ignored when analysing quality. Therefore, the following section will be dedicated to explore the impact of these factors on quality.

8.2.4 Comparison of the impact of other factors upon quality

Producers' production activities as well as quality development processes, are also impacted by many other factors, such as natural factors, the farm size, the education level of farmers, the local culture and so on.

Firstly, as the quality of GI products is greatly influenced by the natural environment in the three sample cases, farmers always make their production decisions based on certain natural conditions. For example, Nanfeng farmers from the suitable and less-suitable areas prefer to increase inputs to secure the taste of their products and farmers from the unsuitable area have no interest in improving the taste mainly because the taste is difficult to be improved in this area. Secondly, as the Chinese

government introduced the Household Production Responsibility System in 1978 and forbids the trading of farm lands, the three networks investigated are populated with small-scale farms. It limits farmers' abilities to improve the quality of their products through increasing inputs, such as using modern farming equipment because they are always unaffordable for small-scale farmers. Thirdly, in the urbanisation process, most well educated farmers went to the cities to earn their living because urban income is much higher than rural income. As well-educated farmers have more employability chances in the city, all farmers interviewed in this research have a low education level (see also Zhong et al., 2011). It limits farmers' abilities to improve their farming skills through learning modern techniques and address safety issues in the production process. Fourthly, the impact of the local culture on the quality forming process cannot be ignored, especially with respect to the Wuyuan Green Tea network.

Beside the four main factors mentioned, many other factors, such as the production experience, the scientific research abilities and the number of technicians, may also impact upon production activities as well as quality in different ways. These factors limit producers' choices in the production process, and therefore should be considered carefully when analysing the quality forming process within the three cases.

8.2.5 Comparison of the quality forming process in the three cases

The quality characteristics of Gannan navel oranges are mainly decided by farmers' production activities as Gannan navel oranges are better for fresh eating than for juicing. But, through exploring power relationships involved in quality development processes, farmers' production decisions are found greatly influenced by quality criteria proposed by middlemen rather than the GI standard although "Gannan navel orange" is a GI product. Firstly, an incorrect interpretation of the national standard (which is not imposed) combined with inappropriate GI issuing procedures (the quality checking stage is not involved) made farmers realise that whether producing navel oranges according to the GI standard or not is not important. They can sell their products under the GI without any consistent adherence to the GI standard. Secondly, although the GI is a collective intellectual property, as farmers were not encouraged to co-operate until 2006, the associations/farmers' co-operatives in the network are mainly supported and thus work for the local government. Without an independent

certification authority to regulate members' activities, the influence of these associations/farmers' co-operatives on production activities is rather minimal. Thirdly, the decreasing price of Gannan navel oranges since 2004 shows the GI itself cannot bring a high income to farmers automatically. To ensure the income, farmers have to produce navel oranges based on middlemen's quality criteria. The "quality" is thus presented into the market reflecting economic rationality, and middlemen are becoming "powerful" actors in the quality forming process. Decreasing taste and safety levels are unavoidable results under such power relationships.

In the Nanfeng mandarin network, power relationships involved in quality forming processes are quite similar to the Gannan navel orange network as the producers (farmers) make their production decisions based on economic rationality rather than existing GI standards. Firstly, under inappropriate GI issuing procedures (the quality checking stage is not involved) and the policy approved by the Fuzhou government allowing mandarins from other counties to be sold under the GI, the influence of the GI standard on quality is minimal. Secondly, because local farmers prefer to sell their products individually and government supported associations (including GI holders) have no authority in regulating production activities, formal organisational influences on farming activities and thus quality can be ignored. Thirdly, as the GI cannot bring high economic rewards to its producers automatically, to secure the income, farmers always produce mandarins under the quality criteria presented by contracted companies who are thus becoming powerful actors in the quality development process based on affluent market knowledge and "purchasing power". Compared with contracted trading companies, the impact of normal trading companies/intermediaries on quality forming processes is much weak under individual selling culture and weak marketing research abilities. Fourthly, through approving the expanding policy, the government plays an important role in the quality forming process through its political authority. But, its impact on the quality is negative rather than positive as farmers' incentive to improve quality is partly decreased by rising output. Under complex power relationships between different actors, in face of government expanding policy, Nanfeng mandarins with insecure safety levels and decreasing taste levels[93] are presented into the market.

