



THE REPUBLIC OF SOUTH SUDAN  
MINISTRY OF AGRICULTURE, FORESTRY,  
COOPERATIVES & RURAL DEVELOPMENT



# SEED POLICY

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## PREFACE

The Ministry of Agriculture, Forestry, Cooperatives & Rural Development (MAFC&RD) has the primary responsibility to ensure that adequate and timely supply of high-quality seed and planting materials to farmers at competitive prices. The South Sudan Seed Policy addresses the role of improved seeds to improved agricultural productivity and food security, poverty reduction, regional harmonization and sustainable growth and development. The seed sector vision, foresees attaining a well performing seed input supply chain, contributing to increasing agricultural production and productivity in all agro-ecological zones of the country. Seed activities shall focus on providing the highest-quality seed and planting materials consistent with potential economic returns. To ensure reliability of seed and planting materials offered for sale to farmers, all key agents in the seed sector shall comply with all applicable quality requirements.

The process of developing the draft policy included a very wide range of interested parties, including state and national governments' representatives, national, regional and international organisations, the private sector, farmers' organizations, NGOs, researchers and academicians. The process of consultations was formalised through draft presentations to various groups and a national consultative workshop in Juba, thanks to the support by USAID funded Farm Project. In addition to state and national consultations, written comments were received from many organisations, including researchers, national and international organizations, NGOs and development partners.

It is hoped that the resulting policy addresses the needs of all seed sector stakeholders and provides a truly sector-wide perspective on the way forward for the development of Seed Sector in the Republic of South Sudan.

Hon. Dr. Betty Achan Ogwaro  
Minister of Agriculture, Forestry, Cooperatives & Rural Development

### EXECUTIVE SUMMARY

One of the major constraints to development of the agricultural sector is reliance on traditional and low performing seeds and other planting materials based on local cultivars or landraces of the principal crops. Most of the introduced germplasm have degenerated over time and there has been no opportunity for several years to carry out local genetic improvement.

Major challenges facing the development of South Sudan's agricultural sector include:

- the absence of appropriate seed policy and standards to ensure seed quality;
- subsistence nature of agriculture;
- Lack of access by farmers to improved seeds and planting materials at competitive prices;
- lack of access to capital;
- low research and technology development capacity;
- inadequate information and knowledge about improved technologies (including improved seeds and planting materials); and,
- poor storage and transport infrastructure, especially access roads

These and other constraints and challenges result in very low crop yields and inefficient use of potentially productive land and labor resources. The limited exposure to modern technologies in agriculture limits the capacity of the country to compete with imported agricultural products and limits incentives for farmers to engage in commercial agriculture activities. Market opportunities in South Sudan exist, but low yields and low labour productivity combine to elevate unit costs of production, thereby neutralizing any potential comparative advantage. Furthermore, national products generally are of lower quality than imported goods. Repeated free food distributions often depress local market prices.

The goal of the South Sudan National Seed Policy is to contribute to improved agricultural productivity, increased household incomes and enhanced food security through adequate, timely and sustainable supplies of high-quality seed to farmers at competitive prices. This National Seed Policy is intended to contribute to emergence of a dynamic and efficient private seed system that integrates economic activities related

to production, distribution and marketing of seeds. It seeks to focus public sector attention on developing and implementing enabling policies and in exercising quality control oversight. Towards this end, national seed policy should define the roles, responsibilities and relationships by, between and among all relevant stakeholders in both the public and private sectors.

The major objective of this policy is to ensure timely availability of required quantities of high quality seeds of improved crop varieties to farmers at competitive prices and at accessible locations. The following policy statements are designed to ensure a highly performing seed input supply chain which contributes to increasing agricultural production and productivity in all agro-ecological zones of South Sudan.

### **Policy Statement No. 1**

Develop and use approved guidelines regarding seed production in order to achieve necessary cohesion among stakeholders.

### **Policy Statement No. 2**

Ensure availability of quality seeds to farmers and establish a seed quality control system for quality control to all components of the seed commodity chain, including development of varieties, production, conditioning, storage, marketing and distribution of seeds.

### **Policy Statement No.3**

Implement a legalized system for variety ownership to protect intellectual copy rights of the originators;

### **Policy Statement No.4**

Establish a system to preserve local genetic plant resources as a source of research-based improvement of quality seed to satisfy consumer tastes and preferences.

### **Policy Statement No.5**

Publish Government position on the issue of genetically modified organism (GMO) technology and procedures for developing programmes of biotechnology applications to the seed industry.

### **Policy Statement No.6**

Ensure the continuous availability, accessibility and affordability of quality for different farmer needs, including emergency replanting, and promote widespread competitive commercial distribution of seed varieties appropriate to different agro-ecological zones.

### **Policy Statement No.7**

Facilitate development of financial and micro-financial institutions to enable the private sector to invest in the seed industry.

### **Policy Statement No.8**

Support seed import and export arrangements to ensure safe sourcing and availability for immediate use and for breeding.

### **Policy Statement No.9**

Align South Sudan Seed Policy, legislation and regulations with those in neighbouring countries and international standards to take full advantage of the benefits of cooperation and harmonisation.

### **Policy Statement No.10**

Improve institutional capacity in the seed sector to ensure smooth management and administration of the seed sector.

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Cover Photo: a mixture of improved seeds for yellow maize, beans

## LIST OF ABBREVIATION

MAFC&RD	-	Ministry of Agriculture, Forestry, Cooperatives & Rural Development
ITF	-	Input Trade Fair
AGRA	-	Alliance for Green Revolution in Africa
MFIs	-	Micro Financial Institution
SSSA	-	South Sudan Seed Assessment
NARO	-	National Agricultural Research Organization
ECAPAPA	-	Eastern and Central Africa Programme for Agricultural Policy Analysis
EAC	-	East African Community
CBO's	-	Community Based Organization
NGO's	-	Non-Governmental Organization
SSSC	-	South Sudan Seed Council
BST	-	Board for Seed Testing
ISTA	-	International Seed Testing Association
VRC	-	Variety Release Committee
GMO	-	Genetically Modified Organism
SSCRAV	-	South Sudan Committee for Release Agriculture Varieties.
ASARECA	-	Association of Strengthening Agricultural Research in Eastern and Central Africa.
SSARO	-	South Sudan Agricultural Research Organization
AGRA	-	Alliance for Green Revolution in African



## 1.0 BACKGROUND

Agriculture is the major source of livelihood in South Sudan, accounting for about 80% of employment including the entire agricultural input and output value chain. About 1.25 million farming families depend on the agriculture sector. Most farmers practice traditional subsistence agriculture involving various combinations of cattle rearing, crop production, fishing, wild food collection and trade, depending on geographic location and livelihood zone (Bigirwa, and DeVries, 2010).<sup>1</sup>

About 50% of South Sudan's land has high potential for agriculture. The climate and soils are conducive to a wide range of



**Photo 1- Pumpkin seeds: the fruit is rich in vitamin A and the seeds are good source of low cholesterol fat**

both cash and food crops. Based on the 2010 FAO Annual Needs and Livelihood Analysis Report<sup>2</sup>, the average yield of cereal production, especially, sorghum over a period of ten years is less than 800kg/ha. A major constraint to improving yields is widespread use of traditional and low performing seeds and other planting materials, based on local cultivars or landraces of the principal crops. These local landraces generally have a yield capability of less than one metric ton per hectare, no matter what farming practices are applied. There are a number of reasons why improved seed is not used, including lack of access and/or inadequate supplies, low quality in terms of germination, limited diversity in terms of varieties or level of seed

<sup>1</sup>Bigirwa, George and DeVries, Joe (2010). AGRA's Program for Africa's Seed Systems (PASS) Assessment Mission in South Sudan.

<sup>2</sup> FAO (2011). Annual Needs and Livelihood Analysis Report.



stocks. Commercial distribution of improved seed and other inputs is essential for transforming agriculture in the South Sudan.



**Photo 2- Developing and adopting high yielding planting material is critical to improving farm productivity and income of South Sudan's farmers**

## 2.0 RATIONALE FOR A NEW SEED POLICY

A wide range of food crops is grown in South Sudan depending on the agro-ecological zone. Principal food crops include cassava, sorghum, groundnuts, sesame, maize, sweet potatoes, cow peas, beans, pigeon peas, and vegetables (tomatoes, onions, okra, pumpkins). The Ministry of Agriculture, Forestry, Cooperatives & Rural Development (MAFC&RD) has the primary responsibility to ensure that adequate and timely supplies of high-quality seed and planting materials are available to farmers at competitive prices. Seed activities shall focus on providing the highest-quality seed and planting materials consistent with potential economic returns. To ensure reliability of seed and planting materials offered for sale to farmers shall comply with all applicable quality requirements. The current seed system is discussed below in terms of availability, access and utilization.

### 2.1 AVAILABILITY

South Sudan historically has faced shortages of essential seeds and planting materials necessary to enable farmers to produce sufficient food for their families and surplus for sale. The long and protracted violent conflict has exacerbated this problem. Additionally, recurrent floods and drought have contributed to deterioration of local seed security systems. Currently, this problem has worsened because of increasing demand for seed by returnees, refugees and “internally displaced persons” (IDPs) who have no seed held over from previous harvests. More remote agricultural areas suffer most from seed and planting materials shortages. Even when seed is available in local markets, most subsistence farmers lack funds to purchase it.

The majority of improved seeds used in South Sudan have been sourced externally due to the absence of a functioning seed development and production system. The bulk of emergency seed aid initially was procured from Kenya, Uganda and Northern Sudan. However, during the last five years, FAO has worked closely with various partners to source seeds of locally adapted crop varieties through “seed re-collection programmes” in which seeds were repurchased from local farmers. These organizations worked

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closely with local farmers' organizations and with an expert or extension agent from the Ministry of Agriculture, Forestry, Cooperatives & Rural Development (MAFC&RD) to identify good seed producers and growers, preferably ones previously provided with good quality seed by FAO. In addition, they organized seed quality testing. Re-collection and bagging was carried out after seed quality was certified by MAFC&RD officials. A total of 350 tones of seeds were re-collected and distributed in 2009, while in 2010 some 795.4 tons were produced by farmer groups offering hope that smallholder farmers could be used to produce quality seeds for the safe to others.

Base seed for multiplication was generally locally sourced (that is, very little of the base material was certified), and multiplication included both local and modern varieties of a large range of crops. At present in South Sudan there are no facilities for seed grading, treatment and packaging.

The seed and input trade fair (ITF) approach adopted in some states has encouraged seed growers to practice market oriented seed production, with cash received during these fairs acting as an important incentive to continue as seed producers. This has been an appropriate strategy to reach those in need of seed aid.

## 2.2 ACCESS

In South Sudan there is limited documentation on how farmers traditionally manage seed. Channels through which seed is distributed include Government, NGOs, international commercial sector, relief agencies, own production, and exchange with relatives or friends. Local market analysis by CIAT and FAO (2010) shows that much of the seed/grain trading business is quite new in the country, with 76% of traders having started their enterprise in 2005, although they lack adequate storage facilities.

