

*Original Research***Determinants Factors Affecting the Red Meat of Livestock Exports during the Period of (2004-2015), Khartoum, Sudan****Abdalgabar Suliman Hamid Ahmed¹, Mohmed Musa Ali Ibrahim^{2*} and Suleiman Hassan Suleiman³**¹Economist, Khartoum, SUDAN²Freelance Consultant/Economic Security and Livelihood, Khartoum, SUDAN³International Committee of the Red Cross (ICRC), Livestock Specialist, Khartoum, SUDAN***Corresponding author:** m.musaali@yahoo.com

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Abstract

The study was carried out at Khartoum, Sudan during the period of (2018). The paper investigated the main reasons effect the recent trends of the Sudanese red meat export, as well as specifying the main importers of Sudanese during the period of (2004-2015). The paper used secondary data and relevant documents to the field of study. A set of research tools and methods including; the liner regression, descriptive analysis of the time series data. The study findings have shown that the livestock red meat trends experienced several changes throughout the examined period. The trends of livestock head showed improvements by ($R^2 = 69$). Regarding the production, domestic consumption and the total export are gradually decreased by the ($R^2 = 0.379$, $R^2 = 0.522$ and $R^2 = 0.209$) respectively. The exchange rate movements (USD) of ($R^2 = 0.735$) sharply increased and went up till (2015). Moreover, the Sudanese red meat main importers are Saudi Arabia, Jordon, Qater, Emirates and Oman. Furthermore, exporting of the red meat is economically profitable and gains a hard currency. The paper recommend, on the production level- to improve the livestock feeding, improve genetic, provide technical and experienced personal. At the industries level- to monitor the livestock farming, slaughtering houses and the markets. At the export level- to establish a modern slaughtering house particularly, at Khartoum level and to stick on the quality control to fulfill the export requirements and improve competitiveness in foreign markets. To gains the exports revenues- is to export the livestock products in different form not as row material. Future and the research direction should focus on the livestock products both domestic and import to gains the economics and profitable in different form and crated the utilities and the value added by grading and standardization of the livestock products; weight, age, facts, cover including hoofs and fleece to the import countries.

Key words: Livestock Red Meat, Livestock Marketing Functions, Livestock Supply Chain

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Introduction

The Sudan is the biggest Arab and African countries ownership of livestock and Sudan has great potential to develop this wealth and make it one of the best wealth at all. According to the statistical estimates of the livestock sector in 2001 found that the Sudan has about 140 million head of cattle, 38 million head of cattle, 47.5 million sheep, 40 million head of goats and 3 million head of camels, this wealth represent about 70% of cattle in the Arab homeland, 31% of sheep, 49% of goats and 25% of the camels. Sudan produces about 43% of the total production of red meat in the Arab nation; animal wealth in Sudan played an important role in macroeconomic and social life. The sector contributes about 22% of the gross domestic product (GDP) and 22% of the total exports, it is well known that the Sudan self-contained of red meat consumes about 500 tons a year; this sector provides the livelihoods of a large proportion of the population of the Sudan up about 75%. in traditional societies are represent a measure of wealth and the social position, as it represents the security line of poverty and the focal point of the prospects for inflation or economic fluctuations. The livestock sector it is consider one of the most sectors response to the policy of economic liberalization pursued by the State in the year 1994 a way for economic development and the expansion of the production base and investment (Nahla E., 2012).

A growing demand for products of animal origin with the increase of population and growth rates, which is exacerbated by increasing migration rates from rural areas to the cities and the rate of growth of real per capita income levels and price levels, is also affected by the volume of demand on red meat also the availability of alternatives and prices of consumer tastes. On the other hand, the areas available pastureland decrease rapidly thereby widening food gap and thus need to modern system in the field of breeding and production and the search for renewable sources of nutrition. Globally increased demand for livestock products and demand growing rapidly in developing countries as the studies and reports predicted by the Food and Agriculture Organization to double the per capita consumption of red meat.

The livestock sector is renewable resources which makes it to be the main pillar of the national economy in the light of local, regional and global changes, in addition to the comparative advantage of all crop products and possession to the features of the comparative advantage and preferential on neighboring states and markets in the Arab world and African, a climate of openness to trade, which no doubt will constitute a formatting the quality of production, prices and markets of the high proportion of production from this sector; which could support the GNP and also contribute in the balance of payments and bring the hard currencies of the state treasury.

The Sudan's geographical business engagements, regional and Arab countries and the COMESA, (1994) countries of important factors to stimulate exports of livestock and red meat available opportunities and possibilities of production with a large deficit in its production to other countries, in spite of the availability of the red meat production which depend on nutrition and modern, turn to the modern world,

which qualifies it to increase the volume of its exports in the improvement of the balance of payment (Sabrain, 2010).

The relations of production systems divided animal production in Sudan to the main patterns are the traditional pattern and modern pattern where we find about 90% of this production possessed by the traditional sector and the rest 10% possessed by other sectors.

1) The traditional system is depends on the migratory continuous or partial for water and pastures and represents about 90% of the total national herd is considered as the main source of meat production for domestic consumption and exports, the recent period has seen considerable activity to develop this pattern; considered promising for investment to increase productivity, efficiency and sustainability of production and include: (footloose grazing and the Bedouin production System).

2) The semi-nomadic production system of agricultural stable crops.

3) The modern production system the pattern of plant and animal integration, especially in the field of production of meat and milk this pattern is in irrigated agricultural projects such as the Gazera, Halfa and Alrahad scheme; this pattern of production is characterized by high species of production uses the modern methods to intensify the production system and investment more in both agricultural and livestock farming.

