

Towards A Feasible Agricultural Policy Reform in Sudan: PPP as an Alternative Approach

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Abstract

As it is well known, Sudan is an agricultural country receiving more than 80% of its Gross Domestic Product from exporting raw agricultural commodities. More than 70% of its working force were farmers relying in earning their living on agriculture. The country has been endowed with plenty of natural and human resources. Major among these resources is the abundant fertile vast land area, with plenty of water sources such as the River Nile and other rivers and water sources. In this paper we intended to investigate, why, despite all these endowments, the Sudanese economy achieved very little revenue from selling raw agricultural products due to the poor productivity of the vast cultivated land area. During the last thirty years, the Sudanese economy has undergone a drastic change. Instead of been an agriculture-based economy it has turned into an oil-dependent economy which in turn has marginalized agriculture. At a time when the world is suffering a food crisis, which is especially afflicting Africa, food production should offer the main productive future for the Sudanese economy. In this paper we investigated the need to go back and invest in the agricultural sector, where, 75% of the country's fertile land has been calling for utilization. However, in the light of the fact that, the private sector with all its financial abilities and know-how has been all the way out of the government plans, it may be time has come to reform agricultural policies. In this paper, we proposed a new relation of partnership where the private sector's facilitates would be mobilizes jointly with the government expertise to improve agricultural sector's policies. public-private sectors' efforts would be earmarked to improve productivity and production including the agro- industrialization process to enhance economic value added of Sudanese agricultural commodities. During the harvest of the year 2017, many farmers including private sector companies and foreign farmers, registered a new record productivity level reaching up to 30 Kg per Fadden in some regions of the country such as Kordofan, Northern region, White Nile, Gedaref, and Gezira regions, through personal or group initiatives. The standard productivity per Fadden in growing any cash crop in any of these regions used to be ranging between 4-7 Kg per Fadden. Our findings, suggested alternative scenarios, and policy recommendations towards achieving successful agro-industrialization based on improved use of advanced technology and modern marketing method has been provided at the end of the study.

Keywords: public-private sectors' relationship, Sudan government, productivity, Agricultural commodities, Exports. Agro- industrialization.

1. Introduction

During the last thirty years, the Sudanese economy has undergone a drastic change. Instead of been an agriculture-based economy it has turned into an oil-dependent economy which in turn has marginalized agriculture. At a time when the world is suffering a food crisis, which is especially afflicting Africa, food production should offer the main productive future for the Sudanese economy.

The economic activity that sustained by far the largest number of people in the country was agriculture. Agriculture catered for 80% of GDP and sustainable living for 60-70% of the population of the country, who were engaged in farming. This sector has been facing many difficulties which include lack of finance and no clear marketing strategy for agricultural products. Commercial farmers have been facing immense problems in repaying their loans to banks and in some important locations more than 90% of commercial farmers were bankrupt. The Gezira scheme, once the heartbeat of the Sudanese economy, has been facing many difficulties due to failed policies which were adopted by successive regimes. Nonetheless, thirty years ago Sudan produced more than (10%) of the world's cotton, which was a mainstay of the economy. In the early 1990s, the current government compounded the long-term decline of the Gezira scheme with the decision to switch priority production from cotton to wheat. This followed the regime's slogan "we eat what we grow." While it is true that, the urban Sudanese market had developed a taste for wheat, which had to be imported (itself a product of distorted economic policies), the principal of comparative advantage dictated that Gezira stick to its most suitable crop, cotton. The outcome of the attempted switch to wheat was that today Sudan produced just (4%) of the world's cotton. At the same time, wheat production was insufficient, partly because Gezira possesses the wrong climate for quality wheat production.

While the oil money was flowing, the government behaved as though it would last for ever. The government failed to use its resources to invest in developing other sectors of the economy except for a few roads and bridges built in the centre of the country, and instead diverted most of the resources to finance the military and the security apparatus. The secession of the South of Sudan to form a new republic constituted the

strongest blow to the country's economy. The emerging new Republic of South Sudan took away with its departure 75% of the country's Petrol and other mineral reserves and as well, 30% of its fertile lands and 30% of the ever productive and able manpower.

Historically, most of the private sector investors in Sudan (for example from the Middle East and Turkey and Sudanese as well) were interested only in making short-term returns, focusing on activities that bring quick profit without any risks, instead of long investments towards creating long term jobs in the economy. This was the situation until recently, in some parts of the country such as Kordofan, Northern region, White Nile, Gedaref, and Gezira regions. (Ministry of Agriculture, Sudan 2017). Recently Sudan has succeeded in attracting private sector investors to join investors in the agriculture sector for the first time ever. Those investors changed the taboo of the low productivity of land which used to be the excuse for the poor productivity within the limits of 4-7 KG/Feddan The standard productivity per Feddan in growing any cash crop in any of these regions was the same until 2016, ranging between 4-7 Kg per Fadden regardless of the crop type, (Ministry of Agriculture, Sudan 2018). Hence, under such a low rate of productivity, agriculture was no longer an attractive profession since the farmers can hardly cover their expenses and loans, let alone to maintain a living for their families. It was our intention to explore the possibility of reforming agricultural policies to make this sector capable of attracting investments and job seekers.

During the harvest of the year 2017, many farmers including private sector companies and foreign farmers, registered a new record productivity level reaching up to 30 Kg per Fadden in the above-mentioned regions (Ministry of Agriculture, Sudan 2018). Some new crops were introduced for the first time, to regions which were not known to produce these crops. The harvest was extremely high in these new regions. This has been repeated now in the harvest season of 2018. This Success led us to question and seek answers as regards the suitability of alternative different types of technologies and new cropping policies for the case in consideration. The main theme of this paper was to analyze the available data, in order to trace the root causes that destined Sudanese agriculture to remain underdeveloped, with low productivity and little revenue.

This study aimed at suggesting reforms for the present policies through a new feasible approach towards agricultural production and marketing policies. These reforms include changing the investment patterns, production and marketing policies through the inclusion of the private sector as a full partner with the public sector. The suggested new policy model would include a new relation of partnership between the stakeholders (see shape No.7). Those stakeholders include, the government, private sector companies and farmers as well as, expatriate investment companies. This partnership was supposed to cover strategic planning and sound production and marketing policies of agricultural commodities. This was meant to enhance the performance of the agricultural sector through importing and application of improved technologies and effective know-how to enhance the capabilities attainable in the agricultural sector so as to increase productivity, use of agro-industrialization for exports of manufactured cash crops, to generate value added to the economy. We thought to explore the likelihood of success of this reform policy through the inclusion of the private sector and Sudanese expatriates as main players with plenty of funds, beside the public sector in the agricultural sector development efforts.

2.The Problem Finding:

The Problem investigated in this paper has been mainly concerned with issues related to failure agricultural policies. Such policies have not succeeded over the past few decades to improve the quality and quantity of the produced agricultural commodities for shortages of finance. These Products were sold at very low prices as raw materials in a volatiles pricing market system for raw agricultural products. How could that be changed favorably? These issues were compounded by the extensive use of vast areas of land with insufficient and low quality inputs. Therefore, it was not surprising that, the output of that land was very little and below the international standards of productivity. What led to these minimal returns? could it be, the old fashion technologies and non-scientific agricultural irrigation techniques and fertilizing systems? Why were the returns not encouraging further expansion in farming? It may worth noting that, so far the cultivated land in Sudan represented only 25% of the suitable land area. Was that due to financial shortages, lack of technology, and inefficient policies of farming? Is it due to the lack of agro- industrialization to create value added to the economy? In this paper we intended to investigate the underlying reasons and explore the possibility of increasing land productivity vertically and horizontally.

Sudan, is predominantly an agricultural country. Most of the country's revenues were earned from agriculture. More than 80% of GDP accrued from selling agricultural commodities such as cotton, sesame, Gum Arabic, and Groundnuts. These products were mainly produced in some parts of the country such as Kordofan, Northern region, White Nile, Gedaref, and Gezira regions, through personal or group initiatives by individual farmers sharing either with the government or private sector's investors. The standard productivity per Fadden in growing any cash crop in any of these regions was ranging between 4-7 Kg per Fadden, which was very low (Ministry of Agriculture, Sudan 2018). whereas, other countries such as Turkey, Egypt, which were producing

similar crops were achieving higher productivity per feddan for the same products. Hence, under such a low rate of productivity, agriculture was no longer an attractive profession since the farmers can hardly cover their expenses let alone to maintain a living for their families. It as well, produced little returns in terms of revenue compared to the high cost of agricultural operations. How could the rewards of agricultural commodities which remained insufficient to cover governments obligations be improved through further joint efforts of PPP to develop its technologies and spared sufficient funds in the budget to be earmarked towards research and other Agricore facilities?

On the other hand, this paper offered to investigate the role that the private sector in Sudan could play considering that this sector, had historically, never took any risk of investing in long-term projects or agricultural or agro- industrial projects of large scales. The contribution of this sector in the economy was very limited and in particular areas which has no connections to agriculture. The agricultural season of the year 2017, marked a new phase in the history of this sector. Is it likely that, PPP could change the attitude of the private sector towards long term investment to boost the agricultural sector's productivity and enhance industrialization?

As reference has been made earlier, during the harvest of the year 2017, many farmers including private sector companies and foreign farmers, registered a new record productivity level reaching up to 30 Kg per Fadden in the above-mentioned regions (Ministry of Agriculture, Sudan 2018). It was intended by this author to investigate the underlying reasons for such a breakthrough. Therefore, one thought this might be the golden opportunity to explore the possibility of rethinking of new and promising scenarios that might attract the abilities of the private sector, suggesting a reform in agricultural policies. In these scenarios we shed light on the new production technologies, new partnership relations (PPP) that, might help in achieving higher productivity, better marketing methods to achieve value added for the economy.

3. Objectives of the paper:

However, This paper has been written with the objective of investigating the underlying reasons for such a low agricultural productivity from one side, and to explore the likelihood of breaking this taboo of low productivity based on the participation of the private sector as a partner with the public sector (PPP) .It was also, our intension to explore the possibility of creating successful joint ventures between the public and private sector to rehabilitate the old and traditional technology used in agriculture since independence and employ new technologies and advanced methods based on the knowledge economy to increase both productivity and production of agricultural commodities .By way of supporting the suggested joint venture between the public sector and private sector companies including expatriate Sudanese companies, we aimed at creating an intermarriage between the huge financial abilities and experiences of the private sector with the managerial expertise of the public sector to resolve the problem of mobilizing sufficient funds to finance the import of new technologies, fertilizers, know-how to improve production and productivity of the mentioned sector. On top of that we intended to explore the use of new marketing models to boost the trade balance. This was meant to minimize costs and enhance revenues using the large scale approach. Hence, it was our prime objective through this paper to suggest a reform of the whole agricultural policies as regards the production relations between stakeholders as well as, the production and marketing policy including the technologies and other facilities and operations used. Part of that objective included assessing the viability of withholding the export of raw commodities and resort to agro- industrialization to create value added to the economy.

