

**REPUBLIC OF KENYA**



**MINISTRY OF AGRICULTURE, LIVESTOCK, FISHERIES AND COOPERATIVES**

**REPORT OF  
ICAC PLENARY MEETING AT BRISBANE, AUSTRALIA, 2<sup>ND</sup> – 5<sup>TH</sup> DEC 2019**

**COMPILED BY AGRICULTURE AND FOOD AUTHORITY – FIBRE CROPS DIRECTORATE**

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## **EXECUTIVE SUMMARY**

In 2018, the area under cotton in Kenya was 33,580 acres producing 2,000 MT of lint equivalent to 6,000 MT of seed cotton. This production was mainly from rain fed environment by approximately 30,000 smallholder farmers using conventional recycled cotton seeds. The average yield using these conventional uncertified seed is 230kg/acre of seed cotton against a potential yield of 1,000kg/acre using certified seed. The fibre quality is of medium staple and strength suitable for production of a wide range of fabrics. Current irrigated production covers 250 acres only against a potential of 87,500 acres. The yield rate for irrigated production is 600 Kg/acre against a potential of 1,400 Kg/acre. The world average seed cotton yield is 780 kg/ acre, thus national production is below global average.

This year, the Country is gearing towards introduction of Non-Bt cotton hybrids on 25,000 acres under rain-fed conditions. Expected yield with the hybrids is 400 Kgs of seed cotton/Acre. Thereafter the country targets to transit into commercial Bt hybrid cotton production in 2021 on 37,000 acres under rain-fed conditions expecting a yield rate of 600Kgs of seed cotton/Acre. This will result in increased production from current 10,400 to 61,600 bales. A lot of data and studies have been conducted on cotton hybrids and Bt cotton and Kenya will learn from these experiences as the country adopts the technology.

The Cotton Advisory Committee ICAC is an association of governments of cotton producing, consuming and trading countries. It is the international commodity body for cotton and cotton textiles. Due to the critical role it plays in technical information sharing by collecting and publishing data on cotton industry, Kenya joined the organization in the year 2007. The organization holds an annual Plenary Meeting of member states to discuss emerging concerns and data. While most of

the world's cotton producing nations are members, two of the ten largest producers (The People's Republic of China and Turkmenistan) are not members of the ICAC. All of the top four cotton exporting nations (USA, Australia, India and Brazil) are members.

In the year 2019, ICAC held its 78th plenary meeting in Brisbane Australia. The theme of the meeting was '*Global Leadership: Pushing Cotton's Boundaries*'. Kenya was represented in the meeting by the Fibre Crops Directorate with the Head of Directorate leading the delegation.

## **1.0 INTRODUCTION**

The meeting was attended by 307 persons including representatives from 23 Member governments, 5 international organizations and 5 non-member countries. A new methodology to allow for discussion on the individual written Country Statements was introduced. Advance statements had been provided by countries and international organizations. This enabled delegates to ask informed questions of each other country reports on specific areas of interest from the Statements. The session achieved increased interactivity among delegates.

## **2.0 EMERGING ISSUES**

**2.1 Global Megatrends for Cotton: Seven megatrends were identified as** important to the future of the cotton industry. Change and constant innovation will be needed to address these trends shaping agriculture, especially climate change, geopolitical realities and consumer choices. The challenges should be seen as opportunities requiring intensive research, as well as consumer understanding and engagement.

**2.2 Cotton Traceability Technologies: It was highlighted that consumers are** increasingly demanding information on the origin and history of the products,

putting pressure on retailers to provide transparency. Essentially traceability technologies are expected to establish authenticity of fibre quality, establish fibre origins, quantify, fibre purity and track the processing path from fibre to fabric. While some technologies can trace origins and enable quantification of the fibres in a blend, others add markers to fibres and claim authentic tracking of the marker along the value chain. Implementing traceability technologies carries a cost for businesses. The Plenary discussed whether Governments should have a role in regulating traceability and noted that biosecurity and accurately informing the customers remain important.