The Exports

Is the sale of products of another State according to the system of recognized laws and let the import by the consuming countries and export by the exporting States. Seems not export is considered an important source of income for the opening up of new markets for their products and is an indicator of the quality of industry and agriculture in those States (Sabrin, 2012). There are procedures and conditions should be available until the process of the export and import of red meat is the following: The foundation contract or name of work, The membership of the register of exporters and importers, The membership of the Federation of chambers of Commerce, Livestock ownership certificates or purchase documents, an initial bill of goods imported or an agreement of the importer and commitment to the application of the regulations and the veterinary quarantine measures (Nahla, 2012). The problems and constraints facing the exports of live cattle and red meat include:

1) Axis of production and productivity e.g. weak investment in livestock research and extension programs in livestock production and the spread of epidemic diseases, lack the efficiency of production and productivity of the traditional sector because of the weakness of the productive capacity of local cattle strains, the lack of adequate quantity and quality of food, lacking the information and requirements of the global markets. In addition to the quality requirements/health certificates and industrial production to increase the value added.

2) Axis of the product and export costs it's including: instability of government policies for the sector in the production and marketing, higher taxes and fees on the inputs and outputs of production and weak infrastructure and services (transport, ports and veterinary care, water services and feed).

3) Axis of marketing: including the lack of a good organization of internal markets.

Finally a multiplicity of mediators and the length of the marketing channel within domestic markets led to conflict and the rise in prices, and traditional practice in the system of sale and purchase.

(See the diagram 1: General Scheme of livestock Marketing Channels from producers to exports (2018).

Exchange Rate

Exchange rate is fiscal policy of economic; a number of countries used particularly, the developing countries to measure positive of economic growth and sustainability. Moreover, its keeps the inflation and its sustainability among the country. It's play an important role of economic indicator of fiscal policy that can affect the exchange rate, inflation, balance of trades and the economic reserve. Many countries require meat exporters and/or importers to produce a number of health and administrative certificates before their products are allowed to cross an international frontier. Commonly, all of the surveyed exporters were well informed about the requirement for these documents, whereas just a small minority of the small-scale traders, brokers and agents of exporters did so (Waad, 2014).

Livestock Marketing Functionaries

Marketing channels of livestock in Sudan depends on the flow of livestock producers to the final consumer. The marketing channel is very long due to the remoteness of producing areas to the consumption centers. The supply chain is characterized by many intermediate stages with transaction costs being taken up mostly by intermediary traders and brokers. Most trading is done by private treaty, with the exception of large numbers of sheep intended for export which are sold by private Resale in the same market on the same day is common and animals may be fattened or reconditioned before resale (Elsedig, Elbadawi A. *et al.*, 2010). The marketing and market information its can be the way of communication or recipient of knowledge or intelligent it's could be all the facts; estimates, opinions and or information which affect the marketing of livestock services.

Most livestock population producers performed one or more markets function. They sell their surplus either in village market or in the market. Some livestock, specially the large one assemble the cattle of small producer transport it to the nearby markets through (Sababba or Gallaya) of local traders. The Middle men including those individuals or business concern which specialize in performing the various marketing function these include *Al-Damin* (Guarantor) and *AL-wakeel* of (local Agents), are the main function of livestock suppliers and the exporter. The marketing function of livestock include the activities

performed to carry out the cattle from the point of its production to the ultimate consumers may be termed as marketing function. The marketing function may be any one or combination of time, space, and form. The marketing function of livestock it's may be classified into various ways (Thomsen); from area to another, cities, villages, regions and national or international. It can be primary function, secondary function and tertiary function (Fig. 1).

Research Problem

Exports is one of the most important axes of the economic development of developing countries, where the export process goes up when local Agriculture Alliance to the point of the surplus of domestic consumption to be marketed externally leading to marketing externally and the continuation of the development process and the provision of foreign exchange will raise the standard of living; and diminishes the purchasing power of this a positive role in the growth and development of other productive sectors. Sudan including owned by the distinct geographical location, trade relations, regional and international cuisine with the Arab countries and the COMESA in stimulating the export of livestock; red meat available opportunities and possibilities of its production compared with other countries, and its advantages in this sector, which depend on the feeding of natural and turn to the modern world, which qualifies it to increase its exports of livestock and red meat however, during the last few years the livestock export facing many problems including, marketing, social and technical constraints particularly the Gulf and Arab countries.

The Importance of the Study

The animal wealth in Sudan is about 140 million head of livestock ; this wealth plays an important role in the food security of the Sudan is self-contained animal agriculture alliance for the red meat and contributes by 22% of the (GDP), about 80% of the rural population and 28% to the total exports. By comparing to other sectors not offset by onerous cost; the state budget and it's an obsession for the government support and to providing inputs and the finance. It has completely and market by the private sector and this is consistent with the policy of economic liberalization adopted by the state in the year of 1994. Therefore, the country has the opportunities to increase its exports of livestock products (red meat) and his possess of the preferential rate make its competes to the COMESA, European market as well as the Asian and the international markets.

Research Objectives

The broad objective of research is to the determinants factors affected the red meat exported during the period of (2004-2015). The specific objectives are the following:

1. To describe the trends factors that are affecting the livestock export of the red meat

2. To identify the main importer of Sudanese livestock of red meat
3. To highlight the most important problems facing exports of red meat.

In a summary, the study will examine the grouped factors of (capacity/coverage Khartoum, total production, domestic consumption, total export and the exchange rate) that are recently leads to the livestock product of the Red Meat Exports over the period of 11 years (2004-15).