Many scholars wrote about Sudan, saying "As it is well known, Sudan is a country endowed with plenty of natural and human resources. Major among these resources is the abundant fertile vast land area, with plenty of water sources such as the River Nile and other rivers and water sources. Let alone the mineral wealth including petroleum and gold among other 13 valuable various minerals (Ministry of mines, Sudan 2017).

Despite all these endowments, the Sudanese people were living in a state of war and internal violence since Sudan gained its independence in 1956. The lifestyle of the Sudanese people, who are mainly preoccupied in farming and animal breeding, has been overwhelmed by poverty and in most cases starvation (Ali (2003), (Bilal 2007: pp20-25). Other scholars such as (Eltayeb, 2017: p1), (Ali and Elbadawi (2004) raised questions such as: Why was the average land productivity very low? was it the traditional technology? or, bad seeds or low land fertility or shortage of rain falls. How could we break this vicious circle of backwardness? This has been the context of the problem, which we have been dealing with in this paper. Would it be possible to say that; the future of Sudan would be promising? Would it be possible to utilize the strengths of the public sector and the financial ability and knowledge of the private sector to transform the situation? How could we achieve sustainable development through intermarriage between the two sectors? (Ali and Elbadawi 2004 Ibid). All the above questions played the major role in inducing me to investigate the matter to find concrete answers for these questions and suggest possible alternative reformed policies that might help in streamlining the performance of the agricultural sector in terms of productivity and production as well as, modern marketing techniques.

4. The Importance of the paper

Since Sudan gained its independence, in 1956 and till 1989, the main sources of Gross Domestic Product (GDP) included agricultural raw products, such as cotton, sesame, gum Arabic, ground nuts, and other cash crops (Arab Organization for Agriculture report:2016). The economy of the country was performing very well and the standard of living for almost (60-70%) of its population who were engaged in farming and animal husbandry was reasonable. From 1989 and until present the government followed inconsistent and unstable set of policies that reflected lack of vision and absence of modern strategic planning. The policy approach of the government did not consider improving the quality and technological methods of production that utilized the agricultural resources of the country in an appropriate manner. As well, the government followed very traditional marketing approach that led to the continuous decline in revenues earned from selling raw agricultural products. By so doing, the government wasted the comparative advantage that Sudanese agricultural commodities had enjoyed through all its history.

The study meant to explore weaknesses in strategic planning, production and marketing policies adopted by the government and to underline areas of failures. While doing so, the study suggested alternative useful methods and means to stop the continuous mismanagement of the resources, approaches for improving revenues to enhance the returns to the country's GDP. The importance of this study lied in the authentic analysis of the available data offered by the government itself to prove that there were always other ways to make reforms that might make things promising and better than they really were. This could be achieved through sound policies to enhance productivity and follow modern marketing techniques in selling agro-industrialized agricultural commodities.

5. Research Methodology

To present salient ideas and useful information analysis for the readers, the study followed a descriptive approach of analysis. The problem under consideration was mainly related to policies that were supposed to be based on sound strategic planning and prioritizing the problems that withhold the efficient use of modern applications to release the capacities of such a rich and promising agricultural sector. This sector should have played a dominant role in boosting the country's economy based on the comparative advantage that Sudan's agricultural commodities as organic products has been enjoying throughout their history. For analysis used in this paper both qualitative and quantitative approaches have been used and statistical modeling such as regression analysis may be utilized after tabling the available data from primary and secondary sources whenever the need arises. The analysis was earmarked to prove or otherwise nullify the provided data as regards the possibility of successful intermarriage between the public and private sector's capabilities to overcome all the financial and technological problems facing agriculture in Sudan. This would have eventually allowed us to provide concrete answers for the questions raised in this research paper. Since the basic theme of the study has been concerned with the production and marketing of the agricultural sector products, emphasis has been on the use of comparison of the old methods employed so as to suggest what approach may be suitable under PPP. The study provided recommendations and highlighted the positive difference that would have been accrued had the suggested alternative approaches been followed. However, in addition to the data collected from primary sources, the data collected from international concerned organizations, academic sources and journals may as well, be used wherever possible. At the end of the analysis some possible recommendations were made. The study falls in three major parts. The first part provided mainly a review of the underlying reasons for underdevelopment of the Sudan, as observed in the failure of the plans in general and with regard to the production and marketing of agricultural products in particular. The second part underscored what can be done to tune the economic performance through PPP and break from this vicious circle. The third part emphasized on providing sound findings that might answer the questions raised in the paper. we concluded with the study findings and recommendations.

6. The Scope of the paper:

It is our intention to address the issues related to socio-economic policies in Sudan in general and those related to the agricultural sector in particular. The underlying reasons for the spread of poverty, malnutrition, social violence, and lack of services, unemployment, and all other negative phenomena characterizing the Sudanese people's lifestyle has been mainly connected to the poor policies and lack of modern technology usage. Such failure led to low productivity of the agricultural sector and hence little revenues that would not suffice to caters for the basic needs of the population. To enable us to address these issues we have followed a descriptive approach. While relying on descriptive data in the study, which were mainly theoretical and constructed on available data we used available statistics to provide further evidence for our suggested Scenarios.

The whole paper has been divided into three major parts. The first part concentrated mainly on shedding light on the underlying reasons for underdevelopment of the agricultural sector and its low contribution to Sudan economy, while the second part emphasized on what could have been done to break from this vicious circle by

utilizing public private sectors partnership as portrayed in the successful experiences of the mentioned countries. Finally, we provided our suggested reform Scenarios and findings and results, supplemented with a conclusion and recommendations.

7. Difficulties and Challenges

- 7.1. One of the major challenges that faced this author is the lack of a unified and accurate statistical figures related to Sudan economic performance. This dilemma of contradictory figures has been a mere outcome of relying on estimates in preparing budgets in the absence of recent population census.
- 7.2. In addition, one of the big challenges was how to convince government officials to change their perspective of how to overcome the economic and administrative problems of the Sudan economy without coordination and sincere effort towards knowledge transfer, and improvement of capacity building policies and programs.
- 7.3. As well, this study has been done under a situation of unsustainable and volatile economic policy due to the alarming circumstances the country has been through and everything has been likely to change unfavorable to our findings and recommendations.

8. Public Private Sector Partnership: A theoretical background:

Within our efforts to offer a new approach as a reform for the existing production and marketing policies related the agricultural sector in Sudan, it might worth reviewing and reflecting on other experiences from other countries which have benefited from PPP and achieved success.

According to Hodge and Greve, (2007) A public-private partnership (PPP) that is also named (3P or P3) is a cooperative arrangement between two or more public and private sectors, typically of a long-term nature. Hodge and Wettenhall (2010) argued that, "Governments have used such a mix of public and private endeavors throughout history. However, the late 20th century and early 21st century have seen a clear trend towards governments across the globe making greater use of various PPP arrangements. There is no consensus about how to define PPP like all the social sciences that are subjective in nature. Moreover, Marta (2011) claimed that, "There is no consensus about how to define a PPP. We can understand PPPs of both as a governance mechanism and a language game. When understood as a language game, or brand, the PPP phrase can cover hundreds of different types of long-term contracts with a wide range of risk allocations, funding arrangements and transparency requirements. In addition, as a brand, the PPP concept is closely related to concepts such as privatization and the contracting out of government services. (Marta (2011): pp763-782). When understood as a governance mechanism the PPP concept encompasses at least five families of potential arrangements, one of which is the long-term infrastructure contract in the model of the UK's Private Finance Initiative (PFI). Particular types of arrangements have been favored in different countries at different times.

It should be noted that, infrastructure PPPs as a phenomenon can be understood at five different levels: as a particular project or activity, as a form of project delivery, as a statement of government policy, as a tool of government, or as a wider cultural phenomenon. Different disciplines commonly emphasize different aspects of the PPP phenomena. The engineering and economics professions primarily take a utilitarian, functional focus emphasizing concerns such as project delivery and relative value-for-money (VfM) compared to the traditional ways of delivering large infrastructure projects. In contrast, public administrators and political scientists tend to view PPPs more as a policy brand and as a useful tool for governments to achieve their objectives.

Mozoro and Gasiorowski (2008) believe that, Common themes of PPPs are the sharing of risk and the development of innovative, long-term relationships between the public and private sectors. The use of private finance is another key dimension of many PPPs, particularly those influenced by the UK PFI model, although this aspect has waned since the global financial crisis of 2008. The PPP phenomenon has been controversial. The lack of a shared understanding of what a PPP is, makes the process of evaluating whether PPPs have been successful complex. Evidence of PPP performance in terms of (VfM) and efficiency, for example, is mixed and often unavailable. (Mozoro and Gasiorowski (2008: pp1-25)

According to Weimer and Vining, "A P3 typically involves a private entity financing, constructing, or managing a project in return for a promised stream of payments directly from government or indirectly from users over the projected life of the project or some other specified period of time". Because P3s are directly responsible for a variety of activities, as indicated by Weimer and Vining, P3s can evolve into monopolies motivated by rent-seeking behavior(s). According to Wikipedia (pp 1-23); Pressure to change the standard model of public procurement arose initially from concerns about the level of public debt, which grew rapidly during the macroeconomic dislocation of the 1970s and 1980s. Governments sought to encourage private investment in infrastructure, initially based on accounting fallacies arising from the fact that public accounts did not distinguish between recurrent and capital expenditures.

However, interest in alternatives to the standard model of public procurement persisted. In particular, it has been argued that, models involving an enhanced role for the private sector, with a single private-sector organization taking responsibility for most aspects of service provisions for a given project, could yield an

improved allocation of risk, while maintaining public accountability for essential aspects of service provision. Initially, most public–private partnerships were negotiated individually, as one-off deals, and much of this activity began in the early 1990s in the UK. PPPs are organized along a continuum between public and private nodes and needs as they integrate normative, albeit separate and distinct, functions of society—the market and the commons. A common challenge for PPPs is allowing for these fluctuations and reinforcing the intended partnership without diminishing either sector. Multispectral, or collaborative, partnering is experienced on a continuum of private to public in varying degrees of implementation according to the need, time restraints, and the issue at hand. Even though these partnerships are now common, it is normal for both private and public sectors to be critical of the other's approach and methods. It is at the merger of these sectors that we see how a unified partnership has immediate impact in the development of communities and the provision of public services.

According to Barlow and Wrights (2010: pp51-55) “A key motivation for governments considering public–private partnerships is the possibility of bringing in new sources of financing for funding public infrastructure and service needs. As well, the World Bank report (2012), on PPP mentioned that, “It is important to understand the main mechanisms for infrastructure projects, the principal investors in developing countries, sources of finance (limited recourse, debt, equity, etc.), the typical project finance structure, and key issues arising from developing project financed transactions. An interesting aspect, quite ubiquitous in project finance, is the dual nature of the parties involved, being both service providers to and contracted with the newly created entity (Special purpose entity), and shareholders of that entity. For example, it is quite common for the construction contractor or operations and maintenance service provider to hold an equity stake in project finance's capital structure. Some governments utilize a public sector comparator for assessing the financial benefit of a public–private partnership and the optimal level of private sector involvement.

