



THEME:

Reducing Food
Losses and Waste:
Sustainable Solutions
for Africa

Postharvest loss assessment
methods and data, technologies,
practices, strategies, investment,
policies, cases studies,
success stories

EXCURSION PRE-READS
FOR THE 1st ALL-AFRICA
POSTHARVEST CONGRESS
& EXHIBITION

The reduction of FLW is an important strategy to ensure food and nutritional security in efficient and sustainable food systems. It has become even more critical as most countries appreciate the futility of increasing production (using limited resources) to make up for the lost food. Putting value (economic, social, and environmental) to FLW makes the impact clearer. For example some reports estimate that the global FLW amounts to 1 trillion USD per year.

If environmental and social costs are factored in, the value rises to about 2.5 to 3 trillion, which is approximately 5% of the world GDP. In Sub Saharan Africa (SSA), annual losses in grains alone are valued at USD 4 billion (World Bank, 2011). This value exceeds the total food aid received in SSA over a decade and equates to the annual value of cereal imports to SSA.

Food production in SSA is dominated by smallholder farmers who account for more than 70% of the agricultural production. For the smallholder farmers, intermediaries, processors, and other actors in the supply chain, the lost income from postharvest losses is estimated to be more than 15%.

The good news however is that there are a growing number of innovative projects and technologies being designed to try and reverse the trend. In Kenya for example a number of companies and government institutions have invested heavily in initiatives that are greatly reducing postharvest loss and increasing profitability for agribusinesses.

The partners behind the 1st All-Africa Post Harvest Congress and Exhibition would like to showcase some of these initiatives and provide delegates with an opportunity for delegates to learn and interact with local companies and farmers.

The excursion is targeted at delegates who are interested to see first-hand projects that are impacting the livelihoods of communities and putting more money in the pockets of farmers. The excursions will take place on Day One of the Congress (28th March, 2017).

Excursion options

There are three options for delegates to choose from namely:

1. Dairy sub-sector
2. Horticulture sub-sector
3. Processing and storage.





ROUTE 1

Focus on the dairy sub-sector

Who will be visited: Githunguri Fresha Processing Plant and a small-scale Dairy Farmer and the Field Station at the College of Agriculture and Veterinary Sciences.

Logistics

- Participants will be meeting at the Safari Park Hotel, Nairobi at 7:00am
- There will be transport available for all who have confirmed their participation in advance.
- Water, snacks and a light lunch will be provided.
- Dress appropriately - light clothes, hats, sunblock and closed comfortable walking shoes

AGENDA

TIME	ACTIVITY
7:00am	Meet at Safari Park Hotel reception
7:15 – 8:30 am	Drive to Githunguri
8:30 – 9:00 am	Visit Dairy Farmer The delegates will be divided into two groups and each group visit one of the smallholder dairy farmers within the vicinity of the processing plant where the following will be expected. <ul style="list-style-type: none">• Farmer to provide an overview of their dairy activities and challenges afflicting the operations especially with regard to losses• Farmers will provide an overview of their previous experiences on losses experienced and the mitigation measures
9.00 - 10.00am	Meet at Githunguri Dairy Processing Plant and get a brief overview <ul style="list-style-type: none">• Of the history and operations of Githunguri Dairy• Best models of working with farmer groups• Officer takes participants through operations of the collection centers including overview of how they test, weigh the milk and use of technology

10:00 – 12:00	Processing Plant Officer takes participants through operations of the processing plant to cover all the aspects of milk processing where they will be explained to on the processes and also learn by observations and interaction with the company staff.
12.00 – 1.15pm	Drive to Kabete (CAVS)
1.15-2.00pm	Lunch and health break
2:00 – 3:30pm	Visit CAVS Field Station The delegates will be able to learn <ul style="list-style-type: none"> • Handling of various crops and livestock products to reduce losses • Best practices in managing pests and diseases avoiding pesticide residues
3:30 – 3:45pm	De-brief
3:45 – 4.45pm	Depart for Safari Park
6:00 – 8:00pm	Participate in Congress Welcome Cocktail

PROFILES

STOP 1

Visit Smallholder Dairy Farmers

The delegates will be divided into two groups and each group visit one smallholder dairy farmer within the vicinity of the processing plant where the following will be expected.

- The farmers will provide an overview of their dairy activities
- Challenges and previous experiences afflicting their operations especially with regard to milk losses
- Mitigation measures the farmers have adopted and what visiting delegates can learn





STOP 2

Githunguri Fresha Milk Plant

The Society was formed in 1961 as an initiative to help the smallholder dairy farmers of Githunguri Division, to market their milk. The cooperative focused initially on marketing of milk by selling to other large institutions, processors before it opened its own processing facility in 2004. It collects around 250,000 kg of milk a day from a membership of approximately 14,000 small scale farmers.

