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# A transaction cost analysis of factors affecting market arrangements in the agroforestry tree product value chain in Cameroon

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# CERTIFICATION



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# Abstract

Farmers are often encouraged to form producer groups to facilitate their access to markets by linking them with traders in urban markets. Most of the times, this initiative fails after project withdrawal. This calls for a better understanding of factors that influence market arrangements between producers and traders. The transaction cost economics is used as the analytical framework to investigate: factors that influence successful market arrangements between producer groups and traders in the agroforestry tree product value chain in Cameroon, to compare transaction cost farmers incurred when they sell in groups and when they sell as individuals through their habitual channel and to asses the relevance of producer groups-traders market arrangements in overcoming transaction costs. Results of the study show that transactions cost are higher when farmers sell in groups than when they sell individually, however the benefits of group sales are higher than the cost. The study identifies amongst others, higher prices the groups negotiate for their members, financial assistance and advanced payments from traders, nature of the products, asymmetric market information, distances producers cover to get to the agreed place of group sales and the nature of the roads and bridges as important elements that determine success and recommends producer groups and trader market arrangements as appropriate governance structure to overcome transaction cost in the AFTPs value chain in Cameroon within a poverty reduction context.

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# List of Abbreviations

**ADEAC**: Associations pour le Développement Intégral des Exploitants Agricoles du Centre

**AFTPs:** Agroforestry Tree Products

**CIFOR:** Centre for International Forestry Research

**FAO:** Food and Agricultural Organisation

**FCFA:** Francs communauté financière d'Afrique centrale.

**GDP:** Gross Domestic Product

**GNI:** Gross National Income

**ICRAF:** World Agroforestry Centre

**IFAD:** International Fund for Agricultural Development

**ICRAF-WCA/HT:** World Agroforestry Centre West and Central Africa Humid Tropics

**MDG:** Millennium Development Goals

**MSA:** Kaiser-Meyer-Oklin measure of sampling adequacy

**MIFACIG:** Twantoh Mixed Farming Common Initiative Group

**N/A:** Not Available

**NGO:** Non Governmental Organisation

**NIE:** New Institutional Economics

**NTFPs:** Non Timber Forest Products

**PRSP:** Poverty Reduction Strategic Paper

**SAILD:** Service d'Appui aux Initiatives Local de Développement

**TCE:** Transaction Cost Economics

**TCs:** Transaction Costs

**UK:** United Kingdom

**USA:** United States of America

**USD**: United States dollars

**WDR:** World Development Report

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# Chapter 1: Introduction

### 1.1. Importance of agriculture to development

Three out of every four people in developing countries live in rural areas; 2.1 billion people live on less than 2 US dollars a day and 880 million on less than 1 US dollar a day. A majority of these people considered poor depend on agriculture either directly or indirectly for their livelihoods (World Bank 2007). The 2008 World Development Report (WDR) stresses the important role agriculture can play in achieving the first Millennium Development Goal (MDG) of reducing by halve the number of people suffering from extreme poverty and hunger. This limelight on agriculture 25 years after the last WDR on agriculture reflects renewed interests in the sector's potential to reduce rural poverty and inequality. The importance of agriculture in reducing poverty is also recognised by Bienable *et al*. (2004) who write that agricultural development is considered strategic for poverty reduction. Other authors have acknowledged the contribution of smallholder agriculture in this drive (Delgado 1999). The 2008 WDR further draws attention to the fact that agriculture has unique features embedded in its ability: to function with other sectors as an economic activity for livelihoods, to produce faster growth, to reduce poverty and to sustain the environment.

In agriculture-based economies, agriculture generates on average 29 percent of the gross domestic product (GDP) and employs 65 percent of the labour force. An estimated 86 percent of rural people rely on agriculture as a livelihood option and it provides jobs for 1.3 billion smallholders and landless workers. In its attribute as a provider of environmental services, agriculture can create good and bad ecological outcomes depending on the ways natural resources and inputs (agrochemicals) are managed on and off agricultural fields (World Bank 2007). Although the report does not provide details on how agroforestry can be used in current development pathways, other institutions like the World Agroforestry Centre (ICRAF), the International Fund for Agricultural Development (IFAD), the Centre for International Forestry Research (CIFOR) and the Food and Agricultural Organisation (FAO), have for some years now been researching on agroforestry options as livelihood strategies for millions of poor people all over the world, as well as provision of environmental services.

### 1.2. Agroforestry and agroforestry tree products

The definition of agroforestry has evolved over the years. However, the most recent and widely used definition by Leakey (1996) states that 'agroforestry is a dynamic, ecologically based, natural resource management system that, through the integration of trees in farm and rangeland, diversifies and sustains production for increased social, economic and environmental benefits'. Agroforestry systems usually result from the gradual modifications of forest by enriching them with useful crops which may not include agricultural crops but in many cases will involve trees producing non timber forest products (NTFPs) (Wiersum 1996).

The attention in this study is centred on the management of agroforestry systems in Cameroon. This takes into consideration the technical and social interactions involved in the protection and maintenance of agroforestry resources, and the harvesting and distribution of the products. The products of interest are termed 'agroforestry tree products' (Wiersum 1996). The term Agroforestry Tree Products (AFTPs) is used to describe timber and non timber forest products (NTFPs) that are harvested from trees cultivated outside of forest, to distinguish them from NTFPs extracted from natural systems (Simons and Leakey 2004). In this study AFTPs are used as defined by Simons and Leakey (2004) but timber is excluded. However, in some parts of the report the term NTFPs is used especially when referring to cited literature. In this case it should be interpreted to mean AFTPs. This is to keep the original sense of the authors.

Efforts to increase domestication and commercialisation of AFTPs as complementary strategy to their extraction from natural forest have increased over time and de Foresta and Michon (1996) report that their integration into production systems is not new in the tropics. This in a way recognises the importance of AFTPs in livelihoods options in this part of the globe.

In Cameroon, the World Agroforestry Centre's West and Central Africa Humid Tropics node (ICRAF-WCA/HT) has been doing participatory domestication on a number of priority species (Tchoundjeu *et al.* 2006). These include:

(a) Indigenous fruit/nut trees: *Irvingia gabonensis***,** *Irvingia wombolu; Dacryodes edulis, Garcinia kola, Ricinodendron heudelotii, Cola nitida, Chrysophyllum albidum, Allanblackia spp.;*

*(b)* Indigenous leafy vegetables: *Gnetum africanum*

(c) Medicinal trees: *Prunus africana, Pausinystalia johimbe, Annickia chloranta*

*(d)* Melliferous trees and shrubs: *Vernonia, Alchornea, Dombeya, Myrianthus, Polyscias and Vitellaria species and Lophira lanceolata.*

Participatory tree domestication is 'the means by which rural communities select propagate and manage trees according to their own needs, in partnership with scientists, civic authorities and commercial companies' (Tchoundjeu *et al.* 2006). Also, Leakey et al (1998) add a market component to the definition by specifying that the approach is usually oriented towards specific local markets. Local knowledge on the use of the species and specific characteristics required by the market are incorporated in the domestication process by selecting fruit and species characteristics that the market requires.

### 1.3. Contribution of AFTPs to poverty reduction and growth

The contribution of NTFPs to poverty alleviation has been documented by Garity (2004) and Russell and Franzel (2004). Also, Arnold and Pérez (2001) report that, the importance of NTFPs to rural development and conservation of natural resources has been on the rise during the last 10-20 years. This, they say, is related to the fact that NTFPs contribute in important ways to the livelihoods and welfare of populations living in and adjacent to the forest. This is also because exploitation of NTFPs is less ecologically destructive than timber harvesting and other uses. On the other hand, Oji-Ambrose (2001) reports that NTFPs do not represent a significant component of the livelihood strategies of the very poor in rural and forest communities and gives the example of the South West Region of Cameroon where it accounts for no more than 6% of their annual income. However, it has been acknowledged that the importance of NTFPs as food and income lies more in its timing than in its magnitude as a share of total household income (Schreckenberg *et al*. 2006). They are used to supplement diets and household income especially during particular seasons of the year and to help meet medicinal needs (Arnold and Pérez 2001).

Schreckenberg *et al.* (2006) propose that in addition to conventional fruit trees indigenous fruit crops should be integrated in national poverty reduction programs. This proposition follows evidence from Cameroon and Nigeria related to the contribution of NTFPs to poverty reduction. These proofs are related to:

- *the numbers and types of people who gain income from indigenous fruits*

They are usually reported to be poor smallholder farmers and women. For example more trees are found in small sized farms of less than 1 ha (usually owned by the poor) than large ones. Also even though men own the trees, women are more involved in NTFPs activities. A case in

point is Cameroon where 95% of the *Dacryodes edulis* trade is handled by women who may have few alternative income generating activities (Schreckenberg *et al*. 2002).

- *the proportion and value of income*

A combination of NTFPs found in producers' fields can contribute substantial amounts to a household income particularly to women. Sometimes the incomes derived from NTFPs are comparably larger than local wage rates. So is the case of Cameroon where *Dacryodes edulis* traders are reported to earn more than daily local minimum wage.

The contribution of NTFPs to rural growth and national income has also been documented. Rohadi et al (2004) describe how woodcarving contributes to rural growth in Bali (Indonesia). In Burkina Faso, Schreckenberg (2004) report that shea (butter and kernels) is the third most important export. Olsen and Treue (2003) report that, annual supply of air dried unprocessed plants *S. chirayita* from Nepal was valued at about 2.0 million USD between 1997/98. In Cameroon, Awono (2002) values exports of *Dacryodes edulis* in 1999 to Nigeria, France, Belgium and the UK to be 2 million USD.

Justification for supporting NTFP commercialisation to improve livelihoods, of poor people especially NTFP producers were discussed in the above paragraph. However reviews of experiences gained during the past 15 years by Belcher and Schreckenberg (2007) indicate that approaches to NTFP commercialisation have not been universally successful and have not succeeded in meeting the expectations of local income generation, nor have they been able to fully meet conservation goals. Despite this drawback, successes at different levels indicate that there is potential to be exploited amongst which increasing demand for more variety and for more natural products as well as general trends towards increasing recognition and transfer of rights of local people to manage and profit from the natural resources (Scherr *et al.* 2003).

### 1.4. Problem Statement

Some researchers (Leakey and Izac 1996; Roshetko *et al*. 2007) have documented problems faced by both traders and farmers dealing in NTFPs in different regions of the world. Ndoye *et al*. (1998) and Ruiz Perez *et al*. (2002) wrote on the specific cases of the humid forest zone of Cameroon. For producers these problems include: lack of access to market information (quantity and quality demanded in various markets and market prices), poor knowledge of how the AFTPs markets function, lack of adequate grading and sorting skills, low profit margins received by farmers and poor bargaining power by farmers. On the other hand traders

face problems related to inadequate quantity and quality supplied by farmers, limited markets to national and regional boundaries; long hours used in collecting harvest from farmers' fields, long hours used in sorting and grading and small quantities supplied by farmers. These private traders also face problems related to limited capital, low access to credits and lack of long term investment opportunities (Swinnen *et al.* 2007). Some of these problems that prevent producers and traders from achieving a fair income from their activities can be related to transaction costs. For example farmers seem to have difficulties with:

- Searching traders who want to buy their products, because they do not have enough access to knowledge on the market. This implies high information costs (which are a specific type of cost)
- Bargaining: they have too little bargaining power. This implies high negotiation costs (also specific type of cost)

Traders are also facing specific cost, different from those of the farmers:

- High information costs resulting from the difficulties for them to find producers
- High monitoring costs resulting from the high dispersion of producers
- High control costs because of the fact that farmers do not sort the produce according to quality and perhaps try to cheat

In order to fully integrate AFTPs producers to markets it is important to choose the appropriate governance structure that minimises such cost. Many authors (Romanik 2008; Bienabe *et al.,* 2004; Fraval 2000; Moustiere 1997) have encouraged the creation of farmer organisations as a means of solving the above problems. The advantage of organising farmers into groups include among other factors a reduction in the transaction costs of accessing input and output markets as well as improving the negotiation power of smaller farmers vis à vis large buyers or sellers (Kherallah and Kirsten 2001). Morrow et al. (2004) add that in addition to marketing costs minimisation cooperative organisation minimise governance costs with opportunism (or the threat thereof) being the primary transaction cost. Producer groups became more important in developing countries after the liberalisation of agricultural markets (Kherallah and Kirsten 2001). In Cameroon a law on common initiative groups and cooperative societies enacted in 1992 as a response to market liberalisation ignited the process of forming producer groups.

Clay (1996) emphasises on the importance of volumes in NTFPs marketing for export markets and argues that it is impossible for a single producer to meet the demand for the smallest

enterprise in North America. This argument may also be valid when dealing with national markets and more importantly when a group of traders have to be served at the same time. For NTFP product development and under such conditions of limiting individual quantities, Ervin and Mallet (2002) propose collaboration amongst farmers through cooperatives in order to meet market demands. Belcher and Schreckenberg (2007) support options to safeguard the interest of the less powerful partners (typically producers) in any partnership and encourage formation of NTFP producer association and networks in order to exert their power.

Empirical evidences where group sales carried out by producer organisations have been tried in the AFTPs sub-sector have been reported by Facheux *et al.* (2007) and Roshetko *et al.* (2007). Group sales are particularly important in the AFTPs value chain and for the specific case of Cameroon also because they grow in less favoured areas. Less favoured areas in this case are characterised by lands that have high agricultural potentials but have limited access to infrastructure (very bad roads, broken bridges), low population density, dispersed settlements and thin supply (Hazell and Pender 2000). These factors increase the site specificity of AFTPs justifying the need to create linkages between producer organisations and traders. Creating producer groups to mobilise large quantities is seen as a means to increase the competitiveness of less favoured areas to attract more traders. It is important to note that the creation of farmer organisations to facilitate market linkage in this process is not an objective in itself but a means to attain objectives.

Facheux *et al.* (2007) document the approach used by ICRAF-WCA/HT to enable producer groups to market AFTPS. The ICRAF approach starts with building a solid base for producers to operate as a group. This involves building farmers' marketing skills and knowledge (negotiation and bargaining), improving group dynamics and management of group resources, and finally improving their contacts with traders through market visits and trial sales whereby traders familiarise themselves with the production zones and the producer group activities. This is expected to install trust between the producers and traders. From a transaction cost perspective trust is expected to reduce governance costs because of the reduced threat of opportunistic behaviour. This may lead to an increase in efficiency which in turn enhances the performance of an organisation (Morrow *et al.* 2004). In addition to group dynamics related issues the producer groups are exposed to new domestication technologies to improve quantity and quality of on farm supply as well as harvest from natural stands which confer specific human capital to the producer organisation.

Despite theoretical support for producer groups and efforts towards this as an appropriate structure to link producers to markets, Shepherd (2007) reports that producer group formation as structures to solve marketing problems has had mixed success to date. The problems of producer groups are similar to those faced by traditional cooperative societies that have had limited success in meeting the needs of their members. For the cooperatives, failures have been attributed to Government intervention and other organisational problems. These problems led to a situation of weak property rights resulting in opportunistic behaviours of members characterised by free riding and other moral hazards (Kherallah and Kirsten 2001). Most often, for producer organisations involved in group sales, the process of linking producer groups to buyers that was generated with the assistance of NGOs seems not to continue with the same steam and provides little prospects for replication due to the huge resources involved (Shepherd 2007). These problems are not uncommon in market arrangements between AFTPs producer groups (kola and njansang) and traders in Cameroon and are therefore used as case study in this research.

Failure of long term producer groups and traders relationships in the agroforestry value chain in Cameroon may be related to certain environmental, behavioural and risk factors of both producers and traders. These are often reported to influence the level of transaction costs (Williamson 1993). Trust and commitment have been reported to be an important element in maintaining long-term relationships among exchange partners (Morrow *et al*. 2004). Studies show that trustworthiness reduces transaction costs (Dyer 1997), while the presence of trust measurably improves the chances of success in a supply chain. It is thus important to investigate if trust and commitment between members of producer groups and traders mitigates transaction costs in the AFTPs sector in Cameroon and whether investing in such constructs can lead to successful market arrangements between producer groups and traders.

Sartorius and Kirsten (2007) conclude in a study of smallholder institutional supply arrangements in South Afirca that it is difficult to assume that trust can play an important role in reducing transaction cost as other factors contribute to pragmatic supply arrangements. In the case of AFTPs in Cameroon this study besides trust and commitment analyses if market arrangements between producer groups and trader are influenced by the specificity of AFTPs or to organisational problems of the producer group or from too much influence (dependency) from traders as signalled by Sartorius and Kirsten (2007).

Buckley and Chapman (1997) argue that transaction costs issues cannot be understood apart from issues of perceptions and that perceptions are more important than the real measures of transaction costs in guiding behaviour. According to te Velde *et al*. (2002 cited by Vanhonacker *et al.* 2008) 'perceptions are constructed according to their frames of reference which are in turn influenced by convictions (opinions about the ways things are), values (opinions about the ways things should be), norms (translation of these values into rules of conduct), knowledge (constructed from experiences, fact stories and impressions) and interests (economic, social and moral interest)'.

Storer *et al*. (2002) recommend that management in any business need to get accurate picture of how customer/supplier relationships are being managed and how inter-organisational information systems works. For this to be effective they recommend that interviews should be conducted from both parties concerned. This ties with Bienabe *et al*. (2004) who emphasise that it is important to understand the various types of institutional arrangements (interactions between various actors) in the commodity chain which may be horizontal (between producer groups) or vertical (between two different levels of the production chain). Thus the involvement of other actors, like traders and micro-financial bodies, facilitating NGOs as to how things are being done and why some producer group arrangements with traders succeed and others fail, are important questions of research. However because of limited resources (time constraint) this study focuses on AFTPs producers and traders and will sort their opinion as to the factors that affect market arrangements between both parties.

This research will investigate whether creating producers groups and linking them with traders (operating in groups or as individuals) is the appropriate structure to reduce transaction costs identified in AFTP market chains. Also AFTPs traders' constraints may further provide answers as to whether it is important for traders to operate as individuals or as a group. An option that has often been criticised in rural development policies due to the farmer bias. Secondly encouraging traders association is often seen as promoting a forum for them to curtail prices.

### 1.5. Research Questions

Based on the above problem statement, the questions to answer in this research are:

- What are the sources of transaction cost in normal AFTPs market arrangements and during producer groups and traders buying and selling arrangements in the AFTPs value chain in Cameroon?
- Do producer groups and traders perceive transaction cost incurred during group sales arrangements as higher than that borne in their usual transaction?
- Are producer groups-traders market arrangements the best options to reduce these transaction costs?
- What are the factors that influence successful market arrangements between AFTPs producer groups and traders in Cameroon?
- Does trust between both parties play any significant role in successful market arrangements as some literature hold or do other factors related to the specificity of AFTPs, group organisation and the opportunistic behaviour of both parties play more significant roles?
- To what extent can producer groups and traders sustain active market arrangements after withdrawal of external influence or support?

### 1.6. Objectives

The objective of this study is to identify factors that may influence successful market arrangements between producer groups and traders involved in AFTPs markets in the Centre and North West regions of Cameroon.

The specific objectives of this study are to:

- assess the sources of transaction cost in producer groups and traders buying and selling arrangements in the AFTPs value chain in Cameroon;
- assess producers and traders perception of transaction cost incurred during group sales/purchase and that incurred using their habitual channel;
- assess the suitability of producer groups-trader market arrangements in reducing transaction cost in the AFTPs value chain in Cameroon;
- identify and describe factors that influence successful market arrangements between producer groups and traders;
- asses how important the element of trust and other transactions cost drivers such as commitment, mutual dependence site and product specificity are to a successful market arrangement,
- asses to what extent producer groups and traders can sustain successful market arrangements in the AFTPs value chain in Cameroon.

### 1.7. Importance of the study

A study of the factors affecting successful market arrangements between producer groups and traders in the AFTPs value chain in Cameroon using the transaction cost economics theory is important for the following reasons. First the study researches factors affecting transaction costs in AFTPs value chain using several constructs known to be related to transaction costs in literature. These include asset specificity, frequency, uncertainty and complexity of the arrangements; trust in quality of information shared between both parties, and other constructs that may be related to an enabling environment. When these factors are known appropriate governance structures can be put in place to overcome them.

Second, the study explores how the element of trust between both parties can influence commitment and frequency of transaction. Understanding the relationship between these variables can help to reveal to development workers, especially NGOs whether it is important to invest in trust between producers groups and traders in the AFTPs value chain in Cameroon and other less developed countries for group market arrangements to be successful. It will also provide the opportunity to enhance knowledge on how producers and traders of AFTPs perceive other factors besides trust that condition successful market arrangements within the context of traditional marketing systems in less developed countries.

Third, this study will also contribute in testing the relationship between transaction cost theories and empirical evidence based on the perceptions of stakeholders' in the AFTPs value chain in Cameroon.

### 1.8. Description of selected species

Amongst the priority species for domestication listed by Tchoundjeu *et al.* (2006), two were specifically chosen for this study: *Ricinodendron heudelottii* and *Cola anomala.* These species are chosen for their high market potentials and producer groups' and traders' experiences in handling the species.

#### 1.8.1. Ricinodendron

*Ricinodendron heudelottii* commonly called njansang in Cameroon is an endemic African tree specie. It belongs to the family of Euphorbiacae. It spreads from Senegal to East Africa and Madasgascar. The species' peak flowering occurs around the end of the dry season and lasts for approximately 2-3 months. The tree grows fast and may reach a height of 40m and a width of about 120cm. At maturity the fruits drop from the trees and are processed to obtain the

kernels (Ayuk 1999). The seeds of the fruits and the trunks are used for different purposes in the communities where they grow and beyond.

The wood of the tree is seldom used for construction but is widely used for carving masks, spoons, cups and the production of musical instruments due to its high resonant capacity (Shiembo 1994). The roots bark and leaves have high medicinal properties. In Nigeria for example the roots are ground with pepper and salt and used as a laxative. In Gabon it is used to treat blennorrhoea and painful menstruation while in Liberia pregnant women use either the bark of the leaves as pain killers and to prevent miscarriages during pregnancy (Burkil 1994, cited by Obeng and Brown 1994).

The focus of this study is on njansang kernels that are used in Cameroon for preparing soup and a variety of dishes due to its appetizing aroma. The chemical properties of njansang have been studied by Tiki *et al.* (2002). They report that the kernels of the fruit are rich in fatty acids and essential oils (49.2 to 63.5 percent) and proteins (49.9 to 65.2 percent) and low in carbohydrates (4.9 to 6.4 percent).

Photo 1: Njansang kernels

Source: author

The njansang kernels have a good market potential within and outside Cameroon. In Cameroon for example Fachuex et al (2008) quote a CIFOR report which indicates that in 2004 out of 104 households interviewed in Yaounde, 98 percent consumed njansang. A total

of 36 tons representing a monetary value of 43 432 200 CFA (1 € = 655 FCFA) was sold in Yaounde in 1995 (Ndoye *et al* 1998). Tabuna (1997) reports, that a total of 4 tons of *Ricinodendron* was exported to Europe in 1998. Marketing of the species provides employment to many Cameroonians especially women. For example Ndoye *et al.* 1998 report that about 1120 traders were reported dealing in the product in Yaounde in 1997.

### 1.8.2. Kolanuts

Kolanuts is a tropical tree that belongs to the family of Sterculiaceae. About 125 species of kolanuts are known to exist and many of them are cultivated. The kolanut tree is evergreen and grows to a reasonable height of about 25m-30m. The three species: *Cola anomala*, *Cola acuminata* and *Cola nitida* that are common in Cameroon are distinguished by their number of cotyledons. *Cola nitida* has two cotyledons while *C. acuminata* and *C. anomala* have between 3 and 7 (Tachie-Obeng and Brown 1994). Besides the number of cotyledons other authors use colour to distinguish subspecies that are known to exist between species. For example Vockler (1937) identifies three subspecies of *cola nitda.* These are the red, white or intermediates shades of pink but according to Tachie-Obeng and Brown (1994) controversies exist in the criteria used in differentiating the subspecies. The species of concern treated in this thesis is *C. anomala* that grows in the western highlands of Cameroon.

The seed of kolanuts are reported to contain the following: 13.5 percent water, 9.5 percent crude protein, 1.4 percent fat, 45 percent sugar and starch, 7.0 percent cellulose, 3.8 percent tannin and 3 percent ash. It is also rich in caffeine and theobromine 0.05 percent (Purseglove 1968). Kolanutsis is described to be comparatively richer in caffeine than cocoa and coffee (Moloney 1987 cited by Obeng and Brown 1994).

In West and Central Africa kolanuts are consumed as a masticator to counteract fatigue, to curb thirst and hunger and are also understood to boost intellectual capacity. This may explain why kolanuts chewing has become very popular among students, drivers and many other consumers who need to stay active for abnormally long hours (Jayeola 2001). Kola also has some industrial uses that date back to the seventies and early eighties. During this time kola nut extracts were reported to be used for the production of varied cola soft drinks (Beattie 1970). It was also used in the pharmaceutical industry as a source of caffeine and essential oils (Olounloyo 1979). In the confectionary industry it was used in the production of heat

tolerant chocolate bars (Williams 1979). In a recent publication, Blades (2000) reports that kolanuts can be used in assisting in weight loss.

The disappearance of kolanuts in current industrial uses may explain the absence of current literature on this species. Asogwa et al. (2008) note that kolanuts remains the only indigenous African cash crop that has not yet attracted international sympathy. He added that the species is often referred to as an orphan crop because many countries outside Africa and even Africans to an extent shy away form its production and improvement.

Kolanuts has high medicinal and cultural values that make it a priority species in some African countries. For example, *C. nitida* can be used as a natural fertility regulator because the stem bark extract inhibits the release of Luteinizing hormones (LH) form pituitary cells (Benie 1987). Other medicinal properties of the species can be found in the stems, leaves, twigs, flowers, fruit follicles and the bark of *C. nitida, C. anomala* and *C. acuminata.* They can be used in the production of concoctions to remedy dysentery, coughs, diarrhea, vomiting etc (Benie *et al.* 1987).

Photo 2: Kola nuts parceled in baskets

Source: Author

Kolanut is of great importance in many socio cultural settings in Africa. In Cameroon for example Mbile *et al*. ( 2004) report that it is offered in birth, naming and death ceremonies as well as an acknowledgment of appreciation to visitors. It is also shared to demonstrate peace

and agreement after settling disputes between conflicting parties. Due to its high cultural value some communities in the Northwest region of Cameroon have put special rules to preserve the species by attaching significant financial sums before the tree is felled after prior authorization from local authorities.

Total kolanut production in Cameroon today is estimated at about 36000 tons per year (FAOSAT). Other FAO statistics show that exports of kolanuts out of Cameroon reached its highest ever in 1984 when 583 tons were exported. Recent data estimate exports of kolanuts at about 87 tons. This means that almost all kolanuts produced are consumed at home. Very little is imported as figures from the same source show that in 2006 about 3 tons were imported into Cameroon with the highest ever of 1020 tons worth 165,000 U.S. dollars recorded in 1978 (www.faostat.fao.org consulted June 2009). These figures reveal the strong domestic market potential of kola. For example in the humid forest zone of Cameroon, a total quantity of 509 tons worth 221,990,000 FCFA was sold in 1995 ( 1 € = 650 USD).

