

REPUBLIC OF KENYA



COUNTY GOVERNMENT OF KITUI

THE COUNTY ASSEMBLY

SECOND ASSEMBLY – (SECOND SESSION)

COMMITTEE ON AGRICULTURE, WATER AND IRRIGATION
REPORT ON THE LEARNING VISIT TO THE NAIROBI INTERNATIONAL TRADE FAIR
(2018). (AGRICULTURAL SOCIETY OF KENYA (A.S.K SHOW))

The Assembly Chambers
P.O Box 694-90200
Kitui

OCTOBER, 2018

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CHAPTER ONE

1.0 INTRODUCTION

Hon. Speaker,

The Committee on Agriculture, water and Irrigation attended the Nairobi International Trade Fair, 2018, as from 1st October 2018 to 4th October 2018. The visit was aimed at learning the best practices that can be employed in the Agricultural sector in our county to ensure food security. The committee was also on a benchmarking mission to learn on how best we can improve and better our own Agricultural show.

1.1 BRIEF OVERVIEW ON THE NAIROBI INTERNATIONAL TRADE FAIR.

Hon. Speaker

The Nairobi International Trade Fair started in 1901 when the Agricultural and Horticultural Society was formed with an objective of bringing into more general notice, the great potential of the highlands for European settlement and farming. From the humble beginnings until Kenya gained independence in 1963, the Society was called the Royal Agriculture Society of Kenya and the queen was its patron. In 1964, the Society changed its name to be known as the Agricultural Society of Kenya, with the first President of the Republic of Kenya (Mzee Jomo Kenyatta) as the Patron.

His Excellency Hon. Uhuru Kenyatta is the current patron of the Society. It is from the above Royal and National inspiration, coupled with clear objectives that the Society has covered ten decades in total dedication to serve the Agriculture sector. In 1972, the Society was privileged to host the first African Trade Fair. In 1986, the first Preferential Trade Area (PTA) was incorporated during the national show, attesting the fact that the show had attained international status with regular participation for overseas countries.

It became a Trade Fair in 2002 and now offers opportunities for regional, continental and global exhibitors to display and demonstrate their services and products. It also offers show goers an opportunity to meet people from different countries and backgrounds, hence creating a platform for interaction and exchanging of ideas and experiences.

Hon. Speaker, the Nairobi International Trade Fair is the largest Trade Fair in Kenya and the East African Region, with a mission of informing, through exhibitions and other related activities using modern technology to promote excellence in Agriculture and allied industries. Its vision is to be the disseminator of information in Agricultural and allied industries in Africa.

Hon. Speaker, among others, the mandate of the trade fair is as follows;

- 1) To promote excellence in Agriculture.
- 2) To provide forums for exchange of agricultural and agribusiness information.
- 3) To embrace innovation and technology transfer.
- 4) To participate in developing agricultural trade policies and markets

Throughout this tour, the committee visited different exhibitors/stands where we learnt a lot as far as the theme for the season's trade fair was concerned. The theme for the trade fair this year was; **'Enhancing Technology in Agriculture and Industry for Food Security and National Growth'**.

1.2 COMMITTEE ESTABLISHMENT AND MEMBERSHIP

The Committee on Agriculture, Water and Irrigation was established to oversee the activities of the Corresponding County Ministry of Agriculture, Water and Livestock Development as contained in the second schedule of the County Assembly Standing Orders.