Membership is drawn from members of the parent society Githunguri Dairy Farmers Co-operative Society Limited, its employees, tea and coffee farmers, youth & the Business community within Kiambu County. The society has operated a very successful business model and the demand by farmers to join it is overwhelming and the society is unable to take in new members due to overstretched capacity

The head office for Githunguri Dairy is located in Githunguri town approximately 50 km from Nairobi city. The route to Githunguri Dairy passes through big coffee farms with scenic views with meandering roads and river beds where farmers practice mixed crop farming. Next to Githunguri Dairy are tea farms characterized by undulating hills.

At the Githunguri plant, the delegates will be taken through:

- The history and operations of Githunguri Dairy
- Best models of working with farmer groups
- Operations of the collection centers including overview of how they test, weigh the milk and make use of modern technology
- Tour of the facility.



*Processing
plant at the
Githunguri
Dairy*



*Dairy farming
among the
small scale
farmers.*



*Hand
milking
practiced
by most
farmers*

STOP 3

Visit Field Station of the University of Nairobi

The Field Station Farm of the University of Nairobi has been in operation for over 40 years with land size of around 500 acres. The Farm supports teaching, research and income generation. The farm provides land and irrigation facilities to students, staff and collaborating institutions for research.

The farm engages in commercial production and markets its products at its sales outlet (Kiosk) at Kabete Campus and other campuses. The farm is implementing high-value enterprises such as, fish production, indigenous chicken production and intensive livestock production and associated waste management strategies such as composting and biogas production. By embracing these new technologies, the farm aims to increase efficiency in resource utilization and reduce negative impact on the environment. Once fully implemented, these new technologies and enterprises will be used for demonstration and outreach activities.

The delegates will be able to learn about:

- Handling of various crops and livestock products to reduce losses
- Best practices in managing pests and diseases avoiding pesticide residues.





ROUTE 2

Focus on the horticulture sector

Who will be visited: Real IPM, Practical Training Centre (PTC) and Kenya Agricultural and Livestock Research Institute (KALRO), Burton & Bamber and Makongeni Open-air Market

Logistics and Programme

- Participants will be meeting at the Safari Park Hotel, Nairobi at 7:00am
- There will be transport available for all who have confirmed their participation in advance.
- Water, snacks and light lunch will be provided.
- Dress appropriately - light clothes, hats, sunblock and closed comfortable walking shoes

TIME	ACTIVITY
7:00am	Meet at Safari Park Hotel reception
7:15 – 8:15 am	Drive to Real IPM
8.15 – 10.30 am	Officer takes participants through operations at IPM. Delegates will be able to see <ul style="list-style-type: none">• Technology for managing fruit flies - Auto-dissemination device• Vertical bag farms with various vegetables growing• Greenhouse with tomatoes grown under pure organic conditions• Facility where the formulated products are kept with demonstration of how they work from a team of highly trained staff
10.30-11.00 am	Drive to Practical Training Centre (PTC) and Kenya Agricultural and Livestock Research Institute (KALRO) –Thika.

11.00 – 1.00 pm	<p>The delegates will be taken through the various facilities both at PTC and KALRO Horticultural Research Institute</p> <p>Delegates will be able to see</p> <ul style="list-style-type: none"> • Handling practices of vegetables prior to delivery to the exporting companies • Field operations for the production of various vegetables • Tests and analytical procedures being carried out on post harvest commodities • Delegates will be able to tour the research laboratories and get more briefs from the staff
1.00 – 1.30 pm	Lunch and health break.
1.30-2.00	Drive to Burton and Bamber
2:00 – 3.30 pm	<p>Get brief overview of the company. The delegates will be able to see the following:</p> <ul style="list-style-type: none"> a) Best practices in handling of fruits and vegetables to manage losses b) Drying as a method of processing and value addition of fruits and vegetables c) Aggregation of farmers and training them for production of quality produce that meets the certification standards
3.30-4.00	<p>A visit to the Makongeni Open Air Market where delegates will be able to interact with the traders going on with their normal business operations</p> <p>Delegates will be able to see</p> <ul style="list-style-type: none"> • Handling of cereals, fruits and vegetables • Storage of the various products
4:00 – 4:30pm	De-brief
4:30 – 5.30 pm	Drive back to Safari Park
6:00 – 8:00 pm	Attend the Welcome Cocktail





PROFILE OF COMPANIES

STOP1

Real IPM

Real IPM is located 6km off Thika Gatanga road approximately 500m from Blue Post Hotel in Thika. The company offers crop solutions that allow growers to protect both field and greenhouse crops with limited use of chemical pesticides.