Material and Methods

Area of Study

The study was carried out at Khartoum, Sudan, over the period of (2018). The area has the geographical coordinates of (15° 35' 17") North and (32° 32' 3") East. It consist of three main towns- Khartoum, Omdurman and Khartoum North and lived by a total population of around 7385139 million (WFP, 2016). The arable land is 1.89 million acres and headed by seven localities, Jebel Awllia, Ombadda, Omdurman, Karari, Khartoum, Bahari and Sharg Elneel.

Data Sources and Collection

To achieve this objective, the data were obtained from secondary sources of qualitative data of annual and span over the period of 2004-2015. The (qualitative data) has been taken from institutional government agencies; Ministry of Animal Resources and Fisheries (MoARF), and Ministry of Foreign Trade Statistics (FMoT), Central Bank of Sudan, (CBOS) annual reports, Ministry of the National and Economic Planning and UN agencies of FAO, UNDP and NGOs of ICRC livestock program.

Observation

A field survey has been carried out on 10/03/2018, to *AL-MULIH* Central market of the livestock at Khartoum national level of the Sudan. Three groups composed of (10 per each) of livestock producers, middlemen, retailers, wholesalers, traders and exporter have been met and discuss the issues related to livestock market particularly, the livestock market and supply chain systems, market structure, factors that can influence the capacity to respond and the local supply and demand.

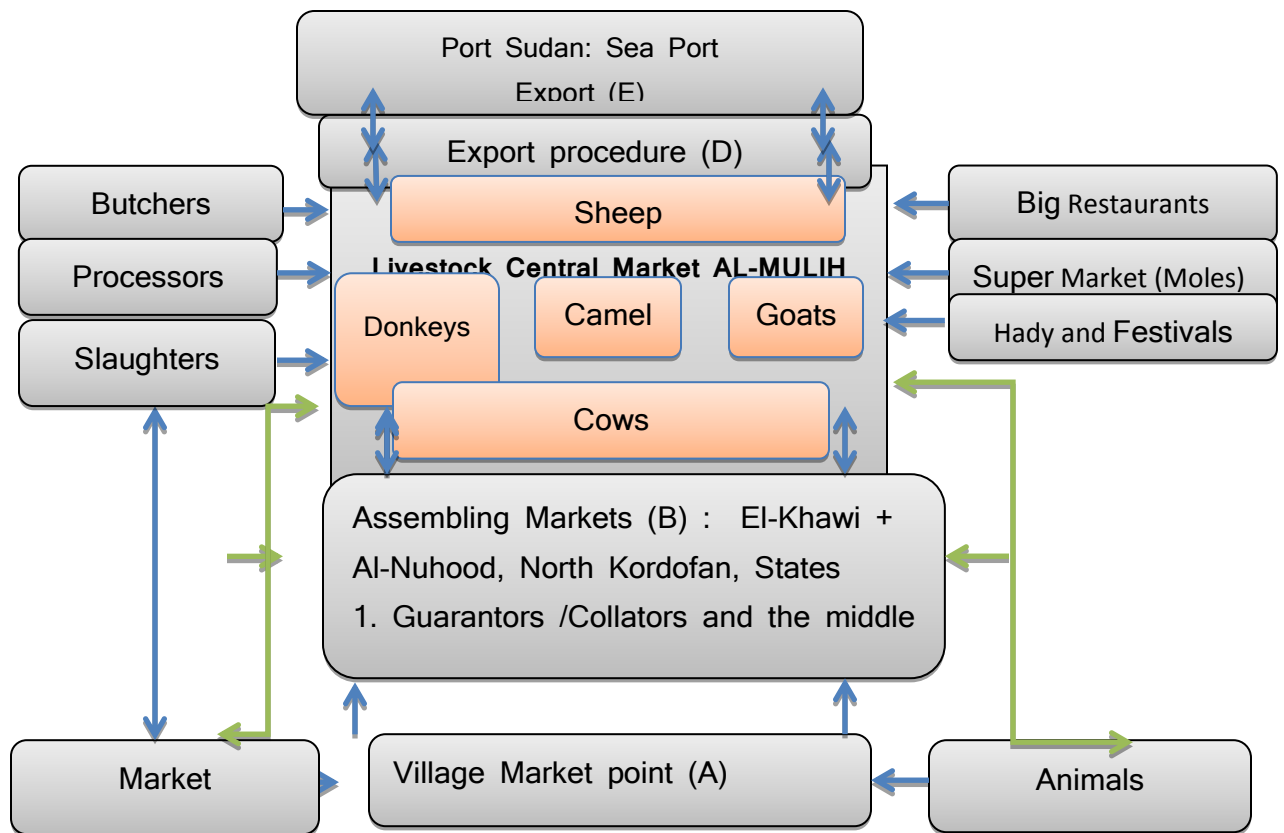
Analytical Techniques

To achieve the objective study, trends components of the time series (consistently increasing or decreasing), 'Time series data' was collected between the periods of (2004-2015). A set of methods like excel computer program were used and analyzed the data in order to extract meaningful of statistics and forecasting or to predict the future values of exports revenue earnings. A line graphs of trends analysis; irregular component that used to make predictions and provides the conclusions and the policy recommendation were offered.

Results and Discussion

Livestock Supply Chain

From the Fig.1: After the cattle assembling in *EL KHAWI* (Assembling point B) the market function through the agents of the middlemen and traders reaching to the livestock central and national market at Khartoum level; (AL-MULIH, Abu Zeid; Omdurman C) functionalities are; butchers, meat processors, big market restaurants and the super market (Moles) at the Khartoum Level, exporters of purpose fattening and processing for or meat. In case of exports, cattle after injected vaccines by the veterinary authorities in Omdurman beyond the quarry veterinary quarantine for 7 days through (D) and then allowed to move to Port Sudan (E), where to wait in the quarry veterinary until the arrival of ships to the port countries importing.



