# ANALYSIS OF VALUE CHAIN FOR PIGEONPEA IN TANZANIA

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**Abstract**

The positivity and negativity of globalization have been experienced at a number of different levels. However, little is known on the challenges the farmers are getting, with the use of transaction cost theory. This study therefore, analyzed the value chain of pigeonpea in Babati District so as to improve market access, production and reduce poverty. Snowballing and mapping approaches were employed in which interview schedule and self-administered questionnaires used in data collection of actors from the source to the downstream. Descriptive statistics, narrative and content data analysis approaches were used. Reesults showed that, common marketing system used was not direct marketing system between farmers and buyers. Therefore, it was concluded that common market system for pigeonpea involved many links from individual farmers through rural assemblers, Urban wholesalers to Urban exporters with no value addition within the channels. It was recommended that, the governement should empower pigeonpea producers through credit accessibility so as to add value and enhance their bargaining power in the market.

**Key words:** Value chain, pigeonpea, rural assemblers, Urban wholesalers, Urban exporter, and Babati

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## 1.0 Introduction

In developing countries, Gross Domestic Product (GDP) growth from agriculture benefits the incomes of poor people two to four times more than any other sectors of the economy. About 75% of the world's poor people live in rural areas and most of them are involved in farming (Asenso-Okyere, Davis, and Aredo, 2008). In Africa, agricultural smallholder producers are the basis for development and they make majority of the population and account for large share of GDP and export earnings (Warner and Campbell, 2000). Smallholder producers in developing countries increasingly seek to participate in global markets. This participation is an important driver of economic and social progress throughout the developing world (Stanton and Burkink, 2008).

However, commodity market liberalization can improve incentives for production of export crops by reducing the total costs of transforming products through space, form and time, or by reducing the costs of arranging and completing transactions (Nelson and Temu, 2002). At the sectoral level liberalisation of domestic agricultural markets and the effects of globalisation provided new opportunities that could benefit poor farmers, but for this to happen priority needs to be given to interventions that improve the competitiveness of smallholder farmers (International Fund for Agricultural Development (IFAD, 2001). Smallholder farmers face high transaction costs and uncertainty arising from missing or incomplete input and product markets, high access barriers and costs of information, and other market imperfections that restrict market access (Jones, Freeman and Monaco, 2002). Policy makers face the challenge of determining and fostering the most productive roles for public, private, and non-governmental organizations in supporting African farmers, traders and agribusinesses (Eicher, 1999). Only working together can these actors establish the institutional relationships that can provide and facilitate smallholder farmers to develop a competitive advantage in international markets (Jones, Freeman and Monaco, 2002). According to Kaplinsky (2000), the issue is not to participate in the global economy but how to do in a manner which provides sustainable and equitable income growth.

Improving the agriculture value chain in developing world can make an important contribution to increasing incomes and reducing poverty by enabling smallholder farmers to use the opportunity available for improving the marketing of their produce.

## 2.0 Statement of the problem

Many countries in sub-Saharan Africa have liberalized markets to improve efficiency and enhance market linkages for smallholder farmers. Statistics show that, over 75% of the rural population are characterised by smallholder farmers who are disorganized (Asenso-Okyere, Davis, and Aredo, 2008). However, market access has persisted to be the constraint. According to Shiferaw, Obare, and Muricho (2006), the functioning of the market is constrained by high transaction costs and coordination problems along the product to consumer value chain. Also, due to inadequate access to storage facilities, smallholder farmers are poorly served by small traders, making local market thin and less competitive. Shiferaw et. al (2006) identified poor roads and high transportation costs due to the remoteness of the farms from the markets, poor communication systems that hamper access to market information and limit development of markets as value chain problems. Moreover, lack of competition and low local demand limits opportunity for farmers to bargain for better prices which makes them accept low prices for their produce (Nadvi, 2008). However, little is known on how the Tanzanian government has done to assist smallholder farmers to become important players in local and export markets. This study therefore assessed the value chain for pigeonpeas, a lucrative export crop, in Tanzania.