[93] It is caused by limited production in suitable and less-suitable areas and increasing outputs from other counties

The quality construction process in the Wuyuan green tea network is more complicated than that in the previous two cases, as Wuyuan green tea can be produced not only by farmers individually but also by processors through the contract farming system. However, by examining power relationships involved in quality forming processes, the findings indicate that the impact of the GI standard is still very limited. Firstly, although the government enforcement of relevant laws/regulations/standards on regulating farming activities is really weak, the government can still influence production activities and thus quality through offering subsidies. As upgrading tea trees and farms can bring not only subsidies but also higher future incomes (through increased output and quality), farmers prefer to cultivate their farms according to government requirements (which is based on provincial standards rather than the GI standard). Secondly, processors are regularly inspected by government officers based on the compulsory laws/regulations/standards (rather than the GI standard) which focus on the safety and hygiene aspects. The processing process within the contract farming system is thus greatly impacted by the local government. Thirdly, in face of three GI frameworks, GI applicants prefer to choose the SAIC one as its GI label can be obtained very easily with a small amount of payment due to the inappropriate sampling methods and "too basic" standards. The impact of GI schemes on quality through GI issuing procedures is thus limited. Fourthly, in face of different consumers, middlemen develop different quality criteria from contracted processors, such as middlemen focus on the taste and the appearance to purchase green tea products and processors concentrated on the taste, the appearance and the safety to evaluate quality of fresh tea shoots and leaves. To secure income, different farmers (individual farmers and contracted farmers) have to produce their products according to different criteria. Therefore, Wuyuan green tea products are presented into the market with various quality characteristics. In general, the average quality level of Wuyuan green tea is improved due to the increasing output of the supreme tea products and upgraded tea farms under the appropriate support of the local government. And, specifically, Wuyuan green tea produced by the contract farming system is safer than that produced by individual farmers because of the regular quality inspection programmes on processors.

Focusing on power relationships, quality forming processes within the three cases

were carefully examined and compared. Although the findings show that the context and power relationships involved in quality forming processes within every network are unique, the limited influence of GI schemes on quality is a common point in the three cases mainly due to basic GI standards, inappropriate GI issuing procedures, weak government enforcement of GI standards, and unsuitable government policy contravening GI standards. This phenomenon is very different not only from the theoretical assumption that the GI system focuses on offering "quality" products to compete with industrial agrifood system, but also from the quality forming process illustrated in Cassis wine, Parma ham and Florida citrus networks. To gain a comprehensive understanding of such a weak influence of GIs on developing quality in the Chinese GI system, the analysis will be linked to broader theoretical debates in the following section.

8.3 The wider network — the GI system revisited

This section attempts to contextualise the empirical findings from the three sample cases within a broader agrifood debate, as the empirical material has raised a number of interesting issues pertinent to the agrifood production literature and several concepts outlined in Chapter 2, namely agrifood quality, industrial agrifood systems, consumers' quality re-orientation and AAFNs. After revisiting the literature and concepts, this section ends with a grounded framework to conceptualise "differences" between Chinese and "Western" GI schemes.

The starting point is the conceptual framework for agrifood quality presented in Chapter 2 (Figure 2.1, p.22) which indicates that agrifood quality is impossible to be defined based only on production or consumption aspects but can be analysed and understood through exploring power relationships between different actors within quality forming processes based on a given context. Under this framework, this research was designed and three sample cases were chosen. However, although the research has shown that the power relationships are useful clues to examine and understand agrifood quality, the edge between socio-economic environment and power relationships has been found to be always unclear in the real world. For example, culture is a factor that must be included in the socio-economic environment

category, but it cannot be observed unless examining power relationships between different actors. The analysis of agrifood quality should thus focus more on power relationships involved in production processes under varying contexts rather than analysing contexts separately from power relationships.

Concentrating on power relationships, the link between quality and GI schemes are clearly noted in Chapter 2. In principle, GI products are produced in protected areas and the quality of GI products can be secured by government regulatory authorities through quality inspection programmes and GI issuing procedures based on GI standards. The "legislator", the "executor", and the "judiciary" are all independent of each other to ensure quality (see also O'Reilly and Hains, 2004; Hayes et al., 2004, 2005; The Parma Ham Consortium, 2007). GI producers can thus obtain a high economic reward through offering certain quality characteristics that consumers would like to pay a relatively high price for (Marsden et al., 2000b; Renting et al., 2003). But, the research results of the three Chinese cases do not follow this logic.