Sources: Field survey, AL-MULIH, (2018), Omdurman, Sudan.

Fig. 1: General scheme of livestock marketing channels from producers to exports (2018).

Information/communication flows on two ways:
 Information/communication flows on one way:
 (A), (B), (C), (D) and (E): Marketing Channels.



Capacity and Coverage

In Sudan, a person ratio from the livestock products of red meat is 47.5 kg/person/a year, 26 kg of milk and 1 kg of egg in a year for the home consumption compared to the Arab countries is 18 kg/person in a year (Arab Organization, 2011). Recently at the Khartoum national capital, is lacking the modern slaughtering houses to process the livestock of the red meat from and to the local consumers; particularly, the advanced machines of meat processing of exports. It can be seen from the Table 1 that is the only 6 modern of livestock slaughtering houses with the capacity function of (ahead/hour, head/day) of both sheep; 404.7 of cattle and 26.7 of sheep.

Table 1: Shown the number of modern slaughter house at Khartoum during the period of 2011.

No.	Slaughter	Capacity/head hour		Actual production/day		Percentage %	
		Cattle	Sheep	Cattle	Sheep	Cattle	Sheep
1	AL –Sabaloga	35	250	100	80	66.7	5.3
2	Ghanawa	25	200	306	10	204	0.8
3	AL-Kadaro	25	250	50	53	33.3	3.5
4	AL-Hudaa	25	250	54	93	36	6.2
5	AL-Shaheed	25	250	70	156	46.7	10.4
6	Arabawyee	25	250	72	21	18	0.5
Total	6	160	1450	652	413	404.7	26.7

Source: MARF, 2011

Table 2: Given the number of slaughters ponds and compared coverage of 944% of cattle and 586% of sheep.

No.	Slaughter	Capacity/head hour		Actual production /day		Percentage %	
		Cattle	Sheep	Cattle	Sheep	Cattle	Sheep
1	AL –Salam	30	100	48	297	160	297
2	AL-Bugaa	30	100	40	41	133	41
3	Jebell Awllia	15	50	22	31	146	62
4	Suq El-Mashia	30	75	18	140	60	186
Total	4	105	325	128	509	944	586

Source: MoARF, 2011.

Livestock Improvement (Head)

The Fig. 1 presents the general trends of livestock improvement; has been remained fluctuated and increased through the years of (2004-2015). A remarkable increased in the pattern of livestock and its reported sharply decreased between the years (2004-2006) and gradually went up till 2015. The overall, trends of livestock (head) revealed slightly increased ($R^2 = 69$) during the whole period of study. A several explanation of this improvement, were associate factors of easy movement, nutritional status, pastures and decreased the losses of livestock (Abdo Jabar. Fadul, 2016).

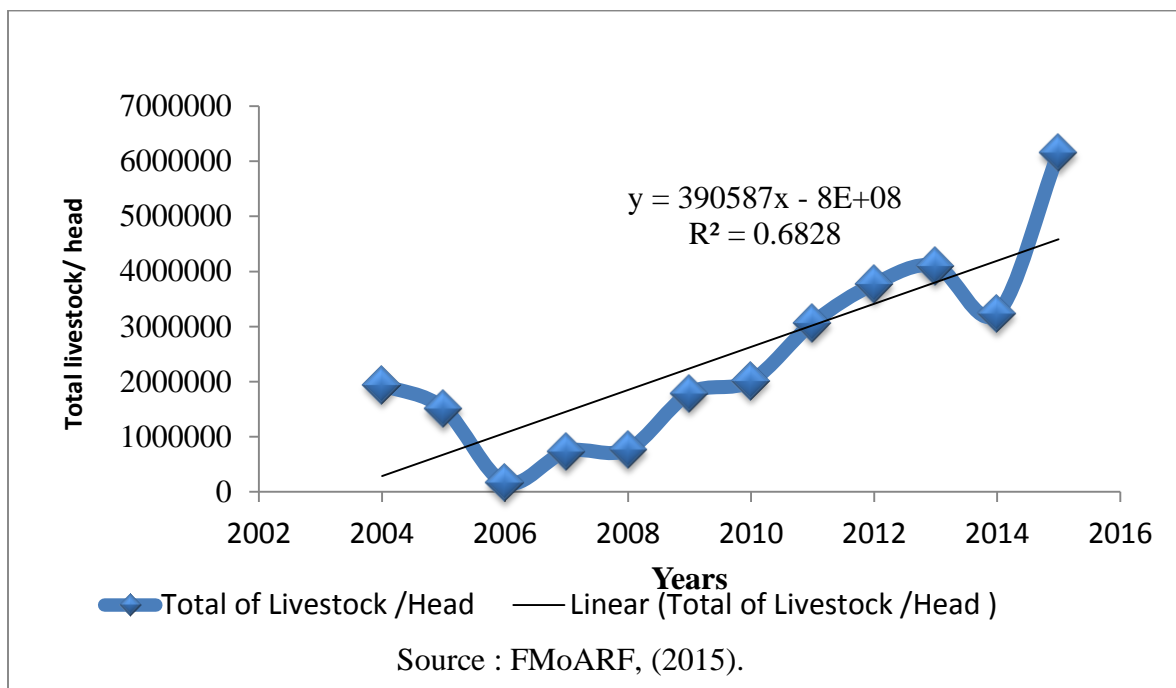


Fig. 1: Trends of Livestock improvement (2004-2015)