There was a number of key risks need to be taken into consideration as well. These risks would need to be allocated and managed to ensure the successful financing of the project. The party that was best placed to manage these risks in a cost-effective way may not necessarily always be the private sector. However, there were a number of mechanisms and products available in the market for project sponsors, lenders and governments to mitigate some of the project risks, such as: Hedging and futures contracts; insurance; and risk mitigation products provided by international finance institutions. (World Bank:2012).

According to Barlow and Wrights (Op. cit.) PPPs often, involve a contract between a public sector authority and a private party, in which the private party provides a public service or project and assumes substantial financial, technical and operational risk in the project. In some types of PPP, the cost of using the service is borne exclusively by the users of the service, and not by the taxpayer. In other types (notably the PFI), capital investment is made by the private sector on the basis of a contract with government to provide agreed services and the cost of providing the service is borne wholly or in part by the government. Government contributions to a PPP may also be in kind (notably the transfer of existing assets). In projects that are aimed at creating public goods like in the infrastructure sector, the government may provide a capital subsidy in the form of a one-time grant, to make the project economically viable. In some other cases, the government may support the project by providing revenue subsidies, including tax breaks or by guaranteed annual revenues for a fixed time period. In all cases, the partnerships include a transfer of significant risks to the private sector, generally in an integrated and holistic way, minimizing interfaces for the public entity. An optimal risk allocation is the main value generator for this model of delivering public service.

There are many drivers for PPPs. One common driver involves the claim that, PPPs enable the public sector to harness the expertise and efficiencies that the private sector can bring to the delivery of certain facilities and services traditionally procured and delivered by the public sector. Another common driver is that PPPs may be structured so that, the public sector body seeking to make a capital investment does not incur any borrowing. Rather, the private sector vehicle implementing the project incurs the PPP borrowing. On PPP projects where the cost of using the service is intended to be borne exclusively by the end user, the PPP is, from the public sector's perspective, an "off-balance sheet" method of financing the delivery of new or refurbished public sector assets. On PPP projects where the public sector intends to compensate the private sector through availability payments once the facility is established or renewed, the financing is, from the public sector's perspective, "on-balance sheet"; however, the public sector will regularly benefit from significantly deferred cash flows. Generally, financing costs will be higher for a PPP than for a traditional public financing, because of the private sector higher cost of capital. However, extra financing costs can be offset by private sector efficiency, savings resulting from a holistic approach to delivering the project or service, and from the better risk allocation in the long run.

Zheng et al (2008) in an IMF working paper argued that, “Typically, a private sector consortium forms a special company called a "special purpose vehicle" (SPV) to develop, build, maintain and operate the assets for the contracted period. In cases where the government has invested in the project, it is typically (but not always) allotted an equity share in the SPV. The consortium is usually made up of a building contractor, a maintenance company and equity investor(s). The SPV signs the contract with the government and with subcontractors to

build the facility and then maintain it. In the infrastructure sector, complex arrangements and contracts that guarantee and secure the cash flows make PPP projects prime candidates for project financing. A typical PPP example would be a hospital building financed and constructed by a private developer and then leased to the hospital authority. The private developer then acts as landlord, providing housekeeping and other non-medical services while the hospital itself provides medical services.” Zheng.J & Roehrich& Wrights (2008) in an IMF working paper (2008: pp1-25).

Reviewing literature reflected to us that, PPP has been used in providing and delivering different successful projects in areas such as infrastructure, education, health services and other areas where governments were experiencing finance strain or inefficient allocation of resources. The experience proved to be successful despite the different nature of relations between those stakeholders. Further details could be found in (pieter stock (2013), (Jandhyala, BGTalik) (2016), (Richard Webb&Bernard Pulle,2002). This proves that PPP has been the latest mantra of development especially in LDC’s countries. The model became very popular in those countries considering that, private sector management and innovation is expected to lead to increased efficiency, share of risk among stakeholders. It as well, guarantees increased investment without adding to government borrowing and public debt.

Proponent of adopting PPP as a way out of underdevelopment argued that, opting to PPP could be one of the solutions for governments, which does not have enough funds to finance its development projects. It is claimed that, PPP will ease financial constraints, as the private sector makes huge investments on its own under PPP. As the private and public sector complement each other, it is claimed; this will increase total resources and enable a major strategy to tap the untapped private financial and human resources, including specialized skills that are not available in the government and to encourage active participation of the private sector in national development. As in the case of education it is observed by Pritha (2013) that, “Paradoxically, public education which is an essential service, to remain public needs partners outside the government to keep it up to date, efficient, transparent and engaging”.

Secondly, PPP is likely to overcome the weaknesses of the public system: it was claimed that, the public system has been inefficient; it was rigid and inflexible; it does not respond to market needs; it is not autonomous and so on especially as regards the ability to make decisions and fulfil them. On the other hand, it has been argued that PPP would provide flexibility in relaxing restrictions associated with public sector, such as in the salary structure, recruitment policies, fees and resource mobilization and management and development rules (e.g. civil works). PPP promptly respond changing market signals in academic and other aspects; it even promotes innovativeness; and increase transparency. It is considered as a model that embraces market- based “efficient solutions’ and logics with state sector, and has been free of the rigidities associated with state sectors.

Thirdly, it has been argued that, PPP increases competition, brings in efficiency associated with the private sector, improves accountability, reduces costs and improves cost-effectiveness and thereby reduces prices and fees in service. (Jandhyala BG Tilak,2016: pp4-5).

On the basis of what has been argued, taking in consideration the case of Sudan underdevelopment root causes, we believed it has been a viable approach to choose PPP as an engine to explode the capacities and abilities of both natural and human resources to achieve sustainable development in Sudan. If the public sector planned projects and assigned execution to the private sector, then the work would have been done efficiently and at low cost and short time. The Private sector is both cost and profit sensitive and time matters to their performance. This would meet the objectives of both parties.

However, some other scholars who were not optimistic about the experience of PPP in Western countries were very likely to attack our proposals arguing that the gap between western countries and Third World countries has been and will continue to widen, there was no room for comparison or replication of such models.

Luckily, we managed to quote the experience of at least three third World countries who followed the mentioned PPP approach and achieved their objectives. The experiences of these successful countries such as, Malaysia, Singapore, Turkey, were sighted in this paper to proof that the model was a success and likely to be replicated taking in consideration the special circumstances and problems of each country. (Bilal: 2014: PP 81-85).

However, the experience of PPP especially after setting the 2030 agenda seemed to be a promising experience that, need to be considered in such a model that may suit the Sudanese case. We were trying to find out ways and means to overcome these challenges which were withholding Sudan from achieving success. That was to suggest alternative approach to alleviate Sudan's underdevelopment in all areas of the economy with special emphasis on agriculture. It is our intention to investigate the possibility of putting together the abilities and capacities of both public and private sectors’ to achieve sustainable development.

This could be achieved through a reformed approach towards designing more efficient agricultural policies.

9. Root Causes for underdevelopment:

In our effort to clarify the root causes for the long years of socio-economic underdevelopment in Sudan, we

reviewed the available information. We believed, as many scholars did (Ali, Al/Gadir, Elbadwai, I. and others) that, the negligence of the agricultural sector which catered for 80% of the country's revenue and the source of income for 60-70% of its population, was the core of the problem of underdevelopment. The Situation was alarming, where poverty has been increasing, unemployment among educated youth escalating to reach (19%-31%) according to (IMF Report 2014). This was as well, compounded by the spiral inflationary rate of prices of everything which has been shooting up to reach 68% during 2018, according to recent reports. The usual question that jumped to the mind was: what went wrong? Why a country with such endowments has been struggling for survival, though it should have been offering its people a prosperous life?

Before spreading accusations here and there, we reviewed what Sudan as a country has got in terms of natural and human resources. We came up with the following:

9.1 The total land area of the country after the session of the south was approx..728 square miles.

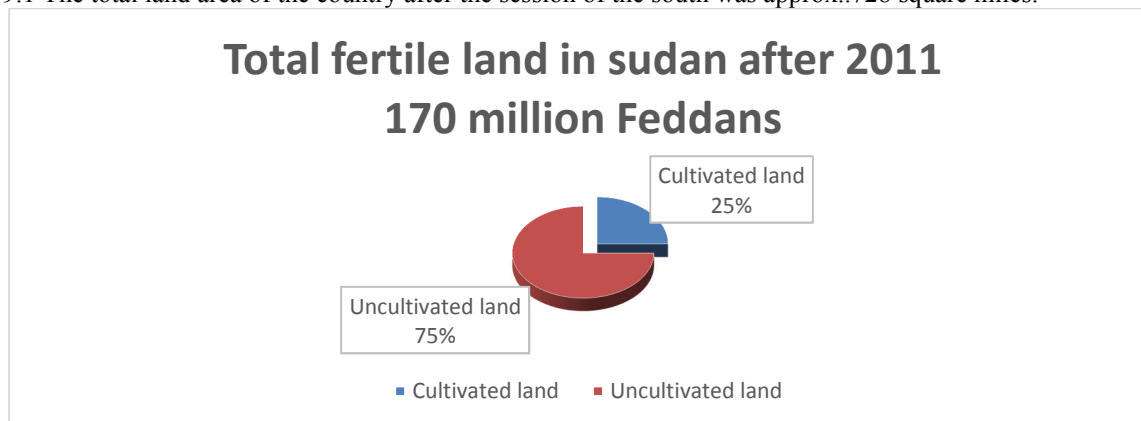


Figure No. (1): The percentage of Cultivated land as a percentage of the Total Fertile Land. Source: (Sudan Central Bank Report (2017).

9.2 170 million feddans (two thirds of the country land area) were suitable for cultivation. So far between 35-37 million feddans were rain fed agricultural projects while 3-4 million feddans were the projects of agriculture through irrigation schemes. The irrigated schemes were under the direct supervision of the government. However, all the used fertile land since independence was 25% of the total fertile land. That meant 75. % of the fertile land were still unused and calling for production.

9.3 In terms of water resources from the river Nile and its branches 31 billion cubic meters. While water from rain is estimated to be 300 billion cubic meters while the underneath water is about 5 billion cubic meters annually. This meant in terms of water resources Sudan was very rich but unfortunately the rest of this water was utilized by our neighbors for free because we can't use it simply due to lack of vision, strategic planning and lack of feeling of responsibility to utilize such resources.

9.4 In terms of animal wealth, the total number of livestock including: Camels, Cows, Sheep, Goats, were estimated to be 104 million heads.

9.5 In this part I would refer to the Mineral resources in general without details because no one has authentic detailed information as yet, but we could safely say we have, petrol, Gas, Gold, and many other 13 different types of minerals.

9.6 The most valuable part of the country's resources was the human capital. Sudan population has been estimated to reach between 35-40 million and the country's population has been described as a young nation. Those numbers of population who fall in the age group 15-64 represent the majority of the population (46%). That meant, there was quite a good number of able and productive workers.

