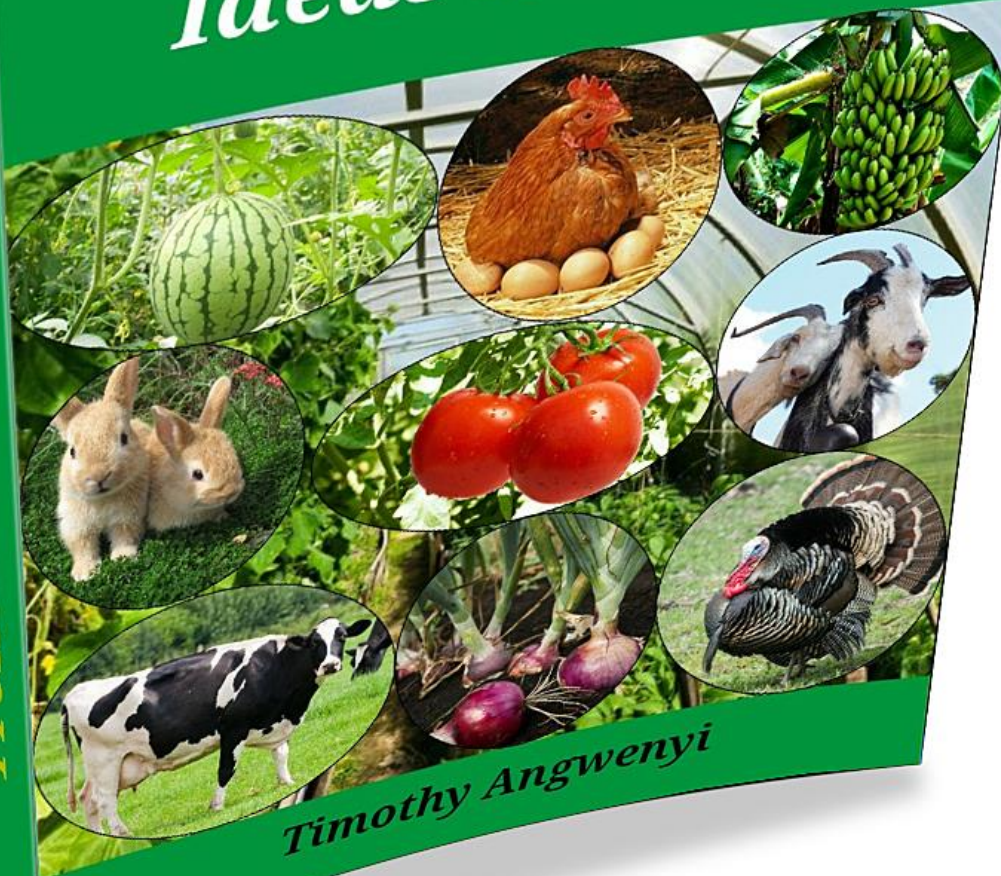


# 200 Profitable Agribusiness Ideas In Kenya

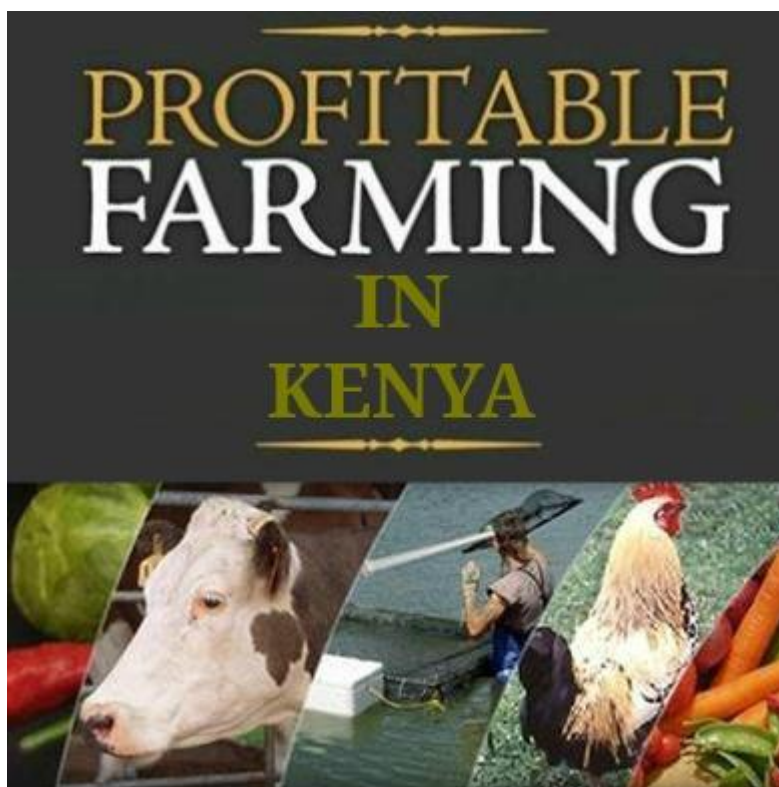
*Profitable Farming In Kenya*



*Timothy Angwenyi*

# 200 Profitable Agribusiness Ideas

## Profitable Farming In Kenya



**Written By: Timothy Angwenyi Morebu**

Do you want to start a business in the agriculture industry? If YES, this eBook will enlighten you on profitable agricultural business ideas you can start today in Kenya.

Ever wondered what life would have been without farmers? Well, if you have, chances are that you have come to realize that should there be no farmers on the face of the earth, then starvation and poverty would become our mantra. The agricultural industry is no doubt amongst the leading industry in most countries of the world; it is the industry that produces food for the populace and also helps in the generation of income.

Because of the significant role the agriculture sector plays, the government ensures that they go all the way to subsidize seedlings, fertilizers, and farming implements and machinery for farmers and also encourage entrepreneurs to go into farming.

There are several business opportunities available in the agricultural industry and one good thing about the industry is that there is market for all the produce which the industry churns out. Over the years, researchers and scientist have been reaching for ways to improve crop cultivation – especially in areas where the soil composition and climatic condition does not support the growth of certain crops (cash crops, food crops etc). So also; engineers have been improving on their invention as regards mechanized farming, as well as other factors that are imperative to the trade.

As a matter of fact, with the recent advancement in technology, farmers can now yet comfortably grow crops in parts where such crops can hardly survive and in places where there are few farming land, people can make use of the rooftop (basement) of their houses to cultivate crops even for commercial purposes.

By the end of this eBook, you'll have nuggets of wisdom and the ability to start a farming business.

# Copyright

Written By: Timothy Angwenyi morebu (0714723004)

Agribusiness Writer

Copyright © 2016 by Timohbright.

All rights reserved.

First Edition: January 2016

Profitable Farming Guide Series

This guide is geared towards providing exact and reliable information in regards to the topic and issue covered. In no way is it legal to reproduce, duplicate, or transmit any part of this document in either electronic means or in printed format. Recording of this publication is strictly prohibited and any storage of this document is not allowed unless with written permission from the writer. All rights reserved.



## About The Writer

Hello! My name is Timothy Angwenyi Morebu. My phone number is **0714723004**. My email also is [timohangwenyi@gmail.com](mailto:timohangwenyi@gmail.com). I am an Agribusiness writer, Agri-tourist & an Entrepreneur. Am currently writing *guides on various ways of earning a living in Kenya through Profitable Farming (Entrepreneurship)*, whereby i educate Kenyans on business ideas to venture in Agriculture sector.

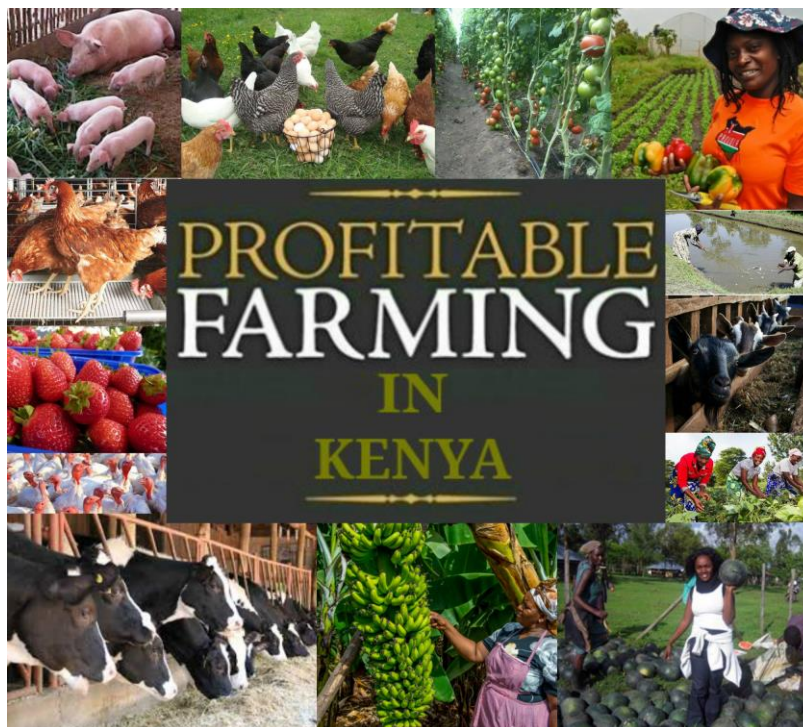


Helping people start Agribusinesses and achieve the income they desire has become a huge part of my life. Being able to share the knowledge I have gained through visiting people's farms and attending Agriculture seminars and exhibitions has become extremely important to me.

I consider my readers my friends. I am always so appreciative that they take their time out to read my eBook guides and to learn about Agribusiness ideas from me. Once you have finished reading this guide, I have no doubt that you will have learned a great deal about on various profitable farming business ideas in Kenya.

Copyright © 2016 Timohbright

# Introduction



Are you interested in starting a Profitable Farming Business? If YES, this eBook will guide you in identifying profitable farming business you can start in Kenya.

Agriculture in Kenya or rather agribusiness is the new business in town and everyone wants a piece of the cake. You have all seen and heard the numerous success stories of farmers on the newspapers and TV. They make farming look easy and everything they touch turns to profit. I decided to visit successful farms around the country to find out what makes them tick.

I found out qualities that have helped them and their businesses in more ways than one, reach where they are now.

## 1. Knowledge

Successful farmers are constantly researching. They are always looking for new information to improve their farming methods and practices. By doing this, it will help them

increase productivity on their farm and boost sales. Knowledge is power and the continuous pursuit of this will ensure that you are always ahead with modern farming.

## **2. Passion**

This should actually have been the first point on this list. You need to have passion for farming in order to succeed. You have to love your job. Show me a productive farm in Kenya and I will show you a passionate owner running the farm. Apparently this point applies to every business owner in Kenya. If you are planning to engage in agriculture it is highly important that you really love what you are doing because this will help you cope in times of failure. You will have a reason to get up every time you fall. This will keep you working.

## **3. Problem Solving Abilities**

When you are running a farm you will soon realize that there are some set-backs that require creative thinking. You have to come up with new ways to solve problems to make your farm run smoothly and more productive. There are certain methods that are not laid out on instruction manuals, so the farmer has to come up with his/her own innovative ideas.

## **4. Marketing**

How I am I going to sell my crops after harvest? This question worries many new farmers but not the successful farmer. To succeed in farming you have to know all the different ways of marketing products. With the new technologies in today's generation (Facebook, Twitter, Youtube etc) you cannot miss. You have to use everything out there to ensure that your products get maximum exposure.

## **5. Perseverance**

This requires the strongest individuals. Farming can sometimes bring losses if the weather does not go your way or if you accidentally mismanage your crops and livestock. You need to be patient with yourself if you really want to succeed. Rome was not built in one day and so is your farm.

If you think you have the qualities mentioned above then you are well on your way of becoming a millionaire farmer.

## **Information is Power in Agribusiness**

Information is very important in a lot of things and one of them is farming. Once you are informed you can make wise decisions in your agribusiness investment. When I was starting out in farming I faced lack of enough information challenge. I used hear a lot of agribusiness success stories around me but no one told me the exact step by step process on how to get into it.

This is very frustrating. I ended up collecting bits and pieces of information and decided they were enough to jump start my farming initiative. By doing this I missed key steps that would have saved my crops on the field. I am sure you know there is nothing demoralizing as losing your crops after seeing them perform quite well for some time. The only thing that kept me going was passion and my desire to succeed.

Inadequate or lack of information affects us all and it makes us miss out on new and improved methods of farming. People living in the rural areas face even bigger challenges because they have no way of accessing the most basic information on farming. They practice farming as a way of life and not as a business because they don't know how to improve their yields, information on how to get better seeds or how to perform record keeping.

They also miss out on affordable but effective farming methods such as organic farming, crop rotation and irrigation. Farming then ends up being bothersome due to the constant low yields and losses brought by lack of information.

## **Millionaire Farmers in Kenya Achieved Success through Passion and Motivation in Farming**

Starting a new farming business is a tough decision to make. It's a decision filled with the excitement of getting into something that is life changing and interesting but also filled with concerns about the risks ahead and the uncertainties involved. Starting a farm means that you have to put in extra-long hours into your business and planning everything to the least detail.

We all need motivation in order to work hard. The thing here is that many people tend to dismiss motivation in agribusiness. They may point it out as a factor in business but not as an important factor like having a good business plan, or capital costs etc. But what is motivation? Motivation is considered to be "the internal and external factors that stimulate desire and energy

in people to continually have interest in and be committed to a job, role, or subject and to exert persistent effort in attaining a goal.”

Motivation is simply the desire to do things.

Motivation is the driving force of everything. When you wake up in the morning feeling syked up for work, ready to work those long hours and make the most out of your capabilities that’s motivation doing its thing. In your first few months of setting up any farm venture is usually also the most critical, it is important to recognize the impact motivation has on the future of your agribusiness.

At the core of motivation lies passion. If motivation is the motor that gets the car moving, then passion is the fuel. Sure, there are other factors that can increase motivation—such as incentives (usually in the form of money). But from observation it’s easy to notice a huge difference in the quality of work of someone who does something because it is their passion and someone who does something because they get a lot of money to do it.

Passion also means dedication; A lot of new farming business fail because their owners lose faith and give up too early or aren’t willing to work harder. In Kenya there are many success stories of people said they won’t give up on their dreams, kept going and eventually succeeded.

All in all, motivation and passion will help you get things done on your farm. And getting things done is crucial when you are a beginner farmer. When you are motivated and show the love for what you do, it will be easier to manage your activities and development well. So when opening a starting your new agribusiness venture, make sure you have a lot of fuel to keep the motor running, and it will help you get to wherever you want to go.

### **Basic skills that every farmer needs**

Agribusiness is profitable and the solution to youth unemployment in Kenya. For you to start an agribusiness venture you must have adequate capital to jump-start your business. Having capital is one of the most important factors when starting a business for this will enable you to get things rolling, however money is not the only thing you need. If you want to be a successful farmer, you’ll to need to research and read all the material out there you can find on farming.



There usually basic skills that every beginner farmer needs. These are;

1. **Farm Operations Skills:** This is the general farm management skills that you need to perform day to day basic duties on the farm
2. **Crop and Animal Management Skills:** These skills are important because they will enable you to grow or raise your animals e.g. How to grow, How to raise animals, Harvesting etc
3. **Interpersonal Skills:** Agricultural professionals who work in the supply chain management, interpersonal skills are incredibly important. You are routinely required to interact with farmers who produce the farm products, and deliver these goods to other companies and institutions. Having strong interpersonal skills is necessary for those involved in sales, marketing, advertising or an area of expertise that relies heavily on strategic communication
4. **Value Chain Knowledge:** When you get into farming you need to be well versed with the value chain or value addition process. The value chain involves a full range of value adding activities required to bring a product or service through the different phases of production, including procurement of raw materials and other inputs. Knowing how to add value to your produce will be helpful to you on how to generate more profit.
5. **Time Management:** Beginner farmers need to know how to manage their time as they practice farming. Farmers are tasked with ensuring that farm produce are properly transported, stored and delivered from producer, to wholesaler, to consumer. This is very important to ensure success of the business.
6. **Technical Skills:** These are agricultural technical skills on how to use farm implements, disease management and direction on farm chemicals. If you are doing dairy farming you need to go for training to get practical and theoretical knowledge on how to take care of your herd. The same applies to crop production and other animal husbandry.
7. **Marketing Skills:** Most agricultural produce are marketable on their own because they are among the basic human needs. However this does not necessarily mean that marketing is not important in farming. For that matter, this assumption often leads to post-harvest loss due to lack of market. This often arises when there is a surplus of a specific commodity in your region and more marketing action are needed to sell your farm produce elsewhere.
8. **Record Keeping:** Every farmer needs to have a record keeping system in place as they engage in agribusiness. This will enable them to have a systematic flow of inputs and outputs on their farms. It will also control financial issues that arise on the farm by showing the flow of money within the agribusiness enterprise i.e where the money has

come from and where it was spent (Income and Expenses). Softwares that help you to manage your farm records and keep your finances in order include Financial Management Software, Dairy Management Software, Crop Production Software.

## How to start a farm in Kenya



You are watching the local evening news and just when its about to end they feature an entrepreneurship success story about a certain farmer somewhere in Kenya. Suddenly you are interested about farming and you are impressed with how easy it looks. You open your phone's browser and you start researching about what you have just seen to prove if it's true.

Starting a farm is the most crucial step before engaging into any farming activity. You have to be prepared because starting a farm requires so much more than the knowledge of how to grow crops. Am going to give a step by step guide on how to start a farm in Kenya.



**Research:** Try and learn as much as possible about the practice of farming. There are a lot of useful materials, ebooks and forums that can help you know a thing or two about farming and

what it's all about. If you know anyone doing farming you can also approach them and ask them for advice and guidance, this can really go a long way.



**Planning:** You need to have a solid business plan at hand. Identify what you are good at and what you are not. Survey the land that you own or want to buy and find out what kind of farming activity works well there. Take the farm soil to a credible soil test facility for testing to find out which crop is best suited for your land. Many people in Kenya tend to ignore soil testing and go straight to planting only to fail later and complain how farming is hard.



**Capital:** Its always good to start small if you don't have enough money for farming. Try and avoid debts because this will pull you down. I am not saying that getting a loan is bad but it needs to be done with caution. Try to apply for grants from agricultural institutions or borrow money from a family member or friend to jump-start your farm.



**Equipment:** Before you start the actual farming process you should be prepared with all the necessary things you need. If you want to get into horticulture you need to buy all the requirements i.e F1 seeds, fertilizer, herbicides, pesticides etc. If you want to start a dairy farm then you need to buy good cow breeds, animal feeds etc

### **How to start farming with little to no Capital**



Finding capital in Kenya to start farming is one of the most frustrating things you can ever do. The Kenyan government has launched many funding schemes over the years that are mandated to cater for the youth but when you slow down, assess yourself as an individual and think...they have never helped you in any way.

For that matter they have even wasted your time waiting for your applications to go through only to be told you did not make it or qualify. This often leaves most youth in Kenya

feeling hopeless with nowhere to turn to for funding. So what can you do now in order to jumpstart your farming business with little or no capital?

1. **Farm what you know-** Do not venture into farming practice that you are not well familiar with. Make sure that you have done your research well and you have all the knowledge and skills at your disposal. This will improve your chances of success in the agribusiness venture you are going to launch. Also, this will reduce any outside help that would have added expenses into your business. Sometimes having the knowledge and experience in a certain farming venture is all it takes to succeed.
2. **Start small-** I always tell people to start small. When you want to get into farming you have to look at the small apple below the tree before setting your eyes on the apple on top of the tree. By doing this it will enable you to use the little money you have to start small and grow naturally. Within no time you will look back and smile thanking God for giving you the patience and wisdom of starting small. Then you will have build up all the experience and even come up with custom made solutions to farm problems that may arise.
3. **Spread the word about your new agribusiness venture-** Inform your family, friends, business contacts and past colleagues about your new venture. Call, send emails and make your new venture known on your social-media profiles. Your friends and family members can help you spread the word, and past business contacts can introduce your new agribusiness venture to their professional contacts as well. This type of grassroots marketing can help introduce your agribusiness to a much larger audience. This will help you when it comes to marketing your harvested produce. Now when a family member or a friend hears of someone looking for fresh vegetables they will just forward your name to them.
4. **Avoid unnecessary expenses-** When you start your farm in Kenya, you are going to have plenty of expenses, and there are some that just can't be avoided. What you can avoid though is overspending. For example if you want to plant Cabbages and you do not have money to buy the expensive hybrid seeds, why don't you instead buy the normal seeds and save the money. By doing this you will have enabled yourself to spread out your money and buy other farm implements that will be required during the growing period e.g. insecticides, fungicides and D.A.P. Being frugal in the beginning can be the difference between success and a failed agribusiness.
5. **Get ready to hustle-**Hard work is an absolute necessity, but when you are starting an agribusiness venture in Kenya with little to no capital then you must be prepared to dedicate everything you have into making the farming business a success. This might



mean planting and taking care of the crops yourself, handling marketing, dealing with billing and accounting, and every other working part of your business. You will wear many hats and it will require the majority of your time and energy if you are to make it.

Don't let limited capital prevent you from empowering yourself in agribusiness.

### **Why youth in Kenya are not embracing agribusiness**



Increasingly fewer young people in Kenya are aspiring to live as farmers. Most of them are rushing to cities and town to look for white collar jobs. This is not a bad thing. If you complete your university education or any other form of education and get a job that makes you satisfied then that is okay. We grow from there and move forward with our future decisions and life investments.

Education is very important; however it does not necessarily lead to employment. Most of us always hope to get a job in government institutions after finishing our studies because of the good pay but this path has always been stacked with challenges of bribery making it near to impossible for most young people to get jobs fairly. The so called “connections” always affects the balance of getting a job in Kenya.

Every parent wants their child to go to school, score good marks, get admission to campus and find a good job. They all want their kids to live better than them. The best alternative therefore is to empower our young people and to direct them to agribusiness which is profitable but this has proven difficult.

So we ask ourselves, why do youth in Kenya, after being told how agribusiness is profitable, still don't like agriculture as a business or career? Why are they so resistant in embracing agribusiness?

Below are some of the reasons that might probably shed some light and explain why.

### **1. Mentality:**

When one talks about agriculture (Ukulima), in the minds of young people, they automatically think of someone in shagzz living in a house made of matope (soil) or mabati, who wakes up very early every morning to go dig coming back home at sunset. In their minds, farming will take them way from civilization; make them hassle a lot only to earn very little income.

Ooh, plus they would have to get dirty every single day. Also in most smallholder farms in Kenya, Jembes and Pangas are normally used hence making farming very energy and labour intensive. Young people think this life will be like if they choose agribusiness. Parents used this mentality to even scare their kids if they didn't want to go to school. "You are going to end up like a farmer. Living a very hard and tough life and getting infected with lice and no one is going to want to be near you".

### **2. Funding:**

Borrowing Institutions want quick returns on the loans meant for agricultural projects that they have to give out to youth in farming, but instead they lend out the money out to non-agriculture sectors that would bring in quicker and more lucrative returns. This often means many applications for these agricultural loans especially from young farmers are unfortunately rejected.

### **3. Impatience:**

Youth complain that it takes much longer time to achieve success in the field of agriculture than it would normally take other career paths or ventures e.g politics, banking or oil. Since most youth want money fast, very few are willing to take to a field like agriculture.

### **4. Past Experiences:**

Do you remember your punishment days in primary and secondary school? Cultivation of food in the school shamba has been used as a punishment for every offence committed at school by the children, which has made many young people hate Agriculture. For failing to get an exam pass mark, you would be made to slash a bush every evening for a week, uproot tree roots or dig half an acre of potatoes. That was tough.

### **5. Priorities:**

In Kenya and Africa at large, parents are always encouraging their children to study to become accountants, doctors and other office jobs. From the onset, farming or a career in agriculture is frowned upon as a poor man's business.

### **6. Conditions:**

Youths who have taken up farming as a career often complain that agriculture is not attractive enough in terms of compensation and conditions of service compared to what other professions like law, medicine, or banking offer. Pensions, bonuses etc

### **7. Corruption:**

The agriculture loans are often misused and siphoned by politicians who channel this money meant for genuine farmers into their private accounts to buy new cars, buy huge pieces of land, and buy votes and expenses for running for public offices. This frustrates the funding process and discourages youth. There is also the possibility that funding organizations or banks chosen by the government to administer agricultural loans often connive with politicians and put all sorts of impossible obstacles on the paths of these youths in order to frustrate them from getting the loans.

### **8. Inspiration:**

There is a shortage of individuals who are successfully running agricultural businesses than in other professions. Youth should be connected to many individuals doing well in Agriculture to act as mentors, counselors and provide career guidance advice to youth considering a career in agriculture.

## Should you quit your job for farming?



Farming in Kenya is starting to change from being a way of life into farming as a business; Agribusiness. We have all heard the success stories from Kenyans who either quit their job or decided to immediately start farming instead of looking for a job. All these stories are quite inspiring and tempting to the common Kenyan and we all ask ourselves what can we do so that we can achieve the same results as those successful farmers we see on TV.

Maybe you are earning a very low salary and you are thinking of quitting your job but then again if you quit your job you might find it difficult to find another job that can pay you your current salary. Well I have only one advice that I hope will guide you in making the right decision in regard to either keeping your job or engage in farming

### **Take the risk**

If you have enough money saved somewhere, researched about farming and the activity you want to do, even you have done training then why don't you go ahead and see how it goes? If you do not take the risk you will never find out if you are good at it and generate the millions of money that you always dream about. Without risk there is no reward and in farming the rewards are usually very GOOD when you have done proper planning.

If you haven't saved any money from your salary, no knowledge whatsoever about farming and no basic training then it's advisable that you persevere and wait it out until you have saved and researched enough. You might end up regretting your decision when you incur losses because you were not prepared. If you are not a patient person the you need to start being one because nothing ever comes easy in this world.

For those who earn a good salary then you can balance between getting employed and operating your farm. With a good monthly salary, you can hire a farm manager to manage things for you at your farm. You can then visit the farm regularly to check on progress and financial records.

The challenge of leaving your management to someone else who is far away from you is MIS-management! This is a common thing to many white collar farmers in Kenya. The best way to handle this problem to attend training workshops on how to manage your farm business from far so that you can get the knowledge on how to overcome this.

### **Become a millionaire farmer in Kenya**



“If you want to become a millionaire, become a farmer!”

I am not trying to say that farming is another avenue of getting rich quickly. With farming there are a lot of factors involved that make it so appealing to us Kenyans. We feel connected to the land and the land to us. We feel farming is the ultimate retirement package after employment. In short, we need more farmers than white collar jobs to tackle the growing food crisis in the world. It is time for people to get back to agriculture and do real farming to increase the food security of Kenya.

### **Opportunity**

The world’s population is going to increase to 10 billion people by 2050 and who do you think is going to feed all these people? Farmers. So there is no question when it comes to target market! With the current looming food crisis in Kenya and the World at large agriculture is the



world's biggest problem and the biggest viable opportunity, it's even bigger than all financial corporations combined on the journey to a successful and satisfying life.

### **Solution**

Invest in a farm; If you have money why don't you buy land and start a farm? If you do not have the necessary skills or time you can hire someone else to do the work for you. If you cannot find land to buy and you have the money to invest you can partner with someone who has land and allocate profit sharing according to how much you have put in.

### **How to find market in Kenya for your produce**



**1. Research before planting**– You need to research about the market demand before planting any crop in your farm. If the demand is low then you need to change your business plan and move to the next crop. The demand of a product is important because it also affects the selling price.

**2. Apply for tenders**– Many schools and organizations offer tenders for the supply of agricultural produce. Contact your nearest school and ask if they have any tenders for supply that is open.

**3. Transport**– The price for maize in Eldoret is different from Nairobi and Nakuru therefore find a means of transporting your produce to another town, city or country for selling. If you do not own a lorry or pickup truck you can hire one but this will be a little expensive depending on the distance you are transporting.

4. **Create your own market**– If you really believe your product is worth it and necessary, then you can go ahead and create your own market. Try and demonstrate to your community the importance of your product and how it will benefit them. Identify a problem they are facing and use your product as the solution. If you are rearing Rabbits in Kenya you can start by introducing Rabbit eating slowly by making samosas made from Rabbit meat, you will be surprised how people will love it and ask for more!

## 200 Business Ideas in Agriculture for Young Entrepreneurs



What are the best agricultural business ideas? What are the best agro-allied business opportunities? What business can one start in the agriculture industry and succeed? This section will put these questions to rest.

*Do you know that Agricultural businesses are the most lucrative businesses in the world?* Apart from the low-cost of start up and running the business, agricultural businesses turn out a huge profit of up to 100%. With the increase in unemployment, young people are now embracing agriculture which was erstwhile considered a dirty business reserved only for the poor.

The trending challenge and impact of rural-urban migration have continued to generate great debates since the last three decades. Urban employment problems are a result of the phenomenal growth in urbanization and the inability of these urban centers to be able to utilize or absorb the urban labor that was created through the process of urbanization.

Approximately 50% of Kenyans are urban dwellers. At least 24 major towns in Kenya have populations of more than 100,000. Those moving from rural to urban areas constitute certain classes, categories and strata of the society that are basically plagued with certain social and economic problems in which poverty ranks highest and most fundamental.

Agricultural businesses can be started with little or no training. You do not need a special degree to start though you may need to spend some time learning about the intricacies of the business.

There are several business opportunities available in the agricultural industry and one good thing about the industry is that there is market for all the produce from the industry. Over the years, researchers and scientists have been researching on ways to improve crop cultivation especially in areas where the soil composition and climatic condition does not support the growth of certain crops (cash crops, food crops etc). So also engineers have been improving on their invention as regards mechanized farming etc.

If you are looking towards leveraging on the agriculture industry to generate huge income, then one of your best bet is to start a commercial farm. Commercial farming is all about mass – cultivation of crops and rearing animals, fish, and birds' e.t.c for the sole aim of making profits. In most cases it is referred to as mechanized farming.

As a matter of fact, with the recent advancement in technology farmers can now comfortably grow crops in parts where such crops can hardly survive and in places where there are few farming land, people can make use of the rooftop (basement) of their houses to cultivate crops even for commercial purposes.

### **What Does It Take to Start a Commercial Farm?**

One thing is certain about commercial farming, if you are able to conduct your market research and feasibility studies; you are more likely not going to struggle to sell your farm produce because there are always food processing companies and consumers out there who are ready to buy from you.

Lastly, with commercial farming, you can afford to combine crop cultivation and animal husbandry or you can decide to only specialize in the cultivation of crops or rearing of animals /

birds / fish. The bottom line is that if you have enough land (space) and you are interested in maximizing commercial farming, you are sure going to make huge profits from the business.

For the purpose of this ebook, the agricultural industry can be classified into the crop cultivation, livestock breeding, and agro – allied products and services categories. So if you are interested in starting a commercial farming business, here are 200 business ideas an entrepreneur can choose from in the agricultural industry;

## **1. The Kiwi Fruit Farming Business Idea**



There are very few markets where demand exceeds supply. One such market is for Kiwi fruits which, despite being a relatively new idea in Kenya, has taken the market by storm. There are very few farmers who have gotten wind of its valued benefits and you can take advantage of this loophole to make a timely investment. Here is a step-by-step guide on how to go about it.

### **Kiwi Fruit Farming In Kenya**

#### **Step 1: Acquire or Lease a Piece Of Land**

Kiwi vines grow well in areas with adequate rainfall and well drained soil. Think about areas that are neither too wet nor too dry and preferably with red soil which tends to be well drained (unlike black cotton soil). For example Uasin Gishu, Nakuru, Western Kenya, some parts of Kajiado, warmer parts of Central and Nairobi areas. You can start out on a 1/8 th piece of land which can be leased at Ksh.5,000 per year or bought for Ksh.500,000. Preparing the land will cost you an extra Ksh.10,000.

### **Step 2: Obtain Seedlings**

Seedlings are quite rare to find but with a bit of searching you can always find them. Local nurseries as well as online classified sites like OLX are good platforms to start your search. There is also the option of liaising with seed companies or The Kenya Agricultural Research Institution (KARI) for further assistance. Currently, Kiwi Vines that are ready for transplanting are retailing at an average of Ksh.300 per piece.

A 1/8 th piece of land will require about 50 vines amounting to Ksh.15,000 in total.

### **Step 3: Plant & Care for the Vines**

Plant the vines at around the month of March to take advantage of long-rains. Note that Kiwi Vines are very vulnerable to strong winds and you may need to invest a bit more infrastructure-wise to protect them (e.g. by building a temporary fence or planting some trees around the farm).

Also you'll need to invest in a compost manure and some little amounts of fertilizer (D.A.P and C.A.N) to provide the crop with adequate nutrients. Kiwi plants are susceptible to a bacterial infection known as Psa and so you may need to invest in biochemicals that are usually used on fruits like oranges and grapes.



#### **Step 4: Your First Harvest**

The average kiwi vine takes 2 to 3 years to mature and start producing fruits. The first few harvests may however not be as productive but this tends to improve throughout the plants mature life.

You can still commercialize your farm at this time by selling the few fruits that come out of it and healthy vines that you may choose to propagate (Remember, each vine goes for Ksh.300 on average, usually bought by new farmers).

#### **Step 5: Take It To The Market**

The local market is currently underserved as there are very few farmers who have taken up this idea. You can sell to roadside traders or even approach the big supermarkets. There is even greater market potential in exporting to neighboring countries.

#### **How much to invest**

For 1/8 acre piece of land you will require a minimum of Ksh.50,000 and a maximum of Ksh.100,000 to start. Cost may however rise if you're leasing or buying the piece of land for the first time.

#### **How much to expect**

A 1/8 acre piece of land with 50 vines can produce 5,000 fruits per year (about 400 Kgs) on a bad season. A bumper harvest can reach up to 10,000 fruits (about 800 Kgs). Each Kiwi fruit

currently retails at an average of Ksh.100. In other words, there's potential for sales revenues of up to Ksh.1,000,000 per year on such a small piece of land.

Note that, a single vine farm can produce healthy fruits for up to 15 years of maturity.

### **Final Word**

There are many benefits of Kiwi fruit farming in Kenya, including the fact that this is a relatively passive activity. However, there are potential challenges in that the idea is still new in the market and treading through uncharted territory isn't always that easy. You should see this as a medium to long-term investment opportunity.

## **2. Mushroom Farming Business Idea in Kenya**

### **Make Your First Million In Just 2 Months**



Mushroom farming may seem like an arduous and tiresome venture, but if you look closely there is something quite attractive about it. According to official statistics from the National Farmers Information Service (NAFIS), Kenya produces 500 tonnes of mushrooms per year against a demand of 1200 tonnes.

This therefore means buyers have to import from elsewhere as local farmers cannot sustain the demand – and herein lies a lucrative business opportunity for you to invest in.

## **Mushroom Farming in Kenya**

Mushrooms can grow in almost every part of our country provided there is shelter, reliable water supply and stable temperature in the range of 15 to 30 degrees.

### **Step 1: Getting Started**

Of course, you need some land to plant your mushroom crop. A 1/8 th acre piece of land would be adequate to set up a large farm that can produce as much as 2 tonnes of mushrooms after every 2 months (using shelf-frame method).

### **Step 2: Build a Simple House**

Once you have secured a good piece of land, you will need to build a simple mud-house and a few wooden shelves to utilize the vertical space available. Your local carpenter can help you with this and you can improvise on locally available materials to save on construction cost. (Note: Make sure the house is well aerated to allow proper circulation of air).

### **Step 3: Look for the substrate**

The first and most important supply you will need is the substrate. Substrate is basically the substance on which mushrooms grow. This can be forest soil, wheat straw, bean straw, millet straw or even rice straw. Make sure this is sterilized as the slightest bacterial infection can ruin your entire farm. A bale of wheat straw costs Ksh.200 and you will need about 20 bales.

#### **Step 4: Invest In Nylon Bags**

You will need small bags to prepare the seedlings and also big bags for the final planting. Small bags like the ones shopkeepers use to package 2KG sugar normally cost about Ksh.100 for 200 pieces. Bigger bags can cost as much as Ksh.15 per piece and you will require about 1000 of them in a 1/8 th acre farm.

#### **Step 5: Invest In Good Hygiene**

As you will discover through farm training courses, good hygiene is important in a mushroom farm. You will therefore need to buy things like hand gloves, methylated spirit and cotton wool. A box full of gloves costs less than Ksh.1,000 – same for methylated spirit and cotton wool. Other additional supplies that may be needed include drinking straws (Ksh1,000) and a knapsack sprayer (Ksh.5,000 est).

#### **Step 6: Now Get The Seeds**

Finally you will require some mushroom seedlings (also known as spawns). The most popular (and easy to market) spawns are called button spawns. You can buy these from KARI or JKUAT. A Kilogram of button spawns costs Ksh.1,000. 5 Kilograms will be enough to get you started. Other varieties of mushrooms you can plant including: shiitake and oyster.

#### **The Dos**

1. Keep the growing environment clean and sterile always
2. It's advisable to experiment with a small farm before venturing into a big farm
3. Consult an agriculture extension officer in your area for further advice
4. Seek mentorship from farmers who are already doing this to understand what challenges they face

5. Explore your market options in advance to avoid last minute surprises and disappointments

### **The Don'ts**

1. Don't take shortcuts, mushrooms are very delicate crops and you can lose your entire investment if you don't follow professional advice in handling them
2. Don't buy seeds (spawns) from cheaper sources, always buy from reputable sellers e.g. JKUAT
3. Don't forget that cleanliness is at the center of your farm's productivity (again, and again)
4. Don't be in a rush, take your time, like in any other business mushrooms take time to establish
5. Don't stop learning, keep researching and keep enquiring to learn the best practices

### **How Much To Invest**

A 1/8 th farm will require Ksh.230,000 to establish from scratch. However, once the farm-house is constructed and the basic supplies are bought then the cost of operating subsequent farming seasons will drop to about Ksh.150,000.

### **How Much To Expect**

Button mushrooms take less than 14 weeks (2 months) to mature and a 1/8 th acre farm with 1000 bags platforms can produce as much as 2 tonnes of produce. Each Kilogram goes for an average price of Ksh.600 and this can translate to as much as Ksh1.2 Million in sales revenue. You become a millionaire in just 2 months.

### **Final Word**

Mushroom farming, although quite cumbersome and labour intensive, is actually very profitable. All you need to do is to put some effort in learning the best practices and combine that with the brilliant business strategies to launch the next big brand in the country. So, what's your excuse for not being a successful entrepreneur?

### **3. How To Grow Your Sh.100,000 Into Sh.5 Million In 4 Years With Eucalyptus Grandis Trees**



If you are a patient investor who is willing to risk it all and wait for returns in 5 years or so, then Eucalyptus farming might just be the right business idea for you. Not only is this an opportunity to create some income but an avenue to help the country achieve a 10% tree cover by 2030 as well.

But is there market for these trees or is it just hype as usual? Well, don't take my word for it. Statistics from the Kenya Forest Service show that Kenya imports Ksh.7 Billion worth of timber from countries like Tanzania every year. Local forests can barely sustain the nation's demand hence the need for farmers to step in to fill up this gap.

Eucalyptus trees in particular have a wide variety of uses including as: electricity transmission poles, props for construction industry, production of essential menthol oil, timber for furniture and fuel wood for industrial and domestic use.

Demand for mature Eucalyptus trees is very high in most parts of the country and this trend is expected to hold for at least the next 20 years – and herein lies a good investment opportunity for you.

## **Eucalyptus Tree Farming Business Idea in Kenya**

### **Step 1: Get A Piece of Land**

Eucalyptus trees can grow in almost every part of the country (from Turkana to Central Highlands and Coastal Lowlands). Ideally, you should purchase or lease a minimum of 1 acre piece of land. If leasing, let the lease period be at least 10 years so you have enough time to utilize the land. An acre of land goes for as little as Ksh.150,000 (purchase) and Ksh.5,000 per year lease.

### **Step 2: Prepare It**

You don't need to till the land but you will need to dig holes in which to plant the trees. Spacing of 1 meter in between holes and rows is recommended (but you can always talk to a forestry expert for more concise advice on this).

### **Step 3: Obtain Seedlings**



Only get seedlings from reliable outlets. For starters, you can check with your nearest KEFRI office, they have branches in Muguga, Maseno, Kitui, Nyeri, Londiani, Gede, Kakamega and Turbo. Alternatively you can consult the Kenya Forest Service or any KFS-approved tree nursery in your area. Good seedlings retail at a price range of Ksh.20 – Ksh.30.

An acre piece of land can accommodate up to 3,800 seedlings. But you can always start with as few as 3000 seedlings.

Note: Different types of Eucalyptus Species Include Grandis, Saligna, Globulus and Regnans. A forestry expert will be able to advise you on which species best suits your region. Generally Grandis is the most popular type in Kenya.

#### **Step 4: Plant & Wait**

Plant the trees at around the long-rains season and cover with enough soil. Keep animals off the young trees and if possible keep checking every few weeks to see how the farm is faring. The trees are not susceptible to frequent infections; but if you spot any signs of improper growth you will need to either destroy the weak trees or consult an expert.

#### **Step 5: Market**

Market is readily available with mature unprocessed poles being bought at Ksh.3,500 per piece by processing plants which then sell to electricity suppliers in Kenya, Northern Uganda and Southern Sudan. Each processed pole is then sold for Ksh.17,000 per piece. One example of a processing plant that buys eucalyptus directly from farmers is the Millennium Trading House located in Ndenderu, Limuru in Kiambu County.

#### **Useful Tips**

1. Grandis Eucalyptus trees take less than 4 years to reach market maturity.
2. A few trees may die or fail to grow properly along the way. 90% success rate would be a good estimation to start with.
3. Sometimes you can harvest the trees at only 18 months of age if you have ready market for props and posts (mostly this market comes from real estate constructions). Props go for Ksh.100 per piece.
4. Always get KFS certified seedlings. Don't take shortcuts as you might compromise the quality of your final product.

### **How Much To Invest**

You will require about Ksh.150,000 to set up the farm with around 3,000 trees. You can set aside another long-term budget of Ksh.50,000 to cater for other charges that may arise in running the farm. So total investment Ksh.200,000.

### **How Much To Expect**

If you manage to harvest 3,000 trees at full maturity (which is 4 to 5 years) and sell each unprocessed piece to a processing plant at Ksh.3,500 then you will expect Ksh10,500,000 in sales revenue. This is largely passive income because you don't need to spend every day managing the farm once the trees are planted.

### **Final Word**

In this world you have to make two choices. The first choice is to work hard for your money and the second choice is to let your money do the hard work for you. If you choose the former then your options are quite limited. But if you go for the latter, and think about eucalyptus farming in Kenya seriously, you will realize there's a lot in store for you in the future. What's your choice?

## **4. The French Beans Farming Side-Hustle That Can Make You A Cool Ksh. 100,000 Per Month**



Have you been thinking of tapping into the benefits of Kenya’s export market in the Euro and the United States? Well, believe you me, you can start your own small venture right now and be a part of those who feed the nations. You only need to think about planting French beans and in less than 2 months you’ll be thinking of exporting your first produce.

### **French Beans Farming in Kenya**

French beans grow in warm-wet parts of the country. These are areas like Thika, Murang’a, Machakos, parts of Kajiado, Uasin Gishu, Nakuru, Western Kenya and Kisumu. The soil has to be well drained and water supply should be adequate.

#### **Step 1: Getting Started**

Don’t invest in French beans until you consult local export agents for mentorship, training and market advice. This is a very important step because these are the institutions that will buy

from you and sell the produce at the international market. You will need to talk to them so you can familiarize with the right kinds of crop species, chemicals and packaging methods prior to making an investment. Examples:

1. Fresh Produce Exporters Association of Kenya (Located in New Rehema House, Rhapta Road, Westlands)
2. Homegrown Kenya Limited
3. VegPro Kenya Limited
4. Wamu Enterprises
5. Everest Enterprises
6. Kenya Horticultural Exports Limited (KHE)

### **Step 2: Find Arable Land and Prepare It**

An acre of land typical costs Ksh.5,000 to Ksh.10,000 to lease per year. The best land (ideally) is one that is near an international airport so the export agents can easily access your farm.

Those targeting Nairobi may want to think of areas like Murang'a, Gatundu, Kirinyaga, Mua Hills, Ngong and Ngoliba. Lease land can also be found in places like Mwea although the soils in those areas tend to be depleted of minerals due to years and years of intensive farming.

### **Step 3: Find Seeds and Plant**

Your export agent will be able to advise you on the best seeds, fertilizers and chemicals to use. Typically, an acre of land requires a 25Kg bag of seeds which costs Ksh.22,000 on average (1 seed per hole). Note that with irrigation French beans can be grown throughout the year.

### **Basic Farming Tips**

1. Land should be ploughed and furrowed before planting season
2. Single rows of 30cmx15cm or double rows of 60cmx30cm are recommended
3. You'll require about 80 Kgs DAP and 60Kgs of CAN fertilizer per acre. NPK fertilizer may also be used on less fertile land to stimulate crop flowering.
4. Pesticides like "Confidor" and "Thunder" can be used

#### **Step 4: The Harvest**

French beans take around 50 days to mature after which you can harvest them over the next 8 weeks. On average an acre piece of land can yield 4 to 6 tonnes of crop. Note that, because these are highly perishable crops, it is important to harvest when there's ready market.

#### **How Much To Invest**

In order to start a fully-fledged farm (including leasing the farm, ploughing, irrigation, seeds, labour, fertilizer and chemicals) you'll need to set aside a budget of at least Ksh.130,000. This cost may actually reduce with successive planting seasons.

#### **How Much To Expect**

During the high season (September to March), you can sell a Kilogram of your produce at an average price of Ksh.100. Thus if you harvest 5 tonnes from your acre piece of land over period of 2 months then the returns would amount to Ksh.500,000. The low season in this business lasts between April and August and prices per kilo tend to plummet to Ksh.50 on average.

#### **Final Word**

It's not a must to become a full-time farmer in order to engage in this business. And you don't need to be a landowner either. All you need to do is get mentorship from those who

understand the business of exporting products, lease a piece of land near your current place of residence, hire labourers and only visit the farm once or twice a week.

So, YES, you can actually start this as a side-hustle as you explore further options to enhance your investment strategies.

## **5. Start A Small Ornamental Fish Business In Kenya; Be Your Own Boss**



Ornamental fish business in Kenya is estimated to grow at a steady pace over the next 15 years. However, despite the growing domestic demand, very few of our local entrepreneurs seem to have taken up this idea. As such, the niche-specific market has had to contend with an under-supply for many years. In fact, the vast majority of ornamental fish sold in Kenya and Africa in general are imported mostly from Israel, Eastern Europe and Far East.

And as i found out during my research, breeding of tropical ornamentals is usually a small-scale business, and there is nothing really complicated or high-tech about it.

You can therefore start your own smallholding today, and begin supplying nearby retail shops with cheaper and high-quality fish without the costs of international transport, customs clearance and the stress to the fish associated with being transported for many hours.

Here's a step-by-step guide on how you can produce better fish quality than the imported stock and how you can make money out of it.

## **Ornamental Fish Farming in Kenya**

### **Step 1: Getting Started**

First you will need to find a suitable location for your venture. An ideal ground is one that has adequate supply of water, preferably located in an environment that is neither too hot nor too cold (23 degrees to 28 degrees temperature is recommended).

As such most of Nairobi, Central Kenya, Central Rift, Western, Nyanza and Coast would be ideal places to begin your search for land. Learn more here.

### **Step 2: Build a Pond**





A typical liner pond costs about Ksh.30,000 to construct. The size of the pond will depend on the number of fish you want to keep. For instance, a 250ft X 250ft pond is adequate for 3,000 ornamental fish.

You can seek help from the National Aquaculture Research Development and Training Centre in Sagana Kirinyaga County for additional advice on best practices of ornamental fish farming.

### **Step 3: Buy Fingerlings**

You can start with as few as 60 ornamental fish fingerlings. Small gold fish fingerlings cost Ksh.150 (estimate) each, Black Molly cost Ksh.400 each and Orandas Ksh.500 each. You can mix these three species to provide diversity to your customers.

### **Step 4: Manage The Farm**

Ornamental fish are best fed using flakes and pellets. The water in the pond also needs to be changed at least once every month. The fish normally reach maturity in 1-2 years, and although they can live up to 20 or more years, as a commercial farmer, you will want to begin exploring the option of selling them as early as possible.

### **Step 5: Build Aquarium Tanks (Optional)**



You can choose to sell your fish directly to people who make aquariums or you can learn the art (of making aquarium boxes) yourself so that you can tap in even more profit. For instance, an empty aquarium box measuring one-and-half square feet currently goes for Ksh10,000.

### **Step 6: How To Market Your Fish**

Ornamental fish are priced per inch. Hence, the longer the fish, the bigger the price tag on it. For instance, a 6 inch gold fish (priced at Ksh.150/- per inch) will attract Ksh.1,000. And since an aquarium is a lovely sight to behold that uses minimal electricity power in the house, you can market your product directly to homeowners, commercial offices or even schools.

You can also look up some high-end malls in the city (such as Yaya Center and Sarit Center) for potential market. So, in other words, the market is readily available...you only need to be good at prospecting and pricing.

#### **The Dos**

1. Visit the National Aquaculture Research Development and Training Centre or their agents for training and mentorship.
2. Consult with farmers who are already in this business to get an idea of the challenges they encounter.
3. Consult a few buyers in your area or region to get an idea of the kind of quality they are looking for.

#### **The Don'ts**

1. Don't overcrowd your fish in the pond (1 inch of fish per 4 litres of water is recommended).
2. Don't add too many new fish into your pond at one time, get a few first and see how they adjust to their new home.

3. Don't use pesticides near your pond, generally maintain high hygiene standards around the fish.

### **How Much To Invest**

Building the pond will cost you about Ksh.30,000 and buying new fingerlings will cost you about Ksh.20,000. You can start with 60 fish, which if well fed and maintained, can multiply to over 10,000 in a year.

### **How Much To Expect**

If you sell half of the fish (5,000) per year with each fish priced at Ksh.500 then you can expect a sale volume of Ksh.2,500,000. And since the cost of maintaining a pond isn't that high, then you can look forward to a pretty decent profit margin of around 80%.

### **Final Word**

There's an old saying that goes, "opportunities are missed because they come dressed in overalls and look like work." So today, you can make a choice whether to spot an opportunity or to fear work and continue blaming others for your misfortunes. Ornamental fish farming in Kenya presents a wonderful opportunity for anyone, young or old, to explore.

## **6. How To Turn Your Love For Dogs Into A Business That Pays Ksh.500,000 Per Month**



For the real hustlers in the house, the idea of starting a dog breeding and training business in Kenya will sound like a heaven-sent gift. First, the business does not have seasonal fluctuations.

Secondly, if you're really passionate about it you can even start with NO monetary capital. Thirdly, no formal training is required which means you can start as soon as you're ready to get going. And the returns? Well, keep reading to find out.

### **Dog Breeding and Training Business in Kenya**

#### **Step 1: Get Dog Trainers Training**

Dog trainers training is offered on an apprentice basis and NO FORMAL TRAINING is required. Past experience in a dog training facility and the disciplined service e.g. ex-NYS or local security companies can be a big boost.

#### **Step 2: Do This Simple Market Survey**

The reality of the market is that you need to go where the demand is high. Population density and dog-ownership percentages go hand-in-hand. A related consideration is that the demand for dog training services is high in urban areas than rural areas with Nairobi, Mombasa, Kisumu, Embu, Nakuru and Thika towns topping the list.

### **Step 3: Identify a Market Gap**

It's very easy to see if your market has a gap to be filled. If you notice most trainers in the area are usually busy for weeks or even months ahead, it means demand for services currently exceeds supply and hence you can join in. Remember, even if there is no gap in a market, you can still join in by adding a differentiating factor to your services. For instance, door-to-door services, boarding facilities or even free blog tips on dog care can significantly make you stand out.

### **Step 4: Start With Few Puppies**

If you want to become a breeder cum trainer, it goes without saying you'll need to keep a few dogs. You can talk to other local breeders (the East Africa Kennel Club is a good reference point) so that you can book puppies with them. Good dog breeds include:

1. Boxer
2. Great Dane
3. Labrador Retriever
4. Rottweiler
5. German Shepherd
6. Golden Retriever
7. Chihuahua
8. Japanese Spitz

### **Step 5: Build Kennels**

As you wait for the puppies to be delivered, build a few kennels. For instance, you can start with 5 boarding kennels and 1 warm maternity kennel.

### **Step 6: Get the Word Out**

Print out a few brochures and drop a few batches at busy shops and agro-vets in your target area. Put your contacts up in one of the many free classified ads websites. Place a cheap classified ad with the local daily newspaper and then do a bit of social media sensitization.

### **A Quick Note**

Some of the services you can offer include:

1. Dog training services – obedience and aggressive training, potty training, guard dog training (Average Price: Ksh.30,000)
2. Dog breeding services – breed puppies and sell them after training (Average Price: Ksh.10,000 – Ksh.50,000)
3. Dog boarding services – when dog owners want to travel they can leave their dogs with you (Average Price: Ksh.500 per dog, per day)

### **How Much To Invest**

If you're short of starting capital, you can start off as purely a freelance dog trainer and in that case you will not require any monetary capital, just sweat capital and a hustler's attitude. You can however consider widening your opportunities by venturing into the more lucrative dog breeding business.

1. Kennels – Ksh10,000
2. Puppies – Ksh 20,000 (Pure breed)
3. Dog food – Ksh10,000

4. Marketing – Ksh10,000
5. City Council Dog License – Ksh1,000 (Rate applicable in Nairobi City Only)
6. Miscellaneous – Ksh20,000
7. Ideal Budget – Ksh100,000 to Ksh.150,000.

### **How Much To Expect**

On average, an established trainer and breeder makes Ksh.500,000 per month.

### **Final Word**

Contrary to popular opinion, starting a dog breeding and training business in Kenya isn't that complicated. You only need to be passionate about the hustle and ready to do what it takes to get going. What's stopping you?

## **7. With Watermelon Farming It Takes 100 Days To Grow Ksh.40,000 To Ksh.400,000**





We live in a beautiful country indeed. Our potential for agri-business is immense, our land is fertile and our people are hard workers. Thanks to a fast growing demand for fresh grocery, demand for agricultural products such as watermelons has grown exponentially over the last few years. Today i want to share some important tips about watermelon farming.

## **How To Grow Your Ksh.40,000 Into Ksh.400,000 In 100 Days**

### **#1: Get the Seeds**

High quality seeds are available at Kenya Seeds Company and Simlaw Seeds Company outlets. At the moment 500 grams of seeds is retailing at Ksh.12,500 and it can serve up to 1 acre.

Keep in mind that because watermelon produce large vines, you need to leave a space of at least 1.5 metres between rows. This leafy crop should be grown away from any shade so that it receives at least 6 hours of direct sunlight.

### **#2: Choose the Right Variety**

The variety of watermelon you choose can determine what profit you are going to reap from your investment. According to Mr. Robert Musyoki, a variety known as Sweet Rose is the best bet for first time farmers since it is highly resistant to diseases and pests. Other varieties that are in high demand in Kenya include: Sugar-Baby, Jubilee and Congo. Mr. Robert Musyoki can be contacted on 0722281132 for further consultations.

### **#3: How Long to Maturity?**

Watermelons normally reach maturity in 80 to 100 days. To check if your fruits are ready you only need to turn them to see if they have a yellow patch on the part that lies against the ground. Another way to check for maturity would be by thumping the fruits – you should expect to hear a dull noise from a ripe one.

#### **#4: Can I Plant Watermelons in My Home Area?**

“Watermelon is adaptable to a wide range of environments” said Robert Musyoki during a telephone interview with my research team. In general watermelons grow well in mid-hot coastal areas and dry plains. Example of such places: Machakos, Embu, Kirinyaga, Loitokitok, Garissa, Isiolo, Kerio Valley and some parts of Meru. According to Kenya Agricultural Research Institute (KARI) this crop can also perform well in areas with black cotton soil (such as Kitengela) if planted under drip irrigation.

#### **#5: Challenges to Watch Out For**

As with any other business, watermelon farming has its fair share of challenges. According to Dr. John McOpiyo (a one-time Watermelon farmer) says that finding the right pesticides, and fungicide is always a challenge. He narrated to us how he sprayed his farm with wrong chemicals only to lose all his crops. I would recommend seeking advice from an extension officer before applying any pesticides or fungicides to watermelons.

#### **#6: How Much You Need (1 acre farm budget)**

1. Seeds – Ksh.12,500
2. Labour – Ksh.10,000
3. Ploughing and weeding – Ksh.10,000
4. 50 KG DAP Fertilizer – Ksh.2,500

An acre of land can produce 45,000 Kilograms. Each Kilogram retails at a farm-gate price of Ksh.10 – Ksh.15. In short, we're talking about a return of about Ksh.450,000 minimum.

### **#7:Where Is the Market for Watermelons**

Major market for watermelons in Kenya is easily available in Nairobi's City Market, Agakhan Market, Githurai Market, Kangemi and Kongowea Market that is in Mombasa. Alternatively, you can look for market in hotels and supermarkets in your locality. "There are middle-men who normally come to the farms seeking to buy your produce even before it matures, so I don't think finding market for watermelon would be a big problem" Julius Kombo (a farmer from Lamu, Kenya).

### **Finally;**

There are many other things you need to consider before investing your hard-earned money in this business.

## **8. Start Your Own Crocodile Farm And Get A Big Bite Of The Growing Demand**



Operating a crocodile farm has good financial potential, but requires a great deal of confidence and patience before you make a profit selling the skins (hides) or meat in the market. Generally, the Eastern and Southern parts of Kenya provide the best conditions for crocodile farming, although croc farms have been successfully established in areas of Kirinyaga and Embu. Here is what you need to do to venture into this wild business idea.

### **Step One: Get Training Or Find A Trained Personnel**

Crocodiles are wild animals and they require special handling in order to survive in captive cross-circuit breeding conditions. As an investor eyeing this business idea, it is advisable to familiarize with the intricacies of running a crocodile farm on a day-to-day basis.