Very few seed companies are willing to multiply and maintain large inventories of certified seed for a market where there is uncertain demand. Seed marketing and distribution have been the responsibility of aid agencies and workers who lack professional competences in seed quality. Seed sourcing is either in Kenya or Uganda

where there are established seed companies. However, decisions on seed procurement are often made on the basis of what seed is available from these commercial suppliers. Because the need for outside seed generally cannot be forecast until harvest, aid agencies have a short time frame in which to source and distribute seed before the start of the next planting (rainy) season.

Access to seed is also limited by use of traditional on-farm seed storage facilities consisting of thatch and mud construction which often cause seed damage. It is common for crops to be stored over the kitchen fire as one way to decrease pest infestations, and this impact negatively on seed viability. There are no data on storage and post-harvest losses, but anecdotal evidence suggests that such losses are considerable<sup>3</sup>. New seed development – breeding, testing and marketing – incurs considerable expenses. These costs can be prohibitively expensive if the size of the market is small. Because South Sudan’s seed market is so small at present, private seed companies have few incentives to develop new local varieties.

## 2.3 UTILISATION

Evidence from AGRA’s seed assessment in Western Equatoria (Yambio) shows that, apart from maize, most of the crops grown in the country are of traditional, “landrace” varieties, late-maturing, low-yielding, and generally unresponsive to improved crop management practices. In addition, farming methods used are those common to the cultivation of low-yielding crops, with either broadcast seeding or the use of five or six seeds per hill, poor weed control, and near-zero use of either organic or inorganic fertilizers. An analysis conducted by AGRA concludes that current food production farming practices are incapable of supplying the surpluses needed to feed a rapidly growing number of rural and urban consumers due to the subsistence nature of farming. It is difficult to envisage a bright future for South Sudan in the absence of a robust strategy to rapidly improve agricultural productivity and output. A central

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<sup>3</sup>Itto, Anne and Lawrence Wongo (2004). Post-Harvest Grain Losses in On-Farm and Cooperative Stores: A Case Study of Maridi and Yambio Counties, Western Equatoria, South Sudan.

element of that strategy must be to make generally available to farmers more-productive improved varieties that are resistant to common diseases.

## 3.0 CONSTRAINTS, CHALLENGES AND OPPORTUNITIES

Farmers are in acute need of inputs such as improved germplasm, tissue culture, improved varieties of seeds and seedlings, fertilizers, pesticides and herbicides. Principle constraints and challenges facing the development of South Sudan's seed sector are subsistence nature of the agricultural sector; lack of access to capital and poor linkages between farmers and the seed sector; limited capacity for research and technology development; and inadequate information and knowledge on improved technologies. Additional constraints include poor post-harvest handling and transport infrastructure, especially access roads; and low institution capacity to ensure seed and planting materials quality.

### 3.1 CONSTRAINTS

#### 3.1.1 Subsistence Nature of Agriculture

The predominance of subsistence farming has not been able to create enough demand for improved seed and planting materials. The development of the seed industry through the private sector is also minimal due to the nascent Commercial farming in the country. Traditional values, lack of access roads and markets, insecurity and lack of advanced technologies have further inhibited agricultural commercialization.

In the absence of commercial agriculture, there is limited incentive for investment in the seed sector. However, there is potential for the growth of seed entrepreneurs in the country as demonstrated by entry into market of "Nile Seed Company" owned by South Sudanese professionals.

#### 3.1.2 Poor Linkages Between Farmers and the Seed Sector

Farmers in South Sudan are faced with lack of market opportunities and this has been made worse by repeated free food distributions that result in artificially low market prices. Creation of artificial markets that are based on relief needs is not sustainable in the long term. Liberal import policies can allow seed traders to introduce varieties from mature seed markets with more private breeding and a stronger flow of new varieties

that share Sudan's latitudes and length of daylight for photo-sensitive varieties. Generally, this means that regulation of new varieties from private companies can be permissive, in line with regional harmonization of seed laws and regulations, to allow trade to begin as soon as possible and expand the options available for farmers. In this manner, seed import policies can:

- focus import controls on identified phytosanitary risks;
- automatically accept all varieties sold in neighboring countries without further variety testing; and
- Accept private seed imports from neighbouring countries on the basis of seed quality certificates that are sufficient in those countries, obviating the need for new testing.

Although there has not been a fully developed formal seed sector in South Sudan, the weakness of the farmers' seed system is associated with the absence of effective mechanism to link the farmer to the source of new germplasm that would normally come from research, trade networks and the formal seed sector. These crops and varieties might be available from similar agro-ecological zones in the region or could be developed by research institutions.

The process of experimentation by farmers needs to be encouraged and evaluated rather than the more conventional approach where varieties are screened and tested for several seasons under controlled conditions before farmers are involved. Germplasm-based solutions are not a panacea, and there is need to look beyond just seeds and tools.

### **3.1.3 Inadequate Research Capacity**

South Sudan has no fully-functional agricultural research stations to facilitate improvement of agricultural productivity and efficiency, which would in turn lead to agricultural development, food security and poverty reduction. Two research stations, Yei and Yambio, were the main centres before the war. Major factors that have contributed to the collapse of research capacity in the country include loss of trained manpower, reduction of research inputs and deterioration of physical infrastructure during the war period. Dilapidated buildings and research facilities, and limited research and training funds have further undermined the effectiveness of agricultural

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research in the country. In terms of personnel, qualified scientists are inadequate. Other challenges include endemic shortage of technicians (due to abolition of National Diploma Institutes), training and research facilities and research incentives and applicability and lack of funds for capacity development in accredited higher education training institutions.

## **3.1.4 Lack of Access to Capital**

Commercial operations on seed production, processing, storage and marketing are almost nonexistent in South Sudan. The majority of potential entrepreneurs have no access to capital for investment in agriculture or agribusiness. For example, ATIL (2009)<sup>4</sup> estimates that Micro Financial Institutions (MFIs) cover only five percent of the available clients in the Juba County, and less than one percent of the potential market in the country. Whilst the majority of clients is still focused on urban hubs and has a very low rural penetration, the MFIs address mainly women (67%) and seven of the ten states of South Sudan already benefit from microfinance services. Loans range from USD 75 to 3,000 and are usually issued for a period between four to eight months, depending on the particular MFI and the respective product type.

## **3.1.5 Inadequate Information and Knowledge on Improved Technologies**

The low rate of improved agricultural technology adoption among the subsistence farming community in South Sudan is attributed to lack of awareness and understanding of the importance and value of improved seed and application of fertilizer. The country's low literacy and numeracy levels 16% and 40% among women and men<sup>5</sup>, respectively, constitute a barrier to access to agricultural information, knowledge and skills transmitted through different forms of mass media. Low adoption of improved technology is further exacerbated by the limited capacity in the delivery of agricultural extension services. One approach to create farmers awareness of the value of improved technologies including crop varieties and improved crop management practices is to implement a large number of demonstrations together with farmer field days through extension services, taking into account farmers' needs and information.

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<sup>4</sup>Atil, Melody (2009). Expanding the Provision and Impact of Microfinance in South Sudan.

<sup>5</sup>National Baseline Household Survey (2009).

## 3.2 CHALLENGES

### 3.2.1 Poor Physical Infrastructure

The potential of the agricultural sector is compromised by lack of transport infrastructure, especially access roads. Poor rural infrastructure limits access to inputs and produce markets. A special report by FAO and WFP on Crop and Food Security Assessment Mission (2011) observes that given the configuration of transportation infrastructure, Unity and to a slightly lesser degree Upper Nile and the Northern parts of Jonglei State are almost exclusively dependent on Northern Sudan for their market supply. In addition, Northern and Western Bahr el Ghazal States depend largely on trade of cereals from the north. Although Jonglei is a large State, transportation infrastructures are amongst the least developed in the country, leaving some counties amongst the most isolated. For example, Pochalla is amongst the remotest counties. The town can only be accessed by road from Boma between January and March; thereafter it remains cut off by road from the rest of the Jonglei State. Some grain is carried on foot or by bicycle on foot tracks from distant markets in Ethiopia. As a result extremely high food prices prevail in remote and isolated locations.

The Government is also aware that that a complex infrastructure is required to maintain a continuing flow of improved seed of superior varieties. These include office space, laboratories, storage facilities and warehouses which currently are inadequate or do not exist in South Sudan. Poor or inadequate infrastructure will compromise efforts to develop the seed industry in the country.

### 3.2.2 Lack of Institutional Framework to Manage the Seed Industry

An institutional framework to manage and regulate the seed sector does not exist in South Sudan. Seed production during the last 40 years was carried out by either project development units (PDU) or international non-governmental organizations (INGOs) and individuals (CIAT and FAO). Generally, there have been no set standards and regulations for guiding for seed production in South Sudan. During the PDU era, seeds were either purchased from contract farmers (seed growers) or produced at PDU's farm. The absence of registered seed companies, coupled with the lack of a functional public and private seed institutions, pose a threat to the advancement of quality seed development in South Sudan. As a result, importation and distribution of grain instead

of seed by aid agencies and the private sector have contributed to low agricultural productivity.

## 3.2.3 Gender Inequality

Female headed-households represent almost half (47%) of the agricultural population in the country, but cultivate markedly less land than male-headed ones (CIAT and FAO). According to the South Sudan Seed Assessment (SSSA) by CIAT and FAO, boosting women's production potential would seem to be key to increasing food security across the country. Women are known for specializing in seed selection and storage, although the division of labour varies greatly by ethnic group and State. For instance, in agro-pastoral zones, women may take the burden of all crops in agriculture, while men specialize in livestock production. Rural South Sudanese women engage in a range of activities to generate income, but none has been documented as being unusually lucrative. Vegetable production has been tried as one avenue for professionalizing agro-enterprise initiatives among groups of women. Of special note are the labour constraints on female-headed households; they tend to lack the capacity for heavy labour that is needed for a number of pivotal tasks, including the opening of new land and fencing existing farmlands to keep out predators. As female-headed households, their production potential is being hindered.

## 3.3 OPPORTUNITIES

### 3.3.1 Market Potential

One of the major factors creating market potential in South Sudan is increased demand for food. Estimates from the SSSA report shows that with a 2011 projected population estimate of 9.16 million people, an overall cereal deficit is about 291,000 tones. However, with a forecast of 400,000 people returning mainly from Northern Sudan and considering the need of about 12,000 tones of cereals for every 100,000 returnees, the estimated deficit is expected to increase to 339,000 tones. Based on the survey data by CIAT and FAO, formal and informal imports from Uganda which include food were estimated at USD 246 million and as much as \$389 million in 2008, respectively (Yoshino, Ngungi and Asebe, 2011). However, before the civil war, South Sudan used to export a range of products such as cow, hides and skin, honey, coffee beans, ground

nuts, sesame, beans, horn and hoofs, and gum acacia; but the only product currently being exported is timber.

Apart from meeting the national food security requirements, the country has an opportunity to export agricultural and forestry products to regional and international markets. For example, the existing agricultural potential and access to Nile River and tributaries can facilitate the country to produce sufficient quantities of horticultural products for sale outside the country. Local, regional and international demand for agricultural and forestry products demonstrate that there is need for improved agricultural productivity through increased quantities of high quality seed and planting materials.

