



**KENYA COUNTRY REPORT
MINISTRY OF AGRICULTURE, LIVESTOCK AND FISHERIES
AND IRRIGATION**

**STATUS REPORT ON KENYA COTTON SECTOR
79TH ICAC PLENARY VIRTUAL MEETING 6TH – 9TH DECEMBER,
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1.0 EXECUTIVE SUMMARY

Due to limitations placed on the country by Covid-19 that came with budgetary constraints, the cotton sub-sector registered minimum growth in 2020 and 2021 seasons. Kenya declared its first case of COVID-19 in March 2020. Subsequently the Government imposed a number of restrictions that led to severe economic impacts especially to the rural farming communities including women and children. The situation resulted in major disruptions in food supply and demand, and shrinking of markets resulting from closure of major market centres in rural areas including institutional markets such as schools, hotels and local restaurants. There has been shrinking of also falling purchasing power of the population.

For cotton the disruptions of COVID-19 included limited access to inputs due to restriction of movement of value chain actors and labour especially machinery for land preparation. It made cost of inputs to escalate beyond affordability of many rural cotton farmers. Restricted movement also affected extension service delivery which impacted negatively on cotton productivity. During harvest there was reduced access to markets as key markets are ginneries situated outside main production areas. There were delays in collection, transportation and delivery of cotton to the ginneries. The cost of these delays was borne by farmers thus reducing incomes from cotton sales. As a result, the uptake on cotton planting in the following seasons of September /October 2020, March /April 2021 and September/October 2021 reduced tremendously resulting in low volumes of lint. The effects were experienced in the neighbouring countries also and have continued to date. This has resulted in rising cost of lint and today Kenya is importing lint from neighbouring countries at F.O.B price per Ton of USD 2500.

In general since market liberalization in 1991, the cotton-to-garment value chain in Kenya has lacked the structure and institutional dynamics required to compete globally or even with regional producers, and is far from realizing its real potential. Some of the key factors responsible for the sector's poor performance include: low quality seeds, periodic drought, volatile producer prices, high cost of pesticides, the collapse of co-operative societies, ginneries and former state-owned textile firms, and competition from synthetic fiber substitutes and cheap imports of new and second-hand clothes (Mitumba). The lack of certified seed has culminated to low productivity of the cotton crop. Some of the policy issues which impact on cotton production ecosystem in Kenya include lack of access to subsidies and credit for inputs and a liberalized *price-guiding mechanism* for harvested seed cotton.

Currently the country is producing an average of 2,000MT – 4,000MT lint annually, (10,000 - 20,000) bales against an actual consumption of 12,000MT lint (70,000 bales). Despite the sector's production and activities decline, cotton is still considered one of the few cash crops with real potential for increasing employment opportunities and food security through income generation in the Arid and Semi-Arid Lands (ASALs) of Kenya. The country is endowed with a well-developed textile industry that requires a constant supply of cotton lint. The textile industry includes; integrated textile mills and large-scale garment manufacturers many of which are operating below capacity with some closed down. However, the industry has significant potential to expand if cotton production and market conditions improve. The country's annual demand **potential** for cotton lint is estimated at over 200,000 bales. Therefore, the industry continues to import various material inputs mainly from the neighboring countries of Uganda and Tanzania for lint and also from the Far East for (Asia) for inputs in garments manufacture.

Production of cotton is undertaken in 50% of the 47 the counties in the country. There are 4 operational privately owned ginneries. In addition to the textile industry, seed processing stands out as a downstream industry for the sector, offering several potential business opportunities with respect to oil, animal feed and energy production. Both oil and animal feed production represent important market outlets for domestic cottonseed that can be exploited through value addition to improve earnings for farmers.

1.0 INTRODUCTION

Cotton is an industrial cash crop grown by small scale farmers in Kenya largely under rain-fed conditions. It is considered a strategic crop for communities in the ASALs (marginal areas). These areas have low potential for arable farming and the population living in these areas is resource poor. Cotton, being drought tolerant is grown in 24 counties which fall under arid and semi-arid areas. The cotton sub-sector has potential to employ 10 million people directly or indirectly, contribute to farmers' income for buying food and other family needs thus reducing poverty. The sub-sector provides raw material for local industries; *in textile, edible oil and livestock feed* as well as export markets to earn the country the much-needed foreign exchange.