For instance, you can opt to work as a volunteer in one of the major farms around the country. Alternatively, if you're busy or outside the country, you can always consider the option of hiring a farm manager who is well trained on handling the reptiles.

### **Step Two: Pick a Site For Your Farm**

The best place to locate your farm is an area where the terrain is generally flat and the temperature is generally high. The main advantage of this kind of land is that besides it being ideal for the reptiles, it is generally cheaper to buy or lease. An acre of land is enough to accommodate a small farm of up to 700 crocodiles.

### **Step Three: Get KWS License**

According to the Wildlife (Conservation and Management) Act of the Laws of Kenya, every person planning to keep crocodiles or any other wild animals should apply for a farming

permit. This application is made to the Director KWS through the nearest KWS regional office. The annually renewable license fee is priced at Ksh.2,000.

#### **Step Four: Acquire Crocodile Eggs for Your Farm**

Crocodile eggs are freely available in the wild particularly in the areas surrounding the Tana Delta. As an upcoming farmer, you can make a trip to that area and engage the youth in collecting the eggs (of course you will need the KWS license for this).

On average you will pay Ksh.20 per egg collected. Alternatively, you can acquire young hatchlings from existing farms like the Mamba Village in Mombasa County.

#### **Step Five: Expand The Farm**

Since mature female crocodiles are capable of laying up to 70 eggs per season you should strive to gather as many eggs as possible so that you can grow your farm to its maximum capacity. Most importantly the animals should be provided with adequate food (examples: remains from slaughterhouse, dead chicken, maize germ mixed with blood and dead crocodile meat).

#### **How Much To Invest**

The basic minimum budget for starting a small farm is Ksh.150,000. However, this cost may increase depending on the number of crocodiles, size of land, land ownership, cost of feeds and cost of hiring farm caretakers.

1. Constructing the farm structures – Ksh.50,000
2. Sinking 50×100 water ponds – Ksh.40,000
3. Acquiring Eggs and transport – Ksh.20,000

#### 4. Cost of Running the Farm – Ksh.40,000

### **How Much To Expect**

A mature crocodile can produce up to 120 centimetres of quality belly skin which goes for Ksh50,000 on the international market. Apart from the skin, one can sell the meat of which 1 Kilogram of meat fetches a farm-gate price of Ksh.350 on average (A mature crocodile can produce 200 Kilograms of meat.

The crocodile's skull, teeth and skeleton can be sold to curio makers. In addition, one can turn the farm into a sanctuary and charge a gate fee to those visiting. Going by that rule, a small farm can rake in Ksh.15,000,000 to Ksh.30,000,000 per year.

### **Final Word**

Crocodile farming in Kenya ranks top among the business ventures with the highest possible returns. However, the business requires a great deal of patience in order to reap all these benefits.

## **9. Start A Small Yogurt Business And Scoop 300% Returns For Each Shilling Invested**



Before i introduce you to the idea of yogurt production and marketing, think of it this way: A litre of raw milk at the farm goes for Ksh.40. Each litre of milk can produce four tumblers of 250ml yogurt, which currently retail at Ksh.55 each.

In a nutshell, a litre of milk if converted to yogurt and marketed the right way can give as much as Ksh.220 which is equivalent to 500% value addition (or 300% when you deduct all expenses). Does that awaken your business curiosity? Well, if it doesn't you probably aren't an entrepreneur.

### **Yoghurt Production & Supply Business in Kenya**

Demand for yoghurt has been rising steadily since 2010 and the market remains significantly under supplied. This means there are opportunities for startups to thrive especially if they offer specialized services, good branding and unique recipes.

The good thing about this kind of business is that it is relatively easy to start and contrary to common belief, it does not cost much to set up. With as little as Ksh.100,000 you can start small production plant and re-inject the capital as your company passes various stages of growth.

Here is a simple step-by-step guide on how you (yes you) can start a successful yogurt making business today.

#### **Step 1: Train Yourself On How To Make Yogurt**

Julius Yego learnt how to throw the Javelin online and he became a world star...and you too can learn how to prepare a world class recipe on your own through constant practice via this medium. So go to Youtube, Food.com or any other top website and teach yourself how to make nice yoghurt. Then invest in 1 litre of milk and use it for practice.



## **Step 2: Invest in Equipment**

With a small budget you need to plan wisely so as to get maximum value from each investment. For starters you will need a few high quality sauce pans (sufurias), thermometer, milk sieve (kichungi), weighing scale and a firewood kitchen.

As your company advances you will need to think about packaging. For that, you will approach a company that manufactures plastic tumblers – a very well known example locally is TechPack Industries Limited which is located in industrial area Nairobi. With as little as Ksh.20,000 you can get enough branded tumblers that you will be using to package your yogurt for supply.

Later on you will find the need to invest in a pasteuriser to replace your firewood kitchen. A pasteurizer is basically an advanced boiler and a good one goes for Ksh.350,000 or thereabout. You can get one supplied by local firms; a good example being FinKen Holdings Limited located Industrial area of Nairobi.

## **Step 3: Get KEBS Certification**

If you are producing good quality products with the recommended packaging and stuff like that, getting a KEBS certification is a no brainer. A typical certification process will cost you about Ksh.32,000.

## **Step 4: Get Started & Market Widely**

Quality – check. KEBS – check. Packaging – check. The only thing that is missing is the market. You can start small by marketing to neighbouring households and institutions. For instance, you can approach your nearest kindergarten and give them a discount so they can be

ordering from you frequently. You can even hire a few salespeople who can be hawking your products in commuter buses.

Besides that you will need to approach the big retail outlets – consider supermarkets, government institutions and so forth. What you should basically do within the first few months of operation is to build a name for yourself and to get as many retailers as possible to stock your product.

### **How Much To Invest**

You can start without the pasteurizer and use around Ksh.100,000 total to set up around a firewood kitchen. However, if you are really considering serving a big market then it's important to factor in the Ksh.350,000 price of the pasteurizer.

### **How Much To Expect In Return**

You can buy milk from farmers at a price of Ksh.40 per litre and then sell your final product at Ksh.200 per litre or Ksh.50 per 250ml Tumbler (Actually the current market price per Tumbler of Yoghurt is Ksh.58). Assuming you sell 1000 litres per month, that will be equal to Ksh.200,000 in sales revenue. That could translate to a net profit of Ksh.100,000 per month (i.e after deducting all expenses).

### **Final Word**

The ball is in your court. Remember, even those big companies you see today were once small ideas that seemed too difficult to implement. So psyche yourself up and go for it – all the best.

## **10. Snow Peas Farming In Kenya: How To Make Ksh.60,000 Per Week Working 1 Hour A Day**



Snow peas farming is a relatively new introduction in Kenya and despite its relatively unsung tales of success in the media-space its high returns combined with a fast growing market make it an irresistible investment venture. You only need to find little capital to start with, and within 10 weeks, you will be smiling all the way to the bank. Would you like to find out how? Keep reading the next few lines.

### **Snow Peas Farming in Kenya**

Strawberries grow well in upper and lower highlands within temperatures of 20 degrees, rich organic soil and well distributed rainfall. Most parts of Kenya meet these requirements with most parts of Central, Western and Rift Valley meeting the criteria.

#### **Step 1: Getting Started**



Of course, you need land to plant your snow peas crop. An acre of land would be sufficient for a beginner. You can lease out a piece of land cheaply in parts of Nakuru County for as little as Ksh.5,000 per acre per year so the issue of “I wish I had land” should not prevent you from getting started.

Once you have secured a decent piece of land, in a place with adequate water supply, you need to look for seedlings. The best varieties to go for are Oregon Sugar Pod II, Sweet Horizon or Snow Wind which are supplied by Amiran or Syngenta. You will require about 10 Kilograms of seeds per acre. Given that each kilo of seeds goes for Ksh.600 then your minimum investment in seeds alone will cost you about Ksh.6,000.

On top of the cost of buying certified seeds you will need to add an extra Ksh.4,200 for fertilizer (DAP and CAN), agro-chemicals (Ksh.15,000) and sticks/stoppers (Ksh.5,000).

## **Step 2: Prepare The Land**



Till the land, get rid of weeds and soften the soil. You may want to add some manure later on to ensure a healthy supply of nutrients to your crop. Sow the seed at a depth of 3cm with a spacing of 10 cm between plants and 75 cm between rows. The recommended seed rate is 10Kg per acre of land.

### **Step 3: Ensure Steady Water Supply**



Snow peas require a large supply of water during the growing season. In case of poor rains you will need to have an irrigation system on stand-by. You can invest an extra Ksh.50,000 to ensure steady water supply to your farm. A back-up water tank would also be an important investment.

### **Step 4: Harvesting And Selling Your Produce**



An acre piece of land can produce 400Kgs of fresh snow peas per week and harvesting can be done once per week for 13 weeks or more. Each kilo goes for Ksh.150 at the current market price. Now assuming your farm produces 400Kgs per week we multiply that by 13 weeks to get 5,200Kgs. That is an equivalent of Ksh.780,000. It is possible to recover your initial investment within just 12 weeks (or 3 months) of starting the farm!

### **How Much You Need To Invest**

Ksh.100,300 per acre (minimum)

### **How Much You Can Harvest**

Ksh.780,000 per acre over 13 weeks

### **Where To Sell**

Snow peas are not widely eaten here in Kenya and as such you will need to target the export market. You don't need to worry about exporting the produce yourself either. All you need to do is approach local vegetable exporters among them Homegrown Kenya Ltd, Idu Farm, Wamu Enterprises, Everest Enterprises and Kenya Horticultural Exporters Ltd (K.H.E).

### **Final Word**

You don't have to be a "big fish" to succeed in snow peas farming in Kenya. All you need to do is find a good piece of land, invest in high quality seeds and use approved agro-chemicals. If

you have Ksh.100,000 or thereabout and you are wondering which business to start with it, don't be fooled to invest in pyramid schemes.

Start small in snow peas farming today and 24 months down the line you will be a notable horticulture exporter – creating jobs, not seeking jobs.

## **11. Firewood Delivery Business**



Firewood is a commodity in plentiful supply in the forested parts of the country. On the other hand, this same commodity is in short supply in open areas where farms, schools and upcoming trading centers compete for the little available space. There-in lies a potential business venture that doesn't require a lot of capital to set-up. In order to succeed in this business you need to:

1. Find a reliable source of mature wood
2. Ensure that this source of wood complies with the national environmental standards (You can source from your farm, neighboring farms or from a neighboring forest whose crop of trees was recently harvested and re-forestation is yet to take place. Just make sure you have clearance from your area forest officer before you venture into the forest).
3. Buy a panga and axe and do the hard work of cutting the wood
4. You also need to organize for transport from point A (source) to point Z (market)

Preparing the wood and transporting it to the market will cost you about Ksh.10 per piece of wood. You can then sell each piece at Ksh.20 especially in places around Kiambu and Mombasa Counties and therefore make double profit.

## **12. Marketing Agric Produce Even Without Farming**

If you don't like the idea of going farming what about marketing produce from the farmers and doing the work of delivery yourself to the market? You can for instance go to a rural farm in Kisii, order for as many bananas as possible and deliver them at a cost to a buyer in Nairobi. Or you can even travel all the way to Kieni in Nyeri county, buy onions at Ksh.20 per kilo and deliver them to a hotel in Mombasa at Ksh.40 per kilo.

### **What do you need to start?**

1. Good marketing and networking skills so that you can access high-end customers who are willing to pay well for your deliveries
2. Knowledge on good and cost-effective means of transport
3. Starting capital to enable you buy from farmers and deliver to the buyers in good time (Starting capital may vary from as low as Ksh.100,000 for small groceries to as high as several millions for bulk supplies).



### 13. Engage In Organic Farming; Stand Out From The Pack



Look, most farmers today are engaging in inorganic farming. They use tonnes of fertilizer, pesticides and even hormones to deliver the best looking products at the cheapest possible prices. However, as we all know, inorganic food is not good for the human body.

If you think something needs to be done to change the way modern people eat, then why not start an organic farm. Look for organic shops in big towns and tell them about your plans. Think about branding your produce so that everyone knows that you're an organic hub. This will make it even easier for you to penetrate some otherwise flooded markets. And better still, you can always charge a premium for your product – meaning you'll get even more returns from your farm.

#### **Requirements:**

1. Knowledge of organic farming (talk to your area agriculture officer on the possibilities of this)
2. Good marketing and branding skills
3. A farm, source of water, labor and transport

The cost of setting up such a farm may vary depending on various factors. However, you should be able to set up something meaningful with as little as Ksh.100,000.

## **14. Onion Farming In Kenya – A Small Business Idea You Can Start With Little Capital**



There is a rising demand for locally grown onions in Kenya. Past estimates by the F.A.O showed that 50% of red onions consumed in the country are imported from Tanzania (which essentially means that local farmers are being overwhelmed by demand). So what could be better than growing red onions for a blossoming market?

### **Understanding The Opportunity of Onion Farming in Kenya**



It is possible to make very high returns per square foot with red onions. They are one of the most profitable plants. Here's how you can make your first million with this spicy sensation.

First, understand this is not a get-rich-quick scheme at all. You certainly won't make Ksh.1 million overnight. But with smart choices and hard work, you really can make a decent income growing them. At the same time, as with any other business, it is important to start small, growing a few proven varieties the first season, and introducing more varieties as your knowledge improves or as you discover new options that do best in your area.

So let's do the math. Most commercial growers use up to 5 acres of land. Such a plantation produces about 30 tonnes of onions in 4 months. Each Kilo is bought at a farm-gate price of Ksh.40. That amounts to Ksh1.2 Million in sales.

### **How You Can Get Started**



When you are ready to start, the first important thing to consider is your microclimate. Onions grow well in temperature range of 13-25 degrees centigrade (which means most parts of Kenya are ideal for this business). If you live in dry areas such as Ukambani, you will want to invest in greenhouses and drip irrigation systems to maximize production.

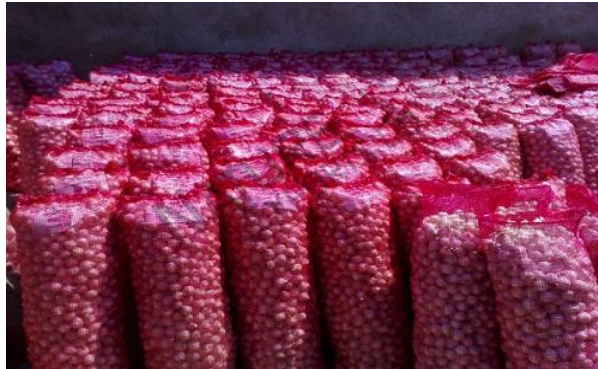
### **Requirements**

1. Land
2. DAP Fertilizer (20 grams per square meter)

3. Seedlings (1 Kg per Acre) – Each Kilo of seeds goes for Ksh.6300.
4. Soil testing is recommended

Different seed varieties perform differently under varying growing conditions. Jambar F1 is the most popular variety in Kenya. Your county agricultural extension office can help you pick the best varieties for your area, as can the seed companies that supply onion seeds. Onions are however notoriously susceptible to disease particularly cutworms. You therefore need to keep your budget open for this.

### **Finding Buyers**



When you are ready to harvest your onion crop, you have many options. These are just three of many: Utugi TV Soko Freshi – This recently launched TV station helps small farmers advertise their products for a small fee to a targeted audience.

Direct Selling – You can approach potential buyers directly e.g. hotels, schools and other major organizations.

Middlemen – Middlemen are available to buy from your farm provided you have sufficient supplies. They however don't offer the best market price (obviously because they buy to re-sell).

### **Final Word**

As you can see, opportunities are endless with onion farming in Kenya, and the demand just keeps going through the roof each year. Could this be the opportunity you've been waiting for to launch your agri-business startup?

## **15. Strawberry Farming in Kenya : How To Make Ksh.100,000 Per Month on 1/8th Acre Land**



Strawberry farming has huge income potential and can easily turn you from a job-seeker to a job-creator or from an employee to an employer in less than 12 months. Would you like to find out how? Keep reading the next few paragraphs.

### **Strawberry Farming in Kenya**

Strawberries can grow in almost every part of our country provided there is constant water supply and stable temperature in the range of 10 – 30 degrees Celsius.

### **Step 1: Getting Started**



Of course, you need some land to plant your strawberry crop. 1/8th of an acre would be adequate for a beginner but if you are in an urban setting you can invest in a few containers (which you can then put in your backyard) and start farming.

Once you have secured a good piece of land in a place that has adequate water supply start looking for seedlings. The best variety to go for is “Chandelier Strawberry” which is perfectly suited for the Kenyan environment.

You will require about 3,000 seedlings for a 1/8th piece of land. Given that each seedling costs Ksh.10 then your minimum investment in seeds alone will cost you about Ksh.30,000. On top of the cost of purchasing seedlings you’ll need to add an extra Ksh.15,000 for transport, fertilizer and agro-chemicals.

### **Step 2 : Prepare The Land**





Till the land, remove weeds and then soften the soil. Later on, add some manure (rabbit, sheep, goat or cow manure will work) and ash to ensure a healthy supply of nutrients to your crop. Proceed to plant your strawberry seedlings leaving a distance of 30cm in between rows. Also, leave at least 50 cm space between any two sections of the farm.

### **Step 3: Look For Market Early Enough**

It takes about 70 days for the crop to mature and produce the first fruits. But because the fruits are highly perishable (stays fresh for 4-5 days after harvesting), it is advisable to start looking for market early enough to avoid incurring losses. Demand is readily available in major urban markets especially among green-grocery suppliers. You can also access a larger market by marketing to companies like Brookside, Trufood, KCC and major supermarket chains. In that case, you will require to invest in good packaging and get accreditation from The Kenya Bureau of Standards.

### **Step 4 : Harvesting and Selling Your Produce**



A 1/8th piece of land can produce between 30kg and 50kg of strawberries per week and each kilo goes for about Ksh200 at the current market price. Now assuming your small farm produces 50Kgs per week then that means you can make Ksh.40,000 per month using only a very small portion of your land.

Moreover, you can increase your farm's productivity by investing in aquaponics through which you can triple the productivity of your farm to make at least Ksh100,000 per month on just 1/8th of an acre. It is possible to recover your initial investment (or break-even) within just 6 months of starting the farm

### **Final Word**

You don't have to be an agriculture expert to succeed in Strawberry farming in Kenya.

All you need to do is find a good piece of land (e.g. in Isinya, Machakos, Kiambu, Nakuru, Naivasha, Kilifi...or simply anywhere near a potential market).

Then you need to source for the right seedlings – and this is where you need to contact KARI for assistance. Alternatively, you can talk to other successful farmers in your region for assistance in sourcing for the right crop.



What about marketing? Package your product nicely, take a few photos and post on various market-based Facebook groups. Also, carry a sample of your product with you and take it directly to your potential buyers.

Invest in a few business cards or fliers that you can leave with your potential customers so that they can contact you when need arises. If you're out there wondering what business to do with your little capital, don't let this opportunity pass you. Start small today and good things will come your way!

## **16. Bamboo Farming in Kenya; 7 Things You Need To Know**



You, probably, have heard people talking about Bamboo farming – how it is transforming lives across Kenya and how it has the potential to transform you from a middle-income earner into a millionaire in record time.

### **Brief Info about Bamboo Farming**

Bamboo farming is popular in China and the US where it is grown for medicinal, ornamental purposes and feeding of panda. Back home, this type of farming is peaking with potential demand coming from construction companies, landscapers and even beer manufacturers.

### **How Do I Get Started**

Virtually anyone can venture into this line of business. Actually, there are no stiff requirements for getting started. You only need adequate land (at least 1 acre) and the right information.

The beauty of bamboo plants is that they can grow in any region where maize, wheat or any other crop that belongs to the grass family thrives. Below are some quick tips for choosing the ideal piece of land for planting bamboo:

1. Well-drained soil; not in a swampy area
2. Spacious piece of land with adequate sunlight
3. Spacing of 5ft in between plantlets
4. Moderate supply of rainfall
5. Soil pH – 6.5 – 8 pH



## **Where To Get Seedlings**

You can get good seedling from a certified nursery in your area. However, before you buy, it is important you talk to a Ministry of Agriculture extension officer in your region. The Kitil bamboo farm in Isinya Kajiado County is one of the few providers of bamboo seedlings and plantlets in the region. The average price per seedling is Ksh.180 to Ksh.250 – this can change depending on the amount of seedlings bought.

## **After how long can I expect my money back?**

Think of Bamboo farming as a long-term investment – pretty much the same way you would buy a plot of land and leave it to gain market value before re-selling it for profit. Bamboo plantlets normally take 3 to 4 years to mature.

## **How much do I need to spend?**

If you were to plant bamboo on say a one-acre piece of land, you would need to spend the following (*estimated*) amounts:

1. 200 Bamboo Seedlings x Ksh. 200 = Ksh.40,000
2. Tilling of land and labor = Ksh.25,000
3. Fungicides = Ksh.10,000
4. Transport and Harvesting = Ksh.50,000
5. Miscellaneous = Ksh.10,000

That brings you to an estimated total of Ksh.135,000.

## **How much can I expect in return**

Each bamboo plantlet produces multiple shoots during its lifetime. For example, a young plant may produce three shoots within two months time. Next season, those three shoots plus the mother plant may produce three shoots each and so on. Fast-forward four years, the single plant you planted will have produced sixty canes stretching up to thirty feet in height.

Now let us say you sell each pole at a throw-away-price of Ksh.100, how much will you get from a single plant (which you bought for Ksh.200)?  $60 \times 100 = \text{Ksh.6,000}$ . Now, Multiply Ksh.6000 by the number of shoots in your farm, how much do you get?  $\text{Ksh.6000} \times 200 = \text{Ksh1,200,000}$ .

The only disadvantage with bamboo plants would be that they are only commercially useful from year 4 to year 6 after planting.

### **Is there ready market for bamboo in Kenya and Africa?**

While market is readily available, you may have to do a bit of marketing just to create sustainable demand for your product. The three years that you would have to wait for the crop to mature should be enough for you to create a buzz around your farm so that you are assured of earning from your sweat when the day of harvest arrives.

Apart from direct marketing, you can get a little innovative to create and sell bamboo products. Examples of products you can produce and sell to a ready-market include bamboo matchsticks, toothpicks, bamboo charcoal or even bamboo beer. You can also create nice art products with it and start selling to individuals and corporate in your area.



A brand of beer made from Bamboo

**Finally;**

*As someone once said, opportunities come dressed in overalls. Who knows, maybe your first million is stashed right in the middle of a bamboo thicket. Think about it!*

## **17. Poultry Farming: How To Make Profits Even When Others Complain Of Lack Of Market**



Want to venture into the business of poultry farming? Kenya's (and Africa's) demand for poultry is growing at a steady rate of at least 5% per year all thanks to our diverse middle-class society segment which currently comprises about 44.9% of our active population.

One thing you should know about the middle class is that they are heavy spenders – and they are frequent visitors of fast food joints. The fastest moving products in fast food joints are poultry products and this explains why this is just the right time to be on the supply-side of this market.

Let me briefly guide you on the basics and estimates of starting a successful chicken farm...later on i'll talk about turkeys, guinea-fowl etc.

### **You'll Require**

1. Land – At least 40ftx60ft
2. Well Ventilated Cages – Ksh.60,000 (to construct)
3. 100 One-Day Old Chicks – Ksh.10,000
4. Chicken Feeds – Ksh.100,000
5. Vet Products & Miscellaneous – Ksh.30,000

#### **1. Land**

Choose a piece of land that is in an open, secure and well-drained. The land should be near a source of electricity and should generally be easily accessible via motorized means of transport

#### **2. Cages**



Cages should be built in such a manner that they occupy at least half of the land. Tell your carpenter to allow for ventilation to the east and west of each cage. Also, very important, make sure to put cement flooring.

### **3. Day-Old Chicks**

Don't take short-cuts when it comes to buying chicks. If you want quality chicks that pay back your investment in 6 months then you better buy from an accredited retailer. Examples of renowned retailers of day old chicken in Kenya are: Muguku (Kikuyu), Bradegate (Nyeri) and Kenchic (Across the country). Alternatively you can buy from your reliable friends or referrals.

### **4. Chicken Feeds**

Don't underestimate the cost of feeding the chicken. Feeds alone can gobble up to 70% of the cost of maintaining the farm. A 20kg bag of feeds costs Ksh.800 or thereabout and you can expect to buy feeds worth Ksh.18,000 and above per month. Note: You can subsidize feeds with sunflower seeds or other cheaper sources of nutrients as may be recommended by your vet.

### **5. Vet Products & Miscellaneous**

All other tools and inputs you will need vary depending on where your farm is and the diseases that are likely to affect your chicken. It is recommended to keep an open back up budget for this cost head. For a small farm of 100 chicken we recommend you set aside a back-up budget of at least Ksh.30,000.

The overall budget of setting up the farm comes to about Ksh.200,000. Let us now look at the returns side of the story.



## **Returns**

Let's assume that all out of the 100 chicks you bought live to maturity and that 85 are hens and 15 cockerels. After 6 – 7 months (the time it takes for chicks to reach full maturity) you'll be expecting at least 80 eggs per day. That adds up to 2500 eggs per month. You can opt to sell some unfertilized eggs of which each egg goes for Ksh12 (Or Ksh.280 per tray on wholesale) at the current market rate.

Alternatively you can sell fertilized eggs of which each egg goes for Ksh.30 (Or Ksh.900) per tray on wholesale) at the current market rate. Another option is to keep the fertilized eggs in a hatchery until they hatch and you sell the chicks. Day old chicks go for Ksh.100 each at the current market price.



**Say you make the following sales (per month):**

1. Sell 1000 Unfertilized eggs – Ksh.12,000
2. Sell 1000 fertilized eggs – Ksh.30,000
3. Sell 300 Chicks – Ksh.30,000
4. 200 eggs – Spoilt
5. Total – Ksh.72,000

Minus expenses and your small farm will give you Ksh.50,000 income per month with just 100 chicken. Moreover, you can boost your returns by adding more chicken and branding to differentiate your products so you can charge a premium.

**But there's no Market!**

People who say there is no market are ones who are not keen to approach potential buyers – as an entrepreneur we believe you should be in a position to actively look for the market instead of waiting for vice-versa to happen. The best target markets include: Education institutions, fast food restaurants, retail supermarkets and general consumers.

What are you then waiting for? Go ahead and give it a try – am very sure you'll have reason to smile soonest!!!

## 18. Reap Millions From Pig Farming Business



If you are considering engaging in pig farming business then probably you're worried about many things. Is there a ready market? How much capital is required to start small? How has the Kenyan industry fared over the last 1 year? Well, look no further because i will answer all these questions albeit briefly.

### **How's the industry performing currently?**

The pig market has been out-performing other notable markets, including poultry farming and real-estate, since 2010. However, the industry seems to have stabilized between 2014 and 2015 although it is still clear that demand currently outstrips supply.

There are great opportunities for investors who are ready to work extra hard i.e. in keeping quality breeds, marketing, value addition, innovation and perfect timing.

### **What are the basic requirements?**

You need at least a 40ft by 60ft piece of land to construct some sheds and a store for your farm. Make sure this piece of land is located in a quiet place and that there is adequate supply of water. Availability of good transport infrastructure is also an important factor to consider.

### **How can I get started?**

Assuming you have a piece of land and some properly built sheds in place, the next important thing to do is to buy at least two pregnant sows. Each sow goes for about Ksh.50,000 at the prevailing market price meaning that you'll require about Ksh.100,000 just to purchase the animals. You'll also require an additional Ksh.50,000 to cater for transport, feeds etc.

Within a few months, your sows will produce about 11 piglets each and therefore your community of pigs will have grown to 24. From that point, you'll have to wait for about 7 months for the piglets to mature and be ready for sale.

The most preferred breeds in the market are Landrace, Yorkshire and Duroc.

### **Can I Get Training?**

Yes. There are several agencies and entities that train farmers on the best practices of pig rearing. You may want to contact the Department of Livestock, which is located at Hill Plaza 7th floor for more professional advice on pig rearing and marketing. Also, one of the commercial pig companies in the country – Farmer's Choice – provides free educational material on this topic.

### **How Are Pigs Fed?**

Pigs are best feed with rice bran which can be bought in Mwea Rice Fields (Kirinyaga County) for Ksh.450 for 70kg or Ksh.1,600 for the same quantity in Nairobi. Mix the bran with maize germ, pollard, molasses and mineral supplements.

Cabbage can also be added and it costs between Ksh.100 and Ksh.150 per bag at your local Wakulima market. Pigs are fed once a day and provided with clean drinking water.

### **Is There Market?**

Yes, there is market. In fact in some cases current farmers have remarked that “demand currently exceeds supply.” You can decide to sell your piglets to other farmers – each piglet goes for Ksh5,000.

Alternatively, you can sell pregnant sows for Ksh.50,000 to farmers who are just starting. But that’s not all – here are some alternative pig markets available in Kenya.

When slaughtered a 60KG carcass goes for Ksh.13,800 on average. While one that weighs 70KG goes for Ksh16,100. Assuming that you slaughter your entire first breed of 22 pigs, each weighing 70kgs then you can expect to make Ksh.354,200 in the first 7 months of investing.

### **Commercial Firms**

The biggest commercial pig buyer in Kenya is Farmer’s Choice with a demand of 500 pigs per day. Another commercial entities that buy directly from farmers are Oscar Chef’s Choice, Hurlingham Butcheries and Olive Enterprises (Limuru).

### **Local Abattoirs**

Confirmed abattoirs or slaughterhouses that buy pigs from farmers include:

1. Ndumboini Farm Slaughter House – Kikuyu, Kiambu County
2. Lyntano Slaughter House – Nairobi
3. Kabati Slaughter House – Murang'a
4. Kitengela Pig Slaughter House – Yukos, Kitengela, Kajiado County

There is also wider opportunities for those who want to engage in value addition through branding, special packaging and even exporting to neighboring countries.

**Some other quick takeaways include:**

1. Boars (male pigs) should be castrated if they're not kept for mating so they don't waste a lot of energy chasing after sows.
2. Pigs should be dewormed after every two months to avoid parasites and diseases.
3. Piglets should be left to breastfeed for at least two months.
4. Payback period (i.e the period you have to wait to recover your initial investment) is 2 seasons or roughly 14 months.

**Final Word;**

Pig Farming is a business like any other. You need to do a Feasibility study before you proceed to invest. However, as you can see, the returns are attractive and the future for pig-trepreneurs looks really bright.

## 19. Start a Livestock Feed Production Business



Most livestock farmers have one major goal in mind, and that is raising healthy and fat livestock. Yes, livestock farmers want their herds to be fat so that they can be attractive to buyers as most livestock are sold based on their weights and how healthy they look. For the animals to be healthy, they must feed on good foods made with the right ingredients like whole wheat, bone meal, palm kernel cake, oyster shells and a lot of other ingredients.

There is an increasing number of investors in the livestock farming business and it gives room for livestock feed production to boom. This is a business that can give an attractive return on investments for a very long time and since it's not a highly competitive business, I advise you to give it serious consideration. Livestock feed production can be started on a very small scale (*as small as 20 bags*) so limited capital is not a challenge.

### **How to Start a Livestock Feed Production Business with No Money**

If you don't have enough money to buy the necessary equipment, this is what you should do. Now animal feed is about the formula-the ingredients you put into it and the ratio you use. The ingredient is what makes a good animal feed so first; you have to come up with a unique formula. Do some research and you will be able to come up with a very good formula.

After you must have gotten your unique formula, then you should look out for animal feed producers who have the necessary equipment. I know that a lot of feed producers in Kenya allow you to rent their machines or produce and package your animal feed brand for you at a fee. Whichever one is available and cost effective, just go for it.

When you have your packaged feed, then you can start marketing and selling and then keep repeating the cycle until you have gathered enough funds to buy the necessary equipment needed to start your livestock feed production business. Trust me, as long as your feed is of good quality and you are hard working and focused, you will have your own equipment in no time.

If you have enough capital and you want to start a livestock feed production business, then these are the steps you should take-:

## **5 Steps to Starting a Livestock Feed Production Business from Home**

**1. Feed Formulation-:** First, you have to come up with a formula. This would depend on the livestock category you want to produce for. Of course, the formula for chicken feed would be different from fish feed. To come up with a good formula, you should learn about the nutritional requirements of the category of animals you want to produce for.

Common nutritional needs are protein, vitamins, fiber and carbohydrate. This is the most important aspect of your feed production business and you must take all necessary steps to ensure that you get it right. One of such steps includes employing an animal nutritionist to come up with a good formula for you.

**2. Purchase of ingredients-:** When you have come up with the right feed formula you can start purchasing ingredients based on what you would need. Some popular ingredients are maize, corn and cassava grits for energy, wheat offal as a source of protein, noodle wastes for carbohydrate and proteins, soybean meal, fish meals palm kernel cake, oyster shells, bone meals, minerals and common salt.

**3. Purchase of Equipment-:** Some of the equipment that you would need include grinders(wet and dry), Mixers (Wet/dry), Pelleters, Steam boiler, cooker, freezer, crumbler, elevators, conveyors, sifter, weighing scales, sealers and bag sewers and packaging bag. This is just to give you an idea of some of the commonly used machines in livestock feed production but the specific equipment that you would need would depend on the type of feeds you want to produce. You can buy already made equipment or have one custom made for you.

**4. Packaging-:** The next thing to think about is how to package your manufactured feed. The best guide is to look at your competitors and other popular feeds that livestock farmers buy more and then look at the packaging sizes that they use. Your customers would want sizes that are

sufficient to feed their herds for a specific period of time and would also be affordable. It is best to have different sizes-; the really small sizes for people who want a test sample, medium sizes for people who cannot afford very big bags and lastly, the big bags for people who need to stock up on a lot of feed.

**5. Marketing-:** This is the part that a lot of new investors find very challenging. Don't worry, I will show you three easy ways to market your livestock feed especially as a beginner.

➤ **Use of Sales Representatives-:**

Trust me; there are a lot of people searching for opportunities like this to earn some money. What you need do is to introduce some attractive commissions that would encourage them to sell more. Don't reward your sales representatives with fixed salary; this may affect your business because the sales reps may not be motivated to work hard and at the end of the day, you still have to pay them. But if you reward them on commission, they would be encouraged to work harder because they know that their earnings are based on how many products they are able to sell. Just ensure that the commissions are reasonable.

➤ **Supply to stores-:**

Another option to consider is selling to livestock feed stores. Look around for animal feed or pet supply stores and introduce your products to them with some free samples that they can sell to their clients and leave your contact details with them; as long as your product is very good, livestock farmers who were lucky enough to buy the samples would demand for it again and that would force the sellers to call you for a restock.

➤ **Personal Distribution Outlet-:**

If your pocket is deep enough, then it won't hurt to have your own sales outlet for your livestock feed brand.

➤ **Sell online-:**



There's nothing that can't be sold online these days. I have seen people sell vegetables online, *so what stops you from promoting, advertising and selling your livestock feed online e.g facebook, twitter or your own website?*

## **20. Make Serious Cash From Rabbit Farming**



There is a new wave in Kenya – that of rabbit keeping. Rabbit keeping in Kenya is encouraged by companies such as the Rabbit Republic that are ready to make contracts with Kenya for rabbit farming. Rabbit breeds vary, although they have one thing in common – they are easy to keep and they quickly reproduce such that the money you use in your start-up capital can be recovered within three months to six months depending on the breed you keep. Kenyans are not accustomed to eating rabbit meat despite the numerous nutritional benefits that come with rabbit meat. But this is all set to change given the intensive education on rabbits that is already underway. So how can you make cash from rabbit farming?

### **Do your research**

As in any business you want to venture in, you need to do your research before embarking on rabbit farming. As noted before, rabbits come in different breeds and sizes. There are those that take up to six months to mature and those that take up to two months to mature. The California White matures quickly and reaches up to five kilograms in weight. Learn about rabbit habits so that you will be able to quickly notice if anything is amiss or if your rabbit is uncomfortable. Learn about diseases and what to do in case your rabbit becomes sick. Learn how to differentiate male and female rabbits and how to know if your rabbit is pregnant.

## **Housing**

Rabbits reproduce at a first rate as their gestation period is just 30 days. This means that they can give birth up to ten times in a year. However, caution should be taken to allow your rabbits a period of rest in between giving birth. They can give birth to up to ten rabbits; therefore, a serious rabbit farmer has to prepare housing beforehand. Do not start with a large number of rabbits if you are new to the business. You can start with one male and one female and expand as they grow.

It is vital to build several cages for your rabbits so as to avoid inbreeding. Inbreeding causes production to go down. Each rabbit that gives birth should be kept in a cage with its children and once the children are of age, you need to separate them and find them their own cages so that they can start their own family. Remember to adhere to the space rules required for rabbits so as not to keep them in debilitating conditions.

While rabbits can be housed on the ground, it is prudent to keep them in raised cages that use wire mesh. This will enable you to easily keep the cages clean as the waste falls through the wire mesh. It is also advisable that you position the cages in such a way that you will be able to collect the urine as this can later be sold instead of going to waste.

## **Keep accurate records**

Ensure that you keep accurate records of the rabbits in your care. Keeping records will enable you to notice any anomalies such as a rabbit that is not good at reproducing or a rabbit that has developed carnivorous habits or rabbits that are dwarfs in size. It will also enable you choose which rabbits should be kept to continue the line and which should be sold for meat. Keeping accurate records is very useful when it comes to breeding as you should be able to prepare a litter box for a rabbit that is about to give birth and you will also know when to do the breeding.

## **Food**

Rabbits enjoy eating dry grass and green vegetation that can be found easily in the environment. They also enjoy vegetables such as cabbages and can eat things like maize, banana and cassava peels and ugali. If you are planning on going large scale, you should plant grass and stock up on dry grass to provide nutrition in the dry season. Also try to experiment on various

growing plants. Rabbits are usually very careful not to eat anything that can harm them so you will quickly be able to discern if your rabbits like a particular food or not. So basically, finding food for your rabbits should not be difficult. Ensure that you also give them water to drink as part of their diet.

## **Hygiene and prevention of disease**

When you embark on rabbit farming, you should take the prevention of diseases seriously. Disease outbreaks can occur in a region, and this could cause havoc to your rabbit farming venture. However, if you develop a habit of disinfecting before handling rabbits, your rabbits will be free from disease. Do not allow anyone to enter the rabbit houses before disinfecting as this can lead to your rabbits becoming sick. You can put a container with the disinfectant just outside the door so that those who go in can quickly step on the disinfectant before entering.

## **Selling products**

Rabbits are kept for their meat, manure and fur. These are all products that are beneficial and can provide you with a regular source of income. Collect rabbit manure instead of letting things like urine go to waste. You can decide to sell the rabbits whole various businessmen (this is a good way for those who do not want to be involved with slaughtering). Hotels especially those frequented by Chinese would also be a good place to sell your rabbits as rabbit eating is nothing new to them.

Or, you can sell directly to customers or to butcheries. There are also many people who keep rabbits as pets that would benefit from your rabbits. With a mature rabbit going from shs.2000-shs 2500, you can indeed reap a lot from rabbit farming. Schools are also a good place to sell your rabbits as most students look for activities to do in their school clubs, and rabbit keeping does not inconvenience them. So why not make rabbit farming provide you with a source of income?

## **Plan for expansion**

This is a point that cannot be overemphasized. Rabbits breed at a fast rate. When you start with two rabbits, you can get up to 80 rabbits by the end of the year. And the next year would lead to more rabbits as the younger rabbits mature and give birth to their own rabbits. Many farmers

utilize space wisely by stacking up cages. This ensures they use only a small amount of space for their rabbit farming business.

### **Use social media**

Internet marketing is a tool that Kenyan farmers should not ignore. It is relatively cheap and it brings great results that will enable you to continue to benefit from your rabbit farming business. The future of rabbit farming is great in Kenya. When done well, rabbit farming has the potential to change livelihoods and employ many Kenyans. So let rabbit farming become a source of revenue for you. It is a fairly easy venture to pull off and its returns are awesome!

## **21. Earning big from beekeeping with less than Sh100,000**



Having a venture with sweet returns is what many prospective business people envision. And since Kenya's arid and semi-arid areas make up more than 80 per cent of the country's landmass, beekeeping is an endeavour that can mint farmers huge returns. The venture requires a small piece of land that does not have to be fertile. The capital required to start the venture is low compared to other farm enterprises.

For instance, it does not require natural resources such as space, light, moisture and soil fertility. The venture requires minimal labour such as inspection and harvesting, which can be done over a stretch of time. Unlike the popular belief that bees are only used to obtain honey and wax, a creative farmer can obtain over 10 income-generating products from beekeeping. This includes pollen, propolis, bee venom, royal jelly, bee colonies, bee brood, queen and package bees and many others.

Bees are good pollinators of plants and play a huge role in bio-diversity and improvement of crop yields. Products from the ‘little soldiers’ are also said to possess medicinal value, and are remedies for several ailments.

Patrick Muasia, a Kitui- based beekeeper, who ventured into the business in 2007 used to harvest over 32 kilos of raw honey each year. This yielded about 22 kilos after it was refined. Bee products Muasia used to sell a kilo of honey at Sh150 in the local neighborhood, which saw him fetch him about Sh3,300 from 22 kilos. From the 32 kilo-harvest, honeycombs made up about 30 per cent — equivalent to about 10 kilos. Only a small percentage of the combs could make beeswax.

Muasia says he got less than Sh200 from the beeswax sale, bringing the total venture to about Sh3500. “I realised that working as an individual did not bring me good returns and joined a group so as to attain a greater yield and better profit margin through many hives,” he says. He then joined hands with five of his friends to set up 100 beehives. The hives now bring in over 2200 kilos of refined honey. “Selling a kilo of honey at Sh200, we make over Sh400, 000 per year. The combs fetch about Sh25,000. As a side-hustle that requires less labour and time, we are pleased with the returns,” Muasia says coyly.

Starting off the venture requires one to get acquainted with the local bee-human relationship. Bee stings are an integral part of beekeeping and a beekeeper has to deal with them. Beekeeper need bee suits, veils and smokers - controllable smoke used to relax the nerves of the bees so as to prevent them from stinging during harvesting. They also need a set of hive tools, gumboots and gloves which in total cost around Sh5,000.

The cost of setting up a beehive varies according to the type of hive used. A Langstroth hive costs around Sh.5,000. But you can construct them using locally available materials to cut costs. Other necessary materials include holding racks and poles. It is advisable to set up a beehive on farms or bushy areas with flowers. If you do not have a farm, you can negotiate with farm owners with the argument that bee’s aid in pollination, which helps vegetables and fruits to grow.

Typically, one beehive provides enough bees to pollinate one acre of crops. Managing a beehive is simple as it doesn’t require your presence. You don’t feed them; you don’t do any clean up. Thus you can visit your site once a year or once every six months as long as you are

well aware of harvest time. Harvest period Harvesting is normally done between 10 to 12 months after set up.

The second harvest takes place eight months later. Afterwards, harvesting can be carried out every four months. Gatundu based beekeeper Mike Kigicha says that attracting bees to your hive is an art which requires good knowledge. “One can start by dabbing the juice of pineapples, mangos or oranges inside the hive. The juice attracts bees to your hive and if it is conducive, they will colonise the place,” he says.

## **22. Make Sh. 150,000 per week from turkey farming**



Two years ago, Mr Paul Wafula, who had just then completed his KCSE, bought two turkey hens to add to his mother’s poultry brood. The then 18-year-old from Naitiri Village in Bungoma did not imagine his decision would turn out so well that it would take care of his tuition fees at Maseno University.

“I bought the four-month-old hens at Sh1,000 each from a farmer in my village. After a while, I purchased a tom (male turkey) at Sh3,500 to mate with the two to get quality eggs for incubation,” he recalls. A visit to his farm in Naitiri today reveals a well-organized wire mesh turkey structure accommodating around 32 chicks.

He sells his turkeys according to their physical size. “I sell a female turkey at Sh1,500 and a male one’s price starts at Sh2,000. I don’t sell the eggs, preferring to let them hatch.” Some farmers opt to sell their turkey meat in portions, with a kilo retailing at about Sh600. A fully grown bird can weigh about 15 kilos.

A turkey egg retails at around Sh70, depending on demand. Mr Peter Gishuga owns a profitable business that distributes turkeys in hotels in Westlands, Nairobi. He says that he buys the turkeys from particular farmers in his village in Thindigua at around Sh1,000 and sells them in portions.

“Kenyans are yet to embrace raising turkeys and consume them as regularly as they do chicken. Due to their scarce nature, they have created demand in hotels that sell indigenous poultry. I sell a kilogramme of turkey at a wholesale price of Sh650,” he says. Mr Gishuga can make up to Sh.9,750 from one turkey. He says he sells an average of 18 turkeys a week, and makes more than Sh150,000 in profit.

You can actually start raising turkeys with less than Sh10,000. Most farmers prefer starting by rearing a female turkey to maturity and then either buying a tom, or taking it to one to mate.

Farmers advice that the least expensive way to get started with turkey rearing is to buy day-old poult. You can contact Sigona Poultry Farm or Nyonjoro Nightingale in Naivasha for these. A poult takes five to seven days to mature. The hen can lay six to 10 eggs the first time once it attains maturity. Once the brooding season starts, it sits on its eggs for 28 days before they hatch. A hen can lay up to a maximum of 15 eggs and sit on them all.

You can either choose to incubate the eggs naturally or artificially. Turkeys are good brooders and hatch most of their eggs. However, for better hatchability chances and healthy poults, select clean eggs with a good eggshell and shape for artificial brooding. You can do this using infrared bulbs, a gas brooder or traditional brooding systems. Ensure you separate the poults from the hens as they are not very concerned about them and may step on them. Wafula says he feeds his poults a high protein diet.

“As chick mash is expensive to purchase, I give the poults ground omena mixed with maize. I also serve them fresh warm milk as it makes them healthier and hardier, boosting their immunity. For the mature ones, I add some ugali to their diet with young leafy green vegetables and grains and ensure they have a lot of clean water.”

It is important to ensure turkeys drink lukewarm water, as anything too cold can affect them. Mr John Kihara, a farmer at Juja Farm, advises that a turkey’s cage be cleaned in the morning by sprinkling wood ash to kill lice rather than sweeping, as the dust could spread colds.

You could also spread sacks or nylon paper on the floor and clean those every day, or wipe the floors. “Poults are very delicate, and since they aren’t enough avian vets, a farmer has to be very careful. Cleanliness is vital, especially for the sake of the young as they are at high risk of contracting diseases.

“In the evening, let the mother in so that she can shield her young from the cold during the night,” he says. Mr Kihara learned the need to keep poults in clean conditions the hard way.

## **23. Make over Sh. 100,000 per month from passion fruit farming**



A farmer in Siaya County has broken the norm to start growing passion fruit. Farmers in the region have predominantly planted maize as the main crop. Mr Clement Odongo has seen his income triple compared to the time he used to plant maize.

“I adopted farming tactics from Lessos, Rift Valley. After my retirement, I visited the area in 2011 and admired what passion fruit farmers in the region were doing. I vowed to borrow the idea,” said the retired ink maker.

Mr Odongo cannot hide his joy as he surveys his four-acre farm that has 425 vines, all promising to give good returns. “This earns me my daily bread. I harvest the fruits every week. About 275 vines fetch me at least Sh.30,000 a week,” he said.

Out of the 425 vines on his farm, about 150 were planted recently and are yet to mature. “I started with 150 vines only and increase them every year,” he revealed. Mr Odongo encourages



other farmers in the county to join the business as passion fruit farming does not entail a lot of work save for weeding, pruning, and harvesting.

Once one starts harvesting, he says, each vine (tree) produces at least two kilogrammes of fruits every week. A kilogramme fetches between Sh100 and Sh120. Compared to maize, he says, passion fruit farming is better because it earns good money and also requires less labour.

“An acre of maize produces 20 to 30 bags of grain while an acre of 670 vines gives two kilogrammes of passion fruits each vine on a weekly basis,” he says. Mr Odongo has joined hands with other passion fruit farmers in the area in the Siaya Passion Growers Association. Through the group, he has benefited from several tours to other farming regions in Kenya to gain more skills. A Dutch firm, Simon Navy Veronica (SNV), and Millennium Management Consultant (MMC) have also been helpful in boosting his skills.

The group has more than 150 members who plant the fruits on large-scale spreads all over the county. The 65-year-old farmer says he has never regretted his decision two years down the line as the business has brought him greater fortune than he expected.

The harvesting of the fruits starts six months after planting and goes on every week for five years with two-week intervals in between for pruning.

“Once a tendril has been fully exhausted, we prune it and give it two weeks to produce more fruits, otherwise the tendrils will just grow without fruits,” he explains.

The pruned tendrils decompose into manure that is used to improve the productivity of the land. The fruits can be harvested at three stages — the almost-ripe, the ripe, and the falling. During harvesting, the farmer picks the falling and the ripe, leaving the almost-ripe fruits for the next harvesting during which they will either have fallen or become ripe.

Mr Odongo has harvested over 1.9 tonnes of the fruits from the 150 stems that he started with. All his expenses, including land preparation, inputs, seedlings, and labour, are slightly over Sh60,000.

The father-of-five said he employs five casual labourers to help him prepare the land, plant, weed, and spray the vines to prevent diseases. His children are adults and have moved to the city for formal jobs since “they do not want to get themselves dirty in the *shamba*”.

Apart from the free training, Mr Odongo has also got help from USAID. The organisation visited his farm, bringing him a wheelbarrow, a foot pump, and pipes to sprinkle water on the farm during the dry season. Another firm, Green Zone Agencies, has also prepared for him a water pond that supplies his crop with a reliable source of water.

Kisumu and Busia provide the passion fruit farmers with a ready market. “The hot sun ripens the fruits to a sweeter taste than those from cold regions,” Mr Odongo says. They have received orders from abroad but have not honoured them due to low production volumes.

## **24. Make Sh. 200,000 a month from soil-less farming**



A mat of barley growing on an aluminium tray.

Childhood best friends Wachira Mwangi and Samuel Mbugua are teaching farmers a technique that may sound like the stuff of science fiction — growing crops without the use of soil and making a tidy sum out of it.

After a series of boring jobs and failed businesses the 26-year old University of Nairobi-trained biochemists tried to rear pigs early last year but the venture proved too expensive for the fresh graduates.

“We just wanted to keep a few pigs and see how it goes,” says Wachira, “but our biggest problem was the cost of feeding them. That was when my best friend Sam suggested that we grow our own fodder using a rare technology known as hydroponics”.

Hydroponics is the process of growing crops without the use of soil.

The technique avoids soil to speed up growth while avoiding plant diseases.

“What grows normally on soil for 21 days can take only six days if grown using the hydroponics technology,” says Mbugua.

You can grow pretty much anything using this soil-less method, but Mbugua and Wachira decided to grow livestock fodder because it not only saves space and time, but it is also cost-effective in pig farming.

After months of research, the pair started the business in July last year with a capital of Sh.50,000. They used the money to fence the quarter acre plot belonging to Mbugua’s parents and bought 15 piglets to experiment with. They also acquired material to put up the required structures as well as barley seeds.

### **LIMITED SPACE**

The pilot project worked so well, so much that farmers began trickling to their farm in Mwiki to be trained on how to grow hydroponic fodder.

So exactly how does the hydroponic technology work?

It works well for livestock farmers with limited space, time and resources because all a farmer requires is 45 cubic metres of space. For example a farmer with 15 cows will require only 5x3x3 metre (45 cubic metres) structure to grow enough fodder for all livestock.

“We spread the barley seeds evenly on aluminium trays and leave them to sprout, only watering them three times a day. In six days, you will have a network of roots and shoots and a mat of barley grass which is now ready for consumption by livestock,” says Mbugua.

Before spreading, the barley seeds will have been soaked in water for 48 hours so that they can sprout.

The 45 cubic metre structure accommodates up to 44 aluminium trays which can produce enough fodder to feed up to 25 mature pigs at Sh.40 per day, compared to the commercial feed of which pigs consume three kilogrammes at Sh120 per day. The same structure also produces enough fodder to feed about 15 cows for a week as fresh fodder grows in the structure.

“Compare a 100 kilogramme bag of commercial feed to a similar bag of barley. Every kilo of barley yields about six kilos of fodder if you use the hydroponic technology but that is not the case with a bag of commercial feed,” says Wachira.

The quality of fodder is not only more nutritional than the conventional animal feed purchased in the shop but also means you don’t have to own acres to do it. This is because when the barley seeds sprout they release dormant nutrients of which 95 per cent of nutrients are useful to the livestock.

“This is a new technology in Kenya although it has been in existence for over 200 years. In UK and other countries, this kind of vertical farming is the trend. Israel is also using this technology because they have no soil to sustain agriculture. Kenyans do not want to be left behind,” says Mbugua.

### **BROKE EVEN**

Every Saturday between 9am and noon, the pair hosts farmers at their farm in Mwiki for training at a fee of Sh.500. However, their biggest income generator is constructing the structures for farmers who have now warmed up to the idea of using the soil-less technology to grow fodder for their livestock. The 45-cubic metre structure will cost a farmer up to Sh.10,000 while a 30 cubic metre one goes for Sh.6,000.

The two friends started the hydroponic business in July last year. By November they broke even and started raking in profits. In a good month they make between Sh.150,000 and Sh.200,000 depending on the season. Last month, they posted a profit of Sh.150,000 in just three weeks from constructing the structures.

“People, especially the youth, are very receptive to this new technology. The youth have been practising this method in their farms; some even getting into trouble with their parents, but it is slowly gaining popularity. It is all about training and management,” says Wachira.

According to the two entrepreneurs, farming is a career just like any other, which the youth should seriously consider as employment. “It is a business just like any other. You have to be there to oversee it. If you don’t run your business, you will run out of business. You have to account for your money and do serious book-keeping. You must value your customers. The goal of any business is not for profit, but to satisfy your clients,” says Mbugua.

Relatives, friends and parents who wrote them off when they quit their jobs to start the business are now coming to them for consultation.

“My parents thought I was crazy to quit a well-paying job to feed pigs. Relatives were concerned. They thought I would hit rock bottom and go back to job-hunting. Many expected us to fail but after three months they believed in our vision,” says Mbugua.

## **25. Start your journey to build a multi-million dairy farm, real estate**

### **Dairy farmers can now cut feed costs with new fodder technology**



When Peter Mwangi ventured into dairy farming two years ago, his biggest headache was the high prices of animal feeds which i know it is also a headache to most of us.

He had bought three Friesian cows for Sh300,000 and the high cost of feeds was quickly dashing his hopes of turning the dairy farm into a money spinner.

“I used to spend almost Sh60,000 monthly to buy commercial feeds from other dairy farmers. I did not have enough land to invest in livestock feeds,” said Mr Mwangi. After consultations and networking with experts, Mr Mwangi, 38, was introduced to a new technology of growing fodder crops that takes four days to mature.

“It’s one and a half month since I was introduced to this new technology by a friend. My three cows have increased milk production. I now feed them with less commercial feeds hence saving on cost. The hydroponic technology is cheap to start and easy to run for every farmer,” said Mr Mwangi.

He says milk production has increased by five litres every day per cow. Mr Mwangi says he now gets 40 litres of milk and makes about Sh180,000 a month.

Hydroponic technology is a system of growing crops without the use of soil. The crops are grown in water mixed with nutrients that not only ensures the germination, and growth of quality crops but also increases the speed at which they germinate.

“The solution is like a liquid fertiliser that has all the nutrients considered necessary for plants growth,” he says.

Peter Kinyanjui, 35, a farmer in Muranga County, says the cost of commercial feeds has been on rise for years, forcing him to reduce the number of pigs he keeps.

“I operate on a quarter of an acre and I have benefited from the new technology. I now feed my pigs on 90 per cent hydroponic fodder,” he said.

He says for Sh.200, one is able to get five litres of the nutrient solution.

“The hydroponic system works well within a temperature range of 20-25 degree Celsius,” says Mr Kinyanjui, who is a beneficiary of the new technology invented by a 28-year-old university lecturer, Donatus Njoroge.

“My invention came as a way of offering a long-term solution to food crisis because it is one of the major concerns for Kenya which continues to grapple with climatic changes and insufficient modern technologies to eradicate hunger and livestock diseases,” Mr Njoroge said.

The graduate of industrial and analytical chemistry, Mr Njoroge says his invention is able to prevent livestock and plants diseases and pests.

## **26. Make Sh. 356,000 from sukuma wiki farming per month**



When he left the military after six years of service due to injury on the left eye, many expected Shem Modi to easily look for a job at a security firm or start a private company. After all, he was a well-trained shooter and fire fighter from the Lanet Armed Forces Training College.

Instead, the 48-year-old picked a jembe, wore some gumboots and headed to his two-acre farm. His peers jeered at him for wasting his military training ‘toiling’ on the farms and some of his family members riled at him for picking up a lowly job.

However, the former service man ignored the noise around him and dedicated his time and energy to farming. With the Sh.200,000 he had saved, Modi planted tomatoes and waited. When harvest time came, he was Sh.700,000 richer.

“This silenced everyone who was nagging me for not using my military skills better,” says Modi. As a man who earned a basic salary of Sh.20,000 plus other allowances, he was excited at the prospects of farming and diversified to kale farming in his two-acre kale farm in Lak Liech village, Karachuonyo in Homa Bay.

He says he fetches Sh.89,000 from a weekly harvest of sukuma wiki. Averagely, the farmer says he earns less than Sh.1.4m from kale production every season translating to a monthly income of Sh.356,000. Modi says he got into farming in 2012 after his six-year military career ended.

He says he got an injury while in service that prompted the surgery. “I was injured in my left eye and had a surgery. However, the recovery was not as I anticipated and I had to leave,” Modi says.

He says his interest in farming developed after training by Kimira-Oluch Irrigation project by the Ministry of Regional Development and African Development Bank. “I am proof that farming is not for the lowly and cursed or a deadbeat undertaking,” he says.

He targets high demand in November, December, January, March and April. Apart from kales, he has also invested Sh150,000 in tomatoes growing on a one and a half acre farm and hopes to rake in Sh.1m from the harvest by mid-this month when there is scarcity in supply.