The Committee as currently constituted comprises of the following members: -

- | | | |
|-----|--------------------------|--------------------|
| 1. | Hon. Dr. Grace Mutua | - Chairperson |
| 2. | Hon. Andrew Ndisya Lusa | - Vice-Chairperson |
| 3. | Hon. Ruth Kyene | - Member |
| 4. | Hon. Emeritus KaseeMusya | - Member |
| 5. | Hon. James MunuveMutunga | - Member |
| 6. | Hon. Eunice Katheke | - Member |
| 7. | Hon. Boniface Katumo | - Member |
| 8. | Hon. Sylvester Munyalo | - Member |
| 9. | Hon. James Musyoka | - Member |
| 10. | Hon. Jacob M. Kavolonza | - Member |
| 11. | Hon. David Thuvi | - Member |

1.3 COMMITTEE'S MANDATE

Pursuant to Standing Order 190(5), the mandate of the Committee is to:

- i. Investigate, inquire into and report on all matters relating to the mandate, management, activities, administration, operation and estimates of the assigned department;
- ii. Study programs and policy objectives of departments and the effectiveness of the implementation;
- iii. Study and review all county legislation referred to it;

- iv. Study, assess and analyse the relative success of departments as measured by the results obtained as compared with their stated objectives;
- v. Investigate and inquire into all matters relating to the assigned departments as they may deem necessary, and as may be referred to them by the County Assembly;
- vi. To vet and report on all appointments where the constitution or any law requires the County Assembly to approve, except those under Standing Order 185(Committee Appointments); and
- vii. Make reports and recommendations to the county assembly as often as possible, including recommendation of proposed legislation.

1.4 ACKNOWLEDGEMENT

Hon. Speaker,

The Committee on Agriculture, Water and Irrigation extends its gratitude to the Offices of the Speaker and the Clerk of the County Assembly of Kitui for the support and facilitation accorded to it in the execution of its mandate, and the opportunity accorded to its Members to visit the Nairobi International Trade fair.

I also wish to extend my sincere gratitude to the Secretariat for the input and valuable contributions during, compilation of this report.

I wish to express my appreciation to the Honourable Members of the Committee who sacrificed their precious time to participate in this laborious activity of the Committee. Your commitment and involved participation during the exercise was invaluable while undertaking the mandate of the Committee.

HON. DR. GRACE MUTUA
CHAIRPERSON: AGRICULTURE, WATER AND IRRIGATION COMMITTEE

DATE: _____

This report is compiled by:
Kelvin Mumo – Clerk Assistant

CHAPTER TWO: OBSERVATIONS

2.0 EXHIBITIONS VISITED

Hon. Speaker

Within the four days, the committee identified and visited various stands where it learned different technologies and innovations relating to Agriculture and water sectors. These included:

- 1) Kisii University
- 2) Jomo Kenyatta University Of Technology (JKUAT)
- 3) The University Of Nairobi (UoN)
- 4) Simlaw/Kenya Seed.
- 5) Kenya Plant Health Inspectorate Service (KEPHIS)
- 6) Kenya Livestock And Research Organization (KALRO)
- 7) Magrow
- 8) Zalisha Application
- 9) The World Agro Forestry Center
- 10) Biolite Home Stove
- 11) Sun culture
- 12) All Care Kenya
- 13) Muguku Farm

2.1 OBSERVATIONS AND LESSONS LEARNED FROM DIFFERENT EXHIBITORS (SPECIFIC FINDINGS)

Hon. Speaker,

When farmers attend agricultural trade fairs, they are drawn to stands where the action is from cutting edge technology, innovations, new farming methods, to new promising breeds of cattle and crops.

At the ASK Nairobi International Trade Fair Jamhuri Park; the committee visited stands that had sizzling agricultural stuff that promised to turn around Agricultural ventures. The committee was at the show to sample technology and innovations that stood out in Agriculture. Hon. Speaker the lessons learnt from the exhibition and documented in this report if incorporated in the County will make it food secure.

Hon. Speaker.

1. Kisii University

At the stand, one of the highlights that attracted the committee was the Solar Conduction Drier, a machine that dries produce without losing its freshness and nutritive value. To demonstrate how it works, the university had various kinds of vegetables and one of its team leaders took the visitors through the process of how each fresh produce is dried using the machine. “Depending on the type of vegetables, it may take four to six hours to get them out of the drier,” the exhibitor explained. According to him, for a farmer, having a machine that preserves fresh produce for a length of time, is important as one is able to store the food stuff during seasons of plenty which will come in handy during dry seasons. He explained that a filter glass on the drier ensures that it blocks the UV rays from the vegetables and ensures that the produce retains its original color and taste.