## 3.0 Research methodology

### 3.1 Study location

This study was conducted in Babati District which is the main pigeonpea producing district in Tanzania. The study area was selected as a sample district because it is a major grower of pigeonpea and farmers are growing pigeonpeas as a cash crop (Technoserve - TA & ICRISAT/SARI, 1990's).

### 3.2 Research design

Cross sectional experimental research design was employed in which snowballing and stratified random sampling procedures were used to get information from different pigeonpea actor in the value chain. Farmers dealing with pigeonpea were selected in targeted villages in Babati District. Each farmer was asked to identify four most important pigeonpea brokers and traders who were operating in their villages. Farmers were "primary respondents", and those who were sampled from the farmers' responses, were "secondary respondents". Secondary respondents were selected randomly from the list of names generated by farmers' interviews. Then "tertiary respondents", were downstream traders identified by secondary respondents. At the tertiary level, all the downstream traders identified by the secondary respondents were included and their number decreased geometrically to downstream. Therefore, an appropriate design for this study entailed a careful consideration of empirical data as well as the methods applied in data analysis (Aaker *et al.*, 2002; Gupta 2003; Hannås, 2007).

### 3.3 Data collection techniques

Both structured and open ended questionnaires were used to collect information regarding the marketing value chain of pigeonpea in Tanzania. The interview schedule questionnaires were used as a face to face oral interview approach. However, the research instrument was modified before the field survey, since there were no green pigeonpea trading activities in Babati, then it was modified to fit for the dry pigeonpea trading activities.

In questionnaire administration; personal questionnaire administration, mail administration, telephone and electronic surveys (Mwakibinga, 2008) could be used. Selection of any of this method had an effect on the data quality. Data quality could be defined in terms of survey response rates, questionnaire items response rates, the accuracy of responses, absence of bias or completeness of the information obtained from the respondents (Bowling, 2005). In the view of Bowling (2005), the researcher has to consider data quality when selecting a questionnaire administration method. However, selection of any administration method does not depend solely on data quality but also on time, cost and supporting infrastructure (Mwakibinga, 2008).

In selecting how to administer questionnaire certain things have to be taken into consideration like the characteristics of the respondents, in Tanzania pigeonpea traders were characterized by high mobility as they travelled to different places searching for products to buy and sell (they were not found in one place), accessibility of respondents such as infrastructure i.e. in some parts there was poor infrastructure and high costs in terms of communication by internet and lack of contact/address in rural areas and also the literacy rate for example other professional traders had difficulties in expressing themselves in writing and reluctant to complete a form made the option of internet and post address not to be used. Therefore, face to face interview seemed to be more relevant to this study done in Babati, Arusha and Dar es Salaam (Table 1). Looking at mobility factors, in order to get these traders the best option was to chase them in their business.

Table 1: Summary of the outcomes for data collection process

| Type of pigeonpeas | Type of Traders | Sampling Procedure | Number of Questionnaire | Not Interviewed | Reasons | % |
|---|---|---|---|---|---|---|
| Dry pigeonpeas | Brokers | Sampling procedure (snowballing) | 29 | 0 | - | 100 |
| | Traders | Sampling procedure (snowballing) | 9 | 2 | -Unwilling | 77 |
| Green pigeonpeas | Wholesalers and retailers | Interviewed all (opportunistic sampling procedure) | 8 | 2 | -Unwilling<br>-Had a stall, but was not around | 75 |
| Total | | | 46 | 4 | | 91.3 |

### 3.4 Data analysis

This study used descriptive statistics, narrative and content methods to analyse data for the value chain of pigeonpea in Tanzania from upstream to the downstream of the value chain.

