

Sudan Gum Arabic Export Performance during (2000-2014)

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Abstract— Sudan is predominately an agricultural country, with over 90% of its exports supplied by the agricultural sector. Agriculture is the basic economic activity accounting for more than 35% of Gross Domestic Product (GDP). The average share of exports in GDP for the period 2000-2014 is 35.7%. The exports of Sudan are dominated by agricultural products. Sudan is the main exporter (80%) of gum Arabic in the world. Other exporting countries include Chad, Nigeria, Senegal, Ethiopia and some other African countries. Exports of gum Arabic fluctuated due to unstable policies, competition from other countries and unstable production. This study conducted to examine the effects of Sudan gum Arabic exports prices on the quantities during 2000-2014. The study used secondary data obtained from relevant official sources. It carried out the percentage to calculate the concentration of gum Arabic by countries and companies during 2000 – 2014. The results of the study illustrated that the proceeds of Gum Arabic exports fluctuated during the period, but in general overview it has an increasing trend and the export price and total production have positive effects on exports quantities.

Keywords—Gum Arabic, North Kordofan, Sudan.

I. INTRODUCTION

SUDAN is a vast country in Africa with an area of 1.9 million square kilometers. It is located in the north-eastern part of Africa. Between latitude 23° 8' and 8° 45' North and longitudes 21° 49' and 38° 34' East, and extends along the maritime border on the Red Sea coast, and is bounded by two Arab countries are (Egypt and Libya) and 7 African countries. The total population in 2008 was about 33.4 million people [6]. (Fig. 1.) shows the Sudan location.

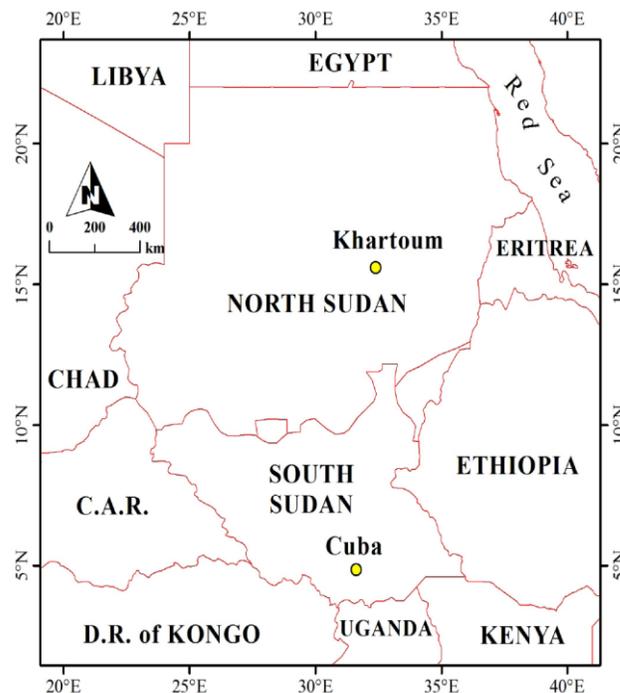


Fig. 1): Sudan Location

Agriculture plays an important role in Sudan economy, it contributed an annual average of 35 % to total GDP during the 2000-2014 and in addition it accommodates about 80% of the employment.

The agricultural sector constitutes the components of agriculture agrarian and animal, agrarian production includes the traditional rain-fed and mechanized agriculture, irrigated agriculture, forest and pastures. Sudan is considered one of the most important Arab and African countries in the area of animal resources and its products, which contribute to export and achievement of food security and provide various types of meat and dairy products for domestic consumption.

Forestry in Sudan includes wood products in form of firewood, charcoal and timber and non-wood products in form of wild fruits and gum products, particularly gum Arabic. Forestry also provides protection of watershed, fodder for domestic animals and wildlife. Gum Arabic is an essential forest product that produced in gum Arabic belt, which stretches from the western border with Chad to the eastern border with Ethiopia. The gum Arabic belt covers an area of about 500 thousand square km. The Belt is home to roughly one fifth of the population of Sudan. Figure (2) demonstrate Gum Arabic belt in Sudan.