Firstly, without an independent GI inspector, the government prefers to propose very "basic" GI standards and adopts lax GI issuing procedures (without/with inappropriate quality checking stages) to ensure all producers in the GI protection area can benefit from GI schemes. In other words, GIs are promoted by the government as a way to increase farm and rural incomes rather than a sign to show certain and consistent quality characteristics. The quality of agrifood products with GIs thus cannot be secured in the market.

Secondly, in "Western" countries, GI systems appeared in tandem with consumers' quality re-orientation which is partly fuelled by safety concerns relating to consumers' falling confidence in industrial conventional "uniform standards". But, both the industrial agrifood system and the GI system developed simultaneously in the 1990s in China. In other words, Chinese GI networks developed not in response to consumers' changing quality attitudes to industrial agrifood products but to the government's aim to increase farmers' incomes. Concentrated on economic rewards, many GI products were involved in Chinese food scandals over the last decade. Consumers' willingness to pay a high price for GI products is thus weakened. In this circumstance, the "Lemon market" may appear as individual small-scale GI producers

may prefer to increase their incomes through decreasing inputs consequently. Some middle-large scale middlemen/processors thus started to build their own trademarks as distinct from general GI products in order to obtain high economic rewards in the market (see also Jin, 2011).

Thirdly, previous research has asserted the argument that GIs are a way for farmers to escape the "control" of the "industrial" agrifood system (e.g. Millstone and Lang 2003; Renard, 2005). Within the industrial agrifood system, retailers and processors, especially large-scale retailers, gain a higher income than farmers based on their huge buying and distribution abilities (Renard, 2005). GIs are supposed to empower qualified farmers/producers and give them a chance to capture extra value in the agrifood network through establishing their own quality definitions (Hayes et al., 2004). However, Chinese GI schemes do not appear as an "alternative" system which has a competitive relationship with the "industrial" approach. After 20 years of development, the modern industrial agrifood system has not been well developed in many areas in China, especially in the rural areas, because of the highly fragmented farm land, a lack of a fully developed credit mechanism, ineffective logistical systems, low education levels of farmers and so on (Guo, 2008). Farmers within many GI networks still work in a traditional way — farmers sell their products by themselves or by small-scale middlemen and the channel cost is thus considerable. Therefore, in the face of strong market competition, Chinese GI producers do not see themselves as an "alternative" standing at the opposite end of the spectrum to the industrial agrifood system. Many farmers and even government officers support the modern industrial conventions agrifood system (i.e. contract farming system) as a good way to stabilise or even increase farmers' incomes because of the advantage that specialisation can bring (see also Guo, 2008; Hu, 2010). The "blur" between the "industrial" agrifood system and the "alternative" GI system appears valid in China. Value distribution in the Chinese GI system is thus not very different from the "industrial" system where middlemen and processors capture most value based on their advanced market knowledge and "purchasing power" through the quality criteria which they initiated.

The Chinese GI system is in many ways a mixture of European and American GI models as Chinese GI products are protected by both *sui generis* protection regulations like the European model and the trademark law as the American model

(see Section 2.5). However, because Chinese GI networks are operating in a very different context from both Europe and America, a range of differences between Chinese and "Western" GI schemes are found. To appreciate these differences, the thesis proposes the following table:

Chinese GI schemes	"Western" GI schemes
• The government manages GI networks alone; • the GI system is developed under the government aim to increase farmers' incomes; • GIs are a promotional tool and certain quality characteristics cannot be secured by GI schemes; • "blurs" appear between the "industrial" agrifood system and the "alternative" GI system; • middlemen/processors rather than farmers obtain a high economic reward in GI networks; • small-scale producers sell the product under the GI, but many middle-large scale producers have now started to build their own trademarks; • formal associations/ farmers' co-operatives (including GI holders) have no authority in regulating members' activities with a lax GI issuing procedure.	• Producer co-operatives, the government and/or the third party manage GI networks together; • quickly developed with "consumers' quality re-orientation" over the last two decades; • GIs are both a promotion tool and a quality sign as GI products are consistent with "pre-set" quality characteristics; • the GI system present itself to the market as a alternative network to the "industrial" agrifood system; • farmers are empowered and have a chance to get a higher income compared to the industrial agrifood system; • producers prefer to sell their products under GIs for a high economic reward; • strong producer co-operatives propose GI standards and regulate members' activities.

Table 8. 5: Conceptualising differences between Chinese and "Western" GI schemes

8.4 Chapter summary

This chapter has provided a comparative evaluation of the three cases. Section 8.2 continued to provide further analysis of the empirical material while Section 8.3 focused on broader theoretical concerns.

