Assessment of Gum Arabic Marketing System in
Main Auction Markets of North Kordofan State-Sudan

By

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Dedication

To my:-

- Family
- Scientists
- Relatives
- Colleagues
- Friends

With great respect and gratitude
I offer this effort

Mohammed
Praise be to the Allah, the All Mighty, who granted me health and power to accomplish this work. It gives me great pleasure to express my deep thanks, sincere gratitude and appreciation to my supervisor: Dr. Ali Abdul Aziz Salih, I would like to express appreciation his guidance for this work. I would like to express my sincere thanks to Ustaz Ahmed Hanafi Abdul Majid, the main coordinator of IFAD-Western Sudan Resources Management Program, and the staff members namely: Ustaz Ammal Hamed, Reem Osman Zain, El Sheikh Ali Mohamed for financing the cost of the study. I’m also grateful to University of Kordofan for sponsoring the study. My thanks are also extended to all the staff of Gum Arabic Research Center, University of Kordofan, for their valuable help, encouragement, follow up and assistance. I would like also refer to the kind finance assistance provided by my relative Ali Abbaker Abdul Karim in the term of the courses. Also the kind devoted help of those who made the study possible, the staff of Elobied Crops Market for providing me with all available information about Gum Arabic, and the commerce chambers of Elbodied, Elnuhoud and Umrwabba specially the traders Osman Elsharif, Abdul wahhab Salih, Mohammed ElKheir Wagi Allah, Hassan Rajab and Alamin Adam for their helping me in conducting the Questionnaire.Special and deep thanks are extended to my colleagues Ustaz Ibrahim Elnour, Amel Abdul Matalab, Hassan Hussein, Munier Elias and Ibrahim Abdallah for their kind help, assistance and support in data analysis and thesis typing and preparing of the manuscript.

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This study was carried out in Elobied, Elnuhoud and Umrawaba auction markets during the production season of (2007/2008), to assess the performance of gum Arabic marketing systems.

The study depended mainly on primary data that collected by means of a structured questionnaire and direct interviewing with gum Arabic traders. Non-probability sampling technique was used to select forty respondents as a sample size. Secondary data were also collected from related sources.

The data were analyzed by descriptive statistical method for the socio-economic characteristics of the traders. Simple, multiple regression and correlation analyses were also used to estimate the relationships among different variables.

The study revealed that:

a- The majority of the respondent traders of gum Arabic preferred liberalization to concession when asked about opinion on suitable gum Arabic marketing system in North Kordofan State.

b- The Gum Arabic Company had not fulfilled its marketing obligations in the production season of (2007/2008).

c- The presence of processing companies with financial ability had offered higher buying prices than the announced floor prices and paid in cash.

The Study recommended:

1- To allow for full liberalization of gum Arabic commodity marketing.
2 – The processing of gum Arabic companies should reform their technical capacity to increase their exports.

3- Establishment of a Commodity Council for Gum Arabic commodity as an independent body to co-ordinate and promote its marketing.
كفتة الدژ

بكل عام، لعلماً لتقدمك في تفكيك مختلف مشاكل التدوين في اللغة العربية، وخصوصاً في التحقيق المختصر في مواقف الدزار، حيث هذه الأجرية الأبيض، كلما توفرت الرواية والنمو في النهوض والإنتاج والموسم خلال عام 2007/2008.

في مثل هذه الأوقات، تم تقديم نماذج م الفنانة وقابلية الإنتاج بدورها في لتقييم الأجرية، بهدف تطوير الأسواق العربية ورفع مستوى خدماتها، وتحقيق المصالح بصفة عامة في عمليات الربط والتعاون بين جميع الجهات المتخصصة في هذا المجال.

ويجب أن يتم تحسين الأجرية في كل الأوقات، لضمان جودة الإنتاج وتلبية المتطلبات المتزايدة للمستهلكين.

1. لتفعيل كرذنة شمالي ولاية في النهوض والإنتاج، وضمان التزامنا، وضمان التزامنا.

2. ومن أجل تعزيز الكفاءة والقدرة على تجارة النشاط، خصوصاً في أوقات فصل الربيع، وضمان التزامنا.

3. كما أنه يمكن أن تؤدي هذه الأجرية إلى تحسين الوضع، وتحقيق تقدم وإنارة في الشارع، وتحقيق التقدم في الشارع.

- تأسست المجالس البلدية لسلعة الصمع العربي كجهة مستقلة، كي يقوم بالتنسيق وترقية تسوية...
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CHAPTER ONE
INTRODUCTION

1.1 Background:

Sudan is endowed with large economic potential in terms of agricultural resources. It is primarily agricultural and pastoral country with a majority of the population engaged in agriculture and livestock activities. These activities employ about 80% of the workforce and contribute in average, about 39% of the gross domestic product (GDP), (Figure, 1. 1), with most farms remain rain–fed and susceptible to drought (Marison & Cooke, 2000).

The country is the world's largest producer of gum Arabic, which is one of the four important agricultural export commodities from Sudan, beside livestock, cotton and sesame. Over the last 20 years, gum Arabic export value amounted to an average of US$40 million annually. The government desist the intervention in the marketing of all agricultural exports, except gum Arabic is the only one of which government control remained.

Gum Arabic is mostly produced by small-scale farmers in traditional rain-fed farming areas (central and western Sudan); they represent up to 20% of Sudan’s population, or around 6 million people, (World Bank, 2007)

Small-scale farmers give priority to food crops production usually (sorghum or millet) to secure family nutritional needs. They also seek other sources to meet their other household’s basic needs. In addition to direct financial returns, they practice the activity of gum Arabic production because it constitutes a crop diversification to compensate the deficit of crop failure (World Bank, 2007).
In 1969 the government of the Sudan granted an exclusive concession to export of raw gum Arabic to the Gum Arabic Company (GAC). This policy had three main objectives: a) to exercise market power, as Sudan at that time was producing 80% of the global gum traded, b) to guarantee production and protect producers through implementation of floor price, and c) to preserve the environment by maintaining the high demand for gum which was expected to help in expansion of Acacia cover (World Bank, 2007).
Figure 1.1: The contribution of the agricultural sector in gross domestic product (GDP) 1990/2006

Source: (Bank of Sudan, 2006)
1.2 Definition and Specification of gum Arabic:
The term gum Arabic in Sudan is used to include two types of gum, which are produced and marketed, but nevertheless, clearly separated in trade. These are "Hashab" or "Kordofan gum" from the Hashab tree (Acacia senegal) and Talh gum from the Talh tree (Acacia seyal) (Koppen, 1999).

The early Joint FAO/WHO Expert Committee on Food Additives (JECFA) Specifications defined gum Arabic as the dried exudation obtained from stems and branches of Acacia senegal, or related species of acacia (Family Leguminasae) (FAO, 1986). This definition was changed many times but the recent one indicated that “gum Arabic is a dried exudation obtained from the stems and branches of Acacia senegal or Acacia seyal (Fam. Leguminasae) (FAO, 1998).

So gum Arabic from Sudan is a product of both Acacia senegal and Acacia seyal species. However, Acacia senegal is the main source of commercial gum Arabic (IIED / IES 1990). Badi (1989) reported that the majority (90%) of gum Arabic produced in the Sudan is obtained from species Acacia senegal and only a small amount (10%) of less quality gum is collected from Acacia seyal (Talh tree). Gum from Acacia seyal is the next most available Acacia gum of commerce. In commerce, it is marketed as gum Arabic (IIED/IES) 1990), but Sudan exports it under a different name (gum Talh) to distinguish it from gum Arabic provided by Acacia senegal (gum Hashab).

Many studies have been designed were contributed to identify the analytical parameters of gums from Acacias; the optical specific rotation is the main parameter that could be regarded as diagnostic to differentiate clearly between gum Hashab and gum Talh.
The identified parameters and intrinsically different properties of gum Talh render it inferior to gum Hashab and make it less suited to many of the applications for which Hashab is used. Moreover, gum Talh contains tannins, so it is excluded for use in food and drink industries. Consequently gum Talh fetches lower price (Anderson, 1993).

In June 2008 the prices of gum Talh rose above those of Hashab gum for exploration of new uses for Talh gum, which were not known before.

1.3 The Gum belt in Sudan:
The production of gum Arabic in Sudan is concentrated in the (gum belt) area of central Sudan between latitudes $10^\circ$ and $14^\circ$ north together with minor protrusions (Mahmoud, 2004).

The gross area of Sudan gum belt (Fig 1.2) is estimated to cover 520,000 square kilometers (52 million hectares) which is roughly one – fifth the area of the country. Administratively, the gum belt spans five sectors eastern, central, Kordofan, Darfur and the Blue Nile in addition to Upper Nile State. The belt covers parts of the clay and sandy plains. The clay plains are found in south kassala, south Blue Nile, south White Nile, Northern Upper Nile and South Kordofan. The sandy plains dominate in North Kordofan and Darfur States (Taha 1999).
Figure 1.2: Gum Arabic Belt in Sudan

Gum belt=green color

Source: (Elamin, 2007)
1.4 The problem statement:

Gum Arabic, both as a product and production activity is very important for the countries in the gum Arabic belt. For a country like the Sudan gum Arabic is a high ranking export and foreign currency earner figures (1.3, 4, 5, and 6).

More than one fifth of the total population of Sudan is involved in gum production one way or another. The activity has environmental aspects as well as socio-economic effects. Among all the producing countries, the Sudan is the dominant one both as a producer and as an exporter of the product (Karama, 2002).

In Sudan gum Arabic is also considered as one of the principal cash crops. Its importance stems from its contribution to the agricultural sector and it is a source of income to small producers and casual labor (Yassen, 2001).

The system of gum Arabic marketing abroad witnessed many changes since the commence of gum Arabic trade in 1820 which is considered to be the beginning for the expansion of gum Arabic trading in the Sudan. As in 1922 free trade policy was introduced into the economy. It experienced various problems such as absence of organization or mechanism to control and protect the producers, decrease foreign currency proceeds due to severe competition in the international markets.

The above mentioned situation could not be changed without establishing a commercial trading body to be responsible for organizing gum Arabic markets both local and foreign. In 1969, the Gum Arabic Company (GAC) was established as a model for gum Arabic marketing. It was provided with concession for exporting crude gum; it used to protect producers by adopting
floor price system and buying in auction markets. The Company is responsible for providing services in remote areas of gum Arabic production and support the related research.

The concession of the GAC as a sole exporter of gum was abolished and restored two times first one was restored by the president in 1992 and the second one was restored by the parliament in August 2001.

Since 2002, GAC was subjected to criticisms from certain companies and the Forestry National Corporation. Again the controversy of liberalization as a model for gum Arabic marketing evolved.

