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THE NATIONAL ASSEMBLY

TWELFTH PARLIAMENT – SECOND SESSION

THE JOINT DEPARTMENTAL COMMITTEES ON AGRICULTURE & LIVESTOCK  
AND TRADE, INDUSTRY & COOPERATIVES

REPORT OF  
THE STUDY VISIT TO INDIA ON BT COTTON 16<sup>TH</sup> – 23<sup>RD</sup> SEPTEMBER 2018

Paper Laid on the  
Table of the  
House by the  
Vice Chairperson  
of the Departmental  
Committee on  
Agriculture, Livestock  
& Cooperatives on

Thursday  
6<sup>th</sup> December 2018

Moring  
[Signature]

DIRECTORATE OF COMMITTEE SERVICES  
Clerk's Chambers,  
Parliament Buildings,  
NAIROBI

DECEMBER, 2018

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## ABBREVIATIONS

AGOA	-	African Growth and Opportunity Act
ASAL	-	Arid and Semi-Arid Lands
ATC	-	Agricultural Training Centres
BCI	-	Best Cotton Initiative
BT	-	Biotechnology
CS	-	Cabinet Secretary
CoG	-	Council of Governors
EMENA	-	Eastern Europe, Middle East, and North Africa region
EU	-	European Union
GMO	-	Genetically Modified Organism
ISAAA	-	International Service for Acquisition of Agri-Biotechnology Applications
KALRO	-	Kenya Agricultural and Livestock Research Organisation
SABC	-	South Asia Biotechnology Centre
KMS	-	Kilo Metres
KSHS	-	Kenya Shillings
MP	-	Member of Parliament
MT	-	Metric Tonnes
PS	-	Principal Secretary
USD	-	United States Dollars
USDA	-	United States Department of Agriculture
WCO	-	World Customs Organization

## 1.0 INTRODUCTION

### MANDATE OF THE COMMITTEE

Departmental Committees are established under the provisions of S.O. No. 216. Its members are nominated by the House Business Committee in consultation with parliamentary parties at the commencement of every Parliament.

A member appointed to a departmental committee at the commencement of a Parliament or at any other time during the term of a Parliament shall, unless the House otherwise resolves, serve for the term of that Parliament.

The mandate of Departmental Committees in respect of the subject matter assigned under the Second Schedule of these Standing Orders shall only be exercised within the limits contemplated under Part 1 of the Fourth Schedule to the Constitution.

#### The functions of a Departmental Committee are -

- investigate, inquire into, and report on all matters relating to the mandate, management, activities, administration, operations and estimates of the assigned Ministries and departments;
- study the programme and policy objectives of Ministries and departments and the effectiveness of the implementation;
- study and review all legislation referred to it;
- study assess and analyse the relative success of the Ministries and departments as measured by the results obtained as compared with their stated objectives;
- investigate and inquire into all matters relating to the assigned Ministries and departments as they may deem necessary, and as may be referred to them by the House;
- to vet and report on all appointments where the Constitution or any law requires the National Assembly to approve, except those under Standing Order 204 (Committee on Appointments); and
- make reports and recommendations to the House as often as possible, including recommendation of proposed legislation.

### MEMBERSHIP OF THE COMMITTEES

The Committee Membership is comprised of the following;

1. Hon. Kanini Kega, MP – **Chairperson**
2. Hon. Adan Haji Ali, MP – **Chairperson**
3. Hon. Emmanuel Wangwe, MP
4. Hon. Cornelly Serem, MP
5. Hon. Maison Leshoomo, MP
6. Hon. Francis Munyua Waititu, MP
7. Hon. Florence Mutua, MP
8. Hon. Ferdinand Wanyonyi, MP
9. Hon. Simba Paul Arati, MP

10. Hon. Kathuri Murungi MP
11. Hon. Alois Musa Lentoimaga, MP
12. Hon. Kipruto Moi, MP
13. Hon. Andrew Mwadime, MP
14. Hon. Jones Mlolwa, MP
15. Hon. James Mukwe, MP
16. Hon. Daniel Maanzo, MP
17. Hon. Bunyasi John Sakwa, MP
18. Hon. Silas Kipkoech Tiren, MP
19. Hon. Alexander Kimutai Kigen Kosgey, MP
20. Hon. Yegon Brighton Leonard, MP
21. Hon. Gabriel Kago Mukuha, MP
22. Hon. John Paul Mwirigi, MP
23. Hon. Dr. Wilberforce Oundo, PhD, MP
24. Hon. Dr. John Kanyuithia Mutunga, MP
25. Hon. Adan Haji Yussuf, MP
26. Hon. Janet Jepkemboi Sitienei, MP
27. Hon. Dr. Daniel Kamuren Tuitoek, MP
28. Hon. Fred Ouda, MP
29. Hon. Joyce Kamene, MP
30. Hon. Justus Makokha Murunga, MP
31. Hon. Rahab Mukami Wachira, MP
32. Hon. Anab Mohamed Gure, MP
33. Hon. Robert Gichimu, MP
34. Hon. Patrick Kimani Wainaina Jungle, MP
35. Hon. Generali Nixon Kiprotich Korir, MP
36. Hon. Joseph Nduati Ngugi, MP