To transform Kenya's agricultural sector, the Government formulated the Agricultural Sector Transformation and Growth Strategy (ASTGS); 2019-2029. Among the areas the strategy is

anchored on is the belief that food security requires *a vibrant, commercial and modern agricultural sector* that sustainably supports Kenya's economic development and national priorities. Increasing cotton production as envisaged in the ASTGS and under the Big Four Agenda (B4A). Cotton will enable farmers to generate complementary and directly usable income that can be spent not only on food, but also on health care and school fees for children. Furthermore, increased cotton production will spur growth in the upper parts of the value chain and increase employment opportunities.

The B4A unveiled by the President in 2017 gave direction on the development of the country for a period of five years [2018-2022]. The strategy identified four pillars namely; affordable and decent housing, affordable healthcare, food and nutritional security, and manufacturing as the four key areas critical in raising the living standards of Kenyans. They pillars will propel the country into becoming an upper middle-income economy by 2030. Under the agenda, *cotton-to-garment chain* has been identified as a driver to grow manufacturing sector from 9% to 15% of the GDP.

The government plans to support the textiles manufacturing industry through increased cotton production and productivity by introduction of new high-yielding cotton varieties and improving local certified seeds. Adoption of hybrids and other superior varieties from key sources such as; *Turkey, Israel, India and Pakistan among other sources* is also under consideration. The government will provide incentives to minimize barriers in the value chain that prevent *private sector capital* flow to enterprise and to cotton farmers. Targeted areas for cotton investment include; *large scale cotton production, modern ginneries and textile manufacturing plants*. In addition, governance of the *existing and new cotton co-operatives* will be enhanced to facilitate resource mobilization at the farm level.

2.0 COTTON PRODUCTION

There are approximately 40,000 smallholder farmers form the production base of the cotton industry in Kenya. This is a substantial decrease from over 200,000 when the industry peaked in the mid-1980s. The average landholdings are less than 1 Ha and occasionally the crop is intercropped with food crops. Despite the relatively low proportion area devoted to cotton by individual farmers, some farmers still earn over 60% of their incomes from the crop. Though in the past (*this has ceased from 2020 season*) all cotton farmers received targeted free seeds from

the government, they also continue to obtain inputs from Agro-input dealers and occasionally from their local ginneries at high costs. Cotton is 100% harvested manually and roughly sorted for quality before being sold to ginneries and agents.

After harvest, cotton is sold to a local ginnery that separate seed from fiber to produce cotton lint. The majority of ginneries purchase seed cotton directly from the farmers, while roughly 30% of seed cotton is sold to agents before being sold finally to ginneries. Ginneries are the key actors between producers and manufacturers, and their output of cotton lint competes with imports sold to the spinners by international cotton merchants. The local supply of seed cotton is not enough to meet ginning capacity. Before sub-sector liberalization, over 90% of Kenya's ginneries were owned by farmer cooperatives who also marketed cotton for farmers. However, most Cooperatives ceased operations after the sub-sector downturn when farmers transitioned away from cotton cultivation.

About 10% of ginned cottonseed is used for replanting as recycled seed, and the remainder is crushed by oilseed processors to make seed cake for animal feed and edible oil. Kenya has high domestic demand for vegetable oil and vegetable oil processing capacity has grown to more than 20 millers and refineries nationwide. However, in the recent past the processors/millers are on decline in favor of refineries. The downstream actors in the textile value chain are mostly small and micro clothing manufacturers. There are 22 export oriented garment manufacturing foreign firms. The main market for these companies is the US with 70% of these apparel companies selling over 80% of their products to this market.

2.2 Trends

Cotton production in the country declined from a peak of 13,000 MT (70,000 bales) in 1986 to an average of 2,000MT (10,000 bales) in the last 2 years. In 2021 annual lint consumption by the textile mills is estimated at 8,000MT (41,200 bales) while the demand potential to meet our entire national requirements stands at about 26,000MT (140,000 bales). The country has a potential to produce up to 37,000MT (200,000 bales) of lint annually from 385,000 ha of arable land that is suitable for cotton growing. However, only about 20,000ha is currently being utilized for this purpose by about 40,000 farmers. There are two commercial cotton varieties in the country, namely; *HART 89M* and *KSA 81M* with a potential yield of 2,500kg and 2,000kg per hectare respectively grown under rain-fed conditions. However, growers only realize an average

yield of 572kg/ha. Under irrigated conditions, farmers produce an average of 1500kg/ha against a potential of 3500kg/ha.