Livestock Production

Fig. 2 give trends information about the livestock total production from (2004-2015). It can be noted from the table, that the livestock production is remained stabilized from the (2004-2007); this was due to the livestock access and movement including; access to range and pasture, insecurity (Darfur and Kordofan main supply of sheep and camels) and lacking the sources of water. A dip from small apart of livestock has been increased between the years of (2007-2010). The livestock production drastically declined from (2010-2011) and remained constant through the years of (2011-2015). The overall, trends of production was steady declined ($R^2 = 0.379$). A multiple reasons was reported by the livestock owners of high taxes and fees, inputs, marketing costs, health certificates and procedure from the government authorities were seen through the sheep and livestock traders and brokers at (AL-MULIH) central and capital of livestock market at Khartoum national level (Field survey, 2018). Also reported that some of the livestock producers, especially in some areas of the border state of West Darfur moved into the Chadian markets as a result of the large number of taxes as well as the presence of the markets across the state of Chad to Cameroon.

Domestic Consumption

For the Domestic consumption; the countries around the world can be divided into two categories "Carnivorous" and "Non-carnivorous" based on the quantity of meat consumed per person.

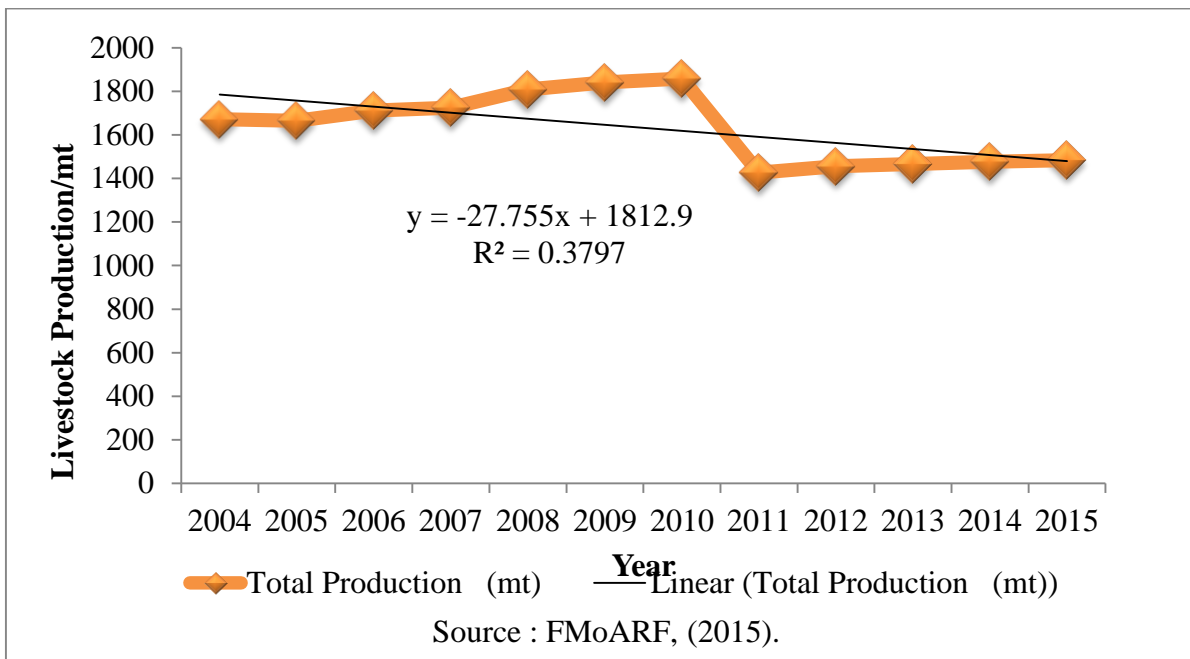


Fig. 2: Trends of Livestock production (mt)

A person from the lowest category consumes 10 times less meat than a person from a country in the highest category such as the USA, Australia, New Zealand or Spain. The countries of Americas, Australia and Europe consume more meat per capita than other parts of the world (Omer Mustafa *et al*, 2009).

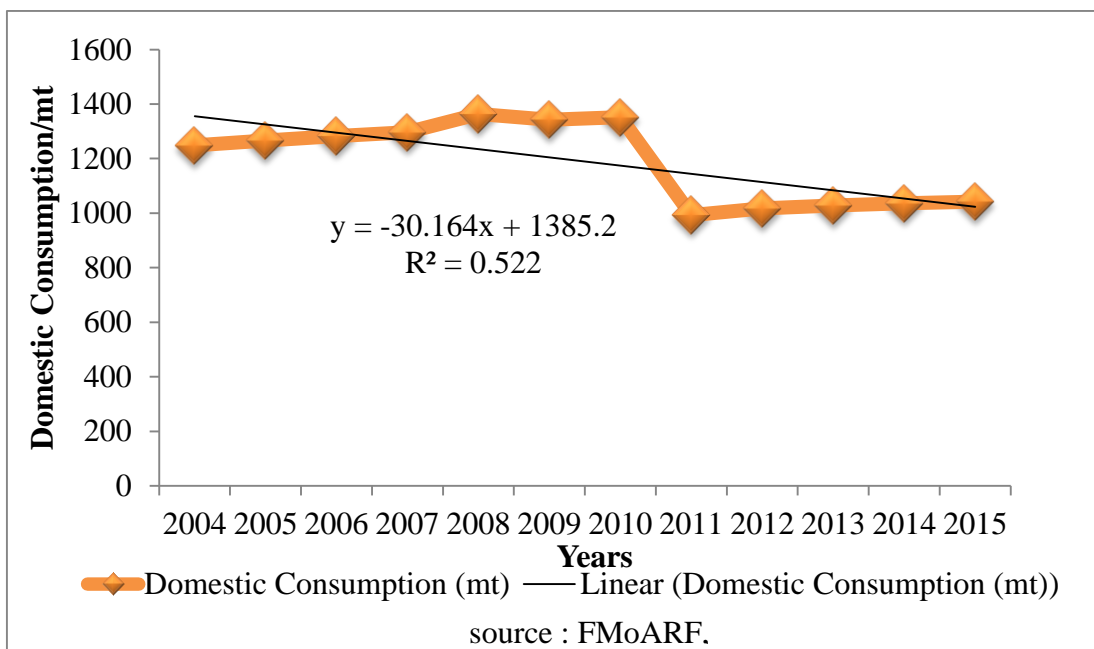


Fig. 3: Trends of domestic consumption (mt)