#### **COMMITTEE SECRETARIAT**

1. Mr. Ahmad Kadhi - First Clerk Assistant
2. Mr. Erick Nyambati - Second Clerk Assistant

3. Mr. Nicodemus Maluki - Third Clerk Assistant
4. Ms. Nuri Kitel Naatan - Third Clerk Assistant
5. Mr. Peter Mwaura - Legal Counsel I
6. Ms. Lynette Otieno - Legal Counsel II
7. Mr. Erick Kariuki - Research Officer
8. Mr. Chelang'a Rotich Maiyo - Research Officer
9. Ms. Deborah Mupusi - Media Relations Officer
10. Mr. Yaqub Ahmed - Media Relations Officer
11. Ms. Rose Omtere - Audio Officer
12. Mr. Alex Mutuku - Sergeant At -Arms
13. Ms. Faith Makena - Sergeant At- Arms
14. Mr. Richard Sang - Sergeant At- Arms

The National Assembly through the Departmental Committee on Agriculture and Livestock and the Departmental Committee on Trade Industry and Cooperatives was represented by the following;

- I. Hon. Adan Haji Ali, M.P. - Chairperson, Departmental Committee on Agriculture and Livestock & Leader of Delegation.
- II. Hon. Florence Mutua, M.P. - Member, Departmental Committee on Agriculture and Livestock
- III. Hon. Dr. Wilberforce Oundo, M.P. - Member, Departmental Committee on Trade Industry & Cooperatives
- IV. Hon. Anab Mohammed Gure, M.P. - Member, Departmental Committee on Trade Industry & Cooperatives
- V. Mr. Ahmad Kadhi - Committee Clerk & Delegation Secretary

On behalf of the Members of the delegation, I wish to thank the Offices of the Speaker and Clerk of the National Assembly, the Members of the Committees and the Secretariat, I beg to table this report pursuant to Standing Order 199.

Sign: .....

Date: ..... 05/12/2018 .....

**HON. EMMANUEL WANGWE, MP**

**VICE-CHAIRPERSON**

**DEPARTMENTAL COMMITTEE ON AGRICULTURE & LIVESTOCK**

## 2.0 BACKGROUND

The Organisers, ISAAA AfriCenter in collaboration with the Government of Kenya through the Ministry of Industry, Trade, and Cooperatives, South Asia Biotechnology Center (SABC) and United States Department of Agriculture (USDA) planned a seven-day seeing-is-believing study tour of India's biotech cotton subsector for Kenyan policy makers, regulators and other cotton subsector stakeholders from September 16<sup>th</sup> to 23<sup>rd</sup>, 2018.

The delegation comprised of Members from;

1. The Executive – The Principal Secretary of Agricultural Research and Principal Secretary Trade and Industry,
2. The County Governments – Busia County,
3. The National Assembly – The Departmental Committee on Agriculture and Livestock and the Departmental Committee on Trade Industry and Cooperatives,
4. Stakeholders - biotechnology and biosafety regulators, Industry players and farmer's representative.

India was the world's largest producer, consumer and exporter of raw cotton and by 2017; over 95 percent of the cotton produced in India was Bt cotton. The country has created millions of jobs and enjoyed economic transformation since the introduction of Bt cotton 16 years ago with 93-96 percent adoption rate in 2017 alone. On the other hand, Kenya was still struggling with high unemployment rate amongst women and the youth despite over 24 out of 47 counties having a great potential for cotton production. Due to high cost of pesticides and poor systemic uptake of raw cotton from farmers by sector players, cotton crop was unprofitable to grow. Currently, Kenya produces a paltry 25,000 bales of cotton compared to India's 37.7 million bales annually.

His Excellency the President had outlined four pillars for transformation of Kenya: manufacturing, food security, affordable housing and universal healthcare. Popularly referred to as 'the Big Four agenda', manufacturing, of which textiles was a key enabler. With huge investments going into reviving and modernizing textiles mills, cotton had become an important crop for supply of raw material to the sector, which currently imports raw cotton from Uganda and Tanzania. With the Bt cotton success rate in India, Kenya was keen to follow in the footsteps and revive its already collapsed textile and apparel industries. On this tour, the Kenyan delegation made extensive visits to farmers' fields, research institutes, technology and seed producing companies and agro-processors to see and experience first-hand the socio-economic benefits accrued along the whole cotton value chain in India. The Delegation visited BT Cotton farms and interacted with farmers.