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Fig. 2 Gum Arabic belt in Sudan

Gum Arabic is the dried exudate produced from the trunk and branches of the *Acacia senegal* tree, known as hashab, and the *Acacia seyal* tree, known as talha [2] and [7]. Gum Arabic is used in various industries such as food, beverages, medicine, soft drinks and chewing gums.

Sudan is considered as a key supplier of raw gum Arabic in the world as it used to provide more than 80% of high quality gum Arabic in the world market [3], [4] and [5]. During (2000-2014) exports of gum Arabic fluctuated.

Sudan gum Arabic exports fluctuated due to unstable production and unstable policies. As a result of the poor performance of the exports of this strategic commodity in the world market and the need for improving it in the future, the Government of Sudan undertook positive steps towards deregulation of the Gum Arabic Company (GAC) concession rights in 2009 to provide incentives to producers to reactivate their production in favor of increased exports. The government established the Gum Arabic Board (GAB) for free gum Arabic trade in domestic and export markets, when many companies compete in gum Arabic exports.

This study aim to:

Estimate the effect of produced quantities and export prices on gum Arabic total exports during (2000-2014).

The study used secondary data in order to investigate the empirical relationship between the level of gum Arabic production, export prices and the export quantities (2000-2014).

The study used the multiple linear regression analysis method. It is unquestionably the most widely used statistical technique in the social sciences and also widely used in the biological and physical sciences. The coefficients represent the change in the value of the dependent variable for a unit change in one independent variable, assuming other independent variables being constant.

The multiple linear regression model is written as straight forward extension of:

$$Q = b_0 + b_1(A) + b_2(B)$$

Where:

Q: Quantities of gum Arabic exported in tons per year (the dependent variable).

A: Export price (US\$).

B: Production quantity (ton).

b₀: intercept.

b₁ and b₂: represent the corresponding regression coefficients.

Results:

The Main Importing countries of Sudan gum Arabic:

The main importing countries were France, USA, Italy, Germany and Japan during 2000-2014 (table 1). Except for France which had increasing imports, the other countries had declining imports throughout the three periods of 2000-2005, 2006-2010 and 2011-2014. On average France imported about 50% of its total exports value of gum Arabic from Sudan.

TABLE I
MAJOR IMPORTING COUNTRIES BY 000 US\$ DURING 2000-2014

Period	France	United States	Italy	Germany	United Kingdom
2000-2005	12,034	6,640	6,889	10,812	11,424
2006-2010	18,394	5,197	4,032	3,290	5,610
2011-2014	20,394	4,188	2,61	2,308	2,079

Source: [1]

The performance of gum Arabic production and Exports in Sudan:

During 2000-2014, the exports of gum Arabic from Sudan had fluctuated between about 23 thousand tons in 2002 to 32 thousand tons in 2008 and down to 18 thousand tons in 2010, largely drop due to the drop in production. But in recent years the exports about 60 thousand tons in 2013 and 2014, this large increase due to increase in production and the increase in international prices, also to the regulation of gum Arabic trade by Gum Arabic Board. (Figure 3.) below shows the patterns of quantities and values of exported gum Arabic during the same period. The performance of gum Arabic exports during 2001-2014, indicates an average export of 34 thousand tons of gum Arabic obtaining US\$ 61 million during the period. And it seemed in all has an increasing trend during the period.