Fig. 3 Illustrate the livestock domestic consumption in (mt). It can be seen from graph; the livestock domestic consumption remained a similar trends to the production Figures (2) within the small change in ($R^2 = 0.522$) over the period of the study.

Processing (mt) at Khartoum Level

Fig. 4 presents information trends of livestock red meat processing at the Khartoum level. From the table it's seen that there was sharply decreased during the period of (2004-2008) this was probably due to the lacking of the modern slaughter houses, slaughters ponds and the traditional method of production. A notable increased between (2008-2011) and similar declined were in (2011-2013) and reached to the peak in 2015, ($R^2 = 0.209$) it's difficult to explain this fluctuation but it might be due to political reasons and/or the seasonality of the livestock. Generally, the trends were fluctuated the reasoning here was the livestock goes into the out borders, especially the state of Chad and Central Africa in the recent period, the state of southern Sudan in the summer seasons, which reduces the number of livestock and thus reduce the quantities available outboard in addition to, the mood of the local producers make them sell their livestock in the period necessary and leads to the small quantities to supply local markets as well as the small number of modern farms that meet the need of external demand.

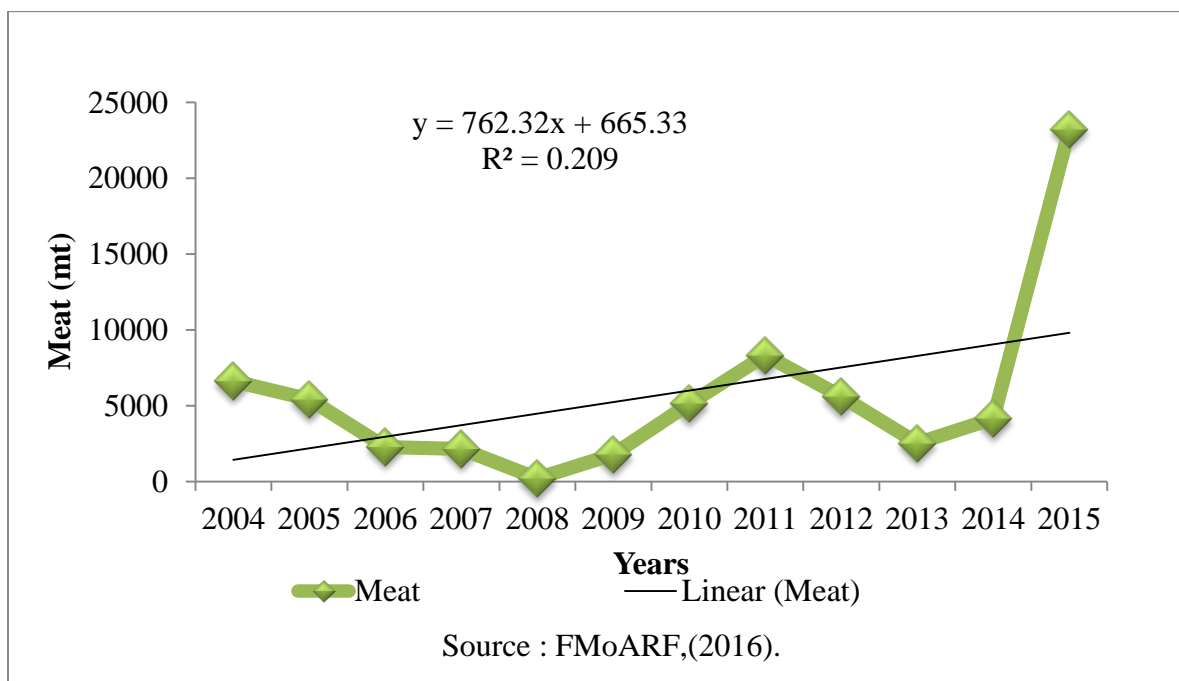


Fig. 4: Trend of red meat processing (mt)

Livestock Meat Export (Tons)

Sudan; is a competing country of the livestock products (meat) with the Argentina, New Zealand, Brazil, Australia and Arab countries. The country has only two main sources of the livestock quality check of

export; 1 in Omdurman and 1 at Port Sudan (Sea port). The country exporting both of a live and meat of sheep; cattle and goats into the Sudia Arabi, Jordon, Qatar, Emarat, Oman and Gulf countries. A cording to Babiker Idris *et al.* (2010); the sheep exports mainly to Saudi Arabia and the Gulf countries and constitute about 80% of livestock export followed by goats 10.5%, camels and cows exported to Egypt and 9% of some other cattle. Exports are mainly mutton, whose annual exports range between 84% and 95% of the total quantity of meat exported. From the Fig. 5 below shows the livestock meat exports; it has been remained stabilized from years of (2004-2007); this probably due to some politics and restriction to export the Sudanese livestock to the Saudi Arabia during the last 4 years of (2015-2017). A notable increased has been reported between(2008-2010) and sharply declined in (2011). It's remained insignificant till 2015 ($R^2 = 0.0338$). Reasoning it may be due to recently situation Sudan with some Arab countries particularly, the Saudi Arabia.