### **3.3.2 Crop Diversification**

Although South Sudan is currently a net importer of agricultural goods, the region has a good natural resource base for the production of a wide range of crops such as sorghum, cassava, maize, groundnuts, okra, pumpkins, cowpeas, sesame, bulrush millet, Jews mallow, etc. Opportunities exist for rain-fed mechanised schemes for grains and cash crops; irrigated farms for sugarcane, fruits and vegetables production and processing. Diversification aims at increasing food security and income as well as taking advantage of new and expanding market opportunities. The growing of an expanding array of crops creates increased demand for seed.

### **3.3.3 Support from National, Regional and International Institutions**

South Sudan has a number of international partners who are willing to support the development of the seed sector. The scale and approach to implementation vary from organization to organization and from location to location, depending on the project design. Based on the same Seed System Security Assessment report, opportunities for the public plant breeding sector in South Sudan are enormous. There are national, regional and international agricultural research centres that have shown interest in initiating and supporting plant breeding programmes in the country. These include Uganda's National Agricultural Research Organization (NARO), the Association to Strengthen Agricultural Research in Eastern and Central Africa (ASARECA), ICRISAT, CIAT, CIMMYT, IITA and others. Crop varieties introduced from these agricultural institutions can be traced to a particular originating centre and breeder seed/foundation

seed obtained for quick seed bulking and distribution to farmers. Public plant breeding can be made more efficient by a flexible strategy whereby genotypes from a range of sources are tested, but with a shift from national testing and release to regional approaches.

In terms of human resources, the Ministry of Agriculture, Forestry, Cooperatives & Rural Development also has an opportunity to recruit qualified South Sudanese scientists currently working in the north, as well as those in the Diaspora, to carry out breeding research on different crops. Since the country has a diversity of crop types, recruitment of experienced breeders will help in mapping and collecting the existing crop varieties (local and introduced genotypes) for characterization and improvement. Some scientists are already linked to regional and international agricultural centres through collaborative research programmes. Their involvement in the breeding research programmes of South Sudan will add value to both research materials and funding.

### **3.3.4 Potential Investment in the Seed Industry**

South Sudan is located on a large fertile plain with abundant sunshine and natural irrigation. As much as 80% of the country's land is arable, compared to only 7% in Sudan and 33% in neighboring Kenya. The country has enormous potential for future investment in agriculture and other sectors. Key areas for investment include mechanized farming, value addition and marketing. In recent years the country has experienced an economic upturn, characterized by a long positive episode of growth and relatively low inflation. A number of foreign companies are acquiring land in for investing in production of sugar, corn, cotton, wheat, sunflower, and sorghum, the majority of which will be delivered to domestic South Sudanese markets.

### **3.3.5 Regional Integration**

Countries of Eastern and Central Africa have different laws, standards, and regulations, some of which are restrictive, impede trade and place unjustifiably discriminatory demands on importers, exporters, and even domestic producers of seed. Harmonizing the countries' seed laws, policies, standards, and regulations could help establish a regional market with enough demand to stimulate a viable and efficient seed industry. A regional seed market would, among other things, promote regional trade, create

economies of scale for developing and marketing seeds, and prevent negative spillover effects from seed systems in neighboring countries, such as the introduction of harmful seeds.

The seed initiative of the Eastern and Central Africa Programme for Agricultural Policy Analysis (ECAPAPA) was undertaken to address the challenge of harmonizing seed policies and regulations in the region. The harmonization process has a number of achievements so far, including streamlined variety evaluation, release, and registration processes; and reduction of the number of phytosanitary restrictions on ten selected crops has from 33 to only 3 pests. The harmonization process has also raised awareness in the region on the importance of sharing phytosanitary information, leading to compulsory notification of new pests, as well as the need for a pest list for the region. As a result of the streamlining of export and import documentation, seed volumes traded within the region have increased. The initiative has created forum for public and private sectors to meet as equal partners to develop the seed sector. Moreover, the project now links regional seed subsectors with global seed structures.

Regional integration, particularly in the form of investment from neighboring countries and blocs will also act as a major driver for South Sudan's economic development (ERGO). There is already talk of the country joining the East African Community (EAC), an intergovernmental organization comprised of Kenya, Uganda, Tanzania, Rwanda, and Burundi. Membership would bring South Sudan greater political coordination with its neighbors and enable economic integration through the EAC's customs union and the recently-announced Greater Free Trade Area which would link together several regional African regional economic blocs.

## 4.0 VISION FOR THE SEED<sup>6</sup> POLICY

The Ministry of Agriculture, Forestry, Cooperatives & Rural Development (MAFC&RD) is the lead agency of the Government of South Sudan for facilitating rapid and sustainable development of the agricultural sector.<sup>7</sup> MAFC&RD has primary responsibility to establish a policy environment that enables private sector-led market-oriented agricultural development.<sup>8</sup>

Preparation of this policy directive took into account the following:

- i. Currently, South Sudan agriculture is based largely on subsistence farming, characterized by low technology and low input use resulting in low yields and high unit costs of production;
- ii. There is virtually no formal seed sector in South Sudan, few improved seeds are available and thus there is little use of improved varieties;
- iii. Most farmers use seed retained from their production of traditional “landrace” varieties;
- iv. Retained seed often carries disease pathogens, is late-maturing, low-yielding and largely unresponsive to improved fertility and production practices;
- v. Sustainable increases in crop production and productivity depend to a large extent on availability of and utilization by producers of improved seed varieties; and,
- vi. Modernization of South Sudan agricultural production requires an efficient seed supply system that is easily accessible to producers at competitive prices.

A seed policy working group sought views of national stakeholders and of national and international experts in preparing this draft. The working group also sought to rationalize and harmonize South Sudan seed policies with those of neighboring

<sup>6</sup> As used in this document, “seed” also includes other vegetative planting materials.

<sup>7</sup> As used here, “agricultural sector” refers to the entire agricultural value chain, from input sourcing to final demand for output.

<sup>8</sup> See “Food and Agriculture Policy Framework”, approved by the South Sudan Legislative Assembly in November, 2006.



countries and international institutions in order to gain the benefits of cooperation in developing a modern national seed system. Prior MAFC&RD directives, orders, protocols or other official communications that are inconsistent with this new policy are hereby rescinded.

## 4.1 VISION, MISSION AND GOAL

A highly performing seed input supply chain which contributes to increasing agricultural production and productivity in all agro-ecological zones of South Sudan.

### 4.1.0 MISSION

To Create an enabling environment through appropriate rule-making and public services that promotes a strong, efficient and sustainable private sector, integrating activities related to production, distribution and marketing of seeds.

### 4.1.1 GOAL

To improve agricultural productivity, household income generation and food security through adequate, timely and sustainable supplies of well-adapted high-quality seed at competitive prices.

## 4.2 GUIDING PRINCIPLES

The following are general principles to guide the Seed Policy. These principles build on the government's national development priorities of food security, poverty reduction and sustainable growth and development.

- i. **Sustainable Development:** South Sudan's seeds and planting materials should be managed to meet the needs of this generation without compromising the rights of future generations.
- ii. **Livelihoods and Poverty:** the improvement of livelihoods should be a major goal in all the strategies and actions for the development of the seed sector so as to contribute to improved food security and poverty reduction.
- iii. **Biodiversity and Environmental Services:** the seed sector development should safeguard the nation's seed biodiversity and environmental services through effective conservation strategies.

- iv. **Partnerships in Governance:** new institutional relationships should enhance efficiency, transparency, accountability and professionalism, and build confidence in all seed stakeholders: These include roles of:
  - a. **MAFC&RD:** MAFC&RD should withdraw from activities that can be carried out more effectively by the private sector or other stakeholders, but maintain core functions of policy development and regulation;
  - b. **Local government:** more seed resources should be managed through devolved responsibility wherever practical and advisable;
  - c. **The private sector:** private sector investment should be maximised in the development of the seed sector;
  - d. **Local communities and farmers:** the public's participation in the management of the country's seeds should be actively encouraged; and
  - e. **NGOs/CBOs:** these should be encouraged to strengthen civil society, to build capacity and grassroots participation, and to help develop the rights and responsibilities of seed users.
- v. **Gender and Equity:** the active participation and affirmative action of all women and men, young people and the elderly, and vulnerable or disadvantaged groups should be integrated into seed sector development.
- vi. **Cultural and Traditional Institutions:** seed sector development should take into consideration cultural and traditional attributes and institutions.
- vii. **International Obligations:** legislation should be developed to support the implementation of current and future international commitments that affect the seed sector.
- viii. **Seed Valuation:** environmental and social values should be used in cost/benefit valuations when assessing strategies to implement the Seed Policy.

### 4.3 OVERALL OBJECTIVE

To ensure timely availability of required quantities of high quality seeds of improved crop varieties to farmers at competitive prices and at accessible locations. Towards this end, this policy defines the roles, relationships and responsibilities of public and private sector stakeholders, and seeks to encourage broad-based participation and collaboration.

The Ministry of Agriculture, Forestry, Cooperatives & Rural Development shall ensure that essential infrastructural components are established and operated so as to benefit South Sudan agricultural and economic development. Cooperative and supportive participation of both Government and private sector are required to ensure efficient use of national resources, while providing effective services to agriculture.

All crops grown by South Sudanese farmers are important since each crop, in its own way, contributes to both the individual and national effort. However, in recognition of limitations on national resources, as well as the specific needs and circumstances of specific crops, research and the formal seed sector can only handle a limited number of crops. Consequently, priority crops for research and seed multiplication are as follows: cereals (sorghum, maize, rice, millet and wheat), root crops (cassava, sweet potato, irish potato), oil crops (groundnuts, sesame, sunflower and castor oil), pulses (soya beans, cow peas, beans, pigeon peas), high value vegetables and fruits, and plantation cash crop (tea, coffee, pineapple, cotton, sugarcane and jute).

#### **4.4 POLICY STATEMENTS**

The following are policy statements binding the Ministry of Agriculture, Forestry, Cooperatives & Rural Development to undertake in order to promote a sustainable seed industry in the Republic of South Sudan. The policy statements are based on the identified problems and are followed by suggested implementation strategies as well as expected flagship projects to be undertaken in realizing the policy statements.

##### **4.4.1 Policy on Guidelines for Breeder, Foundation and Certified Seed Production**

Seeds for many vegetable crops, such as cabbage, tomato, lettuce and watermelon, are largely of foreign origin and regularly imported by the private sector for use in South Sudan. While these seeds do not emanate from national research, nor are they multiplied locally, it is recognized that the national research system may find it helpful to use farmers to participate in their release and marketing through trials and testing. The private sector will be encouraged to move beyond mere importation and develop local seed multiplication of major vegetable crops where agro-climatic conditions allow it. Furthermore, the list of priority crops will be reviewed from time to time to keep it current.

