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ABSTRACT

The purpose of the research is to increase knowledge and understanding of constraints in agricultural development for self-reliance and prosperity in South Sudan. This is because South Sudan has abundant fertile land with a vast potential for agricultural development. There is a diverse forest and woodlands that can provide surplus forest products for export. Livestock rearing is a productive asset in South Sudan and fishing is a source of food. There is significant fishing that contributes to household food security. However, despite the high potential for agricultural development for prosperity in South Sudan, the principal result of the research is that budgetary allocation to the agricultural sector is negligible. The lack of investment in the agricultural sector has reduced South Sudan into one of the countries in Sub-Saharan Africa that is gripped by perpetual food insecurity and in dire need of humanitarian assistance. Although agriculture is considered the backbone of the economy of South Sudan, agriculture is the least considered in budgetary allocation as of high priority. The major conclusion is that there is an absolute lack of investment in agriculture and South Sudan will continue to face chronic food insecurity and famine, dependent on humanitarian assistance. It is, however, recommended that further research should be undertaken to determine specific constraints to agricultural development. This is in order to increase knowledge and understanding of the challenges faced in modernizing agricultural production for food self-reliance and prosperity in South Sudan.

Keywords: agriculture, forestry, fishing, livestock, budget, prosperity, extension, investment.

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I. ABSTRACT

The purpose of the research is to increase knowledge and understanding of constraints in agricultural development for self-reliance and prosperity in South Sudan. This is because South Sudan has abundant fertile land with a vast potential for agricultural development. There is a diverse forest and woodlands that can provide surplus forest products for export. Livestock rearing is a productive asset in South Sudan and fishing is a source of food. There is significant fishing that contributes to household food security. However, despite the high potential for agricultural development for prosperity in South Sudan, the principal result of the research is that budgetary allocation to the agricultural sector is negligible. The lack of investment in the agricultural sector has reduced South Sudan into one of the countries in Sub-Saharan Africa that is gripped by perpetual food insecurity and in dire need of humanitarian assistance. Although agriculture is considered the backbone of the economy of South Sudan, agriculture is the least considered in budgetary allocation as of high priority. The major conclusion is that there is an absolute lack of investment in agriculture and South Sudan will continue to face chronic food insecurity and famine, dependent on humanitarian assistance. It is, however, recommended that further research should be undertaken to determine specific constraints to agricultural development. This is in order to increase knowledge and understanding of the challenges faced in modernizing agricultural production for food self-reliance and prosperity in South Sudan.

Keywords: agriculture, forestry, fishing, livestock, budget, prosperity, extension, investment.

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II. INTRODUCTION

South Sudan has vast potential for agricultural production with abundant fertile land and water resources where over 80 per cent of the population derives their livelihood from agriculture with the majority producing at subsistence level (WFP, 2012). In addition, 80 per cent of the total land cover is arable and suitable for crop [production. However, according to WFP, despite the great potential for agricultural development only 4 percent of the land is used for crop production. This suggests that with adequate investment focused on agriculture, South Sudan could not only be the breadbasket in the region but this could also alleviate poverty and make it a thing of the past. The research is therefore to examine the problem of the relevance of policies to agricultural development and also to assess the extent to which agricultural policies are implemented to achieve sustainable production for self-reliance. Key to this is to examine budgetary allocation to natural resources and rural sector in relation to South Sudan's great potential for agricultural development for prosperity. This is for informed decision making in the effort to realize agricultural development for the achievement of sustainable production, food security and poverty reduction.

III. RESEARCH METHODOLOGY

This research is based on secondary sources and data reviewed and this is qualitative. It is in contrast to quantitative data where data are collected by administering a questionnaire to a

sample obtained from a sample frame. The research methodology is therefore qualitative, dependent on literature review.

IV. RESOURCES

As already noted, South Sudan has immense potential for sustainable agricultural development for prosperity because of its vast natural resources which include abundant arable land for agriculture, forests, livestock, water, fish and minerals (Ministry of Agriculture and Forestry, 2006; Ministry of Agriculture and Forestry, 2012).

