VALUE ADDITION ON AGRO-PRODUCTS

a) value addition on milk

1. Mr. Mwiru is a prominent dairy Farmer who produces milk on a large scale. He used to sale his milk to the customers in the community and some to the diary people in the nearly towns. However, at times the milk could reach the diary when it had gone bad, and could fetch him very little money since one litre was sold at 1000/= to customers and 800/= to the dairy people. One-time Mr. Mwiru attempted to make ghee from the money milk but his attempt failed.

Task

As an expert in handling animal products, help mr. Mwiru to overcome his challenges.

2. Opamba and other dairy farmers in wakiso district are happy with the profits they make yearly. They sell their milk in the city daily and keep their money collections after sale in their homes. Individual farmers rent rooms expensively per month and the electricity bills per individual are also high.

The milk sales have drastically declined due to a number of complaints raised by customers. These farmers transport their milk in jerricans while carrying them on their heads to their operating individual rooms which are very hot. The milk has a bad flavor and has hairs in it also. The milk goes bad on boiling. Opamba wanted to buy a milk cooling tank for his business but does not have enough money.

Task.

Advise the farmers above on how they can benefit from the milk production profitably.

3. JUMA is the district veterinary officer who decided to visit and inspect a dairy farm in the district. He noted the following; the milk had blood stains and some hairs that were sieved using a piece of mosquito nets. Milking was done in big sauce pans that attracted many flies. Milk was stored and transported in jerricans

without kids. Near the parlour was a garden of onion plants. The floor of the parlour was dirty and dusty. The cows all appeared Bonny, dirty, with long loose hairs. Their teats had cracks and some sores.

Task.

Guide the farm manager on how to produce clean and safe products on his farm.

4. Miss Kasimanta decided to start up a dairy farm with 20 Friesians. Each provides 15 litres of milk per day. Miss. Kasimanta decided to decide milk into can A and can B. Milk in can A had a lot of fur, had blood clots and had gone bad, while milk in can B was left open, flies were sorrounding it but dit not go bad. He was advised to provide the cows with elephant grass(hay) and silage during the milking time as a dairy meal, but refused to do it because silage can easily lead to tainting of milk and produce an offensive smell in it. The neighbor realized the miss. Kasimanta knows some animal management practices, that's why she is making more profits than other farmers who have the same types of animals.

Task.

What advise can you give to Miss. Kasimanta to increase quality milk production?

5. Bongye decided to establish a dairy farm for milk production. His Friesian cows gives him a lot of milk per day. He transports his milk in a jerry can to the nearest dairy plant for selling. He uses his head to carry the milk to the dairy plant. Sometimes, his milk is rejected at the plant due to its poor quality. He decided to make ice cream out of the rejected milk. But he made one which was watery and tasteless.

He opened up a fixed savings account with a commercial bank expecting profits but saved nothing in the account apart from the opening balance . He applied for a loan from Rwetuha dairy farmers association where he is a non-member but was denied one because he had no guarantors due to his mistrust with funds yet he needed money urgently.

Task.

a) Give guidelines on how Mr. Bongye can come out with quality ice cream.

b) Advise him on how he can improve on the sales from his farm.

6. Dairy farming is one of the most income generating enterprises in Western Uganda. Kansiime decided to establish a dairy farm on her one-acre piece of land to tap income. Her two jersey cows give her a lot of milk per day but she doesn't know much she earns from each individual animal. She carries the Jerry cans of milk on her head to the dairy plant for sale. She opened an account with a rural development bank but still keeps her money under the pillow. Her milk is occasionally rejected at the plant due to poor quality.

At the beginning of the year she decided to borrow money from the village self-helf group to acquire equipment for producing milk products. She was asked to pay 72,000/= before being given a loan since she is not a member. She started making ice cream and yoghurt from the rejected. The yoghurt made is smelly and watery and tasteless and it has been rejected by customers. Registered members do not pay any money while applying for a loan in a village saving group.

Task.

a) Guide Miss Kansiime on how she can produce good quality yoghurt.

b) Advise Kansiime on how she can gain highly from milk production.

7. Malongo village is occupied by dairy farmers. These farmers obtain little profit from their projects since they are under priced by milk brokers on individual level. One day, MUSA decided to add value to his milk by making Yoghurt. He packed his Yoghurt in white polythene bags for distribution to the nearby community members who had low economic potential. The village in next to a highly populated masaka city. He visited a bank to open a bank account with only his LC 1 letter to confirm his residence. Some farmers who consumed yoghurt complained about its quality.