*Problem Statement No. 1*

**Lack of guidelines for the production and release of seed varieties**

*Policy Statement No. 1*

**South Sudan Seed Council will develop and recommend to MAFC&RD for approval guidelines regarding seed production in order to achieve necessary cohesion among stakeholders.**

**Implementation Strategies for policy No. 1**

The national seed programme of South Sudan will follow a four-generation system of seed multiplication<sup>9</sup>. This means that recognition will be given to four seed classes, namely, breeder, foundation, registered and certified seed (including certified plus 1):

- i. **Breeder seed:** Seed (or vegetative propagating material) that is produced under the supervision of a plant breeder, originator, or owner of the variety, is controlled by that person or institution, and is the source for production of foundation seed;
  - a. The national research system should have capabilities in terms of staff, facilities and budgets to ensure timely supply of the required amounts and kinds of publicly developed breeder seed;
  - b. Ensuring adequate quantities of foundation seed to start off the multiplication process is essential. MAFC&RD will support SSARO with a mandate to produce supplies of foundation seed for priority crops. SSARO will cooperate with all public and private variety developers and research stations;
  - c. MAFC&RD in collaboration with SSARO shall obtain resources to produce and supply foundation seed as a public service for both public and private sector varieties;
  - d. Foundation and other improved seed varieties shall be made available at cost recovery to qualified private-sector agencies upon request, as and when it is available and in accordance with established requirements for producing high quality seed and in compliance with relevant legal provisions;
  - e. Public sector agencies (SSSC and SSARO) involved in the seed system shall provide all possible support and encouragement to the private sector to produce seed

<sup>9</sup> Appendix 1 provides details of the Breeder Seed, Foundation Seed, Certified Seed and Basic Seed.

required for farmers' use. Seed multiplication activities of a commercial, market-responsive nature shall be the responsibility of the private sector. MAFC&RD shall ensure that its agencies do not generate competition to private-sector operations;

- f. MAFC&RD will promote establishment of a private commercial seed laboratory in the country to ensure seed quality, private sector participation and sustainability of the sector; and
  - g. SSARO seed facility shall be well-equipped with a controlled environment and a seed storage capacity whose operations shall be financed through a fee on imported seeds and on seed sales proceeds of private sector enterprises.
- ii. **Foundation seed:** Seed stocks increased from breeder seed, and so handled as to closely maintain the genetic identity and purity of a variety. Production of foundation seed is carried out under the responsibility of the breeder and approved by an official certifying agency. Foundation seed is the source of registered and certified seed.
- iii. **Certified seed:** The progeny of foundation, registered, or certified seed produced and handled so as to maintain satisfactory genetic identity and purity, and approved by an official certifying agency.
- a. Certified seed production shall be undertaken by qualified seed growers ;
  - b. A training and public awareness campaign will also be undertaken on the different levels of seed quality;
  - c. In the interim the bulk of seeds used by farmers will be sourced from the informal seed sector through the activities of a large number of small scale farmers who make up the informal seed sector;
  - d. MAFC&RD and public sector seed agencies will encourage parallel seed supply programme and strive to enhance its contribution to national efforts through well-designed extension education and other promotional campaigns on seed quality, variety selection, seed processing, storage and marketing;
  - e. Additionally, farmers participating in the informal seed sector will be encouraged to use newly released seed varieties emanating from research and/or testing where such varieties hold advantage over their own cultivars; and

- f. A fifth class called certified seed (generation 2) selected from generation 1 should permanently be established to supplement generation 1 in the event of a serious seed shortage.
- (iii) Adequate recording of full circumstances for the release of new seed variety (from Policy No. 3)
  - a. SSARO, on the advice of the South Sudan Committee for Registration, Release and Protection of Agricultural Varieties, will be the sole body responsible for the registration of varieties in South Sudan;
  - b. The onus for proving the uniqueness of a nominated variety will rest on the breeder or the sponsoring research agency. Applications for registration and release of a new variety will include a comprehensive description of the variety, its attributes (distinctiveness, uniformity, stability, etc) and data from trials across designated environments; and,
  - c. All newly introduced crop varieties shall undergo at least one season of multi - location evaluation trial in isolated plot(s) inside South Sudan before release to the public. MAFC&RD will establish a seed testing laboratories.

## **Flagship project for policy no.1**

- (a) South Sudan Seed Council**
- (b) South Sudan Seed Programme**

### **4.4.2 Policy on Quality Control System and Availability of Quality Seeds to Farmers**

#### **Problem Statement No. 2**

**Unavailability of quality seed to farmers and quality control system in the seed commodity value chain**

#### ***Policy Statement No. 2***

**Ensure availability of quality seeds to farmers and establish a seed quality control system for quality control to all components of the seed commodity chain, including development of varieties, production, conditioning, storage,**

**marketing and distribution of seeds.****Implementation strategies for policy no. 2**

- i. The South Sudan Board for Seed Testing (BST) will ensure seed quality as a public service. BSTC has full responsibility to establish or assure establishment of well-equipped seed laboratories, with adequately trained personnel and sufficient budgetary support to carry out their work effectively;
- ii. To ensure protection to farmers, all seed offered for sale shall comply with all applicable quality requirements. Seed activities shall focus on providing the highest-quality seed (genetic, physical, physiological, and phytosanitary quality components) at competitive prices.
- iii. To assure quality, every seed producer shall maintain its own internal quality control. In addition, MAFC&RD shall maintain internal and external quality control operations required to protect both seed suppliers and farmers; the needs of farmers for reliable quality seed vs. realistic production capabilities.
- iv. Seed quality control is the responsibility of SBSTC, and will be based on the minimum standards system. All participating organizations will be encouraged to assure seed quality through their own internal test standards rather than on external quality checks;
- v. Current seed standards being applied will be reviewed and modified to reflect the above objectives and to reflect local needs, using regional and international requirements as a standard, in order to facilitate seed trade and use. Particularly, South Sudan will contribute to support efforts to harmonize seed standards with international and regional organizations;
- vi. Government shall establish a network of official seed testing laboratories located so as to permit samples to be delivered within 24 hours after sampling, physical tests to be completed and germination testing begun within 24 hours after the lab receives the sample. These labs shall be adequately equipped and staffed with trained qualified analysts, and shall conduct tests according to procedures of the International Seed Testing Association (ISTA);
- vii. To help develop a quality-oriented seed industry and expand availability of high quality seed, a certification procedure shall be developed, and seed suppliers will be encouraged to participate. Certification standards, procedures, and methodology shall comply with international usage; and
- viii. The SSSC will ensure the preparation of a unified seed law which will draw on



international standards and successful legislation of other countries. The unified seed law will be activated through a set of regulations to be approved by the SSSC and recommended to MAFC&RD for official approval. This will be done in consultation with relevant stakeholders. The unified seed law will cover provisions for:

- seed production, processing, handling and trade, as well as variety protection and farmers' rights;
- legal establishment of public sector agencies including SSSC and SSCRRPAV; and
- Seed laboratories and their activities in seed testing which shall conform to International Seed Testing Association (ISTA) rules and procedures.

viii The public and private sector seed agencies shall be encouraged to provide conditioning services to small or new seed operations on a fee basis, to assist in developing the seed industry

xii. A system for rapid, safe and efficient conversion of harvested seed into clear storable material involving public and private agencies.

xiii. Formulation of Variety Release Committee (VRC) under SSARO.

## **Flagship project for policy no. 2**

### **South Sudan Board for Seed Testing (BST)**

#### **4.4.3 Policy on Farmers' Rights and Preservation of Genetic Resources**

It is recognized that farmers have contributed immensely to development, maintenance and preservation of local plant genetic resources in South Sudan. Indigenous cultivars that have been developed and preserved by farmers are expected to serve as major components or contributors to new varieties.

#### **Problem Statement No. 3**

**Lack of a legal framework for protection of intellectual property rights of variety originators and identification of the true sources of the new materials.**

#### **Policy Statement No. 3**

**Implement a legalized system for variety ownership to protect intellectual copy**

## rights of the originators

### Implementation Strategies for Policy no. 3

- i. All eligible contributors to the development of a variety will be documented. All varieties that are developed with national resources shall be considered state property with reservation of breeder rights. However, private ownership shall be recognized where private resources have yielded new varieties.
- ii. To encourage variety development and permit recovery of development costs, appropriate laws in accordance with international Plant Variety Protection policies will be established. The breeder shall benefit financially from his investment, while serving the needs of farmers
- iii. Ensure that farmers are adequately compensated for their efforts

### Flagship project for policy no. 3

#### Legislation for Intellectual Property Rights with respect to the seed industry

#### 4.4.4 Policy on Preservation of Local Genetic Material

Establish a system to preserve local genetic plant resources as a source of research-based improvement of quality seed to satisfy consumer tastes and preferences.

#### Problem Statement No. 4

**Inadequate preservation of local genetic plant resources as research-based improved and quality seed to satisfy consumer tastes and preferences.**

#### Policy Statement No. 4

Establish a system to preserve local genetic plant resources as a source of research-based improvement of quality seed to satisfy consumer tastes and preferences.

## Implementation strategies for Policy no.4

- i. Every effort will be made to ensure that farmers are adequately compensated for their efforts;
- ii. Rehabilitate and strengthen informal seed system for food and cash crops; and
- iii. Encourage farmers to maintain their right to use, exchange, share or sell their farm-saved seed between themselves, without any restrictions; and should have the right to continue using any varieties of their choice without being hampered by compulsory registration, provided they do not sell seed emanating from proprietary varieties.
- iv. Pricing of seed, or the determination of the selling price, shall be the responsibility of the agency selling seed in response to market factors.

### 4.4.5 Policy on Genetically Modified Organisms and Bio-Safety

Worldwide debate over GMO technology currently is under way. MAFC&RD will seek to understand the underlying principles and practices of biotechnology, particularly with regard to bio-safety in the application of GMO technology in the future without disturbance to local genotypes, and to be limited to controlled experimentation, avoiding any GMO that may affect the safety aspect of human nutrition; and

## Problem Statement No. 5

**There is no official policy on Genetically Modified Organisms (GMO) in South Sudan**

## Policy Statement No. 5

**Establish a system to preserve local genetic plant resources as a source of research-based improvement of quality seed to satisfy consumer tastes and preferences.**

## Implementation strategies for Policy no. 5

MAFC&RD shall develop a GMO policy and propose a bio-safety law to ensure compliance with the Cartagena Protocol on Bio-safety of the Convention on Biological Diversity.

### Flagship project for policy no.5

#### GMO and Bio-Safety Law

#### 4.4.6 Policy on Smooth Supply of Quality Seeds at Competitive Prices

Seed production and supply and provision of required seed at competitive cost to farmers is primarily a private sector function. The process of private sector entrepreneurial development should receive a high level of continuous assistance in view of the complexities of the seed industry. This assistance will be ensured through the collective actions of all private sector seed agencies with the active support of the SSSC. The private sector will be encouraged to play a major role in seed supply and shall also provide all possible support, as specified in this policy or established in ensuing supportive rule-making and protocols, upon the advice of the South Sudan Seed Council. The aim is to encourage the private-sector to invest in the activities of seed multiplication and supply, and to the extent possible utilizing benefits accorded under the South Sudan Investment Law. Climate variability and other emergencies can disrupt crop production. Interventions involving emergency seed distribution, which have an attendant potential of genetic erosion and disease and pest introductions, shall be minimized by ensuring the deliberate and systematic stocking of an annually renewable national improved seed reserve.