The findings reveal the homogeneity and heterogeneity of the three sample cases operated in Jiangxi province, China. Wary of making generalisations, the evaluation suggests that, despite the diversity of power relationships involved in the quality construction process, the three sample cases are in fact quite similar in terms of

limited influence of GI schemes on quality. The conceptual discussions raised various critical comments concerning agrifood literature. This included the application of the conceptual framework in analysing agrifood quality and the impact of Chinese GI schemes on quality and income distribution. The most essential arguments are: 1. the Chinese GI system is developed with the intention to raise rural incomes rather than responding to consumers' quality demands and farmers' empowering requirements; 2. as the Chinese GI system is managed by the government alone, the quality of GI agrifood products is difficult to ensure. Crucially, these comments do not diminish the value of GIs in helping small-scale farmers distinguish their products from other similar products and improve rural incomes[94], but simply suggest that the quality of Chinese GI agrifood products may not be better than other similar non-GI products and it is not easy for Chinese farmers to obtain a high income through GI schemes. The findings clearly raise various issues for future research. These are included in Chapter 9, which returns to assess the six objectives established at the start of the thesis and to provide some general overall conclusions.

[94] Small-scale producers still prefer to sell their products under the GI

Chapter 9: Conclusions and Future Research Questions

9.1 Introduction

This final chapter of the thesis provides a summary of the key findings and is comprised of three sections. Section 9.2 revisits the aim and objectives of the research and summarises the main theoretical and empirical arguments outlined in the thesis. Section 9.3 discusses the implications of the research, especially in terms of directions for future research. Finally, the chapter ends by offering some brief concluding remarks about the thesis overall.

9.2 Summary of key findings in relation to the research aim and objectives

It is useful to begin this summary by restating the overall aim of the study. It will be remembered from Chapter 1 that the thesis aimed to *"evaluate the effectiveness of GIs in terms of developing agrifood quality in contemporary China"*. Compared to the stated functions of Western GIs, namely to act as third-party certification to help make the quality judgement for consumers and therefore improve producers' economic rewards and rural incomes, the influence of Chinese GI schemes on quality is questionable, especially in the current context of the Chinese food safety regulatory system, a system criticised by many researchers (e.g. Tam and Yang, 2005; Roth et al., 2008).

After introducing the research aim, the research focused on six key objectives to explore the relationships between agrifood quality and Chinese GI schemes: firstly, developing a conceptual framework to analyse agrifood quality; secondly, reviewing shifting quality meanings in the world agrifood sector and the role of GIs in constructing agrifood quality in several "Western" countries; thirdly, examining the social-economic environment of the Chinese GI system; fourthly, developing a research methodological approach in order to undertake empirical analysis in China; fifthly, exploring the contribution of GIs in the construction of quality of specific

Chinese agrifood products through selected case studies; and finally, to provide an overall evaluation of the Chinese GI system in the construction of quality. The detail of these key objectives that helped to achieve the overall aim of the thesis is revisited below and the key findings summarised for each objective.

1. *To establish a conceptual framework for analysing agrifood quality*

The review of the academic literature on quality comprised two key elements. First, a critical survey of existing literature associated with quality was undertaken. Secondly, based on a general quality perspective, a conceptual framework for agrifood quality was built based on socio-economic theory and the network approach. The following commentary recaps some of the main arguments arising.

Initially, a series of published papers from a management perspective to define or explore quality were reviewed (e.g. Juran, 1951; Feigenbaum, 1956; Levitt, 1960; Garvin, 1987; Crosby, 1979; Harvey et al., 2004; Kotler and Keller, 2006; Sung, 2010). Responding to the question about "what is quality?" the literature review traced the historical roots of the "quality" concept. Informed by debates, a key distinction between a producer based quality conception and a consumer based quality conception in theory was highlighted. As quality criteria change over time and both consumers' requirements and producers' participation cannot be denied when examining and evaluating quality (e.g. Logothetis, 1992; Crosby et al., 2003), quality is believed to be difficult to define (Parrott et al., 2002). Thus, the analysis of quality must be set against the relevant context.

Following this review, one of the key arguments of the thesis was developed, namely "how to concepture agrifood quality". After reviewing different researchers' opinions on agrifood quality from different perspectives (e.g. Ilbery and Kneafsey, 2000b; Parrott et al., 2002; Winter, 2003a; Harvey et al., 2004; Marsden, 2004; Morgan et al., 2006; Kneafsey et al., 2008), agrifood quality is indicated as a social construction *"dependent on the socio-cultural, political and economic contexts"* (Ilbery and Kneafsey, 2000a p.219). In other words, although agrifood quality is difficult to define from simply a production or consumption perspective alone, it can be understood and analysed through exploring inter-relationships between different actors within quality forming processes based on a given context.