4.1 Agriculture

The importance of agriculture in Africa has long been recognized (Maxwell, 2001) and in South Sudan the economy is based on agriculture and the agricultural policy highlighted below includes the following (Ministry of Agriculture and Forestry, 2012):

1. Acceleration of food and agricultural production while ensuring that the growth is pro-poor and sustainable to contribute to food and nutrition security which will require both local and foreign investment in agriculture;
2. Improved agricultural markets and trade through investing in market infrastructure and institutions, and developing linked value chain businesses for local, regional and international markets;
3. Develop and enhance human and institutional capacity, using different entry points from central government to community based organizations (CBOs) and businesses; and
4. Pursue agricultural growth with social and economic development, whereby the population have access to food and are free from poverty.

The agricultural policy is very clear in enhancing agricultural development to achieve food security where hunger and poverty may become a thing of the past in South Sudan. Food security is defined as when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food

preferences for an active and healthy life (FAO, 1996). However, the extent to which the agricultural policy is being implemented on the ground to achieve food security and prosperity for all in South Sudan is yet to be established. This is because famine has been declared in South Sudan (FAO, IFAD, UNICEF, WFP, WHO, 2017). As can be seen without adequate food, people cannot lead healthy, active life (Madeley, 2002). The research is therefore to assess the extent of implementation of the agricultural policy in realizing the achievement of food security. This will depend on the extent the budget for the agricultural sector is adequate enough.

In South Sudan agriculture is largely traditional, relying primarily on hand power with very limited use of animal power which has just been introduced recently (Ministry of Agriculture and Forestry, 2012). In view of this the research will also assess the level of technology transfer through agricultural extension services.

4.2 Forestry

South Sudan is richly endowed with a diverse natural forest and woodlands with an estimated area of about 30 per cent of total land area and according to one policy statement there will be accelerated development of forest plantations in national forest reserves, state forest reserves, and in other public lands, community lands, and in urban and peri-urban areas, in order to meet present and future demands for wood for local use and for export (Ministry of Agriculture, Forestry, Cooperatives and Rural Development, 2013). It can be seen that South Sudan has abundant forest reserves and woodlands which suggests there will be surplus forest products for export to earn the badly needed foreign exchange for development. However, the level of contribution of the forestry sector to the national economy is not clear. In view of this the research will determine the extent to which the forestry sector is contributing to the national economy. This is in order to increase knowledge and understanding of the role of forestry in development.

4.3 Livestock

Livestock rearing is an important part of production system in South Sudan and it is a productive asset which is a source of food, income and, to some extent, draught power (WFP, 2012). It is also confirmed that livestock production is a very important livelihood activity for the communities in South Sudan (Ministry of Animal Resources and Fisheries, 2010).

The rangelands of South Sudan have got a large number of animals available in all the livelihood zones but except the tsetse fly infested south-westerly greenbelt zone where only small ruminants may be found (WFP, 2012). It can clearly be seen that the rangelands are potential for prosperity in South Sudan. According to the WFP livestock, especially cattle are regarded as a safety net for hard times during the dry season and the cattle provide poor households with the potential to bank their savings which enhance the household's capacity to cope with shocks.

The role of the Ministry of Animal Resources and Fisheries (2012) is to take charge of protecting, promoting, exploiting and developing the livestock resources for socio-economic prosperity of the people of South Sudan. It is therefore clear that with investment in livestock production, people in South Sudan will be prosperous.

4.4 Fisheries

WFP (2012) has noted that fishing is a source of food and livelihood for fisher folks and it makes significant contribution to household food security in most parts of South Sudan, alongside livestock and agriculture. Among other things one strategic objective of the Ministry of Animal Resources and Fisheries is to enhance the role of fisheries in achieving food security, poverty eradication and economic growth. The Sudd swamps between Malakal and Bor, capitals of states in Greater Upper Nile region of South Sudan, have an estimated area of 40,000 square kilometers during the rainy season and over 100 species of fish have been identified from this area alone. In addition, lakes and the river Nile, and

other tributaries and floodplains form an estimated area of 40,000 square kilometers. This shows that the total area of 80,000 square kilometers is available for fisheries development in South Sudan.