The low yields are as a result of a myriad of constraints which have contributed to a high cost of production among them being high input cost and poor farming practices which include; poor quality seed, low application of fertilizers, and pesticides, poor extension services, poor processing and marketing services and inadequate market organization and credit systems. The national target is to increase production from the current 2,000MT (10,000 bales) to 21,000MT (113,500 bales) by the year 2025. This objective will be achieved by increasing acreage from the current 20,000Ha to 80,000 Ha in the same period. The seeds will also be improved from the local conventional fuzzy seeds to superior delinted cotton varieties including hybrids and certified local seeds.

Table 1: The production trend for the last six years is summarized in the table below.

| YEAR | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Area (Ha) | 28,627 | 28,700 | 20,717 | 13,432 | 18,000 | 9,837 |
| Yield (Kgs/ha) | 650 | 550 | 570 | 400 | 170 | 350 |
| Seed cotton production (MT) | 15,726 | 15,800 | 11,850 | 5,321 | 3,015 | 3,389 |
| Seed Cotton price (USD Cents/kg) | 42 | 42 | 46 | 46 | 52 | 48 |
| Value of Seed Cotton (Ksh. Million) | 660 | 664 | 545 | 245 | 157 | 172 |
| Lint cotton (MT) | 5,200 | 5300 | 4,000 | 2,000 | 1,000 | 1,100 |
| Price of lint (USD /Kg) | 1.42 | 1.42 | 1.64 | 1.64 | 1.90 | 1.80 |

Source; Fibre Directorate, AFA

2.3 Cost of Production

The cost of cotton production in Kenya is comparatively high due to low productivity. Average yields are below those achieved by other producers, mostly due to; *poor seeds, reliance on rain-fed farming, high exposure to pests, inadequate financial resources and poor management practices*. Between 2006 and 2018, lint yields in Kenya averaged 196kgs/Ha. Kenyan farmers lack the requisite domestic support systems to make them access inputs and improve productivity in order to lower production cost per unit and enhance farm gate earnings.

2.4 Cotton Sub-Sector Main Challenges and Issues

The cotton-to-garment value chain was once a key contributor to Kenya's rural livelihoods and foreign exchange earnings. However, since liberalization in 1990s, cotton production has suffered in terms of production and productivity. Domestic cotton seed and lint production is well below demand for seed-oil and textile-apparel industries. Though in the past the government has included the cotton sub-sector in a number of its strategic growth plans, targeted support initiatives have been lacking or are not properly coordinated.

The following are key issues and challenges in the sub-sector: -

- a) **Lack of superior cotton seeds.** There is low productivity (572kgs/Ha.) due to the use of local recycled fuzzy cotton seeds. The returns to farmers are low and the cotton produced is uncompetitive against imports from neighboring countries.
- b) **Low prioritization of cotton crop development in County resource allocation.** Most of the cotton growing counties have not included the cotton in their County Integrated Development Programs (CIDPs). In this regard, the plan and strategy to develop cotton is lacking.
- c) **Lack of funding for research to produce superior cotton seeds.** KALRO is inadequate in both structural, equipment and funding capacity for Research and Development of superior Seeds (Bt cotton seeds, hybrids and certified local seeds). The institution lacks modern equipment in cotton seed research and production.
- d) **The availability of superior seeds is currently limited to few International suppliers.** The current status of the industry is not attractive to private sector investment and competition in the supply of superior seeds. This makes the country to depend on expensive and often inefficient import supply markets.
- e) **Lack of extension services at the Counties.** Extension service is a critical missing link in the cotton production in all the cotton producing counties. Absence of quality extension services for farmers is a major hindrance in achieving the desired cotton production, productivity and quality.
- f) **Collapse of Cotton Ginneries.** There is limited ginning capacity with only four operational private ginneries across the 24 cotton growing counties. This severely affects the processing and marketing ecosystem thus limiting the sub- sector's capacity to grow.

- g) **The diversified and scattered nature of cotton growing counties and growers.** Cotton is grown by smallholder farmers on farms of less than one (1) Ha which are scattered over vast areas in all cotton producing counties. This denies the sector essential economies of scale and efficiency.
- h) **Weak aggregation system for economies of scale.** Farmers lack the capacity to aggregate their produce as well as acquire inputs in bulk. This denies the farmers the bargaining power in the marketplace and increases their cost of production.
- i) **High cost of production for cotton in Kenya.** Cotton is a resource-intensive cash crop. In Kenya there is low application of inputs; fertilizer and pesticides despite having low soil fertility, poor quality seeds and extension service system. This leads to low yields thus increasing the unit cost of production hence making Kenyan cotton uncompetitive in the region.
- j) **There are inadequate value addition facilities.** The existing ginneries are not integrated for by-products processing (value addition). This lowers the earnings to the ginners and consequently to the grower.
- k) **Lack of empathy in Contract farming in the cotton value chain.** Ginners and Millers are not willing to enter into contract farming with growers because of price uncertainty and quality assurance from growers.