## 4.0 Results and discussion

### 4.1 Socio-Economic Characteristics of Pigeonpea Business

#### 4.1.1 Level of Education

Findings (Table 2) showed that 80 % of the participants who were owner managers of the pigeonpea in Babati had no more than primary education and 40% based in Babati town and no participants in the third and fourth market had primary school education. However, in the third and fourth markets, all participants falls in the college level. This shows that most of participants in the downstream of the value chain have high level of education than participants in the upstream of the value chain. Results suggested that in pigeonpea marketing the level of education of participants differs in both markets. The difference could be attributed by the nature of market players to achieve their business objectives.

Table 2: Level of education in pigeonpea marketing

| | | Market Chain | | | |
|---|---|---|---|---|---|
| | | **First Market (Babati rural)** | **Second Market (Babati town)** | **Third Market (Arusha)** | **Fourth Market (Dar es Salaam)** |
| Education in Years | 0-7 | 80 | 40 | - | - |
| | 8-11 | 12 | 40 | - | - |
| | 12-13 | 8 | - | - | - |
| | >14 | - | 20 | 100 | 100 |
| **Total (%)** | | **100** | **100** | **100** | **100** |
| **Number of observations** | | **26** | **5** | **2** | **3** |

#### 4.1.2 Experience in the pigeonpea business

Year of experience varies from market to market with less experienced, 45% of participants found in the first market in Babati town with less than 7 years of experience (Table 3). While in

the third and fourth market, majority of participants have more than 8 years of experience. This shows that in order to operate successful in a down stream of the value chain and face the business challenges, education and years of experience are important.

Table 3: Experience in Pigeonpea Business

| | | Market Chain | | | |
|---|---|---|---|---|---|
| | | **First Market (Babati rural)** | **Second Market (Babati town)** | **Third Market (Arusha)** | **Fourth Market (Dar es Salaam)** |
| Years of Experience in Pigeonpea Business | 0-3 | 15 | - | - | - |
| | 4-7 | 30 | 20 | - | - |
| | 8-11 | 27 | 40 | 50 | 66.67 |
| | 12-15 | 12 | - | 50 | - |
| | 16-19 | 4 | 20 | - | - |
| | 20-23 | 12 | 20 | - | 33.33 |
| **Totals (%)** | | **100** | **100** | **100** | **100** |
| **Number of respondents** | | **26** | **5** | **2** | **3** |

### 4.2 Roles of Respondents in Pigeonpea Business

According to the respondent's information, it was discovered that, the management of the pigeonpea business depend on the size of an enterprise. The small the size of the business the manager is the owner. Looking at the size of the business in a value chain, the sizes increases when moving downstream of the value chain. The percent of owner managers decreases from rural assembler's business which is 90% to 80% for urban wholesaler and 40% for the urban exporter's business. As it goes down the marketing chain, the management of the business changes to hired Managers, Crop Procurement Manager and Directors (Table 4) .According to the survey, pigeonpea business players participants in the marketing chain were trading other crops such as maize, beans, sunflower, lablab, finger millet and wheat and they operate in more than one point in the country. This showed that most of the downstream participants were organized and concentrated in other business than the participants who traded in upstream part of the value chain which could be contributed by high level of education and experience in doing business. Diversification increases the size of the business and help in catering of loss in profit that may occur due to different factors such as price fluctuation.

Table 4: Role of Respondents (in %) in a Business

| | **Green Pigeonpea** | **Dry Pigeonpea** |
|---|---|---|

| | | Urban wholesaler | Urban Retailer | Rural Assembler | Urban Wholesaler | Urban Exporter |
|---|---|---|---|---|---|---|
| Role of Respondents in the Business | Owner Manager | 100 | 100 | 95 | 80 | 40 |
| | Hired Manager | - | - | 5 | 10 | 40 |
| | Procurement Manager | - | - | - | - | 20 |
| | Director | - | - | - | 10 | - |
| | **Total Percentage** | **100** | **100** | **100** | **100** | **100** |
| | **Total Number of Respondents** | **2** | **4** | **22** | **10** | **5** |