The total production estimate for the Sudd area is 160,000 metric tons of fish and from other wetlands, rivers and lakes the estimate is 180,000 metric tons respectively. According to the Ministry of Animal Resources and Fisheries (2012) the overall production estimate for the country is 340,000 metric tons of fish per annum. However, this seems to be an underestimation because South Sudan has a high fisheries potential. The annual yield of the Sudd area alone is estimated to be 400,000 metric tons (WFP, 2012). This clearly seems to suggest that with investment forthcoming to the fisheries industry, a lot much more could be achieved in terms of sustainable fisheries development for prosperity in South Sudan.

V. BUDGETARY ALLOCATION

For any activity it is most likely that a budget is needed to carry out the activity. For example, an agricultural project needs to have itemized costs to show estimates of expenditure on the various components that make up the project. This will show the total budget needed for the project to be implemented.

For agricultural development to take off, adequate budgetary allocation and investment are a prerequisite. As already highlighted, agriculture is the backbone of the economy of South Sudan and as seen, it is a source of huge potential. Agricultural development is therefore viewed as the engine that will not only enable South Sudan to diversify its economy away from oil dependency, but will also directly reduce poverty and chronic food insecurity (Kameir, 2011). This suggests that agricultural development correlates to reduction of poverty and chronic food insecurity. This makes it appropriate to determine budgetary allocation to the agricultural sector in order to assess the extent to which agriculture is

given high priority in economic development in sectors and to the natural resources and rural South Sudan. Table 1 and 2 show budgetary allocation in South Sudan pounds (SSP) to all

Table 1: Budgetary allocation in SSP to all sectors

No	Sector	Amount
1	Accountability	8,026,118,295
2	Economic	534,391,449
3	Education	1,862,205,015
4	Health	1,033,006,240
5	Infrastructure	872,927,049
6	Natural Resources and Rural	809,181,551
7	Public Administration	16,331,289,591
8	Rule of Law	3,959,505,616
9	Security	4,689,408,239
10	Social and Humanitarian Affairs	167,671,546
	Grand Total	38,285,704,591

Source: National Budget Plan and Draft Budget Tables Fiscal Year 2017/2018, Ministry of Finance and Planning, June 2017 and Approved Budget Book Fiscal Year 2017/2018, Ministry of Finance and Planning, September 2017, Republic of South Sudan

Table 2: Budgetary allocation in SSP to the natural resources and rural sector

No	Sub-sector	Amount
1	Agriculture and Food Security	59,256,664
2	Livestock and Fisheries	25,977,618
3	Environment and Forestry	37,130,693
	Sub-total	122,364,975
4	Wildlife Conservation and Tourism	683,263,702
5	Land Commission	3,552,874
	Sub-total	686,816,576
	Grand Total	809,181,551

Source: Approved Budget Book Fiscal Year 2017/2018, Ministry of Finance and Planning, September 2017, Republic of South Sudan

Table 1 above shows the budgetary allocation to all the various sectors with the total budget of 38,285,704,591 SSP. In contrast, Table 2 only shows the budgetary allocation to the natural resources and rural sector with its sub-sectors. As already highlighted in the context of this research, the natural resources are agriculture, forestry, livestock and fisheries. The total budget for the natural resources sub-sectors is 122,364,975 SSP. However, when natural resources and rural are combined to appear as one sector, the total budget is 809,181,551 SSP. This shows that the percentage of budgetary allocation to natural

resources is about 0.3 per cent of the overall budget of the government of South Sudan. With natural resources and rural combined as one sector, the allocation is about 2.1 per cent of the overall budget.

The budgetary allocation to the economic sector is about 1.4 per cent and to the infrastructure sector it is about 2.3 per cent. In contrast, the budgetary allocation to the public administration sector is 42.7 per cent of the overall budget. However, budgetary allocation to the economic, infrastructure, natural resources and rural sector

(2.1 per cent) respectively vital for economic growth, and therefore prosperity, have a combined budget of 5.8 per cent of the total budget. This seems to show gross negligence of the mentioned sectors. It is difficult to understand

how development could be achieved without investment in the economic, infrastructure and natural resources and rural sectors vital in basic service delivery.