#### Problem Statement No. 6

**Unreliable accessibility and affordability of adequate quantities of quality seeds due to underdeveloped seed business.**

#### Policy Statement No. 6

**Ensure the continuous availability, accessibility and affordability of quality for different farmer needs, including emergency replanting, and promote widespread competitive**

**commercial distribution of seed varieties appropriate to different agro-ecological zones.**

## **Implementation Strategies for policy No. 6**

- i. MAFC&RD will assist the private sector in developing seed distribution channels, but always in a manner in which the private sector carries out all business transactions. MAFC&RD and all other government agencies will support a deliberate process of developing private sector entrepreneurs as seed stockists;
- ii. Promote and support the establishment of community-based, market oriented seed producer groups including women, for them to get a significant market share for both food and semi-commercial crops;
- iii. Multinational private-sector seed firms can benefit the seed industry with new genetic materials and technology in addition to seed supply, but sometimes do not supply specific local needs, which may be best-supplied by local domestic seed firms, including some minor crop seeds. For maximum technology development, operating and cost efficiency and supply of seed needs, both multinational and wholly-local seed firms, and firms which provide services and products supporting seed supply, shall be encouraged and supported;
- iv. Stockiest will be recruited from among agricultural input suppliers;
- v. The SSSC and MAFC&RD will assist in seed demand surveys and provide market intelligence to facilitate operational decisions of seed stockists;
- vi. The quality control agency will monitor seed quality and ensure safe storage and handling at seed stores. The agency will also check arrangements whereby left-over seed will be returned to safe storage, discarded or re-labeled before the next sales season;
- vii. Financial institutions will be encouraged to give priority consideration to the credit needs of emerging seed enterprises, dealers and stockists;
- viii. Private sector marketing efforts will be supported with appropriate public sector extension and promotional programmes, with the aim of enhancing seed demand levels;
- ix. MAFC&RD shall seek to support and coordinate marketing efforts in the private sector. This shall include, but not be limited to, assistance in marketing campaigns, promotional methods and materials, emphasizing seed in agricultural extension and farmer training programs; and
- x. Registered seed companies in South Sudan are encouraged to come together and form a

## Implementation Strategies for policy No. 6

- i. MAFC&RD will assist the private sector in developing seed distribution channels, but always in a manner in which the private sector carries out all business transactions. MAFC&RD and all other government agencies will support a deliberate process of developing private sector entrepreneurs as seed stockists; “South Sudan Seed Network” and eventually join the African Seeds Trades Association (AFSTA).
- xi. A national seed reserve shall be kept at government expense, but can be contracted to private sector enterprises. The size of the reserve shall be based on the quantity of seeds required to meet the estimated minimum requirement for sustaining the seed industry and key vulnerable crop production areas.
- xii. A revolving fund enables the seed reserve stock to be largely self-financing through sales of the stock at the beginning of the next marketing season to finance its regeneration. The private sector will be engaged in the distribution of the national seed reserve across all production areas and through private sector warehouses to ensure that all grain (that could be used for seed) in storage is considered.
- xiii. However, in special cases such as ensuring provision of improved seed to low-income groups, MAFC&RD may in collaboration with the private sector assist on a short-term or long-term basis in such a manner that the MAFC&RD-provided subsidy is clearly indicated and is applied so that it will not interfere with normal business practices in pricing and/or selling seed, or with the development of a seed industry which serves the nation’s interests.

### 4.4.7 Policy on Role of Finance in Promoting Seed Industry

#### Problem Statement No. 7

**Lack of micro-financial institutions to enable the private sector to invest in the seed industry**

#### Policy Statement No. 7

**Facilitate development of financial and micro-financial institutions to enable the private sector to invest in the seed industry.**

## Implementation Strategies for policy No. 6

- i. Relevant public sector institutions shall promote crop production credit for farmers, including credit for purchase of improved seed. Such credit shall permit farmers including women to select the supplier of their seeds;
- ii. Through relevant institutions, credit will be encouraged for seed industry firms at concessional rates to promote investment in seed supply. Such credit shall be for capital expenditures, operating expenses, and seed inventories, with minimum reasonable collateral required; and
- iii. Facilitate and strengthen access and linkage to credit and financial services among community-based market-oriented seed producers including women.

### 4.4.8 Policy on Import and Export Trade of Seeds

#### Problem Statement No. 7

Lack of institutional support in seed importation and exportation business

#### Policy Statement No. 7

**Support seed import and export arrangements to ensure safe sourcing and availability for immediate use and for breeding**

#### Implementation strategies for policy No. 7

- i. All public sector agencies will promote of any public or private-sector agency requesting import clearance for seed, within procedures specified in appropriate regulations established under this policy. Procedures required shall be minimized so that delays do not occur. Seed quality and internationally-recognized plant quarantine standards such as sanitary and phytosanitary certificates in both South Sudan and the country of origin, shall be recognized, respected and enforced;
- ii. Only duly registered companies and NGOs shall apply to import seeds, indicating quantity, crop variety, maturity period, yield potentials, County targeted and port of entry (Kaya, Nimule, or Nadapal) to be approved by a designated officer within SSARO, against lists of crop varieties recorded as successfully being grown, or reviewed and accepted for testing, in South Sudan.



**Implementation strategies for policy No. 7**

- iii. All imported seeds, in clearly labeled and sealed packages, indicating crop variety, the producer, source of parent materials, country of origin and expiry date not less than five month on arrival in South Sudan, shall be accompanied by original copy of phytosanitary certificates, and seeds inspection / germination test certificates. For vegetable seeds there is provision for bulk import and repackaging within South Sudan.
- iv. All imported seeds will be kept in custom bonded quarantine stores from where seed inspectors will draw samples for laboratory analysis to verify the seed quality against those recorded in the accompanying documents and share the information with the plant inspectorate department in country of origin;
- v. There shall be regulations to govern the conduct of seed inspectors, operations of customs bonded quarantine stores and recording of seed samples for every seed lot received in the Country as reference for future disputes.
- vi. Administrative procedures shall be established by MAFC&RD to provide incentive to domestic and multinational private-sector agencies producing seed for export;
- vii. Importation of essential equipment and supplies for the seed industry shall be duty free and subjected to minimum restrictions;
- viii. GOSS shall encourage domestic manufacture of equipment for the industry and establishment of joint ventures and licensing agreements, provided, that such manufacture shall be in compliance with internationally-recognized protection of patents and intellectual property rights, to maintain a good international reputation;
- ix. Special incentives will be provided to the private sector to promote investment in priority seed areas.
- x. There shall be an establishment mechanism for the importation of basic seed, seed for research purposes, and some seed for farmers.

**4.4.9 Policy on Rationalisation and Harmonisation with Regional Policies and Standards**

The aim of rationalization and harmonization of seed policies, laws, regulations and procedures is to promote development of the seed industry. The east-central Africa region faces many different standards and regulations in each country. Compliance with multiple regulations is costly. These high costs, coupled with relatively low effective demand, may make it unprofitable for either local or international seed companies to make the investments required to provide the quantity, quality and variety of seed needed to support an expanding agricultural base in the eastern and

central Africa region. Most of these costs take the form of non-tariff barriers, regulations, procedures, administrative and technical requirements imposed by the governments of these countries, and such costs place discriminatory demands on importers, exporters, domestic producers and traders. The ultimate aim of rationalization and harmonization is to increase the flow of seed across national boundaries. This increases the choices of quality seeds available to farmers, leading to increased productivity, increased incomes and enhanced food security.

In order to ensure efficient operation and minimize use of resources, MAFC&RD and private-sector agencies shall cooperate and work toward the common goal of improved agricultural efficiency; the public sector will not compete with the private sector in economic activities. Such coordination shall include, but not be limited to, seed industry conferences, newsletters, bi-sectoral advisory committees, exchange of information, training programs, support to seed trade and/or technical associations. SSARO will be responsible for all seeds related issues particularly quality assurance building on past interactions with the Plant Inspectorate and Quarantine Departments of neighboring countries, particularly Kenya and Uganda, for efficient follow up on planting materials crossing the borders until a full Plant Inspectorate Service and Quarantine institution for South Sudan is established.

## **Problem Statement No. 8**

**The country's seed legislation and regulations are not in harmony with those of neighboring countries and other trading partners internationally**

## **Policy Statement No. 8**

**Align South Sudan Seed Policy, legislation and regulations with those in neighbouring countries and international standards to take full advantage of the benefits of cooperation and harmonisation.**

## Implementation Strategies for Policy no. 8

- i. MAFC&RD will cooperate with such international organizations as International Seed Testing Association (ISTA), UPOV, OECD and International Centre for Genetic Engineering and Biotechnology, etc;
- ii. As soon as possible, when an appropriate level of seed quantity and quality control has been achieved, South Sudan will take steps to attain ISTA membership in order to realize the full benefits of the association; and
- iii. The harmonized seeds regulations for East Africa, developed by ASARECA/ECAPA will be adopted for implementation in South Sudan.

### 4.4.10 Policy on Legal and Institutional Framework and Capacity Building

#### Problem Statement No. 10

**Insufficient institutional capacity in the seed sector.**

#### Policy Statement No. 10

**Improve institutional capacity in the seed sector to ensure smooth management and administration of the seed sector.**

#### Implementation Strategies for policy No. 10

- (i) Review Seed Legislation and Regulations and MAFC&RD organizational structure to ensure a legal and a functional framework for implementing the policy;
- (ii) Establish a South Sudan Seed Council to enhance coordination and facilitate the growth of seed industry activities in order to ensure rapid, orderly and balanced development in tune with the requirements of agriculture and forestry;
- (iii) In collaboration with SSARO and NARS, establish a South Sudan Committee for Release Agricultural Varieties (SSCRAV) to ensure a fair, credible, transparent and accessible system of introducing new varieties into the seed system as required by all users;

- iv) Encourage formation of seed associations and cooperative societies among the private sector, communities including women, other disadvantaged groups and youth; and
- (v) In order to ensure high and uniform standards of practice throughout the nation, MAFC&RD/Directorate shall develop capacity for technical guidance and oversight for State Governments.

**Flagship project for policy no. 10**

South Sudan Committee for Release Agricultural Varieties (SSCRAV)



## 5.0 INSTITUTIONAL AND IMPLEMENTATION FRAMEWORK

### 5.1 LOCAL INSTITUTIONAL ARRANGEMENTS

#### 5.1.1 South Sudan Seed Council

The complexities of the seed industry require a high degree of coordination to enable the large number of stakeholders to play their complementary roles effectively. In order to ensure that the function of coordination is adequately carried out, MAFC&RD will establish the South Sudan Seed Council (SSSC), to be a seed sector oversight body (see Appendix 2). The SSSC shall be established under the Directorate of Agriculture with direct authority of the Undersecretary for Agriculture and shall provide guidance to public sector and other seed industry stakeholders in the conduct of their various roles and responsibilities.

#### 5.1.2 Objectives of SSSC

The objectives of the South Sudan Seed Council is to enhance the coordination and facilitate the growth of seed industry activities in order to ensure rapid, orderly and balanced development in tune with the requirements of agriculture. Further, the council will advise MAFC&RD on all matters relating to seed policy and programmes, and all ensuing legislation, regulations and protocols, as well as seed industry planning and implementation.