### 4.3 Employment in Pigeonpea Business

According to the market survey it showed that, in Babati rural apart from the owner managers, pigeonpea business was not employing many people. In the whole value chain the total number of people employed in the pigeonpea business was 31 who get monthly salary and 42 owner managers who worked for their business. The total number of people employed in the pigeonpea value chain was 73 people for both green and dry pigeonpea. However, only 8.2% of the people in rural area were employed in pigeonpea business (Table 5). This contributes to rural – urban migration and increase the level of poverty among the people living in the rural area.

Table 5: Employment in Pigeonpea Business

| | | Green Pigeonpea | | Dry Pigeonpea | | |
|---|---|---|---|---|---|---|
| | | Urban wholesaler | Urban Retailer | Rural Assembler | Urban Wholesaler | Urban Exporter |
| Number of Permanent Employees | Rural Market | - | - | 6 | | - |
| | Urban Market | - | - | 10 | 8 | 7 |
| | Number of Respondent | 2 | 4 | 22 | 10 | 5 |
| | **Total Number** | **2** | **4** | **38** | **18** | **12** |

### 4.4 Mode of Transport in a Pigeopea Business

Findings (Table 6) showed that 100%, 90% and 18% of Urban exporter, Urban wholesaler and rural assembler, respectively owned trucks whereas 80%, 72% and 20% of Urban wholesaler, Rural assembler and Urban exporter accordingly owned bicycles. Meaning that these assets are most important when doing agricultural business for supporting activities. The business involved moving the product harvested from farm gate to the warehouses or store, to the market and finally to the end users (Table 6 ). This could be explained that, in the upstream of the value

chain, farmers were scattered and produced small quantity of pigeonpea. Therefore, it was expensive for a farmer to hire truck to transport small quantity of pigeonpea from the farm to the warehouse/store or direct to the market.

Table 6 : Mode of Transport (in %) in Pigeonpea Business

| **Assets Owned for Pigeonpea Business** | | **Dry Pigeonpea** | | |
|---|---|---|---|---|
| | | **Rural Assembler** | **Urban Wholesaler** | **Urban Exporter** |
| Transportation | Truck | 18 | 90 | 100 |
| | Motorcycle/Bicycle | 72 | 80 | 20 |
| | Ox-cart | 9 | 10 | 0 |
| **Total Number of Respondents** | | **22** | **10** | **5** |

### 4.5 Storage Facilities

Results (Table 7) showed that 80%, 73% and 50% of Urban exporter, rural assembler and Urban wholesaler owned warehouses respectively for pigeonpea storage in Babati. Meaning that, farmers use individual warehouse/store to keep small quantity of pigeonpea after havest, when moving downstream of the value chain many participants owned more than one warehouse in different buying points. Also, it was uneconomical to store dry pigeonpea individually while every village owns warehouse and not used for the purpose of storing crops. This was caused by poor organization of farmers in upstream of the value chain. Keeping together crops in a common warehouse/store could reduce storage and transportation cost from the individual warehouse to the sellers while managing one shared warehouse, farmes could have enjoyed the economies of scale.

Also, findings (Table 7) showed that only 9% of pigeopea participants in rural market used weighing scale when compared with 50% and 60% of Urban wholesaler and Urban expoter, respectively. Meaning that majority of farmers don't use weighing scale to measure their produce before they sell. It was observed that most of the farmers used bucket and approximate the weigh to 20 kilograms. This is risky to both sellers and buyers since this represents an imprecise approximation of the actual weight exchanged for.