Hence, this study is designed to assess the different systems of foreign marketing for gum Arabic concession, liberalization and processing to compare their feasibility to producers and to ensure the sustainability of gum Arabic production in Sudan.
Figure 1.3: Contribution of gum Arabic in Agricultural Product exports 1990/2006
Source: (Bank of Sudan, 2006)

Figure 1.4: Contribution of gum Arabic in Sudan gross Export 1990/2006
Source: (Bank of Sudan, 2006)
Figure 1.5: The quantities of gum Arabic exported in Thousands Metric tons 1990/2006
Source: (Bank of Sudan, 2006)

Figure 1.6: The Value of exported gum Arabic quantities in Million US$/ 1990/2006
Source: (Bank of Sudan, 2006)
1.5 The Objectives of the Research

The general objective of the study is to compare the feasibility of different systems of gum Arabic marketing.

The specific objectives are

1- Investigate the constraints that threaten foreign marketing of gum Arabic.

2- Identify advantages and disadvantages of liberalization on gum Arabic production.


4- Assess the benefits of exports of processed gum Arabic.

1.6 Hypotheses of the Study

1- The Concession system as a model for foreign marketing of gum Arabic is feasible to the main producers and exporters.

2- Liberalization of the economy increases the volume of Sudan gum Arabic in world market.

3- Establishment of gum Arabic processing companies is not sufficient to buy all products of gum Arabic of the Sudan.

1.7 Arrangement of the Study

This study has been divided into five chapters:

The first one is an introduction; it describes briefly the problem, objectives, hypotheses and the arrangement of the study. The second is showed the salient features of gum Arabic production and marketing in Sudan. The third is about research methodology. The forth is results and discussion, and finally chapter five describes; summary, conclusions and recommendations of the study.
CHAPTER TWO

The Salient Features of gum Arabic production and marketing in Sudan

2.1 The Socio-economic importance of gum Arabic in Sudan:

Ecologically the gum belt in the Sudan stretches throughout the lowland savannah, low rainfall woodland savannah, on clay, sand and the other types of land. This region represents the most fragile environment in sub-Sahara Africa. Acacia Senegal, the gum Arabic tree (and other similar tree species) are known to survive well in such an environment and provides economical, social and environmental benefits to the inhabitants of the region. From environmental point of view the most important role of the Hashab tree in the marginal land of the Sudan is its ability to improve the soil fertility (being a leguminous tree) and thus support the production of agricultural crops, and to act as a natural hedge against the desert creep from the North. From economic point of view the Hashab tree is a source of direct and indirect income. The direct income comes from the sale of gum Arabic as an off-farm activity, and the indirect income comes from the effect of the tree on increasing agricultural crops productivity (farm income) (Sharawi, 1987). The significance of the income gained from gum production is that collection and processing of gum Arabic are carried out during the dry season. The activities do not compete with agricultural calendar of the farming activities. This in turn allows farmers to make use of their slack period and acquire supplementary income at a time when it is not needed.

The gum Arabic is an important off-farm activity for inhabitants of the gum Arabic belt. In this activity all members of the family are employed for
about 4 months of the dry season. In addition, seasonal labors from other parts of the country migrate to the gum belt area seeking for seasonal employment. In a survey covered the gum belt area it was found that on average about 19% of total household income is gained from activities related to gum Arabic (Sharawi, 2000). Socially, this is very relevant since this income helps to some extent in preparation for the next season and keeps the farmer tied to the land. Thus sustainability of this income is of vital importance for the sustainable development and stability of this area. The importance of gum Arabic at the national level emanates from its being an important export product and contributes by an average of about 10% to the agricultural exported products of the country (BS, 2006).

The international significance of gum Arabic is confirmed by USA exemption of the product from economic sanctions on Sudan in 1997. This exemption shows the economic importance of gum Arabic for Sudan and for the developed countries (Elamin, 2007).

2.2 The Relationship between agricultural crops and gum Arabic Tree

Traditionally in Sudan Acacia senegal tree was introduced in a crop-tree shifting cultivation included crops as millet, sorghum, groundnuts, sesame and water melon benefit from enriched soil fertility by the Acacia trees. This system was well acknowledged and regarded as sustainable in terms of its environmental, social and economical benefits (Ballal, 1991).

The gum gardens are controlled under farmers’ management from regeneration to maturity for gum production. The tree can be propagated by coppice, which is practiced as a part of the bush–fallow (or shifting cultivation allowing, a fallow period of about 10-15 years). The bush–fallow
cycle usually starts by clearing an old gum garden (15 – 20 years old), for the cultivation of crops. The short stumps (about 10cm high) were left after cutting the trees to re-sprout vigorously as a second rotation crop.

The cleared area was cultivated for 4-6 years, while at the same time the coppice shoots were left during weeding operation. When the soil fertility decreases, as reflected in low crop yield, cropping was ceased and the area was left to relapse to a bush-fallow of Acacia senegal. (Seif Eldin, 1984) the trees were tapped for gum production until the trees were 15- 20 years old. At the end of this rotation, the trees were cleared again for cultivation, and the new stumps were left to re-sprout to form a new rotation crop. In addition to coppice, regeneration resulting from natural seed fall was also protected by farmers during weeding operation (Seif Eldin and Obied 1971).

**2.3 Gum Arabic Production**

Gum Arabic production begins with Sudanese farmers who tend and protect their valuable trees throughout the year. They have experience of the local conditions and acquired expertise over many years (Gabb, 1997).

Acacia senegal is the dominant variety that grows in Sudan and is considered as a main source of commercial gum Arabic (Hashab).

Gum Arabic in Sudan is derived from natural stand and plantations and is collected by tapping of the trees (Chikami, 1996).

According to Taha (2000), gum Arabic production is mostly dependent on relatively small land holdings locally known as Gineins or gum Orchards. These are usually located in the vicinity of villages and more particularly in the sandy part of the gum belt.
Management of gum production falls into either of two systems; Hashab owner or Hashab renter system (Chikami, 1996).

Hashab ownership system is subdivided into small holders on both the clay and sandy soils, and large holders are found in central area of the gum belt. The first type makes up the majority of gum Arabic management across the belt. Large holders include traditional Hashab owners Sheikh, Umads, mechanized schemes owners etc. They depend on hiring labor and on share-cropping for production. Hiring of labor takes two forms of contractual payments; daily wage or piece work per unit area (Mukhamas), per tree or per number of trees. Hashab renter system includes those renting from the Forest Administration’s plantations and orchard owners. (IIED, IES, 1990).
Figure 2.1: Hashab gum Arabic Production (in Thousand metric tons) 1990/2006

Source: (Bank of Sudan, 2006)

Figure 2.2: Talh gum Arabic Production (in thousand metric tons) 1990/2006

Source: (Bank of Sudan, 2006)
2.3.1 Tapping and Collection of gum Arabic:

The tapping of Hashab tree involves wounding a branch by using either a traditional tapping axe or the most recently introduced Sunki (Gabb, 1997). Commencement of tapping is after the rains or when the growth of tree stops. This sign of maturity is judged by change in the color of leaves into yellow. Tree ripening for tapping is also checked by observing leaf shedding after manual shaking of the tree branches and also by the change in inner phloem to red.

After tapping the tree, the first harvest gum nodules are picked after 3-6 weeks or 30-45 days. Gum continues to exude from the same injured spot, and is collected every 10-15 days and the same tree is picked up 4-6 times during the season. Farmers usually observe weather conditions before starting gum collection. If wind and dust prevail or if there are animals moving inside the gum garden, the farmers stop collecting gum to prevent dust from ceiling the gum exudation points resulting in low yield of subsequent pickings. For the same reason, they also start collection when the weather is warm enough so that nodules do not ceil off exudation points (Ballal, 1991).
Plate 2.1: Tapping of gum Arabic tree by using an axe  
Source: (Ballal, 2006)

Plate 2.2: Tapping of gum Arabic tree by using Sunki  
Source: (Ballal, 2006)
Plate 2.3: Gum Arabic picking and collecting

Source: (Ballal, 2006)

Plate 2.4: Gum Arabic cleaning and packing

Source: (Gum Arabic Research Center 2007)
2.4 Gum Arabic Beneficiary Groups:

Gum Arabic beneficiary groups can be classified into four main categories as mentioned by most recent studies (Taha, IIED and IES, 1990). These categories are gum producers, gum local traders, gum processors, and gum exporters (GAC).

1. **Gum producers:** can broadly be defined as the rightful owner of a gum orchard or plantation, or a shareholder in the cropping system of the gum product. Their major job is to establish, maintain and market gum, that is to acquire land, plant, naturally regenerated gum trees, tend, protect, tap and collect the gum Arabic and finally sell it as raw natural gum. Ideally, marketing should take place through official channels (auction markets) but often through "middlemen".

2. **Gum local traders:** operate at different marketing levels, from producers ending up into the hands of gum processing companies or Gum Arabic Company. The local marketing infrastructure is composed of village merchants, local city merchants and auction markets.

   a. **Village merchants:** operate at village level and undertake small scale transactions. They buy directly from gum producers at village shops or on market days, and sell the amount they collect to merchants at nearby markets towns, or to lorry operators visiting the small rural centers.

   b. **Local city merchants:** usually reside in the centers, with some operating as company agents who may be self financed or supported by main dealers in Khartoum, or other major cities. They represent the top tier in the hierarchy of the marketing set up, and organize the cleaning, grading and transport to the processing companies or any other buyer sources.
c. Auction markets: are organized by local government as part of gum marketing system. Gum is brought by producers or merchants to special yard or shed and sold by auction to buyers. In auction markets, both sellers and buyers come under one roof. Gum is auctioned by government clerk. A minimum price is fixed by the central government. Prices can go above this minimum price, because of competition, but not below the minimum, except in certain cases when gum has some defects.

2. Gum processors: are newly established operating companies. They process natural gum into different categories according to the international market demand. Then, they have the right to export processed gum only.

3. Gum exporters: are represented by the Gum Arabic Company (GAC), which is entrusted with international marketing of the commodity whether it is raw or processed gum.

2.5 Functions of gum Arabic:

According to (GAB, 1997) gum Arabic has the following functions:

1. It retards sugar crystallization.

2. It is a thickener of sweets, jellies, glaze and chewing gum.

3. It converts royal icing into a plastic paste in home cake decorating.

4. It maintains the foam in beverages.

5. It helps citrus and other oily flavors to dissolve in water.

6. It is emulsifier, stabilizer and preventive of chemical breakdown.
7- It is copper forming agent in fermentation to encourage the precipitation and coagulation of protein and tannins.