9.7 With all these resources the country was never able to satisfy the needs of its people let alone to offer them a prosperous life. The country's economy has been described as a middle lower income economy according to IMF Reports (2018). When we looked at the records of the country, we found that: out of 170 million feddans of fertile land only 25% has been in use. Why that low utilization of resources? What went wrong? What stopped the government from utilizing the rest of this fertile land under a situation of inelastic international and regional demand for crops?

10. Manifestations of the failure policies:

Within our efforts to assess the causes of failure agricultural policies and answer the above questions, we observed the following facts:

10.1 With due respect to all the above mentioned resources, the records of Sudan exports reflected a very poor productivity and production level in all agriculture commodities and animal production although most of those commodities has a comparative advantage and Sudan has been one of the major producers of these

- organic products which had enjoyed an inelastic demand especially in the Arab world.
- 10.2 The best productivity per feddan in Gezira Scheme was ranging between 4-7 Kg's per feddan.
 - 10.3 This was the situation throughout the years since independence due to the traditional technology used, poor seeds, little amount of fertilizers and irrigation techniques followed.
 - 10.4 However, that standard of low earnings from agricultural commodities, pushed farmers out of their farms, since every one of them was indebted to the banks, almost through all seasons. These low earnings have been one of the major pushing factors for rural urban migration.
 - 10.5 Rural – urban migration and external migration were net results of the deterioration in the agricultural sector from one side. The failure of civil servants to design practical and fruitful economic policies has been accused as well, for escalating rural –urban migration on the other hand. This led to the rise of unemployment due to the negligence of the government to invest in new projects that may create jobs for those who left their farms.
 - 10.6 Another side effect of rural urban migration was the rise and expansion of the informal sector, which reflected the mal-functioning of the economy. This led to the expansion of the parallel economy which was overtaking the traditional economy in the absence of sound policies.
 - 10.7 Another by product was the rise of slum cities around the big cities, where communities of unemployed poor people living below poverty lines were growing rapidly. This led to the spread of crime, drug dealing, smuggling of goods across the borders and even human trafficking across the borders.
 - 10.8. It might worth noting that, all those scenarios were taking place under a situation of war and armed violence in several parts of the country due to unfair distribution of wealth and development opportunities. This situation led to the deterioration of the economy which was characterized by high rates of unemployment (19%- 31%), deficits in both the balance of trade and the balance of payments, deteriorating rates of the national currency in front of the dollar and other major currencies (See figure 1 above).
 - 10.9. However, the picture was very gloomy and the country's economy as well as, the social life of the community was going down the cliff. On top of that, Sudan lost its shipping line, Sudan Airways, Sudan railway, Gezira and Rahad projects, White Nile agricultural Schemes (Agricultural projects in central Sudan) and Nuba mountain projects (Agricultural projects in Western Sudan), which were completely ignored because the government was suffering from the "Dutch syndrome" after the discovery of petroleum and the rise of fast revenues in hard currencies.
 - 10.10. Unfortunately, all the money earned was squandered in a very irrational manner as one have noticed. While the government could have paid Sudan Debts, or imported new technologies for agriculture and industry, the money was rather earmarked to spend on non- productive employment of relatives and supporters of the ruling party.
 - 10.11. The peak of our losses came with the session of the south of Sudan as an independent Republic of Southern Sudan carrying with it 75% of the petrol wealth, 30% of fertile land and 30% of the able ever creative manpower.
 - 10.12. Sudan turned to be a consumer rather than a producer, Dependent on others rather than independent, "because if you don't own your food you do not own your decision"

11. To sum up this series of miseries, Sudan problems could have been summarized in the following:

- Low productivity in all sectors due to:
- Failure planning model that led to failures at both macro and micro economic levels.
- Lack of institutional management for the government machinery compounded with other administrative and social constraints such as corruption and nepotism.
- Lack of sufficient financing for agricultural projects simultaneously with absence of modern packages of technology, development in agricultural policies including new technologies through transfer of knowledge.
- Infrastructural problems such as lack of transportation between projects and seaports, and airports facilities, inconsistent supply of power to the factories that, were working under capacity. Added to that, were the problems of instability and consistency, which characterized policies of all government agencies plus lack of coordination and sustainability among these agencies.
- Lack of agricultural services (such as research, - follow up –immunization efforts) plus weak cropping innovations, low use of fertilizers, use of expired insecticides, and introduction of machinery in all agricultural processes.
- Lack of health and educational services (29% of children at schooling age were not attending

schools). This constrained the aspect of human development and continuous supply of creative and innovative manpower.

- This was compounded with the application of old fashion marketing policies, as well as the rigid investment laws that failed to attract local and foreign investments to boost the economy and create employment chances to enhance the export sector. To overcome all the above mentioned challenges Sudan was in need to address the following Priorities through immediate intervention and policy reforms:
- High vulnerability of the economy to external shocks due to heavy dependence on oil and limited share of other productive sectors namely agriculture and industry.
- Lack of inclusive and broad-based economic growth as a serious threat to economic growth, peace and social justice.
- The large and rapidly growing public sector became an impediment to the development of a robust private sector, that was already functioning under conditions of economic uncertainty and unattractive investment climate
- High levels of unemployment associated with the limited absorptive capacity of the economy to accommodate the increasing numbers of job seekers remained a major threat to political stability and human security in the country.
- Wide spread of poverty associated with lack of inclusive growth and unequal income distribution induced corruption and nepotism all over the country.
- Concentration of poverty among rural households poses the challenge of enhancing investment in the traditional rural economy and investment in building the capabilities of rural communities with especial reference to human development.
- Regional inequalities have been a big challenge to peace and stability and the long-term sustainable development in the country.
- Challenges related to accessibility to basic social amenities due to the vastness of the country, shortage of facilities and personnel, inadequacy of infrastructure, mal- distribution of the existing facilities and cadre, increased costs of services, wide spreading of poverty, shortage of funds and prolonged conflicts and violence.
- In health, the important and pressing challenges to achieve an increase in service coverage to include the majority of the population particularly in the disadvantaged rural areas.
- The development agenda for the infrastructure sector were mainly maintenance of infrastructure, development of capacity and systems, and reform to improve safety, security and performance.
- Social protection and safety nets were challenged by the inability to cope with the growing number of the needy people and vulnerable groups. Finance and management issues remained among the main concerns.
- Addressing the complicated issue of IDPs and returnees constituted a real challenge.
- Accelerated rural urban migration with its negative impacts on both sending and receiving areas constituted a major challenge.
- Support to capacity development for effective implementation of the country's population strategy and policies remained highly needed
- Gender-based violence and gender-based inequalities in employment and decision- making needed more consideration.
- Population with special needs, especially the disabled, the homeless and street children required special attention
- Brain drain, especially of professionals and skilled labor, had been an acute problem inflicting present-day Sudan; this required paramount attention
- Institutional and human capacity development in planning, policy formulation, implementation and monitoring has been and will remain to be an essential development challenge.

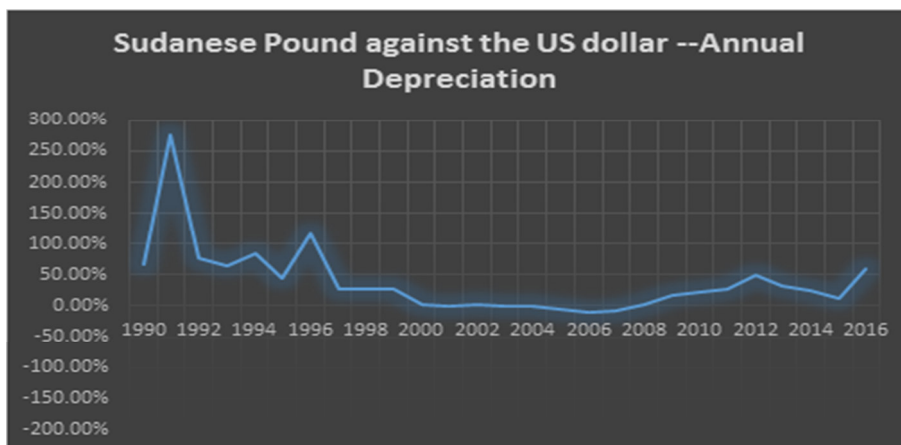


Figure No (2) The Value of Sudanese pound Against US Dollar.

Until mid of 1970s, there was hope that sustainable development could be attained if better and inclusive strategic planning of policies was followed, supplemented with better technologies. Most of the profiting companies and corporations of the public sector were privatized in a very unfair and irrational manner. While on the other hand, the role of private sector has been marginalized or ignored.

The outbreak of wars in the peripheral regions of Sudan, by those who believed they were marginalized, exacerbated the deteriorating economic situation, which started to be a consumer economy instead of a producer economy by relying heavily on the revenues flowing from selling petroleum commercially from 1999. During that time, up to 2011 agriculture which was supposed to be the engine of the economy has been completely neglected. Most of the farmers being under unfavorable circumstances left their farms and joined the ranks of the " Informal Sector" in the big cities. ((Bilal: On the Role of Informal Sector in Economic Development in Sudan; ESRC:1982)

Sudan experienced a hard situation where, exports deteriorated to the point that, imports became double the value of exports and the country faced a series of hardships in mobilizing foreign currency to cater for the basic needs of the people, let alone inputs for industry and fertilizers for agriculture. The peak of the hardships appeared after the session of the south, where Sudan lost 75% of its petrol and mineral resources for the emerging new state of Southern Sudan. The country began to live on loans, donations from Gulf countries and expatriate's remittances.

During the period following 2011 and up to 2018, pessimism was overwhelming over the whole country; because nothing showed that there was a way to stop the country from drifting into bankruptcy. Figure (2) above showed the deterioration in the value of Sudanese Pound compared to the US Dollar during the period ranging from 1990 to 2016. The drop in the value of the national currency was apparent and unprecedented. As well, the interests of public and private sectors were in contradiction.