The delegation visited the following sites:

1. Central Institute for Research on Cotton Technology (CIRCOT) Mumbai; An institute with over nine decades of research, assisting Indian cotton breeders in the development of new strains by evaluating various fiber quality parameters and undertaking research on their spinning potential.

2. Farmers' fields in Maharashtra and Telagana states in the western and southern India respectively, dominated by small-scale farmers.
3. Mahyco research and development facility; A private company with over five decades of driving innovation through seed technology and was the first company in India to introduce hybrids seeds.
4. Laxmi Cotspin limited – a recognized star export house, manufacturing 100% cotton yarn, cotton bales and cottonseed.
5. Bayer Crop Science - an innovation-driven global research and development company, committed to helping tackle agricultural challenges with competence in high value seeds production, innovative chemical and biological crop protection solutions, and services for modern, sustainable agriculture.
6. Abhay Nutrition Private Limited - one of the largest cottonseed-processing unit, which is India's first of its kind strategically resourced processing technology.
7. JK Agri Genetics Ltd – a leading local seed company engaged in research and development, production, processing and marketing of cotton hybrids, maize, paddy rice, pearl millet, sorghum, sunflower, castor, mustard, wheat, fodder beet, tomato, okra, chilies and other vegetable seeds.

The delegation had an opportunity to interact with their Indian counterparts along the Bt cotton industry value chain, and, identified areas of networking, technology transfer and partnerships with India.



### **3.0 STUDY VISIT TO INDIA ON BT COTTON**

#### **3.1 Visit to Central Institute for Research on Cotton Technology (CIRCOT) Mumbai**

The facility located in Jalna Region was established in 1924. The delegation held a meeting with Dr. P. G. Patil, Director, CIRCOT. CIRCOT was widely recognized for its contribution in testing, standardization and development of test methods for different types of textile materials for over ten decades. Its' main objective was to assist cotton breeders in the development of new strains by evaluating various fibre quality parameters and carrying out research on their spinning potential. The visit provided delegates with a unique experience on how Bt cotton can drive industrialization of a country with enormous social-economic benefits to citizens. The meeting highlighted how every part of cotton crop is utilized to produce either lint, cottonseed oil, cotton cake, paper or briquettes. The delegation was taken through how the quality of cotton fibre was assessed and how the spinning potential was determined in the labs. Members observed as key the diversity of products from the whole cotton crop and the value it adds to the economy apart from fibre and seed cotton. The level of investment in infrastructure in form of machinery and cutting-edge technology in value addition was also noted.

#### **3.2 Visit to Mahyco Research Centre and Demonstration Fields**

Dr. Rajendra Barwale, Mahyco's Executive Chairman received the Kenyan delegation. During the deliberations the Delegation was informed that;

- Mahyco Research Centre (MRC) was India's largest private sector research firm.
- The center had achieved great success in recent times on agri-biotechnology
- Mahyco perceives Kenyan market as a key market to expand and partner with
- The company whose Bt cotton seeds are currently under trial for commercialization in Kenya
- Mahyco will become the first ever company to avail transgenic seeds to Kenyan farmers for planting.
- The Company was confident that the Kenyan trials would meet all the set regulatory standards for commercialization,

The Members were also taken on a tour of the facilities departments including;

- Crop Transformation Laboratory,
- Molecular Quality Assurance Laboratory,
- Genome-editing research Laboratory, all the way through to the
- Bt cotton hybrid seeds multiplication fields.

The delegates also got an opportunity to interact, seek clarifications from the Mahyco team, and vice versa. The Mahyco team sought to know the Kenyan government's plan in relation to Bt cotton commercialization with the ban on GMOs still in place. They were also keen on Kenya's readiness to allow further processing into Bt cotton seed oil and other by-products beneficial to farmers and the economy once the Bt cotton seeds were approved for commercialization in the country.

The delegation finally paid a visit to hybrid seed production plots, where it was noted that the farms were solely managed by women. The team had an opportunity to practically undertake the hybridization process after demonstrations.

### **3.4 Visit to Abhay Nutrition Private Limited**

The delegation was met by Mr. Ashish Mantri and Mr. D. A Prasad, Directors at Abhay Nutrition Private Limited. The Kenyan delegation was informed that Abhay Nutrition Private Limited, was an oil technologist company in India that exclusively operated on Bt cotton seeds, other edible oilseeds/oil and their derivative products. During the visit, the delegation learnt that Bt cottonseed oil was widely consumed in India and was sold at a premium price, second only to ground nut oil.

The meeting was informed that Indians preferred frying in cotton seed oil as compared to any other oil because the ratio of poly-unsaturated fatty acids to saturated fatty acids was very favourable as compared to other oils for frying. The main reason was that fried products in cotton seed oil compared to soya bean oil or sunflower oil, the shelf life of the product fried in cotton seed oil was much larger compared to the other two oils.