# Chapter 2: Theoretical and Conceptual Framework

## 2.1. Introduction

The theoretical background for this study is based on the New Institutional Economics (NIE) theory. This theory considers that decisions taken by economic agents are not a result of individual choices, but are in general determined or regulated by collective mechanisms, which may be voluntary or not and inherent to the socio-economic environment where the agents operate (Fraval 2000). Within the new institutional economics, Transaction Cost Economics (TCE) has focused on how transactions have to be organised in order to minimise transaction costs (Verhaegen 2002). Since transaction costs economics can be used to identify organisational cost as well as define different forms of organising AFTPs producers and traders and some of its influencing factors are reported in literature to affect longterm buyer-seller relationships, it is employed as the theoretical foundation of this study.

In this chapter, an overview is given of the new institutional economics and governance structures with emphasis on the hybrid governance structure. Later in the section, the transaction cost economics is situated within the new institutional economics school. The chapter continues with a description of the transaction cost theory and its main drivers, amongst which human behavioural factors (bounded rationality and opportunism) and environmental factors (uncertainty, and mutual dependence). In another section of the chapter, empirical evidence of past studies using this theory is presented. The chapter ends with a conceptual framework for the analysis of this study, but before this, existing literature on NTFPs value chain, producers-traders association and factors defining success in NTFP commercialisation are discussed.

## 2.2. The New Institutional Economics

The New Institutional Economics (NIE) is a relatively new branch in the field of economics that includes a varied field of studies amongst which history, political science, sociology, business, organisation and law (Kherallah and Kirsten 2001). This branch of economics' thinking first saw the light of day after Coase's 1937 article titled 'the nature of the firm'. The article gave a clear introduction of transaction cost in economic analysis (Coase 1998). The phrase 'the new institutional economics' was denominated by Oliver Williamson to distinguish it from the 'old institutional economics 'of John R. Commons and Wesley Mitchell (Coase 1998). The old institutional economics like the NIE recognises the

importance of institutions in explaining and influencing economic behaviour. However the fathers of the old institutional school are criticised because they lacked theoretical backings to link their collection of facts (Coase 1998). A summary of the differences between the old and new institutionalist can be found in the statement of Langlois (1985) cited by Kherallah and Kirsten (2001) that 'the problem with many of the early institutionalists is that they wanted an economics with institutions but without theory; the problem with many neo-classicists is that they want economic theory without institutions; what the NIE tries to do is provide an economics with both theory and institutions'.

The reason behind the NIE is to explain both the determinants of institutions and their evolution and to evaluate their impact on economic performance, efficiency and distribution (Nabli and Nugent 1989, cited by Kherallah and Kirsten 2001). As an example, North (undated) writes that institutions are formed to overcome transaction costs which result from incomplete information and the limited mental capacity of economic agents to process information. He adds that institutions are also formed to reduce uncertainty in human behaviour.

### 2.2.1. Institutions defined

North (undated) defines institutions as 'the rules of the game of a society, or more formally are the humanly-devised constraints that structure human interaction'. He added that institutions are made of formal rules (statute law, common law, and regulations), informal constraints (conventions, norms of behaviours and self imposed codes of conduct) and the enforcement characteristics of both.

According to Williamson (2000), institutional economics operates at two levels: the micro and the macro levels. The macro level deals with the institutional environment that is the rules of the game that shape the behaviour and performance of economic actors as well as provide the legal framework under which organisations and transactions operate. The micro level deals with institutional arrangements. Kherallah and Kirsten (2001) define an institutional arrangement as one between economic units that governs the ways in which its members can cooperate and/or compete. This means that institutional arrangements treat topics related to the institutions of governance. Williamson (2000) adds that institutional arrangements refers more to the modes of organising transactions and include market, quasi-market and hierarchical modes of contracting.

This study focuses more on institutional arrangements referring to the factors that may favour market interactions between AFTPs producers and/or producer groups and traders and/or traders groups. It involves market coordination, which is a particular institutional arrangement (Ménard 1995) but also non standard market arrangements which cover non-market coordination (Bienabe *et al.* 2004). The latter corresponds to the hierarchical and hybrid structure of governance, defined by Williamson (1985).

North (undated) further distinguishes institutions from organisations. While institutions are the rules of the game, 'organisations are the players'. The groups of players he says are bounded 'by a common purpose to achieve a common objective'. They include 'political bodies, (political parties, the senate, a city council, a regulatory agency), economic bodies (firms, trade unions, family farms, cooperatives, social bodies (churches, clubs athletics, associations) and educational bodies (schools, colleges, vocational training centres). Fraval (2000) elaborates on this. He defines an organisation as 'a programmed, regulative and organic institution'. This definition to him clarifies the confusion that exists between the notion of institutions and organisations especially in developing countries. As such, 'an organisation has a notable physical occurrence with recognised and accepted roles'. However for such an organisation to be called an institution it needs to have the capacity to regulate individual behaviours. The illustration Fraval gave to this definition is that 'even if a new producer organisation is legally recognised and made up of individuals having the same goals, it cannot be considered an institution. It can only be one if it acquires a given level of recognition for example it plays an indisputable role with regards to discussions within given agricultural sub sectors'. This can be interpreted to mean that the producer organisation should be able to achieve its goal by attaining an acceptable level of members' satisfaction and is recognised by partners to play important roles for example to coordinate production and marketing of members produce.

### 2.2.2. Transaction cost economics and branches of the NIE

Transaction cost economics is only a branch of the new institutional economics (NIE) and figure 2.1 represents what is generally considered to belong to this school of thought and the pioneering fathers.

The *new economic history* attempts to explain how economies have developed through time. The *public choice and political economy* analyses government intervention in agriculture, as

well as farm policy studies. It also attempts to explain the influence of political institutions, lobby groups and individual preferences of pressure groups. *New social economics* deals with intra household analysis, family economics and human capital. The theory of *collective action* deals with the manner with which interest groups use collective action to reach common goals. Advocates of *law and economics* use an economic approach to study the use of various legal instruments such as regulations, litigation and legal decisions. They see players in the legal system as rational actors who attempt to maximise legal action. *Economics of information* make reference to pioneers like Stigler, who point to the fact that market information is not cost free and this cost element explains the divergence of prices between efficient markets. *Property rights* in NIE deals with the internalisation of externalities if property rights are well established (Kherallah and Kirsten 2002).

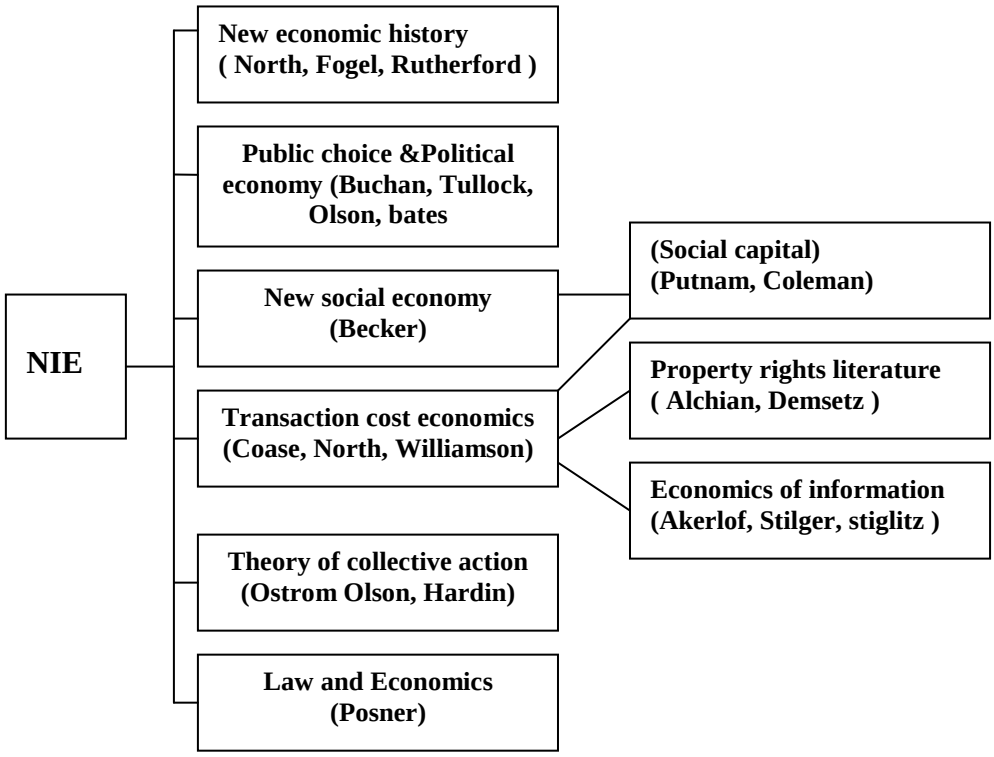


Figure 2.1: Branches of the New Institutional School

Source Fraval (2000)

Lastly, *transaction costs* within the framework of the NIE School considers institutions as cost minimizing arrangements that may change and evolve with changes in the nature and sources of transaction cost (Kherallah and Kirsten 2002). This is thus adapted as the core theory of this study, especially as market arrangements between producer groups producer

and traders can be considered a mode of organising transaction which is an institutional arrangement governing the way both can cooperate and reduce their cost of interaction leading to a sustainable relationship.

### 2.2.3. The concept of transaction

To better position transaction cost within this study, it will be important to have a common understanding of what is referred to as a transaction. Williamson (1985) notes that 'a transaction occurs when a good or a service is transferred across a technologically separable interface'. One stage of activity terminates and another begins. Furubotn and Richter (2005) refer to Williamson's definition as situations where a resource is actually transferred in the physical sense of delivery which may occur within firms or across markets. Another description of transaction is given by Commons; to him *transactions* 'are the alienation and acquisition between individuals of the *rights* of future ownership of physical things'. Both definitions/descriptions of a transaction by Williamson and Commons can be noted to involve the physical transfer of goods. However the additional element dealing with the exchange of property rights can be noted in Commons' version.

In this study the term transaction is used in the context of both Williamson and Commons that can be found in Hobbs's definition of the concept to be 'an exchange which occurs between two stages of the production /distribution chain as the product changes in form and/or in ownership rights' (Hobbs 1995). This can be interpreted to mean that a transaction occurs when NTFP producers lose the property rights of the NTFPs they own to traders, as well as the products exchanging hands between producers and traders. Lastly, we define transaction cost in this study as the cost of co-ordinating or organising a transaction (Beckmann 1996 cited by Verhaegen and Van Huylenbroeck 1999).

## 2.3. Transaction Cost Economics

Having situated transaction cost economics within the new institutional economics school, reference is made to Furubotn and Richter (2005), who note that a distinguishing feature of the new institutional economics is its insistence on the idea that transactions are not costless and institutional arrangements are transaction cost minimising arrangements, which may change and evolve with changes in the nature and sources of transaction cost (Kherallah and Kirsten 2002). Coase (1937, cited by Verhagen and Van Huylenbroeck 2002) argues that markets and firms are important alternative methods to coordinate production. He added that in many cases firms are advantageous to markets, because market transaction involves costs

that are influenced by the price mechanism. These costs include cost of discovering the relevant price and cost of negotiating and signing a contract. By forming an organisation and allowing an authority (an entrepreneur) to direct the resources, some market costs can be reduced (Coase, 1937 cited by Verhagen and Van Huylenbroeck, 2002). Table 2.1 distinguishes six types of transaction cost in agribusiness supply chains and indicates their various sources as well as their concrete forms. The table 2.1 also points out the hidden nature of such costs and their importance.

Table 2.1: Transaction cost sources and tangible forms

| **Type of cost** | **Source/origin of costs** | **Tangible forms of transaction cost** |
|---|---|---|
| Search Costs | Lack of knowledge about opportunities (e.g. products, prices demand, supply, trading rights, market outlets) | Personal/ personnel time , travel expenses, communication cost, advertising/promotion costs |
| Screening costs | Uncertainty about reliability of potential suppliers/buyers; uncertainty about the actual quality of the goods/ services offered | Consulting/service fees, costs of credit rating checks |
| Bargaining costs | Conflicting objectives and interests of transacting parties. Uncertainty of traders to trade on certain terms, uncertainty over transactor rights and obligations | Licensing fees: insurance premiums |
| Transfer costs | Legal, extra-legal or physical constraints on the movement / transfer of goods | Handling/storage costs, transport costs, bribery, and corruption expenses |
| Monitoring costs | Uncertainty about transactor compliance with specified terms; uncertainty about personal changes in the quality of goods and services | Auditing fees, product inspection charges, investments in measurement devices |
| Enforcement costs | Uncertainty about the level of damages /injury to a transacting party arising from contractual non compliance through bilateral agreements or through use of third parties | Arbitration, legal court fees, costs to bring social pressure |

(Source: Loader and Hobbs 1996)

Williamson (1975) in his book ‘markets and hierarchies’ exposes the organisational failure framework that indicates which environmental and human factors can cause market failure and how they can be better addressed by internal organisation of the transaction. The human

factors to which Williamson made allusion to are bounded rationality and opportunism. According to Williamson (1975), bounded rationality takes into consideration the fact that human beings have the intention to be rational but are often constrained by physical limits (the capacity of the brain to receive, process, store and replicate information) or language limits (the capacity to express ones knowledge or feeling); as such humans are unable to predict contingencies and react accordingly.

The other human factor is opportunism which involves, self-interest seeking through guile, such as selective or distorted information disclosure and self disbelieved promises regarding future conduct (Verhaegen and Van Huylenbroeck 2002).

Manifestation of opportunism is also seen in situations where economic agents say one thing and do another (if they think they can get away with it), they tell lies, cheat and may even steal. Bounded rationality does not only limit exchange partners to anticipate and plan for future exchange conditions. It also facilitates opportunistic behaviours. The implication of bounded rationality in the study of economic organisation is that all complex contracts are unavoidably incomplete (Williamson, 1993). This becomes an issue when bounded rationality is combined with environmental factors characterised by uncertainty and complexity. The ramification of this is that under such conditions there will always be gaps, errors, omissions etc in contracts (Verhaegen and Van Huylenbroeck 2002) and hence the need for efforts to negotiate, monitor and control transactions. Williamson (1993) insists that although bounded rationality and opportunism are both treated as drivers of transaction cost, economic agents are not all the time opportunistic. Opportunism only becomes a problem in a situation of small numbers. In other words, when there is a large number of economic agents in an exchange relation, anyone trying to behave opportunistically will lead to others changing partners. Williamson (1975) argue that most transactions are transformed into small number conditions as agents transact and gain experience which gives them a competitive advantage over time. Under such conditions opportunism leads to a lock-in and hold-up problem.

The hold-up problem occurs when one actor of a given transaction involves in specific investment and the other actor acts opportunistically by exploiting the sunk cost of the nature of the investment to ask a higher price (seller) or lower (buyer) price (Baye 1997 cited by Verhagen and Van Huylenbroeck 2002). The lock-in situation refers to instances where for all

intent and purposes, one party is heavily dependent upon the other party (Narasimhan *et al*. 2009).

Simons (1957, cited by Williams 1993) claims that it is because humans suffer from bounded rationality that it is necessary for them to invest in organisations in order to achieve human purposes. He added that it is therefore weak to keep focusing on market failures if the origin of failures is related to human factors rather than technology. In this sense Williamson (1993) says that all forms of organisations are doomed to fail and the only other way to survive is to compare alternative feasible form to choose the most appropriate. TCEs is characterised by its specificity to propose governance structures that economise on bounded rationality, thereby reducing transaction costs. Pilling *et al.* (1994) interpret this to mean contracting modes that address the problems created by bounded rationality. The importance of the last two sentences in this study is the possibility of using the transaction cost theory to investigate the optimality of producer groups - traders market arrangements in NTFPs value chain to overcome transaction costs as compared to other alternative forms like door to door buying commonly practised in most supply villages.

### 2.3.1. Governance structures

Governance is defined as 'the institutional framework broadly consisting of markets, hierarchies, and hybrids through which a transaction is channelled'. Commons' (1934, cited by Williamson 1993) suggestion is to use a less micro analytic element, the transaction as the unit of analysis compared to a much more micro analytic unit, the decision. The different governance types are distinguished by their incentive intensity, administrative control and their adaptation mechanism to uncertainty, and lastly by the type of contracts which is an indicator of the type of relationship between the actors (table 2.2).

*The market*

At one end of the spectrum is the market. The main incentive in this governance structure is the market price and competition is the main safeguard. The adaptation mechanism by actors is autonomous and disturbances are signalled through changes in prices. The classical contracts between actors in the market are the most important in market governance. Classical contracts are those for which the identities of the contracting parties are irrelevant, the contracts are written down and are very formal and disputes are settled in court (Verhaegen 2002).

Table 2.2: The continuum of governance structure

| | Governance | | |
|---|---|---|---|
| | **Market** | **Hybrid** | **Internal ( Hierarchy, firm)** |
| **Instruments :** | | | |
| Incentive intensity | ++ | **+** | 0 |
| Administrative control | 0 | + | ++ |
| **Adaptation** | | | |
| Autonomous | ++ | + | **0** |
| Co-ordinated | 0 | + | **++** |
| **Contracts** | Classical | Neo-classical relational | relational |

++: strong, + semi strong, 0: weak

Source Williamson 1991 cited by Verhaegen 2001

*The firms/hierachy*

At the other end of the governance spectrum is the hierarchy (table 2.2). Hierarchies are characterised by low power incentives to maximise profits. Administrative control is high and is used to stimulate and motivate the actors (Williamson 1996). Hierarchies provide high protection for specific investment and coordinated-adaptation mechanisms are devised to share cost and benefits resulting from disturbances. Bureaucratic costs are high. The contract types are relational; in which the identity of the partners is important, disputes are settled internally and formal documents are not too important (Verhaegen 2002; Boger 2001).

*Hybrids*

In-between markets and firms are a great variety of hybrids characterised by both high and low power incentives. They use autonomous and coordinated mechanisms and apply neoclassical contracts (typically long and incomplete and adaptation mechanism is developed to adjust to uncertainty), although sometimes relational and even classical contracts can be used (Williamson 1996). They are also characterised by the installation of an authority (one person or a group of persons) that has been given the power to take decisions and could lose this decision power at any time the members no longer agree with the authority (Menard

1997). Verhaegen and Van Huylenbroeck (1999) conclude that hybrid governance structures are arrangements between autonomous actors who have agreed to co-operate and to this end have given an authority the decision right about certain aspects of their activities.

### 2.3.2. Transaction cost as determinants of governance structures

Williamson (1993) identifies three attributes which influence the level of transaction costs. These include: uncertainty about the future, frequency with which a transaction recur and most especially asset specificity. This means that these attributes can be used to distinguish how transactions in the AFTPs subsector between producer groups and traders differ from those commonly carried by both actors.

#### 2.3.2.1. Asset specificity

Asset specificity refers to the degree to which an asset can be redeployed for alternative uses. This element provides the motivation to uphold a relationship in order to safeguard the value of the asset. It also creates the incentive to behave opportunistically (Pilling *et al.* 1994). Six kinds of asset specificity are distinguished (Verhaegen and Van Huylenbroeck 2002) :

*Site specificity:* location of trading partners close to each other due to ex-ante considerations to minimise transportation and inventory cost. A break in the relationship may lead to considerable cost if alternative partners are distant.

*Physical asset specificity:* investment in specialised technology by one or both parties in a transaction

*Human asset specificity:* investment in human capital most of the time connected to learning by doing.

*Dedicated specificity:* general purpose investment by a seller dedicated to sell to a particular customer

*Brand name specificity:* investment in reputation by labelling the good or service in question and makes the seller for example dependent on a particular supplier;

*Temporal specificity:* timing of delivery and its effect on product value

The basic question when dealing with asset specificity is, what governance structure provides an efficient framework for transactions with varying level of asset specificity (Boger 2001). This relationship is elaborated in figure 2.2.

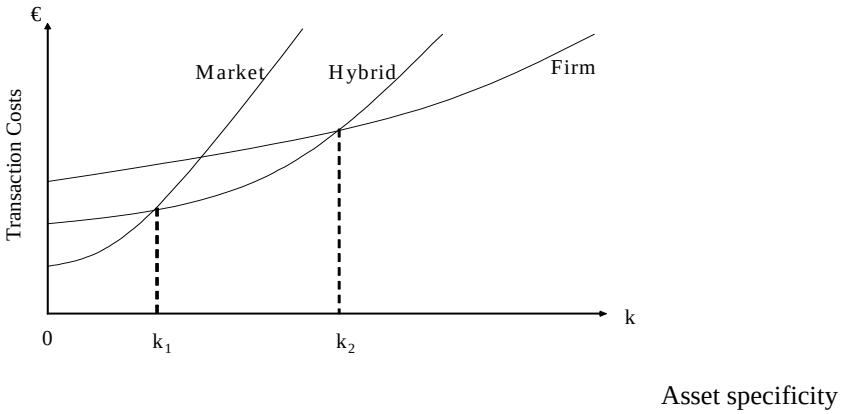


Figure 2.2: Transaction cost as a function of asset specificity

Source: adapted from Williamson (1991)

Consider the three organisational forms: markets, hybrids and firms shown in figure 2.1. and assume that transaction costs in these governance structures are a function of asset specificity denoted by k. When asset specificity is less than k1, the market governance structure gives lower transaction cost than a hybrid and a firm. This is related to high incentive intensity and individual adaptability of the market arrangements. With an increase in asset specificity, hybrids become the most appropriate form of governance as administrative control and coordinated adaptations of hybrids and hierarchies gain importance. As asset specificity increases, there is a relative greater increase in transaction costs in markets than in hybrids and hierarchies as reflected by the higher gradient of the market structure. When k is greater than k2, internal governance becomes the organisational form with the least transaction cost.

**2.3.2.2. Frequency**

The frequency with which a transaction occurs can be important to determine the choice of governance structure as well as to reduce transaction costs. Frequency influences the set up cost of a transaction and the need for safeguards against post-contractual opportunistic behaviour (Williamson 1985). A threshold level of frequency is an enabling condition which permits the recovery of the cost required to set up specialised governance structures (Pillings *et al.* 1994). As mentioned in the introduction of this section, high frequency lowers transaction costs because the contracting parties through regular trade will familiarise themselves with each other, as well as with the product and the trading environment. Trust will then develop and will limit the level of monitoring and control. Long term relationships are thus recommended for benefits to be generated from transaction cost economy. For

efficiency to be guaranteed, at least hybrid governance structures are required (Menard 1996; Poulton *et al.* 1998 cited by Verhaegen and Van Huylenbroeck 2002).

Table 2.3 shows the impact of frequency on asset specificity. Four governance structures are imagined in the outline: markets, bilateral, trilateral and unified. The latter three structures can be compared to the hybrids forms initially discussed. If a transaction is characterised by zero asset specificity then market governance is the efficient structure no matter the frequency of the transaction. Whenever asset specific investments have been made, either partially (mixed) or completely (idiosyncratic), trilateral governance is suggested if the transactions only occur occasionally. Trilateral governance is characterised by a third party who may be private or public. The role of the third party will be to resolve disputes and evaluate performance. In case the transaction is recurrent, a hybrid with bilateral governance is chosen. In situations of mixed investment and for idiosyncratic investments a unified governance structure is chosen. Unlike the trilateral case no third party is involved in the unified case as such disputes are solved internally.

Table 2.3: Matching governance structures with commercial transactions

<table>
<tr><td colspan="2" rowspan="2"></td><td colspan="3">Investment Characteristics</td></tr>
<tr><td>Non-specific</td><td>Mixed</td><td>Idiosyncratic</td></tr>
<tr><td rowspan="2">Frequency</td><td>Occasional</td><td rowspan="2">Market Governance (Classical contracting)</td><td colspan="2">Trilateral Governance (Neoclassical Contracting )</td></tr>
<tr><td>Recurrent</td><td>Bilateral Governance (Relational</td><td>Unified Governance Contracting )</td></tr>
</table>

Source: Williamsson 1979

**2.3.2.3. Uncertainty and complexity**

Uncertainty and complexity are central problems of transactions. It is assumed that without uncertainty, transactions will be fully predictable ex-ante. Two kinds of uncertainties are distinguished: exogenous uncertainty (environmental uncertainty) and endogenous uncertainty

(behavioural). Exogenous uncertainty relates to changes in the market condition such as changes in demand, characteristics of the suppliers and modification of the institutional environment. Endogenous uncertainty deals with the opportunistic behaviours of transacting parties and the difficulties to predict the behaviours of contracting agents. It is also concerned with technical difficulties, maintenance and other coordination problems (Menard 1996). Menard (1996) adds that behavioural uncertainty increases with asset specificity because increase in specific transactions increases the need for and difficulty of monitoring and assessing the actions of other partners. Williamson (1996) remarks that although the efficiency of governance structures deteriorates with increasing uncertainty, the hybrid forms are held to be the most susceptible due to their typical contractual relationships. This leads to a shift of the transaction cost function of the hybrid mode (fig 2.3)

Hobbs and Young (2001) constructed a model of product characteristics and their relationship to transaction cost drivers (table 2.4). As an example the case of product perishability is illustrated. Perishability is said to create uncertainty for the buyers with respect to product quality and the trustworthiness of supply.

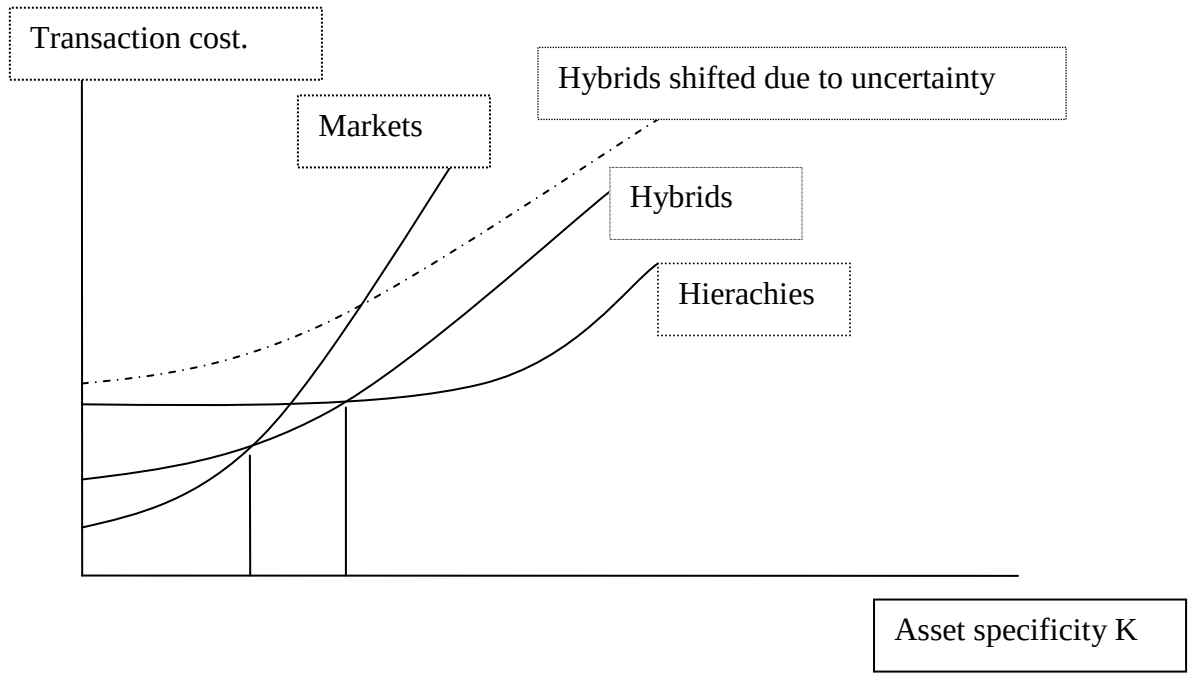


Fig 2.3: Uncertainty as a shift factor on transaction cost

Source: Boger 2001

Hobbs and Young (2001) also elucidate that perishability creates uncertainty for the seller in locating a buyer since perishable products must be moved quickly to the market place to avoid deterioration, leaving sellers unable to store the product for better market prices. This thus leads to increase frequency in transactions. Perishability also leads to complexity of the transaction because the quality of the product can deteriorate, thus imposing sorting, or information costs on buyers and also increase negotiations costs as both parties will have to develop procedures to decide who bears responsibility at different stages of the transaction.