Hon. Speaker

2. Jomo Kenyatta University of Agriculture and Technology (JKUAT)

At the Jomo Kenyatta University of Agriculture and Technology (JKUAT) stand the committee was awed by a presentation on cricket farming dubbed ‘*cricket for animal and human feeds discovery*’, the researchers also revealed that they are now working on grasshoppers to prepare sustainable sources for proteins. “The insects can either be roasted and chewed or dried, ground and licked in powder form.

They can also be prepared as a drinking paste, just as crickets are prepared. A Research Associate at JKUAT took the committee through the farming and cooking methodology for the noisy insects for many of us in this House. To start rearing crickets what a farmer needs, according to the JKUAT researcher is a cage made of wood or a trough stuck with trays or any dark places where the crickets can hide and drinkers. The crickets can be fed on kales. It is also mandatory to have plastic plates stuffed with moist cotton wool where the grasshoppers can lay eggs. The insect lays up to 300 eggs in its lifetime, which is 14 days.

Hon. Speaker

3. The University of Nairobi

The University of Nairobi's stand also attracted traffic as show goers made their way to see the impressive innovations on offer. One of the researchers showcased a cheap way to control pests on farms. It is worth noting that pests are one of the headaches that give farmers sleepless nights because if not controlled on time, they can wipe away an entire crop. At this stand most farmers wanted to hear what the research had on offer to tame these destructive creatures.

The simple technique uses readily available bacteria to make a component that destroys pests. The researchers explained to the committee that a farmer simply collect bacteria that is readily available in the soil, multiply them in the fields and voila the menace is sorted.

Hon. Speaker

4. Kenya Seeds /Simlaw Seeds

To appreciate and learn on Innovations showcased by companies at the Nairobi International Trade Fair the committee also took time to focus on how best new technologies can help improve the nutritional status of crops, boost food security and add value to farm products.

At the Kenya seed company and its subsidiary Simlaw seeds the committee received advice from agricultural seeds experts.

As a Kitui delegation we were advised to encourage farmers plant short-term season crops during the October - December period. Simlaw Seeds officers informed our delegation that the company's latest developed high-yielding, drought and disease-tolerant seed varieties, vegetables and pastures suit various ecological zones so as to sustain food security. According to a researcher with the Firm, the older farmers continue to engage in outdated farming practices while climate change has disrupted traditional rain and drought cycles. He emphasized that farmers in arid and semi-arid areas cannot go far if they fail to come up with smart innovations to encourage young people to embrace farming. He noted that weather unreliability demanded that the company comes up with seeds that can survive in different ecological zones.

Hon. Speaker

Kenya Seeds — the mother company of Simlaw Seeds— recently released a new tomato variety into the market. Tomato NyotaF1 a medium to large fruit with lots of juice and a long shelf-life of two to three weeks. They informed that it is tolerant to bacterial wilt and leaf curl virus he said the high-yielding tomato is tolerant to heat and is widely adaptable especially in Kitui, Makueni, Machakos and parts of Rift Valley.

Besides food security agenda, he said in the new seed of tomato and maize they put into account the nutritional component of indigenous vegetable seeds able to improve health of consumers and to help fight diseases such as cancer and even HIV/Aids.

The company staff encouraged our delegation to seek for partnership with it through the County Ministry of Agriculture so as to reap maximum benefits from its research and innovations.

Given the onset of the short rains season, farmers often lack information about the best maize varieties to plant.

The officers told the members being the people in touch with the citizenry they should encourage them not to ignore the short rains of between October and December as they present an opportunity to take advantage of the short season crops to boost their food reserves or build surplus for the market. He said the short rains maize breed for the medium and low altitude areas of up to 1,600 metres above sea level and areas that receive around 800 mm of rain.