‘Soldier’ as he is known by the locals says successful farming is all about proper timing and planning, a ‘secret’ he is not afraid of sharing. “Yes, farming is all about timing and planning when to grow, harvest and sell.

I have figured that all out and that is what sets me apart,” says Modi. Usually, he grows kales in dry spells. “At that time, sukuma wiki is like gold,” he says. To boost his income, he hopes to upscale kale production by October and targets an income of Sh.50,000 per week come “I have already acquired another five-acre farm to grow more sukuma wiki and cowpeas,” says the farmer.

The ex-military officer says farming has greatly transformed his life. “Since I am not entitled to any retirement benefits, I rely on farming to keep me going and take care of my family,” Modi says.



## 27. Become a Watermelon Millionaire



Farming has always been associated with illiteracy and the older generation. But one young lady has debunked all these myths. Annie Nyaga, who boasts of a Bachelor's degree in Biomedical Science and Technology, is a thriving horticulture farmer in Embu.

Despite getting a scholarship to do a Master's degree in Biomedical Science and Technology in USA after graduating from Egerton University, Annie, turned down the scholarship to pursue her heart's desire – farming.

“Farming has always taken a special portion of my heart. I don't feel like I wasted my four years in university since I can apply what I learned in my farm,” says Annie adding “Farming is a profession like any other and young people should not view it as a side hustle. They should be ready to soil their hands if they want to prosper in farming.”

The 28-year-old is a successful farmer in Mbeere, Embu County, where she plants watermelons and tomatoes among others. Her journey to farming began in 2009, two years after graduating from university with a capital of Sh. 20,000. She began with French beans and baby corns for the export market, then she got demoralised due to poor market.

“I had a passion for farming. My parents practiced it and I noticed they got good returns,” she adds.

Annie says in spite of challenges, she never gave up. She decided to concentrate on watermelons, which are doing well to date, earning her a name as a successful young farmer in Embu County.

“Considering the availability of water in the region, cheap labour and adequate climate, I settled on watermelon since it requires a lot of water and sunlight,” says Annie.

Her journey to the top has never been a walk in the park. She began by working as a purchasing assistant before she started supplying groceries in the city. This is when she noticed that farmers received good income from farming.

“I saw a potential in farming when I was supplying groceries around the city. Farmers could reap mouth wetting benefits,” she adds. She explains that she tried various seed varieties of watermelon before she settled on the hybrid seeds, which yield a bumper harvest. She then invested in machinery like water pump for irrigation and hired permanent staff to look after the crops in the farm.

Annie points out that farming has a lot of potential, but people should do proper timing by planting a few weeks to the rainy season to save on water. Though watermelon farming has a few challenges like price fluctuation, since middlemen dictate the prices, she believes things can only get better.

She started a company, Farm2Home, in 2009, which provides a valuable educational resource to young farmers and staff. She is the CEO, and it has a widely used e-business market place and an efficient local distribution system. She insists that farming is the best decision she has made so far, and calls upon young people to change their perception on farming.

Today, she invests between Sh.80,000 and Sh.100,000 per acre. This covers cost of seeds, labour, chemicals, irrigation, salaries and fertiliser. With good management, one can harvest 30 to 40 tonnes per acre. In her harvests, Ms Nyaga takes up to 30 tonnes and at Sh. 28 per kilo, makes a net profit of Sh. 600,000 from a gross of Sh. 840,000 in three months.

## 28. Make Sh. 100,000 per month from spinach farming



Many residents living in towns and cities are turning to urban farming to fight poverty, enhance food security and improve environmental sustainability. Like many trying out the activity, Major Rt. Rev Francis Mutua Ndolo, 65, is already making a fortune out of it. He says urban farming is becoming a solution to earning a decent living.

The father of two, who lives in Thika's gated Landless Estate, off Thika-Garisa Road, says that he has planted spinach on an eighth of his land, thanks to Real Impact, a non-governmental organisation (NGO) working to increase food security and improve nutritional health across East Africa.

The NGO delivers modern and sustainable agricultural practice and nutrition by helping communities understand the principles of good nutrition by championing the concept of vertical farming. The technology allows growing of crops in large, bag-gardens, enabling farmers to grow vegetables such as sukuma wiki, spinach and amaranth on one square metre.

Bag gardening is an inexpensive but high-yielding food security technology developed by Real Impact, as it maximises land and water use. They are efficient for schools, hospitals, informal settlements and on small-scale farms. The NGO is based on Kichozi Farm in Thika, Kiambu County where it has a 2.5 hectare demonstration farm and a training kitchen. After retiring from service in 1985, Ndolo initially tried to venture into poultry farming. His 12,000 broilers died of disease in 1997 and left him desolate. But in October, while watching TV one evening, he saw a demonstration of vertical bag gardening. "I took the contacts of the advertisers and got in touch.

What interested me is that the sacks can be useful for up to seven to ten years if well-kept unlike the normal sisal sacks which rot fast,” says Ndolo who is also a musician and an author. He pooled capital of Sh.300,000 and bought 97 large size bags at a cost of Sh.1,100 each, a total of Sh.120,000. The large size vertical bags have holes in them where stem seedlings are planted. They come in small medium and large sizes. He first decided to plant tomatoes in ten bags but they all died due to bad seeds. He resorted to planting spinach only, thanks to its fast maturity period of one month.

Eight months later, Ndolo is a happy farmer with leafy spinach in his compound and he says in one day, he makes Sh.2,000 selling spinach to neighbours. “If I sell to the market, I make Sh.3,000. This translates to about Sh.100,000 per month and after deducting expenses, I remain with not less than Sh.60,000,” says Ndolo.

Ndolo sells 15 leaves at Sh10. He does not just plant and sell but also acts as an agent for the NGO to procure bags and liquid fertiliser to use as training materials for interested farmers. He spends some cash on buying soil, liquid fertiliser and farm manure. “One good thing with the bags is that they minimise land use. If I would have planted on land, I would have tilled about half an acre but thanks to these bags, I farm on just one eighth,” Ndolo says.

Ndolo advises urban dwellers to utilise space by trying sack farming. “It will help you save the cost of buying vegetables from mama mbogas and supermarkets. I also advise youths to take advantage of this technology to be financially dependent and create jobs,” he concludes.

## **29. Became a millionaire farmer with mango farming**



As the saying goes, one fruit a day keeps the doctor away. But to this retired prison farm manager, a fruit seedling keeps poverty at a distance. In any ordinary morning, you will find George Konyango Ngira watering his nursery at his farm in Segwa in Ugenya, Siaya County.

The 64-year-old embraced production of fruit seedlings for sale and fruit farming immediately after his retirement from Kodiaga prisons in 2007.

“I had plans to venture into horticulture farming after retirement because after years of being a farm manager, I knew with dedication and hard work, I could keep poverty away through farming. I only had to dig a borehole and buy local mangoes to start producing seedlings of my choice,” says Ngira.



His desire to excel in horticulture was strengthened when he learned new methods of producing mangoes throughout the year.

“Mangoes, just like most fruits, are seasonal. After grasping this method where I could have mangoes throughout the year, I embraced it. I started grafting mangoes to local farmers for export,” he said.

Ngira’s nursery is full of mango, apple, orange and guava seedlings as well as banana suckers.

The father of seven opted for grafted mangoes that he produces for two seasons every year, affirming that, unlike other fruits, mangoes have a ready market in the region.

“The success rate for the grafting process is 70-80 per cent and it should be done during dry season. Grafting is better done during dry season because that is when the scion is dormant. There is need for a ready water source and that is why I have a borehole in the nursery,” Ngira says.

The farmer, who was trained in horticulture farming by German cooperation (GIZ), says it takes three months after grafting for the seedlings to be ready for sale to local farmers.

“I sell my seedlings at Sh.200 per plant for mangoes and oranges. I graft a lot of seedlings depending on the market. Initially, I sold the seedlings at Sh.150 or 100, but with the growing market, I increased my price, I don’t look for farmers to buy my seedlings anymore, they look for me,” said Ngira.

The farmer says he makes money from his nursery every season, making Sh.950,000 from the venture annually. “The mango seedlings bring a profit of between Sh.500,000- Sh.950,000 at the end of the year. I have an orchard where I mix up varieties to get my materials,” he says.

He grafts Tommy Artkins, Vandaik and Ngowo mango varieties, which he claims does better in the region.

“I have clients from all over the Nyanza region. Mango seedlings and fruits sell most in my home area Ugenya while my orange seedlings are bought by our neighbours in the Western region where the fruit does well,” he says.

After seeing the agronomic benefits of fruit seedling farming, Ngira decided to give back to the society by training young farmers on how to produce grafted mangoes.

But many youths despise farming because they are afraid to soil their hands.

“I formed a group of young farmers dubbed Ugenya Fruits and Tree Nurseries Operators, where we contribute money monthly for welfare and table banking. All the farmers here are engaged in tree nurseries but I want to train them on horticulture,” Ngira says.

He acknowledges the challenges that slow him down. “We lack enough land to meet the demand for fruit seedlings. There’s also lack of labor because even with the group I started, we still cannot meet the demand. Many youth shy away from farming. I also face lack of adequate water supply as I depend on boreholes. My plan is to get irrigation machines,” he says.

Ngira joined the prisons in 1976 as a farm manager and worked in Kamiti Maximum Prison for three years. He was later transferred to Kakamega prisons where he worked for seven years, Kibos prisons in Kisumu for four years before his final stint at Kodiaga where he retired.



“I had just returned back to the village but still had children in college and the university that I needed to educate, so I took on my passion for horticulture to raise income. Having worked in the prisons farm almost all the years I was employed, I was good to go,” revealed Ngira.

Ngira’s says he channels all his energy and resources to his farm because he earns more than he ever did during his days at the prisons.

According to Ngira, who hopes to become a large scale mango producer, about 90 per cent of the mangoes exported are from small-holder farmers like him.

### **30. Make Sh. 1 million a year from fish farming**



Story by Mercy Gatwiri: Meru is known for miraa more than anything else, but there are many farming activities taking place here. The newest one is fish and I am happy to be among those spearheading fish farming in the region, particularly in Meru South sub-county.

My business entails keeping fish and hatching fingerlings. Thereafter, I sell them to residents for meat and farmers, who are growing in numbers.

I started the business four years ago. Two things made me go into fish farming. One, the government was promoting fish farming, mainly keeping Tilapia, and two, there is a stream that passes through my farm in Kibumbu village, where I get water.

When I first heard about fish farming, I was hesitant to engage in it because I didn’t know if I will find market; mainly because people in Meru traditionally do not eat fish, and secondly, I did not have the knowhow.

Besides, I was used to tea and dairy farming, activities that I had been doing for years, but I have now scaled down to concentrate on fish. However, a visit to the fisheries department in Chuka changed my perception about fish farming.

The officers taught me how to engage in the practice, including building ponds.

I, thereafter, bought fingerlings worth Sh.20,000 from Sagana Aquaculture Research Station. Each fingerling was going at Sh.20.

In total, I invested Sh.45,000. I used Sh.15,000 to dig the fishpond and the rest to put in manure to colour water in the pond to protect fish from predators. My first batch of fish, which I sold in 2011 through the fisheries department gave me over Sh.200,000. This encouraged me.

Later, I also ventured into production of monosex fingerlings for sale. When you rear monosex fish, you don't mix female and male fish. I have specialised in rearing male fish. Getting male fish is an easy process. First, you put mature male and female fish in the pond and after 21 days, the latter would lay eggs. You then extract eggs from the mouth of the female fish.

This is done by opening the mouth when the fish is facing downwards. You then take the eggs and put them in a container and later in a hatchery. After three days, you put hormones in the feeds that ensure the eggs hatch into male fish. I get the hormones from Chuka Fisheries Department.

People prefer male tilapia because it matures faster – in eight months. At this age, they have attained at least half a kilo and you can sell in bulk. When they are mixed with female, they breed and this interferes with their weight and size. Mixing the breeds also brings competition for feeds.

I learnt all this information at the Sagana Aquaculture Research Station in Kirinyaga County. I usually attend field workshops there and get professional information regarding fish.

## **WORK WITH EXPERTS**

As in other farming ventures, you can only succeed in fish farming if you work with experts. With the male fish, you must feed them enough food to keep on growing and attain good weight. They grow fast because they are not breeding.



The fish takes eight months to mature. A kilo goes at Sh.350. Most of the time I hatch 3,000 fingerlings after three weeks, which give me good money. I spent about Sh.30,000 on the fingerlings and sell each at Sh.15.

My take is that fish farming is lucrative. I have put my fish ponds on a quarter acre but I get more money from the venture than what I make from tea, which is on more than an acre.

I also engage in poultry and dairy farming. The main challenge with fish is feeds. Getting pellets is a problem since a 20kg bag goes for about Sh.3,500. Sometimes I buy dairy meal and mix it with fish meal. I plan to buy machines to make my own feeds using sunflower and other ingredients that we have been taught by specialists.

We sell the fish locally since the residents now eat the delicacy. Chuka Fisheries Department assists us a lot. They have a deep freezer where we store our fish and they help us in distribution. We are happy that there is a firm called Mt Kenya Fish Company that intends to give us feeds and other inputs and then recover it after we harvest.

The company is setting up a fish factory with a capacity to process over 20,000kg per day. It is in Tunyai, Tharaka South sub-county.

### **31. How I use hydroponics to feed my 700 chicken and guinea fowls**



Poultry feed is expensive and farmers know that too well. That’s why a cheap and equally good option is great news. Sam Ikwaye, a poultry farmer from Kilifi is using hydroponics to grow his affordable chicken feed. “I have always been a poultry farmer so I know how expensive the chicken mash can be. Tired of buying the mash, I embraced hydroponics which saves me a lot,”

says the farmer who keeps 700 birds which comprise chicken and guinea fowl on a 40 by 50 feet size plot.



Poultry farmer, Sam Ikwaye.

Hydroponics he says cuts down his feeding cost by 70 per cent. He explains: “I used to buy one sack of growers mash feed at Sh2,500 which would last for two to three days. Now for the same amount (the sack), we can make feed that can last two weeks,” he says.

“The water we use for irrigation is little and the same can be recycled for four days,” he adds. “The good thing is that the feed is completely organic and contains high protein content. The feed also makes our birds mature faster, they produce higher quality eggs and the birds have good weight,” he says at his farm in Kiembeni, Bamburi.

So how does he do it? “I soak the 8 kilos of seeds in water for 48 hours then drain in perforated containers. I then put them on the trays. The moisture that the seeds sucked in triggers the germination process. Within two days, the sprouts start appearing. Within six days, it’s a thick carpet with green foliage. I disintegrate, comb and give to the poultry,” he explains. Ikwaye orders for the barley seeds from Narok or Nairobi. He buys a kilo of the grains at Sh.40 which in turns yields up to six kilograms of fodder.

### **IT'S TIME TO TRY SOMETHING NEW**

The place where he grows the foliage is enclosed within a shade net (sourced from Amiran Kenya) to regulate temperature, mimicking a small greenhouse. “Doing so prevents the growth of moulds and fungi,” explains Ikwaye. The aluminum trays he uses can be improvised or bought at

Sh.700 and then a farmer will require racks which are inclined to allow the water to drain free. The nutritional value of hydroponic fodder is also unrivaled as the fodder is rich in protein, B-carotene, trace elements and enzymes and the fodder is also 95 per cent digestible as compared to other commercial feed. He sells the chicken at between Sh.1,500 to Sh.3,000 because they are ornamental, and their eggs for Sh.50 each.

“My chicken fetches very good money because they are of good weight and the meet is nutritious. There is a high market for organic chicken,” he says. This feed also ensures the birds mature in four to five months instead of the conventional seven to nine months. They also begin laying eggs at six months.

Ikwaye’s indigenous chicken can be fed on hydroponic fodder as three quarters of their daily feed requirement while layers and broilers (exotic) can be fed on hydroponic fodder as a third of their meal. The farmer also uses hydroponics to plant strawberries, tomatoes and lettuce. Thanks to the convenience this method allows him (light labour and minimal attention), Ikwaye, who has a full time job, says he has time to juggle other roles. “With this technology, farming is enjoyable as it makes work easier,” he says.

## **32. How we make Sh. 450,000 per month from rearing exotic birds**



Maina Macharia and his mother Teresa Macharia from Chorogi village, Nyeri County own an exotic birds project worth millions. The duo have at least 50 different species of exotic birds in various stages of growth, which they sell to high end resorts in Rift Valley. They include turkey, Egyptian geese and guinea fowls.

Teresa recalls how they started the birds project: “Four years ago, my son who was then working in Mombasa, sent me a small package. Inside was a pair of live guinea fowl. When I asked him what these birds are for, he just told me to rear them like chicken. I did just that.”

For Maina, this was just another boyish hobby — collecting beautiful birds and sending them to his mother.

His mission was just to have a series of beautiful birds dotting their rural farm. But a time progressed, Maina felt like poultry business could be lucrative. As he sought what else to do, he stumbled on the idea of keeping game birds as a commercial venture.

To roll off the project, Maina got a licence from the Kenya Wildlife Service to keep the game birds at the farm.

“Next, I went online and ordered 300 eggs of California geese from the US, which we incubated and hatched,” Maina says. And that is how the exotic bird business was hatched.

“We sell our exotic birds in pairs, male and female therefore we sell each pair at Sh.8,000. The returns are encouraging because the running costs are minimal and the birds mature fast,” Maina says.

Maina says rearing exotic birds is one of the best decisions he has ever made. Why? He says exotic bird farming is lucrative, the returns are high and the investment low.

“The beauty of these birds is that they are low maintenance. They eat feeds that a kienyeji chicken eat like sukuma wiki and maize meal. They also do not fall ill often,” Maina says adding, “I breed the birds on an eighth of an acre which is quite small considering the returns. I also focus on pure breeds of chicken such as booted bantum, silky, pekin, kuchi, and black oripington which often have high yields.”

And the winning score is that, demand for the rare birds is high.

“My clientele is high end, people who have everything in life and they just want beautiful creatures to colour their farms. I also have a solid client base from posh resorts in the Rift Valley,” he says.

But the biggest challenge is sourcing for the pure breed of the exotic birds.

Crossbreeding of various game birds has made it difficult to acquire pure breeds.

“I have to travel around the country and sometimes to other East African countries to ensure I have enough exotic birds to sell my clients,” Maina says.

Maina has traveled to Somalia and Uganda where he sources for the the Vulturine guinea fowl and Crown bird respectively. So far he has several species of guinea fowls such as Vulturine, which is the largest species of guinea fowl. He also keeps Royal Blue from Taita Taveta, White fowls, spotted fowls and Spur fowls.

“We have eggs, chicks and grown birds of geese, duck, turkeys, pigeons, chicken, so we can easily breed the birds the clients want,” Ms Macharia says. One of the unique challenges for the exotic bird farmer is that the wild birds often spread diseases to domesticated birds.

“Most water fowl such as ducks and geese are disease carriers which mean when they come in contact with domesticated chicken they transmit communicable illnesses which can wipe out entire flocks. So were are careful not to mix the two,” Ms Macharia says. The game birds also do not reproduce well in captivity therefore breeding the birds is a slow and often unproductive process.

“Exotic birds require their natural habitat so they can lay eggs and reproduce naturally. However living in caged environments stresses them which slows down their reproductive systems,” Maina says.

The beauty of this business is that clients are tempted to buy the birds just by beholding their beauty.

“When an exotic bird customer visits the farm, they may have come for a pair of geese but when they see the other beautiful breeds, they take them too. The sight of the birds is so beautiful the farmers are always tempted to take more.”

On average the Macharias earn Sh.15,000 a day from the sale of birds, which easily translates to Sh.450,000 per month on a good month. Interestingly, the most lucrative of the birds being the vulturine which can fetch as much as Sh.40,000 per pair.

### 33. From poverty to luxury with Banana farming



Askar Kerubo, a mother of three, is a proud owner of a permanent house in Miriri village in Kisii county worth millions of shillings. A mud house was the dwelling of the family before the banana farmer put up the house envied by rural folks.

She initially struggled to put food on the table for the family, whose menu months on end comprised of cooked and ripened bananas. Raising fees to send her three children, currently in prestigious secondary schools, to school, was yet another challenge.

The cultural banana farming practice of producing the fruit for home consumption made life a nightmare as she could not meet the family demands.

The most she earned from the quarter piece of land where she practiced mixed farming was Sh24,000 every two months. But Kerubo, a member of Nyangororo Banana Processors Youth Group, who currently earns Sh244,000 annually, has since put the miseries behind her back after she discovered value addition methods to the fresh bananas.

“I knew bananas can only be cooked or eaten ripe. To earn income. I sold the produce to brokers. I did not know they made a kill out of my sweat,” said Kerubo.

She is among nearly 600 banana farmers in the county reaping the benefits of the group, which has since been transformed into Nyangororo Banana Processors Company Limited, that was formed in 2002 after Jared Osoro came up with the idea of adding value to the fruit.

“The group was turned into a company to give improved serviced and train the increasing number of the members on skills to grow high quality bananas,” says Kerubo, stressing: “The number has been increasing.

More farmers are turning to growing bananas after realising there is more money here as opposed to coffee and tea farming, which they are doing away with.” Before value addition, bananas weighing 30 kilogrammes earned a farmer Sh.200.

But the company pays Sh.600 for the same amount. The company buys at least 1,000 kilogrammes of bananas per day, at a unit price of Sh20. Annually, the farmers earn Sh7.2 million.

“It was a rip off. Middlemen and brokers took advantage of ignorant poverty stricken farmers,” says Kerubo who has since taken over as the chief executive officer of the company because of her passion and mobilisation skills to spread the banana message.

Bananas are collected at various points where farmers deliver them. The firm picks the produce to process at the factory premises based at the Kisii Kenya Industrial Research Development (KIRDI) branch, which supports the initiative.

Lydia Nyakwara, a businesswoman in the region says poor road network in Kisii to access the material interferes with the volume of bananas collected.

“Currently we are targeting central province where the population is high and makes business opportunities favourable,” explained Lydia during an exhibition mounted by innovators in Nairobi.

The bananas are added value to produce various items such as long shelf-life banana crisps, bread, biscuits, queen cakes, scones, yogurt and wine flavoured with strawberry, jam and juice.

The *matoke* crisps are branded as “Ritoke Crisps”. “The products are sold through the local supermarket chains.



### 34. Make millions from incubation business



One evening two years ago at the University of Nairobi (UoN) hostels, electrical engineering student Martin Kaberia, 30, was having a chat with his fellow finalists about what the future held for them. “All of us wanted to have big jobs in leading engineering firms in the country. We wanted to earn millions and live flashy lives,” he recalled as we chatted.

However, when he was asked to repair a damaged egg incubator, his dreams took a completely different turn. Today, Kaberia, owns Ecochicks Kenya Limited, an egg incubator supplier and manufacturer. His monthly turnover ranges between Sh.2 million and Sh.5 million. “My business has employed and provided space for some of my classmates whom we shared the employment dream with on that evening when the egg incubator was brought for repair,” he said, during the interview at his second-floor workshop in Nairobi’s Midtown House along Accra Road.

Kaberia recalls that he borrowed the tools for that first repair job. “Within a few days, the owner — who had written it off saying that he had unsuccessfully looked for a repairman — came back to me and said: ‘Young man, you did a brilliant job. Why don’t you try this business’” he says. These days, you will meet Kaberia dressed in designer jeans and expensive jewellery in the company of farmers in the rural areas. “My egg incubators are for farmers who want to grow indigenous chicken on a large scale. This is a market that you cannot easily exhaust,” he says.

Kaberia’s business model is simple — he prices his egg incubators cheap so that he can sell several units. He believes that this is what has helped him compete with larger companies in the egg incubation business. He, however, notes that the industry is cut throat, with several would-be entrants being frustrated through court processes. “Last month, a businessman was



taken to court for allegedly infringing on a patent. I have also been taken to court but won,” he says.



The poultry sector is estimated to be worth Sh.4 billion and it has created its fair share of billionaires, including the late Nelson Muguku, and Kaberia hopes to be among them.

“My future plan is to be the biggest egg incubator supplier in the country,” he says. In less than three years, Kaberia, who started his company without capital, has made impressive progress towards achieving his dream. He has 10 employees and has offices in Nairobi and Meru. Ecochicks Kenya Limited is benefiting from the soaring interest in the poultry and poultry products market.

The incubators are ideal for those seeking to incubate chicken, duck, quail, peacock, turkey, goose or pheasant eggs to either breed the birds or sell them to large-scale breeders. The machines are popular among small-scale farmers due their user-friendly functions and the high hatching rate of over 90 per cent. The incubators he sells moderate temperature, humidity and allow farmers to turn the eggs. They are not power hungry and in case of electricity outages, they can be run on solar power or a generator. His company sells 11 types of incubators, with the smallest having a capacity of 48 eggs and the largest capable of incubating 1,232 eggs.

The 48-egg incubator goes for Sh.25,000 while the 1,232-egg one costs Sh.150,000. “My prices are affordable if you compare them with my competitors’. This is because I am able to manufacture or assemble the egg incubators locally, unlike a number of other firms that import the machines,” Kaberia says. He adds that he remains competitive by offering repair services, which few others in his field do.

He started out repairing incubators before venturing into importing new machines. He then started shipping in parts and assembling the units locally, cutting down his costs by almost 30 per cent. Ecochicks' clientele ranges from farmers to government organisations and NGOs.

You can reach Ecochicks on: 0727087285.

### **35. Earn big from beekeeping with less than Sh.100,000**



Having a venture with sweet returns is what many prospective business people envision. And since Kenya's arid and semi-arid areas make up more than 80 per cent of the country's landmass, beekeeping is an endeavour that can mint farmers huge returns.

The venture requires a small piece of land that does not have to be fertile. The capital required to start the venture is low compared to other farm enterprises. For instance, it does not require natural resources such as space, light, moisture and soil fertility.

The venture requires minimal labour such as inspection and harvesting, which can be done over a stretch of time. Unlike the popular belief that bees are only used to obtain honey and wax, a creative farmer can obtain over 10 income-generating products from beekeeping.

This includes pollen, propolis, bee venom, royal jelly, bee colonies, bee brood, queen and package bees and many others. Bees are good pollinators of plants and play a huge role in biodiversity and improvement of crop yields. Products from the 'little soldiers' are also said to possess medicinal value, and are remedies for several ailments.

Patrick Muasia, a Kitui- based beekeeper, who ventured into the business in 2007 used to harvest over 32 kilos of raw honey each year. This yielded about 22 kilos after it was refined.

## **Bee products**

Muasia used to sell a kilo of honey at Sh.150 in the local neighborhood, which saw him fetch him about Sh.3,300 from 22 kilos. From the 32 kilo-harvest, honeycombs made up about 30 per cent — equivalent to about 10 kilos.

Only a small percentage of the combs could make beeswax.

Muasia says he got less than Sh.200 from the beeswax sale, bringing the total venture to about Sh.3500. “I realised that working as an individual did not bring me good returns and joined a group so as to attain a greater yield and better profit margin through many hives,” he says. He then joined hands with five of his friends to set up 100 beehives.

The hives now bring in over 2200 kilos of refined honey. “Selling a kilo of honey at Sh.200, we make over Sh.400, 000 per year. The combs fetch about Sh.25, 000. As a side-hustle that requires less labour and time, we are pleased with the returns,” Muasia says coyly.

Starting off the venture requires one to get acquainted with the local bee-human relationship. Bee stings are an integral part of beekeeping and a beekeeper has to deal with them.

Beekeeper need bee suits, veils and smokers - controllable smoke used to relax the nerves of the bees so as to prevent them from stinging during harvesting.

They also need a set of hive tools, gumboots and gloves which in total cost around Sh.5,000. The cost of setting up a beehive varies according to the type of hive used. A Langstroth hive costs around Sh.5,000.

But you can construct them using locally available materials to cut costs. Other necessary materials include holding racks and poles.

It is advisable to set up a beehive on farms or bushy areas with flowers.

If you do not have a farm, you can negotiate with farm owners with the argument that bee’s aid in pollination, which helps vegetables and fruits to grow.

Typically, one beehive provides enough bees to pollinate one acre of crops.

Managing a beehive is simple as it doesn’t require your presence. You don’t feed them; you don’t do any clean up.

Thus you can visit your site once a year or once every six months as long as you are well aware of harvest time.

### **Harvest period**

Harvesting is normally done between 10 to 12 months after set up. The second harvest takes place eight months later. Afterwards, harvesting can be carried out every four months.

Gatundu based beekeeper Mike Kigicha says that attracting bees to your hive is an art which requires good knowledge.

“One can start by dabbing the juice of pineapples, mangos or oranges inside the hive. The juice attracts bees to your hive and if it is conducive, they will colonise the place,” he says.

## **36. I started with Sh. 40, now I make Sh. 15,000 on a bad week from my farm**



Majority of people assume that to start a rewarding agribusiness venture, you need a big seed capital. Let’s say Sh10,000, Sh20,000 or maybe Sh5,000. But one farmer in Nyeri is proving that even with seed capital as small as a mustard seed you can make it happen.

“Believe it or not, I started with just Sh.20 that my husband had given me. Now that small seed has grown into this massive seedlings project,” Caroline Waruguru says.

Waruguru is now an established vegetable seedlings supplier in Nyeri and has received commendation from the government and several awards for her role in boosting food security in the community.

Ministry of Agriculture awarded her last year for her exemplary farming. Back then in 2000 when she started, Waruguru was a stay-at-home mother and depended on her husband for everything — from household needs to personal items. “One day, I was going to the market to buy kales to cook for my twin boys who I had just started to wean. With just Sh.20, I walked to the nearest groceries but could not find the mboga I wanted. I tried several groceries with no success,” she says.

“I was frustrated and angry, and as I walked home empty handed, that day, I resolved I would start my own kitchen garden.”

The following day, she borrowed her husband an additional Sh.20 and walked to the market to buy kale seedlings to start her small kitchen garden. That is how it all started.

“After my kales seedbed flourished, one of my neighbours visited me and insisted I sell to her my seedlings, I refused since they were for my upcoming kitchen garden. But she eventually persuaded me to take the money,” Waruguru recalls.

Unbeknown to her, her kale seedlings would later snowball into a business opportunity she never expected. “My neighbour told her sister-in-law and she too came to my farm asking for seedlings. I nearly said no but she said she would pay double the price. Before I knew it, I was planting more seedlings,” Waruguru recalls.

Now she earns a minimum Sh.15,000 a week from her seedlings with a solid client base.

But she says it has not always been easy. Starting out, her number one challenge was managing diseases and pests that threatened her crop.

“I often incurred heavy losses but I never gave up. I approached my local agroveter shop and asked him to help me manage some of the diseases,” Waruguru says.

Within no time various seed companies sought to help her in growing more seedlings and introduce their products to farmers.

“This is how I perfected my art and gained confidence in the market,” Waruguru explains. Another drawback she faced at the beginning was exploitation by brokers who often refused to pay her.

“I would deliver seedlings to various vendors and they would disappear after that. At one point, they owed me more than Sh.8,000 and I decided to find direct market for my seedlings,” she says.

To achieve that goal, her strategy was to rely on her network of farmers and clients and it worked.

“Now I never call my clients, they just come to my farm and buy directly. Of course it takes time to have a steady clientele but it is worth it,” she says.

An important lesson she has learnt in this journey is that clients determine what kind of seedlings she plants.

“Clients often inform my decisions to expand my business. When they want more that is when I expand. I would then prepare more seedlings for them and this grows demand for my produce,” she says. Currently, Waruguru grows more than 100 different varieties of vegetables, trees and flowers on her one and a half acre farm. According to her, vegetables such as kales, cabbage, spinach, tomatoes, green peppers, and onions are the most lucrative seedlings and are always on demand.

The advantage of running a seedling farm as opposed to fully grown crops is that it requires less labour and space. With just a quarter acre, you can comfortably run your farming enterprise and make good profit.

“If you buy 50 grams of cabbage seeds at Sh.2,800, you will grow a maximum 15,000 seedlings. However for most farmers only 10,000 seedlings germinate and you can sell each seedling for Sh1.50 per seedling hence making Sh.15,000,” the farmer shares.

Fifteen kale seedlings are sold at Sh.10 while one tomato seedling is sold at Sh.5, while these prices may seem low, the profit margins are usually triple the investment.

To maintain consistency in her business, each month Waruguru plants a fresh bed of seedlings.

“As a seedlings farmer, one of my biggest investments has been in water, I have a water pan which collect harvested rainwater and a bore hole which I dug to ensure I do not rely on piped water,” she notes.

However, it is not always a pay day for Waruguru as there are seasons when the market is dry.

“During such seasons I can make as little as Sh.1,500 a day. However my peak season starts in March as majority of farmers are preparing their land for planting, and this continues till late November,” Waruguru says.

Looking back at how far she has come, Waruguru is grateful to God for everything.

“For the past 15 years, I have watched as this garden bloom from nothing to something big. I thank the Lord for everything,” Waruguru adds.

### **37. Make Sh. 100,000 per month from ‘Supermarket farming’**



Lukendo village in Bungoma County is a sleepy hamlet like any other in the rural areas. One may not expect much from such a village and its people.

But here, a farmer is engaging in what is known as ‘supermarket farming’, a method experts note is a sure way of fighting climate change. The method involves keeping and growing as many animals and crops as possible.

“My farm is a crops ‘supermarket’,” says Maurice Otunga who owns one-and-a-half acres. “It has nearly everything that an average resident in this area will need for his three important meals in a day,” adds the father of three.

Otunga is one of several farmers in the village who have changed their way of farming using skills acquired from Climate Change Adaptation Project (CAPro) run by Egerton University. “Climatic conditions have become unreliable. It is, therefore, important we avoid keeping all eggs in one basket,” he says.

Otunga keeps different livestock that include poultry like guinea fowls, chickens, ducks, turkeys and dairy cows, goats, rabbits and fish. He also grows various crops that include beans, maize, bananas, vegetables, tomatoes, strawberry, guavas, pawpaw, avocado and cane.

“Growing the many crops ensures that there is something ready for the market at least every day.” Otunga knows climatic conditions are not the same as they were some 20 years ago.

“The rainfall patterns have changed drastically, and the heat from the sun is intense compared to what I experienced when I was a young boy. ‘Supermarket farming’ helps us remain food secure,” says Otunga, whose neighbours mainly grow sugarcane.

The farmer, who studied at Kilifi Institute of Agriculture, crossbreeds his indigenous chickens with the exotic broilers, a practice that ensures he gets fast-growing Kenbro breed that fetch more money in the market.

The crossbreeds, according to experts, grow fast and are hardy enough to withstand the tropical climate and diseases and produce more eggs. “I have 20 Kenbro hens with five cocks. After every 21 days, my incubator hatches 55 chicks which I sell at Sh.100 to farmers.” Otunga refers to his rabbits as “the ultimate livestock”.

“I went for rabbits because they eat little but fetch good money. I have 50 animals that I sell at a minimum of Sh.1,500 each.” He has two fish ponds, one with 1,500 tilapia fingerlings and the other with 500 mud fish.

He invested Sh.60,000 in the ponds and Sh.10,000 in four rabbits that he started with. A quarter acre of his land is fixed with drips and is dedicated to vegetables that include cabbages and sukuma wiki. On average, Otunga earns over Sh.100,000 per month from his various ventures.

“I harvest rainwater from the roof of my house and store it in a borehole. I then pump the water into an elevated plastic tank from where it moves down to irrigate the farm,” says Otunga, who has a permanent house that he built from farming.

Prof Francis Lelo of Egerton University and the Principal Investigator for the CAPro Project, says the initiative aims at enhancing indigenous knowledge of adapting to climate change, through growing of resilient crops and hardy animals.

“Nearly all the climate adaptation techniques in all our sites were identified by the residents. And given the wide range of crops and animals they ended up with on their farms, they decided to refer to it as supermarket farming.”



## **6 Crops that will make you a millionaire quickly**

Everyone likes making smart quick money, Right? Now if you've passion for farming but with limited capital and land, the crops listed below have been tested over time and have to be proved quick money makers. Giving them a try will definitely leave a land mark in your life as the returns are overwhelming.

### **38. Cabbages:**

Cabbages too have unending demand in towns. Two acres of well managed cabbages, in any East African capital can earn you about Ksh.580,000 with investment capital of about Ksh.77,800. You'll need an experienced farmer to give you more information on how to go about it.

### **39. Onions:**

Planting onions is simple as planting beans but the returns are huge. Normally, a kilo of Bombay variety, one of the best varieties, costs Ksh.100 and Ksh.300 when prices are lower and higher respectively. According to research, an acre can give you 4000kgs and taking the lowest price (100), this will earn you Ksh.390,000 yet with less than Ksh.39,000 invested capital. The market for onions locally and internationally is ever available.

### **40. Watermelon:**

Are you aware that a big watermelon can cost Ksh.500? The demand for watermelon is present in many towns in Kenya and Uganda. Smart middlemen are exporting them to South Sudan for better prices. If you can be a regular supplier of melons, many middlemen, hotels and restaurants in Kenya are ready to welcome you. You can make Ksh.1,238,000 in three months from just growing two acres of these simple creepers. The estimated capital requirement is Ksh.77,800.

## **41. Pumpkin:**

Pumpkins rarely miss on the menu in almost all hotels and restaurants you know in Kampala. It is a good export commodity for Kenyan farmers. But what's surprising, you rarely come across a garden of pumpkins. This is a "virgin" area awaiting exploitation. A single plant of pumpkin can produce over 100 pumpkins. It is advisable to buy a pumpkin with a hard shell from markets and get out seeds to plant. An acre accommodates 784 holes. Each plant will produce between 10-30 pumpkins. The least price a pumpkin sells on the garden is Ksh.40. Considering 10 as the average, this translates into Ksh.300,000 with an investment capital of about Ksh.15,000.

## **42. Passion fruits:**

An acre requires 600-800 plants. Planting materials cost Ksh.10 and Ksh.40 for unspotted and potted ones respectively. Currently, a bag of local purple is selling at Ksh.15,000 in local markets while the Kawanda type is selling Ksh.10,000. In a well-managed acre, Kigoye, an expert, says a farmer can collect two to four bags of fruits a week for a period of 12 months for the two seasons. Taking two bags as the average, it translates into 96 bags of harvested passion fruit. And, taking Ksh.6,000 as the average price per bag, a farmer would earn Ksh.557,000 but when prices go up to 15,000 during scarcity a farmer will pocket Ksh.1,500,000.

## **43. Tomatoes:**

Sauce without tomatoes is not sauce today! Even if it's not fresh tomatoes, at least tomato sauce extracted from tomatoes will be applied. There are testimonies of people who are rich because of tomatoes. To get maximum yield, one needs to be near a source of water like a river or borehole so as to grow tomatoes even in dry season, when the prices shoot up. If you don't have land, don't worry because you can rent it at affordable rates. You just need to get a few tips from successful farmers and experts to kick start your poverty eradication campaign by growing tomatoes. With an investment capital of Ksh.46,000 you can earn about Ksh.190,000 if you sold at the lowest price.

## 44 . Amazing Success Stories in Rabbit Farming



Have you ever considered rabbit farming as a top business opportunity?

Though rabbit meat may not be as common as chicken, beef or pork, there's no doubt it's a very lucrative business; every year, over one million tons of rabbit meat is consumed worldwide.

The world's four biggest producers and consumers of rabbit meat are: China, Italy, Spain and France. In Africa, the consumption of rabbit meat is gradually taking off and a few farmers on the continent are already enjoying the benefits of this niche business.

In this article, I'll share the success stories of 2 farmers in Kenya who have achieved remarkable success with their rabbit farms.

For those of you reading this who don't know, rabbit meat contains the highest amounts of digestible proteins and the lowest cholesterol and fat of all types of meat. Rabbits are also easy to raise; they're clean and require little capital, labour, time and space to manage.

This article will open your eyes to the amazing benefits of the rabbit business and offers some valuable and free resources you can use to get started. I had fun doing the research for this article. I hope you have fun reading it!

## **Moses Mutua, CEO Rabbit Republic (Kenya)**



Popularly known as ‘Mr. Rabbit’ in Kenya, Moses Mutua grew up in a poor family and couldn’t further his education because his family couldn’t afford to pay for it.

Although he always wanted to become a policeman, he never reached that dream. Instead he got a job as a security guard and worked at it for five years before he got fired.

Before he became Mr. Rabbit, Moses had already tried greenhouse farming, fish farming, organic farming, but settled on rabbits because they are the most lucrative domesticated animals in the world in terms of time, space utilisation and profit margins.

Moses learned everything about rabbit farming from the internet (by using Google) and finally started a small rabbit farm with just six rabbits. That’s how his company, Rabbit Republic, was born.

Today, Rabbit Republic has a turnover that’s more than Sh.10 million and slaughters about 2,000 rabbits every month.

His business has attracted investors and Moses is currently developing a five-acre farm that will breed about 30,000 rabbits.

Rabbit Republic now has a network of over 1,000 rabbit farmers across Kenya who receive free training and support and in turn sell their mature rabbits to the company.

This expansion has paid off as Rabbit Republic has now opened shop in neighbouring countries; Uganda and Tanzania. But that’s not all. By mid-2015, the company plans to export one ton of rabbit sausages to the US and Europe where the demand for healthy meats (like rabbits) is growing.

Mr. Rabbit wants to make Kenya a major player in the untapped global rabbit meat market. Currently, China, Italy, Spain and France are the leading producers of rabbit meat which has earned a reputation as a 'super meat' due to its nutritional and health benefits.

Rabbit Republic is now partnering with universities and local/international organisations to train more youths and women on rabbit farming as a means to alleviate poverty.

### **Charles Kamau (Kenya)**

Charles started a small rabbit farm in 2004 to provide organic fertilizer for his vegetable farm. He lost his job in the hospitality industry and had to do something to feed his young family. His first attempt at raising rabbits was a disaster because he lost all his animals to diseases.

Despite his frustration, he did some basic research, learned from his mistakes and started again. This time, it was a huge success and he even had to demolish part of his house to create more space for his thriving rabbit business.



*Charles holding up a Flemish Giant, one of the largest rabbit breeds in the world.*

Charles Kamau stocks a wide range of rabbit breeds which he sells to new farmers and also slaughters rabbits which he supplies to local meat markets.

His top customers include foreign nationals living in Kenya, restaurants and five-star hotels. In fact, he once got an order from China to supply a consignment of 22,000 pieces of rabbit fur but was unable to meet that huge request. This just shows how big the demand for rabbit products is.

Charles says he is now able to save more than Sh.20,000 every month from his rabbit business. The business also provides money to feed his family and pay school fees for his children who attend private schools.

A few years ago, he was able to buy some plots of land in Nairobi (Kenya's capital city) and recently bought a car and a 12-acre property where he is planning to establish a much larger rabbit farm.

### **3 Reasons why you should seriously consider rabbit farming**

The success stories of these rabbit farmers prove the huge and largely untapped potential of the rabbit farming business in Africa. In this section, I'll reveal three major reasons why you should seriously consider the rabbit farming business opportunity. Here they are:

#### **#1. There is a huge market opportunity for rabbits**



The growing rate of heart disease and related ailments has increased awareness of the harmful effects of cholesterol in our diets.

More people are now going for 'white' meat which contains low amounts of cholesterol. Unlike 'red meats' (especially beef and pork), white meats like ostrich, poultry, fish and rabbit meat contain less fats and cholesterols and have higher health benefits.

Apart from fish, rabbit meat has the highest amount of protein and contains the lowest fat than all other types of meat. It contains less calories and Sodium than other meats but contains more calcium and phosphorus (which is very good).

As a result of these properties, rabbit meat has become the ‘super meat’ for people looking to eat healthy meats and live a healthier lifestyle. Rabbit meat is also very widely accepted. Unlike snails and pork, there are hardly any religious or cultural taboos about consuming rabbit meat.

More than 700 million rabbits are slaughtered worldwide every year, producing about 1 million metric tons of rabbit meat. The world’s leader in rabbit meat production is China, representing over 30% of total global production.

Rabbit meat is popular in countries such as Italy, Spain, France and China. These countries consume the most rabbit per person (about 8kg per person) and are the best export markets for rabbit meat.

Rabbits produce high quality skins that are used to make fur garments (like clothing, hats and boots), and to cover bicycle seats, etc. Another significant use of rabbits is in cosmetic, medical and pharmaceutical research laboratories. Rabbits are also purchased by people who want to keep them as pets.

## **#2 Rabbit farming is lucrative because rabbits multiply very fast**

A single doe (female rabbit) can give birth to (litter) up to 40 kits (baby rabbits) in a single year. This means you can start with two mature breeding rabbits (one male, one female) and end up with over 40 rabbits in less than 12 months. That’s because rabbits can breed throughout the year and it takes just about a month (30-33 days) for a pregnant doe to produce baby rabbits.



After they are born, rabbits grow very fast and can reach maturity and market size in less than 6 months. One of the reasons for this fast growth rate is that rabbits are efficient converters of the food they eat.



Compared to other livestock animals (poultry, cattle, pigs etc), rabbits convert up to 20 percent of the proteins they eat into body weight. That's higher than any other animal!

A mature rabbit ready for market can sell for up to Ksh.2,200 (depending on the location and customer). However, the cost of raising a rabbit comes to about Ksh.100 per month.

According to Moses Mutua (CEO of Rabbit Republic), the resources and cost incurred on raising one cow is equivalent to what you'd use to raise 40 rabbits. As a result, rabbits offer a higher profit potential than cattle and other livestock.

And because rabbits mature quickly and multiply very fast, they offer one of the best opportunities to quickly recover your costs and investment in a short period of time.

### **#3 Easy to start, cheap to operate and maintain**



Rabbits don't need any elaborate preparation or huge capital to start up. You can start with two rabbits (male and female) using a basic cage made of wood and chicken wire.

Unlike chickens, cattle and pigs, rabbits are not noisy animals. They are very clean animals and don't easily get attacked by diseases.

Above all, rabbits don't require a lot of space like other livestock; it's the ideal animal to raise in your backyard or any place with little space.

Raising rabbits is not labour-intensive like cattle and poultry. Rabbits are easy to feed and often don't need a lot of attention. As a result, a rabbit farming business can be run on a part time basis.



Some kitchen waste, grass, plant leaves etc. are favorite foods of rabbits. In fact, a single rabbit needs just about 120 grams of food daily. You can feed it in the morning before you go to work and then in the evening when you return.

So, in terms of capital, time, space and labour needs, rabbit farming beats poultry, pig farming, and cattle farming.

## **Ready to start your own rabbit farm? Here are two important tips.**

If you're excited about everything you've read so far in this article and can't wait to join the small but fast growing league of 'rabbit entrepreneurs in Africa, here are two very important things you need to do to get started:

### **#1 Learn the nuts and bolts of rabbit farming**

People like Moses Mutua (Rabbit Republic) learned everything about rabbit farming on the internet and through books.

There are lots of manuals and videos online that will help you. I have done some homework for you. Am writing an ebook that you can use to learn everything you need to know about rabbit farming. It contains everything you need to know about rabbits including breeding, slaughter and packaging. I strongly recommend it.

This is another great resource for learning everything about rabbit farming. It's written in very simple language which makes it easy to understand. It covers a lot of topics including how to build rabbit hutches and the common diseases that affect rabbits. You'll surely enjoy reading it.

### **#2 Find good breeder stock to get started**

Breeder stock are the first rabbits a new farmer starts her rabbit business with. Like I mentioned earlier, the minimum stock you need to get started is one male (buck) and one female rabbit (doe).

If you want, you can start with more does; one buck can service up to five does. Ask around for local farmers who can sell you a good breeder stock. Ask for evidence that proves the gender of the rabbits you buy so you don't end up with all males or females.

Keep in mind that there are several breeds of rabbit. However, some breeds are better suited for commercial farming than others.

Commercial breeds grow into large sizes and produce faster. Show rabbit breeds, which are often smaller than commercial breeds, are popularly used as pets or raised for their fur and may not be suited for commercial meat production.

The best places to find rabbit farmers are your local livestock markets, Agriculture ministry or department or through local farmers' associations.

When do you want to get started? To your success!

## **45. Make Sh. 180,000 every 3 months from 'Njahe' and sweet potato farming**



The lethal maize disease destroyed over 5,000 acres of land with crop in Subukia sub-county, plunging farmers into huge losses. After seeing the devastation, Margret Wambui, 50, one of the affected farmers, decided to try her hand at something else on her two-acre farm. "I pondered what next for my family of 15 after a whole acre of maize was decimated by the lethal disease. My Sh.50,000 went down the drain. I anticipated harvesting approximately 15 bags of 90 kilogrammes of maize. But it was never to be," says Wambui.

Last year, Wambui says she decided to try sweet potatoes, which were easily available. She used Sh.2,000 as start-up capital. "I did my research and I was convinced it was a good project. Sweet potatoes are easy to grow and yield a generous harvest. The key thing is water. Luckily for me, there is a well nearby and it has helped a lot. To start off, I tried the red, brown and white coloured tubers. I was impressed by the yield," she says.

This type of crop that Wambui focuses on takes three months to be ready for harvest. From that crop, she harvests 5,000 kilos and sells a kilo at Sh.30. Her earnings in a month come to Sh.150,000 after every three months. She says she has a ready market for her produce. “I have a number of clients who come to my farm to get the potatoes and at the same time, I sell some at the local Subukia Trading Centre, which is 1km from my home,” the farmer says.

According to Wambui, production of sweet potato is cost-effective unlike other crops like beans, maize and Irish potatoes. “Potato production is cheap as long as the soil is fertile. There is no need for fertilisers,” she states. The biggest challenge with growing sweet potatoes is that they require a lot of water. Other than sweet potatoes, Wambui also grows black peas commonly known as njaje, to supplement her income.

She says the black peas are on high demand due to their high nutritional content. “I anticipate to harvest the crop by February. I feed my family with some and sell the surplus,” she says. Wambui says the black peas which mature after six months are grown in rows for easier weeding and harvesting. The farmer has also planted 80 stems of bananas.

“I rake in about Sh.10,000 monthly depending on market price and size,” she says. The advantage of growing bananas is that it does not require a lot of work. The only farm work is pruning, stemming and weeding for maximum crop production. With her farming venture going on for her, Wambui is able to comfortably take care of her large family of 15 and also put aside some money for investment.

## **46. Earn Sh. 192,000 per month from goat and cow milk**



For decades, Johnson Maringa watched from the sidelines as farmers turned their agricultural ventures into profitable businesses.

As an accountant with the Agricultural Development Corporation (ADC) he admired the zeal and success of farmers whom he constantly interacted with, and hoped that after retirement in 2006, he too would try his hand at agribusiness.

Nine years later, Maringa sits at the helm of Mountain Dairy Farm Company which processes and sells yogurt made from goat milk. He supplies this unique but highly sought after product to major supermarkets in five counties.

“After my retirement from the ADC, I moved back to my rural home in Kiawairigi village in Mathira Constituency, Nyeri County, and began dairy farming on my five-acre farm,” Maringa says.

He had high hopes that selling milk from his four cows would comfortably support him and his wife in retirement, but he was disappointed.

“I soon realised dairy farmers are at the mercy of brokers who often buy a litre of milk at a paltry Sh.20 which is inadequate to cover the costs of production,” he says.

The former accountant vowed to find an alternative way to increase his earnings from dairy farming.

He embarked on increasing his milk production from 10 to 25 litres per day by focusing on zero grazing and preparing his own feeds.

“The meagre pay from my milk left me disillusioned. That is when I started to inquire about the value of various milk products in the market,” Maringa says.

His market research led him to discover that while raw milk was retailing at Sh.20 per litre, one litre of yogurt was retailing at more than Sh.100.

“I decided to start making yogurt production line in my home in 2010 by registering Mountain Dairy Farm. I got the necessary Kenya Bureau of Statistics certification the same year,” he says.

With little marketing experience, Maringa chose to sell his yogurt to his neighbours and the local church Sunday school.

Soon, more people started knocking on his door to buy his yogurt. Realising that the drink was becoming popular, he decided to deliver it to local shops at neighbouring shopping centres

and eventually expanded his niche to major towns in Nyeri, Kirinyaga, Embu and Laikipia counties.

Now a confident dairy farmer, Maringa decided to try out dairy goat farming. After conducting a market research on dairy goat farming two years ago, he realised it had huge potential.

“While cow milk is readily available, the scarcity of goat milk in the market makes it a lucrative business. I visited several shops in Nairobi and discovered that half a litre of goat yogurt costs Sh.300,” he says.

With the newfound zeal, he decided to diversify his yogurt making business by buying pedigree goats. He also joined the Dairy Goats Association of Kenya whose headquarters are in Wambugu Agricultural training centre in Nyeri town.

“Currently, I have six goats which produce two and a half litres of milk each daily. I have had to contract local farmers to deliver more goat milk in order to meet demand for the goat yogurt,” Maringa says.

Every day, he and his six employees wake up at 3am to process 30 litres of goat milk and 150 litres of cow milk into yoghurt.

Each litre of milk produces a litre of yogurt, which he then packs into 250ml, 500ml and one litre bottles.

Maringa sells one bottle of goat yogurt at Sh.250 while one litre of cow yogurt retails at Sh.120.

“I earn Sh.120,000 per month from goat yogurt and Sh.72,000 from cow yogurt. The work is exhausting but its rewards have been worthwhile,” he says.

The nutritional value of goat milk and yogurt makes it ideal for those who are health conscious.

“I believe the future of my business lies in dairy goat farming, the cost of production is low and it has high returns. The demand for unique, local and more nutritious products is high in the Kenyan market. In the next five years, I will have to dedicate all my efforts to dairy goat farming in an attempt to fill the gap,” he says.

Maringa hopes more dairy farmers will embrace value addition which he says will change their fortunes.

## 47. Make Sh. 200,000 per month from bamboo farming



Victor Shiribwa sells tree seedlings and furniture. On his four-acre farm about 2km from the market, Shiribwa mainly grows bamboo, selling its seedlings and turning it into furniture.

The 42-year-old has about 200,000 bamboo seedlings, 500 bamboo trees and makes different kinds of furniture in a workshop he runs on the farm.

The bamboo species he grows include *Bambusa vulgaris*, *Bambusa tulda*, *Dendrocalamus giganteus*, *Dendrocalamus asper* and *Oxtenanthera abyssinica*.

“I started bamboo farming in 2007 after I bought this piece of land, which has a steep slope. The person who sold me thought it was useless because of the slope that made farming difficult. I planted bamboo to curb soil erosion,” he recounts.

The former Head of Transport and Logistics at SDV Transami in Nairobi, says together with his wife Flora, he planted 50 bamboo seedlings on the land.

And as the seedlings thrived, Shiribwa soon saw the benefits of the grass. The soil erosion stopped and the slope was filled with foliage that turned his farm green.

In 2010, inspired by the faster growth of bamboo, he cut down several eucalyptus trees to create space for the grass that he had learnt had created a bigger industry in Asia.

And as the bamboo grew, Shiribwa began to propagate the seedlings as he sought to profit from the much-loved plant.

Later in 2012 when he saw the business was viable, he quit his job and returned to the village to venture fully into commercial bamboo farming. His wife, who was working as a

customer relations officer at a security company in Nairobi, too quit her job too as the couple joined hands to build the agribusiness.

By August 2013, they had propagated about 3,000 bamboo seedlings.

“Luckily, there was a World Bank-led environmental programme that involved planting trees in Serem, Hamisi, Cheptul and Shamakhokho. We reached to the officials and sought market for our seedlings and sold all of them at Sh.320 each,” narrates Flora.

The couple propagated a further 16,000 bamboo seedlings that they sold to community-based organisation in the region as their business grew.

“We realised there was a lot of funding coming from different organisations for environmental concerns. We have so far sold the bamboo seedlings to at least 47 community based groups in Vihiga and neighbouring counties,” says the father of four.

From a single plant, a farmer can harvest bamboo for about 100 years.

“From each seedling, 50 to 100 culms or shoots sprout and grow at different stages. Out of every cluster, you harvest 10 mature stems per season. We have two harvesting seasons. A stem of bamboo costs Sh.300. In a year, each cluster of bamboo can give you Sh.6,000,” says Shiribwa, adding an acre of bamboo holds an average of 215 plants.

To diversify their income, the couple contacted Kenya Forest Research Institute (Kefri), which offered them an artisan who trained them on bamboo furniture production.

“The artisan came to our farm in 2013 and taught us bamboo furniture production for six months,” says Shiribwa, who has employed five people and further offers apprenticeship to nine.

Most of bamboo products are handmade with the couple using glue, specialised knives and shaves, among other tools to make them. “For the finishing, we use vanish, various type of sandpaper and sanding machine,” says Flora.

“We do not use nails in making bamboo furniture, thus, the joinery is a bit more complex because the furniture has to be strong.”

They have further invested in Sh.60,000 electric sanding machine and hand drills.

In their workshop, they make chairs, couches, tables, pen and bill holders, kitchen tongs, spoons, jugs, chopping boards, tooth picks, serviette holders, baskets, TV stands and coat holders, among others, with prices starting from Sh.75 to Sh.45,000.

“A single bamboo pole can make 10 miniature dhows, which costs Sh.1,000. When you do bamboo value addition, you make much money. It is the reason we are into it because a post only goes for Sh.300,” says Flora, adding a farmer can cut a single post into 60 cups and sale each at Sh.150.

The farmer makes about six sofa sets in a month, with each set going for between Sh.30,000 to Sh.45,000. The price depends on the design, size and number of stems used.

In a month, they make over Sh.200,000 from different bamboo products, in addition to what they earn from about 1,000 seedlings they sell in a month.

Most of their customers come through referrals and they also run a social media page to market their products.

In recognition of his efforts, Shiribwa was sponsored in 2013 by the Vihiga County Government to travel to China and learn the opportunities in the bamboo industries and maximise them back home.

“I travelled to China to the Yunan Bamboo Nursery, where I learned many aspects of bamboo farming and value addition. I also bought 10kg of bamboo seeds for propagation,” says Shiribwa, adding farmers in the sector need to form a co-operative society.