Table 3: Sectoral priority in budgetary allocation in SSP

No	Sector	Amount	Percentage	Priority
1	Public Administration	16,331,289,591	42.7	1
2	Accountability	8,026,118,295	21.0	2
3	Security	4,689,408,239	12.2	3
4	Rule of Law	3,959,505,616	10.3	4
5	Education	1,862,205,015	4.9	5
6	Health	1,033,006,240	2.7	6
7	Infrastructure	872,927,049	2.3	7
8	Natural Resources and Rural	809,181,551	2.1	8
9	Economic	534,391,449	1.4	9
10	Social and Humanitarian Affairs	167,671,546	0.4	10
	Total	38,285,704,591	100.0	

Table 3 shows sectoral priority in budgetary allocation either consciously or unconsciously. The education, health, infrastructure, natural resources and rural, and social and humanitarian affairs sectors seem to be of less priority than the other sectors. The mentioned sectors when combined only have 13.8 per cent of the total budget.

In contrast, it seems according to government planning, the public administration, accountability, security and the rule of law sectors are of very high priority and so they have the bulk of the budget, 86.2 per cent. However, it is arguable that education, health, infrastructure, natural resources and rural, and social and humanitarian affairs sectors should be considered of less priority than the public administration, accountability, security and the rule of law sectors. There is no alternative to investment in education, health, infrastructure, natural resources and rural, and social and humanitarian affairs sectors for service delivery to the public for prosperity in South Sudan.

The social and humanitarian sector is an important sector in nation building. The sector can address disparity and bring social cohesion in

societies divided because of limited access to opportunities and privileges. The figures in Table 3 suggest that development planners might not have got their priorities right in promoting development for prosperity in South Sudan. This suggests clearly that the agricultural policy is not being implemented as elaborated.

One such policy is the pursuance of agricultural growth with social and economic development, whereby the population has access to food and is free from poverty (Ministry of Agriculture and Forestry, 2012)

VI. AGRICULTURAL DEVELOPMENT

It is a well established fact that the economy of South Sudan is based on agriculture, which consists of a combination of subsistence farming, livestock rearing and fishing, and an agricultural policy has been formulated with the goal of increasing sustainable production by addressing constraints in food and agricultural production (Ministry of Agriculture and Forestry, 2012).

After the Comprehensive Peace Agreement in 2005 that ended a 22-year devastating civil war in South Sudan, one key strategic goal of the

Ministry of Agriculture and Forestry (2006) was to realize food self-sufficiency by 2011. This was indeed an overambitious goal. How could a country which had just come out of a destructive war be food self-sufficient before even being food self-reliant? However, the potential to realize the goal is evidently plausible.

South Sudan has a number of agro-ecological zones that are very productive in relation to agriculture, forestry, livestock and fish. The potential of the agro-ecological zones cannot be overstated. The zones include the Greenbelt, Ironstone Plateau, Hills and Mountains, Flood Plains, the Nile and Sobat rivers and, the Arid and Pastoral zone. According to the Ministry of Agriculture and Forestry (2006) the Greenbelt zone is exclusively agriculture and also the Ironstone Plateau is predominantly agriculture, forestry and some livestock rearing. In the Flood Plains there is a high reliance on cattle and in the Nile and Sobat rivers there is also a high reliance on cattle and fish. There are mixed options in the Hills and Mountains zone. The Arid and Pastoral zone is a place of high reliance on trade.

It is clear that the different agro-ecological zones confirm a high development potential in South Sudan. The Ministry of Agriculture and Forestry (2012) envisaged that by 2015, because of the high development potential of the agro-ecological zone, there would have been food for all guaranteed. However, the opposite instead has occurred.

On 15 December 2013 an armed conflict broke out within the army, the Sudan People's Liberation Army (SPLA) on ethnic lines in what was a power struggle between the president, a Dinka and his former vice president, a Nuer (South Sudan Human Rights Commission, 2014; Human Rights Council, 2018). The conflict has caused untold suffering on the people of South Sudan. Approximately one third of the population has been displaced, including more than 2.4 million becoming refugees in foreign lands and more than 1.9 million are internally displaced persons (IDPs) and in addition about 7.5 million people need humanitarian assistance and protection (Human

Rights Council, 2018). This clearly suggests that food for all in South Sudan by 2015 has never been realized. In the circumstances food for all is a distant possibility. It is only when there is peace and stability in South Sudan can agricultural development program be implemented.