Table7: Storage Facilities (in %) in Pigeonpea Business

| Assets Owned for Pigeonpea Business | | Dry Pigeonpea | | |
|---|---|---|---|---|
| | | Rural Assembler | Urban Wholesaler | Urban Exporter |
| Storage facilities | Warehouse owned | 73 | 50 | 80 |
| | Weghing scale owned | 9 | 50 | 60 |
| **Total Number of Respondents** | | **22** | **10** | **5** |

### 4.6 Communication Facilities

Communication facilities enable a business enterprise to get required information on prevailing market prices and quality requirement by the end users. Findings (Table 8) showed that, in the first market, 91% of participants used mobile phone for communication and 100% for the remaining market points whereas only 23% in the first market participants used radio. This shows that, in rural market not all participants access market information through mobile phones, but others get information from radio and through their neighbours who have mobile phones. The reliability among all means of communication differs. Tollens, 2006a; Weber, Donovan, Staatz and Dembélé, (2006) suggest that modern Information and Communication Technology (ICT) tools should be used, but radio is likely to remain the most effective means of getting information that helps improve the bargaining power of farmers. However, with the rapid expansion of cell phones ownership (Tollens, 2006a), especially in rural areas in Africa (Tschirley, 2007) the tools could be useful in getting information. Weber, John, Staatz and Dembélé, (2006) suggest that modern Information and Communication Technology tools should be used, but radio is the most effective means of providing broad-based unbiased information to help improve the bargaining power of farmers. Since the participants in the upstream of the value chain have low aaccess to the biased means of communication and they are far from the end user to be updated on the situation in the market, they can be faced with the problem of opportunism. Therefore, by using unbiased tool to get market information, it will avoid the problem of opportunism that may occur during the process of trading.

Table 8: Communication Facilities (in %) in Pigeonpea Business

| Assets Owned for Pigeonpea Business | | Dry Pigeonpea | | |
|---|---|---|---|---|
| | | Rural Assembler | Urban Wholesaler | Urban Exporter |
| Communication facilities | TV | 27 | 10 | 20 |
| | Radio | 23 | 30 | - |
| | Internet | - | 30 | 100 |
| | Mobile | 91 | 100 | 100 |
| | Landline | 4.5 | 40 | 100 |
| **Total Number of Respondents** | | **22** | **10** | **5** |

### 4.7 Market Structure of Dry Pigeonpea

Traditionally, the farmers in the northern zone and in Babati District in particular prefer to consume other legumes such as beans and cowpeas while their counterparts in the southern zone districts lack these alternative food sources and therefore use a larger share of their pigeonpea produce for home consumption. In a value chain of pigeonpea, three main types of participants/actors that is brokers/traders (wholesalers and assemblers) and exporters were identified. The actors differed in size and capacity as you move from the upstream to the downstream of the value chain (Table 9).

Table 9: Value Chain Participants and their Functions

| Participants | Percentage of the Total Trader | Functions in the Value Chain |
|---|---|---|
| Traders/Brokers | 55 | They work both in urban and rural market. This includes rural assembler, retailer, rural wholesaler and urban wholesaler. They collect pigeonpeas from individual farmers (rural assembler) and sell to the traders or exporter. Sometimes they act as an urban wholesaler where by they buy pigeonpea from the fellow traders/brokers and they sell to exporters in urban market (Babati and Arusha). They constitute large number of participants in the upstream of the pigeonpea value chain. |
| Exporters | 60- 80 | Mostly work in urban market and use the agent to collect from the rural market. They buy from the brokers, traders in upstream of the value chain and sometimes direct from |

| | | |
|---|---|---|
| | | the farmers with special arrangement such as providing seeds and training on how and when to plant according to the market demand. They are small in number but they have high purchasing power. |