3.0 Cotton Sub-Sector Revival Plan

The current legal and regulatory framework is inadequate for revitalization and revival of the industry. It does not provide the needed environment for cotton sector revitalization process hence the need for a revival plan. The following are the general objectives of the cotton revival plan: -

- Creating a cotton sector that produces high quality competitively priced cotton to support the local textile industry while reducing dependency on imported cotton;
- Improving quality, affordability and availability of locally produced superior cotton seeds by supporting local research, and also through commercialization of local production in partnerships with seed technology firms;

- Encouraging County Governments to play their full roles in supporting cotton farmers through expert crop husbandry and effectively managed farmers cooperatives and Unions, while ensuring availability of efficient ginning capacity.

The guiding policy of the plan is to support cotton growing county governments to develop a high productivity modern cotton sub-sector through the following strategic interventions;

- Clustering counties into viable production, processing and marketing units;
- Availing high quality cotton seeds;
- Establishing adequate ginning capacity;
- Strengthening of farmer organizations/Co-operatives; and
- Enhancing cotton extension services and research.

To achieve this, the country has drafted a *legal and regulatory framework* for cabinet discussion and already the Crops (Fibre Crops) Regulations, 2020 are being implemented to facilitate creation of an enabling environment for cotton development. The Plan proposes the following policy and other actions by both the national and county governments for early revival of the cotton sub-sector within the period 2021-2025: -

- a) For the purposes of cotton value chain synergies and strategic resource planning, cotton growing counties are clustered as follows: -
 - **Western** (Busia, Siaya & Bungoma);
 - **Nyanza** (Kisumu, Homa Bay & Migori);
 - **North Rift** (Elgeyo/Marakwet, Baringo, West Pokot & Turkana);
 - **South Coast** (Kwale, Taita Taveta & Kilifi);
 - **North Coast** (T/River & Lamu);
 - **Lower Eastern** (Kitui, Makueni & Machakos);
 - **Upper Eastern** (Muranga, Embu, Kirinyaga & T/Nithi); and
 - **Upper Upper Eastern** (Marsabit, Isiolo, Meru & Laikipia).
- b) **With the covid - 19, implement a one-off stimulus of supply of superior cotton seeds by the government from approved sources**, to be distributed to farmers in selected cotton growing counties in the period 2020-22. Some 16.3 MT of Bt. hybrids were planted under regulated demonstration trials covering 10,000 acres in Eastern Region in September/ October 2020 season.

- c) **Establish local capacity for Research and Development of superior cotton seeds.** Kenya Agricultural and Livestock Research Organization (KALRO) will be adequately funded to upgrade their capacity to locally produce superior quality cotton seeds. KALRO will collaborate with other relevant research institutions and international commercial seed merchants for the acquisition and transfer of seed technologies. This will enable the country to develop security of superior seeds supply by reducing reliance on imports. Funding for local seed development by KALRO will come from levies charged by the new Fiber Crops Authority, and any taxes levied on seed imports.
- d) **Create a competitive market for the supply of superior seeds.** This will ensure the availability of superior quality seeds subject to regulatory approvals and farmer preferences.
- e) **Include cotton crop development in County Integrated Development Plans (CIDPs).** Agriculture is a devolved function to county governments. Counties with potential for cotton growing to prioritize the crop in comprehensively resourced cotton development programs that will be included in their CIDPs.
- f) **Improve extension services at the Counties.** Curriculum will be **developed** to train extension service providers in partnership with county governments and other relevant training institutions to support farmers in respect to cotton crop husbandry.
- g) **Establish sufficient modern ginning capacity.** The government recommends establishment of an initial 6 ginneries in identified clusters supported by both the private sector, national and county governments to spur cotton sector growth. The factories are to be established in; *Kwale, Lamu, Embu, Meru, Homa Bay, and Bungoma* counties. The proposed ownership and management structure is a joint venture between private sector, county governments and farmer co-op unions.
- h) **Strengthen farmer cooperatives for product and input aggregation.** In partnership with County Governments, farmer cooperatives will be strengthened for product and input aggregation to improve economies of scale. This will also create a conducive ecosystem for production, processing and marketing through the co-operative business model to improve farmers' earnings.