6.1 Investment

It has been noted in Table 3 that budgetary allocation to the economic, infrastructure, natural resources and rural, and public administration sectors is 1.4, 2.3, 2.1 and 42.7 per cent respectively. It seems economic, infrastructure, natural resources and rural sectors are starved of funding for service delivery while the public administration sector seems not to lack funding. It is most likely that the huge budget for the public administration sector goes mainly for salaries. Lack of investment in service delivery in contrast to the huge pay out as salaries could have contributed to the armed conflict in South Sudan. According to South Sudan Human Rights Commission (2014) advice was given for the reduction of the huge size of government both at national and state level due to the fact that over 60 per cent of the total annual budget was being spent on salaries and other administrative costs to maintain and support huge cabinets and legislative at both at both national and state level at the expense of provision of basic services to the public.

For accelerated and sustainable agricultural development in South Sudan the government should devote up to 25 per cent of the total budget to the agricultural sector (Maxwell, 2001, pp.32-66). The current budget of 0.3 per cent of the total budget devoted to the agricultural sector suggests that the sector is grossly neglected. The agricultural sector even does not get one half per cent of the total budget. The budget for the sector is miserably very low given the established fact that agriculture is the backbone of the economy of South Sudan

6.2 Extension

It has already been highlighted that the economy of South Sudan is based on agriculture. However, it is subsistence farming that matters and about 85 per cent of the households cultivate land for food. Subsistence farming is like a private enterprise and farmers need to be innovative so that many minds may have the liberty and innovation to solve farming problems and innovation depends on education in the rural areas (Lowe, 1986). With reference to agriculture this means agricultural extension which has long been seen as key to enhancing agricultural development by improving the delivery of information, inputs and new technologies to farmers (Lilleor and Lund-Sorensen, 2013, pp.1-6).

The goal of extension is to ensure that increased agricultural production, the major objective of agricultural development policy, is achieved by stimulating farmers to use modern production technologies developed by research (van den Ban and Hawkins, 1996). Extension can therefore be defined as a process of working with rural people in order to improve their livelihoods and this involves helping farmers to improve the productivity of their agriculture and also developing their abilities to direct their own development (Oakley and Garforth, 1985). Extension can assist a farmer in each of the stages of the problem solving cycle and can help the farmer in becoming aware of problems in farming, in identifying the causes, in generating alternative solutions and in choosing and implementing an appropriate one (Roling, 1988).

From what has been seen of extension, it is fair to conclude that without a well resourced extension, agricultural development is unlikely to be realized. Extension can be considered as a medium of technology transfer from research to farmers with the goal of increasing production for self-reliance.

6.3 Technology

From thousands of years farmers have been adapting crops to diverse environments and experimenting with and developing new varieties (Amonor, 1993, pp.1-16). In South Sudan, however, the majority of farmers still use indigenous seed stock, whose yield levels, even under the best husbandry practices are low compared to improved seed (Ministry of Agriculture and Forestry, 2012). This suggests that transfer to farmers of improved technology is likely to increase yields for the achievement of food security and reduction of poverty. In South Sudan this can only be an appropriate method of improving farming for food self-reliance.

It is observed that an estimated 35,000 people die of hunger every day (Delpeuch, 1994). This seems to suggest that there is not enough food being produced and this may cause people to go hungry and acute hunger may cause death. However, even if there is plenty of food produced, people may still go hungry and die. According Delpeuch, Brazil has become the third largest agricultural exporter in the world but two out of every three, about 67 per cent, of Brazilians still do not have enough food to eat. It is difficult to understand when a country produces large quantities of agricultural produce yet the majority does not have enough to eat. However, Sen (1981) says a person starves because the person does not have the ability to command enough food.