Table 2.4: Relationship between product characteristics and transaction cost drivers

| | Transaction characteristics | | | | | | |
|---|---|---|---|---|---|---|---|
| | Uncertainty for buyer : quality | Uncertainty for buyer: reliable supply (timeliness and quality) | Uncertainty for buyer and seller price | Uncertainty for seller finding a buyer | Frequency of transaction | Relationship specific investment | Complexity of transaction ( variety of outcomes) |
| **Product characteristic** | | | | | | | |
| Perishability | √ | √ | | √ | √ | | √ |
| Product differentiation | √ | √ | √ | √ | | √ | √ |
| Quality variable and visible | | √ | √ | √ | | | √ |
| Quality variable and invisible | √ | √ | √ | | | | √ |
| New characteristics of importance to consumers | √ | Sometimes | √ | √ | | √ | √ |

Source: adapted form Hobbs and Young 2001

### 2.4. AFTPs/NTFPs value chain specificity and governance

In this section some aspects of NTFPs are discussed that make them different from other agricultural products and justify why they need special intervention strategies for their commercialisation. The section also explores some studies that apply the concept of value chains, transaction costs and governance in the study of NTFPs.

### 2.4.1. Specificity of NTFPs

Some aspects of NTFPs commercialisation have been recognised to be similar to that of agricultural products (Vosti *al.* 1997). Belcher and Schreckenberg (2007) review those that are specific to NTFPs. Their differences are influenced by many factors amongst which include the resource biology, resource tenure, resource knowledge base, policy issues, markets, production volumes and intellectual property rights. Some of these differences as seen by Belcher and Schreckenberg (2007) are condensed in table 2.5.

Table 2.5: Key differences in Value chains of NTFPs and small holder agricultural products

| ***Factor*** | ***NTFPs*** | **Smallholder agricultural products** |
|---|---|---|
| Resource Biology | Collection areas for wild NTFPs often distant from the home | Field usually close to or in walking distant of home |
| | Low density production means bulking up becomes very important | Cultivation leads to higher density usually many products in one area |
| | Usually wild or relatively unimproved to problems of inconsistent quality, sometimes highly dependent on vagaries of weather | Known varieties and availability of inputs allow for more uniform product |
| Resource tenure | Insecure tenure over collection areas leads to risk of overexploitation; inability to manage the resource ( to improve quality and/or quantity) | Individual tenure , therefore ability to exclude others provides incentive to invest in the resource |
| Resource-knowledge base | Traditional knowledge only , little formal research | Many staple and minor agricultural products subject of agricultural research and extension programmes |
| Policy issues | Little relevant policy issue in support of commercialisation , usually restricts harvest and /or transport and sale of NTFPs | Supportive policies in place including, credit provision, extension, research |
| Market structure | Thin markets – often few buyers for the total products from a production area | Many buyers at different scales; producers have more options for trading |
| Market information | Very little available ; channelled through intermediaries | Often widely available via radio, parastatals |
| Production Volume | Often of a supplementary activity therefore production varies as producers choose between different livelihood opportunities | Usually a more consistent part of livelihoods, leading to more predictable production volumes |
| Destination markets | Very diverse, faddish, frequently luxury goods and niche markets | Better known markets and more predicable |
| Intellectual property rights | May be critical for medicinal products and if active ingredients are synthesised away from original source requiring negotiation of benefits-sharing agreements | Can be an issue with respect to propagation of improved varieties. |

Source: Belcher and Schreckenberg (2007)

It is clear from their analysis that unlike the markets for major agricultural products that function smoothly because producers can be reasonably confident that they will be able to purchase inputs and sell the products, NTFPs are noted to be produced in small volumes, and dispersed over wide areas. In this regard wild harvested products in particular can be very unreliable in the quantities, qualities and even locations of production due to the biology of the organism and the vagaries of the weather.

Factors that affect the quantities supplied may also be linked to the existence of competing products for producers especially in cases where the NTFP represents just a small part of their income. Forest areas where most of the species grow are often characterised by poor infrastructure, making it difficult and costly to move products to the market. Because the NTFPs markets are small in scope they attract limited attention or investment. This leads to difficulties in sustaining supply when they do become successful.

### 2.4.2 AFTPs value chain and Transaction cost

Since this study looks at market arrangements in AFTPs value chain, it is necessary to link the concept of value chain to the transaction cost theory, as well as give a contextual definition of the concepts together with some few examples of how it is being used to study AFTPs.

According to Schreckenberg *et al* (2006), the terms supply chain, or marketing chains, and production-to-consumption systems are often used to mean value chain. *A chain* consists of a number of different actors each specialising in different functions but linked through certain ways of cooperation in a network (te Velde et al. 2006)**.** *A value chain* describes the full range of activities which are required to bring a product or service from conception through different phases of production (transformation and service input use of producers), delivery to final consumers and final disposal after use ( Kaplinsky 2001). Schreckenberg *et al.* (2006) in their definition of a value chain emphasised on the added value realised and how it is communicated as the product moves from the producer to the consumer. A value chain can be termed global when it involves different stakeholders at different stages in different countries.

When applied to NTFPs, 'value chains may include, a number of different activities from harvesting of the wild resource to cultivation of the resource, various degrees of processing, storage and accumulation of the product at different points in the chain, transport, marketing (identifying and developing good niches) and sale (Schreckenberg *et al.* 2006). Belcher and Schreckenberg (2007) add that if the product is traded internationally, export and import requirements must be fulfilled. This may necessitate another round of storage, processing, and transport involving an array of agents and distributors before the product is sold to the final consumer (Fig 2.4).

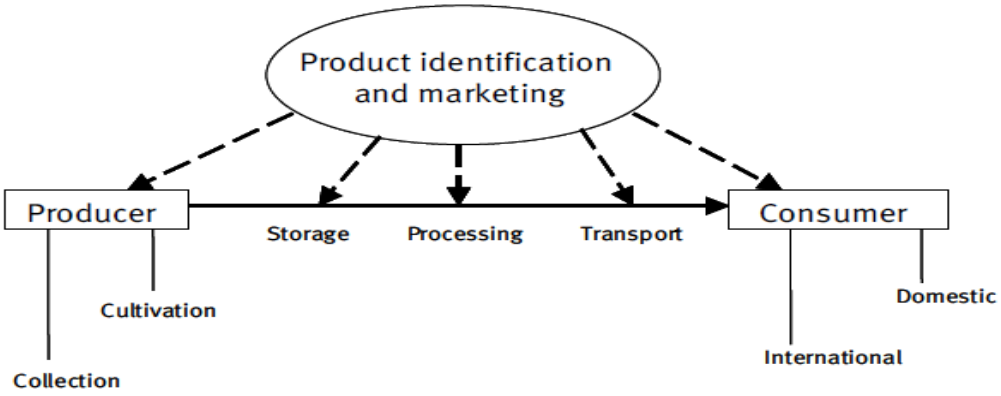


Fig 2.4: The production to consumption system

**Source:** Belcher and Schreckenberg (2007)

te Velde *et al*. (2006) consider value chain analysis as a methodology which is different from other market chain analysis methodologies such as chain analysis and describe value chain analysis as an emerging tool that has already been used to study new and practical insights in the markets of textiles and clothing. The methodology has also been used by Dolan *et al* (1999) cited by te Velde *et al.* (2006) in the study of fresh fruits and vegetables. Greffi *et al.* (2003) report that, recent development in value chain analysis is meant to describe a typology of governance in value chains, the factors that explain this typology and the effects of certain governance. te Velde *et al.* (2006) comment that there have been to date few attempts to use value chain analysis to obtain new information about entrepreneurship in markets of NTFPs. NTFPs are linked to final consumers through value chains. Garfamy (2004) reports that the transaction cost approach represents one possible approach to understanding and evaluating supply chain management and it has the potential to be combined in an interdisciplinary mode with insights provided by marketing, logistics, and organisational behaviours in literature.

### 2.4.3. Governance of value chains

When dealing with value chains, governance relates to the type of coordination amongst dispersed but linked production systems (te Velde *et al.* 2006). Gereffi *et al.* (2003) disintegrated hybrid governance in value chain into the modular, relational and captive forms sandwiched by the markets and the firms, as discussed in section (section 2.3.1). Their model thus ends up with five analytical basic types of value chain governance which are also influenced by transaction cost drivers which they captured as follows: complexity of inter-firms information, potential of codifying inter-firm information and capabilities of producers.

1. **Market**: They are repeated transactions amongst different actors. Such transactions are described to persist over time. The essential point of such governance structure is that the costs of switching to new partners are low.
2. **Modular value chain:** Suppliers make products to a customer's specification. Suppliers take responsibility for competences surrounding process technology, and employ less transaction specific investments.
3. **Relational value chains:** They are characterised by complex interactions between buyers and sellers leading to mutual dependence and high level of asset specificity. These relations are managed through trust, reputation, family and ethnic ties, as well as social and spatial proximity. Relationships in this type of governance are built over time and based on dispersed family and social groups.
4. **Captive value chains:** In this network suppliers depend on many large buyers for their transactions and face significant switching costs and are therefore 'captive'. Such networks are usually characterised by a high degree of monitoring and control by lead firms, creating dependence on the suppliers.
5. **Hierarchies:** This governance form is characterised by vertical integration. The dominant form of governance is managerial control, flowing from managers to subordinates, or form headquarters to subsidiaries and affiliates.

Having described the various types of governance structures, Gereffi *et al*. (2003) went further to identify three factors which determine the type of governance structures in value chains. These include:

1. Complexity of inter-firm knowledge and transfer required to sustain a particular transaction, particularly with respect to product and process specifications;

2. The extent to which this information and knowledge can be codified and therefore transmitted efficiently and without transaction-specific investment between the parties to the transaction; and
3. The capabilities of actual and potential suppliers in relation to the requirement of the transaction (Table 2.6).

These three factors can be liken to the factors that affect transaction cost and te Velde *et al* (2007) construe these factors in a study of NTFPs in Bolivia and Mexico as follows:

*Complexity of inter-firms information*

Complexity as seen by local collectors is not in the product itself but in the information required to successfully market the NTFPs. Thus inter-firm complexity is interpreted as lack of market information or that market information is not easily available to local collectors, lack of contacts downstream to sell their products. Complexity also results when one needs a high complex social web to market produce. For example traders had to have intricate relationships with community members by taking the role of god parents in order to be served quality cocoa beans. Complexity also arises when high skills and knowledge is needed to perform some tasks. The implication of the complex nature of NTFP market information is that it affects the type of governance and thus the cost of transaction (Table 2.6).

Table 2.6: Factors determining the type of governance structures

| Governance type | Complexity of transaction | Ability to codify transactions | Capabilities in the supply base |
|---|---|---|---|
| Market | Low | High | High |
| Modular | High | High | High |
| Relational | High | Low | High |
| Captive | High | High | Low |
| Hierarchy | High | Low | Low |

Source: Gerefii et al. (2003)

*Potential of codifying inter-firm information:*

This deals with questions whether specific investments are required to get a product. For example te Velde *et al.* (2006) observed in their case study of the Jipi japa products that the Jipi japa firm had to invest considerable resources to train low capacity suppliers to obtain the

required quality from the producers. This increases the human asset specificity and explains why the firm had to establish a system of payment to reward quality which is a special arrangement to reduce transaction cost. The authors further quoted the example of matsutake mushroom where weight and quality was the principal information transmitted to collectors and was considered complex but straight forward to capture because it required no processing compared to other species.

*Capabilities of producers*

te Velde *et al.* (2006) used the following key factors to determine whether or not NTFP suppliers can meet the requirements of a buyer: access to the resource, financial capacity, and skills base. They added that membership in a producer organisation may help to overcome one or more of the above key factors. They quoted the example where the resource was originally harvested from communal land by everybody but are now being collected or planted on plots for individual use and would require financial capital to transport the harvest as well as hired labour to collect the product.

Table 2.6 analyses the type of governance structure based on a combination of two values (high or low) of each of the three governance deciding factors specified by Gereffi *et al.* (2003). Like in Williamson's (1991) model, the market governance structure will be chosen when the product is characterised by low asset specificity, and suppliers have the capability to make the products in questions with little input from buyers; as such there is nothing specific about the transaction. The main response mechanism is the price. Buyers respond to prices set by sellers. This mode is also characterised by low complexity of information exchanged; as such the transaction can be characterised with little explicit mechanisms. In hierarchical governance structures, the products are complex and highly competent suppliers cannot be found, in this case Gereffi *et al* (2003) note that 'lead firms' emerge to supply the products.

te Veldes *et al.* (2006) studied governance in 10 NTFP value chains in Bolivia and Mexico using the Gereffi *et al.* ( 2003) typology. Their conclusion is that NTFPs governance can fall in three out of the five governance forms described above these are the market, relational and captive modes.

- Market types include NTFP products only sold to the local markets with often numerous suppliers and consumers as well as those with a fairly simple domestic

market. For some products like mushroom and pita, the more distant markets are made accessible by the existence of a good community based producer association.

- Relational types are those for which cultural ties and family networks play a role in ensuring the success of commercialisation efforts.
- Captive types are those dominated by entrepreneurs and the products are exported.

In their analysis, te Velde *et al.* (2006) found that the critical factor in determining the governance type of the NTFPs they studied appeared to be the physical distance of the consumer from the NTFP collector and the need for specialised skills in processing, marketing, and presentation of the product. Despite having observed concurrence between the predicted and observed governance categories, te Velde *et al* (2006) criticised the Gereffi *et al.* (2003) typology as 'not always easy to apply' to the NTFP cases they studied. Difficulties were most observed where governance changes as one moves along the value chain from markets to hierarchies. Difficulties were also observed where the distinction between firms is not clear as it frequently occurs in NTFPs that are traded in the informal sector and only move in the formal sector when they cross national boundaries.

te Velde *et al.* (2006) add that the Gereffi *et al.* (2006) model can also be applied in a distinguished manner in determining the type of governance structure that may be found in producer level organisations. In their analysis of the NTFPs case studies, they identified three types of producer organisations that provide benefits to farmers. These include:

(a) Producer cooperatives,

(b) Producer associations set up by a trading company to assure its supply and giving members no say in decisions and lastly

(c) Community enterprises run by a hired manager.

## 2.5 Producers and traders and/or their associations and the transaction cost theory

In this section producers' and traders' organisation and their relation to the transaction cost theory are discussed.

### 2.5.1. Existing studies on producer associations

Moustier (1998) distinguishes between vertical (accumulation of various functions: production, commercialisation, transformation etc) and horizontal organisations that assure coordination between various actors in the foodstuffs markets. Vertical coordination includes organisations between:

- producers and traders

- producers and agro-industries
- traders and agro-industries
- wholesalers and retailers and
- consumers and traders or producers

On the other hand horizontal coordination assures interaction between actors performing the same action. These include:

- organisation between producers
- organisation between traders
- organisation of consumers

Vertical integration in producers groups is known to occur whenever the groups move up in the market channel while organising group transportation or processing the produce. Moustier (1998) adds that horizontal and vertical coordination are linked in the sense that the creation of a vertical coordination can lead to market segmentation which renders horizontal coordination unnecessary. Figure 2.5 illustrates various forms of exchange between producers and traders. Transactions between producer groups and traders association may be one form of organisation. Others may include traders negotiating individually with the producer groups or the producer group organising auction sales to either groups of traders or individual traders. Figure 2.5 illustrates various forms of exchange between producer groups and traders.

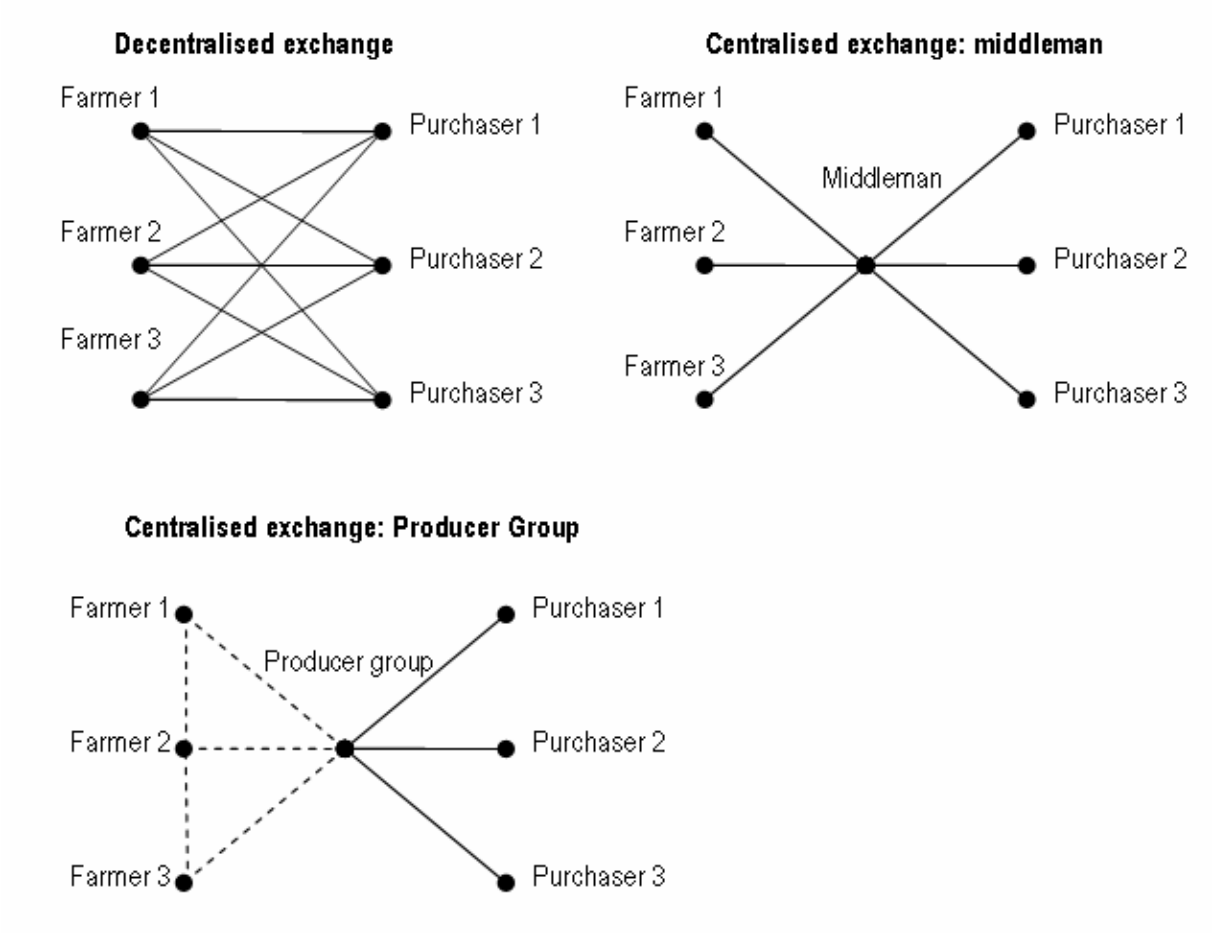


Fig. 2.5: Exchange with and without intermediary and a producer group
Source Banaszak (2008)

When farmer groups are created with the main task of organising joint sales of individually produced output of its members, Banaszak (2008) reports that the producer group act as an intermediary market organisation that coordinates the exchange of goods and services between the farmers and purchasers of their produce. In this respect he adds that the producer group takes the role traditionally fulfilled on the market by the middlemen and is thus horizontally and vertically integrated. By so doing the farmers who associate into groups gain by reducing transaction cost and put them in competition with the middlemen and other traders.

Banaszak (2008) studied producers groups in Poland with emphases on the factors affecting the success and failure of cooperation in agricultural markets. Using the transaction cost theory, he defined a successful producer group just like Pingali *et al.* (2005) as one that manages to coordinate the activities of exchange between farmers and purchasers and that additionally operate at per unit costs lower than the cost of organising the transaction through alternative ways such as decentralised exchange or intermediation. However Pingali *et al.*

(2005) criticise the lack of adequate information of benefits and especially cost in collaborative group action. An attempt in this direction has been made by Moustiere (1998) who identifies elements against which a producer organisation needs to be evaluated in order to be declared successful. These include access to resources necessary for exchange to take place, agricultural inputs, labour, knowledge, running capital, credit, transport, storage, transformation, information, environmental risk, partners risk, negotiation power, and political weight. Pingali *et al.* (2005) remark that benefits of horizontal coordination can be described in terms of increased productivity and increased negotiating power and recommend that more information be collected to understand an actor's rationale for participating in for say a producer or a trader group. He continued that better prices are often mentioned but insists that this may not be the driving factor. Swinnen (2005) indicate that having a secured market outlet and access to technical assistance and credit may be most important. Pingali *et al.* (2005), also recommend that efforts have to be made to document information related to the impact of training on capacity building for producer organisations.

The transaction cost theory as well as the game theory can provide insights on factors affecting the likelihood of achieving success by cooperative organisations (Banaszak 2008). In this study the definition of success for both producers' and traders' group is based on transaction costs and the perception of group memebers. The transaction theory is used because it permits comparison between different forms of organisations.

Banaszak (2008) operationalised the transaction costs model by considering three alternative types of transaction: through an intermediary (I), direct sales (D) and producer group (PG). In operationalsing the model he interprets Spulber (1999) as follows:
'An intermediary will operate if an exchange of a particular good or service through an intermediary yields the buyer a value VI which entails opportunity costs CI for the seller and the total transaction costs for the buyer, seller and the intermediary TI is higher than the exchange of that good or service through direct exchange which yields the buyer value VD and entails opportunity costs CD for the seller with transaction costs for the seller and buyer TD'. Banaszak (2008) adds that a producer group will appear on the market if it is able to organise transactions yielding the value VPG, which entails opportunity costs CPG and transactions costs TPG that are higher than exchange through an intermediary. This can be expressed as:
VPG – CPG – TPG > VI-CI-TI > CD - TD

Where:

VPG = value of the transaction through the producer group

CPG = opportunity cost of the producer groups

TPG = transaction cost of the producer group

VI = value of transaction through an intermediary

CI = opportunity cost of the transaction through the intermediary

TI = transaction cost of the intermediary

VD = value of direct sales

CD = opportunity cost of direct exchange

TD = transaction cost in direct exchange

Based on this logic a successful producer group can be defined as one that manage to coordinate the exchange between farmers and purchasers and that additionally operate at per unit costs not exceeding per unit costs of organising the transaction through alternative ways such as decentralised exchange or intermediation by other buyers (Banasaks 2001).

If the three types of transactions yield the same transaction costs, an exchange through a producer group will be preferred if it leads to net gains higher than from direct and intermediary exchanges.

That is if , TI = TD = TPG and VD-CD < VPG - CPG > VI - CI.

Spulber (1999) specifies the condition under which a producer group can make higher net gains from trade. They can do so by providing additional services to the buyer which increases the buyers' willingness to pay or lowers the group (seller) opportunity costs. One of such services is proposed by Banaszak (2008) and involves accepting a delay in payment from purchasers which usually is hard to accept for individual farmers.

If the same gains from trade are obtained through the three modes of transactions:

VPG – CPG = VI - CI = VD - CD

an exchange through a producer group will occur if it lowers transactions cost. That is the transaction cost from selling through the group is lower than all other alternatives:

TD > TPG < TI.

Frequency in transactions will facilitate cost recovery of specific investment. In producer organisations Banaszak (2008) states that frequency of transactions can be raised by increasing membership. Enlarging the group size through membership may lead to a decrease in the danger of opportunistic behaviour and internal rent seeking by members. Organisations that survive are not the most profitable but are the most successful at solving problems of internal rent seeking (Krakel 2006). However increase in membership leads to an increase in coordination cost. Such cost can be reduced by good leadership through effective decisions and transmission of information (Williamson 1993). Selection of members having previous business relationships in group sales is also important. This point is supported by Menard (2004) who states that the selection of members is based on previous experiences in market relationships, on previous hybrid arrangements and/or reputation. In addition to the already cited success factors Bruynis *et al.* (2001) recommend that any marketing cooperative should be able to handle sufficient volumes, document accurate financial statements and be able to have marketing agreements to secure business volume commitments. Other bases of evaluation include longevity, business growth, profitability, and members' satisfaction. The last factor is inline with Sexton and Iskow (1988) who recommend that self-evaluation should be used as base for measuring success of group activities.

### 2.5.2. Existing studies on agricultural traders association

While literature may exist on producers associations little exist for traders associations and there are a few references about factors that lead to success in vertical integration between producer groups and traders. Shepherd (2005) summarises an FAO commissioned study on agricultural traders associations in Africa, Asia, and Latin America. He concluded that such associations exist and play a series of roles ranging from disputes resolution, supply control, provision of market information and organisation of transport for members in order to reduce transaction cost. He adds that these functions open them up from cartel-like behaviour they are often alleged to be performing. The study recommends that agriculture ministries and donors need to develop an understanding of traders association that function in their countries. In this line their areas of weaknesses need to be identified and appropriate measures like trainings where necessary be developed to overcome such weaknesses. Further recommendation is for NGOs to develop other activities to benefits their members. It is for this reason that the study of AFTPs traders associations is included in this study in order to

explore the opportunity of better linking them with producers associations that deal with join sales of members' produce.

### 2.6. Empirical research on transaction cost and buyer sellers' relation

#### 2.6.1. Transaction cost in developing countries

Pingali *et al* (2005) discussed transaction costs that are specific to the agribusiness firm and report that such transactions are characterised by a high cost of exchange when the number of small farmers is large and the number of large buyers are few. Cases like this can be likened to group sale arrangements when small farmers group their produce to be sold to a few traders. Pingali *et al*. (2005) argue that such transactions will not take place if the TCs are prohibitive. Hayes (2000) enumerated the TCs that emerge from deals between large numbers of small farmers. They include:

- bureaucratic cost associated with managing and coordinating integrated production, processing and marketing;
- opportunity cost of time used to communicate with farmers and coordinate them;
- cost involved in establishing and monitoring long term contracts;
- screening cost linked to uncertainties about the reality of potential suppliers or buyers and the uncertainty about the actual quality of the goods; and
- transfer cost associated with the legal and or physical constraints on the movement and the transfer of goods which also include handling, storage, transport costs etc**.**

TCs emanating from farmers' location in low-potential areas as well as those specific to crops and household factors are also reported by Pingali *et al* (2005). According to these authors low potential areas do not have access to production inputs and markets. This increases cost and risks. Such areas also lack transport and communication infrastructure, leading to higher search and information cost. Perishability as a crop specific factor increases TCs especially under conditions of monopsony because it may increase the chances of agents behaving opportunistically. Some household specific variables exist which are not TCs in themselves but have an impact on them. These include aversion to risk and uncertainty, social networks and organisation, age, gender, education and intra household interaction.