These short season varieties include the WH507 by Western Seed Company, KH500-33A from Freshco and Kh500 – 43A from East African Seed Company. They do well in areas that include Kakamega, Bungoma, Busia, Kisii, Homa Bay, Suba, Migori/Rongo, Siaya, Bondo, Tinderet, Nandi, Kericho, Bomet, Narok, Sotik, Trans Mara, Murang'a, Kiambu, Kirinyaga, Embu, Meru, Machakos, Kitui, Mwingi.

On pasture, the seed company has introduced two new varieties for dairy industries, namely;

- a) Katambora
- b) Brackariamullato

Hon. Speaker.

5. Kenya Plant Health Inspectorate Service (Kephis)

Kenya Plant Health Inspectorate Service (Kephis), the government parastatal tasked with the responsibility to ensure the quality of agricultural inputs, was also an attraction. An officer at the organization explained to eager farmers about an innovative sticker put on seed packets to differentiate between fake and certified seeds. This innovation is timely given that there are many cases of quack seed sellers. She said when scratched, the sticker reveals a digit which if sent to the code 1393, a free SMS service, it delivers correct details about the seed sold. Also on display at the Kephis stand, were various varieties of potato tubers the organization had imported from the Netherlands which are drought resistant and can stand short rains as they require minimal water for their growth.

Hon. Speaker

6. Kenya Livestock and Research Organization (KALRO)

When it comes to practical and relevant agricultural research, Kenya Livestock and Research Organization (KALRO), the State research body, had enticing innovations for the smart farmers. KALRO's ICT specialist demonstrated three mobile applications they had developed in partnership with the European Union which had been developed and were available to farmers who, on accessing the internet, were now able to interact and benchmark on activities of each other.

The apps include; Indigenous KALRO Chicken App, KALRO Drylands Crops App and Range Pasture Seed Production and are all available on the Google Playstore on smartphones and other internet-enabled devices. The officer also explained about a pigeon pea variety which is bigger, disease resistant and high yielding. She said the Seeds are encouraged for growth by farmers in areas with unreliable rain patterns.

The varieties named Kat 60/8, Kat 81/3/3, Kat 777, ICPL 89091, Mbaazi-1/2/3 she said is have High protein content of between 20 and 25 per cent, a good source of energy and provides folic acid, dietary fiber, complex carbohydrates, which are deficient in maize, cassava and rice, Cook faster and have little gas, are drought and pest tolerant, mature faster between 120 – 140 days, can be harvested twice in a year and that can produce least between 8 -15 bags per acre.

Hon. Speaker

Stands that displayed farming machines also attracted heavy human traffic. Magrow Company demonstrated how their spraying innovation reduces wastage of chemicals during spraying. “The manifolds improve the quality of the liquid into finer droplets that fall close to the target. The Machines help reduce waste of liquid content by spraying a larger drop which easily slides off the leaf without having maximum impact on the plant.

Hon. Speaker.

The dairy section also attracted crowds as dairy keeper’s sampled new breeds of cows and goats that promise good milk this was through good feeds with high protein content which the farmers can grow in their own farms. The exhibitors from different firms the committee visited explained to the committee that for a healthy and productive cow, feed rations should have a balance of quantity, quality, amounts of concentrates, protein, mineral and vitamins. Fodder/roughages are bulky feeds that are rich in energy and proteins, but are not whole meal. They said it is important for high milk production in dairy cows and constitute up to 80 per cent of the diet.

At the B.M Musyoki farm the manager gave example of fodders which includes napier grass, Boma Rhodes, lucerne, desmodium and sweet potatoes vines. He added that Napier grass is best intercropped with desmodium, harvested and fed together. He told the committee that Fresh fodder should be fed after a day’s wilt, chopped into 2 inch pieces to enable the cow feed easily and minimize wastage and that a dairy cow should consume 15-20kg of chopped forage per day preferably in two splits, one in the morning and the other in the evening. During steaming up, the exhibitor told the committee that extra high quality feed is given to in-calf cows/heifers for the last two months before calving.