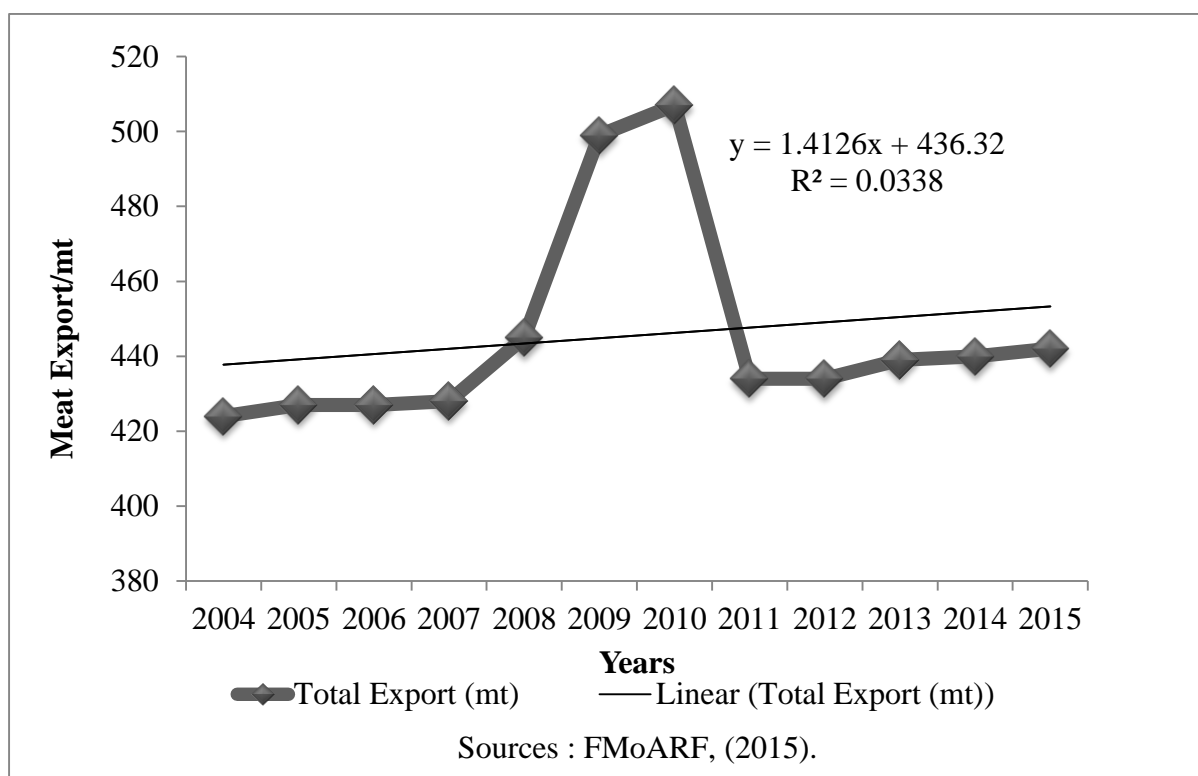


Fig. 5: Trends of Livestock meat export (ton)

Exchange Rate

The exchange rate movements its affect the nation's trading relationships with other nations. The higher currency makes a country exports more expensive and import cheaper in the forging market. A lower of currency make a country exports cheaper and its imports more expensive in the foreign market. Sudan is typically a higher currency exchange and recorded the trade deficit of 929906 USD Thousand in January

of 2018. Balance of Trade in Sudan averaged -210693.34 USD Thousand from 2003 until 2018, reaching an all-time high of 704214 USD Thousand in May of 2011 and a record low of -5102027 USD Thousand in January, 2017.(TRADING ECONOMIC, 2018). Fig. 6 gives the trends of exchange rate (USD) during the period of (2004-2015). It was a dip part of gradually decreased during the period of (2004-2010) this probably the country import good and items more than exports. A dramatically increased between (2010-2011) and remained constant in 2011 and 2013. A notable increased from 2013 till 2014. Generally the trends was increased ($R^2 = 0.7351$); associated factors and linkage of (1) less of exports production (2) lacking controllable of the black market (free market) (3) exporting of raw material a live animal of livestock (4) and some export companies are monopoly the markets.