### 2.6.2. Empirical research on the perception of transaction cost and relationships between agents in a value chain

Storer *et al* (2002) examined the differences in perception between dyadic pairs of buyers and sellers about the nature of their relationships and the inter-organisational information systems with a case study on four nursery retailer stores (buyers) and eleven wholesale nursery green-life suppliers. They found that, there were significant differences in perceptions about the nature of the inter-organisational information system in terms of some of the types of information exchanged and the frequency of exchange of different information types. There were also differences in perception about the relationship in terms of responsiveness and changes in commitments over time. They also found differences in perception about the importance and loyalty to each other and the predictability of demand and supply volumes. They recommended that if management of agribusinesses needs to get an accurate picture of how customers/suppliers relationships are being managed multiple informants should be interviewed. They concluded that while informants may give different responses these differences may highlight areas of intervention for better collaboration.

The impact of information network and trust on collaborative relationship between distributors (growers) in the Dutch potted flower industry as well as the impact of collaboration on the performance of suppliers was investigated by Claro and Omta (2005). They used the network approach to channel relationships and considered elements of transaction cost economics and marketing channels. Their framework was composed of trust, information network, joint actions and flexibility. Trust between parties in a business is required to reduce complex realities more quickly and economically (Powell 1990). It reflects the extent to which negotiations are fair and commitments are sustained (Anderson and Narus, 1990). Claro and Omta (2005) justified the relevance of information network in reducing the information asymmetry of parties and the risk of opportunistic behaviours. They described flexibility in terms of *adjustments* and *join action*s. Expressed as adjustments it refers to the willingness to make adaptations as circumstances change. Seen as joint action it encompasses elements of joint planning and joint problem solving e.g. technical failures and other unexpected circumstances. The result of the study highlights the importance of collaborative relationships with networks and trust. It shows that by means of trust growers and their distributors may have adequate mutual understanding and share experiences to creatively solve problems, set up effective planning and be flexible in day to day management. This may substantially enhance their chances of success in collaborative channel relationships.

The element of trust in supply chain management has also been investigated by Kwon and Suh (2004). In the study they researched factors affecting the levels of trust in supply chain management. In their introduction they quoted Sherman (1992) who reported that one-third of transactions fail because of lack of trust among trading partners. Kwon and Suh (2004) continued by explaining that, a lack of trust among trading partners often creates a condition where every transaction has to be scrutinized and verified, thereby increasing the transaction cost to an un acceptably high level. They tested several constructs known to be related to trust in literature such as asset specificity, behavioural uncertainty, information sharing and other constructs in social exchange theory. In discussing the results, they confirm a positive and significant relationship between the degree of commitment and the level of trust as hypothesized. Further analyses revealed that it is the respondent's unpredictable behaviour (negative) and the partners reputation (positive) that seem to heavily influence the level of trust. They added that these two constructs may provide an avenue where supply chain implementation becomes a challenge rather than a barrier.

Zaibet *et al.* (2005) assess the marketing efficiency of the AL Mawaleh by identifying and measuring transaction cost. Their approach consisted of designing detailed survey questions that reflect accurately transaction cost as well as their determinants. The questions included rating of the search, monitoring, and enforcement activities related to variables such as prices, quality, import permits, storage, wastage, general services and seasonal calendar which are thought to determine transaction cost. Analysis of the collected information shows that players ranked about above average in general the search, monitoring, and enforcement as perceived from the trading rules. They interpreted this to mean that the transaction costs are seen as relatively high, which affects the efficiency of the market. As concerns the impact of selected factors hypothesized to determine the level of transaction cost, values of the measures obtained range from a low of 1.8 to a high of 3.3 out of 5. The authors consider these values low; especially the level of satisfaction of prices which were as low as 1.8 for importers and indicated that the values are a reflection of a relatively low intensity of market efficiency.

By analysing the transaction costs of a small innovative marketing channel for beef in Belgium, Verhaegen and Van Huylenbroeck (1999) through a case study showed that, the inclusion of transaction cost is necessary to evaluate the net benefits for the actors. It also helps to understand the driving force behind cooperation. In their conclusion they stated that

the attributes of the transaction (moderate specificity) of the ProQA cooperative justify the use of a formal organisation in place of the market. Verhaegen and Van Huylenbroeck (2001) further analyse costs and benefits for farmers participating in innovative marketing channels for food quality products in Belgium. They used the traditional cost-benefit theory adjusted by the inclusion of the transaction cost and its qualitative nature to compare and analyse farmers' participation in six innovative marketing channels. Their results revealed that the most important benefits of collective action are a higher turn over and high certainty about prices and sales volume. They added that in all six marketing channels higher costs are compensated for by higher revenues due to higher prices and higher turnover and by reduced uncertainty. In addition to the above they reported that cooperation decreases transaction cost and that collective action enables farmers to enter the pathway of quality for food production without investing excessive labour or capital.

### 2.7. Conceptual frame work

The conceptual model used in this study is based on the transaction cost economics as well as elements trust, commitments and cost-benefits gathered from authors like Sarttorius and Kirsten (2007), Semeijn *et al.* (2005), Kwon and Suh (2004), Maheswari *et al.* (2004), Verhagen and Van Hulenbroeck (2002) and Hobbs and Young (2001). The relationships amongst the key items in the conceptual framework are illustrated in figure 2.6. and are described in the preceding paragraphs.

*Successful market arrangements trust and commitment in the framework*

Maheswari *et al* (2004) write that success is the key outcome of interest in organisational supply chain partnerships and added that people can use a number of different legitimate definitions for success amongst which include: achievement for getting a partnership running within a considerable budget, and reaching business goals. Also success is often judged relative to the organisation's unique goals for partnership. In this regard a successful market arrangement between AFTPs producer groups and traders is defined in this study as one in which both actors engage in a long term strategic alliance in successive production seasons, the bases of which are benefits and satisfaction derived from the alliance. The hypothesis used in this case is that if both producers and traders derive acceptable benefits and are satisfied from their market arrangements compared to other existing channels they will continue to deal with each other and will thus lead to long term collaboration. Kwon and Suh (2004); Morrow et *al.* (2004) as well as Morgan and Hunt (1994) identify trust and commitment as important

constructs that lead to long term buyer-seller relationships. These two elements are integrated into the framework as factors that influence successful market arrangements besides benefits. That is the more both parties trust each other with respect to certain transaction characteristics like quality of information on prices and quantities the more the relationship between both parties will last.

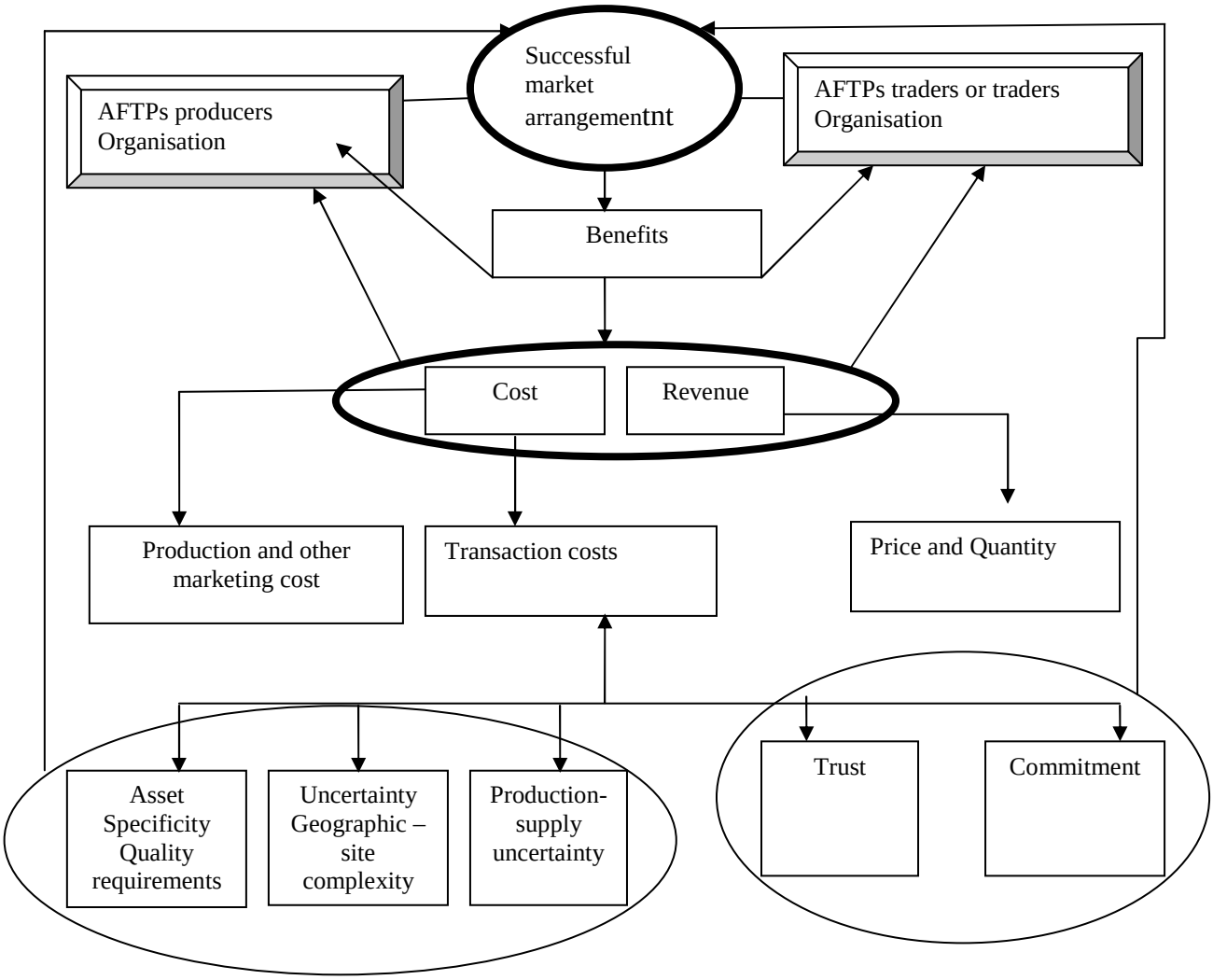


Figure 2.6: Conceptual framework

Source: author

*Integrating transaction cost in-to the framework*

The benefits that producers and traders make of the deal depend on revenue and cost. Revenue depends on the quantity sold and the selling price, while cost depends on production and marketing cost as well as the transaction costs. Emphasis in this study is on identifying transaction cost involved in producer group-traders market arrangement and how that influences success. In the model therefore it is thought that if producers and traders in the

AFTPs do not respect their mutually agreed upon engagements it is due to perceived transaction costs involved in the process which are higher during group sales than when sales are contracted through the normal channel (see section 2.5.1). The perceived transaction costs are considered to be influenced by certain factors gathered from literature and adapted to context (that is associated with producer group–traders' market arrangements). These include product specificity, site specificity-geographic complexity of production villages, production uncertainty and trust between them.

# Chapter 3: Methodology

### 3.1. Geography of Cameroon and general development indicators

Cameroon is located between West and Central Africa from latitude 2°-13° N and longitude 8°- 16° E. It has a surface area of 475,442 $Km^2$. It is bounded to the north by the Republic of Chad, to the south by Equatorial Guinea, Gabon and the Congo, to the west by the Federal Republic of Nigeria and to the east by the Central African Republic (Figure 3.1).


Figure 3.1: Map indicating the 10 regions of Cameroon

Administratively Cameroon is divided in to 10 regions (figure 3.1). The country has an estimated population of about 17 million with a population density of 36 people per $Km^2$. The 2008 World Development Report ranks Cameroon as a lower middle income country with a Gross National Income (GNI) per capita of 1,080 USD. In Cameroon, 17.1% of the population is estimated to live below the international poverty line of 1USD a day and for the 2USD international poverty line the number more than triples to 50.1%. About 46% of Cameroonians live in rural areas. A majority of this population live on agriculture. Agriculture constitutes 45% of the GDP and represents 25% of the major exports (World

Bank 2008). English and French are the two official languages of Cameroon. The country has about 200 ethnic groups, each of which has it own dialect, culture, and tradition.

Cameroon is endowed with a lot of diversity in its physical, human and economic aspects. Physically it has distinct geographic features, which include mangroves swamps, coastal lowlands, plateaux, highlands and numerous volcanic landforms. The country is generally referred to as African miniature due to its six ecological zones, which include: coastal lowlands, humid forest, western highlands, adamawa plateau, the benoue valley (hot tropical) and the dry savannah (semi-arid tropical).

The country can be further divided into five agro-ecological zones (Takow and Ebai 1996) namely: Sudan sahelian or the dry savannah (North and the Far north regions); Guinea savanah highlands (Adamawa, and parts of the Eastern regions), Western highlands or the humid savannah (West and the North west regions), Humid forest bimodal (East, Centre and the South regions) and the Humid forest monomodal zone (South west, Littoral and a small portion of the South regions). In Cameroon forest covers about 22 million ha with an annual deforestation rate between the years 2000 and 2005 estimated at of 0.9% (Mongabay.com 2009). The forests are exploited for lumber, timber and firewood as well as other non ligneous resources such as wildlife and other forest products (IMF 2003).

According to Takow and Ebai (1996), average rainfall in Cameroon is estimated at 3890 mm on the costal lowlands with highest quantities recorded along the slopes of mount Cameroon (10,000 mm per year). This huge precipitation decreases to an average of 600mm in the dry savannah region of the North of Cameroon. Average temperatures in the Grand south is 25° C, 21° C in the Adamawa plateau and increases to an average of 32° C in the northern regions.

### 3.2. Description of the study area

This study was conducted in Boyo, and Nyong et Mfoumou divisions of Cameroon. These sites were chosen because they each host a producer group that has been involved in joint marketing of AFTPs in Cameroon since 2003. These groups are Twantoh Mixed Farming Common Initiative Group (MIFACIG) and Association pour le Développement Intégral des Exploitants Agricoles du Centre (ADEAC). Also visits were made to traders located in

Douala, Yaounde and Bafoussam who took part in group purchases from the concerned producer groups.

*The Boyo Division–North West region of Cameroon*

The Boyo division is located in the North West region of Cameroon. This region is located in the humid savannah and covers a surface area of 17,812 $Km^2$. It has a population of about 1.8 million inhabitants. Its population density is estimated at 99.12 inhabitants per $Km^2$ higher than the national average of 36 inhabitants per $Km^2$. Boyo is one of the seven divisions of the region. It has a soudano sahellian climate. Rainfall is between 1900 mm-1300mm and stretches from mid March to mid November. Average temperature of the region is 20°C. The vegetation is highly modified with small areas of natural forest. Economic activities of the rural population include agriculture, livestock, silviculture and trade (www. Wikipeia. Org).

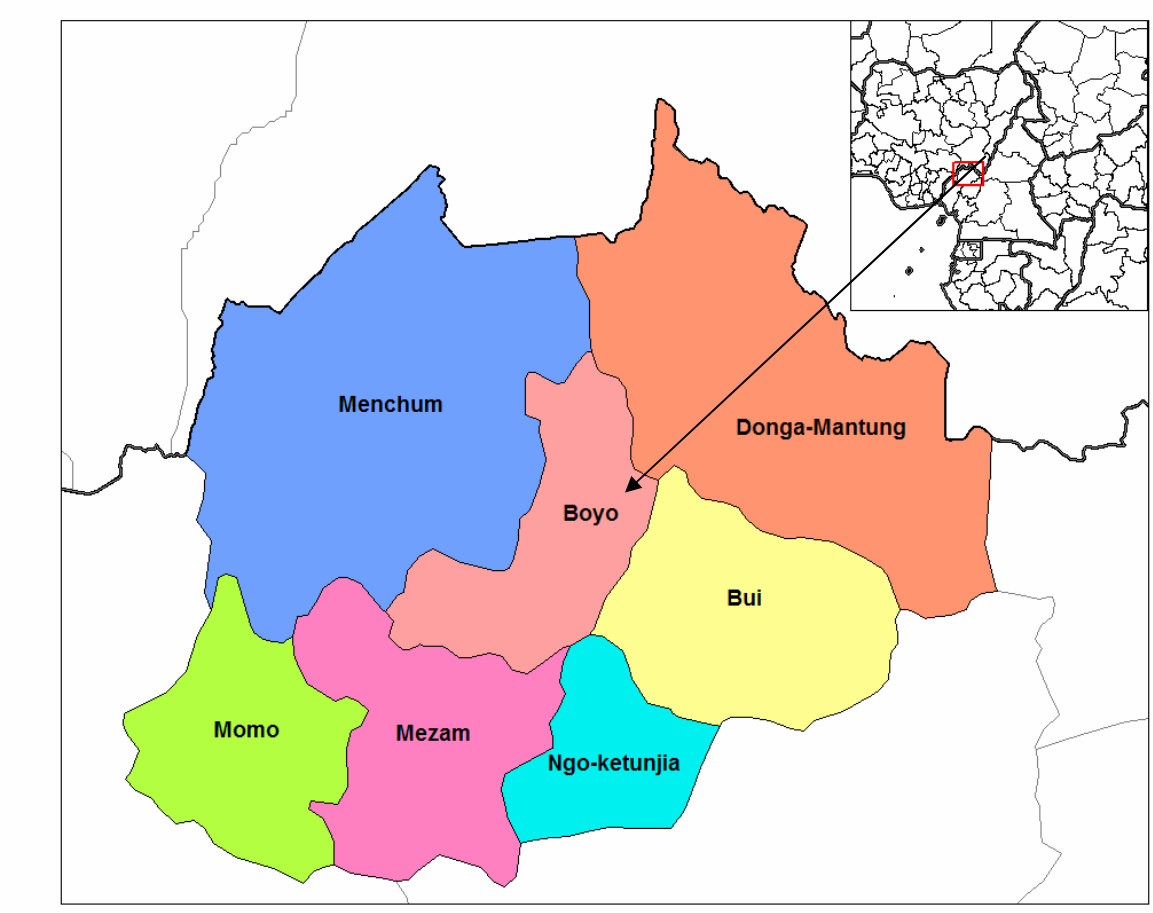


Fig 3.2: Map of the North West region indicating the Boyo Division
Source: adapted from: wikimedia.org/wiki/File:Northwest_Cameroon_divisions.png

*The Nyong et Mfoumou Division – Centre region of Cameroon*

The headquarter of ADEAC is located in the Nyong et Mfoumou division of the Centre region of Cameroon. The centre region covers a surface area of about 70,000 $Km^2$. Average rainfall is estimated at 1600 mm a year and average temperatures are about 23°C. The region has four seasons in a year:

- A short rainy season (March-June)
- A short dry season ( July-August)
- A long rainy season (September-November)
- A long dry season (mid November-February).

The centre region hosts part of the humid forest of Cameroon. The population of the region is estimated at about 2,228,025 inhabitants with a population density of 33 inhabitants per $Km^2$. Major economic activities of the rural population include cocoa production, food crops and forest related activities.

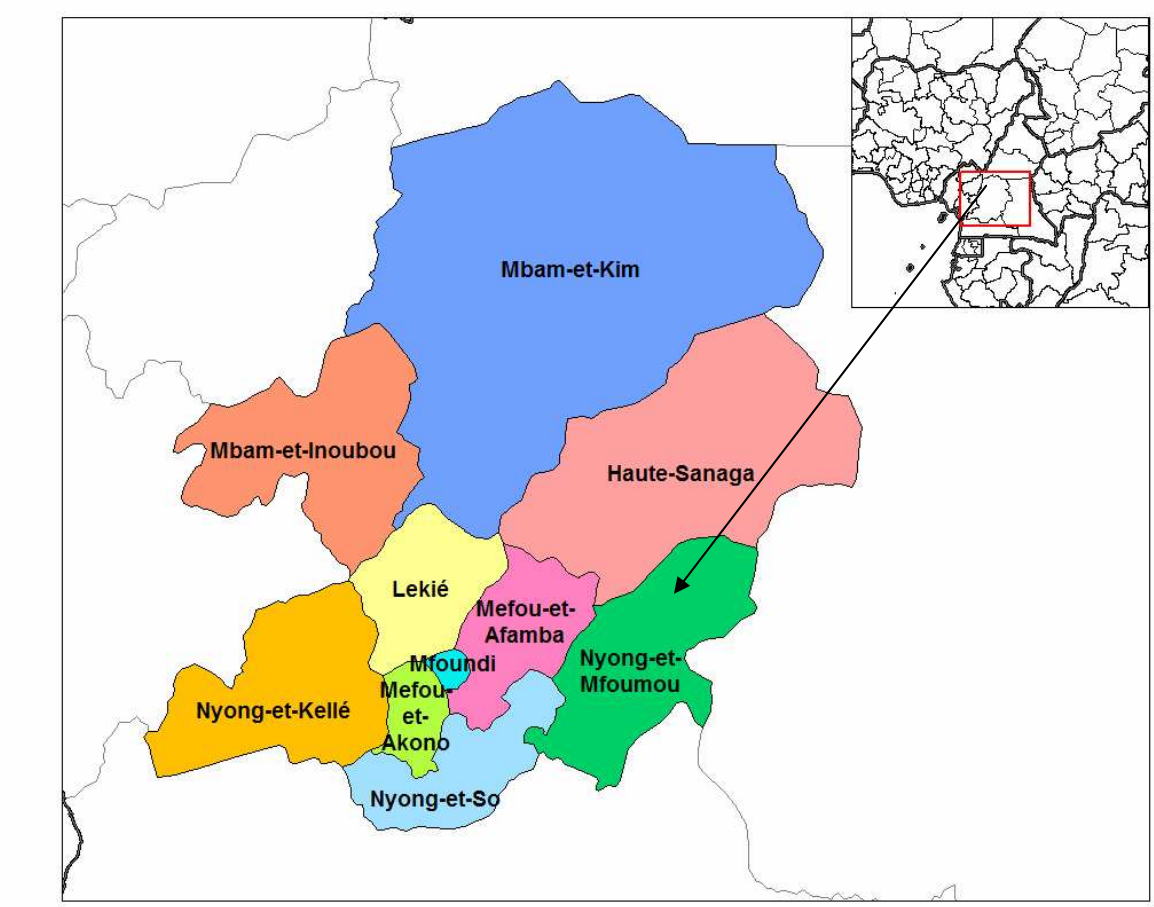


Figure 3.3: Map of the Centre region indicating the Nyong et Mfoumou Division

Source: adapted from: wikimedia.org/wiki/File:Northwest_Cameroon_divisions.png

### 3.3. Description of farmer and trader groups

This section of the report presents the AFTPs producer groups chosen for this study. The origins of the groups are briefly described together with their location, how they function and other agricultural activities performed by the group.

#### 3.3.1 Description of farmer groups

MIFACIG (Twantoh Mixed Farming Common Initiative Group) is a producer group created in November 1993 with the objective of alleviating poverty through sustainable agriculture, job creation and capacity building. The groups' headquarter is located in Belo and its activities stretched throughout the Boyo Division (lower administrative unit to a region) of the North West region of Cameroon. The area of intervention of MIFACIG is estimated at about 85 $Km^2$ with varying radii of 11 to 45 km from Belo. Membership is estimated at about 650 individuals spread over the four subdivisions of the division. Not all the 650 registered MIFACIG members are enrolled as kola nuts producers (ICRAF trip reports).

The activities of MIFACIG are centred on the following domain:

- Agroforestry
- Bee keeping
- Growing of medicinal plants
- Domestication of fruits and agroforestry species
- Environmental protection
- Gender and development etc.

ADEAC (Association pour le Développement intégral des Exploitants Agricoles du Centre) is a farmer organization working in the Centre region of Cameroon. One of the objectives of ADEAC is to reinforce the economic power of its members through a participatory communication system with the aid of its principal actor SAILD (Service d'appui aux initiative local Development). It has a total of 450 active members working in six different agricultural sub-sectors namely: perennial crops, food crops, pisciculture, small animals and poultry, crafts and vegetables farming. Each member can adhere to more than one of the sub-sectors. ADEAC runs the following activities:

- A decentralized system of storage facility for agricultural inputs (spread throughout the zones from where members directly get their inputs of good quality).
- A marketing system that permit members to better sell their products

- A credit and loan system which permit members to implement without difficulties their activities
- A good communication system amongst members that guarantees transparency.

*Membership to AFTPs sub sector within ADEAC and MIFACIG*

Adherence to any sub sector in either MIFACIG or ADEAC is voluntary. For the case of AFTPs (kolanuts for MIFACIG and njansang for ADEAC) sensitisation activities encouraging members to exploit the products and sell in groups started in 2003 accompanied by trainings on capacity building, group dynamics, bargaining and negotiation skills as well participatory tree domestication. By 2007 ADEAC counted 111 registered members in the njansang sub sector operating in three villages (Epkwassong, Nkolobodou, Ondeck) while MIFACIG counted 112 members in the kola sub sector grouped under three villages namely Belo, Njinikom, and Fundong (table 3.1.)

Table 3.1: Distribution of members per AFTPs sub group

| **Region** | **Main group** | **Name of village ( subgroup)** | **Number of members** | | **Total** | **Total per main group** |
|---|---|---|---|---|---|---|
| | | | **Males** | **Females** | | |
| Centre | ADEAC (Njansang) | Epkwassong | 23 | 29 | 52 | 111 |
| | | Nkolobodou | 7 | 27 | 34 | |
| | | Ondeck | 6 | 19 | 25 | |
| North West | MIFACIG (Kolanuts) | Belo | 29 | 24 | 53 | 112 |
| | | Njinikom | 25 | 10 | 35 | |
| | | Fundong/Bafmeng | 14 | 10 | 24 | |
| Total | | | 104 | 109 | 223 | |

Source: adapted from Bikoe (2007)

Each AFTPs subgroup in each participating village is run by a team of five elected persons who occupy the positions of a president, vice president, secretary, financial secretary and marketing officer. Membership into each subgroup is conditioned by payment of a registration fee which varies from subgroup to subgroup. Also members are supposed to be producers or potential producers and for some groups members should reside in the village. The marketing officer has the responsibility of providing market information to group members. He ensures that members provide quality products during group sales, takes stock of individual member quantities available for group sales and serves as the major communication link between

traders and the group. He also leads the price negotiation process during group sales. The president coordinates general activities of the group and chair meetings. The secretary takes minutes during meetings and keeps administrative records. The financial secretary keeps financial records and the treasurer takes care of the groups' financial resources. The last two play important roles during group sales especially in the njansang group as they are responsible for paying each member after having received all payments from traders.

Encouraging group sales of members' produce was one of the major reasons for creating the kola and njansang sub groups within MIFACIG and ADEAC. The groups had other sub activities to accompany the marketing objectives of the selected AFTPs including, training on domestication techniques, development of harvest and post harvest technologies, and group dynamics.

### 3.3.2 Traders and trader groups

Traders involved in group activities are members of a social trader networks in Douala and Yaounde (for njansang) and Bafoussam, Bamenda and Kumbo (for kolanuts). Njansang traders were linked to the group activities of ADEAC farmers while kolanut traders were made to link with the producers of MIFACIG through consultations meetings after which both were interested to collaborate with each other. The linkage process was facilitated by SAILD, ICRAF and CIFOR.