The delegates also noted that safety discussions around the cotton seed oil were not centred on whether the cotton is GMO or not but rather around refining & gossypol level – an impurity profile that is present in cotton seed oil during the initial stages of purification regardless of whether the raw cotton seed used was genetically modified or not.

The visit specifically clarified a lot of misinformation and questions about the safety of Bt cotton oil for human consumption as well as Bt cotton seed cake mostly used as animal feed. The volumes of cottonseed oil and cottonseed cake traded both locally and internationally without any health effects being reported for over two decades was very enlightening to the delegates.

### **3.5 Visit to Laxmi Cotspin Limited**

The delegation had the opportunity to observe ginning and spinning at Laxmi Cotspin limited which was recognized as India's star export house, manufacturing 100% cotton yarn, cotton bales and cottonseed. The facility was started in 2005. Laxmi Cotspin limited produced 100% pure Cotton Combed Hosiery as well as warp count rage Ne 30s-40s.

The facility produced 50,000 bales of yarn per year which were exported to various countries, with the government setting the price of 54 rupees per kg. During the visit to Laxmi Cotspin, the delegates learnt how availability of raw cotton spurred investments and created jobs for the rural community. Laxmi Cotspin limited Director, Mr. Sanjay Rathi received the delegates and explained how setting up the facility strategically in a rural location just next to cotton farmer's fields was key to their easy uptake of raw materials enhancing their operational capacity.

The delegation was informed that 450 workers were employed at the factory with another 12,000 farmers directly linked to the ginnery. A tour of the facility confirmed the heavy investments on

modern textile machinery and the many job opportunities Laxmi Cotspin Limited has created for the local people.

The facility operated under the BCI better Cotton Initiative Programme, funded by the swiss government which was run in various south Asian countries, including India. That project had seen partnerships created with International Brands such as IKEA providing markets for fabrics produced by Laxmi and other ginneries and cotton spinners. The delegation further heard that the facility operated nonstop for 24 hours in three shifts i.e. 8am – 4pm, 4pm – 12am, 12am – 8am. The cotton grading machines tested tenacity and elasticity as well as;

- The length of the fibres
- The strength of the fibres
- The fineness of the fibres

Finally, the staff were trained to handle minor mechanical fixes in instances where the machines break down.

The Principal Secretary, Ministry of Industry, Trade and Cooperatives, Ms. Betty Maina expressed the need for Kenya to move with speed and adopt Bt cotton to revive her textile industry in order to safeguard the AGOA market opportunity. It was noted that Kenya imported raw cotton from Uganda and Tanzania to service its textile industries and may lose the AGOA market by 2025 due to lack of cotton locally. Therefore, in order to safeguard the market, policy makers needed to move with speed to deploy technologies like Bt cotton to enable Kenya to compete globally, revive industries and create employment for our youth.

### **3.6 Visit to Bayer Crop Science India Limited**

The Company was about 150 years old in the world and was in existence for 120 years in India. Bayer was a global Life Science company with three business components; crop science, pharmaceuticals and consumer health. In areas of crop science, Bayer was driven by innovation to solve challenges facing farmers with an aim of producing enough food, feed, fiber and renewable raw materials for a growing world population on the limited land available. Here, the delegates were taken around the Bayer India facility to see the latest technologies in crop science both at the greenhouse level and at demonstration fields for different crops. There was a keen interest from the delegates to learn how Bayer Crop Science distributed their seeds and the possible collaborations to avail improved seeds to Kenyan farmers.

During the visit to Bayer Demonstration Farms, the delegation heard that since introduction of BT Cotton in the year 2002, cotton production had doubled, the delegation further observed that;

- There were two varieties of cotton crop grown on the farms.
- 65 % of cotton crops in india were dependent on rain.
- BT cotton crops did not have a single ballworm.
- One BT tree had between 60 – 100 balls.
- One acre had about 7,000 crops of cotton.
- Spacing was at 1.2 Metres by 30 cm.
- Drip irrigation was used at the Bayer model farms.

- One Kg of produce was made up 600g cotton seed and 400g cotton lint.
- Harvesting was through handpicking.
- Cotton preferred high temperature with little watering conditions.
- It took 160 – 180 days from seed to maturity.
- Cotton seed had 12% oil and when processed into cake was ideal for feeds.

The Delegation also visited the laboratories at Bayer Limited and observed that;

- Investments into the laboratories was 15 Million USD.
- Healthy plants required growth in the nurseries before inoculation were done.
- Inoculations were carried out using toothpick and paintbrush methodology.
- Inoculations were done at intervals of 30, 60, 90 days of the 150 – 180 days of the cotton plants' life span.
- Inoculations were done against Grey Mildew, Bacteria Leaf Blight and Leaf Spot.
- Disease free genotypes were identified and developed to save costs of pesticides.
- The laboratories were used to develop disease resilient cotton.
- The essence of breeding was to create Hybrids.