**2.3 Sustainability in cotton farming systems:** A task force mandated to draft core set indicators of farm-level and outcome/impacts to measure and report progress towards the Sustainable Development Goals (SDGs) in the cotton sector presented their report for review. The report was endorsed and the indicators (16) testing is planned to take place in 2020. The draft core set was developed as part of the Delta Project and largely builds on the ICAC/FAO framework on 'Measuring Sustainability in cotton farming systems' published in 2015. Orientating sustainability measures towards the priorities endorsed and established by the SDGs will enhance the opportunities to adopt a language and a purpose that is shared across the public and private sectors and to forge new partnerships to achieve the common goal of sustainable agriculture. The indicators will be re-evaluated for their performance after a field test in 2020.

**2.4 Reports from the Secretariat:** Consumption drives demand and little growth in cotton consumption was expected in 2019/20 as global economic growth is slowing. Trade barriers and trade disputes have weakened import and export growth and have positioned the global economy into a synchronised economic slowdown that has reduced the pace of manufacturing and investment.

Trade disputes create uncertainty for businesses and lower investment activity and trade deals. Quick resolutions are therefore needed to return confidence to the market.

**2.5 ICAC's report on government assistance to the cotton sector in 2018/19:** Based on the ICAC report featuring information from 10 countries, assistance to the cotton sector has been estimated at \$5.4 billion in 2018/19, which is a moderate decline from \$5.5 billion in 2017/18. In 2018/19, assistance averaged 16 cents per pound, down from 17 cents per pound.

**2.6. Cost of Production:** The cost of production remains a major challenge and the introduction of small-scale machinery and Integrated Pest Management can reduce cultivation costs. The costs and returns of introducing GM seeds should also be carefully examined. To increase yields, major steps should be made to optimise high density planting and canopy management. Governments are encouraged to promote the use of de-linted seeds in suitable climatic regions.

**2.7. Disruptive Technologies:** The Committee was informed of studies on fabric microfibre release during laundering, which show that natural-based fabrics released more fibres than polyester. However, cellulose-based materials like cotton biodegrade very rapidly in aerobic aquatic environments when compared to microfibres released by polyester which biodegrade only over many years and eventually may enter the food chain. On the circular economy, delegates learnt that even though the circular economy is an economic system aimed at eliminating waste and the continual use of resources, virgin fibres are essential for the system to work, as virgin fibres assist in maintaining the strength and the quality of the final product.

On soil health, the Committee was informed about the importance of maintaining soil physical properties; any decline will take considerable time and cost to

correct. Healthy soils are the basis of healthy crops and biodiversity enhancement.

**2.8. Germplasm Exchange:** Extensive plant breeding efforts and selection for desired traits have resulted in narrowed genetic diversity due to the loss of several traits in the commercial varieties. Therefore, there is a need to explore the diversity of germplasm by investing more in cotton breeding. Germplasm exchange is low due to a lack of information and also lack of means and capabilities of breeding teams to address and integrate genetic variability into breeding programs, notably in developing countries. International Cotton Research Association (ICRA) is proposing to set up an international forum for germplasm exchange. It was emphasised that germplasm evaluation and exchange was important and there was a need to enrich collections continuously by applying novel methods for cotton improvement while considering countries' seed breeding policies. Germplasm improvement could greatly benefit from activities such as sharing knowledge and technologies, wider international collaboration, training and education of new generation cotton scientists and increasing investments to expedite the commercialisation of new technologies.