## 3.4. Sample design

### 3.4.1 Sampling frame

The sampling frame for AFTPs producers in this study are members of MIFACIG and ADEAC who:

- belong to the AFTPs subsectors
- have taken part in at least one group sale
- are familiar with the activities of the group
- have witnessed negotiation, bargaining and buying activities of traders coming from Douala or Yaounde.

A total of 111 ADEAC farmers and 112 MIFACIG farmers constituted the sampling frame. A total of 22 traders constituted the sampling frame for kolanuts traders and 15 for njansang traders. These numbers included those that were familiar with the producers (MIFACIG and ADEAC) and their activities. These traders may not have been physically present for the group sale with any of the participating group but had at least taken part in meetings with

producers either in the village or during producer visits to the markets where they discussed prices and other quality issues. These traders must have participated in group sale by sending their money through another trader or physically took part in the sales.

### 3.4.2. Sample selection process

In each of the kola and njansang groups, members of the managing board were selected for interview. This because they were assumed to possess most of the information required for group sale activities and were actively involved in the bargaining and negotiation process. Besides the 5 members in the managing board in each subgroup (i.e. participating village) 5 other members were randomly selected from the register of each subgroup. This was to add the number of respondents and to complement information gathered from the managing board especially those regarding organisation of activities that some board members could have avoided such as assessment of the negotiation and bargaining power of the negotiation team in front of traders. Both board and none board members were asked the same questions and were not treated differently in the analysis. It turned out that some of the randomly selected members were absent and on most occasions the members available were interviewed. It also turned out that some members of the managing board were absent and could not take part in the interview. Their absence was related to trips to distant farms or to attend meetings out of the village. A total of 54 producers actually took part in the interview exercise. As concerns traders all those who actively travelled to the field for group sales were interviewed including those who sent their money. In total 17 traders took part in the interview exercise.

## 3.5. Data collection

Primary data were collected with the aid of a questionnaire carrying the measurement items derived from literature review and theory in the form of closed and open ended questions. Most of the questions concerning the theoretical variable known to influence successful market arrangements and transaction cost were developed using a five point Likert scale. Reverse items were used in some cases i.e the questions were asked in different ways. This was done so that the respondents could keep reasoning through out the interview process. Such score items were reversed in the analyses to be in the same direction so that all low scores mean the same thing and high scores the same. Opportunity was given to those respondents who expressed the need to provide comments on their answers to do so. Some of the Likert items had numerical choices ranging form 1= strongly disagree to 5= strongly agree. The mid point of this scale was 3 and all mean scores above 3 were considered to be in

agreement with the item and those below three were considered to be in disagreement with the item. Mean scores equal to three were considered as neutral in opinion to the item.

The questionnaires (Annexe 1) were originally designed in English and translated into French by a professional and certified translator and were later cross-checked for technical omissions. The English version of the questionnaires was revised by two academic experts and was later commented by a field practitioner in Cameroon. The English version was tested on 3 producers of another AFTP (*Irvingia gabonensis)* and who are familiar with group sale activities. Their comments helped in improving the questionnaire and later aided in developing a tool to be used for those producers who found it difficult to understand strongly disagree to strongly agree questions on a 5 point Likert scale. Such farmers were provided with 5 stones on which to base their judgements of the statements. Where five stones stood for strongly agree and one stone strongly disagree. Each interview lasted between 1h 15 minutes to 2 hours depending on the speed of understanding of the respondent. Though the questionnaires were in English and French, it was sometimes necessary to translate the questions into Pidgin English and the 'beti' language.

In answering the questions concerning buyer-seller relationships in group market arrangements, producers were asked to focus on a single and highly influential buyer or group of buyers and most of the time it turned out to be the traders in Douala, Yaounde and Bafoussam with whom they had had business relationship for some time. For traders they were asked to focus on the producers (ADEAC and MIFACIG producers) who sold to them as a group.

Secondary data were collected by consulting ICRAF and CIFOR reports. The producers' sale records and minutes of their meetings also served as sources of secondary data.

### 3.6. Description of variables

The variables described in this section are based on the conceptual frame derived to attain study objectives. The questions are grouped per category of variable. Theses include:

*Successful market arrangement*

As mentioned in the literature review section, many ways exist to measure success. The ones chosen for this study are based on successful market arrangements as described in our conceptual frame that include aspects of benefits and cost of selling in groups as compared to

the habitual mode of transaction (Verhaegen and Van Huylenbroeck 1999; Verhaegen and Van Huylenbroeck 2001; Banaszak 2008). It also include benefits derived from group sales measured in terms of price premium when selling in groups compared to other channels (Banaszak 2008) and lastly respondents perceived satisfaction of group sale activities (Sexton and Iskow 1988).

*Asset specificity-product differentiation*

Heide (1994) defines asset specificity as investments in physical or human assets that are dedicated to a particular buyer or supplier and whose redeployment entails considerable switching cost. In this study producers and traders asset specificity were measured based on an adaptation of scales provided by Joshi and Stump (1999). This deals with a description of specific asset investment in resources, procedures and people made by both parties in the transaction. Since very little or no investment is made in physical assets, asset specificity was measured in terms of time and efforts made by producers to acquire skills to process the AFTPs. In this study therefore product specificity was measured by producers' and traders' response to agree and disagree statements relating to time and effort invested to meet quality requirements which entails more time and careful processing techniques that otherwise would not have been required in their normal distribution channel.

*Production/supply uncertainty*

According to Lai *et al* (2004) uncertainty is a function of the ability to reliably predict future events that might create problems with information in the exchange. Production/supply uncertainty was evaluated based on producers' and traders' perception of price variability, the ease to determine product quality by observing which could lead to subsequent product loss and reduction of sales volume if that ease is lacking as well as the ease or difficulty to predict the quantity a buyer can buy or a producer can sell.

*Geographic complexity-site specificity*

Geographic complexity in this study relates to complications that results due to the specific location of the production villages in areas with bad roads, broken bridges and frequent road blocks resultant from fallen trees. In this case geographic complexity was rated based on the definition provided by Kaufman and Carter (2005). It deals with producers' and traders' perception of complication issues regarding negotiation and results to high transport of produce and agents, long travel time, ease or difficulties in arranging transactions, difficulties

in obtaining transport to assemble produce on agreed points for group sales by producers as well as efforts made by traders to travel to such complicated areas and to obtain transport.

*Perceived transaction cost*

In order to measure the perception of transaction cost involved in organising group sales between producers and traders the measures used by Pilling et al (1994) and further refined by Groover and Malhotra (2003) and Loader and Hobbs (1996) were adopted. In this regard the following were investigated: the effort required in searching for information on quantities, quality and prices, the effort required to develop the necessary skills through training to negotiate with each other, the efforts and time used during the group sales negotiation process, sharing of funds by group members and sharing of produce by traders and monitoring for opportunistic behaviours during group sales by both parties. They were asked to compare these items in a situation where they sell in group and when they use the normal channel.

*Trust*

Trust in this research was assessed on elements such as: honesty and benevolence as used by Kumar *et al.* (1995). Trust in a partner's *honesty* is the belief that a partner stands by its words, fulfils promised roles and is sincere. On the other hand benevolence is the belief that the partner is interested in the firms' welfare and will not take unexpected actions that will negatively affect the firm (Kurmar *et al*. 1995; Claro and Omta 2005). Producers and traders honesty were thus evaluated by assessing the extent to which both are honest, truthful and reliable with regards to certain transaction characteristics. Their benevolence was measured to capture the belief that both consider the welfare of each other.

*Commitment*

According to Morgan and Hunt (1994), operationalisations of commitment in marketing channels have generally included the desire to continue a relationship based on positive effect toward a partner. This was measured by adapting scales proposed by Kumar et al. (1995). Specifically producers and traders answered questions related to their desire to continue trading with same partners even if others exist due to their positive effect on them.

*Mutual dependence*

Heide and John (1988) report that the inability of a firm to replace its partner is often considered a measure of dependency. In this research dependency was measured by adapting

the scales used by Kumar *et al.* (1995) and Storer *et al*. (2002). This aspect measured the perception of both parties as to the importance of given traders and producers group to the continuity of collaboration, the availability of alternative buyers for producers and alternative producer groups for traders and the ease of replacing a partner and establishing trust with a new partner.

### 3.7. Data Analysis

*Descriptive and statistical data analysis*

The data for this study were entered using SPSS version 16. The first analysis consisted of descriptive statistics in order to have a comprehensible profile of the sample. Descriptive statistics was generated for gender, age, experience in business, education and numbers of years in AFTPs group activities.

Since the njansang and kola groups seem to differ with respect to the number of group sales and the fact that the njansang group continued group sales after project withdrawal they were considered a successful group and the kola group was considered unsuccessful. In this regard, Mann-Whitney U test was used to compare if the mean ranks for one group differed significantly from the other. This was important in identifying those points for which the njansang group considered successful differed from the kola group considered to be unsuccessful.

#### 3.7.1. Answering research questions

In answering the question about the sources of transaction cost between producer groups and traders the group sales process was first described then respondents' perception of sources transaction cost involved in organising group sales were compared to door-to-doortransactions. To better visualise how this is incorporated in the AFTPs group sales arrangements, the scores are integrated in the description of the njansang and kola group sales procedure in the result section.

To answer the question if perceived benefits of group sales were higher than the cost, respondents were asked directly to give their opinion to this.

In the literature review and the conceptual frame work sections different definitions of success as used by different authors (Bruynis *et al.* (1997); Sexton and Iskow (1988); Moustier

(1998); Pngali *et al.* (2005)) were presented. In answering the research question about factors that affect market arrangements between producer groups and traders the price premium was first used as proposed by Banaszak (2008) that is the difference in price between sales contracted through the group and what they would have obtained if they used the habitual channel. This was calculated for both the kola and njansang group after which the values were compared to verify if the group with the highest premium was the group described as successful or unsuccessful.

Later in the process respondents' perception of satisfaction of group sale activities were used to measure success. In this case it was assumed that if producer groups receive a better price premium and they are satisfied with the prices they receive as well as purported benefits of group sales then they will want to continue to collaborate with the traders. In this regard, commitment was taken as one of the measure of success. Responses of both the kola and njansang group were compared to identify points where both differ and which could influence the outcome of market arrangements between producers and traders. To further investigate the factors affecting market arrangements other set of direct questions were asked to identify factors that hinder successful market arrangements. As such respondents were purposely asked to asses which factors they perceived from a list provided to them hinders successful market arrangements between producers and traders. The factors were chosen based on the transaction cost economics as well as literature. The factors with the highest mean scores or mean rank scores were considered to be the most influencing factors.

### 3.7.2 Factor analysis

Since respondents perceived satisfaction are considered as a measure of success and given that a long list of items to measure success based on satisfaction were used, an exploratory factor analysis was performed on the list of items. The objective was:

- to reduce the long list into a more meaningful number (factors) that can be used for further analysis
- to identify if the factors that will emerge from the analysis will group those variables for which the respondents were satisfied and those for which they were not satisfied
- to verify if the kola and njansang group differ with respect to the identified factors

The hidden components from the factor analysis were used to confirm the identified factors of success that emerged when comparing both groups.

A number of items were eliminated because they did not respect the Kaiser–Meyer Olkin measure of sampling adequacy (MSA) which provides a measure of the extent to which the initial items, belong together and could be considered for factor analysis. MSA lies between 0 and 1 and is unacceptable if the value is less than 0.5. Items for which the MSA value was unacceptable were eliminated Janssens et al. (2008). Others were eliminated because it was difficult to distinguish if they loaded high into one or another factor. Janssens et al (2008) recommend that besides statistical and practical significance items are only suitable for interpretation of a factor result if their loading on one factor is at least 0.75 and no more than 0.25. Otherwise, the relationship between the factor and the variable is considered not to be sufficiently exclusive. Such items that load high on two factors are also eliminated in subsequent analysis. The Kaiser criterion was used to determine the number of factors by only retaining those for which the Eigenvalue was greater than one. The results were interpreted based on the varimax-rotated factor loadings.

Factor analysis was also performed on the element used in measuring trust to identify if the items of benevolence and honesty actually load on the same factors and which items of these two constructs could best be used to define trust between producers and traders of the AFTPs. The procedure of factor analysis used in this study is elaborated in Janssens *et al.* (2008).

### 3.7.3 Linear correlation analysis

To answer the research question of whether trust plays a role in AFTPs producer groups and trader market arrangement, a bivarate correlation analysis was performed between the items used in measuring producers' commitment to continue the relationship with the major buyers and the two factors of trust (honesty and benevolence) derived from factor analysis. The items used in measuring commitment were used as proxy for successful market arrangements and dependent variable while honesty and benevolence were used as independent variables.

The Spearman's rho, is recommended for testing the correlation coefficient between two variables that are non metric and do not respect the normal distribution (Malhotra 2004). The statistical significance of the relationship between two variables is stated as follows:

Ho: there is no significant linear relationship between items of commitment and trust

A statistical significant correlation coefficient in the range $0 < r \leq 0.3$ is regarded as a weak correlation; $0.3 < r \leq 0.6$ is regarded a weak correlation; a correlation coefficient $0.6 < r \leq 1$ is regarded as a strong correlation while a correlation coefficient of 1 is regarded as a perfect correlation.

# Chapter 4: Results and Discussions - Group sales and Transaction costs

## 4.1 Socioeconomic characteristics of respondents

Out of the fifty four farmers interviewed in this study half of them were kolanuts producers and belonged to the MIFACIG main group and the other half were njansang producers belonging to ADEAC. Of the twenty seven kolanuts producers, 73 percent were men while the remaining proportion was women. For njansang producers 53 percent were women and the rest were men. With regards to traders, out of the seventeen interviewed, seven were men while ten were women. There were more men (75%) in the kola business compared to women. The majority of njansang traders interviewed (71%) were women. It was observed in the markets visited that a majority of the male kolanuts traders performed wholesale activities. On the other hand all of the njansang traders were retailing besides performing wholesale activities while the male njansang traders only performed semi wholesale and wholesale activities.

The average age of the producer respondents was 49 (+/- 10.6) years while that of traders was 39 (+/- 8.6) years. A majority of both male (41 %) and female (51 %) producers are in the 30 to 49 age group. Seventy percent of the traders were also within this age group (table 4.1). They may thus be considered young and energetic to carry on the business of production and selling.

Table 4.1: Distribution of respondents according to age group

| Age group years | Kolanuts farmers | | Njansang | | Traders | |
|---|---|---|---|---|---|---|
| | Number | Percentage | Number | Percentage | Number | Percentage |
| < 30 | 1 | 4 | 0 | 0 | 2 | 12 |
| 30 - 49 | 9 | 37 | 14 | 54 | 12 | 70 |
| 50 - 59 | 10 | 42 | 9 | 34 | 3 | 18 |
| = > 60 | 4 | 17 | 3 | 12 | 0 | 0 |
| Total | 26 | 100 | 26 | 100 | 17 | 100 |

Source: survey data

Of all the respondents who declared their educational levels, only one farmer and one trader had not been to school. About 60 percent of the farmers interviewed had attained primary education compared to a comparatively lower proportion of traders a majority of whom (59

%) had been to secondary school. While no farmer dealing in njansang had been to a high school or university 15 percent of kolanuts traders reported they had attained this level (table 4.2).

Table 4.2: Distribution of respondents according to level of education

| Education | Kolanuts framers | | Njansang farmers | | Traders | |
|---|---|---|---|---|---|---|
| | Number | Percentage | Number | Percentage | Number | Percentage |
| Never been to school | 1 | 4 | 0 | 0 | 1 | 6 |
| Primary education | 15 | 58 | 16 | 62 | 4 | 23 |
| Secondary education | 5 | 19 | 10 | 38 | 10 | 59 |
| High school | 3 | 11 | | 0 | 2 | 12 |
| University education | 2 | 8 | | 0 | | |
| Total | 26 | 100 | 26 | 100 | 17 | 100 |

Source: survey data

Of the 54 kolanuts and njansang producers in the study, a majority (70%) have been members of the kola and njansang group for between 5 and 6 years. Another 27.8 percent had been members for between 3 and 4 years, while membership of between 1 and 2 years was recorded for 1.8 percent of the respondents. Survey results also indicate that for both kola and njansang producers more than 70 percent of them had fewer than 10 years of marketing experience (table 4.3). This means that most of them started marketing activities only after they were encouraged to unite their efforts to market the products as a group in the year 2003.

Table 4.3: Producers' experience in business

| Experience in business ( years) | Kolanuts farmers | | Njansang farmers | |
|---|---|---|---|---|
| | Number | Percentage | Number | Percentage |
| Less than 5 years | 6 | 23 | 10 | 39 |
| 5-10 years | 16 | 62 | 10 | 38 |
| More than 10 years | 4 | 15 | 6 | 23 |
| Total | 26 | 100 | 26 | 100 |

Source: survey data

A comparably lower percentage of producers (15% for kolanuts and 23% for njansang) declared having more than 10 years of marketing experience which means that they had been

selling the product before the group sales activities were introduced to them. For the traders, average number of years in business is 11.2 (+/- 5) years.

## 4.2 Traders' association

Little information exists on traders' group or how AFTPs traders unite their efforts to meet their business objectives. This section of the report attempts to provide information on how traders organise themselves to collaborate with the organised producer groups. This section also throws light on what producers and traders think of such an association. This kind of information can be used to further understand the main section of this thesis that is building long term relationships between producer groups and traders and/or their association.

### 4.2.1. Origin of traders association

Discussions with ICRAF and CIFOR staffs together with other development actors that initiated the linkage arrangements between producer groups and traders, revealed that assisting traders to unite their efforts to buy from producer groups was necessary because it was believed that a single trader may not have enough capital to buy huge quantities mobilised by the producer groups. Also, it was thought that working with traders association, farmers could have a choice of traders who could at any time organise themselves to buy from the producer groups either as individuals or as a group. By so doing producers will be sure of a ready market and traders on their part will reduce search cost and time spent on the field to secure produce.

To meet this objective traders in major kola and njansang markets in Douala and Bafoussam were contacted and were made to familiarise themselves with the activities of the producer groups through consultation workshops during which the objectives of collaboration were explained to both parties. During such meetings the traders informed the producers on quality norms and provided practical guides on how to meet the required standards where necessary. The selection of traders was based on their purchasing power, their willingness to cooperate in the project, familiarity with the production zones and previous participation in research activities. For example, it happened that at the time of inception of the group marketing initiative, the njansang traders were already working together and with CIFOR researchers through a network of traders that supplied market information on non timber forest products to CIFOR. However, this group never saw the importance of working as a group to attain

business goals like joined transportation and purchases to reduce transaction costs. Their non association for business purposes could be affirmed by results of this study which indicate that 82 percent of njansang traders had never initiated any joined activities with other traders before. The remaining 18 percent said that it may have happened that by chance they pay a common transport or a partner sends his money via another to secure produce for him or her in a given producer village. It was easy to link this trader group to the njansang producers since they were already used to attending meetings with CIFOR researchers. The group had about 15 members all selling njansang in the Yaounde and Douala markets, the two biggest cities in Cameroon.

For the kola traders, the intention to link them to producers facilitated the creation of the Kolanuts Traders Association (KOTRA) which today counts about 22 registered members and the group is also registered as a common initiative group (CIG) under the 1992 law of cooperatives and common initiative groups in Cameroon.

### 4.2.2. Producers' and traders' opinion on a trader association

To further enrich the literature on traders association and their importance in facilitating linkages with producers, the opinion of both traders and producers as to the necessity of such an endeavour was sorted. All the traders answered that it is important for them to form an association. Results also show that 71 percent of the producers interviewed think that it is important for traders to join a group and another 29 percent argued that it is not relevant as facilitating traders association will favour curtail which will lead to the traders offering lower prices.

The traders who answered yes that it was important for them to associate were further asked to give reasons (multiple responses were possible) why they think such an association is important. A number of reasons and the frequency of citation are listed in table 4.4. The most recurrent ones are: strong bargaining power for the traders, quick and easier access to information on supply sources and the ease to offer low prices to producers all of which were cited 5 times. If the strong bargaining power is interpreted as bargaining for a lower price then it may be said that price reduction is one of the major reasons advanced by traders to form associations. This matches with the opinion of the producers who think that trader associations are not desirable. Their reasoning can be interpreted to mean that when the traders form an association, competition is reduced. In the same line of thinking Hobbs (1995)

reported that when the number of traders in auction sales are few, it increases prices uncertainty for the producers as they are afraid that buyers may collude to offer lower prices. In responding to the advantages of forming a trader association, the major reasons advanced by farmers is that it will facilitate their negotiations with the traders because as a group, the traders will be able to mobilise enough capital to buy large quantities assembled by the producer groups and in this case it lowers the time each trader will negotiate with the group and the time the group will negotiate with each trader.

Table 4.4: Reasons advanced by traders for forming traders group for business purposes

| **Reasons advanced by traders** | **Number** | **Percent of respondents** |
|---|---|---|
| Strong bargaining power | 5 | 29 |
| Facilitates access to information | 5 | 29 |
| Buying at a lower price | 5 | 29 |
| Reduces time spent on the field to secure produce | 4 | 24 |
| Facilitates access to loans | 3 | 18 |
| others | 6 | 36 |
| Total | 28 | 165 |

Others include: defend the interest of producers, learn from others, sell at a higher price and reduce market gluts.
Source: survey data

### 4.3. Group sales

One of the objectives of this study is to identify the sources of transaction costs in market arrangements between producers and traders in the AFTPs sub sector and analyse the relevance of group sales as the most appropriate form of collaboration between AFTPs producers and traders able to reduce the identified transaction costs. This section therefore describes the group sales process and how it differs from the usual form of exchange. Respondents' mean scores and mean ranks comparing their perception of various transaction cost identified in literature are used for this assessment. Later on, the attributes of the transaction (asset specificity, site specificity and frequency) are used to asses the relevance of group sales as the best governance structure to overcome identified transaction costs.

### 4.3.1. General description of group sales

Group sales as practised by AFTPs producers and traders is the process whereby a producer group assembles the produce of its members and invite traders from urban markets to purchase it. In most cases forward contracts as defined by Hobbs (1995) are applied. In the forward contracts prices are agreed ahead of time or an indication of the price in the neighbourhood of which both parties will agree is given by both the producers and the traders. This may be arranged on the phone before the traders leave for the supply village or the marketing officer of the producer group could travel to the urban markets for preliminary negotiations. Negotiation on the market day is the responsibility of the marketing officer, a member of the executive bureau and a floor member. In case a member does not agree with the bargained price he/she is free to take his/her produce home but members are not allowed to sell as long as the group has not agreed on a comfortable price with the traders. Refusal to sell through the group was not recorded amongst the njansang producers but was a general practice amongst the kola farmers.

Price is not the only thing that is negotiated. One of the reasons for forming the marketing groups is to force traders to use more objective measuring units compared to the arbitrary measures used during door-to-door transactions. In this regard the measuring unit is often a source of conflict in the group sales negotiation process. The farmers and traders have to agree whether to use measuring cups or scales (kilograms) and if it is the farmer or the trader who will measure. This therefore increases negotiation cost during group sales compared to door-to-door transaction. Surveillance systems are often developed by both producers and traders to make sure one party does not cheat upon the other. Quality is an important issue that is checked during group sales. The marketing officer does this and rejects all the products that do not meet the required standard. The traders on their part organise themselves by mobilising enough capital to buy the proposed quantity announced by the producer group.

After all the necessary agreements have been reached, each farmer's produce is measured separately and the quantity, together with the corresponding monetary value is recorded. For the njansang group the total amount of produce bought is summed at the end of the process and the money is paid to the treasurer of the group. The president again supervises this payment process. The marketing officer and the treasurer are expected to share the money to each farmer under the supervision of the president. If a member owes money to the group (e.g. monthly contribution) this amount is immediately deducted. Because there is huge

variability in quality of kolanuts the procedure of payment here is generally different. After measuring the kolanuts of a group member, traders pay directly to the individual. Although members are paid individually the group initiative helps in the sense that the marketing officer assists the farmer in deciding to which quality standard the kolanuts belong and the price for each grade is fixed by the group and not by the individual.

Information from both groups revealed that by April 2009 each of the three participating villages of ADEAC (Nkolobodou, Ondeck, and Epkwassong) had succeeded in organising 4 group sales each and the 5$^{th}$ was being programmed for June 2009. It is worth mentioning that the sales are organised once a year after each harvest. In the kola group just two of the participating villages Fundong and Njinikom had succeeded to organise a group sale (two in Fundong, one in Njinikom and none in Belo). It was reported that all the group sales in the kola zone occurred with a lot of difficulties and some farmers did not sell or were disgruntled with the selling price and some even abandoned their harvest on the market place because it was strenuous taking the kolanuts back home. The first two sales in both the kola and njansang groups were with project assistance whereby traders and producers were assisted in the negotiation processes. Financial assistance to cover the 'head transport' (a seat in the car) was part of the assistance given to the traders.

The njansang group leaders revealed that after project withdrawal they have been able to organise sales in 2007 and 2008 either with the same traders or some new ones. The new traders were contacted after efforts to continue with the previous ones failed. The reason for failure pointed out by the traders was that producers were not willing to bear the complications of transporting the produce from the villages to a possible market outlet as was agreed upon. Producers mentioned that the traders on their part were not willing to bear the cost of transport over bad roads this time around because previous sales had often taken place in the village.

In the kola groups, attempts to sell as a group after project withdrawal failed despite their willingness to continue the process. The main reason advanced by both the kolanuts producers and traders is that they could not agree on the selling price. In addition to this some traders in explaining their responses are of the opinion that the kolanuts farmers did not meet the quality requirements.

Survey results indicate that of the 54 kolanuts and njansang producers interviewed, 96.3 of the njansang producers sold their 2007-2008 harvest through their group while a comparatively lower proportion (8 %) of kolanuts farmers did same. It was reported that the lone farmer in the njnasang group who sold out of the group had serious financial problems and was forced to sell before the market day by taking his produce to Yaounde.

Based on the above reasons the njansang group is considered a successful group in this thesis while the kolanut group is considered unsuccessful. In this regard in some parts of the results the responses of both groups will be compared.

### 4.3.2. Comparing transaction costs in group sales arrangements and door-to-door buying

To better appreciate the changes in transaction costs between the former mode of transaction (door to door) and when the farmers sell in group, the transaction costs were divided into more tangible forms following the framework developed by Loader and Hobbs (1996) and presented in table 2.1 of the literature review section.

*Information cost*

Before the group initiative was introduced in the production villages, about 31 percent of the producers were informed of market prices together with demand and supply conditions through traders who occasionally ply the production villages to buy. About 24 percent had their information through personal visits to the markets. Seventeen percent of the farmers were informed by their peers. The rest had varied sources amongst which include NGOs (11%), newspaper (6%) and radio (4%). However 7 percent declared that they had no information because they were not trading in the product and it was of little concern to them. The question asked is what did they actually spend in getting this information? It may be difficult to answer because those who bought newspapers declared they did not buy them with the specific purpose to get information on prices. Nonetheless close to 72 percent of the respondents confirmed that through joining the group having information about the market (prices and quantities) has become easier or much easier, while a smaller proportion (15%) thought the contrary and 13 percent observed no change (table 4.5). This means that producers perceived lower transaction cost to access market information (mean scores less than 3) in group sales compared to door-to-door buying.