Task.

a) Design the steps MUSA should follow when making Yoghurt that meets his customers' demands.

b) How would you advise MUSA and the community members to achieve the best from their project?

8. Maria is one of the known dealers in animal products including cheese. She buys already made cheese from different whole sellers and mixed with the old stock in one storage container. Her sales keep on decreasing on daily basis due to lack of awareness by customers. She lent part of her business capital to her friend without any recorded or written information. She joined a savings groups in the village but did not buy any share and had no time to attend group meetings. At the end of the financial year. The group members with shares shared profits /dividends. Due to high prices of already made cheese, she bought milk to prepare her own cheese but she made the one with unpleasant mouth feel and soft.

Task.

a) Design the steps Maria should follow when making quality cheese that meets her customers' demands.

b) How best would you advise Maria about her business for profit maximization.

9. Mr. Mugisha and other dairy farmers in kisozi village are happy with the profits they make from their daily sales. They sell milk in the nearby town and go home with all their money collected in a day. Individual farmers rent rooms very expensively per month and water bills per individual are very high. The milk sales have sharply declined due to a number of complaints raised by customers. Those farmers transport milk in Jerry cans, the Jerry cans are used when very dirty and uncleaned, and they carry these on their heads to their respective business room that have have very high temperatures. The milk has bad flavor and some dead flies in it, it coagulates on boiling. Mugisha wants to buy a refrigerator for his business but has less money.

Task.

Advise these farmers on how they can benefit from the milk production profitably.

10.In kibanda village, Ngobi dairy farm operates on 600 acres of land and supplies fresh milk to a nearby urban centre with over 10,000 residents at 1000shillings per litre. The milk is transported by bicycle in multiple shifts in jerrycans and measured using a plastic cup. A cup of spiced milk tea in town is priced at 2500shillings. Recently, milk consumers developed serious health complications suspected to be linked to poor handling and hygiene practices during milking and distribution. This triggered public concern and led to a significant drop in milk demand. The farm also lacks proper documentation of daily yields and sales, hindering access to financial services and markets.

Task.

a) How can the farm prepare and package spiced milk tea safely for urban consumers.

b) Give guidelines to improve hygiene and value addition at Ngobi dairy farm to enhance profitability.

11. Maria is one of the known dealers in animal products including cheese. She buys already made cheese from different whole sellers and mixes with the old stock in one storage container. Her sales keep on decreasing on daily basis due to lack of awareness by customers. She lent part of her business capital to her friend without any recorded or written information. She joined a savings group in the village but did not buy any share and had no time to attend group meetings.

At the end of the financial year, the group members with shares, shared profits/dividends. Due to high prices of already made cheese, she bought milk to prepare her own cheese but she made the one with unpleasant mouth feel and soft.

Task.

a) Guide Maria how to make good quality cheese that meets her customer's demands.

b) Advise Maria on how to improve her business for profit maximization.

12. Moses is a dairy farmer who produces a lot of milk from his farm. He sells the milk to consumers in kagube trading centre at shs. 600 per litre. Most times, the milk he obtains from his farm is not all sold until the following day. He keeps this milk in aluminum cans placed in one corner of his living room. Some of the milk coagulates and he pours it away. To sustain his business, he recently obtained a loan from a money lender at an interest rate of 30% per annum. However, the proceeds from the milk sales are not enough to repay the loan and the money lender is threatening grab part of Moses's land. Moses has heard on radio that in other places, the price of milk is 1000/= per litre. Customers from nearby Malupe trading centre have asked Moses to supply them with any one of fermented milk product. Moses doesn't know how to make this product. He also seeks your advice on how to improve the marketing of his milk.

Task.

a) Advise Moses on how he can improve the marketing of the milk from his farm (include reasons for advice).

b) Guide Moses on how he can make the required product to supply to customers in Malupe trading centre.

<u>b) value addition on meat</u>

1. Kawanga is a vendor dealing in roasted meat in jjeza trading centre. Every morning, he walks a distance of 10km away to the business place carrying meat from the butcher. He sells different parts of meat at different prices but sometimes customers pick them randomly and pay him any amount they can. He gets profits from his business but he spends almost 60% on gambling. His friends doing the same business with him are given 10% discount as members of jjeza meat roasters association. A business driver complained that he bought a piece of meat that had bad smell and a usual flavor with sooty parts.