8- Gum Arabic is also used medically as a demulcent to soothe irritation, especially of the mucous membranes.

9- Gum Arabic chemically is suggested to be one of the most extensively tested food additives. It is also one of the safest no upper level limits have been recommended by FAO/WHO Committee”.

2.6 Uses of Gum Arabic

Gum Arabic is nontoxic, odorless, tasteless and completely water soluble. It uses depend upon its action as a protective colloid or stabilizer and the adhesiveness of its water solutions, they include:

1. Food industry

“Gum Arabic is used in the confectionery industry to retard sugar crystallization and to thicken candies, jellies, glazes and chewing gum. Its emulsification properties are utilized in various liquid flavor emulsions as well as in solid confections containing fat. It is also used as a foam stabilizer in some beverages and as a fixative in spray dried flavors protecting the flavor particles from oxidation, evaporation and absorption of moisture.

2. Pharmaceutical industry

Here gum Arabic is used as a demulcent and a colloid in sundry mixtures, cough drops and syrups and in the stabilization of emulsions for the formation of tablets and pills. It is in certain antiseptic preparations, and also used in preparation of deity gum drops low-sugar and salt-restricted diets.
3. Cosmetic Industry

In cosmetic preparations, gum Arabic is used to stabilize the emulsion, increases the viscosity and adds a smooth feel to many lotions and creams. The paramount advantage of the gum in these uses is its non-toxicity and freedom from dermatological and allergic reactions.

4. Paper and Printing Industry:

In the paper Industry, gum Arabic is used as an adhesive in the manufacture of different types of stationery. It is also used in preparation of high quality and waxed or coated papers.

In the printing Industry it is an important constituent of many special purpose inks. Water color and quick drying inks and a variety of fabric and laundry marking inks utilize the suspending and binding properties of gum Arabic. In lithographic gum Arabic is used as a sensitizer for lithographic plates, as an element in the light sensitive composition and as an ingredient of the fountain solution.

5. Textile Industry:

Gum Arabic is used as sizing and finishing material in sizing operations of the textile industry. Various gums are mixed with starches to give the film the desired toughness. In finishing operations, the lower quality grades are used with exception of silk where the finest grades of gum are used” (Ibrahim, 1996).

2.7 The grades of gum Arabic:

The quantity of gum Arabic as received by the importer is very dependent on the source. Gum Arabic Hashab from Sudan is of highest quality and sets the
standard by which other (gum Arabics) are judged. Not only does Sudanese gum come from species (Acacia senegal) which intrinsically produces a high quantity exudates with superior technical performance, but the collection, cleaning, sorting and handling of it up to the point of export is well organized and highly efficient (FAO, 1990).

According to the grades of Sudanese Standards and Metrology Organization committee (2004), the gum Arabic was graded into the following.

- **Natural gum Arabic:**

  Its description is a whole nodule and contains extraneous materials such as sand and pieces of bark. And it was sub-graded into commercial grades such as:

  **a- Gum Arabic, Hand Picked Selected (HPS):** HPS grade is large size very clean nodules and tears of gum Arabic.

  **b- Clean grade:** It is medium to small size whole nodules and tears of gum Arabic.

  **c- Kibbled grade:** Crushed gum of uniform particles having maximum size of 14mm and minimum size of 0.3mm.

  **d- Mechanical powder grade:** Gum Arabic mechanical powder creamy white odorless powder of mesh size <300 micron.

  **e- Sifting grade:** Gum Arabic sifting grade is broken pieces of clean gum Arabic of varying size obtained as a by-product of the cleaning and grading process.

  **f- Dust grade:** Gum Arabic dust grade is a fine particle of gum Arabic containing a high percentage of extraneous matter and impurity.
2.8 Marketing of gum Arabic

Gum Arabic, both as a product and production activity is very important for the countries in the gum Arabic belt. For a country like the Sudan, gum Arabic is a high ranking export and foreign currency earner. More than one fifth of its total population is involved in it one way or another. The activity has environmental aspects as well as socio-economic effects. Among all the producing countries, the Sudan is the dominant both as a producer and an exporter of the product (Karama, 2002).

2.8.1 Background about gum Arabic Marketing:

Despite the fact that trading of gum Arabic dates decades back, 1820 is normally considered as the beginning year of expansion in trading of gum Arabic from Sudan to Europe. As early as 1923 the colonial authority in the Sudan introduced the auction system as a method for marketing gum Arabic in local markets in an attempt to activate and perfect the interplay of supply and demand for gum Arabic in the local markets. With the introduction of this method and no intervention was allowed, two observations were made: first: there were acute fluctuations in gum prices and second there was a decrease in the revenues of gum Arabic exports (Karama, 1999).

In 1962 and after independence the Ministry of Commerce, Industry and Mining took the responsibility of organizing the gum Arabic market to avoid the fluctuations of prices and the decline in its export proceeds. A minimum price (floor) was introduced in the auction system that had been in operation since 1923. Moreover, a minimum export price was also introduced. An advisory committee was setup to help the Minister in deciding at the Ministry of commerce this committee was headed by the undersecretary and
the membership of the governor of the central bank, Department of Forestry and some exporters of gum Arabic. The committee meets annually in September before the beginning of the season.

This formula, however, was not very effective in preserving the minimum prices fixed by the committee and announced by the Ministry of Commerce. Prices were still dropping to levels below the fixed minimum ones as gum piles at the end of the auction day and no one was ready to take the surplus at the formal prices.

To improve this situation another step was introduced. An amount of 0.2 Sudanese pound (later raised to 0.25 pound) per (kantar) was charged and collected by the local councils at a service fee of 10% of the total amount collected. This fund was intended to be a concentration and a stabilizing fund. Despite this attempt, however, the problems continued to exist. The main problems, which could not be solved by the concentration fund idea, were:

1- There was no real effective protection (organization or mechanism) to protect the producers from strong companies most of which were branches of or agents to foreign companies that had little interest in preserving such a protection.

2- Trading companies were unconstructively competing in the international markets as a result of which there was a continuous decrease in the foreign currency export proceeds coming to the Sudan. The average inflow of gum Arabic export proceeds never exceed $12 million for the period 1960-1969 despite the fact that average annual exports never fell below 45 thousand tons.
3- There was no body concerned with or taking care of supervision, follow up or quality control issues. There were a number of complains from foreign importers of gum Arabic.

4- There was lack of co-ordination among those in the area of production, environment and those benefiting from trading in gum Arabic (Karama, 2000).

It was evident that those problems could not be solved without establishing a commercial trading body to be responsible for organizing gum Arabic markets both local and foreign. It was also evident that such a body could not be successful without a specific mechanism for operation. The Gum Arabic Company (GAC) as a form of organization specializing in marketing gum Arabic was established in 1969. The Gum Arabic Company as a model for marketing gum Arabic is:

1- A private company, although government owns some capital in it.
2- A public company and broad based shareholders exceeding five thousand people and companies.
3- Responsible for the protection of producers through preserving a minimum price (floor) as one of its main objectives.
4- Supervising and promoting international marketing of gum with the objective of increasing its exports revenues.
5- Preserving quality control and protecting the reputation of the Sudan by working closely with the concerned official organs.
6- Taking care of the environment and the gum communities by various ways and by co-ordination with the concerned government authorities (GAC memorandum, 1969).
The GAC model works in the following way:

The company is responsible for rising and generating its own funds needed for the accomplishment of its objectives from its own capital and finance (local and foreign). Producers produce gum product and bring it to the auction markets. Merchants in the auction markets buy gum Arabic from the producers but always at the minimum prices declared by the government and the GAC to protect the producers, it further sells the gum Arabic at higher price after the merchants have cleaned the gum sorted it and graded it. The GAC then exports the gum after more cleaning and further grading (Karama, 2002).

2.8.2 The procedures of Local Market Development:

Since 1969 the Gum Arabic Company has been responsible for suggesting, monitoring, supervising and protecting a minimum price in the local markets which announced annually well before the beginning of the season normally around September. In its efforts to protect the producers and ensure that the announced minimum price is paid to them by the traders in the auction markets, the (GAC) is obliged to take all crop left unsold by the end of the day at the minimum floor price if for any reason: The traders were not able to purchase for the reason of finance or the traders deliberately tried to force down the minimum price or if the quantity supplied is beyond the capacities of the traders. Generally, at the operational level as long as the auction was going as expected and the minimum price was the prevailing price, the GAC was not allowed to enter the market and engage in auctioning. The GAC was operating through a number of the local agents some of them were traders of
gum Arabic. They were getting gum from the producers presumably at the minimum price that announced annually. They got the crude gum cleaned it, stored it, and then shipped it for delivery at the GAC warehouses at Port Sudan. There were, however, continuous claims by the producers that the minimum price were not normally paid by the local agents or if paid the value of gum was delayed by the GAC agents before finally delivered to the smaller merchants and big producers. The GAC, recognized this defects, so it has taken a number of steps to rectify the situation and ensure that minimum price do reach the producers and those producers are effectively protected.

1- The GAC in 1994 abolished the long experienced agency arrangement that had been in operation since the beginning of its job as a new modality.

2- In 1999 the GAC amended its own law to enable itself to receive gum at its warehouses in Port Sudan or at any other place. With this move the GAC started to enter the auction market and participate and move freely in the production areas to receive gum in direct competition with the local merchants and traders.

3- As soon as recognizing that it can not cover the whole country and that it had to make use of the producers themselves, a third move was made by the GAC in this respect. The GAC moved to organize the producers in the form of commercial groupings that took the form of local companies registered according to the 1925 Company law in the Sudan. The GAC has contributed to the capital of each of the thirteen companies registered in each producing State in the Country.
The idea behind the GAC making the above three moves was not to
eliminate the role and contribution of merchants in the local market. The
intention of the GAC was, rather, to increase competition in the local
markets. It was also an objective to organize the producers along
commercial lines, increase their trading knowledge tying them more and
further to the higher levels of the gum Arabic markets. More importantly, it
was the intention of the GAC to create and solidify its relationship with the
producers (Karama, 2002).

2.9 Concession and Liberalization definitions:-
Concession is a grant of special privileges by government allowing a
specific party or group to have more access to resources than other.

A liberalized market is an idealized form of market economy in which
buyers and sellers are permitted to carry out transactions based on mutual
agreement on price without government intervention in the form of taxes,
subsidies, regulation, or government ownership of goods or services
(Hamed, 2006)

2.10 The trade of gum Arabic in world market:
Hashab gum Arabic exports of Sudan accounted for 80% of all gum Arabic
global exports during 1950-2000. However, considerable year-to-
year variations and overall declining gum exports from Sudan occurred.
Consequences of two severe Sahalian droughts (mid-70s and mid- 80s),
political unrest and inadequate marketing arrangements have resulted in the
emergence of new gum producing countries (Chad and Nigeria).
2.11 The Outcome of GAC concession system within decades of gum Arabic marketing:

Close to 40 years after the exclusive concession was granted to GAC, the assessment for marketing situation can be summarized as follows:

- Sudan’s share of the world market is below 50%,

- Production and consequently exports have been declined at an average rate of 2.2 % per annum;

- Low prices received by producers for gum Arabic pushed them to grow other cash crops.