Those who said that access to information about prices has become difficult or much more difficult explained that initially traders used to come to the area to buy and would inform them of market prices but with group sale those trader no longer come. The reason why a majority perceived access to information on prices as lower can be explained by the fact that the marketing officer collects information and shares this with other members of the group. As such group members are surer of the quality of information and also have a more confident base to bargain their prices unlike when the traders used to give them. Though this means lower transaction costs for the individual farmer it however implies higher transaction costs for the group.

Table 4.5: Producers' opinion about transaction costs in group sales

| | **much more easy** | **easy** | **same** | **difficult** | **much more difficult** | **Mean scores and mean rank kolanuts N= 27** | **Mean score and mean rank njansang N = 27** | **Mann Whitney U Z-value P-value** |
|---|---|---|---|---|---|---|---|---|
| Improved market access | 12 | 26 | 7 | 6 | 2 | 2.10 | 2.3 | -1.06 |
| | (23) | (49) | (13) | (11) | (4) | **24.90** | **29.60** | 0.289 |
| | strongly disagree | disagree | neutral | agree | strongly agree | | | |
| Increased time negotiation/organisation | 1 | 9 | 1 | 29 | 12 | 3.60 | 4.00 | -1.43 |
| | (2) | (17) | (2) | (56) | (23) | **23.70** | **29.00** | 0.15 |
| Increased search efforts | 3 | 8 | 2 | 29 | 10 | 3.40 | 3.80 | -1.14 |
| | (6) | (15) | (4) | (56) | (19) | **24.00** | **26.60** | 0.26 |
| | very satisfied | satisfied | neutral | dissatisfied | very dissatisfied | | | |
| Mode and speed of payment | 9 | 25 | 3 | 15 | 0 | 2.60 | 2.20 | -1.14 |
| | (17) | (48) | (6) | (29) | (0) | **28.80** | **24.40** | 0.26 |
| | much more lower | lower | same | higher | much more higher | | | |
| Rejection due to quality | 5 | 26 | 8 | 8 | 6 | 3.00 | 2.40 | -1.06 |
| | (9) | (49) | (15) | (15) | (11) | **29.10** | **29.40** | 0.29 |

**Source: survey data**

**Mean rank scores in bold**

**No significant differences were observed in the mean ranks for MIFACIG and ADEAC**

*Negotiation and organisation cost*

About 79 percent of the producers agreed or strongly agreed that they spend much more time to negotiate and organise group sales compared to other channels (table 4.5). A better understanding of why negotiation cost increases can be read in the section describing the group sale process (section 4.1). Other reasons can be related to the point that eventhough in individual sales the trader and the producer have to bargain, the process was described as more complicated in group sales as negotiations have to be longer because there are more persons involved which may lead to arguments amongst group members when there is disagreement on sales conditions.

Organisation cost pertains to difficulties to share proceeds from the sales especially for the njansang group that centralised payment (that is the traders pay to the group treasury). It was thought that farmers might be disappointed with the mode of payment since they have to wait to receive their money until the sales are over and calculations are made. Contradictorily a majority (65%) was very satisfied or satisfied with the mode and speed of payment and only (28%) admitted to be dissatisfied (table 4.5). When compared to individual sales through door to door, payment during group transaction takes more time. It can therefore be concluded that according to producers, eventhough organisation cost increases during group sales the method was appreciated by a majority of them.

*Search cost*

About 75 percent of the respondents agreed or strongly agreed that selling in group requires additional effort to search for traders who can buy huge quantities. Though the producers were linked with an organised group or a network of traders they reported that they have to make several phone calls to actually confirm their participation to avoid that farmers mobilise their harvest and the traders do not turn up. Calling the traders means that the marketing officer travels to a near-by village where there is telephone network. Sometimes producers may have to travel to the markets to personally talk with the traders to confirm their participation. During such visits the producers reported that they exploited the opportunity to find new buyers who could have enough purchasing power to buy from them. All the kolanuts farmers considered that it was difficult to find a new buyer. The least score given for the item measuring the difficulty to find new buyers was three which stood for a problem. The njansang producers had divided opinion as 44 percent considered finding a new buyer a minor

problem or not a problem at all and 54 percent considered it to be a relatively significant or major problem.

In door-to-doorbuying the producer stays at home and a few traders come to buy. The problem with the door-to-doortransaction is that the producer remains in a situation of doubt not knowing when the trader will come. The advantage of the group sale is that such uncertainty is reduced as the producers can make market arrangements with the traders when they are in need of money or when prices are high in the market. However the fact the producers never used to pay anything to get information on traders and the fact that they emphasised on the complication of finding a trader with enough capital to buy from the group makes the search cost an additional cost.

*Control Cost*

The rate of rejection during group sales, compared to the normal form (door to door) was rated as much lower or lower by a majority (close to 59%) of the respondents while 15 percent think it is the same. This implies a lower control cost during group sale. Though differences existed in the mean ranks of the responses between the kola and njansang group, these differences were not statistically significant. This is however strange for items related to quality as results showed that kolanuts are more subjected to stringent quality measures compared to njansang.

Based on the above analysis on transaction cost it can be concluded that producers perceived that search, negotiation and organisation costs during group sales are higher compared to door-to-door transactions while information and control costs are perceived as lower. If each higher score is given a value of one and a low score a value of zero, this ends with a total of three on five indicating that perceived transaction costs during group sales are higher than transaction costs during door-to-door transactions.

### 4.4. Suitability of governance structure

As mentioned in section 2.3.2 of the literature review, Williamson (1993) identifies three attributes of a transaction that influence transaction cost and their relationship with the type of governance structure. In order to investigate if a transaction between producer groups and traders is the most appropriate governance structure the transaction is first characterised based on asset specificity, uncertainty and frequency of the transactions.

### 4.4.1. Asset specificity measured in terms of quality of produce

One aspect on which traders working with AFTPs producer groups insist on is quality products. Hobbs and Young (2001) argue that when sellers differentiate their produce to meet the specific requirements of a buyer, it makes the transaction complex and requires specific investments in terms of new skills and knowledge which means human asset specificity. Producers' investment in skills and knowledge to supply specific products to their buyers compared to supplies made through other channels were assessed by three items and their responses were as follows (table 4.6). About 68 percent of the producers either strongly agreed or agreed that the traders with whom they collaborated in the group market arrangements had specific quality requirements they must meet, which otherwise wouldn't have been possible in other channels. Another 64 percent strongly agreed or agreed that they had spent more time to meet the quality requirements of the traders compared to other channels and lastly, close to 81 percent strongly agreed or agreed that they have spent considerable time to be trained to meet the requirements of the traders.

Table 4.6: Asset specificity interpreted in terms product characteristics - product quality

| | **strongly disagree** | **disagree** | **neutral** | **agree** | **strongly agree** | **Mean scores & mean ranks kolanuts N= 27** | **Mean scores and mean ranks Njansang N= 27** | **Mann Whitney U Z-value P-value** |
|---|---|---|---|---|---|---|---|---|
| Traders insists on higher quality products | 6 | 9 | 2 | 22 | 14 | 3.90 | 3.10 | -2.19 |
| | (11) | (17) | (4) | (42) | (26) | **31.50** | **22.70** | 0.03** |
| We spent more time to process product to meet quality standards | 5 | 14 | 0 | 24 | 10 | 3.80 | 2.90 | -2.49 |
| | (9) | (26) | (0) | (45) | (18) | **32.00** | **22.00** | 0.01** |
| Have spent considerable time to be trained to meet quality standards | 3 | 7 | 0 | 28 | 15 | 4.30 | 3.40 | -3.09 |
| | (6) | (13) | (0.0) | (53) | (28) | **33.00** | **21.00** | 0.00*** |

Percentages are in parenthesis
Mean rank scores in bold
Mann Whitney U test: Significant at 1% = *** Significant at 5% = ** Significant at 10 % = *

Significant differences were observed in the mean ranks for all the items used in measuring asset specificity between the two groups of producers (table 4.6). Kolanuts producers had higher mean ranks compared to njansang producers. This indicates a higher degree of skills and knowledge to meet the quality requirements for kolanuts. Kolanuts producers explained

that in order to supply the required quality, sorting begins from the farm when the fruits are harvested. They endeavour to sort broken pods from those intact. This is to avoid mixing kolanuts that may be attacked by weevils with those free from weevils. This knowledge they said was acquired through participatory research between the kolanut producers and researchers which showed that kolanuts harvested with broken pods were easily attacked by weevils compared to those from intact pods.

In the cleaning and drying process of the kolanuts the producers made sure that both qualities (broken and intact pods) are separated. In addition to this, they had to sort the large, medium and small nuts to suit the standards fixed by the kolanuts traders. All these, they said is not done when they sell through the normal channel. In case they miss to sell to the traders with whom they agreed to go through this process it will be difficult to find another trader who will be willing to match price to quality. This means that the kola producers try to maintain recognition by supplying high quality kolanuts so that the buyers with whom they have agreements can pay higher prices for the quality supplied.

The quality of njansang is determined much more by the colour and the size of the kernels which are easy to observe at the time of sales. The colour of the njansang is determined by the processing technique. When boiled for too long it leads to reddish brown, a quality trait appreciated in the Douala market. When boiled for a short period it takes a light brown colour which is appreciated in the Yaounde markets. Another quality norm is that only full kernels should be supplied for sale. Njansang may be dried on fire or in sunlight. The former leads to bad quality kernels which must be avoided during group sales.

### 4.4.2. Site specificity-geographic complexity of production villages

Producers' perception of the geographic or site specificity were measured by producers responding to questions dealing with complications of the flow of the purchased items from the production villages to urban markets as well as from their homes to the agreed place of group sale. About 87 percent of the respondents strongly agreed or agreed that traders who travelled to the production villages to buy from them made tremendous efforts to overcome roads and other geographic related complications (table 4.7). A majority (close to 70 %) strongly agreed or agreed that the nature of the roads complicated their negotiations with traders and has put them on the loosing side to accept lower prices offered by the traders. In addition, about 64 percent of the respondents strongly agreed or agreed that transporting the

produce to the agreed place of transaction was a major problem limiting group sale. Although transportation cost is often considered a physical cost of marketing, Hobbs (1995) argues that it can be considered as a transaction cost if it represents the cost of using a particular marketing channel. In door-to-door transaction producers do not incur any transportation cost as transactions are done at the door step. Based on this it can be concluded that a majority of producers perceive geographic complexity of their areas as high which leads to increased complications and transportation difficulties i.e. high transfer cost.

Table 4.7: Site specificity-geographic complexity of production villages

| | **strongly disagree** | **disagree** | **neutral** | **agree** | **strongly agree** | **Mean scores & Mean ranks Kolanuts N=26** | **Mean scores and mean ranks Njansang N=27** | **Mann Whitney U Z-value P-value** |
|---|---|---|---|---|---|---|---|---|
| Traders make great effort to travel to this village | 1 | 4 | 2 | 29 | 17 | 3.80 | 4.30 | -2.13 |
| | (2) | (8) | (4) | (55) | (32) | **22.90** | **31.00** | 0.03** |
| Nature of roads/bridges complicate negotiations | 6 | 10 | 0 | 17 | 20 | 2.8 | 4.50 | -3.83 |
| | (11) | (19) | (0) | (32) | (38) | **19.10** | **34.60** | 0.00*** |
| Transportation to agreed place of transaction is a major problem | 5 | 11 | 3 | 20 | 14 | 3.90 | 3.11 | -2.25 |
| | (9) | (21) | (6) | (38) | (26) | **31.70** | **22.50** | 0.02** |

Percentages are in parenthesis
Mean rank scores in bold
Mann Whitney U test: Significant at 1% = *** Significant at 5% = ** Significant at 10 % = *

Significant differences were observed between the mean ranks of kolanuts and njansang producers. Njansang producers had higher mean ranks (31.0) for statements regarding the efforts made by traders to overcome the bad roads. They also had higher mean ranks (34.6) on the item measuring the bad nature of their roads i.e. they considered the nature of their roads as much of a problem compared to kolanuts producers.

On the other hand, kolanuts producers had higher mean ranks (31.7) for the statement that transporting the produce to the required market place is a major problem limiting group sales. This can be explained by the fact that kolanuts traders had to travel from far away distances (radius of between 11 to 45 Km) to the agreed market place whereas members of the njansang group lived closer to the agreed market place. If the njansang group is considered to be more

successful it could be that besides other factors, distance to the market place has a greater negative effect compared to the nature of the roads as determinants of site specificity and consequently group sales.

Although producers do not incur transportation cost during door-to-door transactions the nature of the roads however increases uncertainty of whether a buyer is coming to buy or not. With group sales such uncertainties are reduced as both buyers and traders make market arrangements and agree on a fixed market day.

It can be concluded that the kolanuts and njansang producer groups sales arrangements with traders are characterised by product specificity (the need to supply quality products), human asset specificity (skills required to produce quality products) and site specificity (complications to transport produce). Also it can be said that while the asset specificity of kolanuts group is influenced by transportation to the agreed market place and the product characteristics (difficulty to meet quality norms) that of njansang group are more influenced by uncertainties arising from the nature of the roads and bridges.

As described in the literature review section as specificity increases, transactions costs are reduced if, the governance structure moves away from the markets to the hybrids. This means that strategic alliances between AFTPs producer groups and traders through market arrangements are necessary to overcome high transaction costs that result from the specific nature of the transactions in kolanuts and njansang group market arrangements.

### 4.4.3 . Production-supply uncertainty

About 71 percent of the producers affirmed that it was very difficult or difficult to determine the quantity of produce they can supply to the buyers for any group sale. About 53 percent of the respondents declared that it was either very difficult or difficult to determine the quality of the product by simple observation.

Significant differences were observed in the mean rank responses of both groups of producers for questions related to determining quality by observation as well as questions related to fluctuating prices. Mean ranks of kolanuts producers were lower than that of njansang producers. This suggests higher uncertainty that results from fluctuating prices and quality

exigencies for kolanuts compared to njansang (table 4.8). The explanation given by kolanuts farmers with regards to the relationship between quality and quantity is that quantity to be supplied can greatly be reduced by hidden quality traits. For example they explained that since it is difficult to determine if their kolanuts have been attacked by weevils, they can communicate that 10 baskets of kolanuts will be supplied on the market day. But on the eve of the market it is not unusual to discover that half or all of the kolanuts have been attacked by weevils.

Also a farmer may be unlucky that a trader upon tasting the kolanuts picks one that is slippery amongst the lot. In such a case it is difficult to convince the trader that the remaining thousands are of good quality. The traders use such opportunities to offer lower prices or refuse to buy at all, especially if there is abundance. This is dangerous as it increases opportunistic behaviours of traders and thus transaction costs. It can thus be said that based on producers' perception, the selected AFTPs are characterised by high uncertainty which increases negotiation cost during group sales and thus transaction costs.

Table 4.8: Production-supply uncertainty

| | **very difficult** | **difficult** | **same** | **easy** | **very easy** | **Mean scores & Mean ranks Kolanuts N=26** | **Mean scores and mean ranks Njansang N=27** | **Mann Whitney U Z-value P-value** |
|---|---|---|---|---|---|---|---|---|
| Ease/difficulty to determine quantity for group sale | 8 | 30 | 2 | 10 | 3 | 2.20 | 2.60 | -1.43 |
| | (15) | (57) | (4) | (19) | (6) | **24.30** | **29.70** | 0.15 |
| Ease/difficulty to determine quality by observing | 9 | 19 | 1 | 13 | 11 | 2.30 | 3.50 | -2.83 |
| | (17) | (36) | (2) | (25) | (21) | **21.10** | **32.70** | 0.01** |
| | very fluctuating | fluctuating | neither fluctuates nor stable | stable | very stable | | | |
| Product prices | 13 | 27 | 1 | 11 | 1 | 1.80 | 2.70 | -3.09 |
| | (24) | (51) | (2) | (21) | (2) | **21.00** | **32.90** | 0.00*** |

Percentages are in parenthesis
Mean rank scores in bold
Mann Whitney U test: Significant at 1% = *** Significant at 5% = ** Significant at 10 % = *

The situation whereby traders take advantage of fluctuating prices and quality traits to offer lower prices compared to what was initially agreed has been characterised by Hobbs (1995) as

opportunistic recontracting (i.e the purposeful non honouring of a contractual arrangement for economic gain). She further argues that opportunistic recontracting can best be handled through strategic alliances between buyers and producer groups provided such an arrangement can reduce the risk of opportunistic behaviours. Increased bargaining power of farmers relative to traders is identified as the major element to overcome such opportunistic behaviour especially if the group can assure continuous supply.

This opinion is supported by the transaction cost theory which states that high level of uncertainty calls for a forum through which actors in the AFTPs value chain can discuss various possible outcomes and take necessary precautions. This thus justifies the use of producer groups and traders market arrangements as one of such forums.

### 4.4.3. Frequency of the transaction

One characteristic of the transaction between the AFTPs producer groups and traders in this study is that the transaction occurs once in a year. This does not give the possibility for producers and traders to develop trust that is expected to reduce monitoring and control costs amongst the trading partners. The nature of the roads make the transactions between producer groups located in areas with very bad roads and bridges to be very specific because traders travelling to such areas need to overcome the hurdles of the roads including broken bridges.

The transaction cost theory advises that in such a situation trilateral governance is required and the role of the third party (public or private) is to resolve disputes and evaluate performance (table 2.3 in chapter 2). In the context of the AFTPs producers and traders studied, in the absence of a governmental body, this calls for the intervention of NGOs to follow the link between producer groups and traders. The question however is to what extent can the NGOs support such a process and who pays for the coordination. The role of the NGOs can be seen in the explanation of some of the traders who criticised ICRAF and partners approach by claiming that it is too early to think that, the producers-traders market arrangements can run on their own. They also said that it will be difficult for them to bear complications of bad roads without external support.

## 4.5. Factor affecting successful market arrangement

This chapter provides answers to two other research questions: first the factors that affect market arrangements between producer groups and traders and secondly respondents perception of cost and benefits involved in group market arrangements. Measure of success of the price premium is first presented after which perceptions of satisfaction of group sale activities are reported. Producers' commitment to continue dealing with the traders they considered major ones come in this section as a measure of success. From the elements of perceived satisfaction factors that affect market arrangements between producer groups and traders will be identified by comparing responses of the njansang group considered as having had successful market arrangements and the kola group which is considered less successful (see section 4.4.1)

### 4.5.1 Measuring success using price premium and benefits - cost

Using the transaction costs theory Banaszak (2008) defined a successful producer group dealing in joint marketing of the produce of its members as one that manages to operate at per unit cost which do not exceed per unit costs of doing the same transaction through other means or channels. According to him such success could be measured by using the price premium that the group negotiates for its members or by investigating whether the benefits of the group carrying such an operation were higher than the cost. The relation between benefits, cost, revenue, price and quantity will be discussed in this section.

*Price premium*

The price premium the groups negotiated for their members compared to what they would have obtained through the most obvious channel that is door-to-door transactions were compared. For the kolanuts producers, a typical price scenario of their arrangements with traders for the first group sale is shown in table 4.9. As regards the price premium negotiated by the groups, the highest recorded is 18 percent for the kola groups. In another kola group market arrangement (not indicated in the table) the price premium was 0% as the kolanuts were bought at exactly the same price as in the market. For njansang producers, price analyses show that they sold their produce each year through the group at an average of 31 percent higher price premium with a minimum of 25 and a maximum of 37.

Table 4.9 also shows that while the Njinikom and Fundong kolanuts farmers adopted a skim pricing strategy during bargaining (started with a high price) those of Bafmeng used a status

quo that is prices closest to the market price. The skimming method used indicate the objectives of these two subgroups to make very high profits or is an indicator of incorrect market information or over expectation from group activities and may explain why the group and the traders failed to reach a compromise.

Table 4.9: Proposed buying and selling prices of kolanuts and calculated price premium (FCFA)

| Grade | Kolanuts Subgroup | Farmers Initial price | Traders Initial price | Agreed price after bargaining | Current Market ( door to door) price/basket | Premium Percentage | Comments |
|---|---|---|---|---|---|---|---|
| Grade 1 a | | 30000 | 7000 | none | 8500 | N/A | The best the traders offered was 10,000 FCFA |
| Grade 1 b | Njinikom | N/A | N/A | N/A | N/A | N/A | The farmers went down to 20,000 FCFA |
| Grade 2 | | N/A | N/A | N/A | N/A | N/A | No market was concluded. |
| Grade 3 | | | | | | | |
| Grade 1 a | | 11000 | 7000 | 8500 | 7500 | 13 | A total of 9000 kolanuts (9 baskets) worth 74000 FCFA was sold) |
| Grade 1 b | Bafmeng | 10000 | 6000 | 7000 | 6000 | 16 | |
| Grade 2 | | 8000 | 5000 | 6500 | 5500 | 18 | |
| Grade 3 | | 7500 | 5000 | 6000 | N/A | N/A | |
| Grade 1 a | | 30000 | 8000 | 9000 | 8000 | 12.5 | A total of 12000 kolanuts ( 12 baskets worth ) 96000 |
| Grade 1 b | Fundong | N/A | N/A | N/A | N/A | | |
| Grade 2 | | 8000 | 6000 | 7000 | | N/A | |
| Grade 3 | | 7000 | 5500 | 6500 | N/A | N/A | |

N/A: Not applicable or not available
1€ = 650 FCFA
Premium is percentage of agreed selling price to existing market price.
Source: calculated from secondary data in ICRAF trip r

Investigating producers' opinion whether benefits of group sales were higher than the cost, a majority (close to 94 %) of the respondents strongly agreed or agreed that the benefits of selling as a group are higher than the cost, while a few (6 %) thought the contrary.

### 4.5.2. Measuring success based on producers satisfaction

This part of the results presents respondents' satisfaction as members of producer groups dealing with group marketing of their produce. Literatures (Romanik 2008; Bienabe *et al.,*

2004; Fraval 2000; Raymond 2001; Moustiere 1997) encouraging producer group activities propose that farmers who associate in groups can reap various benefits amongst which include: bulk sales, building long term or stable relationship with traders, increase bargaining power, advance payments from traders as well as facilitate access to financial services from micro financial as well as government and donor bodies to name but a few. These benefits were transformed into positive statements to which members had to give their opinion indicating their level of satisfaction based on group sale experiences as well as membership in the various AFTPs groups.

A high proportion of respondents (73 %) indicated satisfaction levels for items related to increases in personal quantities of products sold (table 4.10). A majority (85%) were also satisfied with the amount of knowledge they have learned from other members of the group dealing with production of the species (table 4.11). Despite high rates (76%) of satisfaction related to bargaining power (Table 4.10), a comparatively lower proportion (about 55%) was either satisfied or very satisfied with the price level obtained during group sales. This explains why a majority of the respondents (74%) rated the bargaining skills of the team that negotiated prices during group sales as average, low or very low

Table: 4.10: Producers' satisfaction with benefits of group sales - negotiation process

| | **very dissatisfied** | **dissatisfied** | **neutral** | **satisfied** | **very satisfied** | **mean score and Mean Rank kolanuts N=26** | **mean score & mean Rank njansang N=27** | **Mann Whitney U Z-value P-value** |
|---|---|---|---|---|---|---|---|---|
| Personal increases in quantities sold | 1 | 6 | 7 | 25 | 13 | 3.50 | 4.10 | - 2.11** |
| | (2) | (13) | ( 13) | ( 48) | ( 25) | 22.20 | 30.50 | 0.04 |
| Higher prices | 2 | 11 | 11 | 22 | 7 | 2.80 | 3.90 | - 3.48 |
| | (4) | ( 21) | ( 21) | (42) | (13) | 19.80 | 33.90 | 0.00*** |
| Higher bargaining power (.i.e. against buyers) | 3 | 8 | 2 | 37 | 4 | 3.60 | 3.60 | -0.14 |
| | (6) | (15) | (4) | (68) | (7) | 27.70 | 27.30 | 0.89 |
| Change from arbitrary to standardised measuring units (kg) | 12 | 14 | 6 | 15 | 7 | 3.20 | 2.44 | -2.151 |
| | (22) | (26) | (11) | (28) | (13) | 32.00 | 23.00 | 0.03** |

Percentages are in parenthesis
Mean rank scores in bold
Mann Whitney U test: Significant at 1% = *** Significant at 5% = ** Significant at 10 % = *

Table: 4.11: Producers' satisfaction with benefits of group sales - sharing market information

| | very dissatisfied | dissatisfied | neutral | satisfied | very satisfied | mean score and Mean Rank kolanuts N=26 | mean score & mean Rank njansang N=27 | Mann Whitney U Z-value P-value |
|---|---|---|---|---|---|---|---|---|
| Accurate information about the market | 7 | 14 | 3 | 25 | 5 | 3.40 | 2.90 | -1.39 |
| | (13) | (26) | (6) | (46) | (9) | 30.30 | 27.70 | 0.16 |
| Learn production /processing techniques from other farmers | 0 | 6 | 2 | 37 | 9 | 4.00 | 3.70 | -0.82 |
| | (0) | (11) | (4) | (69) | (16) | 28.90 | 26.10 | 0.41 |
| Learn from other farmers how to market | 7 | 13 | 2 | 25 | 6 | 3.38 | 3.00 | -1.11 |
| | (13) | (24) | (4) | (47) | (11) | 29.30 | 24.80 | 0.27 |

Percentages are in parenthesis
Mean rank scores in bold
Mann Whitney U test: Significant at 1% = *** Significant at 5% = ** Significant at 10 % = *

Most of the items for which a high proportion of respondents indicated that they were either dissatisfied or very dissatisfied are related to their relationship with traders (table 4.12) and expected financial benefits from NGOs (table 4.13). For example a majority of producers (89%) were disgruntled for not being able to receive advance payment from traders. Another bulk (75%) was at least not satisfied with the financial assistance received from partner NGOs. The advanced payment and financial assistance was expected to help the producers withhold their produce or solve urgent needs while waiting for the agreed day for group sales. Access to accurate market information is one of the benefits that are expected from joining producer groups. Unfortunately close to 40 percent (table 4.11) of the respondents were dissatisfied or very dissatisfied with the quality of information they are receiving through the group.

Table: 4.12: Producers' satisfaction with benefits of group sales- relationship with traders

| | very dissatisfied | dissatisfied | neutral | satisfied | very satisfied | mean score and Mean Rank kolanuts N=26 | mean score & mean Rank njansang N=27 | Mann Whitney U Z-value P-value |
|---|---|---|---|---|---|---|---|---|
| Contacts with more traders | 1 | 16 | 5 | 6 | 26 | 3.50 | 3.20 | -1.1 |
| | (2) | (30) | (9) | (11) | 48 | 29.70 | 25.30 | 0.271 |
| Traders respect mutually agreed upon requirements | 6 | 17 | 7 | 18 | 5 | 2.90 | 4.20 | -0.38 |
| | (11) | (31) | (13) | (33) | (9) | 26.70 | 28.30 | 0.71 |
| Exclusion of the middleman | 5 | 24 | 3 | 1 | 8 | 2.60 | 3.30 | -1.84 |
| | (9) | (44) | (6) | (26) | (15) | 23.80 | 31.20 | 0.07* |
| Establishment of long-term relationships with traders | 8 | 25 | 1 | 15 | 5 | 2.70 | 2.70 | -0.13 |
| | (15) | (46) | (2) | (28) | (9) | 27.80 | 27.20 | 0.89 |
| Advanced payments form traders | 32 | 15 | 6 | 0 | 0 | 1.60 | 1.70 | -0.61 |
| | (60) | (28) | (11) | (0) | (0) | 25.80 | 28.10 | 0.54 |

Percentages are in parenthesis
Mean rank scores in bold
Mann Whitney U test: Significant at 1% = *** Significant at 5% = ** Significant at 10 % = *

The Man Whitney U test was used to compare mean ranks between the njansang and kolanuts producers. The results show that there were significant differences between njansang and kolanuts producers' satisfaction levels for most of the items dealing with the negotiation process (table 4.10) and satisfaction of capacity building-financial assistance (table 4.13). For example, the njansang producers indicated higher mean rank for personal increases in quantities sold (30.48) and prices (33.91) negotiated through the group compared to door-to-door transactions. By contrast the kolanuts producers had lower mean ranks for the same items 22.2 and 19.83 respectively. This means that the njansang group succeeded in negotiating better market conditions for its members compared to the kolanuts group and this may account for one of the factors that make the group more successful compared to their kola counterpart.