Hon. Speaker

7. Zalisha Mazao Application.

The committee also visited the Zalisha app stand. The app directly links farmers to buyers. Through the platform, farmers are educated on good and modern agricultural practices. With this App the innovators informed the committee that brokers are now a thing of the past. Use of the App enables a farmer to directly sell his produce to buyers.

The platform which is a product of FINETEK Technologies (K) Ltd, a startup software company that is incubated in the Chandaria Business Incubation Centre

at the Kenyatta University Main Campus. This technology is also able to improve farmers produce as they can get specific farming methods in their areas of interest from the Zalisha platform.

Hon. Speaker

FINETEK Technologies is composed of a group of young men who have developed in their desire to transform the way farming is done in Kenya through the use of technology and smart digital applications. The project, which was founded on May 2017, has six founders and developers. They informed the committee that they are currently working with about 500 farmers but they are expecting the number to rise as more people get to know about the benefits accruing from using the app.

Zalisha App offers predictive farming depending on agro ecology to farmers, by providing accurate weather and climate analytics as well as customized information on crops depending on their farm locations, the director of the initiative informed the committee. The platform also provides a marketplace for farmers to sell their produce as well as get services.

Hon. Speaker.

Zalisha also seeks to help farmers get accurate and consistent weather information on the present and future, give advice on crops to be planted, the timing and the right farming procedures and how to combat crop pests.

In addition, the platform advises farmers on the best time for harvesting and how to do it properly in order to gain maximum yield. The lessons are offered through video tutorials or quick notes. A user can add their farms to the platform catalogue, depending on their locations. The system can then automatically suggest to them crops that can do well in the areas they are located. The app monitors the farm's activities and provide advice accordingly. The platform can effectively manage planting, tendering and harvesting in for farmers to gain maximum yield.

Hon. Speaker

Zalisha also connects farmers directly to the local consumer market. This enables independent farmers and *SACCOS* to sell their produce easily. Buyers are also able to contact farmers easily. Farm input resellers can also get in touch with farmers without having to scout physically for the market. The app also provides a forum

for one to ask and post questions related to their farming practices and provide a communication channel for farmers through formation of farmers groups.

Hon. Speaker

8. The World Agroforestry Centre

In August 2017, the National Environmental Management Authority banned the use of plastic bags in the country.

NEMA has since encouraged Kenyans to come up with alternative ecofriendly biodegradable materials. The World Agroforestry Centre, a Company from Murang'a County has come up with tree seedlings grown in biodegradable bags to cushion farmers against the shock of the ban.

The company was showcasing new biodegradable materials used to pot tissue culture banana seedlings. According to the Agribase Consultant, the biodegradable material disappears after a year once the plant roots has developed and ready to be transplanted. The biodegradable bags are made from clothing materials and this, he said, is good for protecting the environment.

The seedlings produced in biodegradable bags establish more strongly once planted on the farm as the Polythene seedling tubes restrict the growth and aeration of roots in the nursery. When removed from the plastic and transplanted into the soil, the roots, which may have coiled in the bag, take longer to anchor into the ground. This results to lower vigor seedlings when they are transplanted from these bags.

The consultant told the delegation that unlike polythene, biodegradable bags promote better drainage and aeration, which helps normal root development in the nursery. He added that the biodegradable bags do not have to be cut away from the roots when seedlings are being transplanted. This ensures that the root system remains undisturbed thus reducing the risk of transplant shock to the tree seedling.

Hon Speaker

9. BioLite Home Stove

The committee also visited a stand exhibiting a BioLite Home Stove. The energy-saving Jiko cost Sh7, 500. The sales and marketing officer at BioLite Holdings, said the jiko can cook, provide light and also charge a phone. He explained it is made of stainless and well insulated handles. The top and base are made of a strong metal which is well insulated to make it retain heat. It is also fitted with a thermo-

electrical generator that converts heat energy to electrical,” he said. It does not produce any soot, makes cooking easier and saves up to fifty (50%) percent of fuel or less. He said one can use firewood, maize cobs or dry cow dung as a source of heat. He explained that it can boil one kilo of green grams or beans in one hour or five liters of water in 15 minutes.

