It was the best of years for some farmers; it was the worst for others in decades. Bumper harvest, adequate rains and better market prices of produce are among the things that made 2018 memorable for some farmers. On the contrary, rise in importation of eggs, fish and maize, high cost of inputs following the introduction of 16 per cent value added tax on pest control products, outbreak of diseases, floods, shortage of fertilizer and poor prices are some of the things that make some farmers want the year to end faster. But as curtains close on 2018, farmers are looking forward to 2019 with great hope and lots of expectations.

Joakim Samoei, 28, horticulture farmer, Kesses in Uasin Gishu County
This year, we have had plenty of pest and disease outbreaks such as blight and Tuta absoluta. But the biggest challenge is that there are few extension officers, which often results in poor disease management. These pests and diseases can wipe out the entire crop in days if no proper measures are put in place. We need counties to employ more extension officers who will help to identify, monitor and recommend the best control mechanisms.
Although there has been good market for farm produce, the challenge is that most of the farm inputs like pesticides whose prices rose have become very costly. With affordable farm inputs like fertilizer and pesticides, the cost of production will come down. I also hope that this year, soil mapping will be conducted across the country to make us understand the soil type and the requirements since different areas require different farm inputs.
Johnson Murei, maize farmer, Moiben, Uasin Gishu County
This year has been difficult for most maize farmers yet we had bumper harvest due to good rains. In 2017, we had the fall armyworm invasion but this year, the problem declined. However, the price of our produce, at Sh2,300, announced by the government is too low yet production costs are rising. We have plenty of maize in our stores, which in my case I expect to deliver to the National Cereals and Produce Board. But it still owes many farmers money from previous harvest. I think if things don’t change, most farmers may not plant maize for commercial purposes going forward. Myself I intend to grow wheat, keep cows and maybe plant seeds for Kenya Seed Company. I further expect timely delivery of fertiliser this time round, which should be distributed to genuine farmers.

Willy Kirwa, large-scale dairy farmer Kapseret, Uasin Gishu
This year, we had good rains which mean most farmers have stocked adequate feeds such as silage and pasture. But we also had several challenges as dairy farmers. The most pressing for me is that we now have to use semen two to three times for the cow to conceive. We don’t know whether the challenge is with the preservation of the semen straws or with our cows. No one has come out to explain to farmers. Going forward, I hope that universities will move and engage dairy farmers directly on latest technologies so that we can improve production. As farmers, we need to know what researchers in our universities are doing so that we have superior breeds like in Netherlands or Israel that produce more milk. This will also help to significantly lower the cost of production at the farm level. Dairy farmers face constant milk price fluctuation from processors. Sometimes you enter into an agreement only for them to renge on it. I think is time for farmers come together and form or strengthen existing co-operative movements like most countries across the world and start adding value to their milk to address some of these challenges.

Jerim Odada, cane farmer in Muhoroni, Kisumu County
I am optimistic that national government will honour its pledge to settle the Sh2.6 billion debt it owes farmers next year. Sugar cane farmers should be paid promptly to enable them prepare their land ahead of the planting season. I also expect the national government to revive the operations of sugar milling factories such Muhoroni and Chemelil, which have stalled.

Steve Kamwa, Kamsa Poultry Farm, Kisumu
The cheap eggs from Uganda are a huge headache to poultry farmers in western and other parts of the country. Currently, a tray of the Ugandan eggs which have flooded Kisumu goes for between Sh200 to Sh220. This has made us experience losses because we cannot sell our produce. The government should reduce the taxation of agricultural inputs so that we can be able to compete with farmers from across the border. A 50kg bag of layers mash is currently going for Sh2,500. You cannot spend that much and make profit by selling the 30 eggs at Sh200. We are currently working on a network of small farmers so that we can pool our produce together and sell eggs to the wholesale market.