After presenting the conceptual framework for agrifood quality, the research continued to explore the theory and the approach that underpinned the conceptual framework to inform the design of a coherent research strategy. After comparing traditional economic, political economy, socio-economic theories, and, the chain, commodity circuits, networks, actor network approaches, the socio-economic theory and the network approach were viewed as being the most suitable perspectives with which to explore agrifood quality development processes and thus to understand agrifood quality. And, "power relationships" were used to assess the shifting "inter-relationships" amongst different actors in the network.

2. *To review shifting quality meanings in the world agrifood sector and the role of GIs in constructing agrifood quality in a range of geographical contexts*

According to the conceptual framework, agrifood quality is formed under different power relationships between various actors in specific contexts. To understand the power relationships involved in quality construction processes within GI networks, power relationships and relevant quality meanings in different agrifood systems were examined and several GI networks were analysed.

Three agrifood systems were reviewed: the industrial agrifood system, alternative agrifood networks (AAFNs) and GI networks. Within the industrial agrifood system, the "industrial" or "institutionalised" quality standards reflect large-scale industrial production (Renard, 2005). As such quality conventions are always made under the preferences of giant processors and large-scale retailers, farmers usedly lose control in the agrifood system and products with very "basic" quality characteristics are presented into the market to save cost and maximise economic rewards (Murdoch and Miele, 1999). Although most consumers enjoyed a rise in mass agrifood products produced by the industrial agrifood system at low cost, the succession of agrifood crises over the last two decades has actually changed some consumers' confidence in the industrial system (Goodman, 1999). Many consumers "turn" to "quality" rather than "price" and "quantity" to choose what they eat. Therefore, AAFNs appeared as a distinct attractive alternative to the industrial system. To meet different consumers' quality requirements, AAFNs present a series of quality characteristics into the market, e.g. products perceived as healthier (e.g. organic products and GMO free products),

local (e.g. products with GI labels), with improved animal welfare (e.g. “free range” products), or more sensitive to the ecological environment (Nygard and Storstad, 1998; Winter, 2003a, b). The GI system which concentrates on localised quality is a branch of AAFNs as agrifood quality is believed to be directly related to the location where it is grown or reared by many consumers (e.g. Renard, 2003; Mansfield, 2003a, b). As GIs may not only meet consumers’ quality requirements but also help local farmers distinguish agrifood products from anonymous mass produced goods, GIs provide an opportunity for qualified farmers/producers to capture extra value in the market (Hayes et al., 2004). Consequently, the GI system is widely supported by many countries/areas around the world, such as China and the E.U.

The GI system focuses on location to promote quality. But, according to the conceptual framework, the specific quality meanings and quality construction processes may vary between different GI networks. To understand how power relationships form different quality characteristics in different GI networks, three GI networks, Cassis wine, Parma ham and Florida citrus, were explored and compared. The result provides evidence to support the conceptual framework and demonstrates that the quality meaning and construction processes vary in different contexts. Therefore, the agrifood quality under Chinese GI schemes is worthy of being a suitable research topic.

3. To examine the social-economic environment of the Chinese GI system with specific foci upon the food safety regulatory system and GI legislative system in contemporary China

Chapter 3 of the thesis was devoted to meet objective three and comprised two main themes according to the conceptual framework. One outlined the driving force of the Chinese government to develop the GI system through social and economic motivations; the other one was dedicated to exploring the political context by analysing the political enforcement of general food safety laws/regulations on agrifood quality forming processes and examining Chinese legislative system of GIs.

The first theme summarised the key characteristics of the Chinese agricultural system, a rapidly increasing agrifood output, highly fragmented farm lands with millions of small-scale farmers, a widening gap between rural and urban incomes, and an

increasing consumer demand for quality agrifood products. The overall conclusion was that increasing farmers' incomes had captured the Chinese government's attention. In face of a large number of small-scale farmers and increasing consumers' quality demands, GIs are promoted by the government not only to meet consumers' quality requirements but more importantly to improve farm and rural incomes and retain social stability and harmony.