James Maua, a research officer at Kefri in Kakamega says bamboo has over 1,000 uses, including as sources of food for animals and humans, as well as for environmental conservation.

“The bamboo from Asia was tested by Kefri in early 1990s and can grow in the highlands well. The ones indigenous to Kenya have a narrow ecological range and are only found on high grounds,” says Maua.

“We are working with various institutes to boost bamboo species that are certified and can grow faster. Bamboo is a lucrative business that one can engage in because you can make over 1,000 products that you sale locally or export,” says Maua.

Although bamboo furniture is light in weight, it is five times more durable than wood, according to Maua.



## 48. Make millions from tomato farming



Kirinyaga County is an agriculturally endowed land with breathtaking rice fields on the Mwea plains and dense, lush tea and coffee plantations on the upper sides, which neighbour Mt Kenya forest.

The picturesque is complemented by patches of blossoming horticultural crops in many parts of the county where farmers who have invested adequate resources in tomato, vegetables and French beans are reaping fortunes. One such farmer is Githaka Nyingi, a young man minting serious money in his locality from tomato farming, just three years since he ventured into it.

When he talks about income versus cost from tomato farming, you can easily get carried away as he explains how you can make over a million shilling in profit from an acre of tomato in four month's time. He has a rider though: "Lucrative tomato farming entails precise planning and timing in addition to months of hard labour for one to have quality fruits at time of high demand." If you have travelled along Kerugoya-Kutus road in recent days, a short distance from Karia shopping centre you must have noticed tens of tomatoes packed in boxes ready for the market.

Youthful farmers On both sides of the road, acres of tomato plants stand out as youthful farmers, disappointed by poor returns from maize, have ventured to the fruit's planting. Nyingi is among them and he has perfected the art of farming tomato profitably. Prices of tomatoes keep on fluctuating due to market forces of demand and supply and this is what has discouraged some farmers from venturing into tomato farming.

To farmers who rely only on rain to farm tomato, their crop matures at a time when supply is so high that prices fall to a low of below Sh.1,000 per box occasioning losses to farmers since the crop's management is costly. After observing tomato market behaviour, Nyingi rented a piece

of land near a water pond to avoid reliance on rain-fed agriculture so that he times his tomato to mature when demand is high.

“Farmers in Mwea and Laikipia are favoured by even topography, less diseases and pests, and plenty of irrigation water hence their production costs are lower. They farm in large scale and when their crops mature they flood the market. During rainy seasons, they are unable to take their crops to the market due to poor roads condition and that is when my crop is at climax,” he says.

Nyingi initially worked in the tourism sector with East Africa Canvas but after the 2007/08 post-election violence, he quit. During the breaks he would plant a quarter or an eighth acre of tomatoes in his small piece of land but did not put much attention to it hence the earnings were not significant.

Best practise In 2013, he was inspired by the money farmers in Mwea were making from tomatoes and he rented an acre piece of land and set aside money to adequately manage the crop, employing the best agricultural practices. This entailed choosing hybrid seeds which are costlier than the conventional ones used by most farmers in the area and planting them in small polythene bags, which is laborious compared to planting on a seed bed. Nyingi says hybrids offer better disease resistance, higher yield and possess other improved traits.

According to him, the advantage of growing tomato on polythene bags instead of seedbed is that the later get ‘shocked’ during transplanting hence the first flower dries up. “I spent Sh.150,000 tending the crop and found demand high such that I sold each box at between Sh.4,500 and Sh.6,000. I made sales worth Sh1.4 million from 220 boxes. I was motivated because I had never made such money in my life. I decided to concentrate on tomato farming,” he says. Currently, Nyingi has mature tomato crops in his one and quarter acre farm.

When his tomato hit the market early this month, a box was going for Sh.6,000 but as more tomatoes from other farms ripen and enter the market, price has fallen to Sh.4,000 and is expected to plummet further. He spent Sh250,000 tending the crop and if all goes well he expects to make sales of Sh1.6 million and Sh1.3 million profit in four and half months.

Tending tomatoes to yield such money requires great effort right from preparing nursery to harvesting. Nyingi advises farmers to mix soil and manure in equal ratio then plant two seeds per polythene bag and then apply water.

Though one seed per bag is enough, the extra one is meant to replace those that fail to germinate or get spoiled during transplanting. An acre of tomato requires seven tonnes of manure which he buys at Sh21,000 from farmers in Mwea, Kitengela or Laikipia. In the nursery, one must water them in the morning and in the evening daily for the first week and afterwards in the morning only until they are about 25 days old.

“I transplant them between the 23rd and 25th day before the roots have firmly attached themselves to the bags. The land is ready at that time. This is by ploughing to loosen the hard pan, applying manure and burying it lightly with soil. I dig trenches 3ft apart while the spacing from one plant to the other is one and half feet,” he explains. The secret He applies a teaspoon of DAP fertiliser per tomato at planting, then waters twice per day by pumping water from the nearby Karia ponds until it rains.

After three weeks, he applies a tablespoon of DAP and 17:17:0 fertiliser in equal ratio per plant and another three weeks later he adds 17:17:0. Spraying using relevant sprays at the right time is also essential for flowers and fruits to keep diseases, worms and blight at bay. He says tomatoes also require support using stakes when they are one month old. The major challenge he faces is a viral disease locally known as kathuri which is characterised by plant withering such that it gives forth tiny fruits.

There is also the yellowing disease identified by yellow leaves, which hampers fruits from growing big.

“Some diseases are incurable while others require expensive chemicals. Spraying is labour intensive and expensive. As my tomato grow I spend Sh10,000 on spraying. I must also be there to ensure there is correct mixing of chemicals,” he says. He usually plants seedlings on February 1 so that the crop can be ready at May and the next crop on August 8 to time the crop for December.

Nyingi also farms French beans but he says they are not as profitable as tomatoes. To safeguard his future when he might lack the energy to farm tomatoes, he has planted 150 bushes of batian coffee which is also blossoming and promising to bring good returns.

## 49. How teacher makes a killing from rabbit farming business



Rearing rabbit is one of the least practised agricultural activities in Kenya. In fact, for a long time, it has been seen as a hobby for boys thus the reason why it continues to be shunned to date. However, one man in Thika is smiling all the way to the bank thanks to this least practised farming activity that only a handful of Kenyans have embraced.

Meet Peter Macharia, the principal of Christian Industrial Training College, who despite his busy administrative duties, is an astute rabbit farmer. Macharia says rabbit rearing is one of the easiest farming methods since it does not require much time, fodder, space and a lot of capital to venture in.

Currently, he has more than 300 rabbits, which he says is the lowest number he has ever reared having sold more than a 100 rabbits recently. He is planning to expand his rabbit rearing venture to accommodate more than 1,000 rabbits next year to maximise on profits. “Due to the preference of white meat among Kenyans in the recent days, rabbit meat is on high demand and there is no enough supply. It is a market people should take advantage of,” says Macharia.

The Masters of Arts in Political Science graduate from University of Nairobi says he started rabbit rearing in 2008 after releasing a rise in the demand for white meat. He started with 10 rabbits with the number steadily raising to the current 300 which he says are like a drop in the ocean compared to the demand. “Due to increase of diseases associated with red meat, a lot of consumers nowadays prefer white meat and more so rabbit meat with the demand surpassing the supply,” he says. With each of his rabbit weighing between 5 to 7 kilograms, Macharia is making

good money with a Kilo of rabbit meat costing Sh.500 and above. He says he sells a minimum of 10 rabbits per week at Sh.35,000 totaling Sh140,000 a month.

He is planning to expand his rabbit rearing venture to accommodate more than 1,000 rabbits next year to maximise on profits. “Due to the preference of white meat among Kenyans in the recent days, rabbit meat is on high demand and there is no enough supply. It is a market people should take advantage of,” says Macharia. The Masters of Arts in Political Science graduate from University of Nairobi says he started rabbit rearing in 2008 after releasing a rise in the demand for white meat. He started with 10 rabbits with the number steadily raising to the current 300 which he says are like a drop in the ocean compared to the demand.

“Due to increase of diseases associated with red meat, a lot of consumers nowadays prefer white meat and more so rabbit meat with the demand surpassing the supply,” he says. With each of his rabbit weighing between 5 to 7 kilograms, Macharia is making good money with a Kilo of rabbit meat costing Sh.500 and above. He says he sells a minimum of 10 rabbits per week at Sh.35,000 totaling Sh.140,000 a month.

The man who vied for the Gatundu North parliamentary seat in 2013 but lost is rearing five rabbit breeds: New Zealand white, California white, French Earlope, Flemish Giant and Angola. Macharia says French Earlobe are big in size and heavier, which makes them fetch more money in the market.

Macharia is also the Rabbit Association of Kenya national coordinator where he says they have made great strides in making rabbit rearing a choice for Kenyans. Through the association, he says they educate farmers on rabbit rearing practices and introduces new rabbit breeds. He says the association has also been instrumental in lobbying for construction of the Sh10 million rabbit slaughter house which is nearing completion in Thika town. Once complete, the slaughterhouse will have the capacity of slaughtering 2,000 rabbits a day which he says will be instrumental in enhancing rabbit rearing.

“As an association, we also recently started on rabbit meat value addition whereby we are processing sausages, samosas and meat loaves which we are currently selling in Thika, Juja and Ruiru town with plans to venture to other towns,” Macharia told the smart harvest. Mr Macharia outlines the greatest challenge facing rabbit rearing is lack of market for the rabbit skin which he says normally goes to waste. He told Smart Harvest rabbit skin has a high price than meat due to its quality and the value it adds to other products like bags and clothes.

The association is buying one skin at Sh.100 from the farmers. However, since there is no ready market for the skin in the country due to lack of tanneries, the skin business is low. They are exploring foreign markets in Europe and Asia. Rabbit urine is normally sprayed on kales and other vegetables in his garden to control pests. He says the urine may also soon become a lucrative business once a fertilizer manufacturing factory being built in Kawangware is complete by early next year.

He also uses the manure got from the rabbit sheds in his farm where he plants vegetables key among them kales, cabbages, and onions among others that are used by his family. Rabbit manure is popularly known for its high nitrogen content. As a result of rabbit rearing, Macharia says he has bought a car and uses the rest to pay school fees for his children.

The farmer is calling on the many jobless youth to embrace rabbit rearing saying it does not need a lot of capital and space to start.

## **50. Make big profits with Pig Farming in Kenya**



The 25 by 60ft plot in Kayole in Nairobi resembles many others in the populous estate. It is surrounded by a concrete wall to enhance security and atop the walls one can see iron sheet structures. The plot, however, is not occupied by people but pigs. Muhoro Mwai, 35, is doing pig farming in Kenya. He keeps 140 pigs that include boars, sows and piglets. But that is not all, he also has space for four dairy cows and indigenous chickens.



Muhoro mainly feeds the pigs rice bran that he sources cheaply from Mwea. “I buy 70kg of rice bran at Sh.450 from Mwea Irrigation Scheme while the same goes for Sh.1,600 in Nairobi.”

He mixes the rice bran with pollard, maize germ, mineral supplements and molasses. He also offers them cabbage waste that he buys from Wakulima market in Nairobi at between Sh100 and Sh150 per bag. The pigs are fed once a day and supplied with clean water.

“By the time I sell them to butchery operators at seven months at between Sh.15,000 and Sh.25,000, the pigs weigh an average of 50kg. I decided to sell the pigs directly to the traders to cut brokers who were offering low prices,” says Muhuro, who went into the business three years ago after realizing building rental units would not earn him much.

On the other hand, he sells a three-month piglet at Sh.15,000 and an expectant sow at Sh.40,000. From the one-room houses he wanted to built, he would get Sh.1,000 a month rent from each, which cannot be compared to the money he gets from pigs. He bought his first stock of three sows at Sh.100,000. The animals calved down 11 piglets each increasing his brood faster.

He has constructed storey pens for the pigs ensuring he has enough space for chickens and cows.

## **DAILY REPORTS FROM HIS PIG FARMING**

His four dairy cows are housed in a 25 by 12 feet unit which he notes is adequate as it allows them some room to exercise. He feeds the animals napier grass, molasses and hay that he buys in Kiambu and Njiru.



Muhoro gets 15 litres of milk a day from the two cows. “The cows are not a commercial venture. I keep them to provide milk for my family,” he says, adding, “The same case applies to my over 30 indigenous chickens that provide eggs and meat.”

Muhoro has employed two workers and cleans the pigsties and cow pens daily to manage waste. “Every morning I pass by the farm to get daily reports on how the animals are faring,” says Muhoro, who besides farming runs a beer distribution business.

Joseph Mwaniki, a veterinary technician based in Nairobi, says pigs are ideal animals for urban farming because they do not require a lot of space.

“The boars should be castrated if they are not meant for mating to ensure they do not waste a lot of energy chasing after sows,” says Mwaniki. He adds that farmers should always feed their pigs with quality feeds to avoid parasites and diseases. The animals should also be dewormed after every two months to ensure they are healthy.

This further guarantees the worms are not passed to human beings. Before weaning, piglets should be left to breastfeed exclusively for at least two months. “Offering the pigs sweet potato vines, cabbages and other vegetables helps the them in digestion because green matter is a good source of fibre.”

## **51. Make big profits from farming fruits**



Kioria and Keziah, who are based in Gatuthi, Tetu in Nyeri grow various seedlings, which include those of trees and fruits that they sell to farmers in neighbouring counties and Nairobi from Sh.30 to Sh.200.



However, of all their seedlings, one that they introduced last year is making them one of the most-sought farmers in the region.

The couple are growing a “wonder fruit” known as the pepino melon.

The fruit is in the solanaceae family, where potato also belongs. The plant remains green and starts producing fruits at no more than a metre high.

The melon is normally round-shaped, but others are oval and have a thin yellow skin with reddish brown spots or stripes. The flesh itself is yellow, juicy and soft and has a sweet flavour that tastes like melon, pear or cucumbers. Some people call it a melumber.

### **GREENBELT MOVEMENT**

At the centre of a pepino fruit are many flat or round seeds that are also edible. Sometimes they are referred to as tree melons, or melon pears.

The melon fruit is popular in South America where it is known to help fight high blood pressure, diabetes, arthritis and reduces weight.

“We started growing seedling as a group of seven young people in the neighbourhood in 2003. We would plant trees and sell to the Greenbelt Movement,” says Kioria, explaining why he loves the environmentalist.

They were doing it in his parent’s quarter-acre on the slopes of the Aberdares Forest.

“We would collect seeds from the forest then plant them in small bags and sell after about three to four months.”

With time, however, the group members left to pursue other interests and careers leaving the couple to run the nursery.

Mid-2013, they diversified and went into growing fruit seedlings in a 15 by 8m greenhouse, with the structure costing them Sh.160,000.

The couple invested a further Sh.3,000 into buying avocado, guava, passion fruit and tree tomato seedlings.

Mid last year, they visited a friend, Peter Karari, in Nyeri, who is also running a seedling business. It is there that Kioria stumbled upon the pepino melon.

Karari, who has 950 pepino melons, had returned from a visit in Eldoret where he had carried some pepino seedlings and fruits.

“I did not even know it was called pepino. The friend who gave them to me also did not know but said the fruit suppresses various diseases. I carried three fruits with about five seedlings to plant at home for my wife,” says Karari, whose wife is hypertensive.

With the help of his friend Kioria, the two did research on the internet and identified it as pepino.

The fruit contains Vitamin A, B, C, K, protein, iron and copper, which help to boost the immune system and strengthen bones.

“The fruit also contains some fibre which helps in digestion and reduces the chances of gastric ulcers,” explains Kioria, adding they then started to propagate the fruit.

To grow pepino melon, seeds are planted in the seedbed at a spacing of 30x30cm and in holes of about 30cm deep, and they sprout after about two weeks. They are then left to grow for about three weeks to a month and they are ready for sale.

One can also propagate them using cuttings, which are put in nylon bags filled with soil and manure. After a month of watering, the cuttings develop roots and new leaves start sprouting. They will then flower after a week signalling their readiness for sale.

“The flowering starts almost immediately or within a week of transplanting right from the nursery bed. After planting, the fruits develop and they take about five to six months to start ripening,” says Kioria, noting the fruit is harvested by plucking it from the plant, and it continues all through for up to three years.

The plant grows mainly in well-drained soils, but it does also well in other types. Pepino melons require moderate rainfall, organic manure mixed with soil at a ratio of 1:3 and inorganic fertiliser such as DAP or 17:17. During dry seasons, mulching should be done to prevent much water from evaporating.

The couple, which has 500 mature pepino plants and 2,000 seedlings, sell a melon seedling at Sh.200 while a fruit at Sh.30 to their neighbours and Sh.50 at the market.

For the other seedlings, they sell the grafted hass variety avocado at Sh.150, grafted tree tomato at Sh.100, flowers at Sh.100 and indigenous and exotic tree varieties at Sh.50.

In a month, they sell about 100 pepino seedlings to farmers. For the other seedlings, they sell up to 200 seedlings.

Several farmers in Nyeri have taken to growing pepino as demand due to its ‘healing powers’ increases. Kingori Maenia, a farmer from Gaithairi Tetu Nyeri, who has planted over 300 pepino plants says he got the seedlings from a farmer in Kinagop..

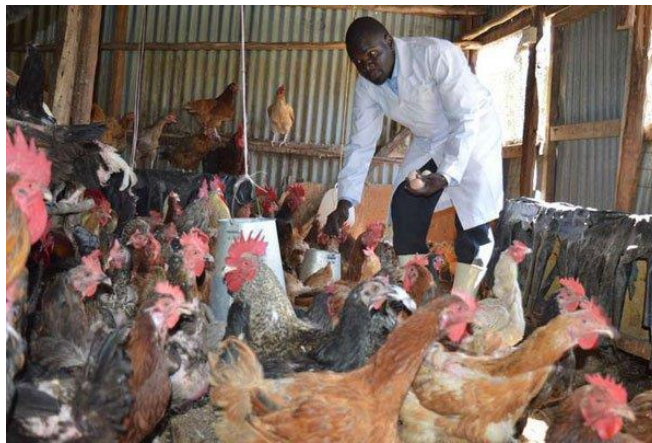
“I sell the fruit to traders in markets in Nyeri and the demand is going up.”

John Wambugu, an agronomist at the Wambugu Farm Agricultural Centre in Nyeri, who also grows the plants out of curiosity, says the ‘super healing power’ of the melon is yet be scientifically proven.

“Because it is a fruit and fruits contains vitamins it’s possible that it has the capacity to heal.”

He adds that fruits that contain Vitamin A, B, C and K helps in boosting immunity and healing diseases.

## **52. Nicholas Omondi: how I make millions from my 2,000 chickens**



Dressed in a white overcoat, a black trouser and gumboots, Nicholas Omondi digs his hand in a sack of poultry feeds and offers his birds at his farm in Dunga, Kisumu.

The farmer keeps 42 ornamental birds that include silky and bantam chickens, doves, guinea fowl and fantail pigeons.

But these are just to beautify his one-and-a-half acres Victoria Eco-Farm. His mainstay are the Kari Kienyeji, Rainbow Rooster and Kuroiler chickens, all which total 2,000, excluding the chicks.

He hatches eggs from the chickens in 15 incubators. “I have two incubators with a capacity of 10,000 eggs. The rest have a capacity of between 2,500 and 8,000 eggs,” says the poultry farmer.

Every three days, he collects over 6,000 chicks for sale. “When they leave the hatchery, I pack them in boxes and deliver to our clients in Kisumu and other counties, including Nairobi.”

Omondi sells to other farmers the day, a week, two weeks, a month and two months old chicks.

A day-old chick goes for Sh.85, a week-old at Sh.120, two weeks at Sh.150, a month at Sh.250 while two months chicks go for Sh.400.

On the other hand, he sells a mature breeding cockerels for Sh.1,500 each.

“The best hen to cockerel ratio in poultry breeding is 1:7. Most farmers over-work their cockerels and this lowers the quality of eggs and, thus, chicks.”

He sells mature bantam and Italian silky chickens at Sh13,000 when they are four months old, mostly to the Asian community.

With contracts from several outside catering firms, the farmer in a good week supplies 1,500 mature birds for events such as funerals and weddings at an average of Sh.1,000.

The 35-year-old collects 1,800 eggs per day. He further sources from farmers to ensure he does not run out of the fertilised eggs to hatch.

“We are encouraging contract farming. We have farmers who buy our chicks, once they start laying eggs, we buy back the fertilised eggs from them,” says Omondi, who works with over 100 farmers in different counties.

Interestingly, his poultry business is a ‘side hustle’ as Omondi works as a journalist at Radio Lake Victoria where he presents an evening show.

So how did he built his poultry empire? “I started the business in 2008 with a capital of Sh.250,000 from my savings. I really wanted to keep poultry with the passion making me to save nearly every coin I made.”

He used Sh.40,000 to buy 50 mature Kienyeji birds comprising of 40 hens and the rest were cockerels. He spent Sh.15,000 on feeds in three months and Sh.187,000 went to the construction of a one-storey poultry house.

With time, his brood increased as he expanded his hatchery using skills he picked in trainings and seminars sponsored by the USAID, Plan International and others NGOs.

Each day, the father of two, who doubles up as the farm manager, starts his day at 5.am by feeding the birds with the help of his workers as he monitors if they have any diseases before leaving for work later in the day.

“We formulate our own feeds from maize germ, cotton seed cake and fishmeal (omena). I add in the feeds coccidiostat and mineral supplements to curb diseases. In a day, we use 12 ~ 50kg bags of feeds,” explains Omondi, who has six workers.

He says the few the number of workers in a poultry farm, the more efficient work is done and overall farm management.

His main challenges include diseases like Newcastle, gumboro and fowl pox, which in many cases strike when he is least prepared.

“Each year, I must lose some birds to these diseases. It happens to every farmer before they identify the disease and take preventive measures,” says Omondi, whose dream is to be the biggest supplier of chicks and other poultry products in western Kenya.

Amos Amenya, an agronomist at the Lake Basin Development Authority, while using a charcoal brooder, one should guard against suffocation due to carbon-monoxide.

“For chicks, Gumboro vaccine should be administered when they are a day-old. After 14 days, the chicken should be vaccinated against Newcastle Disease followed by small pox.”

## **53. How retired soldier started multi-million Meru flower farm**



About 50km from Meru town in Timau on the slopes of Mt Kenya, there is a flower farm where roses are blooming inside greenhouses, waiting to end up in Europe.

The 50-hectare farm named Sunland Roses is owned by Major (Rtd) Silas Mwiti and hosts 80 greenhouses, where over 50 varieties of the flowers flourish.

The rose varieties he plants include Sweetness, Sanoli, Athena, Cape Red, Red Naomi, Panache, Adelaide, Anna-Karina, Airforce, Good times, Ice Bear, Cloud Break, Spritz, Scenta, Mammy Blue, Candid Prophyta and Confidential.

“When I left the army in 1992 after serving for about 32 years, I first ventured into vegetable farming,” says Mwiti.

But even then vegetables were not his first farming venture. He had doubled up as a wheat farmer while working in the military.

After about eight years, he ditched the veggies for roses after seeing an opportunity, a decision he describes as his best ever.

“There are good returns in flower farming because you can harvest the plant for up to 10 years,” says Mwiti, who invested Sh.9 million when starting the venture.

To plant the roses, Mwiti says he first starts by preparing beds in the greenhouses and, thereafter, lays the drip lines. While doing this, he orders for rose stalks from reputable firms at Sh.30 each.

The stalks are then planted in the beds in a spacing of 30.cm from each other and are ready for the first harvest after three months.

The septuagenarian mainly grows his flowers organically to get an edge in the international market.

Mwiti uses ‘earthworm juice’ as his fertiliser. He prepares the natural fertiliser by mixing water with earthworm urine and draining the resultant liquid.

“This is the best fertiliser crops can get because the earthworm urine is super nutritious. Take an example of forests, where there are plenty of earthworms. You will find that the soil there is very fertile and plants thrive and all this is because of earthworms,” says Mwiti, whose major challenge is stiff competition in the market, which sometimes results to low prices, therefore, less returns.

To ensure he has constant supply of the foliar fertiliser, Mwiti rears the worms.

He has made a bed for them using poles, iron sheets and a perforated polythene material to hold the soil. Other than soil, he adds compost manure to enable the worms thrive.

“Sometimes my farm workers go to the nearby Timau market to collect dirt to add to the bed to enable the worms stay in natural environment.”

To harvest the fertiliser, he flushes water on the earthworm bed. The water then flows through the polythene material and ends up in a tank where it is stored.

From the tank, the fertiliser is pumped to the greenhouses and to the flowers.

“I occasionally use other commercially produced fertilisers to add calcium, nitrate, ammonia, magnesium and sulphate but I still prefer the earthworm juice.”

But those are not his only sources of fertiliser. He further uses dried roses to make manure. He shreds the stalks and arranges them in a heap and leaves them for three months as he turns them until they decompose.

The manure will then be harvested and used mainly when planting new roses.

For pest control, Mwiti uses sticky traps as the international market is sensitive to pesticides. The stickers come in different colours, attracting a wide range of insects like white flies.

Half of his flower farm lies on the leeward side of Mt Kenya, thus, receive little rainfall.

“I do not rely on rainfall to grow my flowers because it is very little and inconsistent.”

However, he believes every single drop of water is important as he harvests dew every day, which has become his main source of water.

The farmer gets the dew from the top of his greenhouses, which are fixed with gutters and pipes linked to a reservoir.

“During the night, dew settles on the roof of the greenhouses as it does on the grass. Since the road is slanted, the dew water flows down the gutter and into the reservoir.”

“The amount of dew we collect each day is enough to sustain irrigation on the farm. However, I cannot quantify the litres collected because the water is directed straight to the dam,” he adds, noting dew collected depends on the weather.

Mwiti learnt the technology of harvesting dew during a conference he attended sometime back.

“I then leased a small parcel of land to practice the technology. It has turned out successful as I’m able to get quality flowers for export due to the dew water.”

Sunland Roses harvests about 50,000 flower stems in a day, amounting to 12,000 boxes each week. After harvesting the flowers, he keeps them in a cold room for about an hour to make them remain fresh. Thereafter, they are removed and sorted according to sizes, and later graded.

“We then package the flowers according to colour and sizes and export directly to the market in Holland, Australia, Italy and Russia. We do not use an agent. A single rose goes for Sh.100,” says Mwititi, who encourages anyone interested in flowers to grow them for both local and international market, though he says it is a capital and labour-intensive business.

The farm he started with just about Sh.9 million on an hectare has expanded to worth millions of shillings and employs 300 workers.

He confesses that the flower farm gives him tranquility as he ages gracefully. “Whenever I come to the flower farm, I just smell the roses and I feel very peaceful. It is the best place to be for a man like me.”

Jenaro Gatangugi, Meru County Executive Member in-charge of Agriculture, Livestock and Fisheries, says farmers who use organic fertiliser enjoy long-term benefits of increased soil humus.

“The urine from the earthworms contains urea, which is similar to ammonia used in the chemically produced fertilisers.”

The fertiliser, according to him, increases the soil surface area, which is the most important part of the soil that helps in holding nutrients to be absorbed by the plant.

“If you want soil with high humus content and more moisture, you must use this organic fertiliser.”

Gatangugi, on the other hand, says dew harvesting is viable as long as the farmer knows how to collect the droplets and has a reservoir.

“Before engaging in flower farming or any other, consult agricultural officers and have the soils tested to determine the best varieties of crops to grow for optimum production,” says Gatangugi as he encouraged young people to also grow flowers.



## 54. How I make Sh. 500,000 every three months from Avocados



The farm resembles a magnificent rainforest from afar, with huge lush-green trees neatly growing in straight lines.

Attention shifts to dozens of pear-shaped green and brown fruits hanging loosely from the branches of the trees as one nears the farm.

“Some of the fruits are ripe, others are not, but I will be harvesting in the next few days,” says Maina Karuiru, the owner of the farm located in Mathira, Nyeri County.

Karuiru is an avocado farmer, who is exporting the fruits to Europe. He has been growing avocados since 2006 after switching from coffee.

“I shifted to avocado after the coffee industry became shaky. I cannot regret having moved since some of my colleagues who stuck to coffee are facing numerous challenges that have made the industry lose its lustre.”

The farmer recalls the good old days when he was growing coffee.

“We used to make good money in 1980s, but prices of coffee have dropped greatly on the international market. Coffee farmers are not making much,” Karuiru says.

To switch to avocados, the farmer uprooted over 500 coffee trees.

“I had been in the horticultural industry for over 15 years. I knew what could make money and I convinced my mother. Neighbours thought it was not a smart move.”

Karuiru grows the Hass Export variety of avocados, which he mainly sells overseas. When he started, he planted 100 avocado trees.

“I bought seedlings from a friend. I increased the number to 222 in the second year. Right now they are 322,” says Karuiru of the trees spread on a three-acre farm.

He says that unlike coffee, avocado farming is profitable yet it requires minimal maintenance.

“The seedlings should be planted during the rainy season for better growth. The spacing between the trees should be seven by seven metres. If the trees are not well-spaced, the canopies will overlap and yields will fail.”

### **LESS TIME TO DECOMPOSE**

During planting, the holes should be filled with about five kilos of manure and one can later add DAP fertiliser for better growth. “I use goat droppings for manure as they take less time to decompose as compared to cow dung,” he says.

He harvests 600 fruits from each tree annually—equivalent to between 100 kilos and 150 kilos of fruits.

The food quality consultant and a one-time technical director of Kenya Horticulture Exporters Association, made Sh.300,000 in every quarter of the year from exports.

A fruit fetches an average of Sh.10 in the export market. The fruits are mainly sold in Middle East, South Arabia, France, Holland and Germany.

“France and Holland are my main markets. I supply directly to the markets about 20 tonnes of avocados,” he says.

This year, he expects to export 12 to 14 tonnes to different countries, which will fetch him at least Sh.500,000 every three months.

Karuiru hopes to start producing avocado seedlings to meet the high demand from farmers seeking to grow the crop. “I have an order of 5,000 seedlings that I cannot meet. Each seedling goes for Sh.200.”

## WHAT YOU DID NOT KNOW ABOUT AVOCADOS

1. An avocado has more potassium than any other fruit. A single fruit has 975mg of potassium, which is double that offered by bananas.
2. The fruits are high in protein. A single avocado has 4gm of protein, which is higher than that in other fruits.
3. Avocados ripen more quickly when placed with bananas or apples. This is because the two fruits release ethylene gas, which helps green avocados ripen rapidly.
4. Antioxidants, amino acids and essential oils in avocado repair damaged hair, keep skin moisturised and minimise wrinkles.

## 55. Noah Chemirmir: I make Sh. 20 million per year selling hay



When he left for the United States in search of greener pasture 15 years ago, little did he know that he had left a gold mine back at home.

Noah Chemirmir, 36, an IT expert returned home after a commercial bank he was working for collapsed during the global economic recession of 2008-2009 that hit the American financial sector hard. He had lived and worked in America after graduating from Collins County College in Texas.

“I decided to return after I lost my job. I wanted to stay in Kenya for six months before going back to America to seek for an alternative job,” he says. However, as he did jobs here and

there in Kenya to keep himself busy, he found out there was no reason to go back to America to face an uncertain future.

And the reason for him staying in Kenya came from a tradition he had watched while growing up and wanted to break. “Every dry season, farmers walked for long distances looking for pasture for their animals. For animal keepers, drought is a nightmare,” he says.

Chemirmir says, as an IT expert, he takes challenges as opportunities and works to provide solutions for most of the problems he encounters. That is how Sochon Farm, Rongai, Nakuru, was born. He grows grass for sale as hay and is also contracted by Kenya Seed Company to provide seeds for the same to farmers.

“I saw an opportunity in pasture growing because many people were moving into dairy farming so the demand for feeds was high,” he says. He now provides a source of income to more than 250 people as casuals on his farm.

He started by growing Boma Rhodes grass for hay at his vast family land. “I started with 20 acres, this year we are expanding to 700 acres,” he says. He invested Sh.800,000, from his savings and charcoal sale. “I harvested around 10,000 bales and sold at Sh.150 each,” he says.

He made Sh1.5 million. Buoyed by the profit, he planted 70 acres in 2011, but poor grass seed quality cost him Sh.500,000. He vowed to always get quality seeds and advises farmers to do the same.

“It is our culture to share seeds but that is not a right call for a farmer looking to make a profit,” he says. According to records, there are about 1.6 million dairy farmers in the country and this, Chemirmir says, has presented great opportunities to hay growers.

Chemirmir, who is also the chairman of the newly launched Rift Valley Hay Association, urged maize farmers to venture into Rhodes grass to cushion themselves during drought.

“We used to grow maize but we encountered a lot of challenges because of poor and unpredictable rainfall patterns, poor yields and poor prices,” he says adding that grass growing is more profitable. He harvests more than about 100,000 bales per year and he gets Sh.200 from each bale. This translates to about Sh.20 million a year.

He is contracted by Kenya Seed Company to grow Boma Rhodes seeds and he sells hay to livestock farmers. On one acre, he plants five kg of seeds and harvests an average of 60kg that Kenya Seed buys at Sh.333 per kilo.

Unlike maize and beans, the common crops grown in the area, Boma Rhodes is less labour intensive. There are four million dairy cows in the country with each cow eating about one bale of hay per day, thus the dairy sector has a huge potential and it contributes four per cent of the GDP.

From experience, he says farmers need to understand the climate of their areas to be able to select the right seeds for hay production. The crop suppresses weeds as it grows, consequently, it is advisable to spray soon after planting.

Nitrogen should also be added into the soil each time after harvesting to hasten the growth process. “I mix seeds with fertiliser when planting using a tractor, spray to curb weeds after two weeks and wait to harvest after four months,” he says. The grass is harvested about four times before it is uprooted.

## **56. Meet class two drop out making millions from farming**



Breathtaking acres of rice paddy, lush green fields of tomatoes, green maize and watermelons and innumerable water canals define Patrick Njeru’s farm in Matandara area, a few kilometres from Kimbimbi market in Kirinyaga County.

To begin with, Njeru, 31, reckons that he would today be a village vagabond. He has no formal education, having dropped out of school at class two. But his successful farming exploits have made him a celebrity of sorts in his locality.



Njeru leases four and half acres of land from different people in the village. He currently has an acre of blossoming watermelon that will mature in a month and an acre and a half under tomatoes about to ripen. He also has an acre of one month-old tomatoes and another under maize, which he sells while green.

The area has black cotton soil and the weather is warm, a combination of factors ideal for the crops Njeru cultivates. If the weather favours him, he says, he expects to make about Sh.1 million in profit by the end of the year.

But the huge profits he makes are a result of months of toil and a huge capital investment that could all go down the drain if the crops fail.

With no farming land of his own, Njeru leases an acre at Sh.16,000 for a year. He has spent Sh.300,000 to prepare his crops, money he has raised over the years through hard work.

“Having grown up in biting poverty and pushed by an urge to lead a better life, I did not indulge in money-sapping pleasures like many youths of my age. I rented land and planted rice which gave me 21 sacks,” he says.

With proceeds from the sale of rice, he decided to rent land in an area where he could plant vegetables and fruits as their returns were better than rice. That was four years ago when he ventured into tomato farming, which gave him good proceeds from half an acre. He invested back the profits and increased his acreage to an acre, ploughing in Sh.200,000 and reaping Sh.500,000. With the profits, he bought a plot of land at Sh.150,000 and built a mud house, moved from renting houses and even got married.

The following year he grew even more tomatoes and green maize and was favoured by a good harvest. “I surprised the naysayers by buying a plot of land at Sh.300,000 and building a Sh.700,000 modern house from the proceeds of my farm,” Njeru says.

But the young farmer says the journey has not always been smooth. He incurred losses in 2013 when he spent Sh.100,000 to plant baby corn but made only Sh.80,000 due to poor prices.

He also incurred losses of Sh.30,000 from tomatoes he had planted in an half an acre land that was attacked by a yellowing disease.

From his experiences, Njeru decided to try his hand on watermelons which he had been told have super returns. Tending an acre of the crop costs at least Sh.50,000 per acre, with the bulk of it being on sprays.

“It involves a lot of labour right from preparing the land, applying manure and fertiliser, watering until rains come and spraying twice per week,” he says.

Agricultural officers recommend a spacing of 120X100cm for watermelon growing, which Njeru adheres to strictly. But due to the frequent watering, weeds sprout up fast and he is forced to weed frequently. Watermelons mature in two and half months and Njeru expects to harvest about 15 tonnes from his current crop in two harvests.

His main challenge? Brokers, he says, who offer as low as Sh.10 and at most Sh.20 per kilo of the melons.

“Imagine how much we lose because a direct buyer can offer Sh.50 for a medium sized watermelon but the much a middleman can buy is at half of that price,” he says.

The father of two says he is motivated to work hard to ensure his children get what he missed – good education. His vision is to save and buy more land for farming in five years’ time. Njeru currently employs between four and 10 people on his farms daily, where he too toils just like them.



## **57. Michael Njau: How I make Sh. 80,000 from farming strawberries in bags**



Michael Njau calls himself an experimental farmer. The 26-year-old does not follow what others consider the normal way of growing crops.

The strawberry farmer grows the fruits in polythene bags in what he says started as an experiment, which has paid off.

“I started growing strawberries in 2010 when I was very broke. I had just quit my work at a bank in Eldoret and I had only Sh.300. I bought 10 seedlings using the money,” he recounts. However, of the plants he bought, four died.

“I decided to put the six seedlings in nylon bags to save myself from losses. I had read from a book that it was possible to grow strawberries in polythene bags filled with soil before transplanting,” says the farmer who is based at Kikuyu, Nairobi.

Interestingly, the seedlings did well. Thereafter, he transplanted the crops, which later produced runners and splits and soon, he had 100 plants.

A strawberry plant takes three months to mature. Farmers are advised to remove the flowers to avoid deformities and to allow the plant to support itself.

“I use rabbit manure and urine as fertiliser. The smaller the animal, the better the manure. I avoid poultry manure because it is too acidic and it will burn the roots and the plants will turn yellow. The best manure is from rabbit, goat, cow or compost,” he says.



During the three month period as he waits to harvest, Njau prunes the old leaves, weeds his plants and waters them.

So far, his one-eighth piece of land holds over 1,000 strawberry plants and he has also set up a greenhouse, which holds another 1,500 strawberry plants planted on the ground.

“I opted for a greenhouse because it protects the plants from the cold season and heavy rainfall as well as pests,” he says.

Njau has lined his greenhouse with a drip irrigation system, which he purchased from a fellow farmer at Sh.6,000.

Having succeeded growing the crops in nylon bags, the farmer is experimenting on a new technology. He is growing strawberry seedlings in the nursery before transplanting them in the greenhouse and polythene bags.

“If you uproot a single seedling with soil from the nursery and plant it directly, it will take two months to mature, unlike the four to six months it takes if planted directly into the soil or polythene bag when the roots are too young.” Each plant gives him seven fruits, which means he gets more than 6,000 from his over 1,000 plants.

He sells 5,000 fruits and leaves the others for home use.

“I grade the fruits, then I only sell grade one and two to hotels and groceries in Nairobi. The rest I use to make jam and juice.”

In a good month, he makes a minimum profit of Sh.80,000.

Njau trains strawberry farmers and charges Sh.500 per head, per session. His greatest challenges are pests and birds.

Livingstone Ekisa, an agricultural extension officer with Ministry of Agriculture, says growing strawberry in nylon bags helps save space and it is easier to control weeds.

“One uses less water since the soil does not lose moisture. The challenge is that if the water does not drain, the roots will die. Also, you need plenty of fertiliser or manure since the nutrients in the soil are limited.”

Prof Richard Mulwa, a senior lecturer at Egerton University's Department of Crops, Horticulture and Soil, notes that growing strawberries in polythene bags is advantageous since it is easier to control diseases, one is able to use refined and superior soil.

## **58. Wanjihia: Learn from me how I turn cow-dung into millions**



48-year-old Dominic Wanjihia is the owner of the eco-resource Centre in Karen called Biogas International CEO Dominic Wanjihia.

A lot of the gadgets Wanjihia has developed since his School years at St Mary's School in Nairobi, have revolved around energy and farming, but it is in the world of biogas that he has cut a niche.

His recent innovation — the flexi-biogas system, a portable tube that processes cow dung and other waste, has come to the attention of outside governments and local manufacturers, some of whom have ordered units in the hundreds for pilot projects.

“The Rwandese government ordered one hundred units from us to distribute to low-income farmers and in schools.”

Wanjihia takes pride in the affordability of his innovation to local folk, as well as its ability to produce more than conventional systems.

“In East Africa, a conventional small system costs about Sh.200,000 but it won't produce enough gas to cook githeri for three hours, and poorer people still can't afford it. Ours comes in

three sizes cost Sh.40,000 for the small, Sh.55,000 for the medium and Sh.70,000 for the large and is enough to cook for hours and do other things.”

Another departure from convention: Wanjihia’s flexi-biogas system needs only one cow on hand to operate and apart from cow dung, it can run on kitchen, chicken, pig, elephant, human and other animal wastes.

“The regular dome systems need four to five cows to produce 1,000 litres of gas. They are constructed underground and you need to own the land. How many people have Sh.200,000 to spare, own a piece of land and four to five cows?”

While other systems take up to a week to install, Wanjihia’s system is up in a few hours and running in days. To generate biogas, farmers put dung and water into the portable PVC digester, which eventually produces a constant supply of energy as long as it is fed daily.

A nature enthusiast, he explains that one of his motivations in engaging in the fuel was to reduce the cutting down of trees, starting explorations in biogas after a challenge thrown by his sister, a wildlife conservationist.

“She asked me to come up with a solution to the rapid deforestation behind the Nairobi National Park caused by Maasai community members who were shedding the nomadic life.”

The community did not adapt his technology, but other farmers took interest in it, encouraging the innovator to go on. Apart from its use in cooking, biogas finds other uses on farms. It is disposed of while at the same time pumping water, powering chaff cutters, milking, cooling and drying machines. Its solid waste can also be used as organic fertiliser.

With the help of a generator, Wanjihia demonstrates to us how it can produce electricity and light bulbs. “You can use it for absolutely anything.”

Embarking on his biogas journey spurred him to come up with more innovations. He built a vegetable and fruit drier, which runs on the gas, a Sh.30,000 innovation that gives farmers an alternative from throwing away excess produce after harvesting. Wanjihia also shows us a biogas powered chick brooder he built to keep newly hatched chicks warm, a large cooker for schools that cuts cooking time by more than half, and a fridge-like cooling system.

He does not see himself as doing anything particularly radical, averring that his inventions are simple innovations of existing knowledge, using local material.

He is enthusiastic about knowledge being accessible, putting the descriptions to some of his designs online on maker websites.

“A lot of the tools I have designed are to alleviate challenges and help people. I don’t have the time or energy to sell these products to people, I would rather they get their *fundis* to make them.”

Choosing not to attend college or university, all his knowledge was self-taught. “I was fed up with being told what to do by teachers. I was a free spirited kid.”

His earlier inventions include a device to talk under water and an overhead bridge for monkeys to avoid getting knocked down by cars, which is used today in Madagascar and Australia. He has also produced tools, water pumps, electric solar devices for fuel, and an anti-malarial device.

Wanjhia is currently setting up a fuel station that can enable tuk tuks to run on biogas. Wanjhia does not give figures for how much these may retail at, but mentions that a large cylinder of compressed gas, which can run four households for a month, sells at Sh.1,500.

“Millions of tuk tuks in India are running on natural gas. What we’ve invented and patented here is the scrubber, which cleans up biogas and turns it into bio methane, which is the same as compressed natural gas. We’re localising the technology at affordable rates”

Localisation and affordability are key themes in his work.

“We put three criteria into the making of things: sustainability, affordability, accessibility. I’ll make everything from here, I’m not going to import anything, apart from the digester where the pipes and tarpaulin are not locally available.”

Plans for a biogas fuel station will take a few months, but he eventually hopes to have a commercial agent model where other people can become independent power producers.

Another plan he aims to implement is to build a floating platform in Lake Victoria, using hyacinth as food stock to produce energy.

Apart from coming up with practical innovations, Wanjihia also wants to inspire and nurture the growth of youthful inventors through Simply Logic, an incubation platform for young techies interested in furthering their inventions.

“Innovators have a very rough time not being listened to and not being noticed. Always being told their inventions won’t work, no-one will give them the break they need.

The majority of people get stuck at prototype level. They don’t have money to make them and are afraid that if they share their ideas, they’ll get stolen.”

His role models are Robert Stirling, the Wright Brothers and scientist Albert Einstein. “They achieved what was impossible; people who basically went against the norm and did stuff that was not supposed to be done.”

For his passion in coming up with affordable, innovative solutions to energy challenges, Wanjihia was awarded the Renewable Energy Innovator of the year award by the World Energy Engineering Congress at its annual awards ceremony in Washington DC in 2013.

The International Fund for Agricultural Development (Ifad) also teamed up with him to install nine systems on dairy farms in Kenya as part of a commercialisation programme for smallholder dairy farmers.

Mr. Wanjihia can be reached through: *0772 700530 or Email: info@biogas.co.ke*

## **59. How we make huge profits from tausi birds**



The inscription Tausi Farm on the gate in Karen Brooks, Nairobi stares back at any visitor or passer-by who cares to look at it.

From the name, one expects to meet several peacocks on the farm, but Tausi Farm has more than the beautiful birds.

Brown guinea fowls, crown birds, mallard and pelican ducks rush to welcome us as we enter the half-acre farm.

“These are our children,” says Mr Muthamia Murungi, whose family owns the farm.

“They help us welcome visitors. We are a large family.”

### **DEVELOPED A PASSION**

Inside the coops are king pigeons, German parrots, lion pigeons, fantail doves, budgerigars, cockatoos, bantams and Egyptian geese and red geese.

“Those ones stay in the cages. We do not release them since some of them may fly away,” he explains.

Tausi Farm easily fits the description of a birds’ haven. The farm is home to over 10 species of ornamental birds, which Murungi, 28, his father Mr Phinias Muthamia, and other family members rear for sale.

“All my life, I have lived in the midst of birds and developed a passion for them. These birds take care of us just as much as we take care of them,” says the Information Technology graduate.

### **PEAFOWL EGGS**

Initially, father and son were keeping chicken, but they realised the venture was not fetching much money since everybody was doing it.

“We kept chicken for 10 years but the business went down when the market was flooded with eggs. It is then that we thought of doing something different. Since our interests were in birds, we did not want to venture outside the sector, which is why we picked on ornamental birds,” explains Murungi.

That many people love beauty also encouraged them to rear the ornamental birds.

“They plant trees and keep neat hedges but something lacks — birds. We realised there was a market for the birds.”

They started the business by importing 20 peafowl eggs from India. Each egg cost them Sh.1,500.

“We brought in the eggs and hatched them in incubators here at home. They were special incubators since the eggs are different from those of chicken,” says Muthamia.

After the birds hatched, they kept them for years to increase the number.

“We started selling the peacocks recently. We brought in the other birds after realising the peacocks were fetching good money.”

With all the four family members working on the farm, their brood has increased since then.

“The cost of rearing ornamental birds is almost similar to chicken, but they are very profitable. A full grown chicken costs Sh.1,000 at most in the market but a pheasant, for instance, which occupies less space goes for Sh.4,000,” explains Murungi, who adds that different birds have various prices.

## **WEALTHY CLIENTS**

“Furthermore, you can pluck pheasant tail feathers each month and sell them to decorators.”

Demand is huge for the birds both locally and across Africa. The family gets orders from Rwanda, Ethiopia, Uganda, Somalia, Tanzania and Madagascar.

“There is no single day we have received less than five visitors who either want to admire the birds, learn or buy them,” says Muthamia.

## **SMALLER THAN A FIST**

On a bad week, the Muthamias sell a minimum of 10 birds mostly to wealthy individuals, entertainment joints or corporates. They also sell eggs to other farmers or Chinese restaurants, which deal in exotic birds’ products.

Smaller than a man's fist, the Budgerigar is the cheapest bird you can buy from the farm. The small, long-tailed, seed-eating multi-coloured Australian bird with scalloped markings on the nape, back, and wings, with an ability to mimic human speech costs Sh.3,500.

Each of the five blue Indian Peacocks, which gave the farm its name, costs Sh.100,000.

Former Vice President Kalonzo Musyoka and former presidential aspirant Raphael Tuju, are among the Muthamia's customers.

"Besides beauty, the male peacock feathers, which fall off on their own after every breeding season are very popular in weddings. A number of event planners order them," says Murungi.

The family is keen on increasing the number of mallard ducks, whose eggs they imported from the US, a venture they say is untapped.

### **QUIT COOKING JOB**

"Their feathers are used to make fishing hooks but you need many birds to for such use. However, there is a deficit in the country because manufacturers import them from France at Sh.20,000 per kilo," says Murungi.

The business caters for all the family needs of the Muthamias, as Murungi follows in the footsteps of his father.

In October 2012, Murungi resigned from his work as a computer systems administrator and joined his father in the business.

Muthamia had done a similar thing in 2002 when he quit his job as a cook at Kenyatta National Hospital to keep hens.



## 60. The secret to earning huge profits from mushroom farming



Mushroom production in Kenya is still in its infancy stage although it is picking up as consumption rises.

Two types of mushrooms are grown in the country; button and oyster. Of the two, button is the most popular with its production standing at 476 tonnes annually although the country has a total potential of 100,000 tonnes.

Characteristics of button mushrooms are: it has a smooth rounded cap; gills are free from the stem, with the mushroom being pinkish brown at first and later turning dark brown to blackish when mature; the stem is thick, sturdy, smooth or with small scales below the ring; its flesh is white and firm and lastly, its flavour is mild when raw and more fragrant and meaty when cooked.

On the other hand, the oyster mushroom has: Oyster/fan shaped cap; the cap is smooth with no warts or scales. It is usually white to light brown with firm white flesh; the gills are white and are attached to and running down the cap and stem and lastly, it may not have a stem and if it is there, it will often be stubby and off the centre if the mushroom is growing on the side of a log.

The most important thing in mushroom production is high quality spawn. A good spawn will make the venture profitable because for each kilo of mushrooms, a farmer earns between Sh.600 and Sh.800. Vegetarians, Indian restaurants, supermarkets and ordinary restaurants are potential markets.

Mushrooms contain protein content of 3-7 per cent when fresh and 25-40 per cent when dry. It further contains essential amino acids, amides and lysine. It is low in sodium, thus, ideal for people with heart and kidney ailments, and has iron, calcium, potassium, phosphorus and folic acid.

## **STAGES IN MUSHROOM PRODUCTION**

### **(i) Compost preparation**

This is prepared to provide the crops with a place to grow. The bed must have nutrients suitable for the growth of the mushrooms. Wheat straws are commonly used to make compost because they are locally available. The ingredients needed are: 250kg wheat straw (chopped 8-20cm long), 20kg of wheat/rice bran or cotton seed meal, 3kg of ammonium sulphate/calcium ammonium nitrate, 3kg of urea and 20kg gypsum.

Mix thoroughly the ingredients as you add water. The compost should be piled into stacks measuring about 1.5 by 1.5m. The compost should be turned regularly to allow for aeration and proper watering. This also allows the wheat straws to be moved to warmer parts of the pile. Here is the guide for turning:

#### **Turning Day**

First	4
Second	8
Third	12, add 10 kg, gypsum
Fourth	16, add 10 kg, gypsum
Final	20

Gypsum reduces greasiness that the straws would otherwise have and is a conditioning agent. Cotton seed meal supplements nitrogen while ammonium nitrate and urea are added at the beginning to provide a ready source of nitrogen. The by-products of composting is ammonia and heat, so you should expect the temperatures to rise.

The compost is ready when the straws become easy to bend, have a high water-holding capacity, the colour changes and becomes darker, and has a strong smell of ammonia. The compost should then be packed into clear bags to enable the farmer to see the changes going on

and to identify diseases and infections easily. The bags should then be taken to the mushroom house/building and placed on “shelves”.

### **(ii) Spawning**

This is the actual process of planting the mushrooms. The spawn is spread on the surface of the compost, but it slightly penetrates the surface. You can do this by making a small hole using your finger and planting the spawn. The temperature of the room should be maintained at around 25 degrees Celsius. A humidifier should be used to make the room humid and if the gadget is not available, water can be manually sprayed on the walls and floor of the room.

### **(iii) Casing**

Once the spawn has attached to the wheat straws and looks like a white substance, soil is added to the surface of the compost. A layer of soil is needed and forest soil is preferred. However, the soil has to be treated to rid insects. Formalin solution can be used to sterilise the soil before casing is done

### **(iv) Growth and harvesting**

Mushroom is harvested several times throughout its lifetime. What are harvested are called flushes. The first flush comes 15-20 days after soil casing and 35-40 days after spawning. Mushrooms should be harvested at the right size, otherwise they will become too big and rapture. Each bag should produce at least a kilo throughout its lifetime. The harvests can go up to the fifth flush. It takes approximately 15 weeks from composting to end of harvesting.

A mushroom house should not be close to a cattle shed because the flies from the cattle can contaminate the mushrooms. One of the biggest challenges in mushroom production is getting quality spawn. Besides several private farms, farmers can get spawn from Egerton University, Biological Sciences Department.

## 61. Onion farmer expects to reap Ksh 2 million



Daniel Gakuu’s parents wanted him to be an accountant. They worked hard to ensure that he pursued the course to completion. But that was never to be.

Instead of being called an accountant, 44 year-old Gakuu is popularly known as Farmer Number one.

This was after the farmer from Kinyaiti village in Kieni West of Nyeri County ventured into smallscale farming in 1991, specializing in onion farming. He turned down all job opportunities that came his way. And whenever he got a job, he resigned soon after employment. Today, he is one of the most prominent onion farmers in the County.

He started with less than an acre until 1998, when he increased to one and a half acres.

“ This motivated me and together with my wife we resolved to expand the land under onions to three acres the following year,” says Gakuu. But this year’s venture was not a walk in the park. Gakuu incurred a huge loss due to rains shortage which hit the country due to La Nina effects following the El Nino effects in 1997. This prompted him to seek employment as a farm manager so as to source for capital.

“I regard challenges as a chance to learn new things and so I used my stint in employment as an opportunity for exposure. During this period, I met many people who turned to be very educative to me. They included seed companies’ officials and agricultural officers,” he explains.

In 2009, Safari Seed Company conducted a research for the Red Tropicana F1 onion variety which turned out to be a major success. They requested him to be one of their marketing agents to be selling their seed to other farmers as he was a good witness and model to the locals.

This was his turning point. They sent him seeds worth KSh 200,000 from which he got enough capital and went back into onion farming in full force. He distributed the seeds in the entire County. Since then, seed companies have been using him to research for their new products before introducing them into the area.

In 2010 and 2011, Gakuu grew onions on a 4.5 acre piece of land, which had a bumper harvest. From this harvest, he reaped a net profit of Ksh 900,000 after spending KSh 200,000.

“Not many of my fellow farmers who grow onions ever harvested over 3,000 kilos in an acre due to various challenges. Consequently, this earned me the nickname farmer number one,” he reveals. Through onion proceeds, he has bought a personal car and a pick up. He uses the personal vehicle for his other work while the pickup is used to transport workers to the farm.

The father of five has also managed to educate four children to secondary school. Two are his while the other two are his sister’s. He is optimistic that he will educate them to university level. He has also built a decent house where he stays with his family.

His popularity has made him known far and wide.

The farmer is now an onion farming consultant in his own right, where he provides consultant services to area residents including some prominent personalities on onion growing.

He has also managed to employ over 30 casual workers.

“But we do have various challenges, where one is the issue of labourers who have been a headache to us. They are the ones who dictate charges during planting seasons where they demand between KSh 300 to 400,” he complains, adding that in other areas, labourers earn between KSh 150 to 200 in a day.

However he is quick to add that: “We are glad that many of our youth have ventured into onion farming which has brought down cases of crime in the area as it has drastically reduced idlers. They have been growing onions whose proceeds they use to purchase motorcycles (boda bodas) as well as raising money to pay dowry among other uses.”

Other challenges include high farm input prizes and lack of warehouses for proper storage of their onions. They thus sell them at a throw away prizes to avoid damages in the farm.

“But we are optimistic that most of the problems will soon be over, following intervention by a company known as Farm Concern International which came in the area in 2007. It brought most of the solutions to our problems,” says Gakuu.

According to the company’s representative in the area Gerald Watoro, it is a market development agency that focuses on empowering small scale holders to commercialize farming activities by assisting them to produce quality and quantity harvests as well as linking them directly to buyers.

It offers farmers technical advice on construction of storage facilities which has helped add value to their onions by prolonging the products shelf life. This enables the farmer to keep the produce and sell them when the price improves.

It links the farmers direct to buyers eliminating brokers who earlier ended up with the lion’s share of their proceeds. The elimination of brokers has seen the prizes of onions improve from between KSh 3 and 5 to about KSh 20 to 30 per kilo.

It introduced a programme known as Domestic Horticultural and Market programme which uses commercial village model as a vehicle to empower the community to develop an economic block to achieve the desired volumes for markets and organization structure within farming communities according to Watoro.

Gakuu says that before the company came into the area, farmers used to plant the Open Pollinated Variety (OPV) onions which were a low yielding variety. The variety produced as low as 1,500 Kgs unlike the current hybrid varieties which is capable of producing about 10 tones of onions in an acre, thanks to the company’s advice.

The hybrid variety matures in four months compared to OPV variety which matures in six months.

Currently, Gakuu has put 10 acres under onions where he expects to reap about KSh 2 million. The farmer expects to sell them at KSh 30 a kilo. He is also preparing three more acres soon.

His future prospects are to open a consultation firm where he expects to help more people from the county to venture into Agribusiness. The farmer says that he spent most of his time in people’s lands guiding them on how to grow the crop.

He also hopes that the current season will have a bumper harvest and intends to buy a more powerful transport vehicle which will thrive in the dusty areas of Mweiga.

## **62. George Otieno: How I make Sh. 150,000 from rabbit skin bags and shoes**



The Kenya Industrial Estates in Kakamega town is a busy complex. It hosts all manner of small businesses run by several artisans. Here, you will find fashion designers and metal and furniture workshops.