Naisiadet Kitai, Chui Villa Farm in Kakamega County
My biggest expectation is that fuel prices will decline so that our production costs can fall. This year, we have been hit hard by the 8 per cent increase in tax on fuel products like petrol, which I use. If the fuel prices go down, it will mean I spend less money on delivering my milk and running gadgets like chaff-cutters. I also hope that the weather will be favourable so that it supports the growth of crops. Usually, the country experiences a dry spell from January to March, paving way for the long rains season. I hope this year the rains would start as scheduled and they will be enough to make us grow pasture and other crops. At a personal level, I plan to set up a modern shed for my 13 dairy cows and invest in a borehole. I am also planning to set up a milk shop to maximise on the sale of 100 litres I get daily.
Governments Urged to prioritize animals in policies

*Standard Newspaper, 29/12/2018*

The World Animal Protection organization is running a global campaign christened, “Animals in Disaster”, which asks African governments to include animals in formulation of their policies. According to Dr Judy Kimaru, the disaster manager for Africa at the organization, “the national government should allocate at least five per cent of the National Disaster Management Policy Fund to cater for animals”. This, she argues, is because animals are also affected in times of disaster. As a common practice, disaster management funds are allocated for human beings with livestock being sneaked into the budget under miscellaneous allocations. “Through proper budgeting and legislation on animal protection, animals can be taken care of effectively and appropriately,” Dr Kimaru says. The organization is working with the Kenya Government to review the Prevention of Cruelty towards Animals Act, developed in 1958. The project titled, “Change for Chickens”, focused on the distress the birds undergo in the entire production chain, owing to the current growing demand in the meat industry. Sixty-billion chickens are raised for consumption globally each year. Two thirds of them live in overcrowded sheds or cages, often with no natural light or fresh air, unable to peck or spread their wings.

Smart farmers use tube silage bags to boost dairy produce

*Standard Newspaper, 01/01/2019*

With climate change now a normal occurrence, farmers are realising they can no longer depend wholly on rain-fed agriculture. For livestock farmers, they are also waking up to the reality that because rain-fed farming is unreliable, they have to think outside the box if they are to have sufficient animal feeds all year round. In light of this, some farmers in Njoro, Nakuru County, have taken their feeds management a notch higher by embracing an efficient and affordable method of fodder storage. This way, they are sure their cattle have feeds even in seasons of scarcity.

Tube Silage storage is a modern farming technology that entails packing the feeds neatly and compact in special polythene bags where they can last for two years. Jane Ng’ang’a, from Piave village in Njoro says the technology has raised milk production from her three dairy cows. The farmer says she prepares her silage with maize stalks, sorghum and napier grass, all of which she harvests from her one-acre farm before storing them. She says the technology has helped her escape seasons of feeds shortage that led to needless deaths of cattle. “Now we work smart. When the feeds are in plenty we stock up because we are aware a dry season will come and the tides will change.”
So when there is abundance, instead of using it recklessly, I store my feeds in these tubes for future use,” says Ms Nga’ng’a who adopted the technology two years ago.

Hellen Waweru, another farmer from the same area who has adopted the technology, says it has helped her keep her stock of dairy cows, sheep and goats, well fed all year round. The farmer makes her silage using napier grass and yellow maize that she grows on her two acre farm. She mixes napier grass with molasses during production of the feeds ready after 21 days. On a single day, she feeds her stock 30 kilograms of the silage that she supplements with dairy meals. Since she started using the tubes, she has saved on cost of buying feeds significantly. “Before I adopted tube silage feeds storage system, I used to buy a bale of hay at Sh300 each, and that was not even enough. My animals would be emaciated and get attacks from various diseases. Now I can manage my costs well,” Waweru says.

To prepare tube silage, farmers are required to have standard polythene paper bag that is sold at Sh300 per square metre to make a single silage tube, at least three metres are required and a rope to tie the tubes. With the technology, the milk production has increased because the feed maintains high moisture content and high quality as compared to other feeds. The storage bags are arranged on a flat, properly drained surface in a shade to avoid harsh weather condition that affect quality of feeds, silage stored in tubes should not be rained on, neither should air get into, to prevent it from rotting.

To prepare tube silage, a farmer harvests forage for example maize and sorghum that is chopped into smaller pieces of desired sizes. If it has milk stalks, molasses is not used because it produces required sugar for fermentation. Farmers who use harvested maize stalk that do not have maize fruits need to mix the forage with molasses and water to help speed fermentation. Fermentation takes at least 21 days and at such stage, the feeds can be given to cattle. During mixing, one is expected to pour the molasses mixture evenly onto the forage and turn it repeatedly for excellent fermentation. A flat surface is preferred during mixing. After placing fermentation ingredient in the forage, a farmer then places it in the tubes that vary in sizes. For instance there are those that are 2.5 metre and 1.5 metre. These heights are recommended for easier management. During placement of the forage, farmers are expected to compress it to produce compact material and to avoid seepage of air into the tube. Once it is full, it is tied up on the top tightly. During storage, farmers should also keep off predators like rats that may tamper with or break the polythene bag.