- i) **Enforce Contract farming system in the cotton value chain.** It is recommended that the new regulations under the Fibre Crops Authority Bill will enforce contract farming between Ginners, Millers and cotton growers to build business relationships for sustainable cotton production.
- j) **Support Farmers to improve cotton yields.** Through county governments and co-operatives farmers to be assisted with the correct crop husbandry and reasonable inputs costs including credit. This will permit increased yields and lower unit costs of production.
- k) **Integrate ginning factories for by-products value addition.** Secondary by-products such as cotton seed oil, animal seed cake and fuel processing to be encouraged to increase economic value and earnings to ginners and cotton farmers.
- l) **Fast-track passing of the Fibre Crops Bill 2021.** The revival of the cotton sub-sector will greatly depend on how fast the bill and the envisioned regulations are fast-tracked. The bill will establish an independent legal and regulatory framework that will allow efficient development and promotion of the industry, while providing an effective environment that reassures private investors.
- m) **Establish a Cotton Revival Monitoring Unit for Cotton Revival Implementation Plan.** To ensure implementation of the cotton revival program, a *Cotton Revival Monitoring Unit* will be established to oversee the implementation of the plan.

4.0 IMPROVED/SUPERIOR COTTON VARIETIES

Cotton production is low due to among others, the characteristics of current local commercial varieties. Varietal performance is determined by various factors which require adaptation. Development and evaluation of new cotton varieties is a key strategy in this revitalization process. Currently there are two locally developed, evaluated and released commercial cotton varieties, namely; HART 89M (Eastern Region) and KSA 81M (Western region). These varieties have been in existence for commercial production for more than three decades.

The following hybrid cotton seeds have been evaluated and released for commercial production; *Hazera seed, (HA701 and HA211) and MAHYCO seed (C570, C571, C567 & C569)*. Similarly, improved Bt. cotton hybrids for bollworm resistance have been introduced for evaluation under appropriate protocols. All these provide a basket of options for the revitalization of cotton

production in the country. Hybrids are higher yielding but have a higher moisture demand and nutrition. Therefore, hybrid seed cotton production will be mapped out and targeted to specific locations with requisite infrastructure to ensure successful production. They also require more fertilizer and pesticides and individual grower ability to adequately manage the crop will be important. To increase output, the area planted with certified seeds will be increased progressively while reducing area under conventional recycled seeds targeting to achieve a minimum of 80,000 acres planted with local certified and superior seeds by 2025.

4.1 Current progress on BT Cotton Commercialization

Following completion of the confined field trials (CFTs) by KALRO in 2015, an application for environmental release was submitted to the National Biosafety Authority (NBA). In 2016, NBA issued a limited approval for National Performance Trials (NPTs) subject to the applicant conducting an Environmental and Social Impact Assessment (ESIA). The NPTs were carried out by the Kenya Plant Health Inspectorate Service (KEPHIS) where four (4) Bt. cotton hybrids were evaluated under appropriate protocols. The ESIA was thereafter undertaken in 2020 by the proponent (Bayer East Africa Limited) and a report filed with National Environmental Management Authority (NEMA). The report was reviewed in November 2020 where a number of issues were raised. In February 2021, environmental release and commercialization of Bt. cotton was approved by NEMA.

5.0 Legal and regulatory framework

To enhance efficiency in the sector, the government is in the process of establishing a legal and regulatory framework that will establish the Fibre Crops Development Authority, thereby withdrawing Cotton (and sisal) from Agriculture and Food Authority (AFA). This will provide for the development, regulation and promotion of the Fibre crops industry focussing on the following areas;

- a. Roles of the National and County governments on regulation, development and promotion of Fibre crops
- b. Registration and Licensing of players in the Fibre Crops industry
- c. Quality assurance of fibre crops produce and products
- d. Establishment of a Fibre Crops pricing committee

e. Promotion of fibre crops locally and internationally



Figure 1: Large scale Irrigated Cotton Production in Bura –Tana River County
Source: Fibre Crops Directorate, AFA

6.0 Conclusion

The revival strategy will involve a number of government agencies working together to achieve the plan objectives. To start with a dedicated *Cotton Seeds Research and Development Unit* within KALRO will be created as basic driver in the revival strategy to create the necessary capacity for development and production of local superior seeds varieties, including formation of partnerships for seeds production. This will ensure close collaboration with the cotton growing counties to achieve capacity in the counties to support cotton value chain actors (farmers, cooperative unions, and ginneries). The Fibre Crops Directorate will continue to coordinate the agencies and stakeholders involved in cotton sub sector and ensure salient features are introduced in the new legal and regulatory framework to create an enabling environment for the sub sector growth.