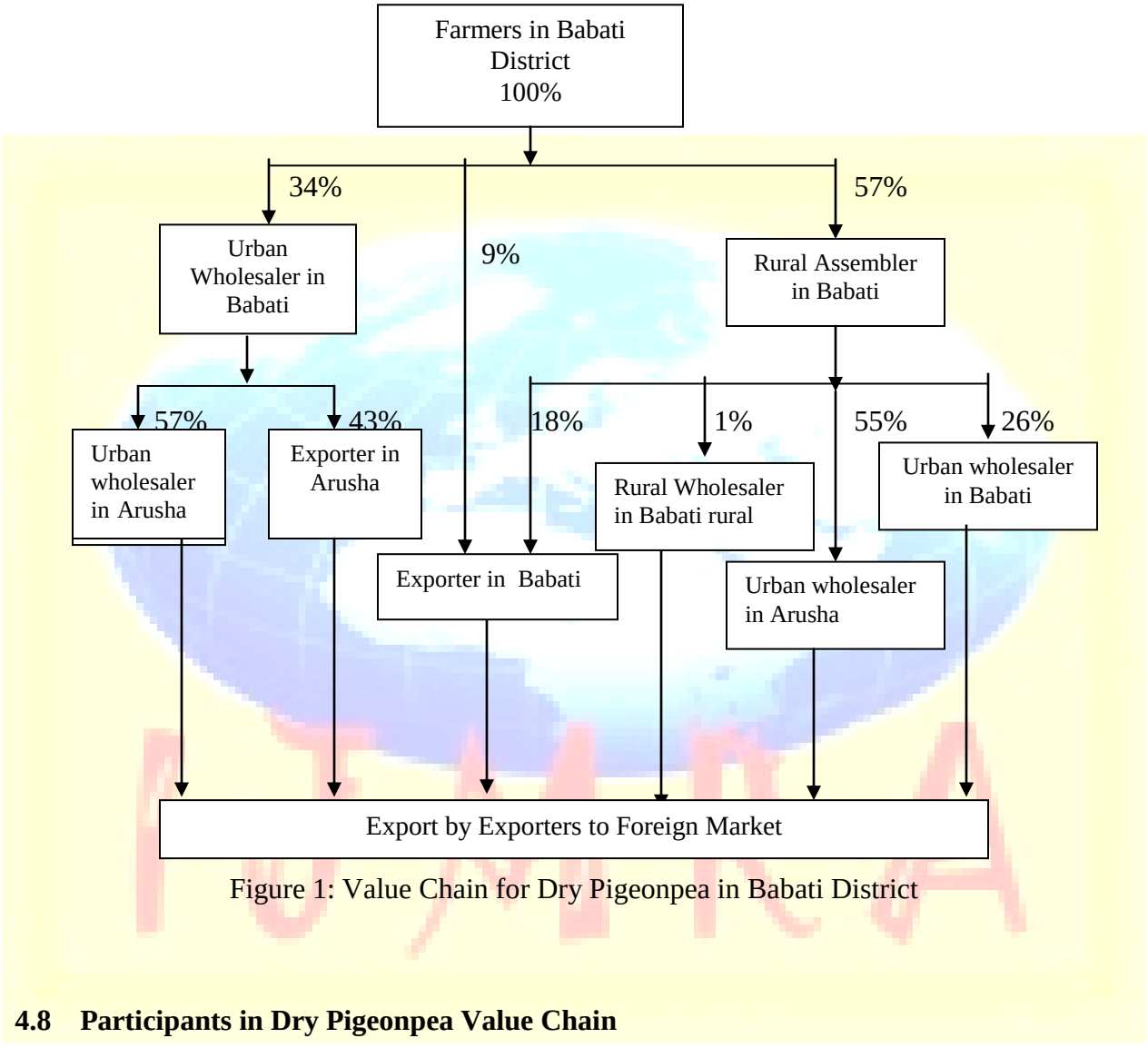


Figure 1: Value Chain for Dry Pigeonpea in Babati District

### 4.8 Participants in Dry Pigeonpea Value Chain

Pigeonpea value chain involves different actors/ participants. The main actors/participant in a value chain includes assembler, wholesaler and exporter who operate in rural and urban market both in Babati, Arusha and Dar es Salaam. The upstream part of value chain for dry pigeonpea starts from the farmers in Babati (Figure 1). Farmers sell dry pigeonpea to rural assembler and urban wholesaler in the rural market (Babati rural) where buyer carries transaction cost in urban market (Babati urban) because farmers inccured transportation costs to the market.