Meet the women who shape Agricultural Research, Policy

Standard Newspaper, 01/01/2019

The gender gap when it comes to access of land, uptake of technology, fertiliser and markets has always been unfavourable for women not just in Kenya, but globally. The Food and Agriculture Organisation of the United Nations (FAO) estimates that if women were given the same access as men, yields on their farms would increase by about 30 per cent, and world hunger would reduce by close to 15 per cent. However, the reality of the disparity exists, and it is even greater among women in agricultural research. Smart Harvest sampled a few notable women in research to talk about their research, input and the lessons they have learnt.

Prof Mary Abukutsa, Deputy Vice chancellor, Research and Extension Services at Jomo Kenyatta University of Agriculture and Technology (JKUAT) believes the struggles she went through growing up in rural Western Kenya shaped her career in agricultural research.
Then fate pushed her deeper into leaning towards agriculture. She developed allergy towards animal sources of food, making her mother seek alternatives for her. Most of the time, she would be served with indigenous vegetables gotten from the wild, stirring a curiosity to learn different types of vegetables. Her father encouraged her to study agricultural sciences while her mother felt she was too bright to “waste her brains in Agriculture”. She wanted something more prestigious for her daughter. Abukusta went for Agriculture and has never looked back. “I believed and still believe that Agriculture is a key profession considering that Kenya is an agricultural economy,” she says.

She holds a PhD in horticultural crop physiology from the University of London and she has repositioned African indigenous vegetables from being considered a poor man’s crop to global super vegetables by releasing nine varieties of African super vegetables in 2016 through Kenya Plant Health Inspectorate Service (KEPHIS). The professor has also developed production and utilisation technologies of African indigenous vegetables and helped in determining nutritional content of the same. She also teaches policy makers and stakeholders in Agriculture to change their mindsets on benefits of indigenous vegetables. Many farmers have taken up and planted vegetable varieties that she developed such as Abuku Nightshade, Abuku Vine and Abuku Mrenda.

The walls on Jane Ambuko’s office at the University of Nairobi are plastered with charts that stretch from end to end. They have winding narratives and photos that document success stories of where her research has been adopted, and some of the technological inventions she has conceptualised. Her story, she says, is one of rising and falling. She had a series of health complications that ended in several surgeries and a kidney transplant, but never gave up the chase of researching for the advancement of Agriculture. Her concentration is on reducing post-harvest loss, especially for small scale farmers. “I was frustrated every time I heard stories of farmers who had worked hard and gotten plenty of produce but had to watch them go to waste because they did not know what to do with the excess,” she says. She made a decision to focus on value addition. She spends hours poring over books, applying for grants and visiting farmers in different regions to test optimized technologies that she develops with other partners. Her team was in Karurumo in Embu where they have set up a small holder horticultural aggregation and processing center with the Rockerfeller Foundation.

“When you visit farmers, you realize they are ready to adapt new technologies that promise to reduce their losses and maximize their yields. As researchers, we should think of action driven research that directly benefit farmers,” she says. Ambuko’s entry into agricultural research was defined by tears, doubt, and a constant desire to drop out of college. When she cleared high school, she applied to study medicine or education in university. Agriculture was her last choice, and she was extremely disappointed when she was admitted to study a Bachelor of Science in Agriculture. It is only in third year that developed interest. It dawned on her that Agriculture provided numerous opportunities. “I started pushing myself more. I went for a kidney transplant in second year, and I was determined to fight on,” she says.

It has been more than two decades since she made a decision to wholly dedicate herself in research. She has a PhD in Agricultural Science, with a major in Post-harvest management. Some of the Agricultural innovations she has piloted include CoolBot cold room, an electronic device that is fitted to a compatible air conditioner and it turns an insulated room into a walk-in cold room. This helps farmers keep their perishable produce longer.