- The insufficient finance of research, reforestation activities this has led to decline in productivity. (World Bank, 2007).
CHAPTER THREE

Research Methodology

This chapter describes the study area, data source, sample frame, sample size and the analytical techniques for data analysis

3.1 Area of the Study

3.1.1 Elobied crops market:

North Kordofan State is one of the States which is distinct in the production and marketing of crops. The advantage of its marketing strikes in the history of ancient trade in Sudan (ECM, 2006).

Elobied city is characterized by crops marketing activity since the earliness date. As pointed, by the writer Jamal Mohamed Ahmed that, Elobied is the hub of Africa and the crossroads of trade and traffic crossing to the western, central northern and southern Sudan. This distinction led to the major Kordofan share with more than 30% of the gross of exports crops of Sudan deported from Elobied city. Also it is one of the oldest Sudanese cities which was established as a municipally in 1942(ECM, 2006).

3.1.1.1 Location of the market:

Elobied crops market lies in the central part of the capital of the North Kordofan State. It is bordered at the North side by the industrial area of east Railway Station, on western part by the Faculty of Medicine, University of Kordofan, and the Children Hospital of Incidents.
3.1.1.2 The establishment of the market:

Elobied market is one of the earliest crop markets in Sudan, since its establishment in 1905; it has been the largest market for gum Arabic market in the world. The area of the market is about 1768.8 square meters, 141.5 meters long and 12.5 meters wide. In 1905 its position was in the large market and the operation sale was by barter system.

Simultaneous transfer of market crops from its old site to the current location in 1912 was done with the entry of the railway to the Elobied City in order to facilitate traffic and deportation. The marketing of crops on that barter system continued till 1922, and then in 1923, changed into the auction system. The different crops which flow into the market include: gum Arabic - sesame - groundnuts - hibiscus – water melon seeds –senamaka.

The famous buyers at that time were:-

a - Akasha Khalil
b- Bakdli
c- Deng Salyson
d - Majas Company (ECM, 2006)
Plate 3.1: Elobied Crops Market Administration Office
Source: (Field survey 2008)

Plate 3.2: The Auction Market Hall of Elobied Crops Market
Source: (Field survey 2008)
3.1.1.3 The Arrangement of the crops movement in the market:-

The crops arranged in three ways:-

a- Crops landed directly in the market and are offered for sale by auction marketing system.

b - Commercial crops landed in merchants, companies and Banks warehouses and their storage and exit organized through the market management.

c - Transient crops checked or revised their documents to make sure that they satisfy the organizing conditions of the movement of crops, in addition to controlling the crops that exported from the State.

3.1. 1.4 The Auction operation System in the market

The Auction operation system procedures include the activities of the following market administration’s Sections:

1 - The Seizing Section:

   a) The preparation of places for different crops landing.

   b) Submission of marks to facilitate the inspection of the crops by traders and the agents.

   c) Registration of various crops in the notebook "Musseir book" to be presented for marketing in the auction hall.

2 - The Auction operation:

The Auctioneer usually begins with gum Arabic - sesame - groundnuts - hibiscus– watermelon seeds and Sanammaka. The producers or the producers' agents have the rights to sell their crops if the market prices are
rewarding and vice versa if they are not find the appropriate price will recorded the word (Bait) as a sign for excluded crops from the auction and to be displayed on the second day.

3- **Elgubbania Section:**

This Section specialized in weighing of the crops in the auction market.

4- **Accounting services:**

The purchases of all traders accounted and registered daily. Each trader has a separate page statement (quantities in kuntar and the amounts owed to be paid to the producers, the imposed fees to each crop from services, marketing, and the imprint or state stamp).

5- **The interior Paying:**

Collection of fees from the merchants with financial receipts.

6- **Passing licenses:** To obtain the permits for trucks passing, including all the statements about the loaded crops.
Plate 3.3: Weighing of the crops in Elobied Crops Market
Source: (Field survey 2008)

Plate 3.4: Weighing of the loaded Truck in Elobied Crops Market
Source: (Field survey 2008)
3.1.1.5 The structure of the market:

The market was controlled by marketing powers supply and demand and the most conditions of Perfect competition market were present such as; the presence of many numbers of buyers (table 3.1) and sellers, either directly or through agents, the availability of marketing information, and the transparency of the auction system especially for the sellers because anyone has a right to refuse purchasing of his crop if he has not found the rewarding price.

Table 3.1 The number of gum Arabic buyers in El obied crop market for selected years

<table>
<thead>
<tr>
<th>Name</th>
<th>2005-No</th>
<th>2005-Total frequency</th>
<th>2006-No</th>
<th>2006-Total frequency</th>
<th>2008-No</th>
<th>2008-Total frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agents</td>
<td>31</td>
<td>60</td>
<td>9</td>
<td>28</td>
<td>10</td>
<td>49</td>
</tr>
<tr>
<td>Companies</td>
<td>5</td>
<td>32</td>
<td>4</td>
<td>28</td>
<td>2</td>
<td>26</td>
</tr>
<tr>
<td>Traders</td>
<td>3</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>total</td>
<td>21</td>
<td>102</td>
<td>13</td>
<td>56</td>
<td>13</td>
<td>79</td>
</tr>
</tbody>
</table>

Source field survey 2008

3.1.1.6 The market Administration

In the market there is administration office headed by executive officer and assisting staff that responsible for the following duties.

1 - Regulate the relationship between the producer, trader and the State.
Figure: 3.1 The quantities of gum Arabic in Elobeid Crops Market (2000 – 2007)

Source: Information Unit, ECM (2007)

Figure: 3.2 prices of gum Arabic in Elobeid Crops Market

*In Sudanese Geneh 2000/ 2007*

Source: Information Unit, ECM (2007)
2-Regulate the marketing operation, by revitalization of commercial competition through the auction system, that achieves the return value to the producer and provide the crop to the buyer with specifications and quality control, and collect the excised charges of the State.

3 - Provide daily information to all the bodies which concerned with the volume of imports and exports of the market, storage and average prices and volume of returns of income and economic analysis for the movement of crops marketing and defused locally, federally and globally, through the media and the Internet for the purposes of international trade.

4 - To solve all the problems which arising from the marketing relationships within the organizing controls framework and helping the other associations in the collection of fees such as Zakat, taxes and fees of public services.

5 - Implementation of quality programmes for the domestic market and exported crops to fulfill the qualitative distinction of the State’s crops.

6- Responsible for securing all the landed crops under auction operation against any risk.

3.1.1.7 The Altolonata Balance Services:-

The Balance is an electric and electronic was installed in 2000 in the market its capacity is hundred tons with a length of 21 meters and a width of 3 meters to facilitate the weighing of inflow and outflow of the crops for the warehousing, and also it deals with weighing of trucks of the agencies outside the stock market purchases. It depends on two weighing loaded and empty to get the net weight of loaded crop.
Plate 3.5: Altolonata Balance in Elobied Crops Market

Source: (Field survey 2008)

Plate 3.6: The key Board of Altolanata Balance

Source: (Field survey 2008)
3.2 Data Source:

The data of this study were collected from both primary and secondary sources.

3.2.1 Primary data:

Cross-sectional data were collected by means of a structured questionnaire and direct interviewing of the gum Arabic traders in Elobied, Elnuhoud and Umrwabba auction markets, beside some selected village markets in North Kordofan State during the season 2008.

3.2.2 Secondary Data:

Collected from related secondary sources such as:

- Gum Arabic Research Center-University of Kordofan.

- Bank of Sudan -Elobied branch.

- Warm Seas Company. (Elobied industry)

- Gum Arabic Company.

-Sudanese Standards and Metrology Organization (Elobied office)

- Other relevant sources include papers, Journals, researches and previous studies.

3.2.3 Sample Frame:

Even though the targeted study area was Elobied crop market, but to support the assessment of the current gum Arabic marketing systems the sample frame embodied Elnuhuod and Umrwabba auction markets beside some selected village markets.
3.2.4 Sample Design:

In order to get a good assessment of the current gum Arabic marketing systems, a well designed sample was done by selection of respondents from different types of gum Arabic traders in the sample, including the village traders, agents and secondary traders.

3.2.5 Sample Size:

As known, the degree of precision increases with the increase of the sample size, but the limited population of the traders, the difficulty to get response and acceptance to provide information a non-probability sampling technique was used to select forty respondents (Traders) as a sample size.
Plate 3.7: The group discussion of gum Arabic traders in El Obeid Crops Market

Source: (Field survey 2008)

Plate 3.8: The gum Arabic traders in El Obeid Crops Market

Source: (Field survey 2008)
3.3 Data Analysis:

The data was analyzed by using statistical package of social science (SPSS) in terms of descriptive statistical analysis (frequencies and percentages) for the socio-economic characteristics of the traders. Regression analysis was used to assess the relationship between the dependent and independent variables.

3.3.1 Regression methods

Regression is being referred to by Jan Kmenta within the framework of econometrics as “Economic theory is mainly concerned with relations among variables while econometrics is concerned with testing the theoretical propositions embodied in these relations and with estimating the parameters involved”, and by Aczels as “the statistical technique of modeling the relationship between variables”.

When we are considering only two variables, then it is a bivariate relationship which is usually expressed in a simple regression model, on the other hand when more than two variables are considered it is a multivariate relationship which is expressed in a multiple regression model.

3.3.1.1 Simple Regression Model

In this regression analysis there only one factor that affect the dependent variable (Johnson and Buse, 1987). Its formula as follows:

\[ Y = b_0 + b_1 x + e \]

Where:

\( Y \) = the dependent Variable.
x = the independent variable.

b₀ = intercept.

b₁ = regression coefficient.

e = the disturbance term.

3.3.1.2 Multiple Regression:

In the multiple regression analysis there is more than one independent variables that affect the dependent variable (Kennedy, 1985). It measures the effect of change in one variable while holding of other variables constant. This type of analysis consists of two or more independent variable, it is considered as a logical extension of the simple regression model (Bower, 1982).

The general equation of multiple regression models is written as:

\[ y = b₀ + b₁ x₁ + \ldots + bₙ xₙ + e \]

Where:

Y = the dependent Variable.

x₁, ..., xₙ = the independent variables.

b₀ = intercept.

b₁, ..., bₙ = regression coefficients.

e = the disturbance term.
The coefficients represent the change in the value of the dependent variable for a unit in one independent variable, assuming other independent variables being constant.