**4.8.1 Assemblers**

Assembler role in the value chain was to collect pigeonpeas from individual farmers in Babati villages and sold to the rural wholesaler in Babati rural, urban wholesalers in Babati rural and Babati town, urban wholesaler in Arusha and urban exporter in Babati ( Figure 1). Assembler bought a large share of dry pigeonpea than the urban wholesaler because they covered large area. 55% of pigeonpea was bought by urban wholesalers in Arusha. Assemblers had direct contact with the farmers whom they negotiated price and acted as an intermediaries since they were used as an agent by wholesalers and exporters in Babati and Arusha. According to the survey, they represented 80% of traders. They connected farmers with other actors in the downstream of the value chain. The modes of transport used were mostly bicycles, motorcycles, ox-carts and tractors within the village and trucks when collected enough pigeonpea was taken by truck to the urban market ( Fiigure 1).

Assemblers were of two types, those who collected and sold within Babati villages, the buyer carried transaction cost and those who collected and sold in Babati town market to wholesalers and exporters from Babati town, Arusha and Dar es Salaam, whereby assembler carried transaction cost from the farmer to Babati town and down to the value chain. The assembler who sold again within the village as it was observed, they sold 1% of the dry pigeonpea to rural wholesaler within the rural market without adding value to pigeonpeas they created double handling cost which increased the total value chain cost. This results were due to lack of capital to transport dry pigeonpea to the urban market which made them to run away and sold in the same market place when they got better price. This elongated the chain and made it more complex. According to Tilanus (1997) the assembler who bought and sold without adding value had to be bypassed so as to reduce the total cost in a value chain and be competitive in the market by setting low price of the produce. Assemblers used mobile phone to get marketing information when searched for buyers and sellers as a result cost in the value chain increased.

Furthermore, assemblers were faced with the problem of capital to operate the pigeonpea business especially when used own money for the business, therefore bought less quantity contrary to the demand by the downstream actors which was caused by lack information and knowledge about credit. An assembler, who worked with big traders in urban market, got money

in advance to buy pigeonpea from wholesalers and exporters. Money obtained facilitated the business and increased the capacity to buy more quantity. However, the volume consumed by an assembler who used his own money was small compared to an assembler who got advance from the actors in down stream. Both they owned individual storage facilities and means of transport like bicycle, motorcycle and some own trucks and ox-cart. Assembler who worked as an agent to the big traders had higher bargaining power because they bought large quantity.

### 4.8.2 Wholesaler

Wholesalers were of two types, i.e. rural wholesaler originated in Babati rural and urban wholesaler originated in Babati town and Arusha. Urban and rural wholesalers operated both in Babati rural, Babati town and Arusha. In Babati rural wholesaler bought from individual farmers and rural assembler whereby urban wholesalers carried transaction cost. In Babati urban, rural wholesaler bought from individual farmers and rural assemblers and in this case the individual farmers and rural assembler carried transaction cost. The amount of pigeonpea bought by the urban wholesaler in Babati rural direct from the farmers was 34% and sold to urban exporters in Arusha and urban wholesaler in Arusha. In the value chain, the urban wholesalers in Arusha got 57% of the total amount bought by urban wholesaler direct from the farmers while 43% was bought by the urban exporters in Arusha (Figure 1).

Wholesaler had a direct contact with individual farmers and urban assembler in the upstream of the value chain and in downstream had the direct contact with the exporters in Arusha. Wholesalers had bigger capacity than assemblers since they worked as an agent to exporters and got money in advance. They used trucks within Babati villages and town, they took pigeonpea from assemblers in rural and urban markets.