Also kolanut producers indicated lower mean rank of 20.98 against 32.80 for njansang producers on the item measuring technical support from partner NGOs on issues related to

marketing and similar results were obtained for issues connected to technical support on production, storage and processing (21.26 for kolanuts and 33.74 for njansang).

Table: 4.13: Producers' satisfaction with group Sales: capacity building/financial assistance

| | very dissatisfied | dissatisfied | neutral | satisfied | very satisfied | mean score and Mean Rank kolanuts N=26 | mean score & mean Rank njansang N=27 | Mann Whitney U Z-value P-value |
|---|---|---|---|---|---|---|---|---|
| Financial support from partner NGOs | 31 | 10 | 4 | 8 | 1 | 1.40 | 2.30 | -2.45 |
| | (57) | (19) | (7) | (15) | (2) | 22.8 | 32.20 | 0.01** |
| NGOs support on production/storage/ processing | 15 | 10 | 2 | 20 | 7 | 2.30 | 3.50 | -3.04 |
| | (27) | (19) | (4) | (37) | (13) | 21.20 | 33.70 | 0.00*** |
| NGOs support on marketing issues | 5 | 9 | 4 | 27 | 8 | 2.90 | 3.90 | -3.01 |
| | (9) | (17) | (8) | (51) | (15) | 21.00*** | 32.80 | 0.00*** |

Percentages are in parenthesis
Mean rank scores in bold
Mann Whitney U test: Significant at 1% = *** Significant at 5% = ** Significant at 10 % = *

This means that the capacity building programs on marketing, processing and storage were more usefull to the njansang group compared to the kolanuts group and may have accounted for the differences in success rates between the two groups.

### 4.5.3: Success factors based on factor analysis-producers

To confirm the factors that determine successful market arrangements identified by comparing differences in satisfaction level between the kola and njansang group, an exploratory factor analysis was performed on the list of items used in measuring satisfaction.

Three main factors emerge from the exploratory factor analysis. About 70 percent of the variances in the seven items used could be explained by three factors. The first factor explains 33 percent of the total variance, the second 22 percent and the third 15 percent (table 4.14).

The MSA analysis shows a value of 0.63 which is greater than the recommended 0.5 (Janssens *et al.* 2008). Secondly the Bartletts test of sphericity indicated high enough degree

of correlation between the measured items (P-value = 0.000 < 0.001) meaning that factor analysis was meaningful. The results were interpreted based on the varimax-rotated factor loadings. Janssens et al. (2008) propose a minimum sample size of 50 and 60 for factor loadings of 0.75 and 0.70 respectively. In this regard items having factor loadings greater the 0.7 were chosen to be included in a given factor. However factors loadings as low as 0.69 for one of the items for the third factor was considered in order to have a better interpretation of the component.

Table 4.14: Factor loadings of producers' benefits of group sales

| | **Components** | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Advance payment_traders | 0.794 | 0.075 | 0.108 |
| Financial support_NGO | 0.777 | -0.109 | 0.317 |
| Respect_mtual agreements | 0.775 | 0.141 | -0.162 |
| Better access mkt_info | -0.092 | 0.833 | 0.155 |
| More accurate_mktInfo | 0.202 | 0.820 | 0.081 |
| Higher prices | 0.081 | 0.031 | 0.892 |
| Higher bargaining power | 0.073 | 0.437 | 0.698 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Source: survey data

The first factor has as key item advanced payment from traders with a factor loading of 0.79 others include items related to financial support from NGOs and mutual respect of agreements. This can be grouped under financial assistance to withhold produce while waiting for the appropriate market day. The first two items on this factor are those for which farmers expressed high level of dissatisfaction. Respect of mutual agreements is related to these two items in the sense that when farmers have advanced payments from traders it will encourage them to keep their produce and not to sell elsewhere. Secondly the fact that traders give advanced payment it will enable them to respect their engagements.

The second factor groups two items related to market information. The first item deals with having access to market information and the second is the quality of the information. These two items each load very high (0.83 and 0.82 respectively) on this factor. The third factor can

be related to financial gains. It groups two items related to higher prices and bargaining power the most important of which is higher prices with a very high factor loading of 0.89.
The satisfaction levels of the kolanuts and njansang producers based on these three factors were compared and significant higher mean ranks were noticed for njansang producers compared to their kolanuts counterparts for items related to financial assistance received from partner NGOs as well as higher prices obtained. The difference in financial assistance can be explained by the fact that one of the njansang groups received financial support from the project to enable members withhold their produce while waiting for the market day. Secondly the njansang groups run a saving and loan scheme within the activities of their mother groups ADEAC which may have facilitated some financial dealings. Kolanuts farmers under MIFACIG had no such assistance.

The results of the factor analysis confirmed that of previous analysis that identified success factors comparing differences between kola and njansang group. Both analysis indicate that for group market arrangements to be successful emphases should be put on micro financial activities that will enable producers withhold their produce while waiting for an appropriate market day, improve their access to accurate market information sources and lastly farmers need to obtain higher prices compared to their previous channel and increasing farmers capacity to negotiate and bargain for such higher prices can be a way out.

### 4.5.4: Traders' perception of success in participating in group sales

As concerns traders, close to 90 percent (table 4.14) of those interviewed were either satisfied or very satisfied with personal increases in the quantity of produce they could purchase on a single trip in a given producer village, compared to their habitual door-to-door transaction. A good number of traders (75 %) were also satisfied or very satisfied with the fact that they could buy at comparably cheaper prices compared to door-to-door transactions. About 60 percent of the traders interviewed were dissatisfied or very dissatisfied for not having established a long-term relation with the producer group or think that the relation will not last for long

Table 4.15: Traders' satisfaction as members of traders group N= 17

| | very dissatisfied | dissatisfied | neutral | satisfied | very satisfied |
|---|---|---|---|---|---|
| Personal increases in quantities of product bought | 1 | | 1 | 10 | 5 |
| | (6) | | (6) | (59) | (29) |
| lower buying price | 1 | 3 | 0 | 9 | 3 |
| | (59) | (19) | (0) | (56) | (19) |
| Better access to information on quantities in supplied village | 1 | 3 | 1 | 6 | 3 |
| | (7) | (21) | (7) | (43) | (21) |
| Establishment of long term relation with producers | 2 | 8 | 1 | 5 | 1 |
| | (12) | (47) | (6) | (29) | (6) |

Percentages are in parenthesis
Mean rank scores in bold
Source: survey data

### 4.5.5. Producers and traders description of a successful market arrangement

In order to confirm the variables on which both groups differ as factors that may influence successful group sales as well as identify others, respondents were asked to define what they would consider a successful market arrangement. The list of items is presented in table 4.16.

Table 4.16: Producers' criteria of successful market arrangement

| Criteria | Kolanuts producers | | Njansang producers | |
|---|---|---|---|---|
| | Number | Percent cases | Number | Percent Cases |
| Higher prices | 18 | 72 | 5 | 23.80 |
| All products must be sold | 11 | 44 | 4 | 19.00 |
| Traders should respect their appointments | 4 | 16 | 9 | 42.90 |
| Mutual satisfaction quantity/quality and prices | 3 | 12 | 5 | 23.80 |
| Traders available when needed | 3 | 12 | | |
| No cheating | 2 | 8 | 3 | 14.30 |
| **Total** | 41 | 164 | 26 | 123.80 |

Source: survey data

It shows that 46 out of the 54 producers indicated one of the reasons. Of these 46 respondents, half indicated higher prices amongst other criteria for successful market arrangement. The

results further indicate that 72 percent of kolanuts producers mentioned higher prices compared to about 24 percent for the njansang producers (table 4.16). Another measure for successful market arrangements listed by the producers is the fact that all products brought to the market place must be sold. Again a comparatively larger proportion of kolanuts producers (44%) mentioned this criterion against a fewer amount of njansang producers (19%). The most important point with regards to frequency of citation for the njansang producers (44% of respondents) was the fact that a successful market arrangement is one for which traders must respect their appointments.

The differences in opinion between the kolanuts and njansang producers can be related to their experiences in the business. It should be recalled that kolanuts producers had bad experiences with prices offered by traders. Secondly, because the traders insisted on high quality, they sorted out the large size kolanuts and refused to buy the smaller ones. This may explain why kolnuts producers insisted on the fact that all the kolanuts brought to the market place must be bought.

The most cited criterion of success by traders is respect of engagements in terms of quantity and quality cited 8 times representing about 47 percent of the respondents (table 4.17). Making profits and buying at a cheap price registered the lowest frequencies. Comparing responses from kolanuts and njansang traders it was recognised that a majority of kolanuts traders insisted on respect of engagements in terms of quantity and quality (80 percent) whereas njansang traders talked more of mutual satisfaction of both producers and traders.

Table 4.17: Traders' criteria of successful market arrangement

| **Criteria** | **N** | **Percent of respondents** |
|---|---|---|
| Both parties respect their engagements i.e. (quantity and quality) | 8 | 47.10 |
| Mutually satisfaction in terms of quantity and quality supplied | 4 | 23.50 |
| No complication involved in the process | 4 | 23.50 |
| We buy at a cheap price | 3 | 17.60 |
| When we make profits | 3 | 17.60 |
| **Total** | **22** | **129.40** |

Source: survey data

### 4.5.6. Factors that may hinder successful market arrangements

Producers and traders were asked which amongst a list of points that included behavioural characteristics, product characteristics, nature of roads and bridges, group organisational issues and finances, they considered could hinder successful market arrangements between both parties. They could rank the listed points from 1 (does not hinder) to 5 (hinders a lot). Analysis shows that 92 percent of the respondents (table 4.18) considered lack of pre-financing to either hinder to an extent or hinders a lot.

According to producers', trust amongst farmers and between farmers and traders is not an element that hinders successful market arrangement. These items of trust received the highest percentages (56% and 59% respectively) as factors that do not hinder successful market arrangement. However the fact that they do not respect their engagement to supply proposed quantities can be seen as a lack of commitment and may eventually lead to mistrust.

Mann Whitney U test indicated significant differences in respondents' perception of factors that may hinder successful market arrangements between the kola and njansang producers. The njansang group had a higher mean rank (34.83) on items measuring the state of the roads. Comparatively the kolanuts group had a lower mean rank (18.87) and therefore perceived the road factor as less of a problem compared to njansang farmers (table 4.18). This result is similar to that obtained when measuring the site specificity based on the nature of the roads which indicated that the njansang producers perceived their roads to lead to a lot of complications during negotiations compared to kolanuts producers.

On the same scale, (1= does not hinder to 5 = hinders a lot) the kolanuts farmers had higher mean ranks for items concerning trust between farmers and traders, as well as to three items related to the nature of the products (perishability, difficulty to predict harvest and difficulty involved in processing from harvest to storage). This means that these factors are perceived to have a more negative effect on successful market arrangements by kolanuts farmers compared to the njansang farmers.

Eighty six percent of the traders considered lack of enough capital to buy huge quantities from organised groups as factors that hinders to an extent or hinders a lot their market arrangements with producers. This is followed by the nature of the roads and bridges (76 %). This can be

understood as they are the ones who go through the hurdle of transporting the produce from the villages to the urban markets.

Table 4.18: Producers' evaluation of factors that hinder successful market arrangement

| | **does not hinder at all** | **does not hinder** | **hinders** | **hinders to an extend** | **hinders a lot** | **mean scores & mean Rank kolanuts N=26** | **mean scores & mean rank njansang N=27** | **Mann Whitney U Z-value P-value-** |
|---|---|---|---|---|---|---|---|---|
| Nature of roads / bridges | 8(15) | 5(9) | 1(2) | 6(11) | 33(62) | 3.00 | 4.89 | -4.34 |
| | | | | | | **18.90** | **34.80** | 0.00*** |
| Trust between farmers and traders | 19(35) | 11(21) | 2(4) | 10(19) | 10(19) | 3.00 | 2.20 | -1.83 |
| | | | | | | **30.80** | **23.30** | 0.07* |
| Trust between farmers within the group | 24(46) | 7(13) | 48) | 13(25) | 4(8) | 2.60 | 2.10 | -0.98 |
| | | | | | | **28.40** | **24.60** | 0.34 |
| Measuring units used by traders | 8(15) | 5(9) | 2(4) | 16(30) | 22(41) | 3.60 | 3.90 | -0.61 |
| | | | | | | **25.80** | **28.20** | 0.54 |
| Perishable nature of the products | 15(28) | 3(6) | 1(2) | 17(32) | 15(28) | 4.50 | 2.10 | -5.49 |
| | | | | | | **38.40** | **16.00** | 0.00*** |
| Difficulty to predict if harvest | 6(12,0) | 10(20,0) | 4(8,0) | 15(30,0) | 13(26,0) | 3.90 | 2.90 | -2.13 |
| | | | | | | **30.10** | **21.60** | 0.03** |
| Small quantities produced by farmers | 7(15) | 5(10) | 3(6) | 23(48) | 9(19) | 3.40 | 3.40 | -0.68 |
| | | | | | | **25.70** | **23.10** | 0.49 |
| Difficulty in processing | 11(21) | 1(2) | 7(13) | 15(28) | 18(36) | 3.90 | 3.20 | -2.09 |
| | | | | | | **31.40** | **22.80** | 0.04** |
| Farmers do not respect announced quantities | 8(15) | 1(2) | 2(4) | 26(50) | 15(29) | 3.60 | 3.90 | -0.31 |
| | | | | | | **25.90** | **27.10** | 0.76 |
| Lack of organisation from traders | 15(28) | 2(4) | 2(4) | 16(30) | 17(32) | 3.80 | **2.80** | ***-1.55*** |
| | | | | | | **30.20** | **23.90** | ***0.12*** |
| Lack of pre financing to withhold produce | 2 (4) | 1(2) | 1(2) | 21(40) | 28(53) | 4.40 | **4.30** | ***-0.58*** |
| | | | | | | 25.10 | **28.10** | ***0.56*** |

Percentages are in parenthesis
Mean rank scores in bold
Mann Whitney U test: Significant at 1% = *** Significant at 5% = ** Significant at 10 % = *
Source: survey data

The results on the perishable nature of the products are worth commenting because looking at the general score one could have the impression it is not a problem. However 96 percent of the kolanuts traders were of the opinion that perishability hinders successful market arrangement. This can be understood because they are the ones who take the risk of storing the product and it is very difficult to know through observation if the product is attacked by weevils or not.

### 4.6 Commitment, dependency, trust and successful market arrangements

This section of the report presents producers' perception of commitment and trust in the traders they consider the major ones and with whom they had group sales market arrangements. Producers' perceived dependence on these traders is also investigated in this section. As a recall of the conceptual framework, commitment to continue trading with the same traders is an indicator of success. The relationship between commitment to continue the relationship and trust the producers have in the traders is examined in later parts of the section.

#### 4.6.1 Producers' commitment to major buyers

Producers indicated their willingness to continue collaborating with the traders they considered the major ones by responding to three statements measuring the positive effects of such traders to them (table 4.19).

Table 4.19: Producers' commitment to their major buyers

| | **strongly disagree** | **disagree** | **neutral** | **agree** | **strongly agree** | **Mean scores & mean ranks MIFACIG N=26** | **Mean scores and mean ranks ADEAC N=27** | **Mann Whitney U Z-value P-value** |
|---|---|---|---|---|---|---|---|---|
| Continuation with the old ones even if others are available | 4(8) | 11(21) | 1(2) | 23(43) | 14(26) | 3.60 | 3.60 | - 0.13 |
| | | | | | | **27.70** | **26.70** | 0.89 |
| Enjoy relationship with the major traders | 3(6) | 8(15) | 3(6) | 33(62) | 6(11) | 3.50 | 3.70 | -0.52 |
| | | | | | | **26.00** | **28.00** | 0.61 |
| Continuation with old ones despite cheating | 13(25) | 11(21) | 1(2) | 22(41) | 6(11) | 3.30 | 3.00 | -0.21 |
| | | | | | | **27.40** | **26.60** | 0.84 |

Percentages are in parenthesis
Mean rank scores in bold
Mann Whitney U test: Significant at 1% = *** Significant at 5% = ** Significant at 10 % = *

Close to 70 percent agreed or strongly agreed that even if other traders are available they would like to continue working with the ones they started working with. In the same line, 73 percent strongly agreed or agreed that they would like to continue working with the traders because they genuinely enjoyed their relationship with them and 53 percent strongly agreed that they would like to continue working with the traders even if they cheat on them (table 4.19).

Based on their responses it can be concluded that a majority of the producers are committed or willing to maintain long term relationship with the buyers. No significant differences were observed between the kolanuts and the njansang group on the various items used in measuring commitment.

### 4.6.2 Dependency

Having linked producers to traders who were considered the most influential in the kola and njansang business, questions were posed to know to what extent producers think that they are dependent on the traders or that the traders have high influence over them. Three items were used to assess producers' dependency on the major buyers while one was used to measure producers' perception of the buyers dependency on them. A good number of producers (62%) either agreed or strongly agreed that the traders involved in the group sales are important to them if they are to continue selling in groups, while 34% disagreed or strongly disagreed with this view (table 4.20). Close to 70 percent of the producers indicated that it is either very difficult or difficult to find new buyers who can purchase large quantities mobilised by the group. Another 79 percent reported that it was difficult or very difficult to establish trust in a new buyer (table 4.20).

According to the transaction cost theory, the difficulty to find new buyers who have capital to buy from the group can lead to a lock in situation whereby the producers become heavily dependent on the major buyers. Because such categories of traders are few, they may take advantage of the complication of the bad roads to offer lower prices to farmers. Secondly because they organise transport to travel to the production villages it lowers the bargaining power of the producers.

Table 4.20 Producers' opinion about their dependency on major buyers

| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree | Mean scores & mean ranks Kolanuts N=26 | Mean scores & mean ranks Njansang N=27 | Mann Whitney U<br>Z-Value<br>P-Value |
|---|---|---|---|---|---|---|---|---|
| The trader group is important for future group sales | 4(8) | 14(26) | 2 (4) | 29(55) | 4(8) | 3,10<br>**24.80** | 3,40<br>**29.10** | -1.30<br>0.26 |
| Our producer group is important to the traders | 1(2) | 7(13) | 2(4) | 31(59) | 4(23) | 3,80<br>**24.80** | 3,90<br>**27.80** | -0.46<br>0.64 |
| | **Very easy** | **Easy** | **Neutral** | **Difficult** | **Very difficult** | | | |
| Ease/difficulty to find new buyers with large capital ( R) | 2(4) | 4(26) | 0(0) | 26(49) | 11(21) | **3.70**<br>**29.90** | 3.40<br>**24.20** | -1.48<br>0.14 |
| Ease/difficulty to establish trust with new buyers ( R ) | 1(2) | 8 (15) | 2(4) | 25(47) | 17(32) | 4.70<br>**31.10** | 3.70<br>**23.10** | -2.03<br>0.04** |

Percentages are in parenthesis
Mean rank scores in bold
Mann Whitney U test: Significant at 1% = *** Significant at 5% = ** Significant at 10 % = *
Source: survey data

The Mann Whitney U test showed that higher mean ranks were obtained for kolanuts producers compared to their njansang counterpart for the item measuring the ease to establish a relationship of trust with a new buyer. This can be due to the fact that kolanuts producers have not been able to organise group sales with other traders like the njansang farmers after a series of failed attempts to make market arrangements with old partners. Generally the scores for this construct for both producer groups signify high producers' dependency on the buyers. Also 81 percent of the producers strongly agreed or agreed that their producer groups are important to the traders. This last item gives an indication of mutual dependence between the farmers and traders groups.

### 4.6.3 Producers' perception of trust in traders

As mentioned in the literature review and conceptual framework section, trusts exist when a partner believes that its partner stands by its words (honesty) and the belief that the partner cares about his welfare (benevolence) (Kumar *et al* 1995). Distribution of responses to the items measuring trust indicates that more than 70 percent of the producers considered the

traders to be honest while a comparatively lower proportion (as low as 27 percent for some of the benevolent items) considered that the traders care about their welfare (table 4.21).

Table 4.21: Producers' perception on different items of trust in their major buyers

| | strongly disagree | disagree | neutral | agree | strongly agree | Mean scores & Mean ranks Kola N=26 | Mean scores and mean ranks ADEAC N=27 | Mann Whitney U Z-value P-value |
|---|---|---|---|---|---|---|---|---|
| *Honesty*: prices/quantities given by producers in urban markets are sometimes false | 5(9) | 4(8) | 3(6) | 22(42) | 19(36) | 3.90<br>**27.40** | 3.90<br>**26.70** | -0.22<br>0.83 |
| *Honesty:* advice given by traders on quality are true | 1(2) | 11(20) | 2(4) | 26(49) | 13(25) | 3.60<br>**25.**40 | 3.90<br>**28.50** | -0.79<br>0.43 |
| *Reliability:* sometimes afraid traders may not have enough capital (R ) | 4(8) | 14(26) | 2(4) | 23(43) | 10(19) | 3.90<br>**21.70** | 2.90<br>**32.10** | -2.59<br>0.01*** |
| *Benevolence:* traders will act and negotiate fairly even if the possibility of cheating exist | 11(20) | 19(36) | 0(0) | 14(26) | 9(17) | 2.90<br>**27.30** | 2.80<br>**26.70** | -0.15<br>0.88 |
| *Benevolence:* traders understand our problems | 15(28) | 9(17) | 4(8) | 21(40) | 4(7) | 2.80<br>**27.00** | 2.80<br>**27.00** | 0.00<br>1.00 |
| *Benevolence:* traders care about welfare when fixing prices | 13(25) | 19(36) | 6(11) | 11(21) | 4(7) | 2.40<br>**24.90** | 2.70<br>**29.0** | -0.99<br>0.32 |
| *Flexibility:* traders are flexible to change ( increase) their buying prices | 6(11) | 17(32) | 2(4) | 25(47) | 3(6) | 3.30<br>**29.40** | 2.80<br>**24.40** | -1.35<br>0.18 |

Percentages are in parenthesis
Mean rank scores in bold
Mann Whitney U test: Significant at 1% = *** Significant at 5% = ** Significant at 10 % = *

Further analyses show that there is no significant difference in the perception of trust between kolanuts and njansang producers for all the items, except reliability. Producers of kolanuts had a lower mean rank (24) on reliability compared to njansang producers (32). It means that the kolanuts producers doubt more about the purchasing power of kolanuts traders compared to njansang producers. This difference in perception can be related to qualitative results whereby

some kolanuts producers reported that refusal by kolanuts traders to buy was not only related to quality, but also because they lacked enough capital. This may suggest that the level of trust producers have for traders is marginal.

An exploratory factor analysis was also performed on the items that were used to measure trust in order to identify how those items relate to each other and if they met theoretical expectations. Following the procedure described in section 3.72 five out of the original eight items were used in the factor analysis after eliminating others using the MSA criteria factor loadings as described in the methodology section. The results show that the variances in the five elements could be explained by two factors both of which explained sixty percent of the variances (table 4.22) with the first factor dominating as it explained thirty eight out of the sixty percent. The first factor groups three items. It defines producers' perception of whether traders care about their welfare when fixing prices and when they explain their problems to them. It also includes items measuring traders' flexibity to increase prices offered to producers when there is rise in the urban markets.

Table 4.22: Factor loadings of producers trust in traders

| Items | Component | |
|---|---|---|
| | 1 | 2 |
| Benevolence_prices | 0.809 | -0.361 |
| Benevolence_probs | 0.733 | 0.160 |
| Flexibility_prices | 0.712 | 0.121 |
| Honesty_info | -0.166 | 0.835 |
| Honesy_advice | 0.397 | 0.707 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

The second factor groups producers' perception of traders' honesty in the quality of information they give them as well as advise on quality issues. Honesty with regard to market information traders give to producers dominate this factor with a high factor loading of 0.835.

The factor analysis on the trust items show that the two factors that emerged describing trust actually confirms the variables that were used to measure trust as derived from theory.

### 5.7. Test of association between commitment and elements of trust derived from factor analysis

The aim of the correlation analysis was to study the relationship between producers trust in traders and their commitment to continue market arrangements with them. The results show that none of the values of the correlation coefficient between honesty and the items used in measuring commitment were equal to zero. However some of the relationships were not significant. There was a weak, positive and significant relationship between perceived honesty and producers' commitment to continue collaborating with the traders because they like being associated with them r = 0.42, P (two tailed) < 0.01 (table 4.23). A weak, positive and statistically significant relationship was also observed between producers' perceived benevolence of traders towards them and the fact that they would like to continue the collaboration because they enjoy the relationship.

Table 4.23: Correlation between items of commitment factors of trust

| **Items of commitment** | | **Benevolence factor score** | **Honesty factor score** |
|---|---|---|---|
| Continuation with the old ones even if others are available | Spearman's rho Correlation | 0.15 | 0.36** |
| | Sig. (2-tailed) | 0.29 | 0.01 |
| | N | 53 | 53 |
| Enjoy relationship with the major traders | Spearman's rho Correlation | 0.29* | 0.208 |
| | Sig. (2-tailed) | 0.04 | 0.13 |
| | N | 53 | 53 |
| Continuation with old ones despite cheating | Spearman's rho Correlation | -0.05 | 0.17 |
| | Sig. (2-tailed) | 0.72 | 0.19 |
| | N | 53 | 53 |

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed)

# Chapter 5: General discussions conclusions and recommendations

## 5.1. General discussions and conclusions

The objective of this study was to research factors that affect market arrangements between producer groups and traders in the agroforestry tree product value chain in Cameroon. Another objective was to identify and compare transaction cost involved in group sale market arrangements between producer groups and traders to that incurred when sales are contracted through the habitual mode of transaction which is the door-to-door buying.

In response to the first and second research question, this study distinguished information, control, search, negotiation and organisation costs as the major types of transactions cost producers incurred when they sell in groups. Both the information and control costs were perceived by the farmers to be lower during group sales compared to door transactions while the remaining three were perceived to be higher during group sales compared to door-to-door transactions. The perceived higher transaction costs (search, negotiation and organisation) are explained by the fact that producers never used to search traders to buy from their homes because the trader moves from door to door. Negotiation costs are higher due to the long discussions which precede sales in order to agree on a number of trading terms coupled with the large number of farmers involved. Organisation cost increases because it takes much more time to pay the farmers than if the arrangements were contracted on individual bases.