It is in this complex, located along the busy Kakamega-Webuye road, that George Otieno has constructed his Maguna Shoe Craft mini-factory, where he makes footwear from rabbit, goat, cow and sheep skins.

However, of all the products, those made from rabbit skin are his forte. Otieno has employed eight young people whose work involves designing new shoe patterns while others cut the leather according to the size. He has been in the shoes business for close to two decades, but he only ventured into the leather business two years ago.

Rising from a cobbler to owning a shoe-making workshop, Otieno has cut a niche in the leather business in the region. “I sell various rabbit skin products ranging from shoes, belts, handbags, caps and wallets,” says Otieno, who learnt the trade after attending a conference in Nairobi organised by the Kenya Leather Development Council and Comesa in 2013. This was followed by several seminars on shoe making and value addition.

After acquiring knowledge on shoe-making, he started sourcing for raw material — rabbit skins from farmers and soles. He invested Sh.1 million. He acquired a loan of Sh.300,000 from Equity Bank and topped with up with his savings.

Before venturing into shoe making business, Otieno used to export fruits to Tanzania and Uganda.

### **FRESH RABBIT SKIN**

The products he makes from the rabbit skin include open shoes, handbags, wallets and belts. The cost varies. For instance, a pair of shoes goes for Sh.2,500, while a handbag sells at Sh.3,500.

Otieno says he buys the soles and inner linings in bulk at Sh.250,000 from leather and sole industries in Nairobi. According to him, soles worth Sh.50,000 can make at least 120 pairs of shoes.

To make shoes from rabbit skin, he buys fresh skin from farmers. All types of rabbit skin can be used, but he prefers skin from the Chinchilla breed.

“I buy fresh rabbit skin. I turn it upside down and spread some industrial salt on it,” he says, without divulging specific amounts as it is a trade secret. “The skin then bulges after 10 minutes. Then I take it for drying in a room.”

He thereafter taps and scrubs the skin using sandpaper, then adds dye. From there, he designs shoe patterns on the leather using cut-out on manila paper. The rabbit leather is cut into the required sizes.

The leather is then sewn up, sprayed and allowed to dry under the sun for 10 minutes.

A tonne of rabbit skin costs Sh.200,000. He sources for it from farmers in Kitale, Eldoret and Bungoma.

“I buy per piece, with each retailing at Sh.250. Two pieces can make two pairs of open shoes like the ladies’ gladiators. I sell them at between Sh.1,500 and Sh.2,500,” says Otieno, adding that the proximity of his workshop to Masinde Muliro University of Science and Technology has given him a boost.



“In a month, I can make up to 600 pairs of shoes from two tonnes of rabbit skin. In a day, I can make up to 35 pairs of shoes.” In a month, Otieno makes an average of Sh.150,000 from his trade.

## **GOOD MONEY**

Brian Otieno, one of his workers, says he enjoys making the shoes. “I learnt the skill from my boss (Otieno) and I look forward to pursuing a related business in the near future,” he says.

George Waithaka, who keeps rabbits at his Kitale farm, supplies rabbit skins. “I have about 1,000 Chinchilla rabbits and supply meat and skin products to my clients across the western Kenya region,” Waithaka says.

By selling the skins on top of meat and urine, he makes good money from the bunnies. George Wanjala, a research scientist at Kenya Industrial Research and Development Institute (Kirdi), says skin from mature rabbits is most ideal for product development because it is durable. He says pelt (skin) destined for dressing should be the best skin, sorted early after slaughter.

## **63. David Muruli: I’m harvesting millions from my 26 acres of arrow roots and 1,200 chickens this year**



With his imminent retirement from Nairobi where he has spent nearly all his life, veteran educationist and publisher David Muruli has set up a jungle of arrow roots to supplement his pension with “green millions”.

His farm, christened Bunyore Riverside Agricultural Development (Brad), is green with thousands of blossoming arrow roots, popularly known as nduma.

Muruli's goal is to create an agribusiness empire on his 26-acre farm. His flagship produce is the arrow roots which he has set aside 10 acres for. Unlike surrounding farms where arrow roots grow without being tended to, Muruli has given his crop enough care. "I looked around Nairobi and realised residents yearn for food that are considered traditional. Such foods have become rare and consequently expensive as years go by," says Muruli in Emusutswi village, Vihiga County.

"Arrow root farming has not been taken seriously in Vihiga and other neighbouring counties. It is a noble venture farmers should try out."

Although he has spent a fortune on the farm and is eager to recoup his investment, Muruli says he is in no hurry as he knows the returns will be good.

"The fact that I have not even harvested the crop is scary, but I am not afraid. We will see how it comes out in the end and learn a lot from the first harvest," he says.

His expansive farm is the envy of many as it also holds six huge fish ponds, tissue culture banana plantations and more than 1,200 layers.

"We are food insecure in this county because we depend so much on maize, which does not yield much," he says.

His passion for arrow root farming led him to Tanzania from where he brought giant variety of the arrow root. This, he says, supplements the crop he planted from locally available indigenous seeds. "I had plenty of an open field which, coupled with the loamy soil, is ideal for arrow root farming. Clay soil induce poor rhizome development," he says.

Arrow roots are not susceptible to serious pest attacks, apart from moles and ants which are easy to control. "The crop takes up to nine months to mature. But if one wants a much higher starch content, the best time to harvest is after the plant is one year old," he says.

As it is the norm of Kenyans to have a cup of tea in the morning complemented by well cooked nduma, Muruli knows he has a ready market for his crop. He expects an initial harvest of 10 tonnes and is targeting the Nairobi market where arrow roots are a favourite at breakfast tables.

With a single arrow root selling at an average of Sh.100 a kilo, Muruli knows he is in for a bumper pay once his arrow roots are ready for harvest.

The nduma, he says, has given him a perfect beginning for a life in retirement away from the fast paced bustle of the city.

## **64. Charles Wathobio: How I make Sh. 100,000 profit per month from goat milk**



Had his son not been affected by cow milk, Charles Wathobio would not be involved in dairy goat rearing today. Although he loved livestock during his childhood, Wathobio never thought of keeping animals in future.

His entry into dairy goat keeping started in 2005, after his son developed complications due to taking cow milk. “He had been ill for sometime but after diagnosis, it was discovered that he was allergic to cow’s milk,” he says.

To treat the problem, the doctor recommended that he takes goat milk. Goat milk was recommended because it does not have much cholesterol like cow milk. But getting goat milk was a headache.

“I traveled far and wide in search of this white liquid and whenever I got it, it was very little,” says the farmer. It was then that he discovered a serious supply shortage of goat milk yet the demand was there.

Mr Wathobio resolved to start keeping goats to produce enough milk for his son and sell the surplus.

He started researching about goat rearing. To roll out the project, Mr Wathobio used over Sh.100,000 to buy four alpine dairy goats from Dairy Goat Kenya in Nyeri.

He also bought feeds and a structure for the animals. He says within one year, his stock had doubled, because goats give birth to twins and triplets. And in two years, he had over 20 goats.

Realising the population of goats was higher than his structure could accommodate, Wathobio took some goats and started another goat dairy farm back in his rural home in Nyeri. Today, his Nyeri farm has 34 goats, while those in Rongai are 12.

“I have more goats at my rural home because there is enough space, compared to Rongai where there’s little space,” he said.

Interestingly, he says the 12 dairy goats in Rongai bring him more profit than those in Nyeri. How so? one may wonder.

He says in Rongai, one litre of goat milk costs Sh.200 and above, while in Nyeri it is less than Sh.100. And at times, the price can be as low as Sh.50.

On average, each of his 12 goats give him three litres of milk in a day, therefore totaling to 36 litres. Mr Wathobio reveals that he pockets at least Sh.100,000 profit in a month. He says the returns are high, while their labour is nearly zero.

“The only work involved is feeding and milking the animals which takes less than two hours. Once I have fed, milked and cleaned their shed in the morning, I can go on with my other activities uninterrupted till evening,” Wathobio says.

To get more milk, he feeds his goats with dairy meal, in addition to proteins, such as soya and minerals. He says minerals are extremely important for lactating goats.

“When you add some minerals, they eat little because there are enough nutrients in the food. And if nutrients are little in the feed, they will eat a lot of feeds to compensate for that shortage,” he explains.

Wathobio sells the milk to individual clients and some institutions.

Although he is settled and making good profit, he says the journey has not been all rosy.

“At first nobody wanted to buy my milk because it was new to them. Some people did not even know goat milk can be consumed by humans. I had to put posters all over the town advertising my produce and its many benefits. I have realised you must advertise your goods for

people to know. That aggressive marketing is what opened a market for me,” says Wathobio, who is trained in marketing.

Today, he has more clients and at times he’s forced to outsource milk from friends and fellow farmers to satisfy the market. He also travels to his rural home frequently to collect milk for the Nairobi market.

To meet client demand, he has also opened a goat milk kiosk in Rongai and sells his milk through online platforms like Facebook.

To farmers who want to keep goats, Wathobio says the secret is feeding them well, to ensure they stay calm so that they can produce lots of milk.

“For the goats to produce plenty of quality milk, they need to be well fed and stay in high spirits. If I hear my goats making a lot of noise, I know that something is wrong. I have to make them calm otherwise the milk output will be very low,” he explains.

Wathobio uses artificial insemination to get healthy goats and also keeps a breed called alpine goats. “Alpine dairy goat are the best to rear because they are resistant to tropical diseases,” he says.

To get maximum benefit from value addition, Wathobio also makes yoghurt and sells a litre at Sh.400.

One of the challenges he faces is that goats give birth to twin or triplets yet they don’t produce enough milk for the young ones. At times, he is forced to buy cow milk and mix it with goat milk so that he can feed the infant goat.

He warns, “If they suckle all the milk, you will have nothing to sell.”

Another challenge is that good affordable veterinarians are hard to come by.

Whenever his goats are unwell or are having a pregnancy complication, he is forced to hire a vehicle to take them to a vet stationed miles away and their services are expensive.

To boost his knowledge and skills on animal production, Mr Wathobio enrolled for a related course at Egerton University, and now he has a wealth of information on urban goat farming and trains other farmers on the same.

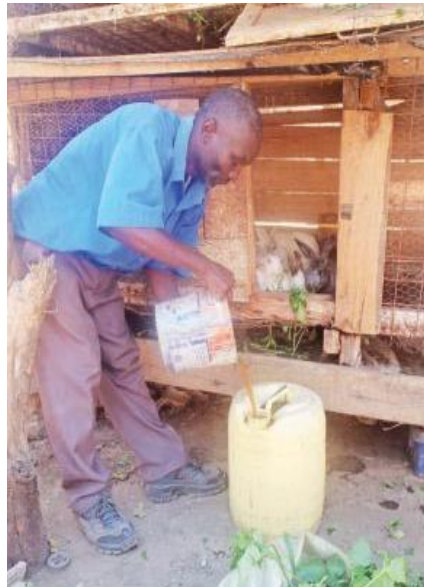
For those interested in this venture, he advises them to start with the little they have and if they do not have land, they should lease.

“Saving to start a project is tricky, because it takes a lot of time and by the time you are through with saving, a lot of market dynamics have changed,” he notes.

Wathobio, 43, has partnered with a group of people and are now constructing a goat milk processing plant.

Once the structure is ready, he says the team of farmers will tap into economies of scale and value addition.

## **65. Peter Maina: rabbit urine is not mythical, it’s a cash mill**



Peter Maina pours a brown liquid into a 20 litre container slowly to avoid spilling it. It takes him about five minutes to fill the container with the liquid that looks like dirty water.

“Now I have 200 litres, I have five more 20 litre containers to fill,” says Maina with a sigh of relief.

Maina is a rabbit farmer in Kariobangi, Nairobi. However, he does not keep the rabbits for sale but he harvests their urine.

He went into rabbit farming so that he can sell them as they fetch good money.

But mid into the venture, he discovered that he can make more money from selling rabbit urine, which is used to make organic fertiliser.

The farmer owns over 60 rabbits comprising of California White and New Zealand breeds.

“Managing the rabbits is not labour intensive due to their calm nature and they rarely fall sick. I intend to have 100 rabbits so that I can boost my production. I will also sell the rabbits,” says the father of five, who invested Sh10,000 into the business, in January.

He has constructed the rabbit pen such that urine sips through the wire mesh, into the corrugated plastic sheet, to the gutters and finally into buckets.

Rabbit urine is highly corrosive, thus one must use materials that do not rust when constructing the pens.

In a month, he collects up to 300 litres of urine, which he carries on his pick-up truck to a depot on Ladhies Road for transportation to Eldoret, where the factory that processes the urine is located.

“I have delivered about 2,000 litres of urine to the processing plant and I am now waiting for my pay cheque,” says Maina, who bought the animals from Kinangop, Kiria-ini and Nanyuki.

The urine the farmer produces is used in the making of Rabbits Urine Extra, an organic liquid manure, which was unveiled recently.

The manure is manufactured from urine produced by farmers in Bomet, Eldoret, Nairobi and Kisii counties.

“Plans are underway to open two such factories at Dagoretti and Ruai in Nairobi in the course of this year,” says Robinson Runyenje, the developer of the fertiliser.

The fertiliser is produced by Kenya Com Rabbit Consortium Limited.

Runyenje, the chief executive at the consortium, says he conducted research and realised the organic fertiliser in the market was not made from rabbit urine.

“The fertiliser is rich in various elements including macro and micro nutrients that can be used as foliar feed and soil conditioner,” he says.

According to him, rabbit urine can end farmers’ reliance on NPK and CAN fertilisers whose prolonged use leave the soil unhealthy.

“As it is, our soils are facing an acidity crisis. Farmers are using a lot of money to reclaim their soils and make them useful,” says Runyenje.

To supply the company with rabbit urine, farmers have to register to be members.

“They are paid Sh100 per litre of urine supplied, alongside a bonus that will be given quarterly,” he says.

The idea is getting the farmer to sell directly without going through middlemen, thus enabling the farmer to earn more.

“Value addition is key to reaping better returns since it allows farmers to be in control of the price the product retails at,” says Runyenje.

He notes that by selling their urine, rabbit farmers reap twice.

“In a few weeks, the fertiliser will be available in agrovet shops and supermarkets in packages of 500ml, one, five and 20 litres,” says Runyenje, who got clearance from the government to sell the product.

To use the fertiliser, one mixes it with water in the ratio of 200ml of manure to 20 litres of water. This can spray an acre of land. The mixture is put in a pump and sprayed on the crops.

The spray should be done early in the morning and late in the evening as this is when the stomata are open. The leaves take in the manure directly while the rest is absorbed by the soil.

“Since it is a foliar feed, the spraying should be done at different stages of growth. For instance, in fruits, it should be done at sprouting, colouring and flowering stages,” says Runyenje.

With time, there will be no need to use fertiliser as the soil will be rich in essential nutrients absorbed from the rabbit urine.

It is advisable that the mixture is used the same day it is made since it has some potent elements that could be harmful. The beauty of it is that rabbit urine has no expiry date as long as it is kept covered after harvesting to preserve ammonia. Runyenje opted for rabbit urine rather than goat or cow due to the ease of harvesting.



## **66. Danson Kithinji: I make Sh. 600,000 from selling bee hives**



Having lived in the city for eight years, Danson Kithinji never thought that he would ,one day, return to the village to farm. But the 2007/08 post-election violence forced him out of Nairobi city to his rural home in Kavutiri village, Manyatta constituency, Embu County. “I returned home and decided to try my hand in bee keeping.

I had some experience in this because the relative I was living with in Nairobi’s Kawangware was doing it,” he says. In 2009, he established Nyukiz Care Services project a journey, which was filled with various ups and downs before he finally became a respected bee farmer in the area. “Starting was not bad because I had some experience. I had done beekeeping for the years while I lived in Nairobi. I knew the tricks of the game. But my focus was making and selling bee hives,” he says.

Kithinji used his Sh.5,000 savings to buy timber, which he used to construct five bee hives. “I went round my neighbourhood and managed to sell all of them making Sh.25,000. I bought more timber and built 15 hives, but it was not easy selling them. It took some time before I sold all of them,” says the farmer.

When the hives were not selling, he got discouraged and almost gave up. “There was a time nobody was buying my hives and at some point, I wanted to quit. But somebody advised me to go to the Ministry of Agriculture offices and they would advise me on what to do,” he says. The ministry gave him valuable insights and offered to train him on marketing the structure. He

was also trained on how to come up with modern beehives that stored more honey, which was easy to harvest. That was his turning point.

“After that experience, I started making modern hives and people noticed that they were more superior than the traditional one. Slowly I started making good sales,” he says. After a year in the business, he started getting good returns. He now has clients from his home area and has orders from as far as Uganda.

Between September and December last year, he sold 120 hives at Sh.5,000 each pocketing a cool Sh.600,000. Farmers also flock his farm to learn about best practice in beekeeping

Kithinji uses pine and cypress to construct beehives since it produces some scent that attracts the insects. After, selling bee hives to his customers, he stocks them with bees and advises the farmer on good bee management. “I have constructed my own small-sized bee hives, which I have placed on top of my house to trap bees and transfer to customers’ hives to ensure their hives are stocked. I sell hives stocked with bees at Sh.6,000 each,” he says.

His apiary, which has 40 modern hives is situated at a forested area. Other than making hives, he also keeps bees. He harvests honey after every four months and sells each kilo at Sh.600. In December last year, he sold 200 kilos of honey. So what is his secret to being a thriving bee farmer? “Easy. I harvest my honey in four months yet it normally takes six to seven months. The trick is to place the hive near a source of flowers and water. Bees also love a cool environment so direct sun light is a no-no,” he says.

Kithinji challenges other youth to embrace the venture because it is promising. Njaunini Kimotho, a bee-keeping officer based in Runyenjes Sub-County, agrees that bee keeping is rewarding fetching high returns if farmers get it right. “Unlike other farming ventures, bee keeping is stress-free. If you make an apiary near a forest, you are assured of plenty of honey because the bees have easy access to nectar,” he says adding the venture is viable in a small piece of land. Kimotho says the hives should be placed where the farmer can easily reach and harvest within shortest time. “They don’t need heights for easy harvesting. One and a half metres height is good,” he says. The major challenge in bee keeping is honey badgers. To curb this, Kithinji uses galvanised wire to suspend the hive.

Sugar ants and safari ants are also a menace, but he smears grease on the wire and applies ashes at the base of the trees around the apiaries.

## **67. Farmer makes Sh.120,000 from farming sweet potatoes**



You will likely find Fredrick Nyaga touring his eighth-acre sweet potato farm, changing water sprinklers from place to another or mulching when you visit him. “A sweet potato farm needs covering to prevent soil erosion,” he says, showing us the effects of growing the crop without covering the soil. It is this attention to detail that has turned his small piece into a profitable venture.

Nyaga started growing sweet potatoes in 2012 after his tomatoes let him down. “I love sweet potato farming because it is less labour-intensive compared to a tomato project. With tomatoes, you have to keep spraying because it is prone to attacks from diseases and pests. For sweet potatoes, you need to provide soft soil and you are good to go,” he says. Last season, Nyaga who grows KEMP-9 sweet potato variety, which he harvests three times a year, sold 600 kilos with each kilo fetching Sh.200.

This variety, according to him is on high demand. Nyaga, a father of three, owns a half an acre of land in Kawanjara Runyenjes, Embu County. Though he is an electrician by profession, he loves farming. “I get satisfaction from farming. It is the backbone of my family as I get almost everything from the farm.” When he was growing tomatoes five years ago, he would fetch very little profits. “Tomatoes are a common crop here so the demand is low and thus, it fetches poor prices.

On the other hand, sweet potatoes are on demand all year round.” Before he ventured into sweet potato farming, he did his research to establish the market availability. “I understood that many supermarket shelves were stocked with vegetables. Very few had sweet potatoes. After that

discovery, I invited an agricultural extension officer who advised me on the basics of sweet potato farming. Afterwards, I immediately started growing them.”

To increase his knowledge on sweet potato farming, the 39-year-old attends ASK shows and exhibitions, which offer him valuable lessons. Last season, he raked in Sh120,000, an amount he has never received when he was a tomato farmer. At the moment, his main clients are supermarkets and other business people in Embu County. Nyaga grows his sweet potatoes in rows spaced at ten to 12 inches apart. He says, “Space is very important and triggers optimum yields.”

To ensure his crop is of high quality and popular in the market, he does sufficient watering and mulching. This strategy ensures he gets huge sweet potatoes that enables him get more than 500 kilos per harvest. Obed Njamura, an agricultural extension officer based in Kyeni Division, Embu County concurs with Nyaga’s sentiments. The officer says the crop thrives where there is a lot of water. He adds that most sweet potatoes diseases affect the roots. “Fungal leaf spots are common, but a farmer can ignore them as they clear on their own. Fusarium wilt is another common sweet potato disease. To deal with them, a farmer needs to use virus-free transplants and also be keen to isolate planting. Soft soils are also good for sweet potatoes,” he says.

## **68. Harrison Kamau: my geese give me profit and security**



Harrison Kamau rears 38 African geese for commercial and security reasons. “Goose are good at protecting one’s farm, and like dogs, they are very loyal to the owner. They are good at the work because they have big bodies and long necks that scare strangers and their beaks are sharp.”

According to experts, the bigger the flock of geese, the better the security they can offer. However, the birds must be fed well for them to identify strangers and be aggressive.

In China, police are using geese to patrol streets and homes because the birds are brave and vigilant. “Geese have a good sense of smell. It is always good to introduce members of your families or frequent visitors to them to avoid conflict,” says Wesa, who last December won an award for how he is utilising his farm in a competition organised by Elgon Kenya Ltd and Ministry of Agriculture.

Wesa says the birds have on many occasions kept away intruders from his home. The farmer feeds his geese on napier grass and the various mashes available in agrovets.

“Every bird hatches up to 10 chicks in four to five months. Their gestation period is between 28 and 35 days and mine hatch mainly in May and November,” says the farmer, adding that the birds’ chicks have higher survival rates than those of chickens. They take four to five months to mature.

Wesa sells a mature goose weighing an average of 15kg at between Sh3,000 and Sh5,000. He sells about 10 birds per month.

The male goose fetches a higher price than the female one, says the retired school teacher.

“I embraced geese in 2012 after visiting my sister-in-law in Eldoret. She gave me two geese, a male and a female. I had eight chicks four months later and the brood has increased since then, despite me selling many of them,” says Wesa, adding that the birds are helping him enjoy retirement.

“Geese like greens that include vegetables and napier grass. One should also provide a pool of water where they will swim and cool their bodies.”

He spends Sh2,000 monthly to purchase feeds to supplement the green fodder. A 70kg bag of layers mash feeds the 38 birds for over a month.

Besides geese, Wesa also keeps 50 turkeys, other birds that offer his home security. He sells each at Sh4,000.

Tobias Omune, a livestock expert in the Ministry of Agriculture, Kisumu office, says the birds, as other livestock need good nutrition and care.



“What most farmers do not know is that each goose requires 160g of feeds per day to enable them mate and be in perfect health. The amount of feeds they consume per day will depend on the duration that they mate.”

Omune says that greens are a source of vitamins for geese. He notes that 80 per cent of feeds should be cereals.

“The birds should be fed on both plant and animal proteins. Plant proteins include soya beans while animal ones omena. Minerals, water and carbohydrates should also be offered,” he says, adding that geese and turkey mostly mate in isolation, thus, farmers should be able to cater for this.”

## **69. From Jua Kali mechanic to Multi-million apple business**



FIFTY six-year old Peter Wambugu Kago does not boast of a university degree or even a certificate from an agricultural institute, but he is a global celebrity in his own right.

He trained as a Jua Kali mechanic in Nyeri Town after working as a farm hand for several years following completion of primary school education in 1976.

But today, prominent farmers from various parts of the world troop to his Ihwa Village home, Tetu District, Nyeri County to purchase apple fruits, seedlings as well as seek technical advice on the crop husbandry.

He has managed to improve the local variety of apple plants following years of research.

At first, Wambugu started by growing coffee, tomatoes, tree tomatoes and passion fruits among other crops on his two acre piece of land, which he says was not very rewarding.

He decided to try his hand in apple business after he won a tender to supply fruits to Mt Kenya Safari Club in Nanyuki.

Though the other types of fruits were in plenty, apples proved to be hard to get.

“I used to buy South African apples at Ksh.20 and supplied them at the same prize so as to retain the tender, but realized I was instead incurring huge losses by the end of the day. I decided to be buying them locally which were not of much help either,” he narrates.

It was then that he resolved to grow his own apples so as to meet the demand.

He unsuccessfully strolled in Mt. Kenya forest searching for wild apples.

Wambugu however never gave up and proceeded to Aberdare Forest where he found two trees believed to have been left behind by white settlers.

It is alleged that the valuable trees were transferred into the forests by Europeans to keep them away from Africans after sensing that freedom was coming.

He improved them by grafting with a variety from Israel that was given to him by a friend. The product was named after him by Kari officials, Wambugu Apple. The new variety matured in only nine months unlike the local type which would take over 23 years to produce fruits.

“I first started by growing 12 trees whose fruits were readily accepted in the market due to their sweetness. This motivated me to plant more trees. By then I had already lost the tender as I could not meet the demand, but I resolved to keep on trying and propagated even more seedlings,” he maintains.

The farmer used to hawk the fruits in various towns which includes Nairobi, Nanyuki, Naivasha and Nakuru among other major towns in the country.

He said he was motivated to keep up the work by a white man who saw them and upon inquiring their source, he told him they fetched good money in the market.

The stranger went ahead to insist that they are used in preparation of wine, juice and flour.

“I grew more seedlings as demand for fruits and seedlings grew every other month. I sold seedlings to prominent farmers from countries such as Canada, Denmark, Switzerland, Zaire, Uganda and Tanzania among other,” he claims.

Currently, Wambugu has a nursery with over 5,000 seedlings.

He sells a single seedling at Ksh.1,000 while a fruit goes for Ksh.80 to Ksh.100 depending on size. By the time the seedlings in his nursery are over, he will have pocketed Ksh 5 million from them alone. The fruits are harvested in two seasons in a year, in January and December.

One tree can bare 500 fruits or more according to age as production improves with time. That means a single tree can earn about Ksh.50,000, which can translate to millions of shillings in a season.

When not in season, he concentrates on propagation and selling of seedlings, keeping him occupied throughout the year.

The farmer who has grown the fruits since 1991 has nine varieties and is working on four others which he says will be producing apples that are green when ripe.

The current variety is reddish when ripe.

He has 1,200 trees in his Ihwa farm and 100 trees in Gatarakwa in Kieni Constituency, where he intends to put five acres under the plant.

The father of four has no regrets for abandoning coffee growing. With the proceeds from apples, he has managed to educate four of his two children to university level and the rest to college.

He has also bought land totaling to 23 acres in Kieni, Nyeri County, all of which he intends to plant apples.

“I had invested in the Matatu industry where I had purchased two but later sold them to concentrate on farming. Other than using the proceeds to feed my family, I also help neighbours and friends in need with the money earned,” he confirms.

He says that though the tree has no disease threat, it is usually affected by pests from other plants in the farm which he easily fights using organic fertilizers. The tree is also not laborious to tend to, like other cash crops as picking is easy and does not require a lot of weeding. One can also inter-crop it with other food crops.

His work is not without challenges.

He says that though he is regarded as the best producer in the country, he has been unable to meet the market demand which has resulted in loss of tenders. A company in America had ordered for about ten tonnes of the fruits which he was unable to supply.



He says the way forward is to embark on a campaign to have as many people as possible grow them so that together they can meet the demand.

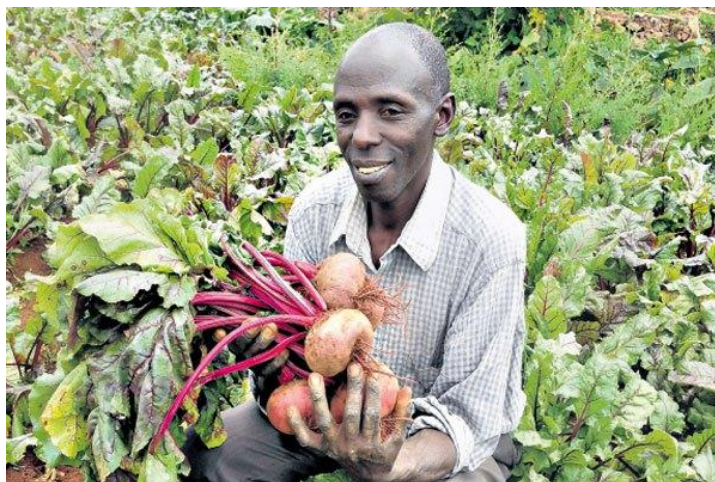
Wambugu says that: “I am more than willing to offer technical advice to farmers if called upon to do so. I can confirm that the campaign I had started has been bearing fruits as some of my neighbours and friends have been responding positively and own several trees now.”

To begin, a farmer should start with 50 trees if serious in the business according to Wambugu. But if unable to, due to financial constraints, one can still begin with one tree and increase their population in due course.

Three of his children have followed his footsteps. One of his sons Samuel Kago is already preparing four acres for the plant while another son Martin Ndirangu intends to plant two acres. One of his two daughters Catherine Nyokabi is also planning to venture in the fruit farming.

Apart from apples he also grows avocado, passion fruits among other as well as keeping dairy cows but in small quantities.

## **70. Beetroot Farming tips from John Koech, a successful farmer from Eldoret**



After a long, winding and dusty 18-km road-drive from Eldoret town, I find John Koech tilling arduously on his one-acre farm at Plateau in Uasin Gishu County.

He is crouching as he uproots weeds on what looks like an overgrown plantation of spinach.

Plucking out a leaf, he says; “This is a nutritious vegetable, but it is not spinach. As you can see, this leaf has red veins and stalks which is very tasty when cooked,” Koech explains.

This bulbous beetroot crop borrows its name from its roots that bear a resemblance to those of onions. Beet, popular for its medicinal value, is grown mainly because of its round-like wonder roots.

The plant produces sweet red juice when graded or blended and most hotels use it as a food flavouring.

But there is more to this plant. “It used to be grown to feed livestock to increase milk production. Nowadays doctors recommend that one should take a glass of beet juice to boost blood levels,” says the father of five.

### **RICH IN VITAMINS**

Beetroot (*Beta Vulgaris*) belongs to the *Chenopodiaceae* family along with quinoa and spinach. Medical research shows that the vegetable’s roots and leaves are rich in vitamins C and A.

So how did Koech end up growing the beetroot?

“I inherited beetroot farming expertise from my father who used to work at a horticulture farm in Nakuru before the 2007-2008 post-election violence.

‘He would bring some of these crops to experiment on the farm at home. I grow them to have an edge in the market,’ says the farmer who also has capsicum, tomatoes, pepper, and seedlings of different trees on his farm.

He first experimented with 200 seedlings of beetroot in 2011.

“I found that the crop was doing well on my farm so I gradually planted more. At the moment, I grow about 2,000 seedlings.”

The farmer plants seeds in a six-inch-high nursery to ensure they are not washed away by run-off water.

“Its seeds take about 10-14 days to spring. Thorough watering is required for four days before top dressing with Di-Ammonium Phosphate fertiliser,” the 45-year-old farmer says.

One month later, he transfers the small plants on to land. It takes about three months to grow to maturity, which is marked by the cracking of the soil around the plant.

“These plants are seldom attacked by insects because their leaves are straight. So a notorious insect finds it hard to lay eggs plus the leaves are a bit cold so there is no fungal attack.”

Dr Nicholas Rop, the head of Seeds and Crop Production department at the University of Eldoret, says red beets contain high iron content while white ones are grown mainly to boost milk production in livestock.

He, however, says further research should be conducted to find out more about the plant that thrives in high altitudes of between 2,800m and 3,000m.

Koech harrows the farm occasionally to loosen the soil so as to allow the roots to increase in size and do away with weeds.

“I have conducted research in the market and discovered that beet lovers tend to go for medium-sized roots,” says Koech, adding that he regularly covers the roots with adequate soil.

He warns that if the roots are over-exposed, suckers sprout and consume the important nutrients — making roots to gradually shrink in size.

From the 2,000 seedlings he has grown on 10m-square section of his farm, he harvests 100 kilogrammes of the roots weekly. He then packs them and sells to traders in town.

“A kilo of beetroots goes for Sh.30 at the moment but prices go up steadily to Sh.100 during the dry season (which usually stretches from August to April) when the demand is high.

And since his farm borders the permanent River Chebaon, he grows beetroot throughout the year.

## **71. Former police officer making a hit in farming – success story of Samson Thoya**



Bore Singwaya in Kilifi County is an ordinary settlement like any other, where many families engage in subsistence farming.

You will find small farms dotted with maize, with residents harvesting once a year.

But a former police officer has set out to change this practice by engaging in commercial mixed farming.

Samson Thoya, 50, keeps bees, dairy cows and poultry and grows watermelon, pineapples, passion fruits, cashewnut and a variety of trees, all on 20 acres.

“I went into farming after taking early retirement from the police force after 32 years of service. The farming bug had hit me in 2005 but I quit in March,” said Thoya, who has four employees and when starting, he invested about Sh.1 million.

Of the money, Sh.700,000 went to buying the 20 acres. He bought the farm in parts over time while still working in the police service.

His 100 cashewnut trees offer him at least 250kg of raw nuts every year. He sells each at Sh.40 to a factory in the region.

From the one-acre watermelon farm, the farmer gets 650kg after every three months. He sells a kilo at between Sh.15 to Sh.20 to middlemen at the Malindi market.

“I grow the Sukari F1 and Sugar Baby varieties that perform well when planted with manure that I get from my five dairy cows that provide milk for my family,” he said.

## **TWO SEASONS**

During a tour of his farm, Thoya, who kept referring to himself as a former telephone farmer, said he grows watermelons in two seasons to avoid tiring the soil.

“I used to call the farm assistant and advise him on what to do on the farm for the entire period of my absence but now I supervise everything myself and help in doing the tasks,” said Thoya, noting telephone farming can be heart-wrenching.

Away from the melons, Thoya keeps bees to assist in the pollination of watermelons.

“Watermelons and other crops cannot do well if they are not pollinated. As a farmer, I realised I cannot rely on wild bees, which is why I keep mine and harvest honey for domestic consumption. I am doing this on small-scale.”

The father of five also grows yellow passion fruits, starting first in the nursery where he currently has about 50,000 seedlings.

“The passion variety is drought-resistant and I expect to start harvesting in August. I will also sell seedlings once I have stabilised the business.”

He further has 35,000 pineapple plants on five acres. “I get suckers from the existing plants and transfer them into dug pits after putting organic manure.

Each growing mature plant produces about six suckers. I sell the fruit from Sh.40 to Sh.50 each.

Next to the pineapple farm, on a two-acre plot, is a forest of casuarina, blue gum and indigenous trees, which total 1,400.

“I sell the casuarinas and blue gum, 4-inch in size at Sh1,000 a pole. Most of those who buy are people in the construction sector.”

At another section of his farm, he has planted rice.

“I am growing the crop on trial basis. If it performs well, I will grow it,” said Thoya, noting he has diversified to avoid overreliance on one agribusiness.

## **MAJOR OUTLETS**

The Kongowea and Malindi markets are the major outlets for his produce.

“I realised farming needs a lot of concentration for one to earn good money, the reason why I quit. However, one must have a business plan and execute it well,” said Thoya, who served in Anti-stock Theft Unit in Pokot, Machakos, Meru and Isiolo and as an OCS at Mwiga, Baricho Station in Kirinyaga and in the Criminal Investigation Department in Lamu, Hola, Mombasa and Kilifi.

He retired at the rank of Superintendent of Police.

Thoya, who gets his water from Baricho–Marafa waterline and stores in a 12,000 cubic metres tank for irrigation, plans to invest in another 100 acres, where he will grow horticultural crops and maize.

“I will lease the land to grow maize to supply to secondary schools. Horticultural crops like melons and pineapples too have big market,” said Thoya, who adds he will enroll for an agricultural course at Pwani University to boost his skills.

His biggest challenge is market, as he is forced to sell his produce to brokers at low prices. He has formed the Bore Singwaya Farmers’ Association to promote the growing of watermelon, passion fruits, rice and pineapple.

“There is life after retirement as long as one plans what to do. Farming offers a good option,” he said.

Kenya Agricultural and Livestock Research Organisation Mtwapa Centre director Michael Njunie said mixed commercial farming is not common at the Coast, thus, anyone engaging in it can reap big rewards.

“It is a better way of farming than mono-cropping because when crops fail, livestock and poultry will provide income that can sustain the other ventures.”

## 72. How Kevin Njiru made millions from Capsicums (Pili pili hoho) Farming



Red and green bell peppers growing in a greenhouse.

Kevin Njiru Ngari, the successful greenhouse farmer, can only be best described as a Kenyan youth who knows how to turn adversity into opportunities worth millions. Coming from the rather dry Mbeere part of Embu County, Kevin only had milk during the Nyayo era when there was free milk for primary schools. Milk is a commodity which, to date, is very scarce in the area, to say the least. It is upon this unfortunate situation that the young chap founded his first agribusiness venture that has left him being envied by most of his peers.

While dairy farming business is lucrative in the area due to unending demand, it has always been a great challenge due to the harsh climate. “If it were not for the fact that I have to work extra hard to feed my cows here, I would definitely have made my first million from dairy farming,” he says.

Now thanks to his extensive reading, Kevin discovered the goldmine he had always hoped to find; greenhouse farming. “I first read about greenhouse farming in a magazine and I was surprised at how easy and fast young guys were making money,” Kevin says. Motivated by the success of other farmers, he went head-first into the business, armed with very little information.

“This is the first mistake I made.” He tells me when I ask how he was able to make such a fortune without much information. His first venture was a total mess in which he almost lost the

dairy farming business that he had built for years. He had sold a few of his animals to raise the capital for his new business. But the relentless 30-year old farmer considered that failure an important lesson.

The loss of his entire tomato crop was an eye opener that he needed to do a lot of research. “That is when I started reading about successful greenhouse farming in Kenya and other countries, and attended several training sessions on the same.”

When he finally felt ready to get started, he settled on capsicum as opposed to tomatoes. “Capsicums are more resistant to diseases and pests as compared to tomatoes and both require almost the same conditions.” He told me explaining why he chose to abandon his earlier crop.

Capsicums do well under temperatures ranging from 15°C to 35°C. The seedlings take between 20 and 23 days to germinate. After germinating, the seedlings should first be transferred onto a nursery and taken care of for about 45 days. After this, the seedlings would be ready to be transferred into the greenhouse.

“Let’s get to the key of this issue; how did you make the Sh.1 million?” I asked Kevin, anxious to find out how two small greenhouses could possibly generate such a huge amount of money. Smiling, he started explaining, giving the details just as I wanted them.

“My two greenhouses cover a quarter an acre each. I used a 30cm by 50cm spacing which allowed me to plant about 5,625 plants in each greenhouse. So in total I had about 11,250 plants. The yield wasn’t bad and I got an average of 10 fruits from each plant. By the time I made my last harvest, I had sold over 110,000 fruits at Sh.10 each. Now you can do the calculation for yourself.”

By the time he finished explaining that, I had a clear picture of a million shillings lying in the bank waiting for me to go on holiday... Mayouth tuzinduke tutafute doh from farming.



### **73. How farmers in Uasin Gishu are reaping big from pepper cultivation**



A four acre farm in Uasin Gishu, Kenya's food basket, stands out from the rest in specializing on pepper cultivation at a time when maize has disappointed farmers.

The farm dubbed Rupa Fruits and Vegetables Farm is also introducing a farming revolution by contracting farmers to grow pepper on their behalf and getting paid.

Farmers in Uasin Gishu have predominantly relied on maize production as their source of income. So embedded is the maize farming that generations in the area have grown associating themselves with maize.

Uasin Gishu falls under the North Rift, an area christened as Kenya's food basket due to its high maize yield. Infact the area supplies 40 per cent of all maize in the country. But the over reliance on maize has worked against the farmers. Diseases like Maize Lethal Necrosis, which has entered the country has been known to wipe entire maize farms. Failing rains have also interfered with the yields forcing the country to look for imports from neighbouring countries like Kenya and Uganda.

The volatile market prices and the exploitation of farmers by the middle men has dampened farmers' efforts to produce more. But Rupa farm is changing farming in North Rift, a pepper at a time. The crop has been doing well in the area due to the fact that it is best suited for the growing conditions that favour maize production. The farm has invested in two chilli pepper varieties Tabiche which turns red on maturing and Carolina cayenne which is green.

“Like everyone else in this area we were also maize farmers. But when markets failed and we couldn't get anything of value from maize we decided to focus on pepper farming as a test. It never disappointed,” said Wilson Cheruiyot the manager at the farm.

The crop has been a hit especially because of its fast maturity, taking two months to mature and selling at Sh.350 per kilo. It has a high resistance for diseases and a farmer does not have to invest a lot on agricultural inputs like fertilizer. Rupa Farm for example harvests 900 kilos each week with harvesting happening year round.

The market demand for the two different varieties by different customer base has increased fortunes for the company. For example, while the green pepper seems to be a favourite among consumers, which has seen the company package them in small packages and distribute them to retail stores in major towns, the red variety is preferred by companies involved in making chilli sauce.

To further motivate the farmers interested in chilli farming, they give the farmers free chilli seedlings and get them to sell the mature pepper at Sh.70 a kilo on contract basis. Farmers who see the market value of growing pepper are dumping maize for the crop.

“Pepper is one of the crops that has not been utilized in the country despite a growing local and international market. If the farmers in this area can see the market value and move from just producing it to adding value, we can go really far as country,” said Wilson.

## **74. Taking home Shs.3 million from cucumber farming, success story of Thomas Kiptum**



With the government encouraging farmers to diversify in agricultural farming, one farmer in Uasin Gishu County has ventured into horticultural farming.

Thomas Kiptum is taking home close to Sh3 million from cucumber and red capsicum farming.

“Horticulture farming is paying well and that is why I decided to venture into it. Our region is well known for maize farming but it has good climate for the kind of farming which few of the farmers have tried to practice,” Kiptum said.

His farm is located at Kuinet in Moiben sub-county where he produces cucumbers and capsicum through greenhouse technology in an acre-piece of land.

The farm has six greenhouses for the two types of cucumbers: Sariq and local.

Sariq is only grown in a greenhouse while local ones can either do in the greenhouse or in an open field.

“My intention for planting these two types was to establish which variety yields more,” Kiptum said.

According to Isaac Kiprotich who is managing the farm, Sariq variety yields more fruits compared to the local type of cucumber. The local variety yields up to 13kgs of the fruits per plant while Sariq produces 30kgs.

“I harvest twice per week on Monday and Thursday,” Kiptum said.

He harvests 1000 kg of Sariq fruits variety on Monday and 800kg on Thursday while the local type gives 400kg on Monday and 300kg on Thursday.

Currently, a kg of cucumbers goes for Sh.30 after dropping by Sh.10 in the last few months.

The plant takes two and half months to mature and ripen after planting. It can be harvested for two to six months with continuous supply of water and fertiliser.

The red capsicum plant produces 1,800kgs in a week with a kilo selling at Sh.100. Kiptum uses water from a swamp near his home to irrigate his farm.

“It is very expensive to maintain a horticulture greenhouse and the water near my farm has assisted me a lot. I have built a network of water systems which irrigate all the sections of my farm,” Kiptum added.

The challenge for Kiptum has been lack of enough market for the quantity of cucumbers produced from his farm. Kiptum said he has been selling the produce through middlemen who buy it at a lower price.

“I have not established my own market and that is why I am selling through a middleman. If I am able to make such amount through that chain, then if I had a direct contact to the market, I would be talking of a larger figure,” he said.

“Consumption locally is still low since most people have not inculcated this type of eating culture in their everyday meals. People need to change eating culture and incorporate such spices which will improve their health generally,” said Kiptum.

Kiprotich says there is a high demand for red capsicum locally and internationally and he is reaping big from it.

“At the moment there is huge market for red capsicum unlike cucumbers,” he said.

Kiptum blamed the county governments for failing to come up with a good market strategy for horticultural produce.

“The county government has been encouraging farmers to diversify without considering market implication,” Kiptum revealed.

Former Kenyan Ambassador to Australia Stephen Tarus said horticulture farming needs huge capital investment.

The county governments need to establish a market strategy abroad for its farmers for it to be successful.

“We will end up making the sector look like that of maize if proper market is not sought. At the moment maize farmers are grappling with lower prices offered by the government cereals board despite the huge input cost,” Tarus said.

Farmers will also be required to observe quality in the sector in order to meet international market standards.

“Since agriculture is a devolved function, then it is the onus of the county government to ensure that farmers are empowered through various seminars relating to horticulture and aids them in getting markets,” he said.

## **75. Sorghum success story of Cecilia from Kitui**

Life was once an uphill struggle for Cecilia, a 62-year-old grandmother from Kitui in eastern Kenya. She used to grow maize but her crop would often wither and die, leaving her with no food and no income despite all her hard work. She recalls, “I had land but I had no income. We were planting a lot of maize but still we were not getting enough to eat, let alone enough to sell.”

With support from Farm Africa, a charity that works with smallholder farmers in eastern Africa, Cecilia was advised to swap from growing maize to sorghum, a versatile type of cereal grain that is sometimes called ‘the camel of crops’ because of its water-saving properties.



An ancient plant that is naturally gluten-free, sorghum can be used to feed both animals and humans, and is a great alternative to wheat flour for baking. As well as being nutritious, sorghum is a hardy cereal that doesn’t need much water and is able to grow in soil that other plants won’t tolerate, making it well suited to the drylands of sub-Saharan Africa.

Cecilia was introduced to a specific type of white sorghum used for brewing beer, and which is faster growing and produces a bigger yield than the sort of red sorghum traditional grown in her area of Kenya.



Today, along with hundreds of other smallholder farmers who live nearby, Cecilia sells her sorghum to a local Farm Africa partner, who then sell it on in bulk to major brewing companies. Receiving a good and reliable price for her produce, she has earned over 120,000 from three harvests thanks to growing the new type of sorghum. What's more, Cecilia and the other farmers are getting access to high-quality seeds and training so they can grow more and invest in increasing their income further.



Cecilia explains, “We are learning how to plant better and our production has increased by 50%. We get a sure and consistent market price for what we grow and as well as selling our sorghum to the brewing companies, we can also sell it at the local market or grind it into flour and make cakes with it.”

Since Cecilia became involved with the project her life has massively improved. With a wide smile on her face and pointing to a huge water tank on top of a beautiful stone house, Cecilia



explains, “we have plumbing, water everywhere in the house, my grandchildren are going to good schools and I can hire people to help me on my farm. My life has completely changed”.

## **76. Making millions from beef farming in Baringo, success story of Dickson Lenasolio’s**



Across the land, large herds of cattle graze in the bushes.

Looking after them are young boys and one wonders if they ever get time to go to school.

But arriving at Dickson Lenasolio’s ranch, the script changes.

He has risen against the local pastoralism culture to not only embrace modern ranching, but also to run a business.

Before he started keeping *sahiwal* breed, Mr Lenasolio had tried his hand in politics. But his short stint in politics gave him a mixed bag of fortunes.

“There always arose complains that I was favouring one tribe or the other no matter how I tried to be fair,” he says.

And on quitting politics in 2007, Mr Lenasolio ventured into beef farming.

He would buy a bull at about Sh.10,000 and resale it for Sh.15,000 after fattening it for three months.

However, profit-sapping middlemen took note, and quite often, they dictated the price.

The turn of events hit Mr Lenasolio hard prompting him to turn to dairy farming.

Interestingly, many of his neighbours keep beef cattle.

Brokers were not the only challenge since he had to relocate to Araban village recently after he was displaced by floods in Salabani village, around Lake Baringo, where he had called home for decades.

He invested Sh.52,000 in buying a Jersey cow at Kabarak farm — over 100 kilometers away from his home.

“Initially, the cow produced a lot of milk which I supplied to a hotel in Marigat town,” he said, adding, “but the production reduced sharply during the dry season to my disappointment.”

### **Less expensive**

But determined to make a difference in cattle business, Mr Lenasolio researched on good breeds that do well in arid and semi-arid areas.

A veterinary doctor from the Kenya Agricultural Research Institute (KARI) advised him to give *sahiwal* breed a try.

Besides being less expensive to maintain, the breed would earn him more profit.

According to KARI, the main breeder and seller of *sahiwal*, the breed has many advantages over the traditional cattle.

On account of his returns, Mr Lenasolio will never regret the journey he made to start a ranch.

He invested in Sh.75,000 *sahiwal* bull. His next stop was at KARI, in Naivasha, where he bought seven heifers.

Today, he breeds both pure *sahiwal* and a crossbreed of *sahiwal* and zebu — the native cattle.

Since he started breeding *sahiwal* in 2008, Mr Lenasolio has sold three bulls at Sh.120,000 each and over 30 calves, some pure while others are crossbreeds.

“I sell pure *sahiwal* calves aged one year at Sh.40,000 while crossbreeds go for Sh.30,000,” he said.

His customers are farmers from as far as Narok, Transmara, Maralal among other arid and semi-arid areas.

An animal health expert at KARI, Mr John Kimeto, said *sahiwal* is more disease resistant than zebu.



The breed also matures faster than the traditional ones and produces up to five times the amount of milk the native breeds produce daily.

“Sahiwal are very fertile and can give birth every 11 months unlike kienyeji (traditional) breeds which can take over two years,” said Mr Kimeto who is based at KARI, in Marigat town.

Mature sahiwal bull weighs about 600 kilograms — twice the average weight of a zebu cattle.

### *School fees*

For Mr Lenasolio, his business is not just about money, “recently, the principal of one of the top high schools in Kenya offered me Sh.150,000 for a bull, but I turned him down because I did not need money at that time,” he notes.

The joy about his business is that he is able to pay school fees for his nine children that costs an average of Sh.400,000 per year.

He said he had taught his wife cattle breeding because he believes in women empowerment.

## **77. Nehemiah Odhiambo: How I became the best soybean farmer in East Africa**



Weaving through the sugarcane plantations gives one a feeling of sweetness that Migori County holds. We see plantation after plantation of cane that feeds the South Nyanza Sugar Company, often simply known as Sony Sugar, towering over other crops and pasture.

Sugarcane, and tobacco, has been the only cash crop grown in Migori, until recently when proceeds from sugar companies started dwindling. When the vast lands are not under sugarcane, the locals prefer subsistence farming — a bit of maize here and beans there.

However, these, too, do not do very well around here.

All is not lost, however, as one farmer from the county has found out.

Tucked away somewhere in the midst of the towering cane plantations is Mr Nehemiah Odhiambo's soybean farm. He was among the first farmers to adopt the new crop in the county, and he has no regrets so far.

For him, the long wait before harvesting sugarcane was probably the first disheartening factor even before the prices came tumbling down.

"I tried growing both sugarcane and tobacco on my farm, but both would take long before harvest and payment. For instance, I have to wait for close to two years for sugarcane to mature, yet I need to send children to school," he says.

He started growing soya beans five years ago after learning about it through a farmers' cooperative society.

"Back then, farmers were just talking about 'soya.' No one really knew much about the crop."

Through a farmer friend, Odhiambo got seed and the know-how of growing the crop. To his surprise, his decision would end up bringing him money, exposure and accolades.

### **HAD TO LEARN EVERYTHING**

"I had to learn everything anew. I was very keen to change my reliance on sugarcane," he says. And reward came fast and furious.

The thought of being part of the team that produces the crop that makes Sossi meat, soy milk, soy flour, soy protein and other products never occurred to Odhiambo when he first started growing the crop.

Just a year after adopting soybean farming, Odhiambo was feted as the best soybean farmer in East Africa. Although he does not know how he became the best, Odhiambo is certain about one thing: He did his farming right.

“Three companies came to the farm to inspect how the crop was doing and even took pictures of us. Little did I know that they were doing all that for a competition. I was amazed to learn that I had actually won,” he says.

The secret, he says was that he plants quality seeds. One acre gives him half a tonne.

The father of three explains that growing the relatively new crop is the easiest kind of farming a farmer can choose. However, any neglect can also cost one dearly.

“This crop needs frequent weeding. For instance, on this two acre farm, I weed after every two weeks.”

The crop is planted two to three weeks before the rains. After preparing the land, he soaks the soy seeds in a Biofix solution, an organic fertiliser meant for of leguminous crops, before planting.

He uses his harvest to get seeds for his next season’s planting.

“With soya, the current harvest makes the best seed crop and has 99 per cent chances of germinating well,” he explains.

Mr Odhiambo says that he got his first seed from a fellow farmer, and since then he has not bought any seeds. However, he prepares seeds for sale to other farmers.

Before selling the seeds, he ensures that they are well dried and selected. He sells a kilogramme at about Sh150 to Sh200.

“I ensure that I only sell the best seeds. Black seeds or those that are smaller than the rest, are separated.”

Odhiambo gets a harvest of up to 1.6 tonnes from his two-acre farm.

Although he has not started adding value to the crop, through a cooperative society (Migori Pamoja Cooperative Society), he and 40 other farmers have managed to get into partnerships with companies like Promasidor, the makers of Sossi.

Being a new crop among Kenyan farmers, Kenya produces about 300,000 tonnes of soybeans yearly. Half of the produce comes from Migori County, which produces 156,000 tonnes.

However, Odhiambo, who is also the area chief, says there are challenges.

“One of the major challenges is that it requires financial muscle to weed the crops after every fortnight.”

He encourages farmers to join cooperative societies to give them a stronger bargaining power.

## **78. Start a Sunflower Farm**



*Is sunflower farming a viable business in your area? Do you have the land to grow it and the market to sell it to? If yes, then you can start this venture that is fairly easy to pursue. Learn from our guide basic tips on sunflower planting, growing and harvesting.*

Sunflowers are fairly easy to grow. They are drought resistant, pollinate without much need for insects, and are not highly susceptible to diseases.

### **Should You Grow Sunflowers?**

If you are planning to start a sunflower farm, however, the two most important questions that you should consider are: whether you have the market for your product and the large area with which to grow the crop. Sunflower seeds are valued for their oil and are sold to pressing plants. They are also milled for selling to the birdseed market.

### **Sunflower Growing Tips**

1. Plant a small crop in your chosen site to assess potential yield and susceptibility to local pests or soil diseases.
2. Choose the variety of sunflower you want to grow. Each variety has different uses – some are commonly used for snacking, others for other purposes like, as garnish or food ingredient, others for oil extraction.
3. An ideal soil for sunflower planting is loose enough for water to drain, but compact enough to hold the plant stalks against the wind.
4. Regulate the amount of water you apply to the crop. While water is good for the plant, too much of it will loosen the soil and make the root weak.
5. Look out for weeds that could compete with young plants especially during the first few weeks that the sunflowers were planted. You can employ mechanical and chemical means of cleaning out weeds from the crop.
6. Plant density is important in determining yield. While low density could result to large heads and thus increased seeds per head, it could result to premature drying out. High density crops, on the other hand, would require higher rate of watering, resulting to water lodging. Check recommended sunflower density standards.
7. Planting sunflowers in groups has the benefit of stabilizing their stand, protecting them from wind damage, and preventing moisture loss from soil.
8. Harvest sunflowers timely to avoid having to loss seeds to late season diseases and birds that loves to eat them. Harvest time is when the back of most of the sunflower heads become brown.
9. A typical sunflower farm yield is around 1,500 pounds per acre. Yield is highly influenced by seed selection, plant density, and pest and weed control.
10. As sunflowers are tolerant of weather conditions, you can plant them in more than one season to spread the risk of failure for each cropping. Also, plant them in rotation with other crops to control diseases and weed infestation that often results with monocropping.
11. As with any grain or seed crop, drying off of the seeds is important to control potential damage from moisture and insects. Check for moisture standards applicable to the type of sunflower you are producing.

## **79. I make more money from farming than from my MCA job**



Few people can boast a side hustle that pays more than their core job. Silibwet Township ward Member of county assembly Robert Metet is one of such few people. Metet is such a successful potato farmer in Bomet County, he has become a household name within his ward and beyond. The MCA, popularly known as ‘Disari’, started farming from a quarter of an acre 15 years ago and now has 20 acres.

He takes us through the journey: “I planted my first crop of potato in 1997 through the assistance of my father. To start off, my dad gave me a portion to till and ‘loaned’ me some money to buy the required inputs.” From the basic agriculture knowledge he learnt in school, he set off with six bags of certified seeds and a 50kg bag of DAP fertiliser to plant in the portion of land he had been allocated.

“From my first planting, I got 72 bags and sold 50 and kept 22 as seed that I planted in three acres. I got 240 bags from the three acres and this made me stick to the potatoes. I was so impressed by this I jumped in 100 per cent,” he says. Luckily, for him, there was a ready market for his crop and the demand was even overwhelming. “This project is lucrative, I can tell you that for free. Look at how far it has brought me.

Money from these potatoes even funded my campaigns,” the politician says. His potato business picked up so well over the years, he managed to buy lorries, ventured into real estate business and started a local construction company. He shows us last year’s farm records which show he accrued profit of Sh4 million from 20 acres under potatoes. He sold the produce to manufacturing industries in Mombasa, Nairobi and Bomet Central Sub-County.

He says on a good season, an acre fetches him Sh150,000. So what inspired him to start potato farming? “While I was in Form Four, I majored in Agriculture and my project was potatoes. To score highly in that project I did a lot of research on potato farming and I became a small ‘expert’. That is how my love affair with potatoes began,” he says.

After high school, instead of furthering his education, he chose to try his hand in potato farming. “I told my dad about my idea and he supported me fully,” he says. When his first produce was ready, he did not make good profit because he went through brokers. “After realising that, the second time round I was wiser. I went in search of a market for my produce after I realized the brokers were buying at exploitative prices,” he says. His hunting for market bore fruit and he discovered potatoes from the region were of high quality and on high demand. As a buyer and a farmer at the same time, he got chance to interact with people from across the expansive region who later voted him in during the 2013 elections.