Wholesalers used mobile phone to get in touch with the sellers and the buyers too. The cost incurred by the wholesaler was high since they moved from one village to another searching for sellers and there was no any market place that all traders were located. Thus, the issue of frequency of transaction and experience in the business could have reduced this cost, since relationship among traders could reduce the cost. Furhermore, wholesalers were faced with the problem of capital for their pigeonpea business especially when used their own money for the business, because the capital used was also small therefore they bought less quantity. This was contributed by lack information, knowledge about credit, high interest rate and fear to take credit

because the business was risk and uncertain due to price volatitlity. Moreover, wholesalers who worked as an agent to urban exporter in Babati, Arusha and Dar es Salaam, got advance money to assist them in facilitating the business by increased their capacity to buy more quantity and increase competition in the pigeonpeas business. Therefore, the volume purchased by wholesalers who used their own money was small compared to wholesalers who got advance from their actors in down stream.

**4.8.3 Exporter**

As someone move from the upstream of the value chain the number of actors decreases. Exporters in the pigeonpea value chain appeared at the downstream near the customer. Therefore, their number was small compared to the number of actors in upstream of the value chain. Exporters originated from Babati town, Arusha and Dar es Salaam and they used wholesalers and assemblers as an agent in the business; they gave money in advance to collect pigeonpea on their behalf. Exporters bought pigeonpeas from the wholesalers and assemblers both in Babati rural, Babati town and Arusha sold to Indian, European and Kenya market. In this study only exporters who were buying pigeonpea produced in Babati in the year 2008/2009 and went through Babati town down the value chain were considered.

In the value chain exporters had a direct contact with the wholesalers and assemblers and small percent by the farmers in the upstream and consumers in the export market were well informed on market prices, time and quality needed in the export market. Exporters demanded the quality needed by the market, in case farmer sold low quality pigeonpea such as unclean seeds or with foreign matters wholesalers and assemblers reduced kilograms to cover the cost of cleaning. The reduction varied from 1 to 10 kilograms in a bag of 115 kilograms depending on buyers' estimation. Since exporters were few in number, they were able to exert monopsony (or oligopsony) power in the value chain. As a result, this increased their bargaining power in price setting, though the price of pigeonpea was dictated by the consumers and the price per kilogram did not take into consideration the cost of production.

Exporters had more than one business and they were getting money from banks to run their business inclusive of pigeonpeas business and had branches in Babati town, Arusha and in Dar es

Salaam. They carried transaction cost from the point of buying to the export point, however; once they bought pigeonpeas they incurred cost of cleaning in case of high market demand like Europe. Indian market was satisfied by the quality obtained from the Wholesalers and assemblers. The use of mobile phone was more important to the exporter in getting domestic market information and internet service when searching for buyers in the foreign market. Since they were big traders, they had access to internet, fax, landline and mobile phones for communication.

## 5.0 Conclusions and recommendations

Based on the challenges the farmers are getting, with the use of transaction cost theory this study mainly analyzed the value chain of pigeonpea to improve their market access so as to improve production and hence reduce poverty through better policy making. Results showed that, common marketing system used was not direct marketing system by having arrangement with farmers. The common market system involved many links with no value addition within the channels which increased the total cost by double handling. Farmers sold pigeonpea individully which increased the transaction cost such as seller/buyer search cost. In all the two systems, there was a lack of market information by farmers in upstream and control of big buyers in downstream making farmers to have low bargaining power due to all the amount of pigeonpea from the upstream of the value chain being bought by the urban exporters. Since the middlemen had a direct contact with exporters, they knew the quality required, they acted opportunistically towards the farmers so as to enjoy the profit by buying at low price with no value addition. Also, the is lack of capital contrained participants in a value chain which was caused by lack of knowledge and collateral to get loans. Therefore, the government and donor agencies need to facilitate implementation of the policies in the sector to help reducing poverty to small holder farmers in pigeonpea business who are affected by the changes in global marketing of agricultural product.

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