The company uses bio-pesticides which conserve naturally occurring beneficial insects whilst killing targeted pests and diseases.

At Real IPM, the delegates will be able to see the following:

- Technology for managing fruit flies - Auto-dissemination device
- Vertical bag farms with various vegetables growing
- Greenhouse with tomatoes grown under pure organic conditions
- Tour facility where the formulated products are kept with demonstration of how they work from a team of highly trained staff.



Vertical vegetable gardens



Integrated Pest and disease management on using biological control agents and sticky traps

STOP 2

Practical Training Centre (PTC)

PTC is a public– Private Partnership between Kenya Agricultural and livestock Research organization (KALRO) and Fresh Produce Exporters Association of Kenya (FPEAK). It is located about 5km from Thika town along Thika Murang'a road.

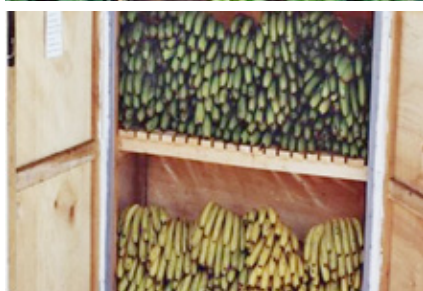
KALRO Horticultural Research Institute undertakes research focusing on production, crop management, pre-and-postharvest and value addition of horticultural crops. The Center's mandate includes the development and dissemination of appropriate technologies for fruits, vegetables flowers and aromatic and medicinal plants.

At PTC, delegates will be able to see:

- a) Best practices in handling of fruits and vegetables to manage losses
- b) Drying as a method of processing and value addition of fruits and vegetables
- c) Aggregation of farmers and training them for production of quality produce that meets the certification standards.



*Horticultural
Research
Institute
Laboratory
and Office
Complex*



*Ripening
chamber
for
bananas*



*Drying
of mango
using
a solar
drier*



Analysis of tomato quality in postharvest laboratory



STOP 3

Burton and Bamber

Burton & Bamber is a Thika based agro-processing company specializing in preservation of fruit and other crops. The company is based in Makongeni area of Thika approximately 4 km from Thika town. The company specialises in drying of fruits and packaging of dried fruits.

The company started operations in January 2016 and is currently processing seven different types of fruit products and uses a mechanical dryer to dry the fruits that are then prepared as rolls or slices. The company prepares around 2000 kgs of slices per day.

The major challenges affecting the company are:

- Poor quality of fruits due to pests and diseases especially in mangoes
- Meeting the requirements of the customers in terms of product specifications and
- Getting the right of packaging materials to address the problem of oxidation of the products.

The company also deals with bananas, pineapple, strawberry, raspberry and tomatoes.



Some of the products from Burton and Bammers

STOP 4

Makongeni open air market

Apart from trade in other merchandize, the market is very important source of food for people in Thika town and its environs and it generates huge revenue for the Kiambu County.

Various types of perishable and non-perishable commodities are traded in the market with traders complaining of heavy losses due to lack of proper structures to store their produce and conduct their business.





ROUTE 3

Focus on processing & storage

Who will be visited: AAA Growers, Kings Commodities and Classic Foods

Delegates will visit AAA Growers, Classic Foods and Kings Commodity

Logistics

- Participants will be meeting at the Safari Park Hotel, Nairobi at 7:00am
- There will be transport available for all who have confirmed their participation in advance.
- Water, snacks and light lunch will be provided.
- Dress appropriately - light clothes, hats, sunblock and closed comfortable walking shoe

AGENDA

TIME	ACTIVITY
7:00am	Meet at Safari Park Hotel reception
7.15 – 8.15 am	Drive to AAA

8:15 – 10.30 am	<p>AAA GROWERS The delegates will get a brief from the farm manager and then visit the following facilities;</p> <p>Production fields The fields have the following crops, lemon grass, French beans, and broccoli.</p> <p>Greenhouse Various varieties of chillies at various growth stages</p> <p>Grading sheds Grading sheds where initial sorting and grading is done before the produce is taken to the packhouse for further processing. The grading sheds is compartmentalized to handle the different types of crops without mixing.</p> <p>Packaging house The farm has medium and high care area in the pack house differentiated by the level of biosafety employed. Delegates will be able to see processing of a wide range of agricultural products.</p> <p>The delegates will be able to see</p> <ul style="list-style-type: none"> • Growing of various crops under field and greenhouse conditions • The various post harvest handling procedures • Processing of the vegetables
10.30 – 11.00 am	Drive to Kings Commodities
11.00 -12.00	<p>Meet officials. Brief overview of the company</p> <p>Tour of the company</p> <p>The delegates can learn on the following;</p> <ul style="list-style-type: none"> • Good practices in storage management of grains • Treatment (fumigation) of grains to manage the storage pests
12.00 – 12.45 pm	Drive to Classic Food
12.45-1.30	Lunch and health break.