The delegation invited the Management of Bayer Limited to consider setting up demonstration farms and laboratories in Kenya.

### **3.7 Visit to JK Agri Genetics Ltd.**

The Company was part of an international group of organisation and collaboration in agricultural research and development. JK agri- Genetics was the first and the only Indian company to develop Bt cotton using indigenous technology and has developed over ten Bt cotton hybrids since 2006. The Company was founded by a father and son with a history of about 150 years with offices in India and Dubai. Its core mandate was to conduct research and development of hybrid seeds like cotton, millet, maize, sunflower seeds and vegetable seeds among others. The company was also engaged in an elaborate Corporate Social Responsibility Programme which involved construction and operating of schools.

The aim of JK's research and development program is to develop hybrids tolerant to biotic stresses like insects, diseases and abiotic stresses like drought among others. The Kenyan delegation were keen to see the processing and packaging of Bt cotton hybrid seeds, the quality and safety measures put in place before being released to the market for distribution and planting by farmers.

The delegation was impressed to learn that the Company produced paper from the cotton plant. Further, the Members heard that;

- In India, the textiles industry was the second largest employer of the vast number of citizens contributing 55 Million USD to the economy.
- It took three years of testing and research before any hybrid is released into the market.
- JK Genetics Limited had operations in African countries including Sudan (2015), Ethiopia and Swaziland in 2018.
- Seeds were produced from 40,000 acres as the production centres.

- The company had a turnover of 15 Million USD.

The Delegation noted that the seeds were packaged well and labelled “Truthfully Labelled Seeds”. Further, the company was responsible for the quality and success of the seeds. In cases of any complaints on quality, a committee would investigate claims of poor seed quality. The investigative committee was composed of officials from the industry regulator, government officials and a farmer’s union representative. The Committee would prepare a report and had powers to spell sanctions against any company that sold farmers sub-standard seeds. Such recommendations were to be implemented by the relevant enforcement agencies.

The Principal Secretary in charge of Agricultural Research, State Department of Agriculture, Prof. Hamadi Boga urged the delegates to help convince the society back home to embrace science. In his remarks, the PS observed that the African society missed the Green Revolution that was driven by Chemistry. Therefore, missing the revolution driven by Biology and ICT, would result to being consumers of products developed by others. Therefore, delegates were challenged to convince the society to be a scientific-driven society.

### **3.8 Visit to Farmers Fields**

The Kenyan delegation visited farmer’s fields in both Maharashtra and Telangana states, to witness the performance of Bt cotton hybrid seeds’ in farmer fields as well as the seeds multiplication fields. These visits to farmer’s fields served to showcase the practical demonstration of farmer’s benefits from Bt cotton hybrid seeds.

Given the misinformation propagated about GMOs and specifically Bt cotton, the delegates were keen to observe and ask questions on the many myths they’ve heard about GM cotton. The delegation learnt that the negative stories they had heard about Bt cotton were not true. For instance, the delegates heard from one Raosaheb, a Bt cotton farmer from Goje village, in Aurangabad - Maharashtra state. The farmer narrated how growing Bt cotton had changed his life and that of his family. he informed the delegation that after he had started growing Bt cotton, he spent about 3,000 rupees per acre and made a profit of between 60-70,000 rupees from the same acre. That enabled him to take his children to a very good English school.

The delegates also visited Anjanabai Javiram, a Bt cotton farmer who specialized in Bt cotton hybrid seed multiplication. During interactions with the stakeholder, the delegates learnt of how profitable seed multiplication farming was. She further informed the Delegation of a modern house she had constructed with proceeds from the small scale Bt cotton hybrid seed multiplication field. Members noted that, From the small farm with only 101 plants, the farmer harvested 100 – 150 kilograms of Bt cotton hybrid seed. The profit was twice in comparison to growing Bt cotton for lint. The delegation heard that the farmer had built a house, sent grandchildren to English schools, and spent money on her sons’ dowries and wedding. Members noted that Bt cotton was a profitable venture for farmers to engage in.

Further, the farmer demonstrated to the delegates on how to emasculate the Bt cotton crop during early stages of pollination to avoid self-pollination – a standard practice during Bt cotton hybrid seed multiplication in farmer’s fields.

Having heard from the farmers proudly narrating the socio-economic impacts of growing Bt cotton hybrids, the Chairperson of the Departmental Committee observed that those spreading

misinformation about Bt technology in Kenya needed to stop misleading Kenyans. The Chairperson further noted that it was unacceptable to be importing yarn from Tanzania while Kenya had perfect conditions in nearly half of the country where Bt cotton could grow with ease. In conclusion of the visit to farms, the Members held that there was no known negative scientific impact of embracing GMOs so far.