10. Sun Culture

Hon. Speaker

At the National irrigation board stand the committee came across the Sun Culture Solar powered irrigation pump

The sales assistant explained to the committee that the solar pump comes with two 40W solar panels, pump, six meters suction hosepipe and a toolbox at a cost of Ksh50,000.

“It is portable, has a charging socket for phones and can pump water up to 500m across flat land. The solar pump can pump 2,500 liters of water in one hour,” he said.

11. All care Kenya

Hon. Speaker

At the All care Kenya Stand the committee was taken through rabbit farming. The exhibitor explained to the committee that Rabbits are fast growing animals that take 4 - 5 months to mature for slaughter. Saying they reproduce very fast, kindling (giving birth) four times a year to an average of 8 kits per kindle.

He told the committee that rabbits have different breeds which are available in Kenya, the California white, Chinchilla, Dutch, New Zealand white, Flemish giant, French ear lop and the Angora. He informed the committee that managing rabbits starts with constructing a proper hutch and may be constructed with wood, concrete or iron sheets depending on the material available.

He added that each adult rabbit should occupy its own hutch that measures 2.5ft long, 2.5ft wide and 2 ft high. The weaned kits may be placed in hutches 4.5ft x 2.5ft x 2ft. The floor of the rabbit hutch should be made of chicken mesh reinforced with a wire mesh to allow dropping to pass through, keeping the rabbits in a clean and dry environment.

He emphasized that there should be a plastic sheet placed below the floor of the rabbit’s hutch to help collect the rabbit’s urine and droppings and this should be in

a slanted direction to help the dung flow to a collecting gutter which also slants to a collecting point. He said this makes it easy to clean and keeps the area dry. Adding that the structure should face away from direct wind and the side that faces away from the direct wind should have a space between the roof and the wall for ventilation. On Feeding the expert told the committee that Rabbits are strict herbivorous and their diet should constitute of 80% fiber. Grass hay (Timothy hay or Rhodes grass) is rich in vitamin A and D, calcium, proteins among other nutrients.

The exhibitor encouraged rabbit farming saying that just like other livestock enterprises, rabbit farming is profitable as long as good management is adhered to. He said the farm was motivating this through the buying back program where the farmer sales back to the farm the rabbits when they grow up at Ksh. 500 per Kilogram.

12. Muguku Poultry farm

Hon. Speaker

To learn on poultry farming the committee visited Muguku Poultry farm which is a primarily a hatchery specializing in the production of day old commercial layer and broiler chicks. The company based in Kikuyu has a rearing farm for hatchery and distribution point at the same location.

The exhibitor explained that their layer parent stock comes from Shaver, the global breeder and distributor of white and brown egg layers suitable for both traditional (cage) and alternative (open range or deep liter) under different global climates.

The Shaver Brown is a brown feathered, brown egg layer which has the ability to meet the expectations of a variety of egg producers with different objectives. The bird can produce high egg numbers. All essential ingredients to keep their business profitable. He told the committee that the Shaver Brown performs extremely well for the egg producer with traditional production facilities. And that it is docile making the bird perfect for alternative production methods as well. He explained that it is known for its growth rate and ability to thrive on low density, less costly nutrition and has the lowest feed conversion rate. He gave the advantage of keeping the shaver brown breed as:

1. Shaver Brown adapts herself to all climates and environments.
2. Shaver Brown is the most “efficient” layer in the industry producing many high quality eggs.

3. Has longer laying period and able to reach over 65% egg production per bird at 90 weeks from a peak of 95% at 28 weeks.
4. Excellent feed conversion with an average feed consumption per day of 140 grams.
5. Weight at 18 weeks is 1500g while weight at 90 weeks is 1975g.
6. Egg production starts at 18 weeks and peak at 28 weeks.