1.30pm – 3.30 pm	<p>Meet officials. Brief overview of the company</p> <p>Tour of the company</p> <p>The delegates will be able to see;</p> <ul style="list-style-type: none"> a) Processing of dairy products b) Milling and packaging of maize c) Processing of fruit juices, honey and tomato sauce
3:30pm – 3.45 pm	De-brief
3.45 – 4.30	Drive to Safari Park
6:00 – 8:00	Attend the Welcome Cocktail

COMPANY PROFILES

STOP1

AAA Growers

AAA Growers operates four production sites spread over different geographical regions in Kenya. These farms are Hippo Farm in Thika, Turi farm in Nanyuki, Chesnut farm in Naro Moru and Simba farm at Nyahururu. The farm to be visited is Hippo farm located in Kabati area approximately 6 km off Thika Kenol road. The diversification in the growing regions ensures sustainable production all year round, taking advantage of the differences in weather patterns between the farms.

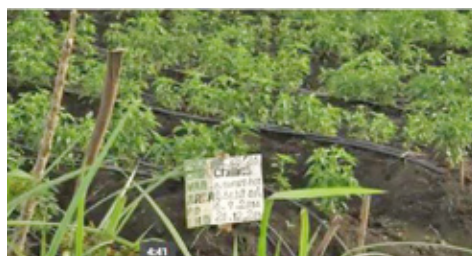
The Hippo farm specializes in vegetables and herbs and it undertakes this at the field and in the greenhouse. The farm boasts of 100 hectares with 3.4 ha being under chillies and herbs under greenhouse. Other crops grown at Hippo farm are tender stem broccoli, French beans, butter nuts squash, herbs such as lemon grass and tarragon.

The company outsources some of the produce (10%) from a small group of outgrowers. These include carrots, red cabbage, bulb onions and courgettes.

The farm has a dam/reservoir to store surplus water during rainy season which is used to irrigate the crops.



The green house at AAA Growers



Crops grown in the open under drip irrigation



Processing of vegetables in the pack house

At AAA Growers, the delegates will get a brief from the farm manager and then visit the following facilities;-

- **Production fields:** The fields have the following crops, lemon grass, French beans, and broccoli.
- **Greenhouse:** Various varieties of chillies at various growth stages
- **Grading sheds:** Grading sheds where initial sorting and grading is done before the produce is taken to the pack house for further processing. The grading sheds is compartmentalized to handle the different types of crops without mixing.
- **Packaging house:** The farm has medium and high care area in the pack house differentiated by the level of biosafety employed. The delegates will be able to see processing of a wide range of agricultural products.

The delegates will be able to see

- The growing of various crops under field and greenhouse conditions
- The various post-harvest handling procedures
- Processing of the vegetables



STOP 2

Kings Commodities

King commodities begun operations in 2002 as a sole proprietorship and is situated approximately 3 km from Thika town along Thika Garissa Road. They have two branches located at Thika town and along Mombasa Road, near Airtel Headquarters.

The Company's Thika Branch operates as a warehouse facility for beans, green grams, black beans and rice while the Mombasa road branch, is responsible for sorting, grading and packaging. Eight different categories of rice are processed at Kings Commodities. The company has spread its wings to Ugandan, Tanzania, and Rwandese market. Their major challenge is pests and they have devised a unique way to tackle the challenge.

At Kings Commodities, the delegates will be taken on a tour of the company and will see the following;

- Good practices in storage management of grains
- Treatment (fumigation) of grains to manage the storage pests



A warehouse for holding the grains at the company



Packaged rice ready for market

STOP 3

Classic Foods

The Company was established in 2009 by Wachira Kariuki and Stella Kimemia and is located 6 km from Juja town and is approximately 36 km from Nairobi. It deals with milk products, maize milling and packaging and also operates an animal feed factory, processing fruit juices, honey and tomato sauce and packaging of mineral water.

At Classic Foods, the delegates will be able to:

- a) Tour the company
- b) Observe the processing of dairy products
- c) Observe the milling and packaging of maize
- d) Observe the processing of fruit juices, honey and tomato sauce.



Range of products from the company

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