12. What ought to be done and how?

The country needed to restructure itself in many sectors and reform its policies:

- 12.1. First the government needed to be restructured by reducing the number of government ministries and agencies to be only 20 major government ministries. This would help in reducing government expenditure and guarantee the efficiency of the government machinery by combating corruption and nepotism.
- 12.2. Secondly; capacity building became a must if efficiency and governance is considered important to achieve sustainable development. That meant:
 - 12.2.2. Improving the content of the educational curriculum as regards the general education, improved teacher training, rehabilitation of school buildings and school's capacities of intake of children since 29% of children at the school age are denied access to education (EU report on Sudan2015).
 - 12.2.3. Higher education curriculums and teaching methods were calling for an update while being connected to the development priorities. That should have been tied with the work market requirements to guarantee easy employment. This would guarantee capacity building that would avail the necessary staff and work force to achieve development plans. (EU report,2015,).
 - 12.2.4. So far and in the light of the numerous agreements and accords signed between the government and rebel movements there were 3000 constitutional jobs for the government officials including the president. Most of these jobs were not adding to the productivity of the economy. The role of such jobs need to be reformed.
 - 12.2.5. The Majority of those constitutional employees who are employed as advisors, are not doing any kind of

- work that adds positively to the economy. They cost the government treasury a worth of US dollars 5 million a month in terms of salaries and other benefits. This looked like disguised unemployment
- 12.2.6. If the number of those advisors was reduced by half, this would save 2.5 million US Dollars which could be earmarked to cater for the budget deficit. By the same token such resources could have boosted the improvement of health and educational services or poverty combat programs, or directed to improve the agriculture sector technologies.
 - 12.2.7. All the Sudanese including policy makers, ought to change their attitude towards agriculture and treated it as an important sector in the economy, sparing more finances for it.
 - 12.2.8. Agriculture should have been treated as the "Growth Engine", since more than 70% of the population of Sudan earn their living from agriculture. (IMF Report,2013).
 - 12.2.9. If agriculture was well funded, then a positive spirit would have spreaded all over other sectors of the economy and generate positive energy that would enhance production and productivity through the multiplier effect.

However, the harvesting season of the year 2017 carried a positive message across the country, through giving realistic and tangible examples. Nevertheless, a glimpse of hope and optimism was revived by the successful agricultural season of 2017. This was exploded by the successful effort of the Saudi Business man Mr. Suleiman Al- Rajihi who managed to utilize a neglected piece of the desert in North Sudan. This investor cultivated that land area using modern technology and mechanized processing in all his farming process and harvesting. This farmer cultivated 1500 feddans with wheat. He paid plenty of money to establish this fully mechanized farm for the first time in Sudan. At the harvest time he was able to reach a productivity level never heard of in Sudan; he produced 30 Kgs per feddan. This farmer made a new agricultural history in Sudan. He again repeated the same story during the harvest of this year 2018.

In Eastern Sudan the African Agricultural company (A branch of Mahgoub Awlad Company) also made a surprising record by achieving above 25 Kgs per feddan while, before using this advanced technology the productivity level of the same area was ranging between 4-7 Kgs per feddan. The same story happened in Gezira, Kordofan, White Nile, Blue Nile regions. This was achieved by using knowledge based technology and agricultural methods.

The African Agricultural Company mechanized all the process of agriculture from zero to the harvest whereby they:

- used improved seeds.
- Insecticides were scientifically used according to fixed measures.
- Fertilizers that matches each crop were used.
- Sufficient irrigation of the crops according to scientific methods and specific quantities of water.
- Finally, mechanical harvesting and packing according to modern know how.

Hence, with the use of modern technology vertical and horizontal productivity levels increased extremely high. This could be clearly observed from the figures below where it was apparent that the more fertilizers are used the more horizontal and vertical productivity increased. That reflected the valuable years wasted through sticking to the traditional methods of agriculture which produced very little. Now after discovering the importance of the new technologies based on knowledge economy, our productivity would rise and our production would be increased so much.

That believe of the possibility of breaking through led to the overwhelming excitement and outbreak of new hope. Policy makers believed that the opportunity to break from the vicious circle of underdevelopment has come. Many scholars and policy makers started to look at things differently after comparing the present situation with the past. Everything seemed likely to happen if we used the right plans, followed the correct procedures, continued to think and behaved creatively. That suggested the reform in used methods continuing the efforts of knowledge transferring, so that our future economy in general and agriculture in particular could be knowledge based. That should have been accompanied with a system of accountability and corruption elimination. In this case, yes we could make it and achieve sustainable development.

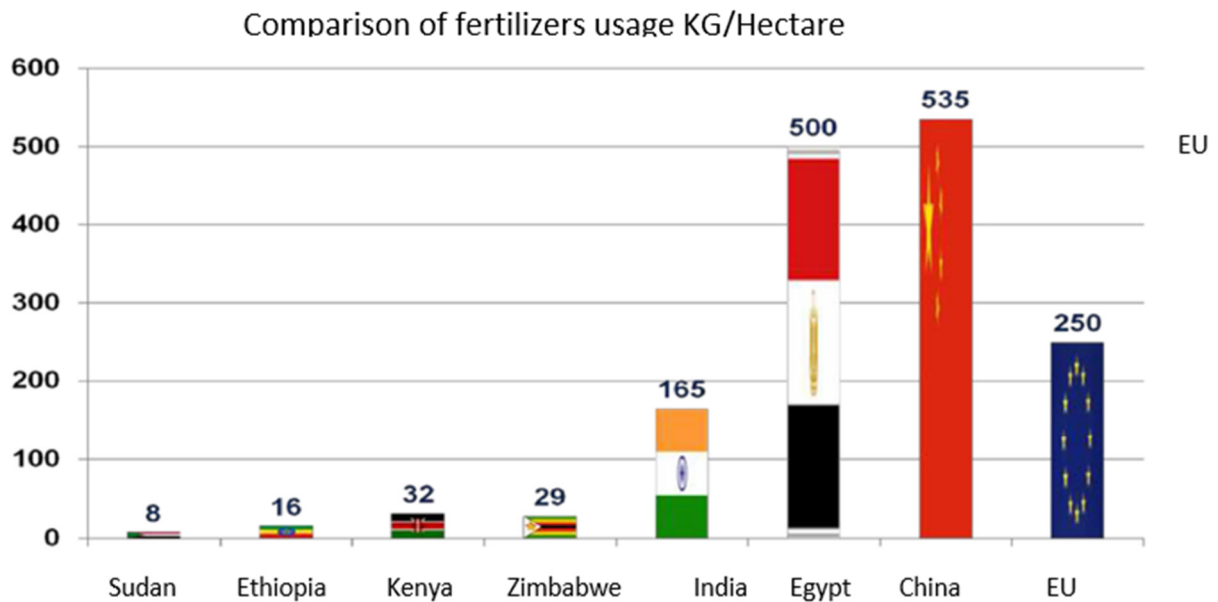


Figure No (3)_Comparison between Sudan and other countries in fertilizers usage KG/Hectare

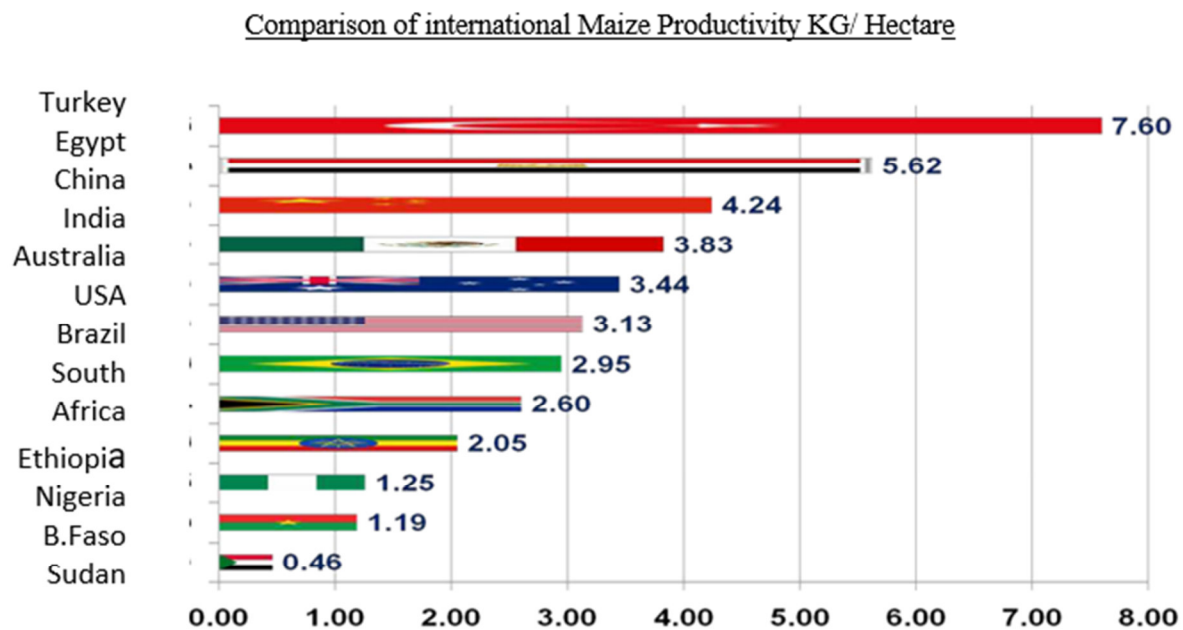


Figure No (4) Comparison of Sudan Productivity to international Maize Productivity KG/ Hectare

13. How Could Sudan break through: A New Suggested Approach?

Given the new approach followed by Private sector investors such as, the African Agricultural company, which is the agricultural branch of Mahgoub Awlad companies, in using full mechanized Agricore, based on scientific knowledge about the volume of fertilizers, the frequency of irrigation and grass and insects control, the results were surprising. Table No. 1) below showed the net result of their action added to what has been done by the Saudi businessman Mr. Suleiman Al-Rajih.

Table No (1) A comparison of productivity under two different regime methods

Maize Productivity	Traditional Methods	Knowledge based Method
The Arab Company (Gedarif Region)	2 sacks per Fodder	10 sacks
The African Agricultural company(Gedarif Region Projects)	2 Sacks per Fodder	7 sacks
Pioneer Farmers – Gedarif region Projects	2 Sacks per Fodder	13 sacks
Industrial Farmers – Agadi Area	2 Sacks per Fodder	14 sacks
National Ministry of Agriculture :2016		

The comparison of both the traditional and modern methods suggested that, following the knowledge based approach would lead to increased productivity and hence more revenue from this product. The difference is surprising and suggested a lot of wasted revenues throughout the past years. This result suggested that, our proposal of policy reform through public private sector’s partnership is useful and feasible

Table No (2) Use of Modern Technology in enhancing Agricultural productivity

Crop	Productivity per Hecter	% Increase
Cotton	1680kg / HEC	350%
Maize and Sweet Corn	1300kg / HEC	325%
Sunflower	792kg / HEC	224%
Source: Arab Agriculture Organization, 2016		

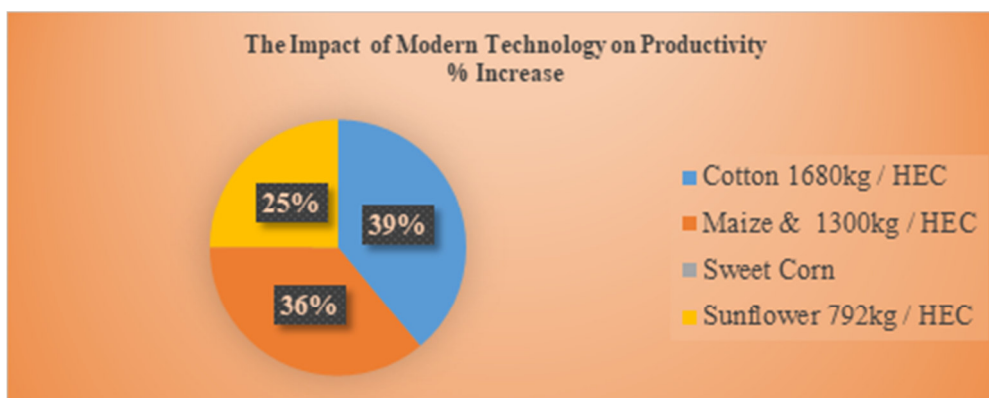


Figure No (5) The Impact of Modern Technology on Productivity % Increase.