#### 5.1.3 Functions of SSSC

Functions of the South Sudan Seed Council will be as follows:

- i. Advise MAFC&RD on seed policy issues as well as on the development and implementation of strategies consistent with South Sudan National Seed Policy;

- ii. Facilitate proper and effective linkages between research and participating agencies in order to enhance their collaboration with each other for the orderly and balanced growth of the seed system;
- iii. Harmonise seed policy and regulations and align with neighbouring countries and international institutions to contribute to national seed system development;
- iv. Ensure proper resourcing and functioning of the South Sudan Board for Seed Testing and Certification and the satisfactory conduct of its activities in seed quality assurance;
- v. Assist MAFC&RD in creating favorable conditions for attracting both domestic and foreign investments in the national seed system and actively promote and support the private sector in variety development, seed multiplication, marketing, import, export and other operations connected with the seed industry;
- vi. Serve as a consultative platform for the seed industry, providing opportunities for participating agencies to articulate their concerns and interests, and to effectively resolve issues for the common good;
- vii. Provide coordination necessary to obtain resource support for development of a national seed programme;
- viii. Act as arbiter in seed industry disputes, as required;
- ix. Undertake, or cause to be undertaken, periodic studies on important issues relating to the seed industry with the aim of obtaining adequate information to guide seed industry development;
- x. Undertake any other duties as may be required by the Undersecretary in the general interest of the seed industry in particular and of agriculture in general;
- xi. Solicit support from development partners to sustain a seed development fund; and
- xii. Establish and maintain a system to collect and disseminate information on a timely basis, in support of seed suppliers and users.



## 5.1.4 Composition of SSSC

The South Sudan Seed Council will meet periodically to discuss the performance of the seed industry; and stakeholder representation will be as follows:

- Representative of the Ministry of Agriculture, Forestry, Cooperatives & Rural Development – Chairperson.
- Representatives of Ministries of Agriculture and Forestry at State levels
- Representative of the South Sudan Board for Seed Testing and Certification.
- Representative of the Department of Agricultural Research.
- Representatives of research stations of each agro-ecological zone in the country.
- Representative of Farmers’ Union.
- Representatives of Farmers’ and Business Cooperatives
- Representative of the Department of Agricultural Extension.
- Representative of the Department of Plant Protection /Plant Quarantine Office.
- Representative of the Ministry of Education Science and Technology.
- Representative of the Ministry of Finance and Economic Planning.
- Representatives of the Ministry of Commerce and Industry.
- Representatives of the Ministry of Investment.
- Representatives of the Ministry of Cooperative and Rural Development.
- Representative of the Universities (Colleges of Agriculture).
- Representative of private sector seed production agencies.
- Representatives of the Ministry of Environment.
- SSSC Secretariat.
- Representative of the South Sudan Chamber of Commerce

## 5.1.5 Voting Rights

All members shall have equal voting rights. The council may invite to meetings, relevant specialists outside the above listed membership, as deemed appropriate. Further, the council may allow certain organizations, such as Financial Institutions, Agro-industries, Farmer Groups, etc., to attend their meetings as observers.

## 5.1.6 South Sudan Committee for Release of Agricultural Varieties (SSCRAV)

The system of variety release will be streamlined by reconstituting the membership of the South Sudan Committee for Release Agricultural Varieties (SSCRAV) in collaboration with Research Institutions to bring it in line with internationally accepted practices. The SSCRAV is to be established as a subcommittee to the South Sudan Seed Council and its membership will be made up of representatives of relevant stakeholders including plant pathologist who will collectively ensure that the process of variety release and deletion is unbiased and fair. The SSCRAV shall be made up of relevant technical members of the SSSC, other relevant experts outside SSSC and designated researchers who may be relevant to specific crops or varieties being considered. The procedures for variety release will be formulated and presented to the Ministry of Agriculture, Forestry, Cooperatives & Rural Development as one of the early acts of the SSSC when inaugurated.

## 5.1.7 Objectives

Ensure a fair, credible, transparent and accessible system of introducing new varieties into the seed system as required by all users.

## 5.1.8 Functions

- i. The SSCRAV will conduct registration of new locally developed crop varieties, assess the distinctness, uniformity and stability of such crop varieties before their release, and adopt procedures to protect such crop varieties from adulteration from foreign crop varieties;
- i. In collaboration with SSARO conduct seed testing and provide secretarial and other administrative and technical support services for both SSSC and SSCRAV;
- ii. Ensure that appropriate new local varieties and hybrids are offered to farmers, they must be tested under farmer conditions. Such testing is a public-service and shall be conducted by MAFC&RD, in accordance with specified procedures adequate to ensure identification of accepted varieties;

- iii. Test results from officially-recognized private sector programs shall be included in the testing requirements for release of new varieties; but varieties/hybrids developed by the private sector may be included but are not required to be included in MAFC&RD trials, and shall be considered solely on their merits;
- iv. Recommend and officially notify varieties and hybrids which qualify and are eligible for Certification. Because improved varieties benefit farmers, a private-sector breeder shall not be charged for including a specified number of materials in test trials; and
- v. Maintain and supply basic seed of improved varieties and hybrids are the responsibility of the developing agency. Within MAFC&RD basic seeds released from the local, regional and international research centers, shall be maintained at MAFC&RD/GOSS regional seed centers which shall be established with adequate staff/facilities/budgets to ensure supply of the required basic seed; and
- vi. Under extenuating circumstances, allocate at cost recovery MAFC&RD/SSARO-produced basic seed to private-sector agencies upon request, in accordance with established requirements and in compliance with a Variety Protection Law to be enacted.

## 5.2 REGIONAL AND INTERNATIONAL COLLABORATION

Success in policy implementation, monitoring and evaluation can be achieved through networking with national, regional and international training institutions. An opportunity to enhance training and capacity development exists through forging strong, strategic and sustainable linkages with various partners. Since the benefits of implementing this policy are expected to be national in scope, states, counties, Payams and Bomas shall be also included in the network (see Annex 1). In carrying out its responsibilities, PIT will network with national, regional and international training institutions on a continuing basis and will incorporate lessons learned from other countries in formulating and implementing training and capacity development interventions.

## 6.0 STRATEGIC PLAN AND ITS IMPLEMENTATION

Implementation of policy requires a strategic plan. The South Sudan Seed Council will develop a Result-based Seed and Planting Materials Development Strategic Plan in collaboration with public and private sectors stakeholders. The Strategic Plans for institutions under MAFC&RD/RSS will be implemented by SSSC in collaboration with NARS and other key stakeholders. However, monitoring and evaluation will be conducted by independent academic consultants, periodically.

There are many challenges affecting implementation of policies. These include human and technical capacity, resources mobilization and political will. As a newly independent country, there is need to consider timeframe on how these critical issues. The following actions are proposed to be taken as priority interventions during the first 24 months after adopting this policy.

Actions	Responsible	Timing
1. Review South Sudan Seed Bill and Regulations		
2. Establish a South Sudan Seed Council (SSSC)	MAFC&RD Executive Senior	2012
3. Establish a South Sudan Committee for Release of Agricultural Varieties (SSCRAV)	MAFC&RD Executive Senior	2012
4. Appointing Policy Implementation Team	Minister	2012
5. Institutional Framework Reviewed	MAFC&RD Executive Senior	2012
6. Strategic Plan	SSSC	2013
7. National, Regional and International Collaboration	SSSC	2013
8. Resource Mobilisation	SSSC	2013
9. Monitoring the Implementation Schedule	SSSC	2013

### 6.1 EFFECTIVE DATE

This National Seed Policy shall come into effect as soon as possible. The tenets of the policy shall have long-term application, and shall continue in force indefinitely, until

specifically modified by law. Any such modifications shall not change the intent or philosophy of this South Sudan National Seed Policy.

### **6.1.1 APPLICABILITY**

All public and private stakeholders in the seed industry shall respect the content and spirit of this seed policy. A legislative proposal and regulations may be introduced in due course to support this seed policy directive. Relevant legal provisions that may be enacted are:

- i. A Unified Seed Law, to give legal backing to the mandated public sector institutions, and establish the legal basis for variety registration as well as seed producer and supplier permitting;
- ii. Variety Protection Law, which will grant legal recognition to the owners of registered varieties; and
- iii. Farmers Rights Law which will give protection to farmers on farm multiplication and use of varieties on their own farms and in the local production area. All three of the above laws preferably shall be included in a single comprehensive legal disposition.

### **6.1.2 RESOURCE MOBILISATION**

Financial resources are a major constraint to training and capacity development policy implementation. Resource mobilisation at the initial stage of implementation is a critical role of SSSC. This includes lobbying, soliciting and project proposal development for submission to the Government and its development partners in support of implementation activities and policy interventions.

### **6.1.3 MONITORING AND EVALUATION**

To keep the South Sudan National Seed Policy current and applicable to changing conditions, the SSSC will from time to time, make recommendations to the MAFC&RD

on relevant issues of importance to the seed industry. The Minister shall consider such recommendations, discuss them with State Ministers of Agriculture and Forestry and other stakeholders, and, in accordance with applicable laws, issue modifications in the South Sudan National Seed Policy to improve its suitability and applicability to current conditions without changing its long-term intent or legitimacy. Plans of action shall be prepared and updated from time to time to serve as guides to both public and private stakeholders in the implementation of actionable components of this policy. The plans of action shall be based on the goals, objectives and strategies outlined in this policy and shall specify the expected outputs and activities expected of the recommended interventions, the time frames, the responsible and/or implementing agencies as well as costs, budgets and other resources. A template for preparing the plans and budgets is shown in Appendix 3. The SSSC will oversee the preparation of the plans of action but all participating agencies will be required to propose the specifics relating to the components for which they are responsible.

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### APPENDIX 1- GLOSSARY

**Seed:** Any grain, plant or part of a plant used for plant propagation in general.

**Quality Seeds:** Are seeds meeting genetic, specific and physiological purity standards, free of any disease and meeting requirements set forth by the seed Law.

**Variety:** A set of plants belonging to the same family that are distinguished from other plants of the same species by morphological, physiological, cytological, chemical traits or any other features that are significant for agriculture, forestry or horticulture which, after (sexual or asexual) multiplication remain with their distinctive traits.

### CATEGORIES OF SEEDS

#### Breeder Seed

The first step in seed production is to produce breeder seed. This is the source of the unique genetic code associated with a given open-pollinated variety (OPV) or hybrid (Poehlman and Sleeper, 1995). The breeder seed is the final product of a breeding programme, and is normally produced under the supervision of the plant breeder. Commercial seed producers rely on a breeder's final product and purchase the breeder seed to start seed production. Breeder seed differs from the final product, whether it is OPV or hybrid. In the case of OPV, the multiple copies of the genetic code contained in the breeder seed are identical to the original breeder seed; in the case of hybrids, the copies represent specific combinations of genetic codes contained in the seed parents (inbred lines, hybrids, or OPVs). Although it is the ultimate source of the unique genetic code needed to produce a particular OPV or hybrid, breeder seed is rarely available in sufficient quantities to serve as an input into commercial seed production.

The breeder seed of OPVs must be clean, genetically pure and "true to type". With careful management, breeder seed of OPVs can be reproduced for several years without significant reduction in genetic purity. The genetic purity is ensured by planting seed plots in isolation to avoid contamination, rogueing (removing) plants that do not conform to the morphological traits of the variety, and selecting for harvest only plants that are true-to-type. The breeder seed for producing hybrids consists of clean, genetically pure seed of the parents. In the case of single-cross hybrids, the parents are inbred lines; in the case of double-cross hybrids, three-way-cross hybrids, and varietal cross (nonconventional) hybrids, the parents are inbred lines, single-cross hybrids or

OPVs. The breeder seed of the parents can be produced from national breeding programmes, international agricultural research centres or university breeding programmes, purchased from private seed companies.