Task.

a) Design the steps Kawanga should follow when roasting quality meat that meets his customers' demands.

b) How best would you advise Kawanga about his business for profit maximization?

c) value addition on vegetables

1. The Igumba Young Farmers Club in Lugoloire County has mobilized youth to engage in agriculture by growing crops and rearing dairy cattle. The young farmers produce a large quantity of milk, oranges, tomatoes, and maize, which they sell in raw form to middlemen around the country. Recently, they have realized that they are not earning enough money due to losses from fruits rotting and milk spoiling while waiting for buyers. Additionally, prices have dropped due to over production. Frustrated, the farmers are now considering leaving farming because of these issues.

Task

As an agronomist, write a message to the farmers group advising them on how to overcome their problems.

2. Matovu harvested 1 tonne of tomatoes. He transported them to his home using a truck that had carried animal dung and stored them in open plastic containers. He decided to sell his tomatoes to people in nearby communities. He was able to sell 20 kilograms in three days at a price of Ugx 500 Shs per Kilogram to his immediate neighbours. In the next village, Kato owns a community radio that broadcast all over the subcounty.

While selling tomatoes, he measures them using hands and packs them tightly in black polythene bags to prevent spoilage. The following week, tomatoes started becoming soft and changed colour to brown which prompted customers to start buying tomatoes at very low prices. He tends to quarrel with customers who are inquisitive about his business.

Task.

Advise Matovu on how he can overcome his challenges so as to get more profit from his business.

3. Hajarah , like many other individual traders in Kiryandongo district, bought a tomato milling and packaging machine, her processed tomato paste contained a mixture of partially crushed skins and inconsistent pulp. Within three days, the paste developed a whitish layer and produced an unpleasant smell.

One of her customers even complained about finding sand particles in the tomato paste served in a restaurant supplied by Hajarah, she hopes to export tomato paste to USA but her current processing volume is only 40 tones per month, farm below the 800 tons demand. Hajarah usually buys fresh tomatoes from 60 small holder farmers on credit. It takes her three days of traveling to physically pay all her suppliers. Which reduces her ability to focus on other parts of her business.

Task.

a) Describe steps that Hajarah should follow to make marketable canned tomatoes to increase profitability.

b) Write an advisory message to Hajarah that would help her improve her tomato processing business.

<u>d) value addition on fruits and beverages</u>

1. Monday has been dealing in the sale of fresh mangoes. Currently very many farmers are engaged in the same business and the demand for mangoes has dropped and many end up rotting. There is an increased demand for mango juice in the restaurants in the trading centre in her community.

Each morning Monday reports to her store, she realizes some mangoes missing on counting. Monday often sells on credit to Molly's restaurants. But she cannot recall how much Molly is to pay him and this has caused confusion.

Later she asked a friend to help her on how to open a bank account to save her earnings and access loans but the friends did not have any idea about the key requirements. She is also a member of a sacco with 50 equal shareholders. During the annual general meeting, she received her share of profit that they made after one year but she did not understand why she was given the money.

Task.

a) Describe the steps that Monday should take to produce quality mango juice that would be accepted and sold to restaurants.

b) Advise Monday on ways she can manage her business better and improve her profits.

VALUE ADDITION ON ROOT TUBER CROPS

1. Kabuga is a farmer who grows cassava in Kamwezi sub county. After harvesting, he sells the cassava tubers of different sizes in bundles of 1,000Ugx each. The bundles of cassava tubers also have some damaged tubers. This has made him achieve less profit. He has decided to make cassava flour for sale instead of tubers. He stores soiled cassava tubers in the store for two days before peeling. After peeling, he dries his cassava chips on a bare ground in his compound. He saves his money under the mattress at his home and wants to use it for cassava milling. The cassava powder after milling is brownish and with a bad smell. Kabuga would like to buy sun driers to carry put proper drying of his cassava but has little money.

Task

Advise Kabuga on how he can benefit from his cassava production profitability.

2. John is a cassava farmer in Mita village. On harvesting the cassava, the small and big cassava are packed in torn sacks and transported to the market. In the market, the raw cassava had low demand, and most of it was rotten by the following day. He tried to make flour, but it was of poor quality.

John wanted to get a loan from a village SACCO, but he was not given one since he is not a member. He keeps his earnings under the mattress.

Task,

a) Guide John on how to make good quality flour.

b) Advise John on how to benefit from his cassava.