Sesame: -

Exporting sesame and ground nuts in their natural shape as a raw product has been a big loss for Sudan because there was a room for much more value added to be attained. The table below (table3) reflected the value added that could have been achieved due to the use of modern technology and manufacturing methods.

Table No (3): Sesame Price and value added

Natural	High Purity	Classified	Peeled	Manufactured (Tahina)	
Price	1100	1155	1210	1375	1595
Value Added %	%	5% increase	10% increase	25% increase	45% increase
Source: National Ministry of Agriculture –Khartoum:2016					



Figure No (6) A Comparison of Sesame selling prices

Table No (4): Ground Nut Price and value added

Raw	Classified	Manufactured (Oil)
Price 500 USD	900 USD	1400 USD
Value added zero %	Value added 80%	Value added 180%
Source: Annual report of Central Bank:2016		

These results, gave the green light for a new era in Sudanese Agricultural development policies. It as well, opened a new chapter in the economic history of Sudan. If the use of technology would enhance our production and as well, boost our exports, we should have aimed further ahead, thinking of moving a step further towards industrialization. This could be done by reforming our policy models, from exporting raw agricultural products to manufactured products. By doing so, we would make sure, that the returns of our exports were increasing. As well, the value added would be more if such products were transferred to manufactured rather than raw materials exported for less. The net findings of the above comparison indicated that putting the abilities of both sectors together was very likely to help breaking through. One important thing that we needed to consider was the important role that PPP could play positively.

14.Utilizing the Promising Opportunities

As we have already mentioned, 75% of Sudan's fertile land is still waiting to be cultivated to explode our real agricultural capacity (figure No. 1 above). There was a great potential that would have enhanced our agricultural production through the introduction of new crops that would have generated more revenues. This increase in productivity could have been achieved through exploiting the available promising opportunities especially in the Arab World and European Union. The only viable option in the light of shortages of financing by the government was to pave the way for a new reformed approach through the inclusion of the private sector with its huge financial abilities and technological know-how to boost both production and productivity levels as well as, enhancing the marketing process.

How can Sudan's potentials be exploited efficiently?

In our endeavors to offer alternative strategies to put the potentials of Sudan in both agriculture (plantation, and animal grazing) plus industry we would need new effective bodies or bureaus to take the responsibility of both planning strategically and marketing effectively. Those objectives were likely to be achieved through two scenarios which we suggested below.

14.1. The first scenario: Establishing a PPP Stakeholders Bureau for production &Exports:

There was a need to establish a national body, either a committee or bureau that encompasses the agencies concerned with agricultural production, animal production development, agro-industrialization and marketing internally and abroad using modern techniques and know-how. The stakeholders who should take part in this committee represent both public and the private sectors. Those agencies are namely: Ministry of Trade and Industry, Ministry of Finance, Ministry of Investment, Ministry of Agriculture, Ministry of Animal Wealth, Farmers Association, Exporters Association, Gezira Scheme, Expatriates Experts and Scholars council, and any other concerned agency. The duties and responsibilities of this bureau should be as follow (Figure 7 below):

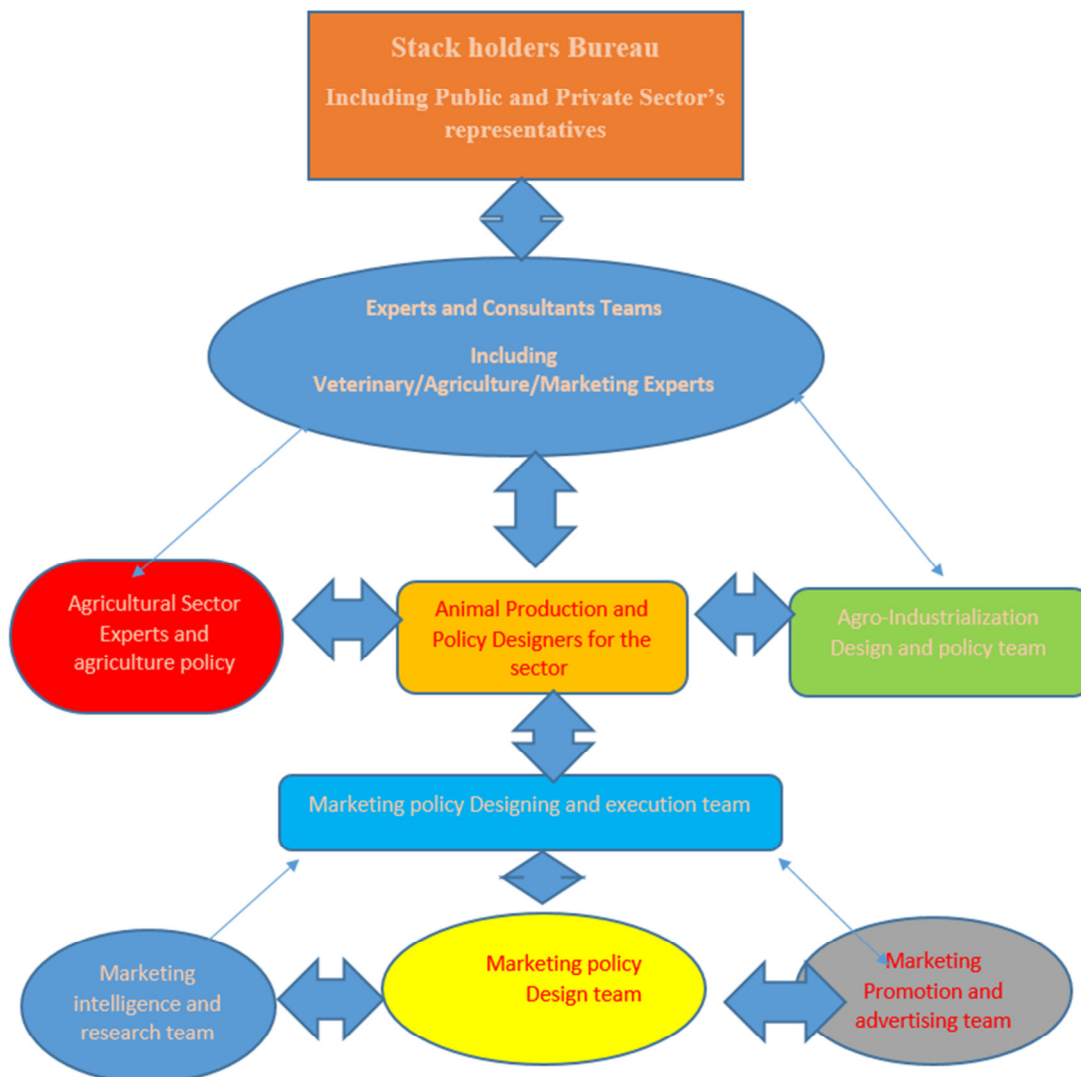


figure No (7) The Standard relationship between different sectors of the stakeholder's bureau

Source: Author's Own Design.

- This body as shown above in figure (7) shall plan what to be cultivated for consumption internally and abroad exports with the consent of both public and private sector concerned agencies representatives.
- This body should decide upon what to be produced, in what quantity and when and where to be produced. It should as well mobilize financing funds from both public and private sector funds. It may worth noting that, the private sector has been always outside the Sudan government plans whereas, in most of the growing economies, the private sector has been given the lead to explore the capacities of the non-oil sector to explode its capacities especially knowing that, the private sector is profit oriented and acts efficiently in terms of cost, and time to fulfil projects.
- This sector has provided an evident experience of what it can do in Sudan, we believed that this sector has not been given enough room in Sudan to participate in achieving sustainable development projects, therefore, it should be taken in consideration as a useful partner.
- This body should work in harmony to plan the storage capacity needed and catered for by either the whole stakeholders or by the government with stakeholder's consent.
- This body should decide what to be industrialized and how it should be exported and to which country based on the development strategy that should be designed jointly by stakeholders.
- This body should be the sole authority to plan for marketing and decide the selling prices after surveying international market prices. This should be done on the basis of unanimous consent of the stakeholders.

- This body should take the responsibility of safeguarding the rights of farmers and animal breeders as well as private sector's interests as well as consumer's rights.
- The whole operations should be technology based and works towards improving the investment opportunities as well as marketing strategies.
- This body should plan all the agricultural and industrial policies on knowledge-based processes including the cropping rotations and seasons.

Benefits to be reaped from establishing this body:

Having this body in charge of agricultural production and marketing would guarantee the following benefits:

- A planned national agricultural rotation for crops based on knowledge and expertise to guarantee planting the right crops in the right place at the right time and in the appropriate climate.
- As experts, scientists, and policy makers are sharing the planning process, then it would be very easy to decide the type of fertilizers to be in use subject to each type of plants, irrigation sessions and harvesting plans and the appropriate technologies that suit the harvest of each crop based on knowledge.
- As well, this body would be able to decide what kind of crops to be produced for local consumption; and what to be produced for export and storage subject to the regulations that control the future movements in terms of industrialization and export.
- The team of consultants and policy makers equipped with technology, would have the ease of communication between themselves to share ideas and thoughts. They would also be able to take important and necessary decisions as regards the financing of operations as well as, their marketing strategy promptly. This strategy should stem from their knowledge and awareness of the world market and prices so that their decisions should be favorable to the economy.

One of the potential markets as (table No 6) below shows is the Arab world countries as well as, COMESA and EU countries. Those experts are expected to have their plans of how to make the most of these markets.

Table (6): Arab Countries Imports of Agricultural Products (2012- 2015)

Crops	201/2013		2013/2014		2014/2015	
	Quantity	Value	Quantity	Value	Quantity	Value
	In Thousand Tons	In Million Dollars	In Thousand Tons	In Million Dollars	In Thousand Tons	In Million Dollars
Maize	709	257	630	208	647	173
Sweet Corn	17,176,72	5,682,34	14,192,37	5208,34	18,052,32	5,574,47
Sesame	229	322	225	368	231	440
Groundnuts	110	146	112	151	136	157
Sun flower	148	164	173	195	173	183
Fodder	-	-	-	-	5,520,870	2,978,270,000
Oats	-	-	-	-	12,008,030	3,112,270,000
Soy bean	2247	2,1	2,884	1,9	2,6	2

Source: Arab Agriculture Organization, 2016 – Khartoum –Sudan.

Table (No. 6) above, reflected the quantities of agricultural products that the Arab world countries, are importing. This volume of imports has been increasing year by year for reasons to do with population growth or other reasons such as droughts or any natural disaster. This seemed to be a sound opportunity if proper marketing strategies were followed.