The second theme reviewed the safety situation in the contemporary Chinese food system and indicated that maintaining a stable quality level or securing minimum safety levels of food products in China is not easy because of too many laws, a fragmented regulatory system, an ineffective production and marketing monitoring system, and an active counterfeiting businesses (e.g. Tam and Yang, 2005; Calvin et al., 2006; Roth et al., 2008; National Bureau of Statistics of China, 2011). Although an important distinction between GI and normal agrifood products is supposed to be "quality", under this circumstance, the degree to which the complicated GI system (three GI frameworks are involved) successfully secured the safety level and other specific quality characteristics in the Chinese agrifood sector can be seriously questioned.

4. *To develop a research methodological approach in order to undertake empirical analysis in three selected Chinese GI networks*

After examining different paradigms and research strategies under social research categories, this research adopted the interpretivist paradigm and case study research strategy. With 67 GI networks in Jiangxi province, China, where the writer comes from, three sample cases, namely "Gannan navel orange", "Nanfeng mandarin" and "Wuyuan green tea", were carefully chosen based on the criteria identified in the literature review section that may influence power relationships, such as cultivation history, legislative frameworks involved and network structure (including the diverse actors), and a pilot research which involved 8 scholars and 12 consumers.

After collecting primary data through semi-structured interviewing and secondary data through documentary research methods, qualitative data was analysed in three phases, namely transcription, classification, and connection (Kitchin and Tate, 2000)

with the help of a specifically designed software for qualitative data management called Nvivo8 for ensuring reliability. After the data analyse stage, coded and retrieved data were reported as three realist tales (using the language of the facts and writing in the third person with a realistic style) based on three cases.

5. *To assess the contribution of GIs in the construction of quality of specific Chinese agrifood products*

The analysis of three sample cases was completed in Chapter 5, 6 and 7 of the thesis respectively. The first theme of each chapter provided a detailed background of the respective GI product based on documentary and preliminary research. The main emphasis of this theme was on introducing the development of the GI network and identifying the main actors involved in the quality forming process. After introducing respondents, the second theme of each chapter presented an analysis of the selected GI network mainly based on primary data. Crucially, the case studies followed the thesis' conceptual framework for agrifood quality and focused on power relationships to explore the quality forming process in the networks reflecting government enforcement, organisational influences, economic relationships, and the impact of other factors.

All three case studies suggest that the quality development process in these GI networks is primarily influenced by economic relationships. "Pre-set" GI standards do not have a great impact on quality through GI issuing procedures or quality inspection programmes by associations or the government.

6. *To provide an overall evaluation of the Chinese GI system in the construction of quality*

The comparative evaluation of the three product sectors was completed in Chapter 8 of the thesis. The analysis first compared the findings for the three case studies then expanded the evaluative work into a broader theoretical debate.

Despite their diversity, the three sample cases are actually quite similar in terms of the influence of GI schemes on quality. For example, GI standards in all three networks are very "basic", inappropriate or little or no quality checking involved in the GI issuing procedure, and no associations or farmers' co-operatives to play an important

role in the quality forming process. The limited influence of GI schemes on quality is a common point in the three cases. In term of the broader agrifood debate, the power relationship had been indicated as an essential clue to understand and analyse agrifood quality. Also, the significant differences between Chinese and "Western" GI schemes were summarised in Table 8.2. Overall, the key messages are: the operating procedure, driving force and value distribution system are very different between the Chinese and Western countries' GI systems, and the quality of Chinese GI agrifood products may not be better than other similar non-GI products.

Based on these findings, the following section will outline directions for future research. This discussion completes the final objective of the thesis, to establish a foundation for future study.

9.3 Direction for future research

As noted earlier, this research tries to evaluate the effectiveness of GIs in terms of developing agrifood quality in contemporary China through the lens of three sample cases. Based on the primary and secondary data collected and analysed, the effectiveness of GIs in enhancing quality has been evaluated and a number of important directions for future research has been briefly highlighted in Chapter 8. At this juncture, six key areas for future research are identified systematically. The first three are direct extensions of the research while the last three recognise a wider research need within Chinese agrifood studies. The rest of the section will briefly appraise each of the six possibilities in turn.

Like any research project, it is important to draw lines around what can and cannot be achieved. This thesis is not different. The first recommended extension is therefore to include those "missing actors in the GI network". In this research, this would include the input (e.g. fertilisers and chemical pesticides) suppliers and final consumers. Both of them are important. The information that input suppliers offered would increase the reliability of the research, especially with respect to the safety issue. Interviewing consumers is particularly important too. Indeed, the need to examine the agrifood system from a consumer perspective is already well recognised in the literature (e.g.