**The coefficient of the multiple Determinations (R²):**

It gives the percentage of the variation in the dependent variable explained linearly by the variation in the independent variables. Computer packages calculated the $R^2$ automatically. The $R^2$ is used as an index of how the estimator fits the sample data.

**The adjusted R²:**

Is developed to facilitate meaningful comparison across equations using different explanatory variables and different sample sizes. It is always less than the unadjusted $R^2$.

**The test of hypotheses:**

**i. The t-test**

T-test is related to individual coefficient in the regression models. It is used to test whether each coefficient is significantly different from zero or not.

T- Value is calculated by dividing the regression coefficient of the variable by its standard error. The computer software regression package gives the t-value to the probability of this coefficient being significantly different from zero.
**ii. The F-test:**

F-Test is the same as t-test, but rather than testing the individual coefficient it test whole regression model whether the equation holds or not. The null hypotheses here assume that all regression coefficients are simultaneously equal to zero. F-Values are calculated in the following way:

\[
F = \frac{RSS}{ESS} \div (K + 1)
\]

Where:

- **RSS** = Regression sum of square.
- **ESS** = Error sum of square.
- **K** = Numbers of independent variable.
- **K+1** = Number of independent coefficients.

**The Durbin Watson statistics (D.W):**

The D.W test for the autocorrelation is widely used; this value ranges from zero to four:

1. D.W. value, which is small (closed to zero), indicates serial positive correlation.
2. D.W. value, which is large (closed to four), indicates negative serial correlation.
3. D.W. value, which is closed to two, indicates that no serial correlation (Elhadari, 1965).

EPSS computer packages automatically calculated D.W. value.
CHAPTER FOUR

Results and Discussion

These results were obtained from the field survey which was executed in the main auction markets of (Elobied, Elnuhoud and Umrwabba) beside some selected village markets in North Kordofan State.

4.1 Socio-economic characteristics:

The socio-economic characteristics of gum Arabic traders are expected to have great effects on their assessment of the current systems of gum Arabic marketing.

4.1.1 Distribution of gum Arabic traders by Age in auction markets of North Kordofan State:

All the forty respondents were males with about 88% had ages within (21-60) years, and only 12% had ages over 60 years, as shown in (Table 4:1)

Table 4.1: Distribution of gum Arabic traders by age

<table>
<thead>
<tr>
<th>Age (year)</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-40</td>
<td>32.5</td>
<td>32.5</td>
</tr>
<tr>
<td>41-60</td>
<td>55.0</td>
<td>87.5</td>
</tr>
<tr>
<td>61-80</td>
<td>12.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)

From the table we can observe that the majority of traders’ age lies within the rational and active age which may have a positive effect on their decision-making in gum Arabic marketing.
4.1.2 Distribution of gum Arabic traders by marital status:
From the marital status view about 97% of traders were married.
And only 3% were single (table 4.2). Which indicate the stability of traders
and their decisions and opinions can be dependant on.

Table 4.2: Distribution of gum Arabic traders by marital status

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>97.5</td>
<td>97.5</td>
</tr>
<tr>
<td>Single</td>
<td>2.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)

4.1.3 Distribution of gum Arabic traders by family size:
As shown in table (4.3) about 97% of the respondents had family members
ranging within (1-15) individuals where as only 3% had more than 15
persons. The expansion of family size of traders reflects the volume of their
responsibilities and they need to raise their revenues by choosing the feasible
system of gum Arabic marketing to maximize their profit.

Table 4.3: Distribution of the traders by family size

<table>
<thead>
<tr>
<th>Family size(No)</th>
<th>Valid Percent (%)</th>
<th>Cumulative Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>42.5</td>
<td>42.5</td>
</tr>
<tr>
<td>6-10</td>
<td>52.5</td>
<td>95.0</td>
</tr>
<tr>
<td>11-15</td>
<td>2.5</td>
<td>97.5</td>
</tr>
<tr>
<td>16-20</td>
<td>2.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)
4.1.4 Distribution of gum Arabic traders by educational level:

Table (4.4) reveals the educational level of traders. About 25% of respondents had elementary education, about 37% had secondary education, and about 28% had University education. Those who received postgraduate education were 7% and only 3% had informal education (Khalwa).

**Table 4.4: Distribution of traders by educational level**

<table>
<thead>
<tr>
<th>Educational level</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>25.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Secondary</td>
<td>37.5</td>
<td>62.5</td>
</tr>
<tr>
<td>University</td>
<td>27.5</td>
<td>90.0</td>
</tr>
<tr>
<td>post graduate</td>
<td>7.5</td>
<td>97.5</td>
</tr>
<tr>
<td>Khalwa</td>
<td>2.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: Field survey (2008)

The educational level in table (4.4) illustrates the higher educational level of traders, which indicated their ability in addressing problems that confront gum Arabic marketing.

4.1.5 Experience of traders in gum Arabic markets

About 92% of the respondents had an experience in gum Arabic trading extending from (2-30) years, while only 8% had over 30 years (table.4.5). This character is expected to be the determinant factor in evaluation and assessment of gum Arabic marketing systems, because most of them have been engaged in gum Arabic marketing and transactions with GAC more than 15 years.
Table 4.5: Experience of traders in gum Arabic markets

<table>
<thead>
<tr>
<th>Experience (years)</th>
<th>Valid Percent (%)</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>11-20</td>
<td>35.0</td>
<td>75.0</td>
</tr>
<tr>
<td>21-30</td>
<td>17.5</td>
<td>92.5</td>
</tr>
<tr>
<td>31-40</td>
<td>7.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)

4.1.6: Distribution of gum Arabic traders by type of trade:

As shown in table (4.6), about 18% of the target traders were village traders, 52% were agents, 18% were secondary traders and 12% were both secondary traders and agents. Village traders were the first traders who buy gum Arabic commodity directly from the producers and transport it to the markets for sale to secondary traders or to auction markets.

Agents are mediators who have licensed offices inside or outside the auction markets. They enter the auction market and mediate between buyers and sellers of gum Arabic.

Secondary traders are the large traders who buy gum Arabic commodity either directly from auction markets or through agents and often from village traders. They store gum Arabic commodity for speculation of higher prices, or deliver their purchases to GAC according to its declared annual marketing policy.
Table 4.6: Distribution of gum Arabic traders by type of trade

<table>
<thead>
<tr>
<th>Type of trade</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>village trader</td>
<td>17.5</td>
<td>17.5</td>
</tr>
<tr>
<td>Agent</td>
<td>52.5</td>
<td>70.0</td>
</tr>
<tr>
<td>Secondary trader</td>
<td>17.5</td>
<td>87.5</td>
</tr>
<tr>
<td>Agent + Secondary trader</td>
<td>12.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)

From table (4.6), especially in the main auction markets cities, the majority of gum Arabic traders were agents. They enter the stock market as representatives to producers as a buyer, or as a seller for those who purchase gum Arabic product. The number of local secondary traders who buy the natural gum Arabic from the markets directly or through the agents decreased either for their weak capital, or to avoid the hazards and risks involved in trading of gum Arabic.

From the field survey observation, producers, village traders and middlemen or brokers transport the gum Arabic product to auction markets.

The buyers` agents purchase gum Arabic commodity for processing companies, business men and other commercial companies. They rarely buy for commercial banks.

The source markets for collecting of gum Arabic commodity were Elobied, Elnuhoud and Umrwabba. Some of traders deal with all three markets and others buy from one or two markets depending on their capital and transactions size.
Types of gum Arabic they traded in included Hashab and Talh gum. In North Kordofan State Hashab trees were found in pure stand but Talh gum was imported from South Kordofan State in small quantities, therefore Talh gum was less available in auction markets than Hashab gum.

The majority of traders had marketing relationship with producers, which start before tapping and after picking. Another group starts their relationship only when buying gum product in the market. The relationship takes place either in form of tapping finance or in form of buying the product. The relationship for the majority of traders takes the form of gratuitous loan, followed by sharing and finally by Salam and Shail systems. Payment is made either in cash or cash plus foodstuff.

Also from the field survey observation there were no relationships between the (GAC) and the producers. GAC did not provide any of the basic needs services (water drilling) or any other supports to producers' areas, which it used to provide in the previous years.

The traders traded in other crops such as groundnuts, sesame, kerkady, watermelon seed and senamaka. They traded in different quantities according to their availability in the markets. Elnuhoud market is distinct by groundnuts, kerkady and watermelon, whereas Umrwabba is famous by sesame, kerkady and groundnuts. In Elobied market, all the crops were abundant because of its strategic commercial position. So the crops flow into the market from all production areas of Great Kordofan State.
Figure 4.1: The marketing channels of gum Arabic commodity

Source: (Field survey 2008)
4.1.7 Function of floor price in gum Arabic marketing

All respondents indicated that they have full information about floor prices of gum Arabic announced annually by the Ministry of Foreign Trade. The sources of information were: mass-media, stockmarket and GAC.

Table 4.7: Function of floor price in gum Arabic marketing

<table>
<thead>
<tr>
<th>Function of floor price</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No response</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Incentive for producers</td>
<td>10.0</td>
<td>12.5</td>
</tr>
<tr>
<td>Incentive for traders</td>
<td>17.5</td>
<td>30.0</td>
</tr>
<tr>
<td>Producers+ traders</td>
<td>22.5</td>
<td>52.5</td>
</tr>
<tr>
<td>Not incentive for both</td>
<td>47.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)

Table (4.7) showed that about half of respondents indicated that announcing of floor-prices for gum Arabic had not any positive effect on their transactions. The other half respondents had different signals. About 23% indicated that both producers and traders alike had benefited from floor-price announcement, about 17% said traders benefited, while 10% indicated that producers benefited.

4.1.8 Financial sources in supports of gum Arabic trade:

The financial sources supporting gum Arabic traders included self financing, commercial banks, processing companies. As shown in table (4.8), about 25% of the respondents finance trade from their own resources. However
most of them were village traders, so they didn’t constitute an important financial source for their small financial scale. About 17% had financial support from processing companies, 15% from commercial banks, and the remaining had among more than one source. Financial support from GAC was absent compared to previous years.