As we looked, at the share of Sudan in providing sufficient supply, to meet the demands of Arab countries, we discovered that, this share has been very low and sometimes not available (see Table No. 8) below.

As we reviewed the records of the Arab Agricultural organization 2016, we observed that Sudan's share or contribution to meet the demand for agricultural products and poultry was as (table No. 8) below suggested could hardly reach 26% in Sesame, 9% groundnuts, 16% in maize, 4.5% in fodder, 18% in poultry. While highly demanded crops such as Oats and Sweet Corn were not grown in Sudan's. These crops were highly needed and their prices have been always very high, i.e. the demand for them has been inelastic. It was the duty of the above mentioned body to take necessary decisions required to introduce these crops into the agricultural rotation. (see Figures 7 /8 and 9).

However, with such a very little contribution to meet the demands of the Arab World Countries let alone the EU countries, without forgetting to mention that, the unutilized 75% of our land has been calling for cultivation,

one believed there was an excellent opportunity to break through relying completely on our agricultural sector as the engine of the economy.

We believed that, in mobilizing the abilities of both public and private sectors' including expatriate's savings through reformed new agricultural policies would be the right approach to make a difference. We Expect it should be a positive difference.

Table (7): Quantity of Life Animal and Slaughtered (2012 – 2015)

Type	201/2013		2013/2014		2014/2015	
	Quantity	Values in Million Dollars	Quantity	Values in Million Dollars	Quantity	Values in Million Dollars
Cattles	734	750	1049	850	1372	958
Goats	13889	1,205	13243	1,394	14,708	1,487
Slaughter Meat	891 Ton	3,664	845	3475	1009	4430

Source: Arab Agriculture Organization 2016 Khartoum –Sudan.

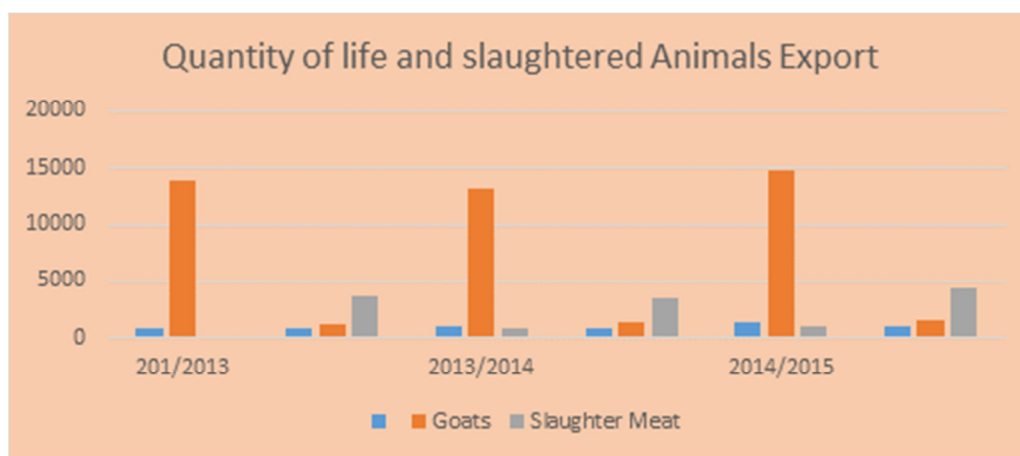


Figure 8: Quantity of Life and Slaughtered Animals Export

We are also much more optimistic as regards the future of the Sudan, relying on its agricultural sector, provided that, we do not export raw products.

That means we have to turn our products into more valuable products through industrializing. These agricultural sector products need to be processed into either half-industrialized or fully industrialized by introducing modern technology industry. By doing so huge revenues could be generated through the value added. (see Figure No. 9).

Simple examples could be quoted for instance: the added value of cotton when it was semi manufactured rose by 60% and when it has been fully manufactured another 50% would be added so the value added rose to more than 110% on the price of the raw material.

By the same token refined ground nuts value added was 50% when it was manufactured and transformed into oil another 75% of value added would apply.

A very clear other example could be sesame. The price of raw sesame has been 1200 US dollar, when it was classified, its price would increase to reach 1290 US Dollars (10.92%). When it has been peeled more value added would accrue since its price would be 1470 USD, (28.4%). Finally, when sesame has been manufactured, its price will reach 1600USD (40%) increase

Table (8): Sudan's share in Covering Arab World Demand of Agricultural Commodities

Type	Sudan's share	Potential available Opportunity %
Sesame	26%	74%
Groundnut	9,4%	90.6%
Maize	16	84%
Sweet Corn	Zero	100%
Fodder	4.5%	95.5%
Oats	Zero	100%
Poultry	17.6	82.4%

Source: Arab Agricultural Organization Khartoum,Sudan.2016



Figure No (9): Potential Export Opportunities for Sudan

Therefore, according to the above examples, Sudan have got great potential chances through increasing production horizontally and productivity vertically. On top of that, by manufacturing our products we would have created more value added which would have generated more revenues for our products rather than exporting them as raw material for cheap and fluctuating prices.

This could also lead to establishing a subsidiary body that takes care of SME's. These new agencies could be assigned related activities or intermediary roles as we mentioned below.

However, there has been a great potential in the Sudanese economy that has not yet been exhausted so far especially as regards the infrastructure of the country, which remained a bottlenecks for exports. This huge hurdle could have been removed either through a joint PPP or through the (BOAT) systems to pave the way for expansion in Agricore, or other related profiting activities

14.2. The Second Scenario: A Subsidiary SME's Nurturing incubator:

The second golden opportunity for public private sectors (PPP) would be, to establish a new subsidiary - incubator that would take care of the rising small and medium size businesses. Those new institutions could play a pivotal positive role in enhancing the break through efforts to improve the economy. It has been observed that SME's activities have been distorted and not organized under one umbrella as an incubator. Most of those people who were looking forward to establish their business were left to try their luck without any support or guidance or training to enhance their efforts. Most of those beginners lost their capital and leave because they lost their projects or failed to stay in the market for either lack of information, lack of training, or supervision that nurture their projects and coach them until they succeed. This subsidiary incubator could act as a subsidiary body to the above mentioned stakeholder's bureau (figure8) and connected to it with full autonomy of running its activities. This group of numerous different types of medium and small size industries could be assigned to handle the production of plastic sacks, poultry packing materials, spare parts, storage of production, transfer of exports from factories to the airports and seaports, production of intermediate accessories to the manufacturing factories, publicity, and many other sub-businesses and - medium and small industries.

This new incubator with all the above-mentioned stakeholders should offer guidance, training and finance for SME's to nurture them and support their performance through coaching them and give them the chance to play a complementary role to the main economic activities and industries.

There has been a need to establish this body and equip it with sufficient financial and knowledge based policy designed by experts on how to nourish SME's. Under the leadership of the experts, new entrepreneurs would receive coaching to prepare their feasibility studies, training and start their business. By doing so it has been believed that this body would make positive contributions towards opening new employment opportunities. This as well, would pave the way for many creative thoughts and innovative projects to enhance the economy through creating value add

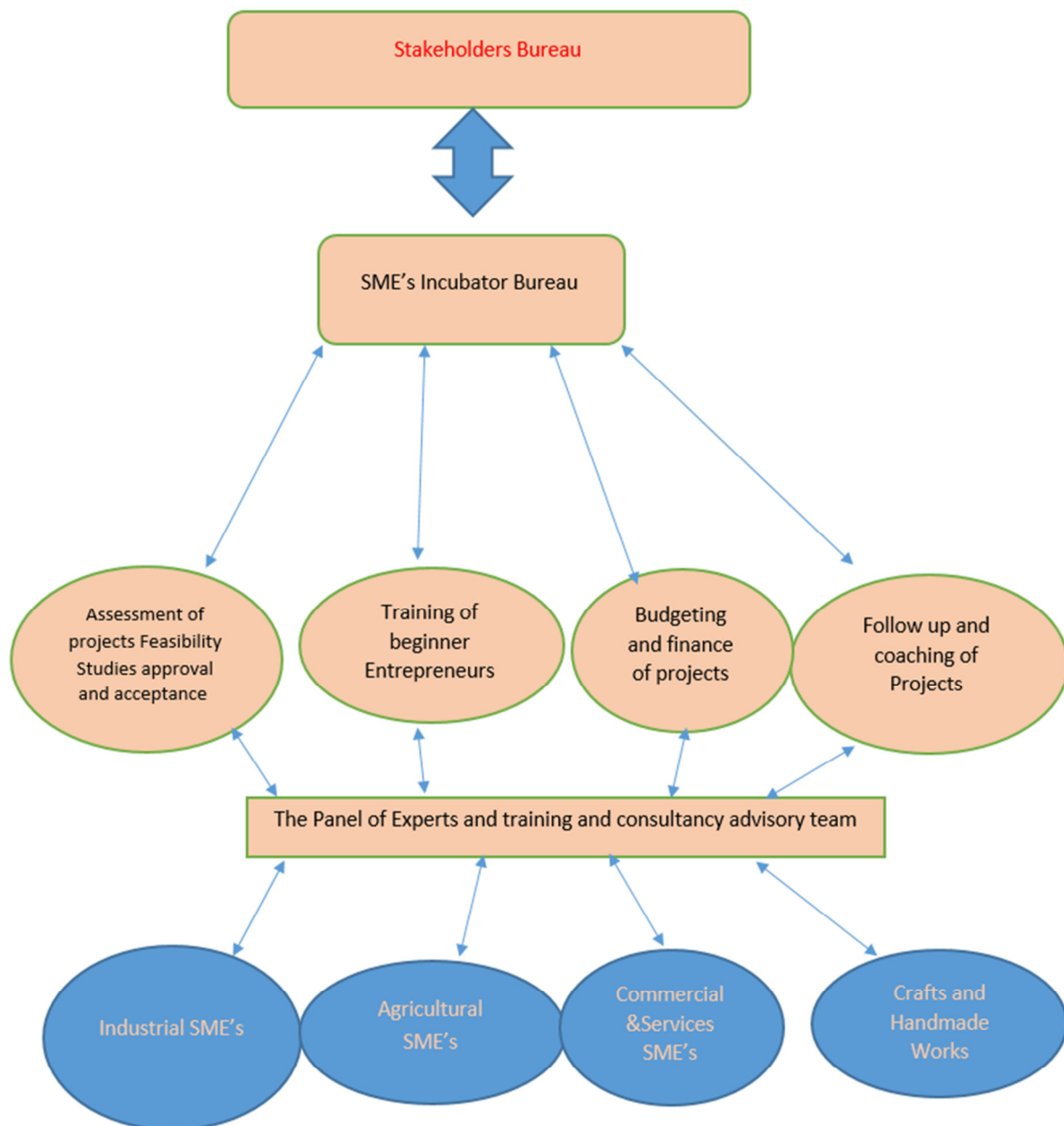


Figure No. (10) A proposed Nurturing Body for SME's in Sudan

Source: Author's Own Design.