3. Nakyanzi deals with Irish potato growing in Rukiga district. After harvesting, big and small sized tubers were packed together in the same sacks and taken to kalerwe market. He put the sacks of tubers on a lorry and then passengers sat on them to the market. No sooner had he reached, than the market prices fell sharply. He decided to borrow money to make chips from a village savings group. He was asked to pay 100,000/= before he is given a loan since he is not a member. He ran to the commercial bank for rescue but was asked to come with the requirements for opening up a savings account. He does not know what to bring. The chips he made were of poor quality and were also rejected. (Registered members don't pay money as they apply for a loan in the village group)

Task.

a) Guide Miss Nakyanzi on how he can produce good quality chips

b) Write a letter to Miss Nakyanzi advising her on how she can gain highly from Irish potato project.

4. Kyera deals with Irish potato growing in muko sub county. After harvesting, big and small sized tubers were packed together in the same sacks and taken to market. He put the sacks of tubers on a lorry and then passengers sat on them to the market. No sooner had he reached, than market prices for Irish potato tubers dropped sharply. He decided to borrow money to make chips from a village savings group. He was charged 50% interest per month since he is not a member. He ran to the commercial bank for rescue but was asked to come with the requirements for opening up a saving account. He does not know what to bring. The chips he made were of poor quality and were also rejected.

(Registered members are charged 2% interest per month)

Task.

a) Guide Mr. Kyera on how he can produce good quality chips.

b) Advise Kyera on how to gain highly from Irish potato project.

c) value addition on agro-wastes

SOIL SCIENCE

1. The Mukanza family of Ivundhu village has been farming on their 20 – acre land, which spans two adjacent hills with a valley in between. For the past two decades, farming has been highly profitable for them. Recently, however, crop yields have been declining due to soil exhaustion and severe erosion on the two hills. As a result, they are now being forced to move to the valley, which has poorly drained soils and frequently floods after collecting water and soil runoff from the hills.

Task

As a specialist in soil, suggest improvements that the Mukanza family should implement to ensure that their entire land becomes productive.

2. Halimaa cereal grower in Kamonkolidistrict owns100acresof gently sloping land with only 50 presently in production as the other half of the land was abandoned. This was due to it's low productivity, light greyish colour, a soil p.H of 3 and very compact as heavy lorries were using it as a short cut. Meanwhile, the 25 hectares under production are characterised with rocky soils and trees whose root system is exposed on the surface. Most of the fertile and dark soils are seen in the valley next to her land. At the start of the business in 2016, the soils particles on which banana grows were intact and presently comprise of very loose particles.

Task;

As the district agricultural extension officer, write an advisory message to Halima that would enable her improve her cereal growing business.

3. Mr. Rutash established a coffee plantation on a fairly flat piece of land. A unknown person is claiming that this land belongs to him. The soils are always dry throughout. A small layer of surface soil is blown off by wind in form of dust. In the lower part of the land, water stagnates for almost a month before it dries. The soil sample testing shows that the soil has a pH of 12. Yet coffee grows well in slightly acidic soils.

Task.

Advise Mr. Rutash on how to improve on his soil for coffee production

4. Okabala acquired a piece of land to grow soyabeans. The soil on the acquired land had a pH of 8.0 and was sticky and plastic when wet. There was a lot of undecomposed plant residue on the soil surface. The seeds he planted we're of good quality, however, the soyabean crops established were stunted in growth and showed chlorosis between leaf veins. These resulted in poor harvest. Okabala intends to grow the same crop in the following planting season.

Task

Advise okabala on how to manage his land and to solve the challenges he faced so that he can improve on the soyabean production.

5. Kwenda established mango crop plantation on his gentle sloping land. This same piece of land is being claimed by another farmer which has disturbed his mind and he is confused of what to do. During preparation, some soils were carried down the slope leaving red coloured soils behind. The lower part of his land has a lot of stagnant water and sticky soils. A good number of dead soil organisms are observed on top of stagnant water. Alongside the slope, some soils are more compacted with widen cracks. When he picked a soil sample from his land to the research center for analysis, the results showed PH of 2 with less air percentage.

Task

Advise Kwenda on how to gain much from his farm.

6. Mukula purchased two acres of gently sloping land for growing NEIRO sorghum variety that prefers slightly alkaline conditions. The upper part of his land posses some simple gully like depressions. The left part of his land dries out very fast while soils on the right side a brown colour and a very hard surface. The lower part of his land is occupied with little stagnant water. He planted sorghum seeds and plants emerged with purple leaves which left him wondering. An expert who conducted research in their community indicated that their land has pH of 2.5. These resulted into poor harvest.

Mukula plans to grow the same crop the following season

Task.

Advise Mukula on what should be done on hisland to solve challengeshe faced so that he can improve on sorghum production.