The delegation was impressed by the immense opportunities in Bt cotton farming having heard from the farmers' testimonies.

#### **4.0 FINDINGS AND OBSERVATIONS**

The delegation having undertaken the visit noted that;

1. The Indian Economy had grown by 55 Million USD due to the introduction of BT Cotton with textiles as the second largest source of employment for its citizens. Such growth can be replicated in the Kenyan Economy with the introduction of BT Cotton.
2. BT Cotton farming was doing well in ASAL regions of India therefore there was potential to increase farming in ASAL regions in Kenya through BT Cotton.
3. There existed strong Public-Private-Partnerships among the Farmers-Corporates-Government, ensuring collaboration in research, development and extension services.
4. There was no research and science backing the banning of BT Cotton for textiles and manufacturing.
5. The regulations by the Ministry of Environment that requires EIA of research and development into BT as the said regulations hampered progress in Bio-Technology.
6. The Ministry of Environment Regulations on requiring Environmental Impact Assessments on BT research were in contravention of the Biosafety Act 2009. The regulations subjected researchers to NEMA regulation whereas the Biosafety Act 2009 empowers the Bio Safety Authority to regulate researchers of biotechnology.

#### **5.0 RECCOMENDATIONS**

The Committee therefore makes the following recommendations;

1. That the Government lifts the ban on BT Cotton.
2. That the Government develops a comprehensive policy on BT Cotton.
3. That Kenya Agricultural and Livestock Research Organisation (KALRO) and Agricultural Training Centres (ATCs) take the lead in seed multiplication and farmer extension services on BT Cotton.
4. That necessary budget allocations are made by the National Treasury to facilitate the Department of Agricultural Research in the Ministry of Agriculture, Livestock, Fisheries and Irrigation to facilitate introduction and promotion of BT Cotton.
5. That the Ministry of Environment revokes regulations hampering researcher and development of Bio-Technology.
6. That the relevant government departments foster Public-Private-Partnerships to ensure the growth of the BT Cotton sector.

## ANNEXTURES

### LIST OF PARTICIPANTS

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23.	Kevin Lamont Sage-El	Male	Agriculture Counselor, USDA/FAS Nairobi	
24.	Hon. Anab Mohammed Gure.	Female	National Assembly – Departmental Committee on Trade Industry and Cooperatives	<a href="mailto:anabmoha74@gmail.com">anabmoha74@gmail.com</a>
25.	Hon. Florence Mwikali Mutua	Female	National Assembly -Departmental Committee – Agriculture and Livestock	<a href="mailto:ahmadkadhi@icloud.com">ahmadkadhi@icloud.com</a>
26.	Mr. Ahmad Abdulaziz Kadhi	Male	Committee Clerk and Delegation Secretary	<a href="mailto:ahmadkadhi@icloud.com">ahmadkadhi@icloud.com</a>
27.	H.E. Ojaamong Sospeter Odeke	Male	Governor, Busia County	<a href="mailto:sospeter.odeke@gmail.com">sospeter.odeke@gmail.com</a>



## PICTORIALS



1. ISAAA Africenter Director Dr. Margaret Karembu (left), Trade Industries and Cooperative Principal Secretary Ms. Betty Maina, Chairman Dept. Committee Agriculture & Livestock Hon. Adan Haji, Hon. Florence Mutua, Bhagirath Choudhary and Kiptoo Lawrence (right), with different byproducts of Bt cotton seed at Abhay Nutrition in Jalna, India.



2. Bayer Crop Science staff (front left), explaining the advantages that a new Bt cotton variety under research has over convention cotton variety. Looking on are members of the Kenyan team



3. JK Agri Genetics President & Director Mr. S K Gupta (Left) Showing different Bt cotton hybrid seed varieties and a host of other crop seeds developed by JK Agri Genetics, during a tour of the JK Agri Genetics facility in Hyderabad, India.



Industry, Trade and Cooperatives Principal Secretary Ms. Betty Maina (Left), Bhagirath Choundhary from South Asia Biotechnology Center, Hon. Anab Mohammed Gure, MP, Kenya National Assembly, Mr. Sanjay Rathi, Director, Laxmi Cotspin Limited during the tour of the Laxmi Cotspin facility in Jalna, Maharashtra state in India

## TAKE HOME MESSAGES

“Science plays a very big role in the improvement of cotton and the processing of by-products. Currently as western Kenya region, we lack a cash crop, but I have seen that Bt cotton has been thoroughly researched and has a lot of benefit apart from cotton lint. Luckily, Bt cotton is being tested in my county, so what I will do is to encourage farmers to take up this technology once commercialized, and I hope the launch of this Bt cotton planting program will be done in Busia County.” - **H.E. Sospeter Odeke Ojamong, Governor Busia County.**