One relevant question Sen poses is, what allows one person rather than another to get hold of the food that is there? He goes on to assert that a person's ability to command food and indeed, to command any commodity the person wishes to acquire depends on the entitlement relations that govern possession and use. Unemployment without public support will make a person starve (Sen, 1981). This clearly suggests that unemployment deprives a person of an income to have access to food. In support of this Sen says a general laborer has to earn income by selling his labor power before he can establish his command over food in a free-market economy. This

confirms that it is the earning of income that can enable people to have access to food in the market. Alternatively a person can produce his own food. For example, cultivators may produce their own food and sell some in the market to earn some income to have access to some necessities of life.

Improved technology that is transferred to farmers should be aimed at maximizing farmers' incomes for high standards of living. It should also be aimed at increases in agricultural production for both local consumption and for export to earn the badly needed foreign currency for development. Farmers should be involved in technology transfer through farmer participatory research and through farmer-led extension. The principle of farmer participatory research is that farmers are actively engaged in on-going search for improved technology (Okali, Sumberg and Farrington, 1994). For farmer-led extension it is a multi-directional communication process between and among extension workers and farmers, involving the sharing and development of knowledge and skills in which farmers have a controlling interest (Vanessa et al., eds. 1997).

Research can be defined as careful investigation in order to discover new facts (Okali, Sumberg and Farrington, 1994). Farmer participatory research is therefore helpful to farmers because the farmers are actively involved in the search for improved technology for transfer to farmers to increase yields and incomes. Farmer-led extension enables farmers to actively make decisions on technology adaptation, to participate in community-level activities, to identify sources of indigenous knowledge and to participate in on-farm trials and experimentation (Vanessa et al., eds. 1997).

It is clear from the above highlights that farmer participatory research and farmer-led extension are instruments that promote improved technology transfer to farmers in promoting agricultural development for prosperity. However, agricultural development and so production should be about fair distribution of incomes for

the majority of people to have access to food as a solution to hunger and starvation. The issue should not be the volume of agricultural production, but the distribution of purchasing power (Delpeuch, 1994).

VII. RESULTS AND DISCUSSION

The main result of the research is that budgetary allocation for agricultural development is grossly inadequate by the standard set (Maxwell, 2001). This is in view of the fact that agriculture is highly considered the backbone of the economy of South Sudan. It would have been, therefore, expected that agriculture should have been higher up in the list of priorities in budgetary allocation. Unfortunately out of the ten sectors considered for budgetary allocation, agriculture has been the eighth in the priority list as Table 3 shows. Another result is that South Sudan had not attained the level of food self-sufficiency by 2011 and has never since as planned (Ministry of Agriculture and Forestry, 2006). On the contrary, the research shows that South Sudan is far from attaining food self-reliance leave alone attaining food self-sufficiency. About 7.5 million people of South Sudan need humanitarian assistance (Human Rights Council, 2018).

South Sudan will continue to suffer from food insecurity because what is said of agriculture as the backbone of the economy does not correspond to a priority given to agriculture. Paradoxically, agriculture is among the least considered in budgetary allocation as of a high priority. This means agriculture is not of a high priority. The contradiction seems to show the lack of commitment to agricultural development for prosperity. This suggests a dependency culture where over half of the population needs humanitarian assistance while those who can afford rely on food imports as domestic production is almost on zero level.

VIII. CONCLUSION

The contradiction between the importance of agriculture as the backbone of the economy of

South Sudan and the less priority given to agriculture in budgetary allocation seems to suggest a planning issue.

In conclusion, despite well elaborated agricultural policies, unless agriculture is considered a top priority in budgetary allocation, South Sudan will continue to face food insecurity and perpetual famine.

IX. RECOMMENDATION FOR FURTHER RESEARCH

An attempt has been made to answer some of the research questions in relation to agricultural development for prosperity in South Sudan. The main finding is that agriculture is not of a high priority in budgetary allocation despite the established fact that agriculture is the backbone of the economy. A further research could, however, be possible to increase knowledge of some specific constraints to agricultural development other than budgetary constraints. The recommendation is that further research should be carried out with the objective to determine precisely how to effect agricultural development for prosperity in achieving food security and reducing poverty in South Sudan.

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