Table 4.8: Financial sources for gum Arabic trade

<table>
<thead>
<tr>
<th>Financial sources</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>25.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Bank</td>
<td>15.0</td>
<td>40.0</td>
</tr>
<tr>
<td>processing companies</td>
<td>17.5</td>
<td>57.5</td>
</tr>
<tr>
<td>private + processing companies</td>
<td>2.5</td>
<td>60.0</td>
</tr>
<tr>
<td>private + Banks</td>
<td>17.5</td>
<td>77.5</td>
</tr>
<tr>
<td>private + Banks+ business men+ processing companies</td>
<td>5.0</td>
<td>82.5</td>
</tr>
<tr>
<td>private + Banks+ processing companies</td>
<td>5.0</td>
<td>87.5</td>
</tr>
<tr>
<td>business men + Processing companies</td>
<td>2.5</td>
<td>90.0</td>
</tr>
<tr>
<td>private + banks + business men</td>
<td>2.5</td>
<td>92.5</td>
</tr>
<tr>
<td>private + business men</td>
<td>2.5</td>
<td>95.0</td>
</tr>
<tr>
<td>banks+ processing companies</td>
<td>5.0</td>
<td>100.0</td>
</tr>
<tr>
<td>GAC</td>
<td>-</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)

4.1.9 Distribution of agents by buying of gum Arabic commodity

Table (4.9) shows that about 28% of agents buy gum Arabic product for processing companies in return for certain commission. The processing
companies represent an important source for purchasing gum Arabic product by virtue of their financial capacity and liquidity with cash for payment of transactions. The rest were distributed among the other sources such as business men, banks or more than one source simultaneously. Of all agents there was no one dealing directly with GAC. About 32% of the agents did not have any relation with either village traders or basic traders.

Table 4.9: Distribution of agents by the buying of gum Arabic commodity

<table>
<thead>
<tr>
<th>Buyers of gum Arabic commodity</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing companies</td>
<td>27.5</td>
<td>27.5</td>
</tr>
<tr>
<td>Business men</td>
<td>7.5</td>
<td>35.0</td>
</tr>
<tr>
<td>Banks</td>
<td>2.5</td>
<td>37.5</td>
</tr>
<tr>
<td>Processing companies + Business men</td>
<td>17.5</td>
<td>55.0</td>
</tr>
<tr>
<td>Business men + banks</td>
<td>7.5</td>
<td>62.5</td>
</tr>
<tr>
<td>Processing companies + banks</td>
<td>5.0</td>
<td>67.5</td>
</tr>
<tr>
<td>No relation</td>
<td>32.5</td>
<td>100.0</td>
</tr>
<tr>
<td>GAC</td>
<td>-</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)

4.1.10 Extent of GAC full responsibility for annual buying of gum Arabic product

From table (4.10) all the respondents answered negatively about the commitment of GAC to buy all annual product of gum Arabic being one of the objectives of establishing GAC.
Table 4.10: Extent of GAC full responsibility for annual buying gum Arabic product

<table>
<thead>
<tr>
<th>Extent of GAC responsibility</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No responsibility</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: field survey (2008)

4.1.11 Response of GAC in buying gum Arabic product from traders in auction markets of North Kordofan State

Table (4.11) reveals that 48% of traders declared that GAC refused to buy their purchases of gum Arabic production in different seasons, which reflects either weakness of GAC financial capacity or absence of competition in previous years before the emergence of the processing companies. About 52% of respondents didn’t have any commercial contact with GAC.

Table 4.11: Response of GAC in buying gum Arabic product from traders in auction markets of North Kordofan State

<table>
<thead>
<tr>
<th>Response of GAC in buying gum Arabic product</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>47.5</td>
<td>47.5</td>
</tr>
<tr>
<td>No</td>
<td>52.5</td>
<td>97.5</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: (field survey (2008)
4.12 Frequency of GAC refusal of buying gum Arabic from traders

Table (4.12) illustrated the frequency of GAC refusing to buy gum Arabic product from traders. About 35% of traders indicated that GAC had refused from 1-5 times, while 12% of traders had more than 5 times refusals. About 53% of the traders indicated that they did not have relation with GAC. These results reveal that GAC had neglected its obligation towards buying gum Arabic from local traders in the producing areas.

Table 4.12: Frequency of GAC refusal of buying gum Arabic from traders

<table>
<thead>
<tr>
<th>GAC refusal frequency</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No relationship</td>
<td>52.5</td>
<td>52.5</td>
</tr>
<tr>
<td>1-5 times</td>
<td>35.0</td>
<td>87.5</td>
</tr>
<tr>
<td>more than 5 times</td>
<td>12.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)

4.1.13 Types of GAC transactions with gum Arabic product traders

Table (4.13) shows the types of GAC transactions in payment to the traders after receiving the product. In previous years the familiar transaction was cash, and was paid immediately or if delayed, it would not exceed more than one month. But in recent seasons, deferred contract was the only transaction method was practiced. In May 2008, GAC announced its payment policies for the current season by postpone payment of contracts, for 9 months and one year after receiving gum product. It declared that it would pay a certain interest for each term based on a determined price per one kantar. This
policy didn’t find any positive response from gum Arabic traders, and hence in June 2008, the period of postponed contracts decreased to 3 months, which reveals the instability of GAC polices. Furthermore this policy was declared late towards the end of the production season. In the past GAC received no quantities of gum Arabic product from traders after thirtieth of June, when it was the only buyer before the establishment of the competitive processing companies in domestic markets.

**Table 4.13: Types of GAC transactions with gum Arabic product traders**

<table>
<thead>
<tr>
<th>Types of GAC transactions with gum Arabic product traders</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No response</td>
<td>35.0</td>
<td>35.0</td>
</tr>
<tr>
<td>Cash</td>
<td>5.0</td>
<td>40.0</td>
</tr>
<tr>
<td>Postponed contracts</td>
<td>17.5</td>
<td>57.5</td>
</tr>
<tr>
<td>Repay after export</td>
<td>22.5</td>
<td>80.0</td>
</tr>
<tr>
<td>Cash + repay after export</td>
<td>10.0</td>
<td>90.0</td>
</tr>
<tr>
<td>Cash + postpones contracts</td>
<td>7.5</td>
<td>97.5</td>
</tr>
<tr>
<td>Postponed contracts + repay after export</td>
<td>2.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)
4.1.14 Opinion about responsibility of GAC in full monitoring of gum Arabic marketing in Sudan

Table (4.14) explains the opinions of traders about the role and responsibility of GAC towards gum Arabic marketing. About 85% of gum Arabic traders indicated that GAC did not have any supervision in any form. However, about 15% of the traders indicated presence of GAC monitoring and supervision role based on their previous experience.

**Table 4.14: Opinion about responsibility of GAC in full monitoring of gum Arabic marketing in Sudan**

<table>
<thead>
<tr>
<th>Opinion about responsibility</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>15.0</td>
<td>15.0</td>
</tr>
<tr>
<td>No</td>
<td>85.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)

4.1.15 Sources of gum Arabic purchases in the previous Season (2007)

Table (4.15) illustrates the sources of gum Arabic purchases during the previous season 2007. About 37% of traders bought gum Arabic on behalf of the processing companies, while only 15% bought on behalf of GAC. The remaining purchases were distributed on behalf of others such as business men, banks or a mix of more than one of those finance suppliers.
Table 4.15: Sources of gum Arabic purchases in previous Season

<table>
<thead>
<tr>
<th>Source of gum Arabic purchases</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No response</td>
<td>20.0</td>
<td>20.0</td>
</tr>
<tr>
<td>GAC</td>
<td>15.0</td>
<td>35.0</td>
</tr>
<tr>
<td>Processing companies</td>
<td>37.5</td>
<td>72.5</td>
</tr>
<tr>
<td>Business men</td>
<td>15.0</td>
<td>87.5</td>
</tr>
<tr>
<td>Processing companies + Bussing men</td>
<td>7.5</td>
<td>95.0</td>
</tr>
<tr>
<td>Processing companies + banks</td>
<td>2.5</td>
<td>97.5</td>
</tr>
<tr>
<td>Banks + business men</td>
<td>2.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)

4.1.16 Traders percentage of revenue of gum Arabic trade out of total annual income in auction markets of North Kordofan State:

Traders do not depend on one crop in their annual transactions. Table (4.16) shows the contribution of gum Arabic marketing activity to annual revenue of traders. About 80% of the traders had revenue ranging from 1-50% from gum Arabic, while about 12% had over 50% and only 8% of the traders had negative revenue. It was found that those who have obtained high share of revenue were village traders and agents, while those subjected to losses were secondary traders. This phenomenon may be explained by the fact that village traders gained at high prices established at the beginning of the season, while the basic traders were faced by low prices that prevail towards
the end of the season or when the traders store gum Arabic product till the beginning of the successive season with lower price.

**Table 4.16: Trader percentage revenue of gum Arabic trade from annual total income in auction markets of North Kordofan State**

<table>
<thead>
<tr>
<th>% of gum Arabic revenue out of total revenue</th>
<th>% of trader</th>
<th>Cumulative Percent of trader</th>
</tr>
</thead>
<tbody>
<tr>
<td>deficit – 0</td>
<td>7.5</td>
<td>7.5</td>
</tr>
<tr>
<td>1 - 25</td>
<td>57.5</td>
<td>65.0</td>
</tr>
<tr>
<td>26 - 50</td>
<td>22.5</td>
<td>87.5</td>
</tr>
<tr>
<td>51 - 75</td>
<td>12.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)

**4.1.17 Personal opinion of gum Arabic traders about feasible gum Arabic marketing system**

Marketing of gum Arabic system has been exposed to many controversial opinions among producers, traders, public and government associations. The controversy was about the feasibility of concession or liberalization of the gum Arabic trade.

Table (4.17) reveals the personal opinion of gum Arabic traders on this issue according to their experience in marketing of gum Arabic. About 77% of the respondents chose liberalization system and only 23% who advocated the concession system of GAC.
Table 4.17: Personal opinion of gum Arabic traders about feasible gum Arabic marketing system

<table>
<thead>
<tr>
<th>Personal opinion</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No response</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Concession system owned by GAC</td>
<td>20.0</td>
<td>22.5</td>
</tr>
<tr>
<td>Liberalization system</td>
<td>77.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey (2008)

4.1.17.1 Justifications for choice of the Liberalization system Choice: Several arguments were given as follows:-

1. The weakness of the financial capacity for GAC as revealed by its absence from the market and the entry of other competing firms with financial ability. Those competitors offered higher buying prices than the floor price, and paid cash for their purchases. Besides those competitors were present in areas of production from the beginning of season, and were buy any produce for sale.

2. Lack of commitment of GAC to direct payment to producers and traders.

3. Liberalization policy gives opportunity to some companies to compete with the monopolistic GAC with respect to the supply and the demand of the commodity. The example of the warm Seas Company in carrying out marketing and promotion of the gum Arabic product and its ability to
create customers to pay fully to producers and traders when GAC failed to do so.