“The government is talking about “The Big Four Agenda”, Here you need Agriculture to support the industry. You cannot be importing yarn from Tanzania to support Rivertex, and we have perfect conditions. Over 24 counties can grow cotton and for that matter Bt cotton in this country with ease.” - **Hon. Adan Haji, Chairperson, Departmental Committee on Agriculture & Livestock, The National Assembly.**

“One of the few things I have learnt is that biotech cotton is safe, it is not harmful to human lives, it does not affect the entire ecological set up. It is safe, and I think there has been no adverse effects on humans for the 12-15 years the country of India has adopted biotech cotton.” - **Hon. Dr. Wilberforce Ojiambo Oundo, Member, Departmental Committee of Trade Industry and Cooperatives, The National Assembly.**

“At home people have a lot of questions about the Bt technology, but I think most of these questions have been answered by many years of research, have been answered by the experiences of this technology in other countries including developing countries like India and Brazil. Our own neighbours in Sudan have adopted it, Ethiopia are on the way, South Africa, Swaziland all of them are adopting this technology because it is good for the farmers.” - **Professor Hamadi Boga, Principal Secretary, Agriculture Research, State Department of Agriculture.**

“What impressed me about this trip to India is the way they have embraced technologies and the way Bt cotton is being grown by many farmers who are really excited about the whole process. I was impressed by the way the systems for cotton production has been organized from production to the market as well as the seed industry and I hope our companies back home can learn from them so that as Africa we are not left behind.” - **Dr. Esther Kimani – Managing Director, Kenya Plant Health Inspectorate Service.**

## YOUTUBE VIDEO

BT Cotton and The Big Four agenda: Voices from Kenyan Policy Makers  
<https://youtu.be/omekFtgUcKk>

**India Study Trip for Kenyan Cotton Stakeholder on Indian Cotton Subsector**  
**SUMMARY PROGRAM**

*Proposed Dates: 16<sup>th</sup> - 22<sup>nd</sup> September 2018, Mumbai /Aurangabad/ Hyderabad*

<b>Day 1- 16<sup>th</sup> Sept: Sunday</b>	Arrival in Mumbai - check in <i>Hotel Hyatt Regency</i>
<b>Day 2- 17<sup>th</sup> Sept: Monday</b>	<b>Program at Mumbai</b>
8:00 AM	Checkout and departure to ICAR-CIRCOT
9:00AM - 12:00PM	Interactive session and visit to R&D facility of ICAR-Central Institute for Research on Cotton Technology (CIRCOT)
12:00PM -1:00PM	Lunch at CIRCOT
1:00 PM - 3:00 PM	Visit a Textile factory (Mumbai)
4:25PM -5 :25PM	Flight to Aurangabad by JetKonnet -check in <i>Hotel Lemon Tree</i>
<b>Day 3- 18<sup>th</sup> Sept: Tuesday</b>	<b>Program at Aurangabad</b>
9:00 AM - 11:00 AM	Visit to Farmers Fields
11:00 AM - 1:00 PM	MAHYCO R&D Lab
1.00PM - 2.00PM	Lunch at Mahyco
02:30PM -03:30PM	Bt Cotton Demonstration Plots
03:30PM -5:00PM	Bt Cotton Hybrid Seed Production Fields
7.00PM -9:00PM	Interactive Session & Dinner Meeting at Hotel Lemon Tree
<b>Day 4- 19<sup>th</sup> Sept: Wednesday</b>	<b>Program at Aurangabad</b>
8:00AM to 11:00AM	Cotton oil & cake processing factory-M/s Abhay Cotex, Jalna
11:30 PM to 02:00PM	Textile/Apparel Mill - M/s Laxmi Cotspin, Jalna followed by Lunch
2:00PM to 5:30 PM	Visit to Ellora caves
08:05PM - 09:25PM	Flight to Hyderabad by TrueJet flight -check in at Hyatt, Hyderabad
<b>Day 5 - 20<sup>th</sup> Sept: Thursday</b>	<b>Program at Hyderabad</b>
9:00AM - 12:00PM	Visit Bayer Multi Crop Breeding Facility
12:00PM - 1:00PM	Lunch at Bayer facility
2:00 PM - 5:00 PM	Visit to Cotton Fields in Telangana State
	Interactive Session & Dinner hosted by FSII & AAI at Hotel Hyatt
<b>Day 6 - 21<sup>th</sup> Sept: Friday</b>	<b>Program at Hyderabad</b>
	Visit to JK Cotton Seed Processing facility followed by Launch
	Visit to Boseeds Cotton Seed Processing/BASF Nunhem Hybrid Vegetable Seeds Processing facility
<b>Day 7-22 Sept: Saturday</b>	<b>Departure</b>