CONCLUSION

Value addition, adoption of latest technology and increasing land under irrigation are some of the key measures that will enhance food security in Kitui County if adopted. The County Government should seek to devise ways of tackling effects of climate change to increase food production, lowering the cost of farm inputs, solving the lack of markets and storage facilities for farm produce and encouraging innovations from different farmers should be prioritized efforts to ensure Kitui County is food secure. Further the Government should ensure agriculture becomes attractive to youths, by ensuring availability of funds, provision of extension services and adoption of indigenous crops.

2.2 GENERAL FINDINGS

- 1) Nairobi International Trade Fair (NITF) is the largest Trade Fair in the East African Region. It is a seven day event that runs from late September to early October every year. NITF became a Trade Fair in 2002 and now offers opportunities for regional, continental and global exhibitors to display and demonstrate their services and products. It also offers show visitors an opportunity to meet people from different countries and backgrounds, hence creating a platform for interaction and exchanging of ideas and experiences.
- 2) The Trade Fair has three broad sections namely: livestock and crop demonstration, manufacturers and service industry and international exhibitions.
- 3) Livestock and crop sections cover exhibitions of pedigree exotic livestock, cereals and demonstration plots for crops as well as greenhouse farming.
- 4) Local manufacturers and service industry section covers displays by local industries which range from farm machinery, farm inputs and manufacturers, banks, insurance and textiles among others.
- 5) International exhibitions sections refer to our exhibition halls where foreign companies are housed during the Trade Fair. Over eighty (80) companies from the following countries have participated at our annual Trade Fair each year in the last 2 years.

- 6) In keeping with the theme of the show, *Promoting innovation and technology in agriculture and trade*, exhibitors showcased several innovations geared towards agriculture and entrepreneurship. The innovations ranged from those in food security, agricultural mechanization, and agribusiness as well as value chain.
- 7) The development of agriculture is important for poverty reduction since most of the vulnerable groups like pastoralists, the landless, and subsistence farmers, also depend on agriculture as their main source of livelihoods. Growth in the sector is therefore expected to have a greater impact on a larger section of the population than any other sector. The development of the sector is therefore important for the development of the economy as a whole.
- 8) Policies for agriculture consist of government decisions that influence the level and stability of input and output prices, public investments affecting agricultural production, costs and revenues and allocation of resources. These policies affect agriculture either directly or indirectly. Improved agricultural production has been seen as one of the overall objectives for poverty reduction in the country.

CHAPTER THREE:

3.0 RECOMMENDATIONS

The committee recommends as follows; that the County Government of Kitui;

- 1) That the relevant County Ministries partner with information technology companies to leverage on technologies that will empower Kitui farmers with opportunities for economic growth.
- 2) Ensures agricultural policy revolves around the main goals of increasing productivity and income growth, especially for smallholders; enhanced food security and equity, emphasis on irrigation to introduce stability in agricultural output, commercialization and intensification of production especially among small scale farmers; appropriate and participatory policy formulation and environmental sustainability.
- 3) Expose local farmers to greenhouse management, drip irrigation, fish farming, land and water management, afforestation, combating desertification, integrated pest management, post-harvest and storage, crop yield improvement, aquaculture, dairy farming, adaptation to climate change, and dryland development
- 4) Take keen interest in picking up the best available farming and dairy practices from successful countries like Israel.
- 5) Apply effective dry-land farming and water harvesting strategies which would contribute to making Kitui county food secure. Noting that Kitui County is characterized by semi-arid climate, persistent drought and erratic rainfall patterns which can allow exchange of knowledge and experiences on dry land farming to flourish.
- 6) Promote serious afforestation campaign with a view to improving rainfall and weather patterns in the county in coming years. It should also promote protection/conservation of wetlands (water catchments) to safeguard accessibility of the vital resource. Further, it should carry out a comprehensive mapping of potential water resources in the County for better management.
- 7) Facilitate enactment of legislation to promote harvesting of rain water across the county to encourage kitchen gardening at household level.
- 8) Roll out a viable master plan to address water and food insecurity in the County. The plan should be implemented under a government –led program to ensure the envisaged goals are achieved within a reasonable time-frame. Such program should encompass the following;
 - a) Identify, develop and protect high potential agricultural areas (specialized zones based on ecological conditions) within the County.
 - b) Installation of water distribution networks and tap the commodity from the permanent sources such as rivers Athi and Tana and circulate it for domestic use and irrigation farming by the residents. This can be achieved by