While at County Assembly he has worked closely with the County government to draw foreign investors interested to use potatoes as raw materials to manufacture crisps and create a direct market to export the surplus. “Everything is possible. I am now worth over Sh.50 million just from potato farming which has enabled me to venture in transport and construction business. I would urge youth to try it out after doing their research,” he says.

## **80. Why you should venture into green-house farming**



Greenhouse production is often perceived as an artificial process, characterised by low nutritional quality of the final product and the heavy use of chemical inputs. Moreover, large



areas covered with greenhouses create a big visual impact. In contrast, open-field cultivation is perceived as an ‘eco-friendly’ activity, and one that has a much smaller visual impact.

Growing under greenhouse conditions, instead of an open field, can enhance quality, quadruple production and enable growers cultivate their crop over a longer window of time. When carried out correctly, it can significantly increase yields over what is possible under open field production. For example, greenhouse tomato yields four to five times more than openfield.

Greenhouse extends your growing season as harvests can last up to eight months compared to one month in the open fields. Any gardener or farmer knows planting crops outside depends wholly on weather patterns and conditions that must be suitable for seeds to take root and thrive.

With a greenhouse, many different techniques can be used to keep temperatures stable, causing less stress to the plants and promoting strong growth much earlier in the year. Some popular techniques involve creating thermal solar mass by using natural materials that readily absorb, store and release thermal heat, and using man-made heaters and heating fans.

Expand the variety among your produce by using greenhouse.

As vegetables come in and out of season, prices fluctuate accordingly based on availability, demand, and production methods among many others. Investing in a greenhouse gives your operation the opportunity to provide a variety of different produce on the “off season” creating greater availability for your customers in times of low supply and having the ability to grow new produce or flowers that do not typically thrive in your climate.

### **Yield and volume:**

Crops from green houses are protected from pests, diseases and other hazards in the open field. The closed nature of the greenhouses reduces the risks of soil borne tomato diseases. For instance, diseases spread when wet soil is splashed onto tomato leaves while it rains (or when using overhead irrigation systems). By use of drip irrigation, the amount of moisture on the tomato leaves, further reducing the risk of fungal tomato diseases that thrive on wet foliage. Pest control is also easier in a greenhouse than with outdoors tomato farming. Birds are a huge nuisance for outdoor tomato farmers this can be minimised through adoption greenhouse.



Minimum water wastage is another advantage of greenhouse. Drip irrigation systems that are mostly preferred in greenhouses have no surface run-off since the water is delivered directly to the root area of the plants. Water is distributed uniformly, which prevents clogging.

### **Weed management**

Management of weeds in the greenhouse is easier, tomatoes grown in small scale greenhouses consume less space but produce more fruits per acre. The planting of tomatoes in a concentrated space makes weeding easier. Moreover, use of drip irrigation denies weeds the water they need to thrive. Good space utilisation in small scale greenhouse farming means there is less distance to cover when tending to your tomatoes. Tomatoes need staking to support the weight of the fruits and to grow upright. It is easier to stake your tomatoes with greenhouse.

### **Minimal theft cases**

Stealing of farm produce is a big problem in most regions in Kenya and that can be minimised by use of greenhouse. Would-be thieves cannot know when the tomatoes are ripe and ready for harvesting.

The need for pesticides is thus reduced, which lowers costs and risk of harmful residues on the crop.

As a result of this, higher quality produce is possible. For consistent quality, good agricultural practices such as optimal plant population, irrigation, plant nutrition and vigilant crop protection (must still be maintained).

Tomatoes grown in the open field are exposed to all insects and diseases in the open environment. Greenhouses are covered with mesh screen to keep most of these pests and diseases they carry, away. However, strict monitoring for breaks in the mesh and proper use of entrance doors, is necessary. The plastic roofing materials also reduce the level of some diseases, by controlling the type of light entering the house.

### **Challenges**

Notwithstanding these huge benefits, several challenges exist. Ecological, physical and socio-economic conditions call for modifications to this introduced technology. For example,

some regions of the country experience higher temperatures. This poses challenges for more appropriate design and construction to reduce heat buildup.

High upfront and operating expenses. In order to utilise a greenhouse to the best of its ability, you'll need to invest in a kit or supplies that will have a good lifespan and proper characteristics for the plants you want to grow. For example, cheaper film plastics may provide sufficient conditions to retain heat, but more expensive glass windows will last longer and may help ventilate the greenhouse if able to be opened.

With maximum climate control, comes the potential for a high operating cost. If you choose to heat your greenhouse via electronic heaters or by way of gas, you'll see a serious increase in your monthly bills.

### **Troublesome pests and lack of pollination.**

While having a greenhouse can help you control most of what your plants come in contact with, one or two plants carrying pests like whiteflies or other diseases can quickly spread to the rest of your plants, sabotaging your entire crop. Careful precautions must be taken to eliminate any pests or diseases to make sure your next crop won't be affected.

Implementing greenhouse growing can be an excellent investment when carefully planned, built, and maintained, creating the potential for an increase in revenue or a means of saving on your monthly grocery bill. Make sure to research all of your options before committing to one style or method.

## 81. How to successfully grow the finest onions in the market



Before you get tempted to engage in onion farming, do your homework well and learn from the masters who are already in the agribusiness. However, here is information to give you a head start.

The land should be more or less flat and have access to irrigation water. The soil should be light and well-draining. It must be free of aggressive weeds like couch grass and should also be in full sun.

Have the soil tested to make informed decisions on your soil fertility management decisions. Onions need a pH of 6 to 6.8. If the pH is below 6, apply calcitic lime at the rate recommended by your soil test results.

Prepare the land about a month before and incorporate about three tonnes of chicken manure. Loosen the soil deeply and prepare the land to a fine tilth.

Start with a small seedbed, which can either be raised if water is not a problem or sunk to capture more water. Prepare it 4ft wide with eight rows 10 to 15cm apart. Make 1cm deep furrows along the rows.

Per acre you will need about 1kg of seeds. Mix them with the same amount of sand. Fill the furrows evenly with the sand-seed mix.

### **KEEP WATERING**

Cover with high quality fine compost and water thoroughly. Keep watering several times per day until the rows of onions have emerged. The seedlings remain in the seedbed for eight to 10 weeks and daily watering is important.

After four weeks, apply liquid fertiliser made from stinging nettle. As soon as seedlings have emerged, keep applying a layer of compost as a mulch to suppress weeds, and keep the soil moist and protected from heavy rains.

Onions are generally long-day plants, which means, they need days with more than 12 hours of daylight. Therefore, only varieties with lower day-length needs can be grown in Kenya.

Popular varieties are Jambar F1 (for size and high yield) or Red Passion F1, Bombay Red and Red Pinoy (they have a lower yield but are in high demand at the market and fetch a high price than Jambar F1).

Onions need around four months to mature. The last three weeks before harvest, the weather should be absolutely rain-free. So plan to start your nursery according to your dry season and count back four-and-a-half months. To harvest end of December, start your seedbeds mid-August.

Transplant when your seedlings have gained the size of a pencil and show four to five leaves. Prior to transplanting, water the seedbeds heavily until they are saturated to avoid damage to the seedlings.

To help your seedlings recover quickly after transplanting, prepare a liquid fertiliser from comfrey leaves, which contain Vitamin B12. Mix it with some soil and fresh cow manure until it forms a kind of sludge.

Pull up your seedlings from the wet seedbed carefully. Dip them in the manure-comfrey mix so that the roots are covered in it. Bunch about 50 seedlings together and cut off 50 per cent of the green tops. Transport them to the field and transplant as soon as possible. You will end up with about 200,000 seedlings per acre.

Irrigate the field well the day before transplanting and plant in rows one foot apart and leave 8cm space between plants within the row. If you plant onions too closely, bulb size will reduce.

Ideally, you should fix a drip irrigation system with 4cm emitter spacing between the rows. Irrigation is needed at a rate of 3 to 5mm per day, but you need to monitor to avoid waterlogging. The field should then be covered with plastic mulching between the rows to avoid moisture losses and to suppress weeds.

If possible, overhead watering should be avoided as it promotes fungal diseases. If no plastic mulch is used, mulching should be done with organic matter and weeds need to be removed regularly by pulling up by hand in the rows and careful hoeing between the rows. Hoeing will also break the soil's surface and help prevent moisture losses. But care should be taken not to damage the onions.

In case your onions get affected by rust, use this homemade remedy: Soak 1kg of pounded pawpaw leaves in a litre of water for six hours. Strain it through a cloth and add two tablespoons of liquid soap. Add five litres of water and spray every three days in the later afternoon.

## **FUNGAL DISEASES**

Onion thrips might be a problem. The leaves will turn silverish and dry. Boil a cup of chopped rhubarb leaves in six cups of water. Leave to cool, add some liquid soap, strain and spray. But be careful, this concoction is poisonous.

If mildew or other fungal diseases become a problem, spray with copper. On soils with boron deficiency, a foliar feed with 20g boric acid per acre is necessary. Sulphur or calcium deficiencies also need to be addressed if shown by a soil test.

Usually, onions are harvested when the tops turn down and start to dry. Short day varieties, however, don't mature uniformly so they are usually lifted when 50 per cent of the tops are down and have dried.

Bunch the onions together and hang them up in an airy space for about a week until all the outer leaves are nicely dried and the bulbs can be easily be pulled from the bunches.

Cutting tops off will reduce storage qualities and promote rot. Well matured and dried onions have a shelf-life of at least six weeks and sell at Sh50 per kilo.

## **82. Chicken breed that matures faster and lays more**



Leonida Wekesa, a retired teacher, feeds her new breed of chicken in a cage suspended about 2m above the ground in Kamukunda B Village on the outskirts of Bungoma town.

To anyone, the multi-coloured birds look like the ordinary indigenous chicken kept by nearly all households in western Kenya. However, these are Rainbow Roosters, a cross-breed of two high-yielding Indian chicken breeds.

The breed has all the features of local indigenous chicken, including taste, and has since adapted well in Kenya.

“I bought 100 three-day-old chicks from Mabanga Agricultural Training Institute’s Poultry Centre of Excellence two months ago and they have all survived,” she said.

The poultry centre was established as a partnership between Bungoma County government and the Universities, Business and Research in Agricultural Innovation programme, which supports the setting up of innovation centres.

Leonida is among thousands of beneficiaries who trained by experts from the centre on best practices in chicken rearing. This is part of the larger plan to commercialise indigenous and

Rainbow Rooster chicken production once the ongoing construction of a chicken slaughterhouse in Chwele, Bungoma, is complete.

“The Luhya people know a lot about indigenous chickens given that the bird is part of their lifestyle and culture,” the director of the centre Oscar Makokha said. “However, what we are now doing is to make it a commercial venture so farmers can produce chickens in a structured manner for bigger markets locally and abroad.”

### **MANY CHALLENGES**

According to Government-run National Farmer Information Service, poultry farming is facing many challenges, including lack of markets, high cost of inputs, loss of genetic diversity and low productivity. There are also issues of fluctuating production, diseases and inadequate funding and these are some of the challenges the poultry centre is addressing.

The centre is working with five farmers’ groups. Each group has 25 members who are trained on how best to keep both indigenous chicken and the Rainbow Roosters. They are trained on disease management, nutrition, use of technologies and marketing.

Makokha said farmers must be taught how to keep chickens for commercial purposes. The lessons should include managing emerging diseases.

However, despite the wealth of knowledge about indigenous chicken among communities in western Kenya, experts say commercialising production will still require extra effort.

“To produce chickens in huge quantities requires a lot of investment, thus, we need a lot of support,” said Dr Gregory Lukhale, Kapchai Sub-County veterinary officer.

The birds that will be processed at the slaughterhouse will have to be of given weight and in large quantities. The facility has a capacity to process 1,000 chicken per hour.

Leonida said the new breed feeds on sorghum, maize, insects, ugali, omena, collard green (sukuma wiki), which are locally available and to her, that is an advantage.

“They are exactly like the indigenous chicken only that they grow faster and lay more eggs compared to indigenous ones,” said the mother of five. The Rainbow Roosters lay up to 320 eggs in a lifecycle, compared to the 80 an ordinary indigenous chicken lays.

“We sell about 3,000 day-old chicks of the new breed every month, particularly to farmers who have been trained. The figure is set to go up once the abattoir is up and running.”

## 5 Most Profitable Landscaping Business Ideas

Landscaping business or lawn care is one of the most lucrative business in the agro-based service industry. This green business also allows you to operate from home with a small startup capital. Having proficient knowledge with a good communication skill are the must in this business. The demand for landscape expert is increasing rapidly in both the developed and the developing country. Residential house owners and business houses both can be your potential clients. The landscaping business allows you to use your strongest abilities and giving your clients a feeling of accomplishment. Here in this article, you will find 5 different types of landscaping business services. You can start with any of them with a niche client base. Otherwise, you can initiate a full-fledged landscaping company with all the services accumulated.

### Skill Required For Landscaping Business



You must have some basic skills in starting this business. Knowledge of machines and tools, including their designs, uses, repair, and maintenance is important. Business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources are the basic requirement. Giving full attention to your customers, taking the time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times are the basic communication skills needed in this business.



## **Tools & Equipment For Landscaping Business**

You must have some basic landscaping tools. According to the specific service you are offering, select the tools and equipment. Invest on the tools carefully. Some of the must-have tools are,

### **Lawn Mowers**

Manual, battery, electric, or gas-powered lawn cutters are pushed or ridden, self-propelled, or hand-propelled. Most can bag clippings. Get a 21-inch gas-powered mower for the average yard. Yards bigger than ¼-acre may need a riding mower to save time and muscle. A push-type reel mower is a good green choice.

### **Trimmers & Edgers**

For the best-kept lawn year round, you must have the complete range of trimmers and edgers including gas and electric trimmers, hedge trimmers, and weed eaters. Different variety includes versatile power heads for use with a variety of trimmer attachments, as well as brush cutters for clearing rough grass, thickets, shrubs and thick undergrowth.

### **Pressure Washers**

The pressure washer makes short work of tough cleaning jobs and solves other problems such as removing flaking. It comes with different sizes. Selecting the right machine is important.

### **Chainsaws & Pole Saws**

These gas or electric saws have sharp teeth that revolve on a chain. They're good for cutting wood, downed tree limbs, big branches, and trees. It takes practice to use one safely, so get some pointers before revving up. You can try a 40 cc saw with a 16-inch blade for most yard work.

### **Leaf Blowers & Vacs**

Leaf blowers are essential time and labor-saving cleanup tool for landscape maintenance professionals and homeowners. Leaf blowers are extremely efficient for cleaning leaves, grass

clippings, and debris from driveways, sidewalks, parking lots, sports arenas, parks and construction sites.

### **Tillers & Cultivators**

A cultivator is good for loosening the soil in an existing planting area, weeding the area during the growing season and mixing compost into the soil. Cultivators are smaller and easier to maneuver than tillers. A tiller is an option for heavier jobs. A tiller is a gasoline-powered machine with a greater working width than that of a cultivator. Tillers are more powerful than cultivators and have larger, heavy-duty tines that work the soil.

### **Snow Removal**

If you are initiating the business in a cold climatic zone, then you must have snow removal equipment. Select a specific snow removal tool for your landscaping business.

## **List Of 5 Most Profitable Landscaping Business Ideas**

### **83. Hydroseeding**

Hydroseeding is an inexpensive, efficient alternative to using sod in areas where a living lawn is desired. However, it's not without drawbacks. Any kind of seeded lawn takes more maintenance to establish than sod. Hydroseeded lawns come up faster. The contact of the seed with water will trigger the germination cycle. Hydroseeding has an attractive green appearance that looks far better than lawns dry seeded and covered with straw mulch. Hydroseeding allows the custom tailoring of the proper seed for your clients. You can offer this service to the niche audience. Also, you can have tie-ups with other landscaping businesses.

### **84. Interior landscaping**

Interior landscaping is simply providing landscaping service for interior decoration. The demand for interior landscaping for commercial purpose is higher than domestic requirements. The objectives of interior landscaping are beautifying and enhancing common areas, reception desks, lobbies, and offices, contributing oxygen and humidity to the air, absorbing and diffracting

undesirable sound frequencies, reducing fatigue, headache, dry throat and coughing. It helps in brand awareness and enhance the overall employee health conditions.

## **85. Landscape architecture Service**

The large areas like parks, playgrounds, recreation facilities, skate parks, bike trails, pedestrian paths, fields, open spaces and areas for people to live, play and work demand landscape architecture planning before get into landscaping. This is all about providing artistic and technical design standards to enhance the beauty of the project. Some of the specific services you can offer are master planning, urban design, courtyard design, Parks & Playground design, site planning, streetscape design, bikeways, greenways & multi-use trails , athletic fields & sports facilities , computer visualizations etc.

## **86. Lawn Care**

The demand for lawn care service is very high. You must procure right equipment and tools. Craft a detailed business plan including financial and marketing aspects. There are some main types of equipment that would be essential for the initial chapter of your lawn service journey. For the business end of things, it would be a good idea to pick up some lawn business software to keep track of accounts and invoices.

## **87. Weeding & Pest Control Service**

Weed management and pest control service are providing pest control, lawn disease control, weeds control and preservative lawn care for a healthy lawn. Many lawn diseases are often a result of the presence of a certain type or varieties of fungus that use the grass as a food source. This can lead to things such as unseemly brown patches, shredded or shriveled grass blades, or even overall stunted growth. Sound technical knowledge is required to start this business.

## **Landscaping Business Marketing Ideas**

You must have a well-defined marketing plan with the budget. According to your climatic zone, start advertising early. So that you get enough clients in the coming season. Make some business tie-ups with other construction and real estate companies. One of the easiest ways of

promotion is yard sign. You can place boards on the lawns you service and commercial properties in which you regularly work. List your firm with local free and paid directories. Landscaping businesses are perfect for car advertising. You can use stickers and wraps for this purpose. Advertise your business digitally too. Create your own site with a blog. Put some posts about the advantages of different lawn care services. Niche social media marketing is also effective in the landscaping business.

## More Profitable Agriculture Business Ideas

Agriculture industry specifically in Kenya is at the crossroad of a new revolution. The entire food chain is supposed to be modernized and the production is expected to be doubled in the coming 10 years. Apart from domestic demand, this industry brings in huge export prospects. At present agri-business may involve either an input or a product or service and encompasses items such as:

1. Productive resources (feed, seed, fertilizer, equipment, energy, pesticides, machinery, etc.)
2. Agricultural commodities – (raw and processed commodities of food and fiber)
3. Facilitative services (credit, insurance, marketing, storage, processing, transportation, packing, distribution, consultancy, soil testing etc.).

Making money from an agricultural business requires knowledge of farming practices as well as some experience in developing a business. Before you decide on an idea, create a business plan that includes research on market demand for the products you grow and how to get them to market. You'll also need a proper financing plan as most agricultural businesses require access to a large area of land and farm equipment to get started. Often I come across wanna be entrepreneurs looking desperately for agriculture based business ideas. I have compiled more profitable agriculture business ideas which i believe will help those entrepreneurs in deciding their preferred business to start with.

### **88. Vermicompost-Organic Fertilizer Production**

Vermicompost organic fertilizer production has now become a major component of agro-business models across the country with a very low initial investment. An entrepreneur can start this business with the proper know-how of the production process.

## **89. Dried Flower Business**

Dried Flower Business in specialty flower is a very profitable venture now worldwide. Flower production is one of the fastest growing crop trends in agriculture today with a strong demand for all types of flowers, especially unique and hard-to-grow varieties. The interest in cut dry flowers has increased consistently over the last ten years.

## **90. Fertilizer and Seeds Distribution Business**

Fertilizer and seeds distribution business in Kenya is one of the profitable agriculture business ideas one can start with moderate capital investment.

## **91. Organic Farm Green House**

An organic farm greenhouse business has a high potential to grow and succeed because steadily the demand for organically grown farm products has grown considerably. Organic farm greenhouse business was normally done on small, family-run farms. But since the demand for organically grown food products is now increasing, people are investing in land for organic farming.

## **92. Mushroom Farming**

A mushroom farming business can be a mean of big profit in just a few weeks with considerably low start up capital investment to start a business. A person who has a little bit of idea in the science & technology of mushroom growing and has an own building for having the farm – mushroom farming business will be the perfect option for him to start.

## **93. Hydroponic Retail Store**

A person having passion in plantation technology can start the hydroponic retail store business to turn his hobby into a profit-making venture. Hydroponics is a new plantation technology that has been increasing in demands over the past decades as a soil free way of plantation both for commercial and home use.

## **95. Sunflower Farming**

In starting sunflower farming business, the primary requirement is the land. In Kenya, sunflower is often called a commercial cash crop. Growing sunflower for oilseed with maintaining right process is a viable business opportunity. An entrepreneur passionate about agriculture and having owned land can start sunflower farming business.

## **96. Bee Keeping**

Beekeeping *business opportunity* does not demand day-to-day monitoring with close supervision to the bees. With the increasing awareness about the health, demand for honey is growing globally. Beekeeping for selling honey and other products like wax is a profitable venture to start with less startup investment.

## **97. Fish Farming**

Commercial fish farming business is a lucrative investment that can spin money at any time of the year continuously. With the implementation of modern techniques and having owned space, an entrepreneur can start this business with moderate capital investment.

## **98. Fruits and Vegetables Export**

An entrepreneur can start an export business of fresh fruits and vegetables by collecting them from local farmers. one can start this business from a home location only having a phone and computer with internet connection.

## **99. Micronutrient Manufacturing – Foliar and Soil Application**

Micronutrient has an immense potential in agriculture business. Having a strong distribution strategy, one can start this manufacturing business with substantial capital investment.

## **100. Florist**

One of the very profitable agriculture business ideas. Having a retail space and connection with the flower growers one can start this business. An entrepreneur also can generate a substantial online sale by offering customers door-step delivery.

## **102. Livestock Feed Production**

This business is small scale manufacturing. Having confidence in distribution, one can start this business to make money out of livestock feed production.

## **103. Frozen Chicken Production**

Frozen chicken is a hot product now. The demand for this product is increasing in Kenya. An entrepreneur living in a big towns and city can start this business with proper planning.

## **104. Botanical Pesticide Production**

The botanical pesticide is one of the most profitable agriculture business ideas. It is an essential and mandatory product for organic farming. the demand for this product is increasing highly.

## **106. Basket and Broom Production**

Basket and broom are very common products in rural agriculture scenario. An entrepreneur can start this business by sourcing these products from rural makers and after giving an ornamentation, it can be sold as utility or decor item through retail and online both.

To start profitable basket-weaving business one requires thoughtful planning and a high level of creative mind having a flair for design. Using a wide range of raw material an entrepreneur can initiate customized basket-weaving business from a home location with moderate capital investment.

Broom production technical process is simple and the project can be initiated with proper planning and moderate *capital investment*. Broom have been used from centuries to sweep up dirt and dust, in and around homes and workplaces.

## **107. Flour Milling**

Flour milling business has many diversified fields. An entrepreneur can start this business with a proper business plan. Establishing your own brand product is highly profitable in this business.

### **108. Fruit juice-Jam-Jelly Production**

Fruit juice-jam-jelly production business has the huge market opportunity. Most important thing is the production process is not that complex and can be initiated small-scale basis.

### **109. Groundnut Processing**

Having confidence in the source of raw material (ground nut) an entrepreneur can start this business with moderate capital investment. Processed groundnut has very good market potential globally.

### **110. Cashew-nut Processing**

Processed cashew nut is a consumer durable product and has huge market potential in the FMCG industry. An entrepreneur can initiate this venture semi-automatic small scale basis.

### **111. Quail Egg Farming**

Commercial quail farming is all about raising quails commercially for the purpose of profitable eggs and meat production. Globally quail farming is playing an important role in fulfilling the daily family nutrition demands and earning livings.

### **112. Shrimp Farming**

Shrimp farming is an aquaculture business that exists in the freshwater environment, producing shrimp or prawn for human consumption. The demand for this product is increasing.

### **113. Fish Hatchery**



A fish hatchery is a place for artificial breeding, hatching and rearing through the early life stage of finfish and shellfish in particular. Hatcheries produce larval and juvenile fish primarily to support the aquaculture industry where they are transferred to on-growing systems.

### **114. Piggery**

Having a sufficient landholding an entrepreneur can start a piggery business. Among the various livestock species, piggery is most potential source for meat production and pigs are more efficient feed converters after the broiler. The major facility is pig farming requires a small investment in buildings and equipment.

### **115. Soya Beans Processing**

Commercially soya beans processing to produce milk, soy flour, soya sauce, soyabean oil, natto etc is a very profitable agriculture business ideas to start with moderate capital investment. With proper marketing strategy, an entrepreneur can start this business in small scale also.

### **116. Spice Processing**

Rising global demand gives a boost to spice processing industry recently. Good quality processed spice has very good demand. Processing and packaging methods are not very complex. The margin is also very satisfying in spice processing business.

### **117. Vegetable Farming**

Vegetable farming is one the most profitable agriculture business ideas. Having sufficient land an entrepreneur can start good quality vegetable farming with quality seed and fertilizers.

### **118. Chicks Hatchery**

Chicks hatchery business is all about making money by selling commercially produce chicks to local egg and poultry farmers. It is a highly profitable business to start with a small capital and as such no specialized knowledge is required.

### **119. Grocery E-Shopping Portal**

Grocery E-shopping portal is a most trending business in recent phenomena. This tech-based business opportunity demands proper planning and strong online marketing strategy to start.

### **120. Landscape Expert**

A landscape expert is a personnel who is enough knowledgeable in the field of landscape architecture. The practice of landscape architecture includes site analysis, site inventory, land planning, planting design, grading, storm water management, sustainable design, construction specification and ensuring that all plans meet the current building codes and local and federal ordinances.

### **121. Medicinal Herbs Farming**

Growing medicinal herbs commercially are one of profitable agriculture business ideas. Having sufficient land and knowledge about the herbs marketing, an entrepreneur can initiate medicinal herbs farming with moderate capital investment.

### **122. Cactus Arrangements**

Cactus is the most favorable item as plant decor item. This is ideal for tabletop gardens, and many plants can coexist happily in the same container. Creating and selling cactus arrangements is a very profitable and self-rewarding business to start. It can initiate from a home location with low startup capital.

### **123. Dairy Farming**

Commercial dairy farming is one of the most profitable agriculture business ideas. Apart from milk, it produced a quantity of manure. There is a tremendous scope/potential for increasing the milk production through profitable dairy farming.

### **124. Goatery Farming**

Goats are among the main meat-producing animals in Kenya. This meat is one of the choicest meats and has huge domestic demand. Due to its good economic prospects, goat rearing under an intensive and semi-intensive system for commercial production has been gaining momentum for the past couple of years. Also goat milk sales like hot cake.

### **125. Potato Powder**

Potato powder has wide application in the processed and snack food industries, it can be used in any recipe which requires mashed potatoes. Potato powder is used as a thickener or base for the preparation of ready to eat vegetable gravies and soups. The processing method is also not very complex. Potato powder processing business can be initiated semi-automatic small scale basis.

### **126. Corn Farming**

Corn (Maize) is one of the most versatile emerging crops having wider adaptability under varied agro-climatic conditions. Globally, maize is known as the queen of cereals because it has the highest genetic yield potential among the cereals. Commercial corn farming by using modern technology with quality seed is one of the most profitable agriculture business ideas.

### **127. Soil Testing Lab**

Soil Testing is agronomically sound, beneficial and environmentally responsive tool used for monitoring the nutrient as well as making precise fertilizer recommendations for various crops and cropping sequences ensuring no damage to the environment. Establishing a soil testing lab with a Government certification is one of an ideal agriculture business ideas.

### **128. Green House Flower Export**

Establishing a greenhouse for only export-oriented flowers is one of the most profitable business ideas. An entrepreneur having a connection to the flower export market and having land-holds can initiate this venture with substantial capital investment.

### **129. Horticulture Crop Farming**

Horticulturists produce fruits, flowers, and plants in greenhouses and nurseries. Selection of the crops and method is important in this business.

### **130. Potato Chips Production**

Commercial small potato chips production line can process both potato chips and french fries. As it is an FMCG product demand is increasing globally.

### **131. Fodder Farming for Goats and Cows**

Fodder is any agricultural foodstuff used specifically to feed domesticated livestock, such as chickens, horses, pigs, cattle and goats. The term refers to food given to animals, rather than the food they forage for themselves. Types of plants typically grown for fodder include alfalfa, barley, oats, clover, grass and wheat.

### **132. Agro-Farming Blogging**

As internet facility is spreading fast, even farmers from remote villages have access to the internet. There is a growing need for unbiased , honest advice for farming related activities. People having knowledge and expertise in farming related activities worth consider agro farming blogs

### **133. Agriculture Consulting**

As with other consulting services, agriculture consulting requirement is surely expected to grow with coming days. People with experience and knowledge in a specified field of farming activity can consider offering consulting services to organizations and farmers.

## Low Cost Agriculture Business Ideas



What are the best agribusiness ideas for villages? What are the best agri-allied business opportunities for big towns and mega cities? What business can one start in the agriculture industry and succeed? This article will put these questions to rest.

Do you know that Agribusiness are the most lucrative businesses in the world? Apart from the low-cost of start up and running the business, agribusiness turn out a huge profit of up to 100%. With the increase in unemployment, young people are now embracing agriculture which was erstwhile considered a dirty business reserved only for the poor.

The trending challenge and impact of rural-urban migration have continued to generate great debates since the last three decades. Urban employment problems are a result of the phenomenal growth in urbanization and the inability of these urban centers to be able to utilize or absorb the urban labor that was created through the process of urbanization.

Agribusiness can be started with little or no training. You do not need a special degree to start though you may need to spend some time learning about the intricacies of the business. So without wasting your time, this article will highlight in details, some lucrative business ideas and opportunities you can engage in in towns or villages rather than remaining unemployed.

### **Top 30+ Low Cost AgriBusiness Ideas for Villages**

#### **134. Urban Agriculture or Crop Cultivation**

Urban agriculture is the practice of cultivating, processing and distributing food in, or around, a village, town or city. Urban agriculture in addition can also involve animal husbandry, aquaculture, agro-forestry and horticulture. Urban agriculture contributes to food security and food safety in two ways: First it increases the amount of food available to people living in cities and secondly, it allows fresh vegetables and fruits and meat products to be made available to urban consumers. Urban and peri-urban agriculture are generally seen as sustainable agriculture.

### **135. Rabbit Rearing**

There is no law prohibiting the keeping of rabbits in Towns and Cities. A backyard can serve as a good source of additional income, food and employment; thus reducing poverty, hunger and idleness. Rabbits do not compete with humans for food, as kitchen leftovers, cut grasses and formulated or compounded feed can sustain them. Rabbit keeping does not require much capital for investment and maintenance. As little space is needed, most rabbits could be kept in the backyard or in the abandoned sheds.

### **136. Start Selling Fresh Fruits**

Without any doubt, this is a business that should be checked out. With a little professionalism and good public appearance or hygiene, you can make money in this business because a lot of people who live in most of our highbrow area, like to eat fresh fruits especially if it is neat. Some people even prefer it served chilled.

So if you have blenders and an extractor, then you are bound to make a lot of money. A lot of people are tired of all these artificial juices in the market and I bet, they will pay and still thank you for giving them the natural source of vitamins which is needed in this age of fast foods and artificial flavors.

### **137. Foodstuff Retailing or Grocery Service**

In today's busy and sophisticated world, convenience has become a real business opportunity. Foodstuff like rice, beans yams plantain, potatoes, onions, pepper, oil etc. These

items can be bought in bulk, cleaned and packaged in specific portions and sold direct to end users. Many people who are unable to find time to shop will be relieved to know that they can just make a phone call and the groceries are delivered. Get a list of people you know who may patronize you. If you can get them to pay up-front, then you are better up with cash flow.

### **138. Fish Farming**

Over the years, quite a few people have made fortunes from fish farming, as the population is swelling and protein needs are far outstripping the available supply. Food is always a winner in any country or environment if done well. Fish farming is a sure bet business if you put the right structures in place. More and more people are turning to fish for its low cholesterol protein.

All you need to do is to get a space, buy or construct tanks, buy fingerlings for between and feed them for 4 to 6 months, then sell depending on weight and size. The breed of fish to train is your choice to make. You can choose to specialize on Catfish, Tilapia, Trout, Salmon, etc.

### **139. Herbs, Flowers Framing and Gardening**

Walking through a grocery store, a herb store, a health food store and even in gardening sections of home centers, you will find herbs in their dry forms to be used by consumers. Using the right equipment in your home garage or shed or by building a green house, you can start and raise both herbs and plants to resell to larger outlets and to the consumer as well.

Plants are the basis for all landscapes, homes, gardens and even for brightening offices. You will pay pennies for packets of seeds and make way more when selling starter plants. The more space you have, the better you are going to do. If you really have the space in your landscape and outdoor garden, creating gardens where you will grow plants and drying them out will add so much to your inventory and you can make great amounts of money selling dried flowers to retailers, wholesalers and even to flower shops themselves.

### **140. Livestock Feed Production**

A lot of people are going into livestock farming like fish farming, pig farming, poultry farming and a whole lot of others. As a smart investor, you can start producing feed for people to feed their animals. However, you must ensure that you carry out a lot of research and come up with a product that is rich in nutrients and would promote quick growth and good health of the animals.

To start a livestock feed production business, you will need a grinding machine, mixing machine, weighing machine, customized packing bags and raw materials for production. Raw materials might cost you about Kes. 100,000 while the machines can be purchased for about Kes. 1 million.

The production process is not so difficult. The ingredients required are mainly, maize, soya beans, fish bone, sorghum, groundnut, blood meal, wheat, rice shaft, additives etc. All these can be sourced from the market, any animal consult outlet, or any agricultural product shop around.

### **141. Setup a Small Poultry Farm**

Technology has enabled many to operate profitable poultry, yet make it free of odor that a neighbor next door will not know you operate a poultry farm. This is a business you can start from one room, car park or from that abandoned property near you with 50 to 500 birds, depending on the cash at hand.

### **142. Mushroom Farming**

Mushrooms are natural phenomenon that can give you much money. The untapped potential of these fungi is so much that if you invest on the venture, your room can no longer be your bank. Mushrooms are rich in vitamins, protein and minerals; they are favored over meat or even fish by some people, considering the nutritional value and superior health implications. There are two main broad categories of mushrooms; the edible and the non-edible (which is poisonous).

The deliberate mushroom cultivation is therefore essential to eliminate the imminent threat of mistakenly gathering the dangerous type. The start-up requirement are mushroom shed or



house, sawdust, Polythene bags, Spawns/mushrooms seeds, Urea/nitrogen fertilizer, Lime, water, ceiling machine, weighing scale, extra hands, Refrigerator.

Mushroom farming is similar to quail egg farming and not many people know that this business brings up to 500% profit. If you have a clean space in your home, you can start your own mushroom farming business today and start selling mushrooms to hotels, exporters and pharmaceutical companies in the next 21 days.

### **143. Frozen Chicken Production**

Many Kenyans have come to depend on imported frozen chicken for quite a while now and this is in detriment of local poultry industry and the subsequent health implication because of the long voyage from Europe or wherever, the imported product are usually preserved with chemicals, some of which are said to be injurious to health.

A lot of people prefer not to go through the stress of slaughtering and preparing live birds because frozen chicken can easily be stored and used at will, thereby saving time; and many people think it is cheap too. Start-up requirement are space, knives, tables, basins, heat source, stove heater, soap, hand towel, extra hands, freezer and generator . You need to go directly to the chicken farms to source for your live birds cheaply You can also position yourself to supply small hotels, restaurants and eateries.

### **144. Grass cutter Farming**

It breeds successfully in captivity and is capable of reproducing twice a year with litter size varying from two to six. They are primarily vegetarian and can be raised to maturity entirely on fresh grasses. They prefer plants with high moisture content and soluble carbohydrate. Field studies reveal that they do not burrow so they may be caged or reared in a fenced pen on the ground.

Grass cutter is worth considering for use in husbandry in the humid forest where poor grazing and harsh environment limits the performance of conventional livestock. Ranching of grass cutter as a backyard mini livestock would therefore improve the lot of the peasant farmers, provide an alternative source of animal protein, create job opportunities for urban dwellers.

## **145. Help the rural farmers to load Agro- Exportable Product From The Hinterland and Villages to Towns**

A lot of our readers have already tap into this opportunity by providing supportive services to Nigeria exporters. You can help source for agro product for Kenyan exporters and earn finders fee. You can travel to rural commodity markets and meet any of the sellers of these commodities, tell them that you need a large quantity.

It is very important to know the product profile because exporters will always ask you to submit samples and the product specification. They will come to the market to pick the product from the market and pay you the commission because you are adding value to the export value chain and a lot of exporters will be ready to work with you.

## **146. Flour Milling**

You can start your own flour milling business and start converting grains like wheat, corns, millet and cassava into flour. Wheat flour is a product that is in high demand in the baking industry. Flour milling is something you can do from the convenience of your home if you have a small space that you can mark out for it. If you do not have space within your home, you can rent a small space and start from there and as your business expands, you can opt for a larger space.

You can easily get wheat, corns, millet or cassava from local farmers, then learn how to process it and make it into flour. Some of the procedures include cleaning, grading and separation, tempering and then grinding the wheat.

## **147. Fruit Juice or Jam Production**

Our fore-fathers used to make their own jam and fruit juice at home by themselves before some smart investors recognized the business potential of these items and started making processed and packaged fruit juice and jam for sale.

As a young entrepreneur, you can start making your own fruit juice or jam and supply them to supermarkets and food stores around you. There is huge demand for natural fruit juice now as more people are now learning how to eat healthy and avoid artificial and overly preserved foods and drinks. You can buy fruits in large quantity from local farmers and make your own natural healthy fruit juice at home.

### **148. Groundnut Processing**

Groundnut is a popular snack that is loved by very many people. Take a trip to a nearby supermarket and you will see bottled groundnuts branded and packaged in a fanciful way. Very little effort goes into frying and packaging those groundnuts for sale and distribution.

With as little as Kes 20,000, you can start your own groundnut processing and packaging business. And of course, you can do it from the comfort of your home. If you can start your own groundnut farm, you will get access to groundnuts cheaply but if you don't have a space for groundnut farming, you can still get cheap raw groundnuts from farm markets.

### **149. Cashew Nut Processing**

Cashew nut processing and packaging is similar to groundnut processing, the only difference is that cashew nuts are more expensive and difficult to get than groundnuts. Raw cashew nuts are readily available in local village farms and markets where you can purchase them, bring them home for processing and packaging and sell them at a good profit.

### **150. Soya Beans Processing**

Soya bean milk is a healthy and nutritious drink that is in high demand by health conscious people. You can also start a soya bean milk processing business for a little capital.

### **151. Agricultural Equipment Leasing**

With the increase in people going into the agricultural business, you can make money from hiring out equipment like tractors, ploughs, sprayers, harvesters and irrigation machines to farmer.

### **152. Spices Production**

Spices used to make food like curry, thyme, cayenne pepper to mention a few are usually in high demand at food stores and supermarkets. Take advantage of that by processing and packaging your own spices.

### **153. Dairy products**

You can start making your own dairy products like milk, cheese and butter for sale.

### **154. Poultry and meat production and packaging**

There is the general belief that manually packaged meat or poultry are not too hygienic because of the way they might have been handled. A lot of people are now making good money from machine processed and packaged meat.

### **155. Vegetable Farming**

Vegetables are one of the highly consumed food items in the world. Starting a vegetable farm is one of the simplest and easiest businesses in the world with a high profit margin of up to 500%.

### **156. Agricultural Brokerage and Consulting**

You can start a business in agricultural brokerage by linking sellers of agricultural produce with buyers and get commission for it. You can also become a consultant and offer expert advice or organize trainings and seminars.

### **157. Hatchery**

Another very good business for young entrepreneurs is starting a hatchery for eggs and selling day-old chicks to poultry farmers.

### **158. Florist**

Fresh flowers are generally used for home decorations or event decorations and you can make money from growing flowers for sale.

### **159. Start connecting rural farmers with exporters using the internet**

Can you browse the internet very well , can you chat online? If yes, then I want to congratulate you because you can connect the agro farmers in the rural areas with exporters and earn a commission. A lot of exporters find it very difficult to get their desired agro product at the right quality and quantity, you can do this for them and name your price.

You can also join some online trade portals, secure a contract, sell the contract and charge an appropriate commission.

### **160. Export Agricultural product from the rural area**

Agricultural Export trading guarantees good returns on Capital on almost monthly basis. Exporting Palm kernel shell, Cow horns, Gallstones, Bitter Kola, Cashew, Ginger, Gum Arabic Chilli pepper, bitter kola, coconut, okro, yam, etc and earn good returns on investment. It might interest you to know that the gap between you and the millions of dollar waiting for you in this business is nothing but the “basic understanding of an export business process.”

Understanding the fundamentals of an export business process especially as it concerns securing a genuine export order or contract with a well secured method of payment is the basic requirement in this business, and then you are on your way to making unimaginable loads of money.

You can also become an export broker which is one of the easiest and most rewarding ways any prospecting exporter can raise money to go into full time export business. Starting from a little or no capital, an export broker could earn large “finders fee” with absolutely unlimited income.

### **161. Basket and Broom Production**

Baskets are used for packaging agricultural product such as tomatoes, pepper, onions, oranges etc. Since baskets are produced in various sizes, they help the farmers to grade his brands of product for easy pricing.. Our concern here is how to convert palm front and leaves to finished product for economic and commercial gains.

### **162. Bee Keeping and Honey Production**

Honey is manufactured in one of the world’s most efficient factories, the **Beehive**. Bees may travel as far as 55,000 miles and visit more than two million flowers to gather enough nectar to make just a pound of honey.

You can sell your Honey to high net-worth individual, busy executives who prefer to take pure honey than sugar, I know some honey dealers who are ready to give out their honey at a ridiculously low prices, all you need to do is to package it for the local or international market.

### **163. Production of Weed Killer**

Another major problem confronting every farmer in Africa, especially in kenya, is the problem of getting rid all the unwanted crops (weeds) from the farm, which successfully compete with crops and exhaust the soil nutrients. The cost of weeding takes between 50 –60% of the total cost of farming but the good new here is that, there is a formulation of chemicals which is crop and environment friendly.

## **165. Rules to setting up a profitable farming business**



To start up, one or nurture it successfully, there is a handful of rules that have to be kept.

### **1. Agriculture is for anyone, farm business is not**

Almost anyone can manage a kitchen garden, nurture some potted flowers or feed a gold fish in an aquarium. But when it comes to agribusiness, there is a lot more involved.

It is therefore important to start by giving a cold reality check to your passion in agribusiness. Consider whether you really have the time and energy your enterprise will need; because like any other business, it will take both passion and commitment to thrive.

### **2. Farm business is more than passion**

Besides the passion to grow crops and rear animal, you also need to have some basic skills in business. Numerous farmers have carried their passion to the farm and hoped to make it. They soon realise you need a few more skills to succeed. Some knowledge in basic bookkeeping, people management and some aptitude in marketing are paramount.

### **3. Match your farm with the best venture**

Your farm could possibly support a number of agribusiness ventures. But before you engage in any, conduct a thorough survey of other alternative uses and adopt the best alternative.

Whereas it is easier to grow what everyone else is growing, venturing into new frontiers is one of the best ways of steering off stiff competition.

#### **4. Start by scouting for the best markets**

It is much easier to grow anything than it is to market it profitably. Before executing any plan, start by scouting for the best market. Some of the unexploited avenues include online marketing, contract business with schools, hospitals and other institution and regional markets.

#### **5. Start small, set reasonable goals**

Starting small gives you an opportunity to make mistake without paying heavily for it. At times it's the best way to learn. First get the experience and then grow your business.

#### **6. Keep important contacts**

The moment you get into farm business, nothing can take the place of experience. It is important to keep the contacts of people who could be useful at your hour of need. You can also gain many useful contacts by participating in farmer's forums and training programmes.

#### **7. Take risks, but invest wisely**

It is easier to get a bank loan than it is to put it into a prudent use. There will always be a lot of things money can do in the farm. You must, however, invest in ventures with the highest returns.

#### **8. Think out of the box, but cutting corners is not part of the deal**

The easiest way to fail in a farm business is to start taking shortcuts. Farming needs a lot of patience. It is more like taking a marathon, as opposed to taking a sprint. If you want to last in the business; learn to be both innovative and patient.

#### **9. Fail. Fail again and again. But fail sensibly**



There is no magic bullet in business. At times things work; at times they don't. It's the only way you gain experience. Don't stop pursuing your dream because you failed, it's the life of a farmer. As long as you learn from it, it will only make you better.

### **10. Grow a sense of humor along with your crops**

Experience has taught farmers that the only way to succeed is by wearing a light heart. Calamities will sometimes visit. It could be a flush flood that sweeps your crop, or bunch of stray lions that pays a surprise visit to your herd. I could say take up an insurance cover, or grow a thick skin. But I choose to say, grow a sense of humour. Laughing at your problems is at times the best you can do.

## **166. Simple ways to spot good layers when buying chickens**



While we can buy breeds based around their egg producing capabilities, how can we tell who in our flock is a laying queen, and who is freeloading?

First things first, let's take a look at what eggs-actly our girls need, to be given the best chance of producing delicious and nutritious eggs!

For your girls to consistently lay eggs they need around 14-16 hours of sunlight a day. Your girls eggs are a result of a surge in hormonal activity that occurs due to sunlight (hence why you will find your flock will produce eggs more consistently throughout spring and summer). So

the more natural sunlight your chickens are exposed to, the more hormones that are produced and that means more eggs for everybody!

Coupled with a balanced and nutritious diet that contains adequate levels of protein, carbohydrates, fat, vitamins, minerals and fresh water, your girls have the best foundations for successful laying.

The hormonal activity that your chickens body goes through to lay an egg will cause visible changes in her body, so there are a number of visual characteristics that will determine whether your chick is a good layer or not.

1. Vent: it may not be the most pleasant of tasks, but examining your chickens vent is the first place to check if you want to know if they are producing the goods. An egg-cellent layer should have a wide, moist and bleached vent. This will allow for eggs to pass more easily, compared to a poor layer who will have a small, dry vent.
2. Combs and Wattles: combs, wattles and earlobes that are rich and glossy in colour, and have increased in size, indicates a healthy, laying hen. On the other hand, a hen displaying short, pale and hard combs and wattles signifies they are not in lay.
3. Plumage: if your hen is looking extra smart and well-groomed with extra soft feathers, this is probably a good indication that they are not a good layer-if your girl isn't using the protein in her feed for egg producing, it will go straight to producing a beautiful shiny coat! So those that tend to be better layers have more worn and tatty feathers-sacrificing their appearance for your brunch, tough gig!
4. Molting: when and how your chicken molts can also help you determine how good of a layer your girl is. You will find your best layers will molt later in the colder seasons, shedding and re-growing their feathers all in one go. This generally takes them all of a few months, then they return to their normal laying habits. Poor layers however, molt early and slowly, which can take up to several months to complete.
5. Body Shape: a nice broad body that is deeper towards the rear, with legs set back and wide apart is a good indication that your girl is a good layer. Their body is set like this to accommodate all their egg organs. A productive layer also should not be too thin, nor too fat. However a small amount of fat does indicate that your hen is storing all the necessary nutrients for conducive egg laying.

So if fresh eggs in the morning is becoming a rarity, a quick inspection of your flock, focusing on the features listed above should give you the best indication of who is more lazy than layer.

## **167. Broiler poultry farming**



Broiler poultry farming is a lucrative business. Generally highly meat productive birds or poultry breeds are called broiler poultry. But broiler chicken is a special species of poultry, which is a great secret. Only four countries of the world knows about this secret and they supply and maintain all the demand of broiler chickens. Broilers are like other common poultry birds. But this broiler is made in a scientific way for producing more meat in a short time. Basically, broilers are only for meat production.

### **Selecting Broiler for Business**

There are many breeds of broiler. Before selecting broilers for business the farmer have to maintain some process. Those important steps are described below.

1. The broiler chick of one day should weight between 36 to 40 grams.
2. It is found that if the baby chick of one day old become good weight then it will give great return when you will sell them.
3. To get more and affordable benefits from broiler poultry farming the farmer should select the good and high productive breeds for business.

4. As broiler convert food to meat so provide them high quality food.
5. The farmer have to ensure high ratio of protein and calorie in broiler chicken food.



6. For the chicken of 0-6 weeks the food should contain 22.24% protein and 2900-3000 metabolic heat.
7. Among the amino acid, lycine and methionine is very essential and important in broiler poultry food. Because this acids helps to enhance chicken health, and help to convert food to meat.
8. In broiler food the ratio of fiber should not more than 6 percent.
9. Vitamin A, B2, D3, B12 and K is an extensive requirements to broiler food.
10. Potassium, Iodine, Manganese sulphate and Zinc carbonate should mixed well separately and feed the chicken.
11. A little amount of disinfectant should mixed in broiler food and this will keep the chick free from diseases.



## Housing

The broiler house should be placed east-west direction. Ventilation system must be well accompanied. The regular distance from one house to another house will be 11-12 meters (35-40 feet). The house should be cleaned well before bringing the chick to the farm. The insects like lice, mosquito, etc. should be run off with blow lamp.

Heating system of the space of baby chicken should be observed well 48 hours before the chick reach the farm. The temperature of the house should be 35°. 7 square inch of space per chick is required. Always keep a moderate number of chick, it will keep the chicken healthy.

### **Feed and Water**

Proper and high quality feed is the main thing to success in broiler poultry farming. Broiler poultry consume feed and convert them to meat. So, to be success the farmer should be conscious in feed management. Broiler poultry needs high ratio of protein in their feed to grow well. They should also provide proper vitamin like A, B2, D3, B12 and K to meet their needs.

Provide some disinfectant to keep them free from poultry diseases. Broiler poultry eats feed and water whole day and night. So, make sure the supply of feed and water all time. Along with feed, fresh and clean water is very important. Broiler poultry takes a lot of water everyday. Make the water available all time to their cage. In winter season farmer should supply warm water. However, to be successful the farmer must have to be more careful in feed and water management. We will discuss details about broiler poultry feed and water management later.

1. For the first few days you can serve feed in egg carton.
2. 2.5 cm space is required per chick until they reach 1 week.
3. For the first time you can fill the feeder fully, but don't do that when they grow enough. It reduces the food waste.
4. Provide the feed four times a day.
5. Provide fresh and clean water all time.
6. Water pot should be kept as much as possible according to the number of chicken.
7. You have to keep in mind that broiler takes more water than layer chicken. The broiler chicken takes more water in summer season.





## **Temperature**

Temperature is very important in broiler poultry farming. You should check the temperature of the broiler chicken house 48 hours before bringing the chick to the farm. For the first week the temperature of the rood would be 350°c and it will reduce at the rate 2.80°c per week, it mostly depend on the outside temperature. The litter of the chicken would between 5-6 inch depth. If possible keep some straw in the chicken bed. The chicken bed should clean twice a week with spade. If the condition of the bed is very wet then you can use lime because it absorbs the ammonia gas.

## **168. Ducks farming**



There are numerous meat and egg productive duck breeds available throughout the world. All the present domestic ducks around the globe come from the wild birds. Those wild birds wander around the world, and some of them have been domesticated as a good source of food. Almost all those wild birds are from mallard species. Incidentally, all hen of the world comes from red wild hen. You might know that, ducks are aquatic organism.

Some people think that, duck without water and pond without water are the same. Even, some people think, ducks can't live without water. But it's totally wrong. You can not imagine pond without water, but duck can be raised without water. Thousands of ducks can be raised without water by keeping them inside house, in the same way you raise chickens or other types of poultry birds.

But, keep in mind that, in case of raising ducks without water 'your ducks will lay unfertilized egg'. That means you can't hatch the eggs for producing ducklings. If you want fertile eggs, male ducks and water are essential. You can easily raise ducks without water, they just need water for reproduction or mating purposes.

### **Advantages of Duck Farming**

There are numerous advantages of starting duck farming business. In many countries, ducks rank next to chicken for meat and egg production. You can raise ducks in both commercial and small scale meat or egg production purpose. Even, you can raise some ducks on your own backyard with other birds or animals. Some notable advantages of duck farming business are shortly described here.

1. Ducks need less expensive, simple and non-elaborate housing facilities. As a result housing costs are very less for setting up commercial duck farming business.
2. Ducks are very hardy bird and they need less care or management. They can adopt themselves with almost all types of environmental conditions.
3. They lay eggs either at night or in the morning. So you can collect their fresh eggs every morning :). And you can do your other work during rest of the day and you don't have to spend time for caring your ducks.
4. You need comparatively less space for raising ducks. Ducks have comparatively shorter brooding period and ducklings grow faster. Ducklings grow so fast that, you can dispense artificial heat within their 5 to 7 days. Although they will require a little longer heating period during cold months.
5. Ducks are highly resistant to the common avian diseases.
6. You can feed your ducks with a wide variety of foods. A duck's regular food includes cassava, copra, corn, rice, fruits and any other low cost and easily available foods. They also have the natural tendency of foraging on aquatic weeds, algae, green legumes, fungi,

earthworms, maggots, snails, various types of insects etc. which directly reduce feeding cost.

7. You can also use your ducks for controlling apple snails or some other harmful insects from your garden.
8. Ducks have less mortality rate and usually they live longer than chickens. In case of egg production, ducks lay eggs for a long time period.

### **Duck's Feed**

Ducks generally eat almost all types of food they find edible. You can feed your ducks like chickens. But you have to add some extra additives into duck feed. As some ducks lay more eggs than hens, so you have to be very careful about feeding your ducks. Add necessary nutrient elements in their diet. Always provide your ducks nutritious feed according to the various types of duck breeds and their growth rate.

For small scale or domestic duck farming, you can feed your ducks rich bran, kitchen waste and a plenty of snails. Always keep in mind that, ducks eat a lot of food daily. So you have to feed them well-balanced food if you want proper egg and meat production.

### **Duck's Eggs and Meat Market**

Marketing duck products (egg and meat) is very easy. People all over the world like duck egg and meat from the ancient time. In some areas, people like duck eggs and meat more than chicken meat or eggs. Duck eggs are usually larger in size than chicken eggs. In some areas duck meat is less popular than their eggs. However, there is no tension about the marketing of ducks eggs and meat. You can try to determine the demand of duck products in your local market.

### **Duck Breeds**

There are numerous duck breeds available throughout the world. Although all of those breeds are not suitable for commercial duck farming business. Some of those breeds are suitable for egg production and some are ideal for commercial meat production. Usually ducks are of three types according to their production type.

1. Meat productive duck breeds
2. Egg productive duck breeds



3. Famous for both meat and egg production.

### **Meat Duck Breeds**

There are numerous duck breeds available which are famous for meat production. Peking, Ayleshbari, Maskovi, Ruel Kagua and the Swiden ducks are most popular for meat production. Usually meat productive male ducks weight about 5 kg and female weight about 4 kg.

### **Layer Duck Breeds**

Indian Runner is a popular layer duck breed and very famous for their egg production capability. There are three types of Indian runner ducks available. White and grayish Indian runners are good layers. Khaki Campbell ducks are also very popular duck breed for high egg production.

### **Meat & Layer Duck Breeds**

Khaki Campbell ducks are suitable for both meat and egg production. They came from Indian Runner and Ruel Kagua. Indian runners are famous for egg production and second one is popular for meat production.

## **169. Types of breeds for profitable dairy goat farming**



**The Small East African Goat**



These goats occur throughout East Africa from desert to urban and known in tribal or local names. Their colour ranges from pure white to pure black with various intermixes of roan and speckled brown. The tassels (toggles) occur in up to 30% of the population. Adult males can weigh 30- 40kg and female's 25-30kg.

They grow up to a height of 64cm at the shoulders. Both sexes have horns that sweep directly backwards and are often curved upwards at the tip. The horns vary from 2.5 cm to 20cm. The ears are of medium length (approximately 12cm), are slightly pendent and rarely pricked. 40% of the males under 14 months have beards.

The coat is short and fine in both males and females but has longer hair on the hind quarters. The males often have a pronounced mane running the full length of the buck. They are mainly kept for meat as their milk is rarely enough for one kid. They are a useful animal to use as a base in an upgrading programme.

## **Galla**

The Galla goat is an indigenous to Northern Kenya. It is also known as the Boran or Somali goat. It's the milk queen of the Kenyan arid and semi arid areas. The female is about 60cm wide at the shoulders and weighs 45-55kgs. The male weighs up to 70kgs. They are white haired with a black skin, on the nose (muzzle) feet and underneath the tail.



Another subtype exists that has colour around the neck and lower legs and black stripe down the spine. The females are long-lived and will continue to breed and rear healthy kids up to 10 years of age. They carry better milk genes and give greater opportunity for genetic selection for this trait.

The back is fairly long and slightly dipped. They are docile animals easy to handle but do not like cold wet climate, thriving best in low altitude preferably in acacia bush country. They have a higher compensatory growth rate after long dry season. The Galla produces about half litre of milk per day.

## **Exotic Breeds**

### **Saanen**

This is the milk queen in the goat world. It originated from Switzerland. It's all white or creamy coloured with pink skin pigmentation. The face is straight, the ears are upright and alert (pricked) the hair is short and fine and the body is long. As a rule Saanen does not carry tassels. Under good management it produces 3-5 litres of milk per day depending on management.

They are prolific and have high twinning rate. Sometimes the kids are born with both male and female organs (hermaphrodite). This has been observed on polled goats. Mature male weighs 70-100 kg and mature female weighs 50-70 kg. The female measures 74 -80 cm in height while the mature buck measures 81-92cm. Udders are usually shapely and well attached.



Saanen Goats (Notice the pink pigmentation)

### **Toggenburg**

There are two breeds of Toggenburg one originating from Switzerland and the other one from Britain. The British breed is bigger than the Swiss breed with the female of the British type weighing up to 70kg and bucks up to 100 kg. With Swiss type, the female weights are in the range of 50kgs with bucks up to 70 kg. They are brown or greyish brown in colour with distinctive white stripes on the face and legs.