MINUTES

**MINUTES OF THE 54<sup>TH</sup> SITTING OF THE DEPARTMENTAL COMMITTEE ON AGRICULTURE & LIVESTOCK HELD ON WEDNESDAY 5<sup>TH</sup> DECEMBER, 2018 IN COMMITTEE ROOM 12, NEW WING, MAIN PARLIAMENT BUILDING 1.30 PM.**

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**PRESENT**

- |   |                    |
|---|--------------------|
| 1. Hon. Adan Haji Ali, MP               | <b>Chairperson</b> |
| 2. Hon. Ferdinand Wanyonyi, MP          |                    |
| 3. Hon. Simba Arati, MP                 |                    |
| 4. Hon. Florence Mutua, MP              |                    |
| 5. Hon. Dr. John Kanyuithia Mutunga, MP |                    |
| 6. Hon. Dr. Daniel Kamuren Tuitoek, MP  |                    |
| 7. Hon. Janet Jepkemboi Sitienei, MP    |                    |
| 8. Hon. Silvanus Osoro Onyiego, MP      |                    |

**APOLOGIES**

- |                                    |                          |
|------------------------------------|--------------------------|
| 1. Hon. Emmanuel Wangwe, MP        | <b>Vice- Chairperson</b> |
| 2. Hon. Francis Munyua Waititu, MP |                          |
| 3. Hon. Adan Haji Yussuf, MP       |                          |
| 4. Hon. John Paul Mwirigi, MP      |                          |
| 5. Hon. Yegon Brighton Leonard, MP |                          |
| 6. Hon. Silas Kipkoech Tiren, MP   |                          |
| 7. Hon. Gabriel Kago Mukuha, MP    |                          |
| 8. Hon. Justus Makokha Murunga, MP |                          |
| 9. Hon. Joyce Kamene, MP           |                          |
| 10. Hon. Fred Ouda, MP             |                          |
| 11. Hon. Maison Leshoomo, MP       |                          |

**COMMITTEE SECRETARIAT**

- |                    |                       |
|--------------------|-----------------------|
| 1. Mr. Ahmad Kadhi | First Clerk Assistant |
| 2. Mr. Alex Mutuku | Sergeant At- Arms     |

**MIN.NO. DC/A&L/ 200 /2018: PRELIMINARIES**

The Chairperson called the meeting to order at 1.30 pm. The sitting commenced with prayers.

**MIN.NO. DC/A& L/ 201 /2018: CONSIDERATION OF THE DRAFT REPORT OF THE COMMITTEE VIST TO INDIA ON BT COTTON**

The Committee considered and adopted the report with the following observations and recommendations:

The Delegation, having undertaken the study visit noted that;

1. The Indian Economy had grown by 55 Million USD due to the introduction of BT Cotton with textiles as the second largest source of employment for its citizens. Such growth can be replicated in the Kenyan Economy with the introduction of BT Cotton.

2. BT Cotton farming was doing well in ASAL regions of India therefore there was potential to increase farming in ASAL regions in Kenya through BT Cotton.
3. There existed strong Public-Private-Partnerships among the Farmers-Corporates-Government, ensuring collaboration in research, development and extension services.
4. There was no research and science backing the banning of BT Cotton for textiles and manufacturing.
5. The regulations by the Ministry of Environment that requires EIA of research and development into BT as the said regulations hampered progress in Bio-Technology.
6. The Ministry of Environment Regulations on requiring Environmental Impact Assessments on BT research were in contravention of the Biosafety Act 2009. The regulations subjected researchers to NEMA regulation whereas the Biosafety Act 2009 empowers the Bio Safety Authority to regulate researchers of biotechnology.

The Committee thereafter made the following recommendations;

1. **That the Government lifts the ban on BT Cotton.**
2. **That the Government develops a comprehensive policy on BT Cotton.**
3. **That Kenya Agricultural Livestock Research Organization (KALRO) and Agricultural Training Centres (ATC) take the lead in seed multiplication and farmer extension services on BT Cotton.**
4. **That necessary budget allocations are made by the National Treasury to facilitate the Department of Agricultural Research in the Ministry of Agriculture, Livestock, Fisheries and Irrigation to facilitate introduction and promotion of BT Cotton.**
5. **That the Ministry of Environment revokes regulations hampering research and development into Bio-Technology.**
6. **That the relevant government departments foster Public-Private-Partnerships to ensure the growth of BT Cotton sector.**

**MIN.NO. DC/ALF/ 202 /2018: ADJOURNMENT**

The Chairperson adjourned the meeting at 2.00pm to the next sitting to be held on Thursday 6<sup>th</sup> December 2018 in the Committee Room 12, New Wing, Main Parliament Buildings.

Signed.....

(Vice-Chairperson)

Date.....