She also helped in conceptualizing the Zero Energy Brick Cooler that is made from locally available materials such as bricks, sand and water tank that provide a cool temperature and high humidity to preserve quality of fruits and vegetables in areas where there is no electricity. She believes there are possible solutions to problems farmers face, and they can only be confronted if government puts more money in research. “We cannot talk about development in this country if we do not fund research that provide solutions,” she says.
Sheila Okoth understands all there is about fungi. She spends hours hunched over a microscope to study the behaviour of thousands of fungi and what they do to living organisms. “There are people who hear me say that I major in fungi, and they think I live a very boring life. They do not know how much there is to learn about these microorganisms and their impact not just in Agriculture, but in human life,” she says.

Okoth is a researcher and first female mycology professor at the University of Nairobi. One of her area of concentration for now is aflatoxin. She has been following the controversy around maize with great interest, and anytime the word aflatoxin is mentioned, she gets even more concerned. “Research has shown that aflatoxin can cause cancer or even death. That is why proper tests and further research should be done to ensure the country never gets contaminated grains,” she says.

Her passion for research started when she was a young girl studying at Ngiya Girls High school. Her strength was in sciences, at a time when it was a male dominated field. She went to the University of Nairobi where she studied Botany, Zoology and Education and later did her postgraduate degree in Mycology.

Her research intensified when she got an internship with African Women in Agricultural Research and Development (AWARD) to go to South Africa. She got a grant and came back with a machine that measures aflatoxins in grains. She now uses the machine to do test for millers, organisations such as World Food Programme, other researchers and students. Her research in aflatoxin helped her discover why there were many cases of poisoning in Eastern Kenya. “The species of fungi in Makueni is different, and they have more toxins,” she says. She also points at the possibility of Uasin Gishu having a high number of people with throat cancer due to the popularity of the fermented maize alcohol that could be having aflatoxin.

Her projects are now centered on providing farmers with seeds that are resistant to aflatoxins.

Kenya stares at food crisis as maize farmers’ woes persist

*People Daily, 4/01/2019*

Kenya is staring at food shortage in the coming months as farmers have to cope with a myriad of challenges that could adversely affect the production of the country’s staple food — maize. Experts have warned that drought, pests and diseases will affect key maize-growing regions rendering many households to rely on government interventions for food supplies. Also casting dark clouds on the gloomy outlook is the slow adoption by farmers of disease and drought-resistant crop varieties.

Besides, farmers are already contending with a bumper maize harvest that is going to waste due to lack of storage facilities and the lethal maize lethal necrosis disease.

“In the last five years Kenyan farmers have seen a sharp rise in severe drought along with the emergence of an avid plant pest called African Fall Army Worm (FAW) that threatens to decimate the region’s most important food crop, maize,” said African Agricultural Technology Foundation Board chair, Ousmane Badiane. Kenyan maize farmers lost Sh3 billion to the FAW attacks in 2017 alone.
“The Fall Armyworm damaged 250 hectares of maize last year when it was first reported in the country. This reduced the maize yield by three million bags, which translates to approximately Sh3 billion,” said David Mwangi, who heads a team of experts appointed to combat the pest at the Ministry of Agriculture.

Food and Agriculture Organization (FAO) has warned the country’s food import bill is set to increase tremendously in the next 20 years as land under main food crops will reduce by over 40 per cent owing to the escalation of effects of the climate change. The area under maize production is likely to reduce by 800,000 hectares from the current 2.1 million hectares to 1.2 million hectares.

Kenyans are among high consumers of maize compared to her peers in the region despite its endowed production potential. Kenya National Bureau of Statistics recently indicated that Kenyans consume 51 million bags of maize against its production of 40 million every year.

Badiane says there is a need for new approaches to overcome obstacles that discourage agricultural technology developers from generating products that meet the needs of smallholder farmers in Kenya.

“We see public-private partnerships as the best way to stimulate innovations that are aligned with the way Africans produce food—which is largely on small, family farms—and target the unique mix of crop varieties and growing conditions on the continent,” he said.

Badiane said that a steady stream of farming innovations is crucial for the success of ongoing efforts to transform smallholder agriculture in Kenya from subsistence to commercial production.