They may be horned or naturally polled. Horns in male are long and curving back. They may have toggles (tassels) or not. They are very gentle and quiet in temperament. They are easily handled and can be trained. They have a long body and seem bony. They are bred for milk with average milk yield of 1-3lts per day depending on management. The breed is suited for the higher cooler regions where heat stress is not a problem and good quality fodder is freely available.



Toggenburg goat (female)

## Alpine

The breed originated in French Alps. They are medium to large in size and are hardy and adaptable animals thriving in many climates. They have a varied coat colour with shades of grey, brown, black, redbuff and combinations. They have a pronounced mane in both male and female. They may or may not have horns. The goat is bred for milk with average milk yield ranging from 2.5-4lts subject to levels of management. The Female weighs from 50-60kgs while bucks weigh 65-80kg. The female ranges in height from 70-76.cm and the male 80-90cm when mature.

## Crosses

There are many crosses depending on the breeds used. The exotic breeds have been crossed with the local breeds to get a better adapted and higher yielding animal than the local goats. This is the best starting point for those with the local goats wishing to keep dairy goats. The performance of the crosses has varying degree of success depending on environment and management. There are also crosses between the exotic breeds for instance Saanen and Alpine.



Cross-bred goat

## 170. Making business raising day old chicks



Raising day old chicks in Kenya has become very popular because you only need a viable batch of eggs for hatching, a reliable incubator and a working knowledge of poultry incubation. Also selling day old chicks can be done both locally and as a mail order business. Your hatchery could be just what people in your community needed as a nearby source of day old chicks.

Many people would like to raise chickens themselves, rather than to buy pullets but are unable to get or hatch enough day old chicks.



Day old chicks

Your job would be to have enough laying hens to lay eggs, incubate them, and sell them when they hatch. Many hatcheries take pre-orders and deliver baby chicks one day after they hatch. You can also distribute the chicks to local farmers or take orders through your website. Day old chicks sell at around Kshs 80 to 100 each. The Kenbro breed is a top selling breeds that you can start with.

Using only egg incubators you can sell day-old chicks as a viable business. With hens that supply a guaranteed number of eggs you can distribute the eggs such that there are eggs for the incubator at any one time. If you organize properly, day old chicks can be produced on a weekly basis for the market. The capital outlay is minimal, no specialized knowledge is needed and very little infrastructure is required.

This business model is ideal for small-scale farmers who want to start their own hatcheries with low capital input and high returns on investment. It is a highly profitable business to start and your capital requirement is very small.

The best way to start is by getting good chicken breeds and rearing them for laying eggs. Kenbro from Kenchic is very popular with farmers because of its high egg yield and quality meat.



You are unlikely to meet the demand. Within six months your hens should be ready to give a constant supply of eggs for the incubator. Your business is to hatch the eggs and sell as day old chicks.

And an even easier way is to outsource the batch of eggs for hatching. But here you will need to be very careful and observant. The breeder you are getting the eggs from should be reliable and trustworthy because in order to successfully accomplish this venture you need to have fertile eggs that produce healthy embryo.

When choosing the eggs, don't let the bigger ones fool you. Large eggs are not ideal eggs for hatching as they develop poorly thus producing sickly chicks. Too small ones are also not good, as these may not have enough yolk to sustain growth. Whether the eggs are from your farm or outsourced, always pick for hatching those of medium size and as much as possible, stain-free eggs. Look out for signs of cracks, holes and other abnormalities in the shell. Avoid those with irregular shapes and stay away from those with suspicious marks. Bacterial infection should be prevented right from the start.

The prices of incubators range from as low as Kshs 15,000. For a medium sized business you can invest in a 1200 eggs per week incubator which should be going for Kshs 140,000. Taking 70% hatchability, you should be selling about 800 day old chicks per week. At Kshs 100 per day old chick, this translates to a gross Kshs 80,000 per week or Kshs 320,000 per month. Other than feeding the parent stock or purchasing the eggs, there are no major expenses and the profit margin can easily be Kshs 200,000 monthly.

## **171. Group of women taking home profits from chicken production**



For a long time, the Mwangaza Women's Group in Kapseret laboured to make ends meet with little success.

Anne Ng'etich, the investment group's chairperson, says they used to meet every week and contribute Sh100, but their business ventures never quite took off.

"We later opened a bank account and after several months of saving we purchased local chicken breeds and reared them for eggs and meat, but they used to take too long to mature," says Ng'etich. She says this all changed when Uasin Gishu County, through the Inua Mama na Kuku initiative, backed their venture. "Mwangaza is among many women groups the county government engaged to boost poultry production through rearing of superior chicken breeds raised through improved animal husbandry," says Ngetich. The Uasin Gishu county government set aside Sh10 million for the purchase of an improved multi-purpose chicken variety and this initiative has benefited 450 groups.

County Executive Committee member in charge of Agriculture Cyril Cheruiyot says they have purchased more than 450,000 birds.

"We have procured over 450,000 birds and we want to get to a million chicken to be given to more groups. Women, especially in the rural homes, are well-placed to manage chicken and cater for household needs and we believe supporting them will positively impact on their lives," said Dr Cheruiyot.

Under the programme, the women are first trained on animal husbandry so that their chicken are properly reared with the view to raising production.

After training, each group is given 100 hybrid multipurpose chicken breeds. Anne Chenoo, a member of the Mwangaza group, says the population of their birds has doubled eight months after their training. The group now profits from the sale of eggs and chicken meat. "Using our initial savings in our group bank account we bought an incubator with a capacity of handling 160 eggs and successfully hatched 140 chicks.

The chicks are maturing at a faster rate than the common breeds and are preferred in the market. They have really supplemented our income," Chenoo said. Janet Saikwa, another member of the group, says the project has empowered them and they do not have to rely on their husbands' income to get by. She says they now want to expand their investment and begin to rear dairy goats and cows.



“We were struggling at the beginning but now we sell eggs from the improved variety at a minimum of Sh.30 while the bird retails at Sh700 when mature. This has opened our eyes and we believe we can improve our financial position,” said Saikwa.

## **172. All about rearing turkeys**



The easiest and least expensive way to get started with turkeys is to buy day-old turkeys. Another way is to buy turkey hens and a tom (adult male turkey). Either way the aim is to have vibrant flock of turkeys.

The incubation period is 28 days in turkey. There are two methods of incubation. You can choose to incubate the eggs naturally or artificially. Naturally turkeys are good brooders and the broody hen can hatch 10-15 eggs. Select clean eggs with good eggshell and shape for brooding for high hatchability and healthy poults.

Although there are many places to order turkey poults (baby turkeys), it is important to investigate and decide which breed is best for you. Getting poults locally is better and less stressful for the birds. Day old poults are available at Nyonjoro Nightngale in Naivasha.

Brooding in turkey takes 0-4 weeks. Turkey poults need double hover space as compared to chicken, at 1.5 ft<sup>2</sup> per bird. Brooding day old poults can be done using infra red bulbs, gas brooder or traditional brooding systems.

You will need to set up a brooder area before the birds arrive. Line it with about 1 inch of wood shavings and provide a source of heat to keep the birds warm. Keep the birds warm and dry (see Temperature control for brooding broiler chicks ) in a round design of the brooder to keep them from piling in a corner and suffocating each other. Temperature at the floor level for the first week should be between 32° and 38° C. Thereafter withdraw the heat source to reduce the floor temperature by 2°C degrees each week for the next 4 weeks.

Common litter materials used for brooding are wood shavings, saw dust, paddy husk, chopped saw etc. The thickness of the litter material should be 2 inch at the beginning and may be increased to 3-4 inch in the course of time by gradual addition. The litter should be raked at frequent intervals to prevent caking.

Give the birds a larger area to roam in the second week. A 20 cm-by 20 cm space per bird will be enough for the next three weeks. When the birds start perching on the top of the waterer or on the brood walls provide a 1 to 2 inch roost 1 foot off the floor.

If temperatures are conducive you can let birds 6 weeks and older to go outside for a while each day but keeping them confined when it is rainy and cold. The birds will be ready to go on pasture by 8 weeks.

## **Feeding turkeys**

It takes about 3.25 kg of feed to produce 1 kg of live turkey weight.

A feeder and waterer for every 25 birds is needed. Start your turkeys on starter mash. Make sure there is plenty of starter mash in the feeders, and that the poults have fresh, clean water at all times.

By the tenth week the poult should be ready to switch from starter mash to a growers mash. Include grit and continue giving it with the mash two times a week. The turkey will also need greens and other foods added to its diet. In intensive system, greens can be fed up to 50% of the total diet on dry mash basis. Fresh Lucerne is first class green feed for turkeys of all ages. Foods such as cracked maize grains and soya bean meal are also great choices. Other supplements such as vitamins and minerals when should be added. This will ensure that they stay healthy and grow up without any problems.

To avoid leg weakness and lameness in free ranging birds, calcium should be supplemented at the rate of 250gm per week per bird in the form of oyster shell. Ten percent of feed can be substituted with vegetable waste to reduce the cost of feed. Turkeys are very good scavengers consuming earthworms, small insects, snails, kitchen waste and termites all rich in protein and this can reduce the feed cost by fifty percent.

Make sure that they have fresh water at all times and feed is adequate. Water should be about body temperature to prevent turkeys from cold.

Turkeys don't add fat until they are 22 weeks. Turkeys are ready for slaughter when the pinfeathers have disappeared and there is a fine layer of fat covering the body. It takes about 24-28 weeks to completely finish a turkey. This usually comes about when the birds reach 8 kg or more depending on the breed. For the best quality meat grains given to the bird should be at least 70% maize by the 20<sup>th</sup> week. Also allow the birds to be on fresh grass pasture throughout the finishing period until the last 18 hours. Separate and give plenty of fresh clean water without food in the last 18 hours before slaughter.

### **Breeds and breeding turkeys**



Turkeys are not classified into breeds. Nonetheless seven standard varieties are distinguished – Bronze, White Holland, Bourbon red, Narragansett, Black, Slate, Beltsville small white. In Kenya the two common varieties are the Bronze and the White Holland types.

### **Broad breasted bronze**

The basic plumage color is black and not bronze. The females have black breast feathers with white tips, which help in sex determination as early as 12 weeks of age. This fast-growing modern bird has plenty of breast meat, usually two to four times the amount of breast meat as a wild turkey. They reach a dressed weight of 7 to 11 Kg in about 24 weeks.

### **Broad breasted white**

This is a cross between Broad breasted bronze and White Holland with white feathers. White plumage turkeys are suitable to hot climatic conditions as they have better heat tolerance and also good and clean in appearance after dressing.

In natural mating the male to female ratio is 1:5 for medium type turkeys and 1:3 for large types. On average 40-50 poults is expected from each breeder hen. Toms are rarely used for mating after first year due to reduced fertility. Toms tend to develop an affinity towards a particular female therefore change the toms every 15 days.

### **Rearing systems for turkeys**

Turkeys can be reared under free range or intensive system. Read Examples of housing systems for poultry.

Under free range conditions, one acre of fenced land can accommodate 200-250 adult turkeys. Provide shelter during the night at 3-4 ft<sup>2</sup> per bird and protect from predators such as dogs, foxes and raccoons during scavenging. Planting of trees is desirable for providing shade and cooler environment. Rotate the range on a weekly basis to reduce incidence of parasite infestation. You can build a moveable turkey roost which can be moved to fresh range as needed. Using moveable roosts will keep manure from building up inside the pen. A 5 by 8 ft roost will shelter up to 20 turkeys.

When turkeys are reared under deep litter system, the general management conditions are similar to that of chicken but care should be taken to provide adequate floor, waterer and feeder space to accommodate the large bird.

### **Husbandry practices of turkey**

## **Debeaking**

Poults should be debeaked to control feather picking and cannibalism. Debeaking can be done at day old or 3-5 weeks of age. Remove the beak at about a half the distance from the nostril to the tip of the beak.

## **Desnooding**

Removal of the snood or dew bill is done to prevent head injuries arising from picking and fighting. It is done when they are one day old by using the thumbnail or finger pressure. At 3 weeks of age it can be cut off close to the head with sharp scissors.

## **Toe clipping**

Clipping of the toe is done at day old by removing the tip of the toe just to the inside of the outer most toe pad including the entire toenail.

## **Catching and handling of turkeys**

Using a stick drive the turkeys to a darkened room where they can be picked up with both legs without any injury. Mature turkeys should not be kept hanging for more than 3-4 minutes.

## **Turkey health**

Be aware of the common health problems that turkeys face so you can be prepared when your turkeys get sick. Turkeys in the free range system are highly susceptible to internal (round worms) and external parasites (fowl mite). Hence deworming and dipping once a month is essential to improve the growth of the birds.

Turkeys are also susceptible to fungal diseases, viral diseases, and bacterial diseases of poultry such as Arizonosis, Blue comb disease, Chronic respiratory disease, Erysipelas, Fowl cholera, Fowl pox, New Castle disease, Paratyphoid, Turkey coryza, Coccidiosis, Turkey venereal disease and others.

## **Vaccination Schedule**

Day Old	New Castle Disease – B1 Strain
4 <sup>th</sup> & 5 <sup>th</sup> Week	Fowl Pox
6 <sup>th</sup> Week	New Castle Disease – (R2B)
8 – 10 Week	Cholera Vaccine

### **Marketing turkeys**

The dressing percentage of turkey is 80-87%, which is highest of all farm species.

A market study shows that a male turkey at 24 weeks of age weighing 10 to 20 kg is sold for an average of Ksh 500 per Kg and it can go a bit higher during the Christmas holiday season. The net profit of a turkey is pretty substantial.

### **173. Types of incubators you may buy**



### **Types of incubators**

An incubator imitates a hen by providing an environment for eggs to hatch into chicks. It keeps the eggs uniformly moist and warm, for a period of about 21 days. Different sources of heat can be used to warm the eggs, the most common being electricity, solar energy or fuel such as charcoal, paraffin or gas. Various types of incubators have likewise emerged on the basis of these sources of heat.

### **Manual egg incubators**

If you don't have access to electricity then the best option is a manual incubator. This provides an easy and affordable way to incubate eggs. A manual incubator can use charcoal, kerosene or gas to heat and retain eggs in the hatching chamber where the eggs are placed. Eggs are turned manually; temperatures and humidity regulation is also manual. Different capacities are available ranging from 50 up to 300 eggs and the cost range from Kshs. 10,000 to 20,000.

However there has been complains on the output of these kind of incubators. The average hatching rate as reported by farmers range between 50 and 60% with good management. However the use of thermometer to regulate temperature and placing water next to the eggs to regulate humidity has improved performance for most farmers.

### **Electrical egg incubators**

This kind of incubators requires a constant power supply if the eggs are to be hatched. Any breakdown in the power supply as is usually frequent in Kenya causes the eggs to lose their hatching value and must be destroyed.

The incubators can be manual, automatic or semi-automatic. Those that are automatic come complete with a hatching tray, thermostat to control accurate incubation temperature and hygrometer to control humidity during egg hatching. The egg tray has an egg turning system for turning eggs automatically. An air circulation system ensures that air is circulated evenly in the incubator and that eggs hatch at the same time. Others are connected to computers, internet, cell phone-based alarms and remote-control functions for easy monitoring and control of activities while on the move.

The incubators are available in capacities ranging from about 60 eggs to 1200 eggs with costs currently ranging from Kshs. 15,000 to 140,000.

### **Solar egg incubators**

The solar incubator uses solar energy to hatch eggs. They are meant for use where electricity is not reliable. A solar panel connected to a battery system with charge controller assures 24-hour power supply. A combination exists where you can use a solar system when there is power failure. Heat is controlled automatically in the entire unit by use of a thermostat to ensure no damage is done to the eggs due to over heating. Fans are installed for fresh air circulation. Humidity is usually controlled manually by placing water container inside the base. The eggs are also turned manually.

One advantage with this is that when the system is not in use, the device can be used to provide power for lighting. Unlike electrical incubators the eggs need not have to be disinfected before placing them inside and after every hatching the entire device can be washed and cleaned.

The incubators are available in capacities ranging from 100 to 1,2000 eggs. Prices range from Kshs 15,000 to 100,000.

## **Things to consider when selecting an incubator**

### **Source of heat**

Obviously the first is to know the source of heat available to you. In the rural areas where electricity is lacking a manual incubator that uses charcoal or kerosene or the solar incubator are the obvious choices depending on your account balance. On the other hand if you have electric power then you can take advantage of the advanced features of the electrical incubators.

But of late there has been concern that many farmers are abandoning the electrical incubators due to frequent power outages and the high costs of electricity. A system that combines solar and electric incubator is a good back up where there are electric problems.



If you are going to entirely depend on solar power, ensure that the solar panel provides twice the power that can maintain the battery when it is at full charge. Compare models, take your time and seek advice.

## **Market**

If you are in business then the size of the market is important because it will determine the off-take of chicks and therefore the size of the incubator. Select an incubator that you can adequately supply with eggs. It will be useless to have a large incubator when you can only supply a few chicks. If you produce eggs for hatching, the egg production should match a weekly setting plan.

## **After sale service**

When you purchase an incubator, it will come with an instruction manual where every step of the incubation process is explained and therefore guarantee successful hatching. And as part of after sales service, manufacturers provide various kind of support. Some of them guide and provide information or training on the incubation procedure and business advice that you need in order to make your hatchery a success. Look for other available services that they offer to farmers.

## **Warranty**

Look for those that carry at least a two-year warranty on all the spare parts, especially if it is an electrical or solar incubator.

## 174. Livingstone Waithaka: I'm making a fortune from my solar incubators



At his home in home in Asia-Quarters estate in Nyeri, Mr. Livingstone Waithaka cuts the look of a mechanic or an electrician. However, the vehicle parts and wires strewn all over are among his solar incubator-making tools. We find him working on his latest innovation: an automatic solar incubator that he says will hold 10,000 eggs. “I am selling this one to a poultry farmer in Arusha Tanzania. It will fetch me a cool Sh. 450,000,” he says.

It is his biggest project since he started making the gadgets three years ago. The 40-year-old makes incubators powered mainly by solar energy.

Interestingly, the Form Four graduate has not undergone any formal training but he says his love of physics and desire to experiment with gadgets made him start making incubators.

“I loved the practical part of Physics. Whenever I saw something interesting, I tried not to make an imitation but improve it.”

It is this drive that made him think of coming up with solar incubators.

“I decided to modify and better what is in the market to suit the needs of local farmers. Most of the imported incubators use electricity but many farmers don't have power,” says Waithaka, who did not proceed to college due to lack of fees.

When he started, he was making manual machines, but farmers complained because turning the eggs physically was a challenge.

Farmers using the gadgets also had to keep checking the temperature with a thermometer to ensure it is at the right level.

The techie turned the machines into the automatic mode by adding a gadget to regulate temperature and another to turn the eggs.

He started making the solar incubators in January after a client from Arusha prompted him.

The man had been introduced to him by a poultry farmer from Machakos whom he had sold an electric incubator.

“He challenged me. He asked whether while making the electric incubators I thought of poultry farmers who had no electricity.”

Waithaka took the challenge head on. He worked on one of the electric incubators he had made and after four months, he had figured out how to make it use both solar and electricity. “The solar incubators are also automatic as they turn the egg-trays after some hours.”

## **MADE-TO-ORDER**

To make the gadgets, Waithaka starts by sourcing chip boards from hardware shops and joins them himself to make the outer compartment.

Among the electric gadgets he uses are small solar panels, alternators to change alternating current to direct current, diodes, tuners and temperature regulators.

So far the techie has sold more than 350 incubators in Arusha and 290 locally of various sizes from Sh30,000.

“I usually have two or three gadgets for display but I make the incubators on order because clients have different preferences when it comes to egg-holding capacity.”

A solar-powered incubator with a capacity of 70 eggs goes for Sh30,000.

“Demand for incubators has risen because many farmers are now rearing Kienyeji chicken thus they hatch their own chicks rather than buy.”

The techie, who also rears chicken, says hatching own chicks comes with a lot of advantages.

“One gets a particular breed he needs and the number of chicks he wants. My incubators can be used to hatch eggs of any kind of bird including ducks, turkeys, geese, guinea fowl, pigeon and bantams.”

A mature bantam, he says, goes for Sh2,500 while a day-old chick costs Sh500.

He sells the gadgets through social media where he has created a page on Facebook.

His products are yet to be approved by Kenya Bureau of Standards but he is in the process of patenting them.

“You have to start at Kenya Industrial Research and Development Institute (Kirdi). I have a letter from Kirdi that permits me to continue with the business before they fully approve the gadgets.”

## **175. How I use homemade herbal medicines to protect my chicken from deadly diseases**



In Buloma, a small village in Kakamega County, one farmer has discovered a secret—making herbal remedies that cure some poultry diseases.

John Waswa claims that his herbal concoction—Mukekuma (Mukangala Herbal Kuku Master)—can treat an array of poultry diseases. “I learnt this from my father who learnt from his father and so on. This knowledge is passed on in the family line,” he says as he prepares the ingredients at his Buloma home.

For the last three years Waswa has been making herbal remedies which he uses to treat his chicken; he then sells the surplus to locals.

“I use the Mukangala Herbal Kuku Master herbal cure to treat a number of diseases. When this herbal cure is used for treatment, the chickens recover,” he says.

Waswa mostly uses the herbal cures to control common poultry infections which he calls ‘ukoo’ — these spread fast through the air and kill chicken.

“When there is an outbreak in my neighbourhood, my chicken are spared because I vaccinate them against disease with the Muhekuma herbal cure,” he says.

The farmer produces 20 packets of herbal cure.

“In the last two days I have sold 25 packets . . . the demand is rising.

“During the dry season, the demand is very high and at times I am unable to meet it,” adds Waswa.

The farmer says herbs are effective against New Castle which is caused by a virus that infects the respiratory and nervous system. They do not work on turkeys and ducks.

However, the herbs treat bronchitis, avian influenza, swollen head syndrome and fowl cholera, but not chicken pox.

“My chicken do not get infected even if they mingle with other chicken which are infected. I have managed to control poultry diseases and infections in my compound for the last three years,” he explains.

To make the concoction, Waswa mixes nine different herbs which he gets from his compound.

He then dries the herbs and mixes them in a mortar before crushing them into powder using a pestle.

“The herbal cures are not used on chicks younger than three weeks and may kill them because their immune system is not fully developed,” he explains. For older chicks, the herbal cure is mixed with water or chick mash. For every kilogramme of chick mash, he adds one spoon of the herbal powder.

Sometimes he mixes the herbs in milk. The mixture is supposed to be used once because sour milk is poison to chicken.

“I mix the herbs with milk for five minutes then sieve it. For chicks that seem to cough, I administer the drugs through the nostrils but for other ailments, I use a syringe to administer two drops into the chicken’s mouth,” he says.

Waswa sells one packet of the herbal medicine for Sh20 to local people and for between Sh50 and Sh100 to people who visit his stand during exhibitions.

“In the dry season there is a high demand for the drug ... vaccinations are more commonly administered during this period. It causes thirst and when administered to chicken they should be given water,” he says.

“Not a single one. Because it is natural, it has no negative effect on the animal’s system,” he assures.

Sounds too good to be true, but what do experts say about herbal medicine in treatment of animals?

University of Nairobi’s veterinarian surgeon Dr Moses Olum cautions that although herbal remedies are commonly used, often there is not much research to establish their effectiveness.

“Some farmers use herbal medicine on their chicken and affirm that they work but that cannot be proved unless more research is done. Poultry diseases like New Castle is seasonal so maybe by the time the farmer applies the drug the disease has not infected the birds, giving the illusion that the drug has worked,” the doctor elaborates.

Olum goes on: “In most cases, people have been using alovera, pepper among other herbs to treat their chicken but scientifically its efficacy has not been proven. Some farmers may say it works but there is no proof.”

A study conducted by Makerere University’s Prof Bukenya Ziraba from the Department of Botany shows that a significant number of poultry farmers in villages use medicinal plants to treat coughs, diarrhoea, swollen eyes, mites worms and lice as well as Newcastle prophylaxis and coccidiosis.

## 176. Poultry farming method that could offer you high returns



The normal way of rearing poultry is doing free range for ‘kienyeji’ and for layers, putting them in a chicken structure. But farmers are embracing a new technology that promises good returns — rearing the layers in a cage. Peter Kioi from Nderu village, Limuru constituency, is a pioneer in this new technology. Villagers throng his farm just to marvel at this innovation. He has two houses, and in the first one, a 1,000 hens are put into identical cages, in cubicles housing three. The cubicles are enjoined and arranged in three tiers, like floors in a storeyed building, with each tier having 72 chickens.

This system gave rise to the name battery cages, due to the formation of rows and columns of the identical cages with a common wall dividing the cells, like in a battery. The hens crane their necks through the wires to the feeding trough as Kioi adds the feed. “After putting the feed early morning, we rarely add,” says Kioi, “that is one of this system’s advantage.”

The feeding trough, according to its supplier based in Thika, is made of PVC, which compresses heat, and is easy to clean. The water system is unique and automated. A white PVC pipe, made to withstand chemical reactions from impurities in the water runs around the cage at each level. The hens crane their necks to a water ‘nipple’, which they peck into. Water-drops drip straight to the gullet. “The water system saves us from always feeding the chicken as it is the case with the traditional way of rearing chicken,” says Kioi.

He points to a tank, with pipes running through the roof to the poultry house and connected into water containers, which are attached at the edge of the cages. The containers have



cisterns similar to the ones found in a toilet, to prevent overflow. The floor of the cage is slanted, allowing for eggs to slide at the edge where it is easy to collect. “It is a great venture,” says the farmer. But it cost him a dime. Setting up the structure cost Sh350,000. But it depends on the size. He has another cage, four-tiered with a capacity for 2,400 birds. It cost him Sh.480,000.

“The initial cost may be high, but in the long run, one saves a lot of money and the yield is impressive,” he says. This technology has numerous advantages. “First, there is no wastage of water and the feeds. The eggs are clean and the rate of transmission of infection is minimal because the animals are well protected from external factors like predators.” What about the downside Some reports show that use of battery system has elicited complaints from animal rights activists.

According to the Europe PubMed Central, an information resource for biomedical and health researchers, cages fail to provide for hen’s welfare needs. But Wakio is quick to clarify this:

“I feel the chicken have enough space to manouvre. The signs that they lay eggs shows that they are okay, ” he says. But Othieno Joseph, a science and health communication expert says the main downside of this system is the welfare of the hen. “In developed countries, animal rights movements are vocal, to the extent that supermarket chains and stores fear stocking eggs from battery cages.” He urges that even though farmers in Kenya have taken it up, there has not been much of a furore.

## **177. How to reap a bigger harvest from hybrid seeds**





One of the most important questions that often comes to farmers' minds is, "what seeds should I plant?" Now, before rushing to the nearest agrovet or seed stockist, arm yourself with this guide that will enable you select the best seeds that fit the location of your farm.

### **The altitude**

Ask yourself if the crop you are planting suits the altitude of your region. For example for maize, the 6-series which include H614D, H627, H6213, H626, H6210, H629, H6401, H628 and H6212, all from Kenya Seed, are for the high altitude areas (1,800-2,200m above sea level).

While the varieties such as H623, H632, H624 and H622 are suitable for the intermediate altitude (1,500-2,000m above sea level). Similarly, 5-series such as H513, H515 and H516 are more-suited in the medium altitude (1,200-1,800m above sea level).

For the areas receiving rainfall 500-800mm per year with altitude of 900-1,400m above sea level and are classified as dry, the most suitable varieties would be Katumani composite (DH04, DH02 and DH09) and for the coastal strip, Coast composite, PH4 and PH1 are more suited.

### **Rainfall**

Some crops require more rainfall than others. For instance sorghum, millet, chickpea and pigeon pea, normally referred to as dry land crops, can tolerate low rainfall and high temperatures. While the horticultural crops such as vegetables require relatively high rainfall and cooler temperatures.

However, some varieties are specifically bred for drought-tolerance, and they include Korongo for wheat and Katumani composites for maize.

The question, however remains, if I am not sure on how much rain our area will receive for this season, what should I plant? Experts from the Meteorological Department normally advise by looking at the historical data of a particular area and determine how the rainfall will be. However, with the changing climate, it would be better to do timely or early planting.

### **The magic of hybrids**

The change in rainfall pattern has had great impact on our crops in terms of yields in the last few years due to poor seed selection and lack of better timing. Some farmers, thus, are on the verge of abandoning crop farming while others dropped out due to frustrations.

So, how, does one leverage on seeds to boost production?

Go hybrid. It is one of the most lucrative ways of maximising production. Yields one gets are determined first by the seed planted. For instance, H614D has a potential of producing 40 bags per acre while for the local varieties such as Nyamula, the potential is as low as 10 bags per acre.

Our scientists, however, have developed various hybrid seeds to cater for different areas. For instance, in Western Kenya where striga is a menace, a variety Ua Kayongo H1, which is striga-resistant has been developed.

The bottom-line is that hybrids enable us get higher yields compared to the local varieties. They possess superior traits such as drought tolerance and better disease and pest resistance. It is easier to breed these traits into a hybrid rather than into an open-pollinated seed.

In addition to this, hybrid crops are better adapted to various ecological environments and perform well in adverse climatic conditions.

Further, wastage emanating from non-germinated seeds is minimised with hybrids. The farmer is, therefore, cushioned from losses but better results are achieved with proper management.

Proper management means that we will need to apply optimum amounts of fertiliser during planting, top-dressing and flowering. Mature hybrid plants grow physically uniform until they fruit to give a certain desired consistency. This is advantageous to farmers in such a way that it is cheaper and more efficient to manage the crop during the described operations.

Hybrids enable farmers use less seeds per acreage of planting, improving the overall ability to invest in high farming ranks and practice precision agriculture.

Lastly, hybrid products have longer shelf-life, but this goes in handy with proper management.

## 178. How I make Sh. 200,000 from farming French beans and tomatoes



Jecinta Ngina's french bean farm is about 300m from River Chania. It equals 15-acres and has 17 workers, Jecinta among them.

The 32-year-old has been farming for the last three years after she quit her job in banking. It's the best decision she has ever taken, she says.

"Having worked in bank for two years, I felt poor even though I had a salary," she says. "Banks pay earlier than most other employers but by 10th of every month, I would have exhausted all my money and wait for the next pay day. I borrowed from friends to tide me over." Jecinta realised that only people in business did not have to wait until month-end to have money as he could see them banking regularly.

The mother of two says she had also learned through her work that farmers were doing well. Armed with hope, she resigned from her job.

She then approached her cousin and asked him to help her lease land in Mwea.

"But my cousin, Raphael Wangunyu, who had been farming for a long time advised me to look for land in Ngoliba, as the soils in Mwea had been exhausted due to years of farming."

He helped Jecinta lease two acres in Ngoliba at Sh.5,000 an acre for one year. Today, leasing has doubled to Sh.10,000.

Her first investment was about Sh.400,000, part of which came from her husband and the rest was a loan from the Youth Fund.

“I planted French beans on two acres after doing research about the viability of the crop. When it matured in 45 days, I realised I had made a mistake because I had no market.” Jecinta called several people and companies to buy her produce.

“I was desperate. I have never been so desperate in my life because I was just seeing my investment going to waste. Luckily, my sister knew someone working with a company that was exporting French beans. She connected me to him.”

She sold produce worth Sh240,000 from her first crop. This encouraged her to soldier on. It took her about a year to break-even.

Today, she has leased 15 acres, where she plants tomatoes, French beans and baby corn.

The French beans and baby corn are mainly for export while she sells the tomatoes in the local market.

“I make about Sh40,000 from an acre of tomatoes monthly, which goes to running the entire farm,” she says. “I get an average of Sh150,000 from an acre of French beans a month, which is my profit.”

A kilo of French beans fetches between Sh50 and Sh180 depending on supply and demand. She harvests an average of 2,000kg a month while a crate of tomatoes goes for between Sh1,000 and Sh2,000.

She sells the tomatoes to traders who come to her farm and pay in cash.

She plants baby corn on about three acres and also sells it to an exporting company at Sh25 a kilo. From exports through one company, she now has tens of clients and ensures she sources for market from them before planting.

At any given time, she has a young French beans crop, another awaiting maturity and a mature one ready for picking.

“Farming needs some knowledge and passion. I do not have a background in agriculture but I had the passion to learn and farm.”

She has attended several trainings organised by horticultural and chemical companies in Thika. Through the meetings, she has networked and roped in clients.

Jecinta has divided her farm into blocks of an acre each. She plants French beans for two seasons, then rotates with tomatoes or baby corn.

The exporting companies give her a list of chemicals she is allowed to use and those that are prohibited. The chemicals keep changing. She is also instructed on the pre-harvest intervals after spraying.

She grades the produce at a shed in her farm, to ensure only quality ones are delivered.

But it is not all rosy. The erratic weather poses a problem. When it is dry, she uses drip irrigation and pumps water from the nearby Chania river.

“When the rains are heavy, my crop is destroyed. Sometimes clients fail to honour their promise to buy produce even after they agreed before the planting season.”

Her plan is to export her produce directly, but she says there are too many licences and getting them is rigorous and costly.

Jecinta’s work as a farmer has brought her fame and fortune. Last week, she won an award in a competition organised by the Ministry of Agriculture and Elgon Kenya for being the top young farmer in Murang’a County.

The award was for her unique contribution in horticultural farming. She received a trophy and a farm inputs voucher worth Sh20,000.

“The future of young people is in agribusiness as people will always need food,” reckons the 2007 Kenyatta University Bachelor of Commerce graduate.

She visits the farm at least twice a week because she has a full-time manager who runs it.

“Don’t wait until you retire to be self-employed. Do it when you are still young and energetic,” she advises.

She plans to buy her own land and install the latest irrigation technology in five years.

Lillian Jeptanui, a horticultural expert at Egerton University, says French beans ought to be weeded before flowering because if they are disturbed during this time, the flower aborts, reducing yields.

She recommends crop rotation between legumes and maize or baby corn because the two crops do not share diseases. “Legumes also fix nitrogen which is used by corn.”

The expert further advises that farmers who deal with export crops, whose earnings may take time to come, should have a crop that brings in regular income to enhance cash flow.

## 179. My journey from a small farm to a thriving farming empire



Small patches of land with tea plants and others with maize and beans is all one sees along the Chavakali-Kaimosi Road in Vihiga County.

The area is densely populated but this has not deterred people from farming on their small parcels.

Besides growing crops, some farmers are keeping rabbits and dairy cows. This is the route farmer John Kidula, 51, has taken as he works hard to maximise the use of his acre-and-a-half farm.

The father of three keeps poultry, rabbits, dairy, bees and mills maize for sale on his Goibei farm. His poultry comprises chickens, turkeys, geese, guinea fowls and ducks.

“I started keeping poultry in 2012, and the birds have hatched all the other farming ventures,” he says. His first brood was of 24 improved Kienyeji chicks, seven ducks, two geese and six turkeys.

The former accountant used to work in South Sudan until 2012. He ploughed into the business Sh140,000, with more than half of the money going into construction of the poultry houses.

The rest went to buying 24 kienyeji chicks at Sh100 each, seven ducks, two geese, six turkeys and feeds.

He soon increased his chickens by 100 one-day old chicks of the Kenbro breed that cost him Sh100 each.

The farmer makes his own feeds by mixing maize bran, fish meal, wheat bran and millet. He also offers them greens for a balance diet, knowledge that he picked from Kwetu Poultry Farm in Maseno.

He sells a mature bird at between Sh700 and Sh1,000 depending on the season and the demand.

He collects three trays of eggs from his 97 birds every day out of a flock of 200. A tray costs Sh300. He also sells mature guinea fowl at Sh3,000, turkey at Sh4,000 while the geese goes for Sh3,500.

He also hatches chicks for sale at Sh70 each.

He has, however, had his share of challenges with pests and diseases.

“I have lost birds to diseases. It is essential to follow the vaccination schedule. I recently lost 50 birds to Newcastle disease,” says Kidula.

As his poultry business expanded, Kidula diversified into rabbits.

“I had gained confidence as my poultry business was doing well to try other livestock. I started with 30 rabbits and now I have 300 California, New Zealand, Checkered Giant and Flemish Giant breeds.”

Kidula rears the rabbits for meat, harvests urine and sells kits to local farmers and schools for lab experiments.

“In October 2012, I visited the Nairobi International Trade Fair where I met a representative from a rabbit firm. I bought six rabbits that they have since multiplied.”

Kidula feeds his rabbits on cabbages, sweet potato vines and commercial rabbit pellets.

“I sell my rabbits to Rabbit Republic Ltd at Sh500 a kilo. A mature rabbit weighs approximately 2.5kg to 4.5kg depending on the breed. I sell 20 litres of urine at Sh1,000 to farmers.”

He also sells kits to high schools in Nandi and Vihiga counties for lab experiment from Sh700 to Sh1,500 depending on the size. On a good month when schools are in term, he sells 100 kits.

He has seven beehives from which he collects an average of 7kg of honey from each every three months and sells to a processing firm at Sh600 a kilo.

He also mills maize from his farm and that of his neighbours. He buys and stocks 25 90kg bags of maize that he mills into flour and sells to residents. A 2kg of pack processed flour goes for about Sh80.

“Nearly everybody in Vihiga grows maize for home consumption. I usually process the maize for Sh10 per kilo.”

He recently lost five cows due to poisoning and now has two Friesian and Aryshire heifers and a calf.

“I woke up one morning and found five dairy cows dead.”

Each cow produces 10 litres of milk a day which is sold for Sh40 a litre.

“We feed them on napier grass, natural grass and molasses. When milking I use dairy meal,” says the farmer.

He recently received an award from the Ministry of Agriculture and Elgon Kenya for turning his farm into a commercial centre.

Felix Opinya, an animal breeding and genetics expert from Egerton University, attributes the low milk production to genetic ability of the cow, poor feeding and management.

“I suggest he should shift to rich silage and put lactating animals on concentrates,” he says.

## **180. How I use machines to grow production & profits in dairy, poultry farming**





The first thing one hears when you step into Nicholas Mbijiwe's farm in Nkubu, Meru, are machines roaring.

From one room one can hear what looks like a posho mill roaring as it grinds maize cobs.

At the cowshed, the chaff-cutter is busy slicing napier grass and other fodder into tiny pieces.

A hammer machine, in a separate room, crushes various crop waste.

The farmer who keeps hens, chickens, pigs and grows various crops has strived to mechanise his farm.

In total, Mbijiwe has seven machines, three for flour processing from maize, sorghum, finger millet and wheat that he grows on part of his three acres for his own consumption, one that makes raw liquid porridge and three meant for making livestock feeds.

These are the chaff cutter, the hammer machine and the mixer.

"I had bought the flour and porridge-making machines and the chaff cutter when I was still teaching at Nkubu Primary School. By then I had only five cows and they produced 23 litres a day, a thing that worried me," he explains and adds, "In 2007, I opted for early retirement and came up with an agribusiness plan and calibrated my own hammer machine for crushing crop waste, which I have been using since then. I bought the mixer in 2012."

These machines are what he uses to produce feeds for his 18 cows, nine which are in-calf, six are lactating while the rest are calves. The six cows offer him an average of 180 litres per day.

For the cows, Mbijiwe uses the chaff cutter to cut into pieces various types of fodder crops that include hay, caliandra, sorghum, maize, napier grass and sorghum silage.

He also processes his own dairy meal.

"For the dairy meal, I use the post-harvest residue that include waste from beans, maize, wheat, barley, sunflower and cotton from my farm and add to what I buy from farmers during the harvesting season as most of them either burn to 'clean and clear' their land or sell at a throw away price as they don't need it."

After collecting the waste, he uses the hammer machine, which crushes up to 3,000kg of the residue per day, to grind them separately and pack it in different sacks.

Thereafter, he mixes the various ingredients in the mixer to end up with a complete dairy meal.

Mbijiwe recommends that, “When making cow meals, energy feeds that include maize bran, maize germ, maize cobs, wheat bran and pollard should form 68 per cent.”

While protein from sunflower and cotton seeds and cake forms 30 per cent. Mineral supplements that include dairy lick – 500g, Dicalcium phosphate – 250g and premix 250g account for the 2 per cent.

“For the farmers who may not understand the percentages, one can use kilos. Carbohydrates should comprise of 68kg, proteins 30kg and minerals 2kg,” he offers.

In his farm, nothing goes to waste, thanks to the machines. What remains after being cut by the chaff-cutter is dried and ground in the hammer. It is then mixed with the dairy meal.

For his 12 pigs, he mixes wheat and maize bran and maize flour to make feeds. He also supplements their feeds with vegetables and kitchen waste.

“The reproduction rate of pigs is high as they can reproduce up to three times a year. And the good thing is that the animals have ready market, thus, offering a farmer more cash.”

Fridah Karimi, who works with Thima Coffee Machinery in Meru, advises that small farmers should go for high speed chaff-cutters that crush about 500-600kg per hour for both green and dry fodder.

“The machine has three rollers and a chain to enhance speed, is portable, has low power consumption, is simple to operate and its spare parts are available,” she says, noting a good machine should curb wastage.

The posho mill goes for an average of Sh.50,000, the porridge-making machine Sh120,000 and the mixer Sh.180,000.

Mbijiwe rears 300 Kienyeji chickens and makes his own feeds from sorghum, maize, wheat, sunflower seeds, and millet among others, which he crushes in the hammer.

“I learned the feed formulation process in a one-week course I undertook at the Naivasha Dairy Training Institute in 2013.”

He uses a natural breeding method to increase his poultry flock. He selects three broody hens that have maternal behaviour and makes them to sit on eggs for 21 days.

On the night when the eggs hatch, he collects the chicks at night from two hens and gives them to one for care. The hen ends up taking care of up to 30 chicks as he gives the other two hens another set of eggs to sit on.

George Muriithi, a Senior Livestock Production Officer in Kirinyaga County, says the method is natural, economical and that it enables small farmers increase their flock.

## **181. Eldoret farmer makes Sh. 2.5 million monthly from dairy farming**



A dairy farmer in Uasin Gishu is making over Sh. 2.2 million from dairy farming and value addition. Apart from the usual milk, Mr. Jos Creemers of Lewa Baraka Farm has been making cheese and sour milk, further adding to his basket of profits.

Currently, his 60 cows produce between 1,500 litres of milk every day, an output that he notes has been constant throughout the year owing to good feeding techniques. This gives him Sh. 2,250,000 at Sh. 50 per litre every month.

However, in a day, the farm uses more than 400 litres of the produced milk in cheese processing, with one wheel of the product that measures five kilogrammes consuming 50 litres. He sells a kilogramme of cheese at between Sh800 and Sh900, depending on the age of the cheese. However, from the farm, the cheese is sold as a wheel whole. “If I would be supplying the milk to companies or hotels, that would earn us about Sh40,000 a day, but processing fetches Sh80,000, giving me Sh.2.4 million every month.”

When venturing into cheese making, Creemers bought a cheese making machine at Sh1 million and a pasteuriser for producing mala at Sh50,000. “Initially, we had a cheese machine that had a daily processing capacity of 300 litres of milk. But we increased this to 2,000 litres this week, which translates to 200kg of cheese.”

“Ten litres of milk produce 1kg of cheese. Some 100 litres of the milk is pasteurised daily into mala. A 500ml packet of the Baraka Farmhouse Lala goes for Sh50.” After processing the milk into cheese and mala, Creemers usually sells the remaining 600 litres at Baraka Milk Bar, owned by the farm. The bar is in Eldoret.

“We have taken charge of our milk, and this enables us make more money. If I was dealing with processors or middlemen, then perhaps I would have closed shop,” says Creemers. “The cheese that we make is way below the required quantity by our customers. Demand is more than what we are able to produce.”

The farm, according to him, has had a constant supply of milk throughout the year, which he attributes to good care of his cows. “If you want to get the most out of your cow, proper care is the key to achieving that,” said the farmer.

Although cheese-making is tedious, cumbersome, and requires a lot of milk, he said the returns were worthwhile. Cheese-making takes up to eight hours, starting with pasteurisation of milk to making a cud that is cooled to give the product. “This is not a simple process. It calls for a high level of patience and dedication in order to achieve the best results,” said Mr Creemers.

The farm, according to Mr Creemers, plans to expand the cheese business to try to meet the high demand. During dry spell, milk production for most farmers who rely on natural pastures goes down but this has never happened to Mr Creemers because he preserves feeds for his animals.

“I also process commercial feeds, which play a significant role in supplementing the fodder that I feed my animals,” he said. According to him, processed dairy meal is meant to supply proteins to the cows as silage lacks this key nutritious component.

Every year, the farmer plants more than 75 acres of maize which he converts into silage. “I have silage that has been preserved on this farm since 2011. I have never run short of feeds for my cows. This is one thing that has given me an edge over other farmers during the dry spell,” he noted.

The farmer, who breeds his own cows on the farm, specializes in cows. Any bulls born on the farm are sold within three days.

## 182. My journey from Sh. 500 to Sh. 50,000 profit in methi farming



After post election violence in 2008, Elijah Mbugua was left with no option but to relocate from Eldoret town where he was selling second hand clothes to his rural home at Nyandarua. Here, he started growing coriander popularly known as dhania.

Though dhania was doing well his father asked him to look for fenugreek popularly known as Methi but he was ignorant. One day his father explained to him how important this plant was and how he would earn good cash from it.

“Methi is an annual plant in the family Fabaceae. It is cultivated worldwide as a semi-arid crop, and its seeds are a common ingredient in dishes but it can also be used as a herb or vegetable,” says the father of two. It is a main ingredient of curry powders and widely used in Indian curry dishes.

He recalls well that one day as he was doing his shopping in a nearby market he saw someone selling strange leaflets to a Hindu woman which had a strong scent.

Later, Mbugua would learnt that it was Methi. He went home and explained everything to his father who insisted that he should buy those seedlings and start Methi farming.

Mbugua bought one kilogramme of Methi seedlings for Sh500 and he was ready for his venture. “I made my bed in a 10 by 10 feet space in which I sowed my seeds and after three days the young tender started shooting,” he says.



The 37-year-old father said that after one month the plant was ready for harvest.

Since most people who were growing Methi were selling leaves he decided to do something different not only to increase the plant shelf life but also to try a new market of powdered Methi. To his surprise people were ready to buy his product.

He explains that Methi grows to about two feet (60cm), with yellow/white flowers and long yellow seed pods. It likes a full sun and well-drained, neutral to slightly acid soil and it doesn't like to be transplanted.

He adds that the age of this plant determines how it should be used. "The plant grows fast and can be harvested for its leaves at various times. Young Methi seedlings (1-2 weeks of growth) are edible as micro-greens while older plants (3-6 weeks of growth) can be consumed as a leafy vegetable," he says.

He reveals that unlike many other herbs that thrive on neglect, Methi does well in fertile soils and a lot of compost but does not require fertiliser at and plants should be five to six inches apart.

"Methi is allergic to pesticides and that is why for you to succeed in this farming you have to go organic. Also the strong scent keeps off white flies making it pest free," he says.

Though this plant is not popular here in Kenya, Mbugua uses social media and farming exhibitions to educate the public on the importance of Methi plant, which is mainly associated with Indian families.

He adds that this plant is often used to treat coughs and sore throat and is effective in the treatment of Type 2 diabetes and can help lower blood cholesterol levels and increase circulation.

It is also often recommended as a herbal treatment for tinnitus. Though Elijah makes more than Sh50,000 per month from his two acre piece of land he is quick to advise farmers not to try this venture if they do not have enough water because Methi crops must be watered thoroughly.

He also encourages crowd farming saying that this plant loves crowd and will grow well when closely planted together. “The closeness of growth gives stability to individual plants. Methi grows well anywhere either in containers or in open plots,” he said.

Currently Elijah sells his products to hotels and also during exhibitions. A 100 gramme pack of Methi seedling goes for Sh100.

He urges farmers to venture into this farming since different cultures have embraced the use of this herb and spice and demand is high and a few farmers are producing this. He wants to expand his farm so that he can enter into the export market.

### **183. I connect farmers to viable export markets**



A seed company in Nakuru is giving smallholder farmers access to high value vegetable crops while connecting them to ripe export markets in a venture that is redefining smallholder farming in Kenya.

Simon Andys, the founder of Premier Seeds, is a trained agronomist who left his job in a local seed industry to breathe new life to smallholder farming after a wrong seed variety devastated the farmers he was serving. “I used to work very closely with the farmers in training them on good farm management practices and handling their grievances.

A seed variety which the company imported had been bred for different climatic conditions caused devastating damage to farmers producing near zero yields. It was heart breaking to see farmers lose resources and days' worth of toil to something that could have been avoided. I had to do something about it," Simon said. And he did. He left the company to start his own outfit that would correct the ills that had bedeviled the farming industry. Thus marked the birth of Premier Seeds.

At the helm of the seed company, Simon has worked with breeders outside the country to breed for him the most suitable varieties that adapt to local climatic and growing conditions. "The problem with our seeds is that we import those that have already been bred for overseas growing conditions which end up disappointing our farmers.

So I decided to partner with seed breeders in Netherlands. What I do is to first do a thorough analysis of the climatic and growing conditions identifying which conditions would produce the optimum yields. I then communicate the analysis to my breeders in Netherlands and explain to them the kind of seeds I would like to work on and the process starts," said Simon.

Through such arrangements, Simon has managed to bring to the country, the fastest maturing tomato variety dubbed Tomato Premier F1 which takes on average 60 days to mature compared to existing varieties that take between 90 and 105 days. The variety is also accustomed to tough climatic conditions and has been bred to tolerate common tomato diseases. Its shelf life, another of its unique selling point, is 15 days compared to between seven and ten days for the other varieties. "It is a variety that has been bred with the local conditions in mind. Even when it is exposed to sunlight as it usually does especially when it is being sold by roadside and open market traders, it still can go for days without going bad," Simon added.

Simon whose mantra is to deliver smallholder farmers from the yoke of overreliance on traditional crops is working with farmers in Bahati Constituency in Nakuru County to plant high value crops for the export market. He is currently working with a group of farmers in the farming of chives, a herb belonging to the onion family, that is enjoying huge demand in the export markets. The farmers who traditionally relied on maize and vegetables are now more than doubling yields and incomes with the chives venture. "At Premier Seeds we felt that if we were to involve farmers in the growth of these high value crops, we needed to move them from traditional way of doing things.



We needed them to own greenhouses. And because greenhouses appeared beyond the reach of many farmers, we have an arrangement with Chase bank that would finance the construction of greenhouses on credit, which farmers would repay using the proceeds from the sale of their produce. The model has been successful so far,” Simon said.

Simon has made it his business to train individual farmers and walk with them through the farming journey since most of them are making their first stint at greenhouse farming. “Again you have to factor in the fact that the crops they are growing, chives for example, are meant for the export market where buyers are very strict about growing conditions, so we have to train them on the specifics of farming for export for example when to spray the produce, how much they should spray, how to look out for pests among other farming practices,” he added.

The farmers are now earning over 5 Euros per kilo of chives which they will be harvesting after every 20-25 days.

Simon has also partnered with academic institutions like Egerton University – Agro Science Park who have been breeding high yielding and stress tolerant bean varieties dubbed Tasha, Chelarang and Ciankui for mass distribution. Under a contractual farming model, Simon connects the academic institutions with farmers who grow the beans on behalf of the institution.

Upon maturity the institution buys back the beans at market prices. “This has allowed the university to test how the new varieties perform in farms while mass producing the beans for distribution. Farmers on the other hand get firsthand experience with the new varieties and a guaranteed competitive market. This model has been key in lifting farmers from poverty,” Simon added.

Such steely determination and will to change farming’s modus operandi hasn’t gone unnoticed. Simon is a fellow of the *Tony Elumelu Entrepreneurship Programme (TEEP)*, a continental programme that recognizes vanguard entrepreneurs that are providing homegrown solutions to Africa’s problems.

The Tony Elumelu foundation has also funded Premier Seeds to advance the course of fighting hunger through various initiatives that the company is involved in with the farmers.

Simon believes a hunger free Kenya is possible. “Kenya is blessed with a beautiful climate and a very entrepreneurial people. It’s the few hiccups like lack of inputs for example the right

seeds that, technical back up is holding us back. It is this gap that we have been trying to bridge. It is what keeps me awake at night. I hope for the day when every farmer's efforts in the farm will always be rewarded. We can do it. It is possible," Simon added.

*For any enquiries, please call: 0726,956,585 or Email : bobkoigi@hotmail.com*

## **184. How you can reap millions from watermelons**



Victor Bor started out as a wedding planner, a job that gave him access to society's most glamorous ceremonies. But as more wedding planners got into his turf, his returns began to dwindle. Frustrated, he decided to visit his village in Kericho as he figured out his next move. "I got interested in agribusiness and began looking at crops that would attract stable market prices. I wanted to be my own boss," Mr Bor says. He did not have a farm or adequate information on the market for agricultural produce when he began his research, but that did not stop him from eventually settling on watermelon farming.

"I looked for land in the region and found about three acres that were mostly thicket. I saw its potential and signed a lease agreement with the owner for Sh4,000 an acre per year," Bor, who is 29, says. He cleared the bush and sought advice on watermelons from an extension officer from Kipsiket in Soin, Kericho. He got insight into how to plough the land, which seeds to use and how to care for the crop. "I bought Sugar Baby watermelon seeds in November last year from Kenya Seeds as the organisation sells certified seeds cheaper than most retailers," he says. A kilogramme of seeds cost him Sh3,499. Bor used a 1kg bag for each of the three acres.

He has since registered his firm, Keriprods Company Limited, and expects to harvest 5,000 to 8,000 watermelons early next month. His watermelons, most of which have already been booked by traders in Kericho, are retailing at Sh150 to Sh200 each, depending on the size.

He plans to sell some of his fruit in Uganda, where grocers have offered between Sh300 and Sh400 per fruit.

“I would have harvested over 15,000 fruits had I been keen on spraying roundup and weeding to eliminate grass, and if I had used more DAP and CAN fertilisers. But since it is my first time, I am positive the next time I will do better,” he says. So how do you get started First, you require a lot of space to accommodate watermelon vines. The fruit grows well in hot coastal areas, dry eastern plains and hilly midlands. It does not do well in cold places. Ensure you have an adequate supply of water and soil rich in nutrients to propel growth. You can improve soil fertility by adding organic matter.

Plough the land at least four weeks before planting to allow for decomposition of any previous crops. “Choose a location in your shamba that has loamy, well-drained soil. Ensure the crop is away from the shade to allow at least six hours of direct sunlight. Since watermelons produce rather large vines, leave a space of at least 1.8 metres between rows,” Steven Kiptoo, an extension officer in Eldoret, says. Till the soil for the beds thoroughly, break the earth well and remove any weeds or vegetation. “Large-scale watermelon planting will require you to use a tractor or garden hoe to form mounds of earth (hills) to plant seeds in. Space these two to six feet apart, depending on the size of your garden. This ensures the soil is loose and the roots grow well since excess moisture drains away,” Mr Kiptoo, who has over 25 years experience in watermelon farming, adds.

“Watermelon seeds will sprout and plants will emerge within seven to 10 days, depending on the soil temperature and the depth they are covered to when planted. Water close to the ground for the water to reach the roots.” Varying sizes You do not need to water the crop too often as watermelons generally have low water requirements. But you need to weed regularly.

Jubilee, Charleston Grey and Congo are large, cylindrical varieties, while Sugar Baby and Ice Box are smaller, globe-shaped types. Marvin Shimoli, a watermelon farmer in Ngong, says the fruit matures between 75 to 100 days after sowing. “To check if they are ready for the market, I normally turn the melons to see if they have a yellow patch on the part that lies on the ground. You can also thump it and if you hear a dull noise, it means that it has ripened,” he says. An

official from Simlaw Seeds said an investor can earn at least Sh1 million from watermelon farming after spending less than Sh40,000 in start-up capital.

“The price of 400 grammes of hybrid watermelon seeds is around Sh2,700. Ploughing and weeding, depending on the type of tools used, costs around Sh3,000 per month, excluding cost of labour. “You’ll need 50kgs of DAP fertiliser at Sh2,250 and pesticides for control of common pests like aphids, which will cost Sh2,500. Citishooter hormone, also known as rooting hormone and encourages fast and uniform growth, costs about Sh4,000 for 200 millilitres,” he says. An acre of land, if well tilled and with fertile soil, can produce around 13,000 fruits. If the average price of a watermelon is Sh100, you can easily realise Sh1,300,000 in one harvest. And you can harvest twice a year.

## **185. This is my secret to getting 460 litres of milk from my cows per day**



The first thing that catches your attention when you enter Silas Mwirigi’s farm in Kalalu village, Laikipia is its cleanliness.

All the farm’s five workers are always dressed in spotless white overalls and black gumboots.

Away from the workers, the cowshed and milking pens are orderly and clean. The bedding for the animals is sawdust. The rule on this farm is that the cowshed has to be thoroughly cleaned three times a day, and the workers have to take shower before handling the animals, particularly when milking.

Similarly, all the cows are cleaned every Saturday. The 10-acre farm is home to 30 mature cows and seven heifers. Of these, 28 are Friesians and the rest are Guernsey.

“I am keen on hygiene because I want to keep away diseases and get quality and clean milk. Diseases like mastitis are common due to poor hygiene. I have seen fellow farmers lose cows to diseases due to poor hygiene, and that is a route I do not want to take,” says Mwirigi, who is also the principal of Meru School. The farmer started keeping dairy cows five years ago, with three heifers that he bought at a total of Sh150,000. The herd has grown to 30 over the years, according to Mwirigi. He has never bought any more cows besides the first three.

Out of the 30 cows, he milks 16, getting an average of 460 litres a day. The top producer offers 45 litres a day and the lowest 25.

## **QUALITY FEEDS**

He sells 210 litres to the Meru Dairy Cooperative Union and 215 litres to Sirmon Moran, a cheese-making firm in the county.

The remaining 35 litres are consumed by his family.

“I sell to the Meru processor at Sh40 a litre while Sirmon Moran buys at Sh42. We milk three times a day. I have a cooler on the farm that enables me to store milk and deliver it in bulk,” says Mwirigi. His short-term target is to produce 600 litres a day.