constructing high capacity dams and water storage tanks along the two perennial rivers and the other seasonal ones like Tiva to harness the plenty of rain-water which flows to the oceans.

- c) Establish a County Irrigation Authority to spearhead the development and management of the major irrigation projects in the County including Wikithuki in Tseikuru sub-county. Further initiate major irrigation projects in the county modelled on Israel's Kibbutz movement through which residents of the county can pursue joint investments for improved incomes and other social benefits. For instance, part of the extensive land belonging to Kanyonyoo ranch, the Kenya Agricultural Research Institute (KARI) and Better Living Institute (BLI) near Kitui town can be hived off for piloting purpose. The model projects can also serve as the learning centres for farmers on the best farming practices to boost production.
 - d) Facilitate mechanized farming in the County through purchase of tractors for major agricultural projects like Wikithuki to maximize productivity. Doing so will discourage the use of traditional farming methods at the ambitious projects such as the use of hoes for tilling the land and planting which delivers poor yields. Implementation of such measures will move the County away from rain-fed agriculture which has failed in Ukambani region owing to erratic rainfall cycle. Encouraging mechanized farming would increase efficiency through a reasonable mix of labour based technologies within the specialized production zones including the Wikithuki irrigation project.
 - e) Establish a County level agricultural research and innovation centre with field stations spread throughout the County to enable training mentorship and transfer of appropriate technologies to the farmers to boost agricultural productivity.
 - f) Come up with a policy geared at promoting food processing/value addition to agricultural products with a view to guaranteeing the farmers markets for their produce and creating job opportunities for the locals.
 - g) Provide a policy and institutional environment that is conducive to increasing agricultural productivity, promoting investments, encouraging private sector involvement in agricultural enterprises and agribusiness. We have a bountiful county with plenty of water, arable land, good climate, population (workforce and consumers) which are underutilized.
- 9) The county government should place heavy emphasis on research and development to promote development of innovative products.

CHAPTER FOUR

4.0 ANNEXURE ONE

PHOTOGRAPHS TAKEN DURING THE TRADE FAIR



Simlaw seeds with a sticker



Kisii University researcher show cases the drier.



Sunculture battery and solar for irrigation.



Rabbits farming briefing



Members sampling livestock feeds

5.0 ANNEXURE TWO:

ADOPTION OF THE REPORT

We, Honorable Members of the Committee on Agriculture, Water and Irrigation, do hereby affix our signatures to this report to affirm our approval and confirm its accuracy, validity and authenticity: -

<u>Members</u>	<u>Designation</u>	<u>Signature</u>
1. Hon. Dr. Grace Mutua	- Chairperson	_____
2. Hon. Andrew Ndisya Lusa	- V/chairperson	_____
3. Hon. Ruth Kyene	- Member	_____
4. Hon. Emeritus Kasee Musya	- Member	_____
5. Hon. James Munuve Mutunga	-Member	_____
6. Hon. Eunice Katheke	- Member	_____
7. Hon. Boniface Katumo	- Member	_____

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| 8. Hon. Sylvester Munyalo | - Member | _____ |
| 9. Hon. James Musyoka | - Member | _____ |
| 10. Hon. Jacob M. Kavolonza | - Member | _____ |
| 11. Hon. David Thuvi | - Member | _____ |