4. Lack of commitment of GAC to buy Gum Arabic product on time.

5. Liberalization opens new exports prospects to producers and to traders and provides services to producing States that were previously provided by GAC.

6. Liberalization provides liquidity in the markets to various areas of production.

7. The transparency in market dealings in the case of the liberalization system.

8. Liberalization allows for setting the right price and for prompt payment. Payment may be done in advance of actual purchases. The reverse was experienced by GAC.

9. The liberalization system was successful in the other commodities such as the case of (oil seeds).

10. Liberalization may open new export markets, unopened by GAC due to political reasons.

11. Liberalization motivates local companies to engage with foreign companies that possess capital and of marketing experience. This would solve the problem of liquidity and facilitate the easy flow of gum Arabic into the world markets.

12. Liberalization encouraged the emergence of manufacturing firms which generated profits to producers urging them to raise production.
helped in expansion of foreign markets including those of GAC that didn’t exist under the monopoly system.

13. GAC had not been able to buy all the product of gum, in spite of monopoly, which resulted in accumulation of large stocks of the commodity and lowering its prices.

14. Monopoly leads to lower prices of gum Arabic product, because Gum Arabic Company buys at low prices and sells at high prices globally, but these prices are not reflected to the domestic producers.

**4.1.17.2 Justifications for choice of the Concession system:**

**Several arguments were given as follows:-**

1. The concession is best when there is only one channel for selling, the price would be higher than any price obtained by an individual exporter.

2. Concession supervises production, producers and ensures the quality of exported goods.

3. The market liberalization may dumpy the foreign market with undesirable quantities in certain instances, and may also give foreign companies the opportunity to exploit the national companies or exporting traders.

4. The concession gives the State, through GAG, the ability to control the world price, and provide the necessary funding for the company to develop a strategic stock of the commodity and releasing it gradually to the world market to maintain the high prices.
5. The State could work with the GAC to determine the fair price for producers according to world price to encourage them to continue in production.

6. The concession will enable the Government to prevent smuggling of gum- Arabic by controlling the exporting channel.

7. The concession earned gum Arabic product global reputation and now has become known in all marketing centers. The preserve of concession to GAC must remain according to specific controls and conditions, including:

   a) A known capital of the company and its financial ability to buy current product and inventory.

   b) A specified period of time, e.g. (five years) renewed according to its performance.

   c) Concession withdrawing condition in case of breach or failure.

8. A concession for exporting of natural gum by the GAC only. This company has supplied the social life of farmers and producers through constructions and drilling of drinking water wells and provision of health services. The traders consider the process of liberalization of the gum Arabic market as purely utilitarian. Hence all proceeds benefit the traders without given due care to the interest of farmers maintaining their gums tree products.

9. Concession is best as provides protection to the producers provided that it is well implemented. However, at present the company failed to fulfill its obligations fully.
10. Despite the failure of GAC in fulfilling its objectives, still it constitutes a protective measure in contrast to the free-market system or the involvement of commercial companies.

11. GAG offers an advantage as it can finance small-scale producers and traders.

4.1.18 Comment on 4.1.17 item

Gum Arabic marketing was surrounded with many problems that need solution by the intervention of Federal Government. Taxes and levies that imposed on gum Arabic commodity should be reformed to facilitate easy access to foreign markets. The majority of markets traders preferred liberalization to concession when evaluating marketing of gum Arabic systems in North Kordofan auction markets.

According to my view based on the field survey and discussion with experienced gum Arabic traders in the biggest production areas in Sudan, Gum Arabic Company lately failed to fulfill all the obligations and commitments of concession.

All the justifications of liberalized market choice represent the dominating opinion regarding changing the present system of gum Arabic marketing in the Sudan. In general, the evaluation of the performance of GAC indicated that its failure in fulfilling its objectives and duties.

On the other hand those who advocate the continuity of monopoly based their opinion on the performance of GAC in the past, when GAC fulfilled its responsibilities and mandate towards the gum Arabic producers and traders. At present, GAC commitment towards prompt payment is not honored.
4.1.19 The Factors encouraging or stimulating the Gum Arabic trade in North Kordofan State:

1. The presence of processing firms that buy gum Arabic commodity which have given the traders an incentive to continue working in its trading.

2. The rewarding return value from gum trading always in cash. And obtaining funding from other financial sources rather than Gum Arabic company.

3. The clarity in the profit which achieved by knowing the sale price before buying.

4. The Commission in gum Arabic trade is more rewarding if compared with some other crops.

5. The credibility from the companies which operating in the area of gum trade with the payment in a short time, enabling the producers to travel to their headquarters after receiving the value of their goods and reducing the expenses of residence in shopping centers.

6. The abundance of all the constituents from experience, knowledge about types of gum, cleanliness and good relationship with buyers and the processing companies.

4.1.20 The Factors that have a negative impact on the trade of gum Arabic in North Kordofan State

1. The factors that concern the Gum Arabic Company are

   a. The fluctuation of entry and exit of the GAC as a buyer in the market and the lack of commitment to buy the annual production.
b. The presence of GAC and its monopoly, which is the reason for impeding the marketing of gum Arabic, for its weakness of the finance situation and inability to prompt payment, furthermore the lack of determining of the rewarding floor price in early time.

c. The refusal of the GAC to receive the product after the thirtieth of June and the GAC payment system is a deferred payment and itself is delayed.

2. The weakness of the finance from banks for purchasing of gum Arabic.

3. Some of the higher taxes and charges imposed on gum Arabic increased in due response to the increase in the price of gum Arabic, being a percentage charge.

4. The packing of the gum Arabic product in the sacs and bags of plastic which change its physical properties.

5. There is no permanent body to purchase the quantities which produced along the season.

6. The large accumulation of the products in the market and the lack of purchasing sources which have financial ability to absorb those quantities.

7. Exodus of large numbers of producers to the cities due to lack of basic needs to stay in rural areas such (health schools water routes).

4.2 The Relationships Analysis results

The regression analysis results were obtained from primary data analysis using the SPSS computer package. A trial of simple and multiple regression analysis were attempted, but gave weak results.
Plate 4.1: The improper packing of gum Arabic in the Bags of plastic

Plate 4.2: The physical properties changes of gum Arabic due to packing in the Bags of plastic
4.3 The correlations of variables

Some results of the correlation between the variables of primary data were obtained using the SPSS program as illustrated in the table below.

Table 4.18 the Correlations between different Variables

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Coefficient</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Types of Trade&amp; Feasible marketing system</td>
<td>-.318</td>
<td>0.05</td>
</tr>
<tr>
<td>2</td>
<td>Experience of traders &amp; Feasible marketing system</td>
<td>-.206</td>
<td>0.05</td>
</tr>
<tr>
<td>3</td>
<td>Types of Trade&amp; responsibility of GAC in full monitoring of gum Arabic marketing in Sudan</td>
<td>-.434</td>
<td>0.01</td>
</tr>
<tr>
<td>4</td>
<td>Types of Trade&amp; Existence of direct relationship between GAC &amp;Traders</td>
<td>-.561</td>
<td>0.01</td>
</tr>
<tr>
<td>5</td>
<td>Types of Trade&amp; Source of purchases selling</td>
<td>-.362</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Source: Field survey (2008)

As shown in Table (4.18) the results of the correlations between variables, only the relationship between the types of trade and the existence of direct relationship between GAC and traders, the coefficient is 0.561 which reveal relatively strong/average relationship between them, while all the coefficients of the rest relationships between variables are less than 0.5 which indicated the weak relationship among them.
CHAPTER FIVE

Summary, Conclusions and Recommendations

5.1. Summary:

This study was carried out in Elobied, Elnuhoud and Umrawaba auction markets during the season 2008, to assess and investigate the systems of gum Arabic marketing. The importance of the study stems from the fact that gum Arabic is one of main forest cash crops product in Sudan, which has socio-economical, commercial and environmental benefits. It has also an important share in the economy of the country in terms of income source for more than five million Sudanese citizens, and foreign currency earnings. However, marketing of gum Arabic systems has been subjected to debate and controversial opinions among producers, traders, public and the government associations. The controversy was about the feasibility of concession or liberalization of the gum Arabic trade.

The study depended mainly on primary data collected by means of a structured questionnaire and direct interviewing with gum Arabic traders. Simple random sampling technique was used to select forty respondents as a sample size. Secondary data were also collected from secondary sources such as Gum Arabic Research Center-University of Kordofan, Bank of Sudan -Elobied branch, Warm Seas Company (Elobied industry). Gum Arabic Company, Sudanese Standards and Metrology Organization (Elobied office), and other relevant sources including papers, Journals, research and previous studies.
The data were subjected to descriptive statistical analysis for the socio-economic characteristics of the traders. Regression and correlations analysis were also used to estimate the relationships between different variables.

The results showed that the majority of markets’ traders preferred liberalization to concession when evaluating the marketing of gum Arabic systems in North Kordofan auction markets. All the justifications of liberalized market choice represent the dominating opinion regarding changing the present system of gum Arabic marketing in the Sudan. In general, the evaluation of the performance of GAC indicated its failure in fulfilling its objectives and duties.

On the other hand those who advocate the continuity of monopoly were based on the performance of GAC in the past, when GAC fulfilled its responsibilities and mandate towards the gum Arabic producers and traders. That high performance level had not been sustained during the last years and in current gum Arabic production season.

Processing companies emerged recently in marketing of gum Arabic channels, and participated in increasing the domestic competition for natural gum, and in turn better and rewarding prices were paid to producers (higher than the declared floor prices) as well as more value added gained, especially the opportunities that opened to the technical and casual labors. But the volume that was purchased by these companies was less than the annual production of gum Arabic.

The regression analysis results were obtained from primary data using the SPSS computer package. A trial of simple and multiple regression analysis were attempted, but gave weak results.
5.2 Conclusions:

Based on results obtained from the study, the following conclusions could be made:

1. The Gum Arabic Company had not fulfilled its marketing obligations in the production season of (2007/2008) as follows:

a- The weakness of the financial capacity for GAC as revealed by its absence from the market.

b- Absence of relationships between the (GAC) and the producers. GAC did not provide any of the basic needs services (water drilling) or any other supports to producers’ areas, which it used to provide in the previous years.

c- The negative commitment of GAC to buy all annual product of gum Arabic being one of the objectives of its establishing.

d- GAC did not have any form of responsibility towards gum Arabic marketing supervising and monitoring.

e- Refusal of GAC to buy traders’ purchases of gum Arabic production many times in different seasons, reveal the neglect of GAC of its obligation towards buying gum Arabic from local traders in the producing areas.

f- The total purchases of GAC were less than the total annual production, so its purchases solely, do not act as a reference source for the Sudan gum Arabic production e.g. (Annual reports of Sudan Central Bank). Other companies purchase and export gum Arabic directly abroad. This requires summation of total purchases of the
GAC and the companies to arrive at the total estimated gum Arabic production.

g-The financial sources supporting gum Arabic traders included processing companies, commercial banks in addition to self-financing. Financial support from GAC was completely absent compared to previous years.