The identified transaction cost during group sales are influenced by the following:

- *Product specificity*: characterised by the need to meet quality exigencies of traders,
- *Human asset specificity*: characterised by the skills required to meet quality standards,
- *Site specificity:* long distances to get to the agreed market place and the bad nature of the roads and bridges),
- *Uncertainty:* that results form fluctuating prices and difficulties to predict weevils attack by observation

Concerning product specificity, the results of this research show that kolanuts producers require more skills to meet quality norms compared to njansang farmers. The transactions are also characterised by site specificity. That is location of the supply villages in less favoured areas and the fact that producers have to travel long distances to get to the market place during

group sales. While the site specificity of the najnsang producers was influenced by the bad state of the roads and bridges that of kolanuts producers was influenced by the distances they had to travel to get to the market place.

For the selected products in this study, producers' uncertainty was influenced by fluctuating prices and difficulties to predict quality by observation. Compared to njansang, kolanuts were more prone to fluctuating prices and it was more difficult for kolanuts farmers to predict the quality of the kolanuts by observation. Kolanuts are often attacked by weevils which only become visible during storage. Analysis shows that kolanuts traders insist to only buy quality kolanuts from the producer groups. Kolanuts producers are of the opinion traders do not match price to the quality of kolanuts they offer. The disagreement between producers and traders on price and quality of kolanuts leads to withdrawal from trade by the producers. It may be expected that promoting group marketing of kolanuts will assist in reducing monitoring cost for the buyer which consequently will reduce the time spent during group sales for the producer. The marketing officer will over time reduce frequent checks to assure that members meet quality standards. The effects of weevils also affect the reliability of supply for kolanuts producers as stored kolanuts are sometimes discovered to be totally destroyed by weevils at the eve of a market day.

A majority of producers interviewed judge benefits derived from group sales to be higher than the cost and would prefer group sales over door-to-door transactions. The benefits are related to the fact that if they do not participate in group sales activity they risk not sell at all or even if they sell they will not sell when they want and may fall victims to cheating and use of false measuring units by traders which are common in door-to-door transactions. Also during group sales they sell in bulk compared to door-to-door transactions where traders with smaller purchasing power move around and exploit the producers.

To answer the third research question, allusion is made to the characteristics of the AFTPs group market arrangements between producers and traders. According to the transaction cost theory, the characteristics of the transactions i.e. quality exigencies, site specificity, human capital specificity required to meet quality, uncertainty and low frequency of transactions justify the use of producer groups to channel the products out of the specific production areas in order to reduce transaction cost. Survey results show that traders are important actors in group market arrangements. Both traders and producers think that it is relevant for traders to

form an association. This will help in reducing the time spent on the field by traders to collect produce. Since traders indicated capital as one of the major factors that hinder collaboration in group sales, creating a traders association will facilitate mobilisation of resources to buy from the producer groups as was practised by the njansang traders. For producer groups it will help in reducing uncertainty related to the buying capacity of the traders as was noticed in the kola group. The traders association will also help the traders to coordinate buying activities and share market information. Though important, the results of the study also show that safeguards need to be developed to avoid complicity on the part of the traders to offer lower prices as traders' responses of the importance of such an association indicate trends towards collusion to offer lower prices to producers.

The analyses that follows provides answers to the fourth research question that deals with factors that influence successful market arrangements. This study analysed the benefits that farmers have from participating in group sales compared to door-to-door transactions. The prices negotiated by the group and members satisfaction of such prices are important factors of success derived from this study. Compared to the kola group considered unsuccessful in this study, the njansang group negotiated higher price premium for its members and were more satisfied of the prices obtained. This could explain why the njansang group had more group sales than the kola producers. Higher prices again received the highest frequency as factors that affect successful market arrangements amongst a list cited by producers.

Three other items for which the njansang group considered successful obtained higher mean ranks indicating their level of satisfaction compared to the kola group are (i) technical support from partner NGOs on processing and marketing, (ii) exclusion of the middleman, and (iii) personal increases in quantities of produce sold through the group compared to the normal channel. The njansang group was satisfied with capacity building programs related to marketing and processing while the kola group was not satisfied. This means that the time and efforts spent in training which are important elements of transaction cost were compensated by the benefits of higher prices and increased quantities sold through the group. The results of this study therefore correlates with that of Bienable et al (2004) who suggest that capacity building programs should accompany projects aimed at improving farmers' access to markets. Asymmetric market information is reported to increase transaction cost (Pingali et al 2005, Sartorius and Kirsten 2005) and thus will influence success of market deals. For example some kolanuts producers explained that they could not accept the prices the traders gave

because they felt the producer price was far lower than what the traders would obtain in terminal consumer markets. Farmers' awareness of price information in consumer markets will help to avoid such misunderstandings and will facilitate exchange.

Producers identified lack of prefinancing and advanced payment from traders to withhold produce while waiting for the arranged market day as the major factor that hinders success. Some producers explained that if traders could give advanced payments, it will help to reduce uncertainty of whether the traders are going to respect their appointments or not.

Other factors mentioned by producers and for which differences exist between the kola and njansang groups are related to site specificity (nature of roads and distances covered by the group members). The njansang group has more bad roads and broken bridges compared to the kola group surprisingly they registered more success than the kolanut groups with better roads but more dispersed settlement. The bad nature of the roads and distances covered by producers to get to the market place increases search, information and transportation cost (Pingali et al. 2005).

The nature of the product (perishable or non perishable) and the ease to determine this trait was found in the analysis to influence market arrangements. This finding correspond to those of Barzel (1982); Hobbs and Young (2001); Verhaegen and Van Huylenbroeck (2001); te Velde et al 2006 as the nature of the product increases opportunistic behaviours of traders. For example one important criteria of success listed by kolanuts farmers is that all products brought to the group market place must be sold. This is in relation to experiences where kolanuts traders used quality norms to discard produce when actually farmers' opinion is that they lacked enough capital and thus used the quality criteria to reduce the quantity they could buy. Also the difficulty to detect slippery kolanuts which a is a bad quality trait by observation results in situation where traders reject or propose lower prices after having detected one out of a thousand. These difficulties were not observed with njansang as it was easy to see if the njansang kernels are broken or well dried by observing. On the other hand njansang producers emphasised that traders must respect their appointment that is they should not say they will come and later change their minds. This may happen when traders find it easy to source their produce from relatively more accessible areas compared to the difficulties of going through the bad roads and broken bridges that characterise the njansang production villages in this study.

Analysis of results also hints high dependency of producers on buyers they consider the major ones. This is related to the few numbers of traders, who have capital to buy large volumes mobilised by the group and the specific location of the producer villages in less favoured areas. Such high dependency will push the producers to commit to the traders because they do not have alternatives. This may explain why more than half of the producers would still want to continue collaborating with the traders they identified the major ones even if they discover the traders cheat on them.

Responding to the fifth research question, investigation shows that producers trust traders in terms of information the traders give them but think that traders do not care about their welfare. AFTPs producers' trust in traders is weakly associated with their commitment to continue collaborating with them. This result is different from that of Kwon and Suh (2004) who found a strong and positive relationship between trust and commitment in supply chain partners. It must also be noted that this study revealed that trust between producers and traders received the highest percentage as factors that do not hinder successful market arrangement.

Like Sartorius and Kirsten (2003) it is difficult to assume that trust played a significant role in reducing transaction cost and in determining success between AFTPs producer groups and traders in Cameroon. The weak association between trust and commitment may suggests that other factors identified in this study like producers satisfaction of prices negotiated by the group, technical support from partner NGOs, financial assistance/advanced payments, reliable market information, the nature of the roads, distances producers travel to participate in group sales, the nature of the products (perishability), dependency, and uncertainty of the transaction may have more influence in determining success. These were not statistically proven in this case study and may be a subject for further research.

The transaction cost theory recommends the use of a third party under situation of less frequent and asset specific transactions (Boger 2001). This provides answer to the last research question of whether traders and farmers can sustain active market arrangements in the AFTPs value chain in Cameroon. The role of the third party in this case will be to coordinate access to financial resources for both traders and producers as well as assure continuous collaboration and to settle dispute between both parties. This third party role can be played by NGOs or government extension services as well as microfinance institutions with interest in rural poverty. Shephered (2007) is of the opinion that the link between

producers and traders need to be seen more as a business than a poverty reduction option. The results of this study opposes this view because the poor roads and dispersed location of producers that characterise the transactions will expose the producers to poverty and under exploitation of the species if strategies are not developed to attract traders to go and buy from such areas.

### 5.2. Recommendations

**To research**

In this study group market arrangements were analysed with a lot of focus on gains producers can make from the process. But such a system also needs the participation of traders. Though some information was collected from traders the analysis failed to look at success factors from the part of traders, especially as they are the ones to decide to travel to the difficult production area. That is what can encourage a trader to commit sourcing his produce from a given producer group located in a less favoured area when they may have other accessible sources of supply. Also research on traders association as partners who can facilitate group marketing projects should be encouraged. This can be seen in light of promoting public private partner ships.

Identification of the factors that influence market arrangements was made on qualitative grounds comparing only two groups and products. It will be important to extend the study to involve more products with similar characteristics (perishable and non perishable species) for a more quantitative analyses. The results of this study on factors that influence successful market arrangements can be used to identify better proxies for success and transaction cost in group market arrangement for a more quantitative analyses of why a given farmer or trader will decide to participate in group market arrangements compared to alternative forms of exchange.

The results of this study brought out microfinancial support as vital elements of success both on the part of producers and traders. It will be important to investigate how such institutions can help in facilitating producer groups and traders market arrangements.

**To policy makers**

At the policy level Governments need to put in place projects to increase the competitiveness of less favoured areas by making them more accessible. Other policy options may be to involve the private sector as partners in rural development. This can be implemented by developing appropriate microfinance institutions that can assist traders who buy from less favoured areas.

**To development workers**

These results of this study suggest that for producers to participate in group market arrangements, the group should be able to negotiate higher prices for its members compared to their normal mode of transaction. Higher prices may not be enough but members need to be satisfied with the prices in comparison with efforts made to meet certain group sales arrangements. Higher prices are expected to motivate producers to increase quantities sold through the group like in the njansang group. For these to happen however, group members should be able to gain appropriate marketing skills, bargain for better prices as well as have sources of finance to enable members withhold their produce while waiting for the agreed market day. Traders are important actors in this process and efforts should be developed to gain their participation by providing micro financial services. In areas which are less accessible more poverty reduction goals should be targeted when traders participation are expected otherwise they would prefer more competitive supply areas or produce. It is thus a challenge for development actors to see how such a procedure can be implemented.

**To producer and trader groups**

Producer groups in less favoured areas as well as traders can improve their conditions if they objectively operate as pressure groups to local governments who are expected to improve their access to basic livelihood facilities. In this area development actors and NGOs can assist farmers to attain this objective.

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# **Annexe 1:** Producers' questionnaire

## Questionnaire to Kola and Njansang producers

This Questionnaire is designed to collect information on factors affecting market arrangements between producers groups in the Agroforestry sub sectors and traders in Cameroon. The information collected will be used solely for the purpose for which it is meant.

1. Questionnaire No -------Q1--------- Village ----------Q2 - Name of group ------Q3---------

**For how long have you been involved in the cultivation/ extraction of this product for market purposes? -- ---------- (no of years) ---------- question code---------- Qcode---DUQ4**

For how long have you been a member of this group (kola or njansang)? ---------- (no of years) **Qcode-MBQ5**

Are you a member of other organisations (farmers' organisations, local village committees, etc) other than this present group? □ 99= Yes □ 90 = No **Qcode –MOQ6**

If yes for how long ? ---------- (no of years) **Qcode –NYQ7**

How long does it take to travel on foot from your house to the sale point: Qcode –**DUQ8**

## 2. Benefits of group sale activities: -BG1

Would you please indicate why you decided to be a member of this group that deals with join sales of Kola/njansang?

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In recent years an increasing number of producer groups are formed to jointly market their produce. A number of reasons listed below have been advanced as benefits of group sales. Would you please indicate your level of satisfaction or dissatisfaction for each of these benefits based on your experience with this group? Do so by assessing the following statement on a scale from 1 to 5.

| | | | Level of satisfaction as member of this group | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1= very dissatisfied;<br>3= neither satisfied nor dissatisfied<br>5 = Very Satisfied. | | 99= Yes<br>90= No | 1 | 2 | 3 | 4 | 5 | |
| **Benefits** | **Code** | Initial motivation | Very dissatisfied | Dissatisfied | Neither satisfied nor dissatisfied | Satisfied | Very satisfied | No opinion |
| personal increases in quantities of products sold than through the usual channels | **BGS1** | | | | | | | |
| Higher prices compared to the usual channel | **BGS2** | | | | | | | |
| Higher bargaining power (.i.e. against buyers) | **BGS3** | | | | | | | |

| | | |
|---|---|---|
| Better access to markets through contacts with more traders ( i.e. reduced information cost) | **BGS4** | |
| More respect from traders for mutually agreed upon requirements (so lower monitoring and control costs) | **BGS5** | |
| Exclusion of the middleman who buys from door to door ( buyam sellam) | **BGS6** | |
| Establishment of long term relationships with traders | **BGS7** | |
| More accurate information about the market | **BGS8** | |
| Learn from other farmers about production of this species | **BGS9** | |
| Change from arbitrary ( cup for njansang and counting for kiolanuts ) to more standardised measuring units ( kg) | **BGS10** | |
| Learn from other farmers how to market | **BGS11** | |
| Financial support from partner NGOs to secure produce while waiting for group sales | **BGS12** | |
| Advanced payments form traders to secure produce | **BGS13** | |
| Technical support from partner NGOs related to issues on production , storage and processing | **BGS14** | |
| Technical support from partner NGOs on issues related to marketing | **BGS15** | |

| | | |
|---|---|---|
| Based on your experience do you agree or disagree that the benefits of selling as a group are higher then the cost | **BGS16** | I strongly dis agree<br>I disagree<br>Neither agree nor disagree<br>I agree<br>Strongly disagree<br>No opinion |

### 3. Transaction cost incurred during group sales:

What was your usual source of information on prices and other market information before joining this group? **Qcode:** **TC1**

1. other farmers in the village
2. NGO
3. other traders
4. news paper
5. personal visits
6. radio

What is your opinion on the statement that:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Through joining the group getting information on markets has become | **TC2** | 1 ☐ Much difficult | 2 ☐ Difficult | 3 ☐ Same | 4 ☐ Easier | ☐ Much easier | ☐ no opinion |

Rate form 1 to 5 if you disagree or agree with the following statements comparing transaction through the group and transactions through your usual channel:

| | | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| | **Code** | I strongly dis agree | I disagree | Neither agree nor disagree | I agree | Strongly disagree | No opinion |
| Selling in a group you **spend more time to negotiate and organise** sales than through the normal channel | **TC3** | | | | | | |
| Selling in a group requires **additional effort (in time and resources) to search** for traders | **TC4** | | | | | | |
| Selling in a group requires **additional effort (in time and resources) to search** for market information compared to the usual mode of sale | **TC4x** | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| How satisfied are you with the mode and speed of payment in group sales compared to the normal channel | Code **TC5** | 1 ☐ Not satisfied at all | 2 ☐ Satisfied | 3 ☐ Neither satisfied nor dissatisfied | 4 ☐ Generally satisfied | 5 ☐ Very satisfied | ☐ no opinion |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| How do you compare rejection rates linked to quality during group sales to that obtained during habitual transactions? | **TC6** | 1 ☐ Much lower | 2 ☐ Lower | 3 ☐ Same | 4 4 ☐ Higher | 5 ☐ Much high | ☐ no opinion |

## 4. Mutual Dependence

**Think of the group of traders with whom your group has been collaborating**

| | | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| **To what extent do you agree or disagree with the following statements** | **Code** | I strongly disagree | I disagree | Neither agree nor disagree | I agree | Strongly disagree | No opinion |
| This group of traders is important to us if we are to continue group sales | **MD1** | | | | | | |
| Our producer group is important to this group of traders | **MD2** | | | | | | |

**Now think generally and respond to these question based ob your experience with this group:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| In general how difficult or easy it is to find new buyers who can purchase quantities mobilised by your group | **MD3** | 1 ☐ Very difficult | 2 ☐ Difficult | 3 ☐ Neither easy not difficult | 4 4 ☐ Easy | 5 ☐ Very easy | ☐ no opinion |
| It general how difficult or easy it is to establish a relation ship of trust with a new buyer | **MD4** | | | | | | |

Which of the following do you consider as **problems that may stop you from changing from an old to a new** buyer or group of buyers that can buy from your group:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The difficulty to establish a relationship of trust with a new buyer | **MDP1** | 1 ☐ Not a problem | 2 ☐ Minor problem | 3 ☐ A problem | 4 ☐ Relatively significant problem | 5 ☐ A major problem | ☐ no opinion |
| The difficulty to find new buyers | **MDP2** | | | | | | |
| The fear that new buyers will pay less | **MDP3** | | | | | | |
| The fear that the nature of the roads and the bridges will distract new buyers | **MDP4** | | | | | | |
| Door to door buyers from our zone may prevent new buyers from entering into this village | **MDP5** | | | | | | |

**Again think of the group of traders with whom your group has been collaborating**

| | | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| To what extend do you agree or disagree with the following statements related to your commitments with the traders with whom you have had group sales | **Code** | I strongly disagree | I disagree | Neither agree nor disagree | I agree | Strongly agree | No opinion |
| **5. Commitment:** | | | | | | | |
| Even if other traders are available we will prefer to remain with the ones we started working with because we like being associated with them | **CM1** | | | | | | |
| We want to remain members of the traders' sources of supply ( that is the group from which traders can buy) because we genuinely enjoy our relationship with them: | **CM2** | | | | | | |
| Our negative feeling towards this group of traders is a major reason we want to stop working with them | **CM3** | | | | | | |
| Despite the fact that these traders cheat on us we will want to continue collaborating with them | **CM4** | | | | | | |

| **6. TRUST**<br>***To what extent do you agree with the following statements about the trust you have for traders with whom you have had market arrangements:*** | **Code** | 1 ☐ I strongly disagree | 2 ☐ I disagree | 3 ☐ Neither agree nor disagree | 4 ☐ Generally agree | 5 ☐ Strongly agree | ☐ no opinion |
|---|---|---|---|---|---|---|---|
| *Honesty:* They information the traders give us about prices and quantities in urban markets sometimes turn to be false | **TR1** | | | | | | |
| *Honesty:* The advice they give us on quality and grading issues are useful and they do so honestly | **TR2** | | | | | | |
| *Perceived reliability:* When we make market arrangements with traders we are sometimes afraid they may not have enough capital to buy the huge quantity gathered by the group | **TR3** | | | | | | |
| *Benevolence*: Traders will act and negotiate fairly even if the possibilities of exploitation exist: | **TR4** | | | | | | |
| *Benevolence*: When we share our problems (difficulties of processing the products) with the traders they tend to understand us | **TR5** | | | | | | |
| *Benevolence:* When taking important decisions like prices we think that the traders care about our welfare (happiness, benefits, interest) | **TR6** | | | | | | |
| *Flexibility:* When prices rise in the markets traders are flexible to change (increase) their buying prices | **TR7** | | | | | | |
| *Flexibility:* We prefer agreements that give way for adjustment in case prices rise or fall in the markets | **TR8** | | | | | | |
| ***7. Product specificity*** | | | | | | | |
| The traders who buy from our group have some specific quality requirements we must meet as a group which otherwise wouldn't have been the case when selling individually | **PS1** | | | | | | |
| We spent more time to process this product (cracking of njansang and storage for kola nuts) to meet the requirements of traders compared to the normal channel | **PS2** | | | | | | |
| Members of this group have spent considerable **time to be trained** to handle this product to suit the requirements of traders | **PS3** | | | | | | |
| **8. Site specificity** | **SP** | | | | | | |

| | | |
|---|---|---|
| The traders with whom we had group sales make tremendous efforts to come and buy in this village | **SP1** | |
| The nature of the roads and bridges complicate our negotiation with traders and put us on the losing side | **SP2** | |
| The fact that we gather the produce on one spot gives us advantage during negotiation and bargaining with traders compared to when we sell individually | **SP3** | |
| Transporting the produce to the agreed place of transaction is a major problem limiting group sales: | **SP4** | |

### *9. Production uncertainty:*

We know that production depends on weather conditions. However asses the following statements related to production uncertainty as well as those related to price fluctuation and quality of the product based on your experience in dealing with this product

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| How easy or difficult it is for you to determine the quantity you can supply for any group sale: | **PU1** | 1 ☐ Very difficult | 2 ☐ Difficult | 3 ☐ Neither easy not difficult | 4 4 ☐ Easy | 5 ☐ Very easy | ☐ no opinion |
| How easy or difficult it is for you to determine the quality of this product by observing | **PU2** | 1 ☐ Very difficult | 2 ☐ Difficult | 3 ☐ Neither easy not difficult | 4 4 ☐ Easy | 5 ☐ Very easy | ☐ no opinion |
| How do you consider the level at which the prices of this product fluctuate | **PU3** | 1 ☐ Very fluctuating | 2 ☐ fluctuating | 3 ☐ neither fluctuating nor stable | 4 ☐ stable | 5 ☐ very stable | ☐ no opinion |

10. For who long can you store this product without loss in quality: ---------- Qcode—**ST1**

## 11. Other questions related to site specificity Qcode----

With regards to the place of transaction, where do you think it will be more appropriate to meet with traders for group sales? Choose one and give reasons for your answer:

a) In the village----------
----------**OSP1**
b) In a possible market outlet ----------
----------**OSP2**
c) Urban market ----------
----------**OSP3**

11. According to you which of the following factors hinder successful market arrangements and collaboration amongst producer groups and traders. For each give values from 1 to 5 to show the intensity of the problem.

1 does not hinder 5. Hinders a lot

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| a) The nature of the roads and bridges | **Code FHSM1** | 1 ☐ Does not hinder | 2 ☐ | 3 ☐ | 4 ☐ | 5 ☐ Hinders a lot | ☐ no opinion |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| b) Trust between farmers and traders | **FHSM2** | 1 ☐ Does not hinder | 2 ☐ | 3 ☐ | 4 ☐ | 5 ☐ Hinders a lot | ☐ no opinion |
| c) Trust between farmers within the group | **FHSM2** | 1 ☐ Does not hinder | 2 ☐ | 3 ☐ | 4 ☐ | 5 ☐ Hinders a lot | ☐ no opinion |
| c) Cheating by using fake measuring units by traders | **FHSM3** | 1 ☐ Does not hinder | 2 ☐ | 3 ☐ | 4 ☐ | 5 ☐ Hinders a lot | ☐ no opinion |
| d) High Perishability of the products | **FHSM4** | 1 ☐ Does not hinder | 2 ☐ | 3 ☐ | 4 ☐ | 5 ☐ Hinders a lot | ☐ no opinion |
| e. Difficulty to predict if harvest will be good or bad | **FHSM5** | 1 ☐ Does not hinder | 2 ☐ | 3 ☐ | 4 ☐ | 5 ☐ Hinders a lot | ☐ no opinion |
| f) Small quantities produced by farmers | **FHSM6** | 1 ☐ Does not hinder | 2 ☐ | 3 ☐ | 4 ☐ | 5 ☐ Hinders a lot | ☐ no opinion |
| g) Difficulty in cracking, storage peeling ,packaging | **FHSM7** | 1 ☐ Does not hinder | 2 ☐ | 3 ☐ | 4 ☐ | 5 ☐ Hinders a lot | ☐ no opinion |
| g) Farmers do not respect their engagements to supply required quantities | **FHSM8** | 1 ☐ Does not hinder | 2 ☐ | 3 ☐ | 4 ☐ | 5 ☐ Hinders a lot | ☐ no opinion |
| h) Lack of organisation from the part of traders | **FHSM9** | 1 ☐ Does not hinder | 2 ☐ | 3 ☐ | 4 ☐ | 5 ☐ Hinders a lot | ☐ no opinion |
| i) Lack of pre - financing to enable producers hold the product until the agreed market day | **FHSM10** | 1 ☐ Does not hinder | 2 ☐ | 3 ☐ | 4 ☐ | 5 ☐ Hinders a lot | ☐ no opinion |

12. What is your opinion on the statement concerning traders coming together as group?

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| When traders come together in groups they agree to offer lower prices: | **Code OTG1** | 1 ☐ I strongly disagree | 2 ☐ I disagree | 3 ☐ Neither agree nor disagree | 4 ☐ I agree | 5 ☐ I strongly agree | ☐ no opinion |

Do you think traders need to be organised in a group to buy from an organised group like yours? Qcode OTG2----------

□ 99 = Yes □ 90 = No

If yes give reasons for your answer----------OTG3---------- ----------

If no give reasons for your answer----------OTG4---------- ----------

What will you consider a successful market arrangement between a farmer group and traders and or traders group ? **SMA**

1:
2 :
3
4

**13. Perception of formal Contracts**

Would you be interested in signing a formal or written contract with buyers? Qcode- **PFC1**
□ 99 = Yes □ 90 = No

Have you ever had financial or product losses during group sale because the buyer did not respect his engagements? **PFC2**
99 Yes 90. No

If yes how can you estimate the losses in quantities---------- Qcode **PFC3**

Do you think it is possible to enforce a contract or arrangement between your group and the buyers through a court? Qcode **PFC4**

1. yes without problem
2. Only with much effort
3. No contracts cannot be enforced through the court
4. I don't know

What would be the amount of losses in CFA which the group cannot bear and for which you will want to take the buyer to court? PFC5

**14. General information**

How much of this produce did you harvest last production season? Qcode **GI-**----------
Season 2008----------**GI1** ----------Season 2007----------**GI2**----------

Where did you harvest it? ---------- Qcode—**GI3**

Is it possible to harvest from somebody else's farm? 99. Yes 90. No Qcode------ **GI4**

Give reasons for your answer ---------- Qcode -------**GI5**

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After the harvest how much was lost to weevils/rodents/moulds---------- Qcode-----**GI6**
How did you sell this product? 1. Group sales 2. Other means: ---------- Qcode---**GI7**

What price did you get for this produce ---------- Qcode-----**GI8**

What quantity of produce did you sell during the last group sale?------ Qcode------**GI9**

What is the highest quantity you ever sold through the group? ----- Qcode-------**GI10**

What is the minimum quantity you sold through the group? --------- Qcode--------**GI11**

What is the highest quantity you sold through other channels? In a given production year --Qcode-----**GI12**

Do you or your group have plans to do any investment to improve the production of this specie or improve cooperation with other farmers or improve cooperation with traders? Qcode—**GI13**

99. Yes 90. No

If yes what kind of plans do you have? (Multiple responses possible) Qcode----**GI14**

1. *Increase the number of trees on farm*
2. *Enlarge the farmland possible by buying more land*
3. *Increase output by buying a machine (mention if this is a group or individual effort)*
4. *Improve storage (mention if its is a group or individual effort)*
5. *Improve processing technique (mention if it is a group or individual effort)*
6. *Improve relationship with the buyer for example (contract)*
7. *others ……..*

What is your age? ---------- Qcode----**GI15**

Sex? 99. Male 90. Female

At what stage did you stop school? Qcode---**GI16**

1. Have not been to school 2.Primary education 3. FSLC/CEPE
4. Secondary education 5. High school 6.University education
7. University degree

Please rate the skills of the team that negotiated the prices for the products during the last group sales Qcode----------**GI17**

| Code | 1 ☐ Very Low | 2 ☐ Low | 3 ☐ average | 4 ☐ High | 5 ☐ Very high | ☐ no opinion |
|---|---|---|---|---|---|---|
| | | | | | | |

Thank you for your cooperation. We do believe that your contribution will help is very much in our research.