### **Foundation Seed**

Foundation seed (parent seed stock) is produced by multiplying (bulking up) breeder seed. In the case of OPVs, breeder seed, foundation seed and commercial seed/certified seed are genetically identical, although they differ in their level of genetic purity. Little difference is generally found in the way the three are produced, except that seed multiplication takes place on a progressively larger scale. In the case of some hybrids, production of foundation seed involves an additional step after the initial supply of breeder seed is acquired: producing single-cross parent seed. The seed increase is normally done under controlled conditions to maintain genetic purity at maximum levels. Parent inbred lines should be multiplied in well isolated blocks/nurseries (for cross-pollinated crops an isolation distance of 200–300 m is desirable). Single-cross hybrids to be used as parents should be produced in isolated blocks.

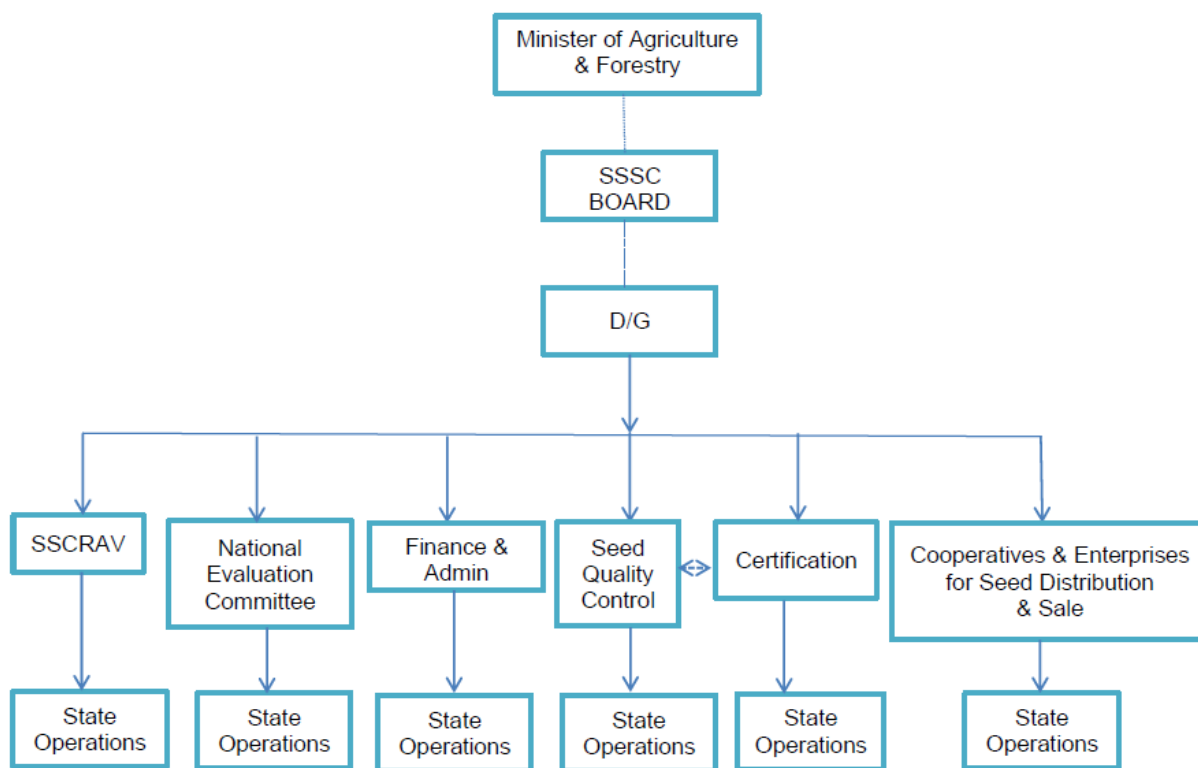
**Basic Seed:** Seed from the multiplication of Foundation Seeds according to the rules of variety selection. Their production shall meet the standards set up by the seed certification board and shall enable better maintenance of genetic purity and identity.

### **Certified Seed**

Certified seed originates from the multiplication of basic seeds whose quality has been approved through official certification process. Certified seeds destined for distribution to farmers. It is normally managed in a special way (inspection, seed testing) so that it conforms to the standards of genetic purity established and enforced by the official seed certification authority. Growing a commercial seed crop is similar to growing a crop of ordinary market grain. The main difference is that, with the seed crop, a high level of management is vital for ensuring seed is healthy, viable and genetically uniform.

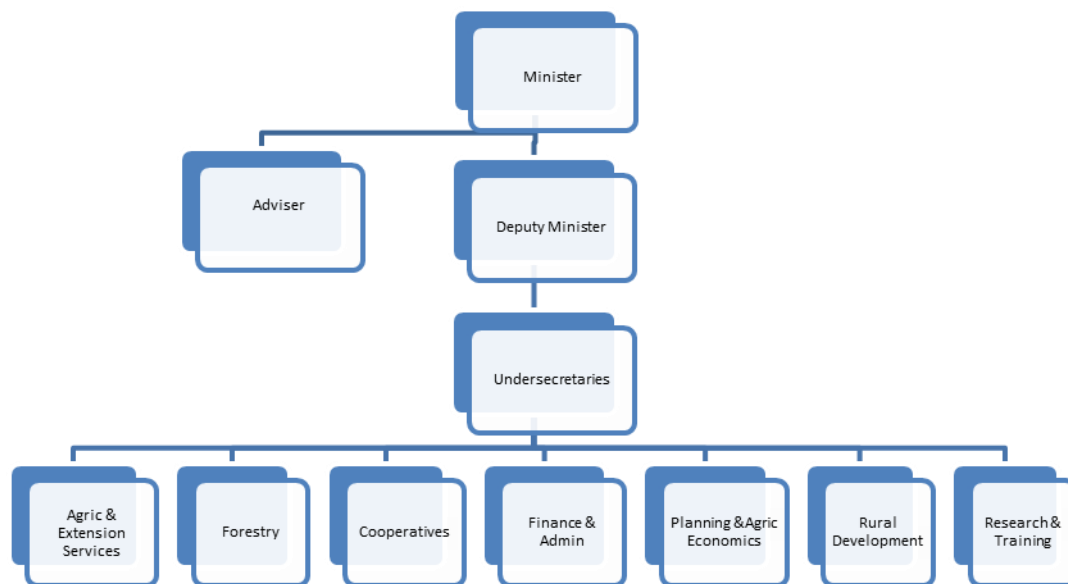
**Quality Declared Seed:** Seeds declared by the producers as being in conformity with technical and quality standards governing seed production.

### SOUTH SUDAN SEED COUNCIL (SSSC) ORGANIZATION CHART



**Figure 2: Proposed Organogram for the South Sudan Seed Council (SSSC)**

## Appendix 2- Organogram of SSSC and Proposed MAFC&RD



**Proposed Organogram for the Ministry of Agriculture, Forestry, Cooperatives & Rural Development**

## Appendix 3-Timeframe and Budget

### TIMEFRAME AND BUDGET FOR THE STRATEGY

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
1. Output 1: South Sudan Seed Council will develop and recommend to MAFC&RD for approval guidelines regarding seed production in order to achieve necessary cohesion among stakeholders.															
1.1 Maintenance and supply of breeder seed of improved varieties are the responsibility of the agency which develops the variety/hybrid. <b>Activities:</b>															
1.1.1															
1.1.2															
1.1.3															
1.1.4															
1.2 Ensuring adequate quantities of foundation seed to start off the multiplication process is essential. <b>Activities:</b>															
1.2.1															
1.2.2															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
1.2.3															
1.2.4															
1.3 MAFC&RD in collaboration with SSARO shall obtain resources to produce and supply foundation seed as a public service for both public and private sector varieties;															
<b>Activities:</b>															
1.3.1															
1.3.2															
1.3.3															
1.3.4															
1.4 Foundation and other improved seed varieties shall be made available at cost recovery to qualified private-sector agencies upon request, as and when it is available.															
<b>Activities:</b>															
1.4.1															
1.4.2															
1.4.3															
1.4.4															
1.5 MAFC&RD shall ensure that its agencies do not generate															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
competition to private-sector operations. <b>Activities:</b>															
1.5.1															
1.5.2															
1.5.3															
1.5.4															
<b>2. Output 2: ensure that rapid, safe and efficient conversion of harvested seeds into clean and storable material, possessing the required quality attributes is achieved.</b>															
2.1 All relevant agencies in both formal and informal seed sectors will be encouraged and assisted to develop and maintain their own up to date and efficient seed conditioning facilities. <b>Activities:</b>															
2.1.1															
2.1.2															
2.1.3															
2.1.4															
2.2 The Public and private sector seed agencies shall be encouraged to provide conditioning services to															



## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
small or new seed operations on a fees basis, to assist in developing the seed industry. <b>Activities:</b>															
2.2.1															
2.2.2															
2.2.3															
2.2.4															
<b>3. Output 3: To ensure availability of quality seed to farmers.</b>															
3.1 SSARO on advice of the South Sudan Committee of Registration, Release and protection of Agricultural varieties. <b>Activities:</b>															
3.1.1															
3.1.2															
3.1.3															
3.1.4															
3.2 Provide uniqueness of a nominated variety. <b>Activities:</b>															
3.2.1															
3.2.2															
3.2.3															
3.2.4															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
3.3 MAFC&RD will establish a seed testing laboratories. All newly introduced crop varieties shall undergo at least one season of multi location evaluation trial in isolated plots. <b>Activities:</b>															
3.3.1															
3.3.2															
3.3.3															
3.3.4															
<b>4. Output 4: To ensure availability of quality seeds to farmers as an important contributor to improved agricultural productivity.</b>															
4.1 South Sudan Board for Seed Testing will ensure seed quality as public service. <b>Activities:</b>															
4.1.1															
4.1.2															
4.1.3															
4.1.4															
4.2 Seed activities shall focus on providing the highest quality seeds.															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
<b>Activities:</b>															
4.2.1															
4.2.2															
4.2.3															
4.2.4															
4.3 To assure quality, every seed producer shall maintain its own internal quality control. In addition, MAFC&RD shall maintain internal and external quality control operations required to protect both seed suppliers and farmers.															
<b>Activities:</b>															
4.3.1															
4.3.2															
4.3.3															
4.3.4															
4.3 Standards for different categories of seed production fields and seed lots shall be established.															
<b>Activities:</b>															
4.4.1															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
4.4.2															
4.4.3															
4.4.4															
4.4 “Truth in Labeling” shall be applied to ensure that all seeds meet minimum quality standards and are traceable throughout the transaction chain. <b>Activities:</b>															
4.5.1															
4.5.2															
4.5.3															
4.5.4															
4.5 All participating organizations will be encouraged to assure seed quality through their own internal test standards rather than on external quality checks. <b>Activities:</b>															
4.6.1															
4.6.2															
4.6.3															
4.6.4															
4.6 South Sudan will contribute to															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
support efforts to harmonize seed standards with international and regional organizations; <b>Activities:</b>															
4.7.1															
4.7.2															
4.7.3															
4.7.4															
4.7 Accurate seed testing is required for sustainable seed supply, for development of the private seed industry, and to facilitate seed export and import activities. <b>Activities:</b>															
4.8.1															
4.8.2															
4.8.3															
4.8.4															
4.8 Government shall establish a network of official seed testing laboratories located so as to permit samples to be delivered within 24 hours after sampling. <b>Activities:</b>															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
4.9.1															
4.9.2															
4.9.3															
4.9.4															
4.9 To ensure standardized procedures and repeatable test results, a national referee seed testing and analyst training program (based on international standards). <b>Activities:</b>															
4.10.1															
4.10.2															
4.10.3															
4.10.4															
4.10 To help develop a quality-oriented seed industry and expand availability of high quality seed, a certification procedure shall be developed, and seed suppliers will be encouraged to participate. <b>Activities:</b>															
4.11.1															
4.11.2															
4.11.3															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 - Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
4.11.4															
4.11 The SSSC will ensure the preparation of a unified seed law which will draw on international standards and successful legislation of other countries. <b>Activities:</b>															
4.12.1															
4.12.2															
4.12.3															
4.12.4															
<b>5. Output 5: To recommend to MAFC&amp;RD/RSS the legal basis for variety ownership.</b>															
5.1 All varieties that are developed with national resources shall be considered state property with reservation of breeder rights. <b>Activities:</b>															
5.1.1															
5.1.2															
5.1.3															
5.1.4															
5.2 The breeder shall benefit financially from his investment, while serving the needs of															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
farmers. <b>Activities:</b>															
5.2.1															
5.2.2															
5.2.3															
5.2.4															
6. Output 6: To ensure the preservation of local genetic plant resources as a source of research-based improved and quality seed to satisfy consumer tasted and preferences.															
6.1 To make sure that farmers are adequately compensated for their efforts. <b>Activities:</b>															
6.1.1															
6.1.2															
6.1.3															
6.1.4															
6.2 Rehabilitate and strengthen informal seed system for food and cash crop. <b>Activities:</b>															
6.2.1															
6.2.2															



## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
6.2.3															
6.2.4															
6.3 Encourage farmers o maintain their right to use, exchange, share or sell their farm saved see between themselves. <b>Activities:</b>															
6.3.1															
6.3.2															
6.3.3															
6.3.4															
<b>7. Output 7: To establish Government position through SSSC on the issue of genetically modified organism technology towards developing programmes.</b>															
7.1 Worldwide debate over GMO technology currently is under way. <b>Activities:</b>															
7.1.1															
7.1.2															
7.1.3															
7.1.4															
7.2 MAFC&RD shall develop a GMO															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
policy and in due course proposing a bio-safety law to ensure compliance with the Cartagena Protocol on Bio-safety of the Convention on Biological Diversity.															
<b>Activities:</b>															
7.2.1															
7.2.2															
7.2.3															
7.2.4															
<b>8. Output 8: ensure the continuous availability, accessibility and affordability of reasonable quantities of quality seeds.</b>															
8.1 The national seed reserve shall be kept at government expense, but can be contracted to private sector enterprises.															
<b>Activities:</b>															
8.1.1															
8.1.2															
8.1.3															
8.1.4															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
8.2 The cost of operating the national seed reserve will be minimized through the institution of a revolving fund. <b>Activities:</b>															
8.2.1															
8.2.2															
8.2.3															
8.2.4															
<b>9. Output 9: To encourage and promote widespread commercial distribution of seed varieties to all areas.</b>															
9.1 MAFC&RD will assist the private sector in developing seed distribution channels. <b>Activities:</b>															
9.1.1															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
9.1.2															
9.1.3															
9.1.4															
9.2 Promote and support the establishment of community-based, market oriented seed producer groups including women, for them to get a significant market share for both food and semi-commercial crops.															
<b>Activities:</b>															
9.2.1															
9.2.2															
9.2.3															
9.2.3															
9.3 Supply of seed needs, both multinational and wholly-local seed firms, and firms which provide services and products supporting seed supply, shall be encouraged and supported.															
<b>Activities:</b>															
9.3.1															
9.3.2															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
9.3.3															
9.3.4															
9.4 Stockists will be recruited from among agricultural input suppliers.															
<b>Activities:</b>															
9.4.1															
9.4.2															
9.4.3															
9.4.4															
9.5 SSSC and MAFC&RD to assist in seed demand surveys and provide market intelligence to facilitate operational decisions of seed stockists.															
<b>Activities:</b>															
9.5.1															
9.5.2															
9.5.3															
9.5.4															
9.6 The quality control agency will monitor seed quality and ensure safe storage.															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
<b>Activities:</b>															
9.6.1															
9.6.2															
9.6.3															
9.6.4															
9.7 Encourage financial institution to give priority consideration to the credit needs of emerging seed enterprises, dealers and stockists.															
<b>Activities:</b>															
9.7.1															
9.7.2															
9.7.3															
9.7.4															
9.8 Support private sector marketing effort.															
<b>Activities:</b>															
9.8.1															
9.8.2															
9.8.3															
9.8.4															
9.9 MAFC&RD shall seek to support and coordinate marketing efforts in the private sector.															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
<b>Activities:</b>															
9.9.1															
9.9.2															
9.9.3															
9.9.4															
9.10 Encourage Seed Company to register and form South Sudan Seed Network.															
<b>Activities:</b>															
9.10.1															
9.10.2															
9.10.3															
9.10.4															
<b>10. Output 10: To ensure seed pricing will be based on market supply and demand.</b>															
10.1 Determination of the selling price shall be the responsibility of the agency selling seed.															
<b>Activities:</b>															
10.1.1															
10.1.2															
10.1.3															
10.1.4															
10.2 MAFC&RD shall not subsidize the selling or purchase price of															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
seed. <b>Activities:</b>															
10.2.1															
10.2.2															
10.2.3															
10.2.4															
<b>11. Output 11: Development of Financial and Micro-financial Institution.</b>															
11.1 Public sector to promote crop production credit for farmers. <b>Activities:</b>															
11.1.1															
11.1.2															
11.1.3															
11.1.4															
11.2 Credit will be encouraged through relevant institutions <b>Activities:</b>															
11.2.1															
11.2.2															
11.2.3															
11.2.4															
11.3 Facilitate and strengthen access and linkage to credit and financial services.															



## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
<b>Activities:</b>															
11.3.1															
11.3.2															
11.3.3															
11.3.4															
<b>12. Output 12: Support seed import and export arrangement.</b>															
<b>12.1</b> All public sector agencies will promote of any public or private-sector agency requesting import clearance for seed, within procedures specified in appropriate regulations established under this policy.															
<b>Activities:</b>															
12.1.1															
12.1.2															
12.1.3															
12.1.4															
<b>12.2</b> All imported seeds, in clearly labeled and sealed packages, indicating crop variety, the producer, source of parent materials, country of origin and expiry date not less than five month on arrival in South Sudan, shall be accompanied by															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 - Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
original copy of phytosanitary certificates, and seeds inspection / germination test certificates. <b>Activities:</b>															
12.2.1															
12.2.2															
12.2.3															
12.2.4															
12.3 All imported seeds will be kept in custom bonded quarantine stores. <b>Activities:</b>															
12.3.1															
12.3.2															
12.3.4															
12.3.4															
12.4 Seed inspectors will enter any seeds store, during working hours and take samples for laboratory analysis. <b>Activities:</b>															
12.4.1															
12.4.2															
12.4.3															
12.4.4															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 - Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
12.5 Only seeds that meet the prescribed or FAO standards will be released from the customs bonded quarantine stores while sub-standard ones will be destroyed at the expense of the importer. <b>Activities:</b>															
12.5.1															
12.5.2															
12.5.3															
12.5.4															
12.6 Seed inspection will enter any seeds store, during working hour and take samples for laboratory analysis. <b>Activities:</b>															
12.6.1															
12.6.2															
12.6.3															
12.6.4															
12.7 Produce high quality seed of special crops. <b>Activities:</b>															
12.7.1															
12.7.2															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 - Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
12.7.3															
12.7.4															
12.8 Country Agriculture Inspection will keep representative seed samples for every seed lot received. <b>Activities:</b>															
12.8.1															
12.8.2															
12.8.3															
12.8.4															
12.9 It is most efficient to import certain equipment and supplies for seed operations. <b>Activities:</b>															
12.9.1															
12.9.2															
12.9.3															
12.9.4															
12.10 GOSS shall encourage domestic manufacture and establishment of joint venture and licensing agreements. <b>Activities:</b>															
12.10.1															
12.10.2															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 - Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
12.10.3															
12.10.4															
12.11 Provide incentives to the private sector such as tax exemptions, import and export privileges. <b>Activities:</b>															
12.11.1															
12.11.2															
12.11.3															
12.11.4															
12.12 All possible MAFC&RD assistance shall be provided to any agency which requests import clearance of such seed. <b>Activities:</b>															
12.12.1															
12.12.2															
12.12.3															
12.12.4															
<b>13. Output 13: Improve Institutional Capacity in the Seed Sector.</b>															
13.1 Review Seed Legislation and Regulations and MAFC&RD organization structure. <b>Activities:</b>															
13.1.1															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
13.1.2															
13.1.3															
13.1.4															
<b>13.2</b> Establish a South Sudan Seed Council to enhance coordination and facilitate the growth of seed industry activities. <b>Activities:</b>															
13.2.1															
13.2.2															
13.2.3															
13.2.4															
<b>13.3</b> Establish a South Sudan Committee for Release Agricultural Varieties (SSCRAV). <b>Activities:</b>															
13.3.1															
13.3.2															
13.3.3															
13.3.4															
<b>13.4</b> Encourage formation of seed associations and cooperative societies among the private sector, communities including women.															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
<b>Activities:</b>															
13.4.1															
13.4.2															
13.4.3															
13.4.4															
13.5 To ensure high and uniform standards of practice throughout.															
<b>Activities:</b>															
13.5.1															
13.5.2															
13.5.3															
13.5.4															
<b>14. Output 14: Align South Sudan Seed Policy, legislation and regulations with neighbouring countries and international institutions.</b>															
14.1 Ensure efficient operation and minimize use of resources.															
<b>Activities:</b>															
14.1.1															
14.1.2															
14.1.3															
14.1.4															

## Appendix 3-Timeframe and Budget

Output and Activities	Budget	PHASE I						PHASE II							
	US\$	2012		2013				2014		2015		2016		2017	
		Q1-	Q2	Q1	Q2	Q3	Q4	Q1 – Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q3-Q4	Q1-Q2	Q2-Q4
14.2 MAFC&RD will cooperate with International organization as International Seed Testing Association. <b>Activities:</b>															
14.2.1															
14.2.2															
14.2.3															
14.2.4															
14.3 South Sudan will take steps to attain ISTA membership in order to realize the full benefit. <b>Activities:</b>															
14.3.1															
14.3.2															
14.3.3															
14.3.4															
14.4 The harmonized seeds regulations for East Africa developed by ASARECA/ECAPA Activities															
14.4.1															
14.4.2															
14.4.3															
14.4.4															