Goodman, 2003; Kotler and Keller, 2006). The research originally set out to do this and included conducting a pilot consumer survey about GI products sold in Nanchang city, Jiangxi province. On reflection, such an attitude survey needed more detailed consideration and is therefore recommended as an important extension of the research. This might include, for example, detailed consumer based field work with people who buy or do not buy three GI products to assess why they do so. Meanwhile, since the quality aspect attracts researchers' attention, a large volume of work has been carried out to examine producers-consumers relations (e.g. Ilbery and Kneafsey, 2000a; Huffman et al., 2007; Sung, 2010). This thesis also has shown that more research is clearly needed on exploring the role of consumers and consumption practice in the developing and shaping of quality characteristics of GI products. Such work could, for instance, consider the impact of business relationships on perceived quality from a consumer perspective; what are the motivations for consumers to purchase GI products? Can direct selling activities enhance the quality reliability for consumers? Which one, GIs or trademarks, are more reliable for consumers to judge quality and why?

The second extension is to conduct longitudinal based research on the three cases. The case studies clearly indicate the remarkable changes in the three GI networks over the last decade. For example, the varieties, the network structure and market price have changed a lot in the Wuyuan green tea network. Juska et al. (2000) and Lockie (2002) indicated that power is unstable and reversible. It would be instructive to re-assess the nature of the investigation within a five or ten year period of time to examine the impact of different factors and actors on the quality development process. For example, will the set up of a fully developed credit mechanism bring Gannan navel orange producers into an industrial system? Can local government play a more active role in the Nanfeng mandarin network to regulate production activities if the price continues to decrease in the future?

The third extension is to conduct a comparative study. This might include a comparison with different GI products (such as chicken, fish, and wine) from different provinces to examine potential differences between GI networks and generate more reliable results. For example, the power relationships involved in quality development processes in GI networks located in the north of China where large-scale industrial

agrifood production system dominates may be very different from GI networks in Jiangxi province. Also, as mentioned before, this research focuses on the national market rather than international markets. The comparative study between these two elements within the same GI network may provide more information about the impact of different actors in the quality forming process. The role that the local government plays in the GI network may thus become clearer through comparing the stricter government enforcement in international markets and the weaker government enforcement in the national market.

Beside three recommended extensions, during the course of this thesis, three areas have developed which warrant future research attention. Based on the evaluation chapter, the first area requiring applied research attention is how to combine the GI schemes with the local production system more effectively. Missing a well developed industrial stage in the Chinese agrifood sector, GIs are mainly treated as a promotional tool to improve farm and rural incomes, rather than a quality sign to meet changing consumers' attitudes to industrial agrifood products. Thus, research is urgently required to explore the methods to develop an effective GI network which can encourage producers to attend GI management programmes and which may thus generate appropriate GI standards, avoid the appearance of "Lemon markets", and provide "quality" GI products under effective GI issuing procedures. Such research might include more extensive surveys to explore how to stimulate producers to become more involved in GI management schemes and address the obstacles to establishing independent quality inspectors.

The second area of research recommended here is to examine the position of associations/farmers' co-operatives and the government in the Chinese GI network. In China, recent years have witnessed considerable academic and political interest in the potential of associations/farmers' co-operatives in enhancing farmers' incomes (e.g. Guo, 2008; Hu, 2009; Wang et al., 2009; Sun, 2009) and the position of the government within the economic system (Wang, 2010; Fu et al., 2011). As associations/farmers' co-operatives funded by the government have had limited value in Chinese GI networks, an important research question is raised which relates to the wisdom of enabling such associations/farmers' co-operatives to regulate their members' activities, respond to requirements of consumers/buyers effectively and to

protect their members' benefits successfully in an increasingly sensitive market. Meanwhile, the position of the government in GI networks is complicated. Wrapped up in this debate is a wider research concern about the Chinese government's regulatory system. Research is thus required to assure how an "effective" GI network can be developed in a certain political environment.

The third area to explore is how to secure and enhance agrifood safety in the Chinese agrifood sector. Theoretically, consumers can influence production activities through their "purchasing power". But, without agency, it is impossible for individual consumers to regulate producers' activities and thus ensure the quality of agrifood products in the market, especially in the invisible safety aspect (see also Mulgan, 1989). With weak government enforcement and ineffective associations/farmers' co-operatives, in face of regular agrifood quality scandals, there is an increasing need to find a way to ensure agrifood safety and protect consumers' rights.