“I want to achieve the feat by December because 20 cows are in-calf. I hope to get 1,000 litres by December 2016 since the number is growing.”

All his fodder that include napier grass, maize and Rhodes grass come from his farm.

The farmer has 10 silage stores measuring 50 feet by 10 feet each, with a total capacity of 300 tonnes that can last a year.

“I prepare the silage by mixing napier grass, maize stalks and molasses. I then keep it for eight weeks in the tanks before it is ready for the cows. The silage is mixed with hay or Rhodes grass when feeding,” says Mwirigi. Each animal is fed according to its weight.

A cow that produces between 35 and 40 litres of milk a day, according to him, eats 20kg of silage while all animals are given 3kg of dairy meal daily.

He plants maize for fodder throughout the year to ensure consistent supply of feeds.

“The animals need a lot of water for drinking and cleaning the sheds and equipment. This is why I have sunk a 152 metre borehole.” Mwirigi is a member of a group of 15 dairy farmers called MeSlopes through which they make quality feeds for sale to farmers and for their own use.

To maintain quality breeds, MeSlopes members import semen from Netherlands.

He notes that one cannot go wrong with dairy cows as long as there is good quality and quantity feeds, water and high standards of cleanliness. Of his five employees, three take care of the animals and two work in the fodder farm.

Mwirigi also works closely with a veterinary officer who pays a visit to his farm twice a week.

Proper record-keeping is also mandatory.

“As a farmer, you need to treat your employees with respect and pay them well so that they can own the project with you for your success,” says Mwirigi. He says he makes at least Sh200,000 in profit a month.

So how does he juggle between school and farming? Mwirigi says; “I give 80 per cent of my time to the school because it is my employer and the remaining 20 per cent to the farm. Besides, I am not worried because I have good workers.”

By mid-next year, the ambitious farmer says he intends to start a mini-processing plant for yoghurt and cheese.

Prof Bockline Bebe, a livestock expert from Egerton University, says a good farmer must provide adequate balanced feeds to maintain high milk production, besides keeping high-standards of hygiene.

## **HYGIENE FIRST**

“The animals should be given feeds rich in energy, proteins, minerals and vitamins. Large-scale farmers should always give a total mix ratio to achieve high yields,” adding that the choice of bulls or semen should be guided by one’s objectives and that animals should be vaccinated against diseases that affect them in their regions.

The professor also pointed out that a farmer should engage workers who have knowledge on animal behaviour.

“The most important thing is that cleanliness ensures that the milk, which will be consumed by a number of people is not contaminated as this can cause a very big damage to consumers and the farm.”

### **Why the health of your cow all depends on hygiene in the cowshed**

1. Many cows pick parasites and diseases from dirty sheds.
2. Research has shown that contamination of milk happens outside the cow’s udder during handling and processing.
3. Farmers must prioritise hygiene and shed maintenance above everything else if they are to run their farms profitably.
4. The cowshed should not only give the animals a shade but also shelter. Let the shed be their homes, where they draw comfort, just as you do.
5. Let your cows have their own resting pen or cubicle where they will chew cud, lie down on mats, and sleep.
6. Do not milk the cow in the shed, have a separate milking area with a feeding trough, so that cows can feed when being milked.
7. Have a hooves bath in your shed. The simple gadget is effective in eliminating hoove diseases.
8. When the shed is clean, animals, in particular calves, will not fall prey to diarrhoea, among other diseases.

### **186. How I use biogas to prepare feeds for my cows**



Kenneth Kemei whose farm is in Sonokwek village in Bomet Central Constituency, has remodelled the chaff cutter that used to be powered by petrol to run on biogas that his cows produce, keeping his cost of production lower.

The farmer borrowed the idea from a firm that specialises in biogas machines in Karen, Nairobi when he visited last year.

“There were so many items on display but what captured my attention was the generator that runs on biogas,” he says.

Back on his farm, he figured out how to turn his small petrol-powered chaff cutter to run on biogas that he was generating.

While using petrol, he would spend at least Sh100 a day on fuel to chop enough food for his four Friesian cows that offer him 20 litres of milk each.

He sought the help of his neighbour, a trained motor vehicle mechanic who has specialised in the repair and maintenance of petrol engines.

### **TRANSFORMED FARM**

The work involved extending the fuel pipe from the tank and then putting a valve that controls the flow of petrol into the machine’s engine. The two then introduced the methane gas pipe into the chaff cutter’s carburettor.

“It worked on the third attempt and I was elated, but a number of improvements were still needed.”

He realised that he could introduce a valve to control the amount of gas in the engine, thus, regulating the speed of the chaff cutter.

This valve helps him use less gas when chopping fresh fodder, which is softer, and thus can be cut as the machine rotates slowly.

However, when chopping dry material that is often harder, he increases the amount of gas, which doubles the speed of the engine and hence the power.

“The engine is ignited using very little petrol and once it is running, the gas valve is opened as the petrol is cut off until the next ignition session,” Kemei says.

The litre of petrol that Kemei used per day now lasts for close to two months.



“Biogas has transformed our farm and home. I now use gas to cook a mixture of beans and maize without any worry and my husband still uses it on the farm,” says Zeddy, Kemei’s wife

The farmer says he learned how to generate his own biogas three years ago from Self-Help Africa, an NGO then based in Kericho. The institution helped him construct a 12 cubic metres biogas digester that now provides him cheap renewable fuel.

Eng Richard Koske, a certified energy manager with Association of Energy Engineers, says “for biogas to run machines, it should first be passed through a desulphuriser before introducing it into the engine to avoid damaging the cylinder.”

Desulphuriser is a special filter that removes the sulphur in the methane that would otherwise react with the iron used in making the cylinder, thus, corroding it.

However, he notes that there are special chaff cutter engines that are designed to run specifically on biogas. Thus, he advises farmers to go for them since not everyone can modify petrol engines.

## **187. All about sheep farming and the best sheep breeds**



By their nature, sheep are followers. They follow the shepherd to pastures, to the market and to the slaughterhouse.

You just need to show the way and they will follow. I am sure this picture reminds you of Limuru, where many people keep sheep.

Today, I would like to focus on two primary sheep breeds, namely the Dorper (pictured) and Red Maasai. The Dorper is a breed that was developed in South Africa and was introduced

into the country through the Kenya Agricultural Research Institute in 1950s. It was developed by crossing the Dorset Horn and Blackhead Persian breeds, hence the name 'Dorper'. The animal is identified by its characteristic black head and white body.

The breed has been widely adopted across the country due to its commendable adaptability to semi-arid and arid environments. The Dorper exhibits good mothering abilities, calves twice a year and can attain a live weight of 36kg in four months.

However, when compared to local breeds, the Dorper may be termed as ecologically-challenged as it is not resilient to drought and common sheep diseases such as gastro-intestinal parasites, commonly referred to as worms. The latter are known to cause serious losses to sheep owners.

On the other hand, the indigenous Red Masaai sheep are mostly found in Rift Valley. The sheep are synonymous with pastoralists. The Red Maasai breed is mainly reared for meat, and not wool. It has reddish-brown fur. It spots a shaggy coat of hair, not wool. The pastoralists are extremely fond of this breed due to its numerous adaptive traits.

However, the down-side of the species is that it is characteristically small compared to the exotic breeds, thus it does not make much commercial relevance.

Clearly, both breeds have merits and demerits. How can a farmer gain from their respective strengths?

The answer lies in crossbreeding. Developing a composite breed that would be relatively more resistant as compared to a pure exotic Dorper and more productive as compared to an indigenous Red Maasai would be an ideal approach.

The crossbreeding approach has been undertaken and indications are that a 50/50 cross is relatively more resistant and productive, and an increase to 75/25 pedigree would ultimately improve the productivity of the animal but require increased management.

The crosses offer better meat and milk, are drought-tolerant and worm-resistant, have higher lamb survival rate, exhibit faster growth, achieve higher slaughter value and are preferred even in local markets.

The crossbreeds perform better in terms of body weight gain and growth rates than both the pure Dorper and the indigenous Red Maasai.

The crossbreed is of clear economic relevance to the smallholder farmers. Crossbreeds can be bought from local farmers around Kajiado and Nakuru.

So, where can you sell sheep? They are mainly sold in local markets at about Sh4,000 an animal. The Kenya Meat Commission is another potential market. Their docile nature makes sheep very easy to rear. They can be comfortably kept on a small portion of land. Sheep also provide very good quality skins for the leather industry.

A good breeding ram would cost approximately Sh12,000.

Being a shepherd may be the next big thing.

### **Why the crossbreed is value for your money**

1. Offers better meat and milk
2. Drought-tolerant
3. Worm-resistant
4. Has higher lamb survival rate
5. Exhibits faster growth
6. Achieves higher slaughter value
7. Preferred even in local markets

## **188. Subiri Obwogo: Why I give my chicks liquid paraffin**



After hatching chicks, I normally transfer them to the deep litter brooder and provide supplemental heat using ordinary light bulbs. During the first one week, I provide chick formula (to boost immunity), glucose (for energy) and liquid paraffin to clear the digestive system. Chick formula contains vitamins and antibiotics.

Medicinal liquid paraffin, also known as paraffinum liquidum, is a highly refined mineral oil used in cosmetics and for medicinal purposes. This product should not be confused with the paraffin (kerosene) used as fuel. Liquid paraffin is found in agrovets and retails at about Sh100 per 100ml.

### **HEALTHY CHICKS**

Liquid paraffin or mineral oil is a transparent, colourless, odourless, oily liquid composed of saturated hydrocarbons obtained from petroleum. When put in water, it doesn't mix but floats on the surface making it easy for chicks to ingest it. In humans, liquid paraffin is used as a laxative (stool softener) to guard against constipation and for softening dry skin.

The use of petroleum as medicine dates back to at least 400 years Before Christ. The earliest internal use of refined petroleum dates 1872, when Robert A. Chesebrough was granted a patent for the manufacture of "a new and useful product from petroleum". The use of liquid paraffin gained popularity, after Sir W. Arbuthnot Lane, Chief Surgeon of Guy's Hospital, UK, in 1913, recommended its use as a treatment for intestinal stasis and chronic constipation. Since then, liquid paraffin has been used to treat constipation, particularly in children.

Apart from liquid paraffin, chick formula and glucose, other measures are necessary to keep the chicks healthy. First, to minimise losses, pre-heat the brooder for six hours before transferring the chicks from the hatchery.

Crowding around the source of heat is often a sign of low temperature. If the chicks move away from the heat source, this may indicate high temperature. I feel comfortable when the chicks are evenly distributed in the brooder, active and moving about. Extremes of temperature, too high or too low, is dangerous to the chicks.

Apart from inadequate heating or too much heat in the brooder, mortality during the first week of the chick's life may be related to the quality of hatched birds. I often check for navel infection associated with unabsorbed yolk and ascertain the chicks are active, clean and dry and

the eyes are open and alert. It is inadvisable to buy eggs to hatch or even mature birds if you are not sure of the source.

Second, use the right feeds and ensure they are of good quality. I feed chick mash from day one to week eight, growers mash from week nine to 18 and, thereafter, start on layers mash.

### **VACCINATE REGULARLY**

Third, ensure adequate supply of clean water and maintain a ratio of one drinker for 50 chicks.

Fourth, give the necessary vaccines as per recommended schedule. For Kari Improved Kienyeji, I give Gumboro at day 10 and day 18 in drinking water. I administer the first New Castle Vaccine (NCV) at week three, week eight and the third dose at point of laying, either as eye drops or in water. Thereafter, I repeat NCV every three months.

Fowl pox is administered at week three and six as a wing web stab. Make sure you buy a special needle for this. Fowl typhoid vaccine is given as an intramuscular injection at week eight. De-worming is done at week 19 and repeated every three months.

Only buy vaccines from reputable sources where you are sure of their cold chain management system. Use a cool box to carry the vaccine home and administer immediately. Do not buy vaccines to keep in the house even if you own a fridge because you have no control over prolonged electrical blackouts.

Once reconstituted, give the vaccine within three hours. Do not use chlorinated tap water to reconstitute the vaccine because this destroys it. If using tap water, stand overnight to inactivate the chlorine, or use a water purifier.

## 190. City farmer builds farming empire from Sh. 100 per day salary



Francis Wachira was employed as a fruit vendor at Nairobi's Marikiti market where he worked for five years making a living from the Sh100 he earned every day. It was a job he did passionately but without earning much, he realised he could be more successful if he broke out on his own to start a fruit and vegetable business.

However his dream for a while would remain just a dream for Mr Wachira lacked start up capital. He took to tending an unkempt playground in his Ofafa Jericho neighbourhood, ensuring the grass was cut and neat. After the first few months, Mr Wachira thought of using part of the field to plant vegetables.

“At first my intention was to use this land for my own benefit but with time I was approached by the Ministry of Agriculture who then offered to support me in teaching others on the importance of urban farming,” says Mr Wachira.

His small farm attracted the local community's interest and they would come to harvest kale and spinach, which spurred Mr Wachira to diversify and offer more. He also advised them to start their own farms and begun offering support.

He would buy vegetable seeds, plant them in his nursery and supply seedlings to anyone in the community interested in farming.

That was 10 years ago. Mr Wachira, who is popularly known as the Rabbit King, now practices urban organic farming as well as animal husbandry. He grows all kinds of vegetables in the quarter acre piece of land, from traditional vegetables to carrots and beetroots, and keeps rabbits, guinea pigs, chicken, goats, geese and quail for sale.

Mr Wachira began keeping rabbits in 2005 after a training session on entrepreneurship. At the time there was no market for the animals but soon farmers who wanted to try their hand at the venture began visiting his farm for training.

“There was a time I supplied Tuskys Supermarkets with 50 pieces of rabbit meat per day due to the demand,” he says.

He has 14 goats he keeps for their milk, which he sells at Sh200 per litre. He has many clients who have embraced the idea of goat milk due to its nutritional benefits. He also keep 200 guinea pigs, another growing market, which he found out were a delicacy in Baringo, Kitui and parts of Central Kenya.

Mr Wachira is now known as an ambassador for urban farming, a title that has seen him feature his produce at local and international trade fairs. Mazingira Institute sponsored him for a visit to the US where he underwent training on the benefits of urban farming.

Apart from providing daily food to Mr Wachira and his family, the once deserted field is now a learning tool for many who are interested in urban farming. Mr Wachira receives five to 10 visitors every week who come for tips on how to sustain their crops in an urban setting.

“Small scale farming is growing and having a variety of vegetable and animals is essential to cut cost of buying food as well as for staying healthy,” he says, adding that organic foods are expensive but people can still grow them in their backyard.

He advocates for growing of vegetables instead of flowers, whether in an empty can, old pots or in a sack.

## 191. How Boran and Red Poll cow breeds give us millions



The about 50 steers stand in a neat line as they munch grass from a feeding trough, almost in sync.

Thomas Onono, the farm's deputy manager, is dressed in a red jacket, khaki trouser and black shoes, and he stands near them watching as they feed on the grass that is mixed with juice extracted from jaggery.

The beef cattle are at the zero-grazing unit of the farm known as Mazao Yetu in Koru, Kisumu County, for fattening.

“We mainly keep Boran and Red Poll cows and their crosses for meat and milk. We have 110 Borans, 68 Boran/Red Poll crosses, 85 pure Red Poll and 60 Jersey,” says Onono.

The Red Poll has white patches on the tail and udder, with the body being deep red in colour. It is a dual-purpose cattle and does not have horns.

The Boran cattle, on the other hand, comes in white, red or black colours. It is an indigenous breed that has the ability to walk for long distances in search of water and feeds. Both animals are hardy.

Onono says Koru is not the typical Boran grazing environment as the area receives high rainfall of 1,650mm annually and has steep hills.

“The success of our Boran herd, however, attests to the adaptability of the breed to produce in very varied conditions. The breed can tolerate harsh rangeland conditions and has good quality beef, the reason we keep it.”



Similarly, he says the Red Poll produces excellent beef and substantial amounts of milk. The bone to meat ratio is high and they mature faster.

“We keep the Boran cattle specifically for beef while the Red Poll and Jersey for milk. Both the breeds can produce between 16 and 28 litres of milk a day,” says Onono, adding they stopped keeping Friesians.

According to him, the western Kenya environment does not favour Friesian because it is a heavy feeder and it suffers heat stress compared to the Red Poll and Jersey.

On average, the firm collects 900 litres of milk per day from about 90 cows that are at different stages of lactation and sell it, together with the beef, through Fairleigh Farm shops in Kisumu, which they own.

The milk is further processed into cheese, butter, yoghurt and ice cream. A litre of fresh milk goes for Sh80 while a 250g bar of ice cream goes for Sh100.

For beef production, they sell the animals when they are 400kg at an average of Sh200,000.

The farm’s Boran cows are regularly inspected by the Boran Cattle Breeders Society and are registered with the Kenya Stud Book.

“We register the animals to maintain high standards. As a farmer, you always want to know you are keeping the best. The registration helps in benchmarking animal standards and market,” says Onono.

Further, registration adds value of an animal during sale.

“When you want to sell a bull that is not registered, price ranges between Sh100,000 and Sh150,000. For a registered animal, the pure breed bull goes from Sh200,000 to Sh250,000.”

The cattle are fed on grass, jaggery juice that is extracted from the sugarcane grown at the farm and 2kg of protein supplement each.

They are fed four times a day, in the morning, midday, afternoon and in the evening.

Prof Mathews Dida, a lecturer at Maseno University’s Department of Agriculture, says that jaggery juice, just like molasses has sugar that animals require.

“When you add jaggery juice to the dry matter, it raises the palatability besides being a source of energy.”

Jimmy Brooks, the managing director of the farm, says they started with a few cattle but increased the number over the years to the current over 1,000 cattle, 323 which are mature and the rest are calves. They keep them under zero-grazing and free-range systems.

### **QUICK RETURNS**

“When I came here to work in 1983, we had 200 head of cattle. Today we have a maximum of 1,200. We select the best animals and do continuous breeding through artificial insemination or use bulls bought from other breeders.” Besides poor road network, fattening the animals is difficult because they mainly rely on grass, says Brooks of their challenges.

However, all has not been in vain. The farm has won at least two awards at the Livestock Breeders Show in 2011 and 2013 for their dual-purpose cows.

“We have won trophies for the Boran and Red Polls breed. We take our cattle for exhibitions mostly at Nairobi and Kisumu Agricultural Society of Kenya,” says Brooks.

David Mbakaya, a senior agronomist at Kenya Agriculture Research Institute, argues that a farmer who keeps dairy cows is likely to get return on investment faster as compared to beef production, which might take three years.

“For dairy farmers, one sells the milk and later the animals but for beef, you have to wait sometimes for three years to reap benefits. Keeping both animals can pay more.”

## **192. How Kiambu couple makes over Sh. 4 million from farming on 1 acre**



The area around Starehe Girls High School in Kiambu County has seen tremendous growth in the recent past. It is to a home in one of these posh housing estates that we head to one fine morning.

It looks nothing different from the other mushrooming estates in the county. At the entrance of our target homestead, we find workers loading parked fresh farm produce onto a waiting car.

Benson Wakaba and his wife, Esther Wairimu, are getting ready to ferry fruits and vegetables, which they have just harvested on their farm, to the market. For the last three years, this has been their routine.

We are ushered into the compound where we find a bungalow surrounded by well manicured grass together with banana plants, sugar-cane and other crops.

The couple bought their one-acre piece of prime land three years ago, intending to build a family home.

The area is ideal for both residential and rental houses, which have better returns, but the Wakabas chose to build a house on only half of it and farm on the rest.

Instead of planting flowers for beauty, he planted 50 pawpaw trees, guavas and some bananas.

For his bananas, Mr Wakaba, who runs a private primary school, St Tito's, bought quality tissue seedlings from Jomo Kenyatta University of Agriculture and Technology.

"I had never done farming before. I tried it just to keep myself busy and because I love crops and animals. But after the crops matured, we got good market for it," Mr Wakaba says.

Traders from Kiambu market and his neighbours would stream to his compound to buy the bananas and pawpaws.

"We had not seen the commercial importance of the crops we were planting. My wife begun selling the produce to her friends and the clientele grew, so we decided to commercialise it," Mr Wakaba says.

They decided to take the venture more seriously.

“We planted more bananas and pawpaw. We also decided to do away with maize and replaced it with vegetables. We sunk a borehole for irrigation and hired some labourers,” he says.

Mr Wakaba has built two water tanks with a volume of 70,000 and 30,000 litres and installed an automatic drip irrigation system.

Presently, he has about 200 tissue bananas, 400 paw paws, kale, spinach, black night shade, and capsicum, among other vegetables.

While Mr Wakaba spends most of the time supervising the farm, his wife, who also runs a beauty shop in Kiambu town, deals with the marketing and selling of the produce.

While leaving home in the morning, she delivers her orders to wholesale and retail clients.

Occasionally, she is forced to make a trip back to fetch more produce.

“We deliver the produce on order. We deliver to traders at Kiambu market, while other clients come to collect their orders. The clients prefer our produce because it is clean and fresh,” Ms Wairimu said.

## **RETAIL AND WHOLESALE**

On a typical day, the couple makes Sh3,000 from bananas (Fhia type) and Sh1,500 from vegetables. The bananas and vegetables are harvested throughout the year.

“From a bunch of bananas, we earn between Sh600 and Sh1,600,” she says.

The banana types in their farm are Giant Cavendish, Grand Nain, which are ripened, and Kampala Green that is cooked.

They have 400 pawpaw trees of the Solo Sunrise variety, each which will yield about 200 fruits each.

From the crop, he expects to make between Sh4 million and Sh8 million. A fruit, he said, goes for between Sh50 and Sh100. They sell both on retail and wholesale basis.

Though they have not been using experts in their farming, Mr Wakaba has been reading a lot of farming related literature.

However, he intends to work with experts from Waruhiu Agricultural Development Centre in Githunguri to improve on his farming.

After realising how lucrative banana and pawpaw farming is, Mr Wakaba decided to buy a seven-acre piece of land in Githunguri where he intends to extend his farming.

## ORGANIC MANURE

Recently, he bought 50,000 seeds of the Sunrise pawpaw variety. He has already planted 4,000 of them on a seed bed. He intends to sell them to interested farmers and plant the rest on the seven-acre farm.

The seeds were sourced at the Kenya Agricultural Research Centre in Pakera, Baringo.

He also has tissue culture banana seedlings which are available for sale to farmers.

At the farm, the couple also rears Kenbro chicken, which not only feed on the crop waste and produce eggs, but also provide organic manure.

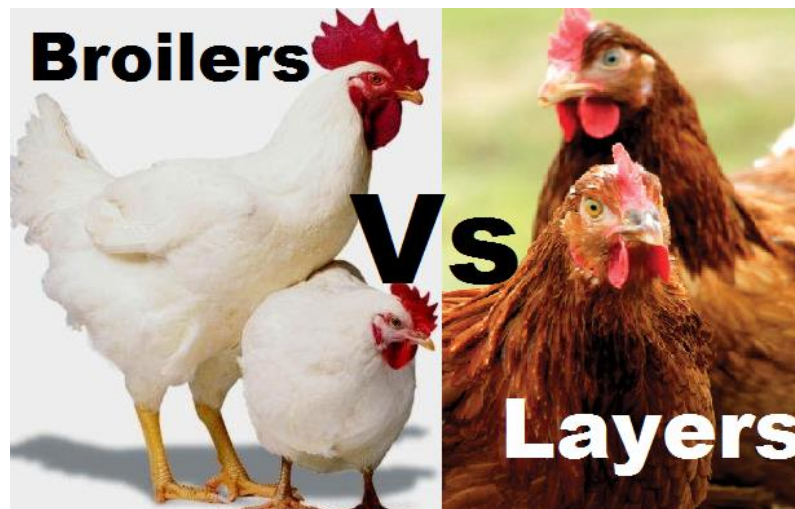
The farm does not use any chemical or fertiliser. The couple has been receiving farmers who are interested in learning their kind of farming. They charge a small fee for this.

Wakaba intends to add value to his produce to increase his returns. “I can advise people to venture into farming. There is a ready enough market. You can reap big even on a quarter-acre piece of land,” he says.

Mr Stephen Mureithi, the principal at Waruhiu Agricultural Development Centre in Githunguri, says if well managed, small farms can produce quality and quantity produce.

“With the shrinking of land, farmers should think of managing the small portions they have,” Mr Mureithi.

## 193. This is how we make more profit from our 1,000 broilers



Kibos, on the outskirts of Kisumu town, is a fast-growing settlement, with homes taking most of the land to accommodate the growing population

It is in this settlement, which is approximately a 20 minutes drive from Kisumu town, that Shinnars Margot Farm is located.

The 1.1 acre farm hosts about 1,000 broilers. They also grow tomatoes in a greenhouse and in the field, indigenous vegetables such as spider plant, cowpeas and black night shade and spinach, climber beans and coriander (dania).



I meet George Kidi, the manager of the farm, at their slaughterhouse. He is supervising the slaughtering of 35 birds for delivery to a hotel in Kisumu.

“We slaughter up to 100 birds in a day but currently the market is low. We only keep broilers because the layers are labour-intensive and take time before one recoups their investment,” says Kidi of the project that was started in 2012.

He explains that they buy day-old chicks and take care of them to maturity at five weeks. “We sell the birds mainly to hotels in Kisumu. They include The Vic, Sovereign Hotel, Peoples’ Hotel and Le Savanna Country Lodge. The price ranges from Sh400, for those who buy in bulk, to Sh450 each.”

Kidi says they slaughter the chickens as service to their customer. However, they make more money as they remove the gizzards, livers, legs and intestines and sell separately. “When we slaughter, we get more profit compared to selling a whole chicken. We sell a kilo of gizzards or liver at Sh60,” he says.

## **MAJOR HARVEST**

Away from the poultry business, the tomatoes sit peacefully in the greenhouse.

Kidi says they have so far planted tomatoes in the greenhouse for six seasons. However, out of the six, only two have been successful. Until recently, their tomatoes were regularly attacked by bacterial wilt.

“But we now plant them in black plastic pots, which control the disease. When bacterial wilt attacks one plant, it spreads fast if there is no barrier between the crops. The pots have helped us curb the disease and losses,” says Kidi, noting they have 870 Anna F1 variety tomatoes, which they planted in February in the 12m by 30m greenhouse.

However, Simlaw Seeds chief research officer Robert Musyoki says the use of pots is a temporary measure to curb bacterial wilt.

“Solarisation, which involves baking the soil can help contain the disease. There are also a variety of chemicals sold in agrovets, which help in curbing bacterial wilt.”

Their first major harvest was in May, and they have been harvesting an average of 30 crates of tomatoes every week since then, although the season is almost done.

“We also supply our tomatoes to hotels in Kisumu and to traders at Sh80 a kilo. The tomatoes are doing well because we use manure from poultry to grow them.”

For the indigenous vegetable, they too sell to the hotels, supplying to at least two produce worth Sh400 each a day.

The farm, which is owned by Caroline Ogot, a Nominated Member of Kisumu County Assembly, has employed six workers who take care of all the projects.

“I went into farming to support a group of 25 children at a home that I have been running with other women under the name Shinnars Centre Organisation since 2004 and so far, it was the best decision I did. The children get their supplies from the farm,” she says, adding the orphans learn computer and dress making skills for self-sustenance while a few have been educated to diploma and university level.

## 194. Christine Kilonzi: here's how I tell what sex eggs will hatch into.



In the small compound in Mwingi, Kitui County, tens of birds roam freely.

Some lie on the ground while others rummage for worms from the soil. Christine Kilonzi, the owner of the birds, is seated on a wooden bench, and before her is a crate of eggs.

The poultry farmer picks two eggs at a time, keenly examining them before marking on each F and M with a marker. She then puts them in a separate tray and picks another set.

The farmer, who lives in Ithumbi village, boasts of a unique skill that enables her to tell whether an egg would hatch a male or female chick by simply looking at its shape.

“The M mark means an egg will hatch into a male chick while F will hatch into a female one,” explains Christine, who rears about 100 birds under the free-range system.

By making the marks on the eggs, she is able to estimate the number of hens and cockerels she would have in her brood.

According to her, eggs that have a pointed end hatch into female chicks and those with rounded ones produce male chicks.

The rare skill has earned Kilonzi accolades and clients, with the concept being researched on by Kenya Agricultural and Livestock Research Organisation.

“Many times clients make very specific requests. One would, for instance, ask for hens only, thus, this skill comes in handy,” she explains, adding that poultry is the most vibrant venture in the area as crop farming does not perform well due to shortage of rain.



## SHARP-POINTED EGGS

With the help of Prolinova, a non-profit organisation that deals with smallholder farmers, Kilonzi has received support to popularise her skill that won her an award in the East African Farmers Innovation Fair in 2013, which attracted contestants from five countries.

“Last year, the Kenya Agricultural and Livestock Research Organisation (Kalro) invited me to select eggs so that they can hatch them and they also researched on the formula,” Kilonzi points out, noting she selected hundreds of eggs and the method has never failed her.

She recounts that she stumbled on the idea sometime in 2009 when a client called to buy 15 female chicks.

“I did not have an idea of how to meet her demand but as I was selecting the eggs for brooding, I realised some had round tips while others pointed ones,” the farmer narrates. “I marked the eggs and monitored them during the entire hatching process. It is then that I realised the sharp pointed ones were hatching female chicks,” adds Christine, who sells about 30 six-month-old birds at Sh1,000 to a guest house and traders in Mwingi town every month.

She later joined hands with other farmers from Mwingi and formed Mwingi Joint Innovators Group to promote different ideas the farmers had.

She has trained members of the group on the egg selection technique.

Eunice Karanja, the country coordinator of Prolinova-Kenya, says many farmers have ideas picked from traditional practices that can be strengthened and help to better the poultry industry.

“The egg selection technique is one of them. We advise smallholder farmers to form groups so that they are able to access funds to promote their ideas,” Eunice says.

Dr Geoffrey Kamau, a poultry expert from Kalro Naivasha, says currently, there is no machine designed for egg selection in the world.

He notes that while Christine’s method is not scientifically proven, it has worked for some farmers.

Other methods mainly used by hatcheries but after the eggs have hatched, according to Dr Kamau, is for instance, looking at the formation of the birds’ wings.

“The wing feather method is used for chicks that are one to three days old. The wings are spread out by holding the chick upside down on the palm and using the thumb and the middle

finger to spread them. The females have longer wing feathers than the males,” he explains, and adds that they are closely working with Kilonzi to perfect her idea and see whether a machine can be developed based on the concept.

The expert, however, notes that the wing method is useful within three days of a chick’s life, beyond which other methods such as comb shape and size and also shape of the vent can be applied.

“There are many methods used to tell the sex of chicks after hatching but no single one is 100 per cent fool-proof,” Dr Kamau says.

## **195. Susan Chesyna: how I make Sh. 10,000 daily from greenhouse, dairy and chicken farming**



I became a farmer eight years ago after I relocated from Baringo to Nakuru County and settled at Kiamunyi, in Rongai.

When I arrived in the county, where I had earlier bought land, I could not stop marvelling at its beauty. The land was fertile and the crops were growing well unlike in Baringo, where erratic rains and drought were regular.

I began with planting maize on about five acres of my 10-acre farm.

Seven months later, I harvested 30 bags. I was happy then, but I later realised I had incurred a huge loss.

After deducting cost of seeds, labour and fertiliser, I realised I had made about Sh80,000, yet I had spent over Sh100,000.

I did not despair. In fact, I thank the loss because it opened my eyes. It made me realise that I should not depend on maize alone.

So the next year, I decided to diversify into tomato farming. I took a Sh100,000 loan from a bank in Nakuru, built a greenhouse and prepared it for growing tomatoes.

### **Greenhouse**

Construction of the greenhouse took 80 per cent of the loan, but it was not much compared to seeking the services from a company.

I built the greenhouse myself using ordinary poles and some polythene materials I bought from a shop in Nakuru.

I was working under the direction of an agricultural officer.

Many farmers believe they must go for the commercial greenhouse, which costs upwards of Sh300,000. You can build your own as long as you get the design right and the materials. My greenhouse measures 12 by 24 metres. I first planted tomatoes.

Tomatoes do well in greenhouses because you control the temperature, protect them from pests like butterflies and when you apply pesticides, they are effective.

I harvested the tomatoes after three months and took them to several supermarkets in Nakuru town, about 10km away.

I could not believe it when later the cheques I collected from the supermarket added up to Sh450,000.

I was selling 2kg of the tomatoes at Sh200. I had harvested over 2,000kg. I remember clearly when I went for my cheques after the supermarkets that include Ukwala and Gilanis in Nakuru called me. I was shocked.

As a teacher, I was earning Sh15,000 per month, which translated to Sh45,000 in three months. But here I was getting 10 times that amount in three months. I was encouraged by the money and decided to build more greenhouses where I planted capsicum, carrots, onions and cucumber.

My produce increased and so were my clients and earnings. From the sale of my produce, I am now earning between Sh10,000 and Sh15,000 each day. I have also ventured into dairy farming, where I have 10 cows, which produce 200 litres of milk.

I normally ferment part of the milk and make mursik, the popular Kalenjin traditional drink, which I sell at between Sh60 and Sh65. This earns me between Sh4,800 and Sh5,200 per day.

### **Not a smooth ride**

Farming, however, is not a smooth ride. During the rainy season, the supply of fresh vegetables surges, which leads to low prices.

Another big challenge in Rongai is lack of adequate water. This has forced me to construct an underground water tank with a capacity of 400,000 litres to irrigate the crops. This tank cost me Sh800,000.

Before I constructed the tank, I was spending up to Sh5,000 on water in a day, which I would buy from vendors.

One of the things I have learned from farming is that certified seeds are key to better harvest.

When you plant seeds that are not certified, you are likely to end up with losses since they are prone to pests and diseases.

My advice to anyone who wants to go into tomato or vegetable farming is to use greenhouses.

With greenhouses, you are assured of a good harvest as long as you use quality seeds and protect your crops from diseases.

To cushion myself against a low season, I keep birds. I have 3,000 Kari Kienyeji chicken, which upon maturity, I sell to supermarkets at between Sh700 and Sh1,000. I have a plan to extend to flower farming as the area is favourable for the venture.

## 196. How Githunguri dairy started from zero to a Sh. 6 billion turnover enterprise



When 31 disgruntled dairy farmers decided to contribute Sh1 each for every litre of milk sold and register a co-operative in 1961, there was no telling that they were laying the foundation for a multi-billion-shilling business.

The enterprise that became Githunguri Dairy Farmers Co-operative Society in 2013 grossed Sh6 billion in annual turnover and has attracted a couple of buyout bids.

Originally, the idea was to find a lasting solution to the persistent milk price volatility. But the more they pushed on, the deeper they sank into financial difficulties, forcing them to increase their contributions from one to two shillings.

Although this did not unlock their expected success, it hardened their resolve to push on.

“At that time, our credit-worthiness was nearly zero and no bank was willing to finance our business plan. Nearly all our applications for loans were turned down,” says Charles Mukora, the society chairman.

“The problem with Kenyan banks is that they present themselves as very close to potential customers but, practically, are very far from that reality.”

Unbowed and with no clear capital outlay to set up a processing plant, the membership enrolment went up, as did milk supply.

The society decided that they would supply the milk to the then market leader — the Kenya Cooperative Creameries (KCC) — and a local hotel.

“It was a desperate move and we had to start working with what was readily available. The profits were not forthcoming yet this was the only source of livelihood for most members,” says Mr Mukora.

Then the worst happened when KCC collapsed in the early 1990s, sending the society back to the drawing board.

“This was our lowest moment and we decided to raise capital and set up our own milk plant,” says Mr Mukora, who became a member of Githunguri Dairy while a student at Kenyatta University.

“We had no collateral but successfully approached Oikocredit International for possible funding and got Sh90 million.”

Oikocredit is a global co-operative and social investor that provides funding to small and medium enterprises to enhance business growth and development.

In 2004, Githunguri Dairy Farmers Co-operative Society went commercial with the first processing plant that produced Fresha whole milk, its flagship product.

It produced 18,000 litres of milk daily, selling it in Nairobi and its environs. That capacity had since increased to 220,000 litres from a workforce of 8,000 as of July last year.

Meanwhile, its market had expanded beyond the borders to neighbouring South Sudan and Tanzania where the society has 23,000 members with 40,000 dairy cattle. Currently, Githunguri Dairy does not buy milk from non-members. Mr Mukora says the society has chosen to grow on existing products instead of introducing new ones.

“We will soon be diversifying and we will set up a milk powder plant but this must go in line with what is relevant in the market.”

John Kilonzo, the general manager, explains: “We appreciate growth in terms of innovation but you don’t rush to the market with a new product just because you made a profit and you want to present a new item.”

The huge investment associated with the powder plant has forced the milk processor to think of outsourcing its production.

The dairy farm is also set to diversify into the bottled water and cheese markets by the end of the year, targeting local and regional markets.

“We have done the feasibility study and identified that there is an untapped market out there,” says Mr Kilonzo, adding that dairy farming in Githunguri has positively impacted on the locals who have uprooted coffee in favour of the milk business.

To strengthen the loyalty of members, Githunguri Dairy has set up a savings and credit cooperative society (Sacco) to offer soft loans to members whenever they have a financial challenge.

“We have also helped members own parcels of land where they can reinvest the proceeds of the business. This comes in the form of bonuses and dividends paid as a motivation to increase daily production,” Mr Mukora says.

In recent years, however, Githunguri Dairy has faced a challenge in the mushrooming of small dairies across the country that are eating into its market.

“Few of these new operators are keen on quality and this enables them to retail their products at very low prices, taking a good percentage of milk consumers,” says Mr Mukora.

The milk market is also fraught with punitive policies both locally and regionally, making it hard for startups and established companies to enter new markets.

More recently, the introduction of value added tax (VAT) on milk has adversely affected uptake in most homes, shrinking the market.

Mr Mukora, however, attributes the success of the dairy operation to absence of political interference and boardroom wars.

“We also have 12 training sessions every month targeting dairy farmers on milk hygiene and farm management given the high competition in the market,” he says.

## **197. King'ori Mathenge: how I've made Sh. 480,000 from organic tomato farming**



King'ori Mathenge knows too well how farming took him out of desperation after he was unable to get a job upon graduating in December 2010.

The 29-year-old has four greenhouses where he practices organic farming which relies on green manure, compost and biological pest control. He sells the produce to hotels in Nyeri and the Coast.

Mathenge chose organic farming because most people are running away from crops grown using chemicals. He gets the manure from the 450 chicken he rears on his farm.

He also buys sheep manure from pastoralists in Doldol, Laikipia County, which he mixes with the chicken manure to grow his crops.

He says he had no idea on farming and had to attend farmers' field days and agricultural shows to get some tips before starting. He attended one such meeting at Wambugu Farmers Training Centre in Nyeri.

However, he says he had never contemplated farming until 2011 when he failed to get a job after one year of searching.

“All I thought of was an office job where I would always be in a suit and tie. However, after several months of joblessness, I had to think outside the box. I needed to earn a living and that is when I thought of farming,” he says.



## **GAPS**

“But before I decided what to grow, I studied the market to find the gaps I should fill,” he told Seeds of Gold at his farm.

“I have realised that deciding what to grow is where many farmers go wrong. That is why you find a product flooding the market because everyone is growing it,” Mathenge says and adds that soil tests also help to know what type of crop can do well in a particular area and farm.

Mathenge had to seek his father’s permission to use his quarter an acre land in Kirurumi village, near Aberdare Forest for farming.

And to keep pests away, Mathenge has been practicing crop rotation, another aspect of organic farming.

“To succeed in farming, one must grow crops that the market needs and not what everyone is growing. You must also ensure the crops are not harmful to human life, such as those grown with chemicals,” Mathenge adds. And according to John Wambugu, an officer from the ministry of Agriculture, organic farming in greenhouses is the best these days.

“In greenhouses, temperatures are warm and this speeds up growth of crops while reducing fungal infections,” Wambugu says.

He says although organic farming in greenhouses is rather expensive, it is the way to go since most people are shying away from crops grown using chemicals due to related health and environmental dangers,” Wambugu adds.

“I started with a small greenhouse measuring 15m by 6m where I grew 400 seedlings of tomatoes,” he says. The crop earned him Sh90,000 within six months.

The young farmer has his market for tomatoes mainly in hotels in Nyeri. He also supplies some to traders in markets. He sells capsicum in Mombasa and Nairobi.

However, the prices are not constant and depends with supply in the market at a particular time.

“I sell a kilo of capsicum at a minimum of Sh100 while that of tomato goes for Sh80,” he notes.

## **BIGGER GREENHOUSES**

Later on, Mathenge put up another greenhouse, bigger than the first one which earned him Sh150, 000 from the first harvest. By this time, he had two greenhouses. He harvested twice in one and earned Sh180,000 before hailstorm destroyed his crops.

Mathenge did not lose hope. He borrowed money from his father, renovated the greenhouse and constructed a third one. He would reap Sh300,000 soon after selling capsicum from the third greenhouse.

He says he later earned Sh60,000 after selling tomatoes before hotels at the Coast stopped buying his capsicum after business went down due to terror attacks. “I was forced to concentrate more on tomato farming,” he says.

With his mode of farming, he has been able to control common diseases such as Powdery Mill Dew that affects both crops and Tuta Absoluta. With this the bachelor of commerce graduate continues to say no, thanks to job offers.

Eustace Gachanja, the coordinator of the Kenya Organic Agriculture Network says organic farming is not as expensive as some think.

Other than enhancing yields by applying manure, crop rotation and planting of legumes, Gachanja says farmers can also have their farms certified as organic to enable them sell at premium prices in selected organic shops and restaurants.

“We also issue the East Africa Organic Mark to those who comply with the standards to enhance organic farming,” says Gachanja.

## **198. Young Farmer Talking Millions**



At the turn of the millennium John Wang'ombe graduated with the coveted Certified Public Accountant (CPA K) honors but instead of pursuing a successful career in Accounting, he fell in love with Agriculture and now he is on his way to become a Real Estate Magnet.

When John Wang'ombe is visiting Nairobi he often runs into his former classmates and he is not surprised when they ask him, "Why are you living like you never went to school John?"

"That's what they always ask me", says Wang'ombe, who is building a shining future for his three children with farming. After graduating from the prestigious Strathmore College, now University, John was selling like hot cake and he landed a job with a stock brokerage firm as an accountant. Although it was well paying (Ksh 45,000 a month), John quit after six years just when the firm was about to turn into an investment bank.

One of his classmates is now a finance manager; he owns a nice car and can afford to live in a rented bungalow but has no investments. Wang'ombe however, had a dream beyond a sleek car, imported clothes, trendy gadgets and cool memberships.

Simplicity is his rule of thumb. "If you eat chicken and I eat sukuma wiki, we both have a full stomach. If you wear a 5000 bob shirt and I wear a 100 bob shirt, they will both wear out", farmer Wang'ombe quips as he adjusts the color of his faded shirt.

Wang'ombe quit his accountant job in 2006 and moved back to his backyard in Nyandarua County to start farming snow peas. The first two years were a disappointment but he never lost heart. He added dairy cows and rented more land to plant cabbages.

Wang'ombe farms 2.5 acres of land and he has made a fortune out of it. In his local Farmers' cooperative, he is the top saver among farmers under 40 years of age. Wang'ombe shares the secret behind his saving culture: "My mother always advised me to save. 'If you have ten thousand shillings, save it all so that when tomorrow you are called to do a fifty bob job you will go', that's what she always said and I listened to her". Currently a share is worth Ksh200.

His big break came in 2009 when a kilogram of snow peas went up to Ksh150. Egypt and Zimbabwe, major exporters of snow peas, had problems with the export market and Kenya got the windfall. That year Wang'ombe made a whooping Ksh. 750,000 from the legume.

Out of his successes in farming, Wang'ombe wants to go into real estate business. He recently invested 1.2 million on a land and has already rented it out to a petroleum dealer who is running a petrol station. Using his savings, Wang'ombe has acquired 11 other plots on prime areas along the Nairobi-Nakuru highway. He is edging closer to his dream of entering the lucrative Real Estate business.

Just this last snow peas season, Wang'ombe acquired another piece of land after M-Farm linked him and 26 other farmers in the area to an export market.

“I was the first farmer in the region to get in touch with M-Farm. We had problems with brokers; they always dictated the prices and we needed help. Sometimes they would go as low as Ksh20/kg of snow peas,” explains Wang'ombe. “One time a farmer emptied his pickup full of snow peas into the river when a broker offered to pay him Ksh5/kg. That's how frustrated we would become sometimes.”

Transparency in the value chain has been a major problem in Agriculture and farmers have suffered silently. The cry of the farmer is a link to better markets. M-Farm connects farmers to markets.

Selling together is a product M-Farm is offering smallholder farmers to enter into commercial farming and increase their incomes. Wang'ombe belongs to a group of 26 farmers who collect their snow peas and sell together. M-Farm has worked with these farmers to ensure they meet the quality standards, the quantity required and a constant supply is guaranteed. In return, farmers have a stable market for their produce and at a better price. This is a relief as the biggest headache to farmers is where to sell their produce and at good price. Buyers are happy too to get high quality and constant supply of the required quantity from these farmers.

Wang'ombe has no regrets wearing gumboots from January to December and dispels the notion in many people's minds that farming is only for those who failed in school. He advises young people to wake up from the dreamland of instant success and put their hands on the plough.

He also has a note he would like to pass to anyone who cares to listen, “Employment is a comfortable prison, it can feel warm, cozy and secure but it can only do so much. Just subtract your expenses from your salary and if you hear an instant bell, look for the closest exit door.”

## 199. How brothers are making it big in mixed farming



In the outskirts of Chuka town in Igamba Ng’ombe Constituency, Tharaka-Nithi County, there’s an outstanding farm along Kangoro-Rubate Road. The 3.5 acre christened Kagumo-Hort farm belongs to Murithi Musa and his brother Edward Micheni. Their farm is a beehive of activity. On the ground, lay bits of cassava well spread as part of the chicken feed; the poultry house is well constructed such that the chicken are kept clean and warm.

A hatchery composing of an incubator and brooder are also in place to cater for the high demand for the kienyeji chicken. Right adjacent to the poultry house is a warren that is stocked with big healthy rabbits. How did they start this enviable project?

Musa explains that one day, he needed a Sh0.5 million loan.

“I took my piece of land as collateral, but upon evaluation, I discovered that the value of the piece of land was high as compared to the amount of money I needed.

This made me re-think. I shelved my plans of taking the loan and thought of investing in the farm to make it more valuable,” he says. Since it was a family farm, he consulted his brother.

He bought into the idea and using the savings they had, they started with 200 banana tissue plants. The bananas picked up well then they went into poultry and rabbit keeping. They have since ventured into fish farming. “The trick with fish is that they are fed at specific times of the day.

If it is cold the fish are not fed as tilapia fish don't feed well when temperatures are low," Musa who is a co-director of the farm with his brother shares. The pond's water is rich in minerals and is often pumped to the other parts of the farm like the arrowroot farm, passion fruits farm, mangoes and the banana farm. The farm has four green houses, two that major purely on strawberries; the third one has garden peas while the last one has assorted crops that range from cucumbers, beetroots and courgettes.

Right beside each greenhouse are some weeds that are allowed to grow. These weeds are a way of enticing and attracting other insects that could otherwise find their way to the green houses.

Part of the farm is also inter-cropped with mangoes and cassava. Tree tomatoes also occupy part of the farm and it is one of the most beneficial farm produce as it yields throughout the year and requires little attention. "Its market is also good and the farm cannot even satisfy the demand which includes the two main supermarkets in Chuka town that is Jatomy and Maguna Andu Supermarkets," says Musa.

The lower part of the farm is occupied by the sweet yellow passion fruit that was introduced to the farm by Techno-Serve Company under the sponsorship of Bill Gates Foundation and the Coca-Cola Company which trained them on how to tender for the fruit from the initial stage. On the far end of the farm, are the goats that are a main source of rich nutritional milk that is meant for their own consumption. At the edge of the farm are some well spaced beehives that help pollinate the farm and also generate honey for sale.

"Everything in the farm is of great value and nothing including the weeds is allowed to go to waste," says Musa. The farm weeds that range from banana trunks are mixed together with wastes from the poultry, rabbits and goats' farm and are all preserved in a pit to make compost manure.

The farm operates under a farm manager who is in charge of all the activities in the farm. The farm is the main source of income for the duo. Every garden has thorns, so what are the challenges they have faced? "First lack of a reliable source of water is a problem. So we have to incur huge expenses to meet that need.

The other challenge is the fact that our farm is near the road means that most of our produce is very dusty.

Another challenge is that sometimes we face setbacks when sourcing for fingerlings. The supplier tells us that we have to wait for several months. But we are working our way around that,” Musa says. Their advise to youth who want to join farming?

“Farming is rewarding. Instead of looking for white-collar jobs, youths should try farming,” Musa says. They also urge the young people to research widely before embarking on any income generating activity by attending forums, shows, workshops and also researching online.

## **200. Why every farmer needs to link up with agripreneurs to grow their profits**



There are approximately three million smallholder farm families in Kenya. Smallholder farms hold the greatest promise for the growth of the produce sector, for enhanced productivity, and for meeting the challenges of food insecurity and malnutrition head on.

There is growing evidence that smallholder farmers also hold the key to solving rising climate change challenges.

Farmers create primary value by being production focused. Farmers bring to the table land, labour, productive capacity, motivation to persevere under all conditions, and the will to survive. Their businesses largely fall in what we call the informal market.

The informal market is not good for these farmers in the long run; it leaves them with little to no power to influence the marketplace and it keeps them in what I call “equity darkness”, that dim place where no one knows who you are or what you do and you go in circles trying to figure out how to pay for input supplies and hired labour to no avail. Their prized knowledge is about their crops and how to produce quality fruits and vegetables.

When I ask smallholder farmers about their greatest challenges, I hear laments about entering and securing stable markets for both raw and processed goods. I hear about the demerits of relying on rain alone, misunderstandings about the use and amount of fertilisers and the differences between organic and non-organic fertilisers, and the lack of access to processing facilities.

An agripreneur is a businessperson who combines the prowess of farming with innovative agro-technologies to increase production and make more cash.

### **RISKY BUSINESS**

This agricultural entrepreneur cares as much for community development as she does farming. It is not just about her growing more quality food on a stable basis; it is about joining together with other farmers in new ways such as through cooperatives and producer unions so that all farmers can produce their way to a better life.

It is also about local communities embracing their farmers as important members of the local economy and improving conditions for their sustainability. By utilising and sharing agro-technologies, smallholder farmers have the opportunity to join the agribusiness value chain and reap the profits.

Agripreneurs empower farmers by moving them into the formal economy and linking them with other actors in the agricultural value chain to bring about a movement on a mass scale.

They incorporate technology, new ideas, innovative approaches, basic education and technical capacity building to demonstrate practical ways to grow more produce, create processing capacity and impact market share on a grand scale. They have the power to influence the market by aggregating hundreds and hundreds of farmers’ productive capacity through technology.



For Kenya, this means bringing millions of smallholder farmers into the complex but sustainable world of agricultural value chains. Farmers have a legitimate role in the agricultural value chain and I believe they have the opportunity now to drive the value chain through apps that give them the information they need to make better decisions.

After all, farmers are in a high risk business; they need to manage risk by making better informed decisions. The top software apps for Kenyan farmers: iCow, Rural eMarket, mFarm, mFisheries, Esoko eAgric platform, FarmerConnect, M-Shamba, Mobile Agribiz, AgroSim, amAgriculture, and Farming Instructor.

Fisheries connects fishermen with agents in the fisheries value chain. It includes navigational tools such as a compass and a GPS logging and retrieval application as well as training companions. Esoko links farmers to markets with automatic market prices and offers from buyers. mFarm connects farmers to share ideas and enhances operational efficiencies with production cost estimating tools. Rural eMarket communicates market information in multiple languages.

iCow increases productivity by accessing knowledge partners and experts. M-Shamba, currently in use by 4,000 rice farmers in Kenya, provides information on production, harvesting, marketing, credit, weather and climate based on location and crop preference.

Mobile Agribiz helps connect farmers to buyers and source information on how to plant crops, how to use fertilisers, and aggregates weather and crop pricing from multiple sources.

By building strong partnerships between farmers and agripreneurs, we can easily distribute and use these agri-technologies for the benefit of Kenyan farmers.

# Conclusion

## Farming myths, lies, and half truths every farmer should know



### **Myth #1: One is born a farmer**

By all manner of definition Peter Wambugu is a successful farmer. His one acre apple farm in Nyeri is a gold mine in its own right. Close scrutiny reveals that no aspect of Wambugu's love for his job exactly depicts a natural born farmer. "I had not even set forth into growing apples, per se," says Wambugu, "to a large extent it was trial and error in the first years of planting. Almost five years passed before I began making profits." Wambugu was already 40 when an Israeli acquaintance brought him seedlings to try out.

"I started out with grafting 100 trees on a one-acre piece of land. Growing apples in Kenya was relatively new at the time but I kept on trying and learning from my mistakes," he offers. Fifteen years later, Wambugu is in love with apple farming.

As he puts it, "I bumped into apple farming and now it is what I do." He believes many can be successful in any kind of farming as long as they possess patience and grit – by learning from mistakes.

### **Myth #2: Farming requires academic qualifications**

As far as Muturi Njoroge and his wife Susan are concerned, passion maybe the difference between growing in one's farming and failing at it. The couple holds no academic qualifications commensurate to farming of any kind. "My wife is a counsellor by profession. I hold a Form four certificate. None of us attended an institution of higher learning to sit for courses in dairy farming yet people look at our venture as among the most successful in the country," Muturi says. Before going solo, Muturi was a farm boy taking care of his boss' cows. The animals produced lots of milk with him in charge. However, Embu, where the farm is located, seemed not to have demand for milk that would have made dairy farming as lucrative.

Muturi asked for permission to transport the milk to Nairobi, an idea that proved quite rewarding. But he would be fired for being too good at his work. With savings amounting to Sh.90,000, he moved to Ngong and started off with seven cows. Destiny would have it that he married a woman who also had considerable interest in cattle. Today, the couple has 32 dairy farms scattered all over Kenya. The main farm in Ruiru has state-of-the-art equipment and holds over 600 animals. "It is only now that we are thinking about going to school to study," Muturi says, "just as a formality. In any case university students come here for attachment and lessons."

### **Myth #3: Farming is limited to crops and farm animals**

Jeff Anthony owns a gym and is a fitness fanatic. Driven by the need to eat healthy, he decided to go into farming. It was neither crop nor dairy related. He looked beyond cows and maize. "Initially it was just for me but then over a period of time I realised it was a good enough venture to hold onto and expand," he says. Anthony is a mushroom farmer.

The decision to go into rearing mushrooms was informed by the fungi's exceptional nutritional qualities. "I was fascinated by the facts," he says, adding, "Mushrooms are richer in protein content compared to fish, chicken and many meats. They also have large amounts of oxidants; improve immunity and detoxifies the body." The good news about his choice was that all he needed was a small mud house for the venture. Mushrooms grow in columns which need little space – for a small scale farmer – compared to crops or even animals.

### **Myth #4: Machines can replace human labour fully**

As farm manager of 1,000 acres of farmland Dickson Chege of Thiba Farm in Embu understands every aspect of farm work. At Thiba, which belongs to Catholic diocese of Embu,

Chege is – among other things – in charge of overseeing work within the farm. Typically, work ranges from land preparation to harvesting. The dairy section also needs farm hands to feed animals and milk them too. In the decades past farming has become more mechanical.

Today, machines can do just about everything: planting, tilling, application of fertiliser and pesticides, and even harvesting. As such, large scale farming has sought the efficiency of machines, drawing many to believe that machines can be enough in successfully holding a farm. “At any given moment 30 per cent of farm work will need manual labour,” Chege says. “Tractors and other mechanical equipment are essential in farming.

This however should never be mistaken for total efficiency. A farm still needs human workforce – a good number for that matter. You should not expect a good harvest just by employing the use mechanical equipment,” says Chege. Machines, opines Chege, are effective but only humans can reason when faced with farm challenges.

### **Myth #5: Farming is as easy as ABCD**

Crops grow almost naturally. As long as the soil is fertile and there is enough rain plants will grow, right? Wrong. In the few years that Tabitha Omuga has cultivated Roselle plant, experience has taught her that beside the human drive that aims at making profit, there are plenty of other factors that determine a farmer’s success.

“You may have very good seeds and could have prepared fairly well. But if your crop is something like Roselle, then you ought to be worried very much about the weather. If there is too much rain then you stand ripping almost nothing from all the hard work. Roselle grows best in dry weather,” says Omuga. Muturi Njoroge on the other hand prefers wet weather. “Dairy farming rises and falls with the weather. Drought means less milk production,” he says.

As for Chege, agriculture may not entirely need university bred intellectuals. However, if one is serious with farming, they ought to have basic and superficial understanding of the factors that affect agriculture. If you are forever aloof in the farm, Dickson suggests that you would be better off in a different career. A farmer should be keen to understand simple things as weather patterns and have the patience to learn.

### **Change your mindset**

You have just completed University/College and you are wondering what comes next. You have studied for four years and at the back of your mind, you knew things were going to be rosy after you completed your education. I am sure you even planned where you were going to work and live right? Sadly though things are never what they seem to be. With a lot of degrees and diplomas in the market today, getting a job in Kenya is not easy. The reality is that not everyone is going to get a job on time and many of us waste a lot of time trying to apply for white collar jobs with no response.

The truth is as Kenyans, we have been hardwired since childhood to think that getting employed is the ultimate achievement in life and without employment we cannot be successful. Am here to tell you that there is another way out of your predicament: Agribusiness is the answer. If you have the right information, tools and training you can make agribusiness profitable for yourself and become a millionaire farmer.

I wish you success in your quest to become a profitable farmer.

Thanks for taking your time to read this guide. Am still writing more and more Agribusiness guides that will nourish you in your profitable farming endeavours. Always keep in touch with me on whatsapp **0714723004** to get more of my Agribusiness guides. Also whatsapp me and give me your feedback about this guide..