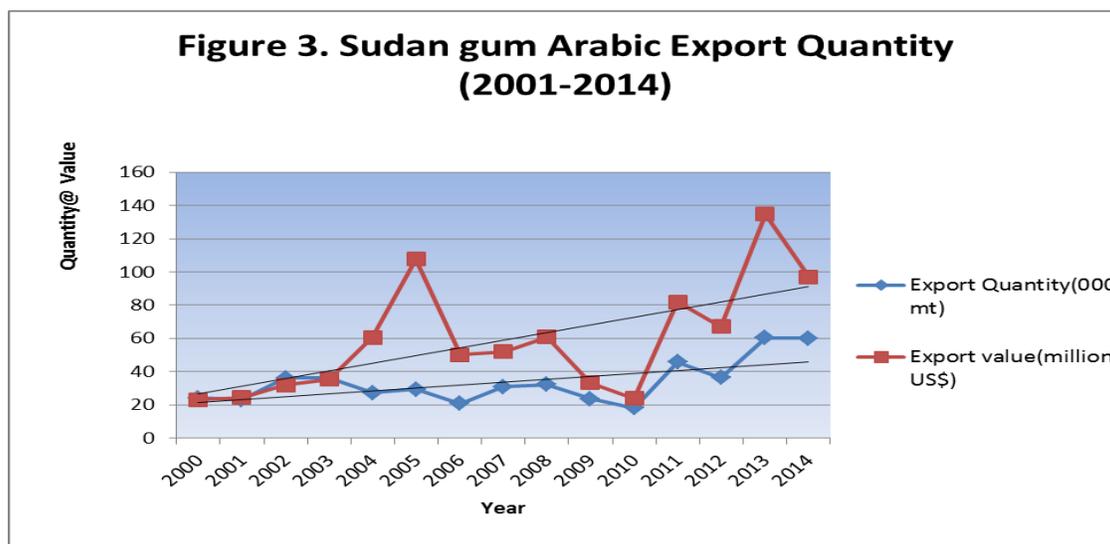


TABLE II
SUDAN GUM ARABIC EXPORTS DURING (2000-2014)

Explanatory variable	Regression coefficient	t- statistics	Level of significance
Constant	23550.47	3.462179	0.005
Export price	0.6514	0.113551	0.912
Total production	0.5768	2.46177	0.031
R2 = 65%			
F = 10.6			

Table (2) gives the results of the analysis. The coefficient of determination R2 was found to be equal to 65%, which meant that about 65% of the variations in gum Arabic exports during the period could be attributed to the export price and total production. The rest of the factors, about 35% could be attributed to other variables not captured by the regression model. However, the value of the F-test which was over 10.6 indicated the overall significance of the model.

The regression results indicated the existence of the positive relationship between the level of gum Arabic exports and the level of export price and total production during the cited period.

Gum Arabic exports price had a coefficient of 0.6514, which was significant at 1% level. This meant that as the exports price increase by one unit, when other variables remaining constant, the total export of gum Arabic would increase by 0.6514 units per year.

Gum Arabic production had a coefficient of 0.5768, which was significant at 10% level. This meant that as the total production increase by one unit, when other variables remaining constant, the total export of gum Arabic would increase by 0.5768 units per year.

Since there is no evidence about increasing gum Arabic exports and unstable pricing and taxing policy on production, marketing and exports of gum Arabic, the study infers its recommendations from the non-captured portion of the regression model result. Therefore, the study recommends to study the factors upon fluctuations of production, especially drinking water during tapping and collection periods, factors behind smuggling of the crop out of the country and facilitating rational pricing and marketing policies to encourage more production of the gum Arabic commodity.

REFERENCES

- [1] Bank of Sudan. (2000-2014). various annual reports.
- [2] FAO. (1999). Production Yearbook, Vol. 53, Rome, Italy.
- [3] FAO [Food and Agriculture Organization]. 2005. "Forest Resource Assessment 2005". FAO, Rome Italy.
- [4] Larson B. A. (1991). Natural Resource Prices, Export Policies and Deforestation: The Case of Sudan. World-Development, Vol. 19, No. 10: 1289-1297.
- [5] Macrae, J. 2002. "The prospects and constraints of development of gum Arabic in Sub-Saharan Africa". Washington, D.C., World Bank.
- [6] Sudan Central Bureau of Statistics. (2009). the results of the fifth census in 2008. Central Bureau of Statistics- Khartoum – Sudan.
- [7] Yasseen, Ghada A. M. (2001). Constraints of Gum Arabic Production and Exports: A case study of North Kordofan State. M.Sc. Thesis, University of Khartoum, Sudan.