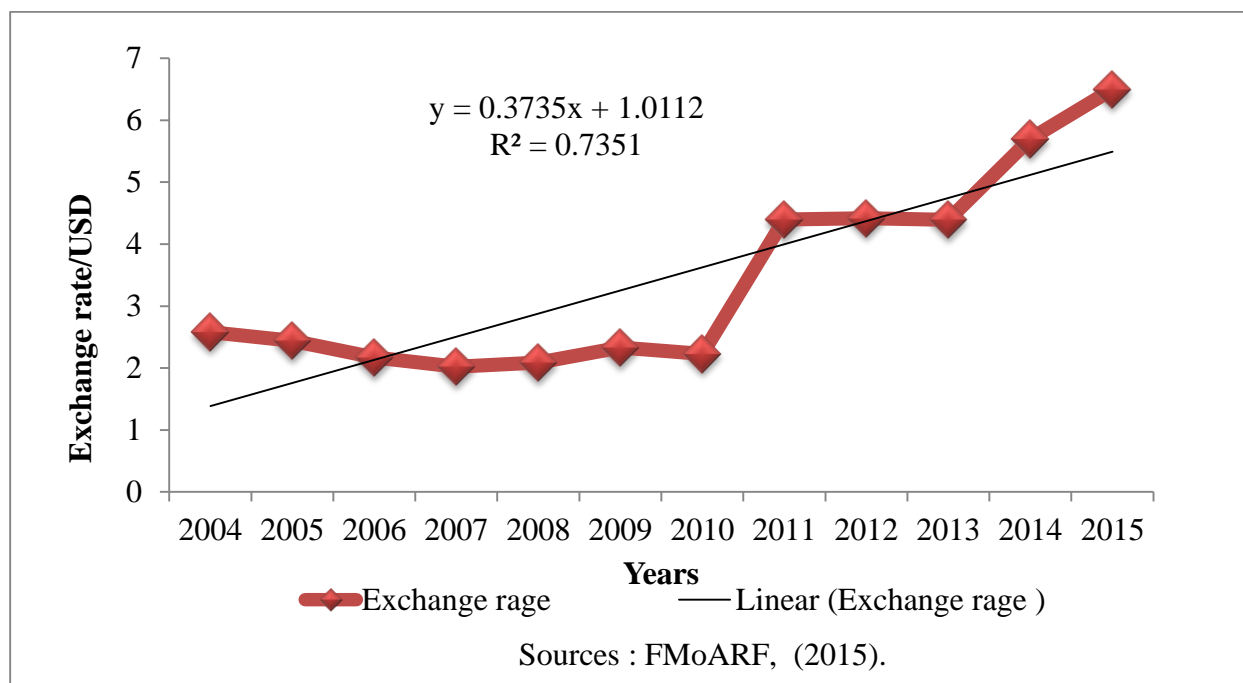


Fig. 6: Trends of livestock exchange rate (USD)

Conclusion

Sudan has huge resources and a great advantage of livestock, which made it the first place in the Arab and Africa, where the estimated wealth of about 150 million heads. Livestock exports and red meat are among the most important types that contribute to the development of Sudan. This sector is ranked as a second in terms of economic return and contributes about 22% of the Gross Domestic Product (MoARF, 2018). Exports are one of the most important economic development hubs in developing countries, where the export process comes when domestic products reach the point of surplus from domestic consumption to be marketed externally and this has the study aimed to find out some factors that may affect the exports of livestock and red meat. The study used statistical descriptive analysis; (time series data) to determine the

direction and trends of exports of the red meat. The study finding that, generally, the livestock trends of head ($R^2 = 69$) has been improved during the period of (2004-2015). Regarding the production, domestic consumption and the total export generally the trends ($R^2 = 0.379$, $R^2 = 0.522$ and $R^2 = 0.209$) respectively; are gradually decreased however, the trends of the red meat remains fluctuated in between (2008-2012) and sharply increased in (2015). The exchange rate movement (USD) gradually decreased in (2004-2010). In contrast, its drastically increased from (2010-2015) and it's still ongoing ($R^2 = 0.7351$); associated factors including the country less of exports production, more imports, lacking to controllable the black market (free market) and exporting of the row material a live animal of livestock .

Policy Recommendations

Based on the obtained result the following points are recommended-

1. On the production level; to improve the livestock feeding, improve genetic, provide technical and experienced personal and improving the livestock services.
2. At the industries level; to monitor the livestock farming, slaughtering houses, markets to see the situation; healthier, documents and its approval to be slaughtering
3. On the export level; to establish a modern slaughtering house particularly, at Khartoum level and to stick on the quality control and the application of animal health certificate procedures to fulfill the export requirement and guideline and improve our competitiveness in foreign markets

The Future research and Developments (R and Ds) should be focusing on; livestock products expansion through the markets expansion, increasing the gains and revenues earnings, satisfied the indifference curves (national) at the consumers (prices) all these could be possible through firstly, to create the utility of the livestock products; form utility, place utility, time utility and possession utility. Secondly, is to assess the value added using details sectorial analysis through synthesis of both demand-side through a market review and supply side via value change to the livestock earnings.

References

1. Babiker Idris Babiker *et al.* 2011. Sudanese lives sheep and Mutton export competitiveness. CBSs. 2016. Annual report, Sudan.
2. Economic of Agricultural development. 2010. (2nd edition), USA and Canada.
3. FAO. 2016. Livestock and Red meat Export marketing. Sudan.
4. ICRC. 2016. Livestock program. Sudan.
5. IGAD. 2013. The Contribution of livestock to the Sudan Economy. Sudan.
6. Jeffery E. Asimo. 2013. Agricultural Production. NEW DELHI (INDIA).
7. JOHN. C. ATBBAT. 1987. Agricultural Marketing Enterprises for the Development World.
8. Ministry of Animal Resources and Fisheries. (MoARF. 2015). Sudan.
9. MoARF. 2016. Livestock issues. No : (26). Khartoum. Sudan.
10. Mildred Haley and Keithly Jones. 2017. Livestock Dairy and Poultry outlook. Unites States Department of Agriculture.
11. Nahal Issa Mohmoud, 2012. Assessing the competitiveness Sudanese meat export to Saudi Arabia. M.Sc. Sudan.

12. Omar Hassan El Diran. 2007. Thesis M.Sc. University of Khartoum.
13. Pantaleo, *et al.* 2013. Market Assessment Guidance; American Red Cross, International Committee of the Red Cross (ICRC) and the International Federation of the Red Cross and Red Crescent Society (IFRC).
14. Sabri Hussin Mohmed. 2012. Livestock export of the red meat. Sudan.
15. Sudanese livestock services; export companies. 2012.
16. Wafa El fadil Mohmood, *et al.*, 2014. Factors affecting the exports quantities of mutton Sudanese.