9.4 Concluding remarks

This chapter has demonstrated how the overall research objectives have been met. The thesis has provided an important conceptual framework for agrifood quality and empirical insight in terms of understanding the quality development process in Chinese GI networks. Throughout, the thesis has explored the use of the term "GIs" on developing quality within the Chinese agrifood system. Following the three GI networks, the results show the development of Chinese GI networks is driven by government with the intention to raise farm and rural incomes rather than in response to consumers' quality requirements, and consequently there remains a focus on economic rather than quality concerns. "Basic" GI standards, inappropriate GI issuing procedures and weak government enforcement in securing quality based on GI standards are becoming unavoidable results. Therefore, an overall conclusion argues that *the quality of Chinese GI products cannot be secured by Chinese GI schemes alone in contemporary China.* Such a conclusion does not deny the value associated with GIs, at least in an ideological sense. Rather, it is argued that believing GIs can bring quality products for consumers and a high income for their producers is too simplistic and arbitrary. The effectiveness of GIs on enhancing quality and increasing rural incomes depend on the socio-economic environment.

Form a quality perspective, the research shows that Chinese GI schemes cannot secure the expected/desired quality characteristics commonly assocaited with GI products in the "West". GIs are treated as a promotional tool rather than a quality sign. But, from a rural development perspective, the thesis strongly supports the view that the GIs may be a useful tool to enable producers to "add value" to primary products as the Wuyuan green tea network demonstrated. This advantage encourages local governments to develop GI networks initially. However, the government needs to be aware of the danger of bureaucracy and must not be too narrow in their approach towards simplifying GI standards and the GI issuing procedure as part of rural development projects.

The Chinese GI system is very different from that in Western countries, especially in empowering farmers and securing "pre-set" quality characteristics due to specific socio-economic environments. Effectively developing the Chinese GI system to obtain the benefits of GI schemes requires the attention of specialists and researchers in the system design and production monitoring processes. Of course, before that, future contemporary research into the Chinese GI system needs to be undertaken.

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Appendix 1: Semi-structured interviewing guide

[Explain the overall structure of the interview and inform that all the information will be treated for research purpose only and suitable anonymity will be maintained]

Interview details

Date of interview:

Location of interviewee:

Name of the Interviewee:

Age:

Education qualification:

The experience in the network (how long and position):

Telephone number (if possible):

[This section to be completed before/after the interview]

A: The general questions:

Q1: What do you understand by agri-food quality?

Q2: How do you judge the quality of your products?

B: Political influences:

Q3: Are there any laws/regulations/standards you have to obey? If so, list them and explain what sort of punishment you will get if break them. If not, why? / Are there any laws/regulations/standards that producers and processors must obey, how to force them to obey?

Q4: Who or which organisation/government departments did check the quality of your products before? If so, how frequent does the programme run and what is the inspection result? / Did your department/association organise quality checking programme before? If so, how frequent does the programme run and what is the inspection result?

Q5: Is enhancing government enforcement to regulate production activities according to laws/regulations/standards a means to improve quality? Why?

Q6: Are GI standards useful in improving quality? Why? Do you have any example?

C: Social influences:

Q7: Do you attend any association or co-operative? If so, what are aims of them? What they did in last several years? Do they have a great impact on production activities/quality?

Q8: How do you grow/process your products?

Q9: What is the most important thing you believe impact quality of your products? How does it work? Are there any other factors?

Q10: Who are the quality judgers in the network?

Q11: Will you suffer any punishement if you sell products with "sub-quality" to contracted middlemen/processing companies?

Q12: What is your incentive to improve the quality?

D: Economic questions:

Q13: Do you/producers obtain a suitable profit in the market? Why? (May compare with other non-GI products)

Q14: Could you list the quality criteria of your products in the market?

Q15: Do you believe increasing inputs can improve quality and thus receive a high economic reward in the market? Why?

Q16: Are the prices very different between quality GI products and sub-quality GI products, and GI products and similar products without GIs? Do you have any example?

E: GI questions

Q17: Could you explain what GIs are? Why your products are called GI products?

Q18: Did you see GI lables before? How can you get GI lables? Would you like to apply GIs/stick GI lables on your products? Why?

Q19: What are GI lables? – Trademarks? Quality signs? A sort of market technique? Do you believe all agrifood products with GIs are quality products? Why?

Q20: Did the quality of the product change over the last five years? Do you believe the quality of your products will raise in the next 5 to 10 years? Why?

Appendix 2: Tree nodes and sub-nodes of the three cases