As depicted in figure (10) above the mechanism of SME's body has been designed to reflect the way how SME's could be nurtured and developed through a panel of experts who lead the activities of this important institution considering that, the current approach used with regard to this important sector has been distorted and ambiguous in terms of its role and the methods used in financing and operations. Under the prevailing system, most of those new entrepreneurs were left alone to seek approval for their projects and hunt to finance them. They were as well, left alone without any supervision of any kind by any concerned institution, to operate their business which were very likely to fail due to lack of experience, or lack of information about the market itself. Under the new suggested body all beginners have to pass through a well-organized system under one umbrella where they receive advise about the areas of investment that suits their expertise, while they receive training, coaching and nurturing until they succeed. This new system would guarantee appropriate investment usage, proper allocation of resources and effort to avoid any risks. One believed that, this ought to be the ideal body and the right approach to build SME's that might last and create value added to the economy without subjecting them to any risks which might have led them to incurred losses and end up bankrupted.

15. What ought to be done by the Government?

If we are supposed to make the best of the available promising opportunities, through utilizing the capacities of public and private sectors, our government has a role to play. This role would include the fulfilment of certain important requirements that would help both sectors to achieve the objectives of breaking through from the vicious circle through reformed policies.

- The government needed to take its responsibility by facilitating the solutions for the problem of financing through earmarking 10% of GDP to finance importing advanced technology and knowhow to improve both production and productivity in agriculture and animal wealth. As well marketing strategies needed to be based on the most recent and up-to-date efficient marketing methods applied internationally.
- In this regard, the Animal Wealth should have received special attention by importing new breeds and medical knowledge to improve productivity and production in this sector in terms of both quality and quantity. Also the establishment of big ranches to breed various types of animals for both milk and meat production remained the demand of most experts. The Turkish government showed interest and it should have been taken on board seriously.
- Financing for all agricultural operations should have been tied with the use of the following technologies:
 - 1- Grass removing technology
 - 2-Improved seeds technology
 - 3- Improved quality of fertilizers subject to each plant qualities and types.
 - 4- Planting the right plant at the right favorable and suitable environmental region.
 - 5- Importing more and new animals breeds with high productivity.
- Much more attention should have been given to SME's, small farms, and individual farmers, because SME's could help improving the performance in various sectors of the economy, especially as regards employment opportunities.
- The government should have purchased or bought all crops from farmers at reasonable prices that, induce more farmers to join agricultural SME's under the (Food Security Program).
- In addition, Agricultural insurance policies should have been considered, to minimize risks and hazards.
- All the problems of the industrial sector should have been sorted out by the government so that, all projects should not face any logistic problems or transport or energy problems to enhance industrial production and productivity in line with the development plan. In addition, factories that were in need of some spare parts to operate again should have been considered and given priority attention. A shareholding policy would be very encouraging especially for those facing finance problems.
- Introducing
- Much more effort needed to be done by the government to promote agricultural investment and attract foreign investors especially in agricultural industries and related services through joint venture projects. Providing the industrial sector with electricity from solar energy would have been a viable solution for energy problems that constraints the operations of the majority of these factories and give them the freedom of increasing productivity at low cost.
- Tax and Customs Exemption Policies on all agricultural projects and agricultural inputs should have been in place. A special consideration in this regard should be given to SME's new projects to guarantee their sustainability and growth.
- Incorporating private sector farmers within the public-private sector relation to offer their experience and share with policy makers planning for the future of agricultural projects and technology innovation and knowledge transfer ought to be a priority.
- New plans by the government to exploit more lands for agricultural projects and introduction of new crops that may enhance our agricultural industrialization should be considered. Also providing these farms with electricity using solar energy at very low cost would enhance their productivity. This would improve the trade balance through improving exports and generate more revenues.
- The transfer of knowledge as regards agricultural technologies and methods, may impose on the government improving training courses for experts and policy makers in this field through, importing advanced know how training programs especially with the use of green technology. This has been always the demand for capacity building.
- The Marketing Policy Models used earlier proved to be obsolete; therefore, the introduction of new marketing techniques and policy models became a must. This would enhance and improve sales of our manufactured agro-products outside Sudan in the international markets.
- Economic Policy stability and consistency became a necessity for sustainability, especially those policies related with finance and exchange prices, if the objective has been a successful agricultural

production to rescue Sudan from bankruptcy.

16. Conclusion:

- In the light of the new trend followed by most of the successful economies in the world in general, and those in the new and rising economies by giving the private sector the driver's seat to lead their economies, the government of Sudan had to revisit its agenda and change their vision and priority list by incorporating the private sector as a full partner in achieving sustainable development. This paper addressed the impact of a public-private sectors' partnership in increasing the productivity of Sudanese agricultural commodities. However, in this paper we discussed what has been evident during the year 2017 harvest season for the major agricultural products in some regions in Sudan. After reviewing what we have been through, one could safely come out with findings that might have provided solutions for the concerns and issues identified which suggested the need for a reform and transformation of the Sudanese economic sector in general and the agriculture sector as the backbone of Sudan's economy in particular.
- The successful harvest season of 2017, raised so many queries as regards the efficiency of the adopted policies. If individuals and companies could have succeeded in their agricultural projects and achieved high productivity levels per Feddan, and managed to break the old taboos about productivity achieved in other countries as not likely to happen in Sudan. Why should people engaged in agricultural activities undertake scattered efforts if they could have put together all their abilities and become winners Secondly, if those successful farmers with their limited resources compared to the government, were able to succeed, what holds the government from achieving such a success throughout the past years and alleviate the country from living in poverty? This simply led us to derive the conclusion that, the attitude of the government officials needed to be changed from employees who would earn their salaries any way, to responsible Citizens whose thoughts and pre-occupation should have been about what would be best for their country and people. This could have been a reality if public and private sectors came together with expatriate's participation to explode our economy's abilities.
- The era of government tight control over development projects, as it is the case in Sudan proved to be a complete failure in the light of the government routine, and lack of efficient technologies of production and modern methods of marketing. The Sudanese government models in both areas resulted in low land productivity and limited production with very high costs. The returns of exported agricultural commodities could hardly coffer the operational expenses let alone to generate any savings for the farmers to meet their loans repayments schedules. Those farmers carried on their debts from season to season if not taken to jail by the lending banks. Therefore, these methods made the agricultural sector an expelling sector for both investors and workers. Furthermore, those who left the rural agricultural sector joined either the ranks of unemployed or joined the "informal sector". The result was a continuous backwardness in the rural areas and transforming modern cities into big rural cities.
- The overall performance of the economy reported negative growth to GDP, deficit in the balance of trade and balance of payments, deteriorating value of the national currency in front of foreign currencies, expansion of poverty, unemployment, nepotism and institutional corruption.
- The country which used to export 10% of the world cotton became an importer of food through loans and donations from some friendly countries. The volume of imports became double the volume of exports and the overall economy was crippled by debts.
- Evident findings of the possibility of success through using knowledge based technologies in agriculture and animal breeding has been provided authenticated by statistical figures depicted in figures, which suggested the necessity of reforming the policies of Sudan government in general and those concerned with agriculture in particular if there is a will to achieve sustainable development in Sudan and break from the vicious circle of underdevelopment.

17. Based on the above findings and conclusion it may worth putting forward the following recommendations:

- 17.1. The government of Sudan had to revisit and reform its economic policy and follow a better approach of appropriate allocation of financial funds. For example, the huge revenues that accrued from selling Petroleum and gold had been spent irrationally on non-productive activities. These funds should have been earmarked towards importing modern technologies to improve land productivity and increase agricultural production, instead of earmarking the majority of revenues towards spending on nonproductive expenditure, by way of nepotism (appointing incompetent relatives, supporters and partisans in constitutional positions).
- 17.2. For quite long years the government neglected agriculture which has been the backbone of the economy, as well as, ignoring capacity building by investing on human capital development. This

resulted in the deterioration of both civil service and the export sector. This led to a continuous negative growth of GDP. This situation provided sufficient evidence to call for urgent policy reforms to ease the bottlenecks of the economy. As the private and public sector complement each other, it is claimed; this will increase total resources and enable a major strategy to tap the untapped private financial and human resources, including specialized skills that are not available in the government and to encourage active participation of the private sector in national development.

- 17.3. It is recommended that, the government should give priority to solve the major constraints for agricultural production and exports, which were mainly the infrastructure and energy. These problems could have been solved through (PPP) where the private sector was capable of funding and execution of as many as possible projects either jointly or alone. It's time that the government had to change its continuous exclusive policy towards the private sector and give more room for the private sector to play a positive role to enhance sustainable development projects. The establishment of more than one body to look after our planning, production in agriculture and agro-based industries, particularly that all stakeholders should be represented within these bodies to design suitable and scientific plan for the whole economy. Also, establishing such bodies to work as incubators for small and medium enterprises (SMEs) has been the case as we mentioned above in three countries and they all gave profound results. These bodies were considered to be the backbone of every economy and nourish their growth. It should be recalled that Sudan has no classification of SMEs and there is no agency of any type to look after their development, in Sudan. It should be noted that SMEs were at the center point of productivity improvement to transfer the technology and upgrade the local work force skills via domestic investment and Foreign Direct Investment (FDI) spillover effects. That proved to be the most viable way to attract foreign investments in the mentioned countries and it would be the case in Sudan It should be noted that SMEs punch-up to obtain loans, and provide sufficient funds that may relieve the government financial shortages.
- 17.4. The government of Sudan ought to stop exporting raw agricultural products and life livestock and ought to invest on improving the quality of research that would have enhanced agricultural industrialization. Furthermore, establishing pasturing farms for grazing animals for milk production and meat export at higher prices would have generated value added to the economy. This could be done jointly through (PPP) as evidence has been provided within the study.
- 17.5. The government ought to stop the loss of huge amounts of revenue on non- productive expenditure. As well, the government should have adopted a new approach of having one compiled unified modern marketing approach for all the manufactured agricultural and animal products through using the technological methods that would allow these products to be sold in the international rather than the local markets at higher prices. Within the study we have provided figures (7&8) that suggested the appropriate methods to do so.
- 17.6. More funds and attention ought to be directed towards production improvement and exploring much more efficient marketing policies through research studies and expert guidance. Sudan needed to follow the knowledge based economy approach for efficient allocation of all its natural and human valuable resources. This could be done through a joint effort via (PPP). This partnership could be extended from agriculture to other areas such as, industry, tourism, construction and many others.
- 17.7. However, more attention should have been given to plant more Acacia trees which produce the gum Arabic to replace the decaying ones and to increase productivity and industrialization of this valuable agricultural product. Besides, the tree of (Gatrova) that produces petrol) has been tested through empirical research and development and showed high potential production. This Product should have received much more attention.
- 17.8. Following the above mentioned recommendations would have enhanced the economy and helped improving Sudan's efforts to alleviate poverty, and create more employment opportunities through attracting more investments to the economy. This would have eventually led to the achievement of its reform objectives. By doing so, sustainable development would have been viable and inevitable.

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