**2.9 Responding to Climate Change:** Climate change impacts vary around the world and may result in reduced water availability, higher potential water use, increased incidents of extreme weather events and changes to the distribution of pests and diseases. Strategies to adapt to these changes should include international cooperation for increasing yields, improving production efficiencies and adaptive management focused on cotton productivity. To improve yields, the Committee was informed that there needs to be an improvement in crop resilience to stress, efficient water usage and soil health. The Committee therefore urges governments to encourage the development of climate-resilient cultivars with high water- and nutrient-use efficiencies with the potential to adapt and

withstand unpredictable drought, changes in heat, waterlogging, increased insect pests and diseases. It also recommends that heat tolerant varieties be developed and that active stress management and optimised growth regulators be used in climate changing conditions. In addition, regionally specific assessments, systems-based approaches and transgenic/digital technologies will be vital. It is recommended that governments evaluate the possibility of introducing an effective and accurate information system for the growers.

### **2.10 Breeding and Producing High-Yielding and High-Quality Cotton Planting**

**Seed:** New cultivars can address production constraints, improve yield and fibre quality, and be targeted for each production region. New cultivars will not solve some major production issues. These need to be addressed by changes in soil and crop management. Successful breeding programs require stringent processes for production and quality assurance to meet the enormous potential. Increased sharing of information from existing germplasm collections around the world are needed to address the challenges and opportunities.

**2.11 Insect and Weed Resistance Management:** Two key factors in the success of resistance management plans in both weeds and insect management are that plans are supported by science, and second, that stewardship is supported by an industry extension and communication program. Insects in particular do not recognise borders and area-wide management is very important. The Committee received information on a commercial-based trap that can be used to detect and conduct real-time monitoring of fruit flies in a rapid 2-3 day loop. The case studies highlight that innovation in digital technology is removing barriers and new products are being developed that may facilitate long-term suppression of pest populations.

**2.12. World Café – Technology Transfer Platforms for Small Farm Holders in Developing Countries:** The Committee conducted a World Café conversation on two innovative technology projects: Virtual Reality Cotton Training and a Soil & Plant Health Digital Application (App). Virtual Reality holds great potential for use throughout the cotton supply chain. The Soil & Plant Health App is intended to assist in increasing yields, especially for smallholder farmers with little or no literacy. Delegates shared their opinions on future areas for development, discussed possible organisations as partners, and cotton-focussed technologies that the Secretariat should consider for development. The Committee encourages the future development of innovative projects that benefit small farm holders particularly in Africa and Asia.

**2.13. Topic of 2020 Technical Seminar:** The Committee decided to hold the 2020 Technical Seminar on the topic of, '*Advances and Challenges of Hybrid Cotton Technology*'.

**2.14. Topic of 2020 - Private Sector Advisory Panel (PSAP):** Topic suggested by the PSAP for the 2020 Plenary Meeting is '*Informational Labelling of Textile Products*'.

**2.15. Future Plenary Meeting:** The Committee accepted invitation from the European Union to host the 79<sup>th</sup> Plenary Meeting during the last week of November 2020 in the city of Seville, Spain.

**2.16. Appreciation to the Host Country:** The Committee thanked the people, the organising committee and the government of Australia for hosting the 78<sup>th</sup> Plenary Meeting. Delegates commented very favourably on the quality of the venue, the efficiency of the preparations, the content of the programme and of course, the warmth of the Australian hospitality.



### **3.0 RECOMMENDATIONS AND WAY FORWARD**

1. There is need to carefully examine costs and returns of introducing GM seeds as the country introduces the technology especially for smallholder production
2. To increase cotton yields, one of the proven options, is to optimise high density planting and canopy management and Kenya should explore this option. The technology is used in majority of countries with high productivity – Australia, Uzbekistan, USA, Turkey, Greece, Brazil among others.
3. De-linted seeds will greatly improve cotton productivity and a program to phase out fuzzy seeds use in production should be implemented
4. While Kenya does not have an active cotton breeding program, it is recommended that heat tolerant varieties be developed and that active stress management and optimised growth regulators be used in current climate changing conditions
5. The government assistance to the cotton sector in 2018/19 averaged 16 US cents per pound (KES 40 per Kg) with some countries implementing minimum support price to growers. Kenya to consider price stabilization mechanism to cushion growers
6. As the country increases its production, traceability program be designed and be implemented to meet customer requirements especially if the country is going to export excess production.