2. The presence of processing companies with financial ability had offered higher buying prices than the announced floor prices and paid in cash.

3. The advantages of liberalization:

a) Liberalization provides liquidity in the markets to various areas of production.

b) Liberalization motivates local companies to engage with foreign companies that possess capital and of marketing experience. This would solve the problem of liquidity and facilitate the easy flow of gum Arabic into the world markets.

c) Liberalization encouraged the emergence of manufacturing firms which generated profits to producers urging them to raise production. It also helped in expansion of foreign markets including those of GAC that didn’t exist under the monopoly system.

d) Liberalization policy gives opportunity to some Companies to compete with the monopolistic GAC with respect to the supply and the demand of the commodity. The example of the Warm
Seas Company in carrying out marketing and promotion of the gum Arabic product and its ability to create customers to pay fully to producers and traders when GAC failed to do so.

4. Disadvantages of market liberalization:
   a. The market liberalization may dumpy the foreign market with undesirable quantities in certain instances, and may also give foreign companies the opportunity to exploit the national companies or exporting traders.
   b. The traders consider the process of liberalization of the gum Arabic market as purely utilitarian. Hence all proceeds benefit the traders without given due care to the interest of farmers maintaining their gums tree products.

5. The main constraints of gum Arabic marketing:
   a- Deferred contract was the only practiced transaction method of GAC in payment to the traders after receiving the product. In previous years the familiar transaction was in cash, and it was paid immediately or if delayed, it would not exceed more than one month.
   b- Some of the higher taxes and charges imposed on gum Arabic increased in due response to the increase in the price of gum Arabic, being a percentage charge.
   c- Absence of independent body to set the rational policy of gum Arabic marketing.
d- The packing of the gum product in plastic sacs and bags change the physical properties and incur negative effect on gum Arabic marketing.

e- The landing and weighing of gum Arabic product in the same place with other cash crops which expose it to contamination with their residues.
5.3 Recommendations:

In the light of previously mentioned findings, the following recommendations are given:

1. - To allow for full liberalization of gum Arabic commodity marketing.

2. The processing of gum Arabic companies should reform their technical capacity to increase their exports.

3. Establishment of a Commodity Council for Gum Arabic commodity as an independent body to co-ordinate and promote its marketing.

4. To conduct studies about the pricing of gum Arabic interiorly incentive and satisfactorily to the producer, lucrative to the exporter and acceptable to the foreign market.

5. To declare the commitment of GAC towards its obligations and duties specially buying the annual production and the receiving prices from traders at an early date, with prompt payment for traders and its commitment of receiving the product throughout the year, by improving its financial position.

6. To issue laws and legislations in North Kordofan State to prohibit packing of gum Arabic in plastic bags and sacs, and instead use gunny/jute sacks.

7. Determination of special place for landing and weighing of gum Arabic product in the auction markets to avoid its contamination by the other crops residues.

8. To establish marketing Associations for gum Arabic producers
References

- Elobied crops market Administration ;( 2006). Historical Background, the past, the Present and the Future. Sheikan Locality, North Kordofan State.

• ......................... (2000). Trading of gum Arabic concession or liberalization a paper presented to the regional workshop on gum Arabic at the Friendship Hall Khartoum. Sudan.


• Kmenta, J., "Elements of Econometrics", Macmillan P. C.,


• Taha, (1999). The socioeconomic role of Acacia senegal in sustainable development of rural area in gum belt of Sudan, PhD. Dissertation University of Dresden, Germany.
Appendix
University of Khartoum  
Faculty of Post graduate- Department of Agricultural Economics  
Questionnaire for the Traders in Elobied Crops Market  

1-Primary data:  
1- State…………..                          2-Locality……………………
3- Administration Unit………….       4- Town/ Village………………
5-Gender:  
1-Male( )            2- Female( )                 6- Age( ) years
2- Educational Level:  
1- Illiterate ( ) 2 – Basic( ) 3- Secondary( )
4-University( ) 5- Post graduate ( ).
3-Marital Status:  
1- Married( ) 2- Single( ) 3- Others ( ) Specify………..
4- The number of family member() Male ( ) Female( )
5- What is The time span which you spent in gum Arabic trading? ( ) years.
6-What are the markets from which you buy gum Arabic?  
1- El bied crops market( ) 2- Elnuhood ( )
3-Um rwaba ( ) 4- Others( ) Specify……………..
7- What are the types of gum you are trading in?  
1- Hashab gum( ) 2- Talha gum( ) 3- Others( )
specify..............................................
8- What are the types of other crops which you are trading in?  
1- Ground nuts ( ) 2- Sesame ( ) 3- Karkady( )
4- Water melon seeds ( ) 5- Others( ) determine…………….
9- What’s the financial source of your trade?  
1- Private ( ) 2-Banks ( ) 3-Gum Arabic company( )
4-Business Men ( ) 5- Possessing companies( )
10- The Type of Trade?  
1- Village Trader ( ) 2- Agent( ) 3- Basic Trader ( )
12- If you are a village Trader to whom you sell your purchases?  
1- Gum Arabic company ( ) 2-Processing companies( )
3- Business Men ( ) 4- Banks( )
13- If you are an agent for whom you buy gum Arabic?  
1-Gum Arabic company( ) 2-Processing companies( )
3-Business Men( ) 4- Banks ( )
14- If you are a Basic Trader, do you sell the product immediately?  
1-Yes,( ) 2- No, ( )
15- If the answer yes, to whom you sell?  
1- Gum Arabic company ( ) 2-Processing company( )
3-business Men( ) 4- Banks( )
16- If the answer No, you:
   1- Store it( )        2- Export it directly ( )        3-others( )
   Specify…………………………………………

17- Since you are a Basic Trader do you commence to buy the gum Arabic after ensuring to whom you sell your purchases?.
   1- Yes( )        2- No( )

18- If the answer yes, it is:
   1- Gum Arabic company ( )       2- Processing companies( )
   3-business Men( )       4- Banks( )

19- Is the gum Arabic company is full responsible for buying all the gum Arabic Supply in the Auction markets Annually?
   A- Yes( )        B- No( )

20- If the answer is yes, what's the degree of that responsibility?
   1- Very high( )       2-High ( )       3- Low ( )       4- Very low ( )

21- Are you asked the Gum Arabic Company to buy your purchases and it apologized?
   1 - Yes, ( )        2- No, ( )

22- If the answer is Yes, how many times ( ) times.

23- which model does the Gum Arabic Company use to buy your purchases?
   1- In cash ( )        2- postponed Contracts ( )        3- repay after exporting ( )

24- Do you agree that the Gum Arabic company is full supervising and monitoring the Gum Arabic Marketing?
   1- Yes, ( )        2- No, ( )

25- If the answer Yes, its monitoring represent in ?
   1- To buy the purchases from the Traders ( )       2- To finance the Traders ( )
   3- Other services ( )        Specify ………………………

26- Have you information about the floor price which is announced annually by the Ministry of Trade?
   1- Yes, ( )        2- No, ( )

27- If the answer is Yes, which of the following sources you obtained your information?
   1-Mass-media ( )       2- GAC ( )       3- Gum Arabic Traders ( )
   4- Others ( ) determine……………………………………

28- Is the information which available for you about the floor price always:
   1- Adequate ( )        2- Not adequate( )        3- Not available( )

29- Are the Gum Arabic Traders have a role in determining the floor piece?
   1- Yes, ( )        2- No, ( )
The Floor price create the stability in Gum Arabic Marketing because it:

1. Incentive the producer ( )
2. Incentive the Trader ( )
3. Both of them ( )
4. Others ( ) specify

Do you use the communication media in your trading activity?
1. Yes, ( )
2. No, ( )

If the answer is Yes, the degree of its benefits is:
1. Very high ( )
2. High ( )
3. Low ( )

What are the quantities which you bought in the previous season? Fill

<table>
<thead>
<tr>
<th>Quantities in Quntar</th>
<th>The higher price</th>
<th>The lower price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What was the Source from which you bought the Gum of the previous Season?
1. The Producer ( )
2. Village Trader ( )
3. Auction Market ( )
4. Brokers ( )

Have you any marketing relation with the Gum Producers?
1. Yes, ( )
2. No, ( )

If the answer is Yes, when does start this Marketing relation?
1. Before Tapping ( )
2. After Tapping ( )
3. Buying of Gum product in Market ( )

What is the type of this relation?
1. Tapping Finance ( )
2. Buying the product ( )
3. Others ( )

What is the system of this relation?
1. Shari'ah ( )
2. Shaiel system ( )
3. Others ( ) specify

What is the model of relation system?
1. In cash ( )
2. Food stuff ( )
3. Both of them ( )
4. Others ( )

Have you direct relation with the Gum Arabic Company?
1. Yes, ( )
2. No, ( )

If the answer is Yes, it would be:
1. Selling the purchases of the Gum ( )
2. Financing ( )
3. Others ( )

Fill the Table below with the Quantities which you have been sold in the previous Season.
<table>
<thead>
<tr>
<th>Quantities in Quntar</th>
<th>The higher price</th>
<th>The lower price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

43- For whom you were sold your purchases of the previous season?
   1- Gum Arabic Company(    )  2- Processing companies (     )
   3- Business Men (       )     4- Banks(      )

44- Mention the marketing costs which you paid in the period from purchasing to selling for one Quntar:

........................................................................................................................
........................................................................................................................

45- What is the percentage which represent the revenue of Gum Arabic Trade from your annual total income?
   1- 100% (     )  2- 75% (     )  3- 50% (     )  4- 25% (     )
   5- Others ( ) determine...........................................................................

46- From your personal view which marketing system has a feasibility:
   1- The Concession system which owned by the Gum Arabic Company (     )
   2- The Liberalization System (       )

47- If the answer with concession explain the justifications of your choice:
........................................................................................................................
........................................................................................................................

48- If the answer with the Liberalization explain the justifications for your choice:
........................................................................................................................
........................................................................................................................

49- What are the incentive factors which encourage you to continue in Gum Arabic Trading?
........................................................................................................................
........................................................................................................................

50- What are the factors which have negative effect on Gum Arabic Trading?
........................................................................................................................
........................................................................................................................

51- What are your suggestions and recommendations for developing and promoting the Gum Arabic Marketing?
........................................................................................................................