7. Mary wants to grow coffee on her piece of land, the soils are loose and dry with deep and long channels. During the rainy season, water floods all over the plantation. The leaves of the coffee plants were brownish and falling off, and the soil samples testing shows that the soil has a pH of 3.5 .

(Coffee grows well in soil pH between 4.2 and 6.2)

Task,

Advise Mary on how to improve on her land for coffee production.

8. Mr. Kakeko lives in a farming community, where there is a lot of land conflict which lead to loss of lives, some farmers cannot manage to buy land individually because land is costly which keeps them out of farming business. Those who want to use tractor to cultivate the land, find it difficult due to small to the small plots they own. Some face a challenge of theft of their cows, piglets and layers especially during the night. He started selling the animals cheaply instead of leaving them to thieves, the cows started showing signs of worm infestation and were advised to buy dewormers. One packet containing four deworming tablets

costs 40,000/=and one which contains ten tablets costs 30,000/=, it is assumed that if the problems are solved effectively and in time, Maximum production can be obtained on his farm.

Task.

Basing on senerio, What advice would you give to Mr. Kaketo to overcome the above challenges?

9. Mr. Opera borrowed an agriculture credit from a micro-finance bank in sironko district. Bought a piece of land where he decided to start up tomato growing on one of the plots. He selected a hilly area with brown soil where to set up a nursery bed with plenty of underground rhizomes. The seeds were broadcasted and after 8 days, the seedlings germinated with a lot of congestion. During transplanting , seedlings were pulled out using the hands and the soil was too hard. After 120 days, Mr. Opera observed that the tomatoes had yellow leaves with reduced size in of the tomato fruits and purple colouration on the leaves, some were seen touching the ground which resulted into contaminations with the soil. Together with his son called opoka , they harvested their tomatoes and some had started rotting. Mr. Opera transported the fruits to the store using a wheelbarrow that had just collected farm yard manure from the kraal and sold them at lower price within his market community.

Task.

What advise can you give to Mr. Opera to ensure maximum production of quality tomatoes to his clients.

10. In karamoja sub region, people rear large numbers of animals as the main economic activity. In this area, land is regarded as a community property where every community member has a right to use land which has resulted to constant wrangles over land issue. Some parts of the region experience long dry spells making land hard to dig when growing pastures. Some pastures seeds fail to germinate even when they are viable due to high soil temperatures that go above 35°c. The pasture stems look slender and stunted due to acidic pH that results

from the disappearance of some plants nutrients in the soil. The soils in these areas have loose soil particles and cannot retain water for long.

Task.

Design guidelines people of this should adopt to make their land productive.

11. Mwojo grows maize as a source of income for the family. He bought a titled land where to grow maize but forgot to pick documents that shows his ownership from the seller. Recently he noticed that there were heaps of soil in the lower part of the land, water in the valley was not flowing for a good number of days but rather stagnant. Some parts of the garden is seen with declined activity of plant and animal species during cultivation and a soil reaction of 5.0 which does not favour maize.

Task

Write an advisory note that can help Mr. Mwojo to improve the productivity of his land.

12. Mwojo grows maize as a source of income for the family . He bought a titled land where to grow maize but forgot to pick documents that shows his ownership from the seller. Recently he noticed that there were heaps of soil in the lower part of the land, water in the valley was not flowing for a good number of days but rather stagnant. Some parts of the garden is seen with declined activity of plant and animal species during cultivation and a soil reaction of 5.0 which does not favour maize.

Task.

Write an advisory note that can help Mr. Mwojo to improve the productivity of his land.

13. Leonard, a cocoa grower in Butebo district, has cultivated 100 acres of land for 30 years, he first settled a squatter and gradually developed half 50 acres into productive farmland . The other 50 acres were abandoned due to their light

reddish colour, Soil pH of 3 and severe compaction caused by heavy lorries using the land as a shortcut for the past five years.

Meanwhile, the 50 acres under production have rocky, loose soils, with the dark fertile topsoil that once covered the land now deposited in the neighboring valley. The rightful owner is now evicting Leonard to build apartments

Task.

Create guidelines for Leonard to improve soil to productivity and strengthen his land ownership security.

14. Mr. Eguma established a coffee plantation on a fairly flat piece of land that was given to him by his father with no document attached. His elder brother is claiming that this land belongs to hm. The soils are always dry throughout. A small layer of surface soil is blown off by wind in form of dust. In the lower part of the land, water stagnates for almost a month before it dries. The soil samples testing shows that the soil pH is 12. (coffee grows well in slightly acidic soils.)

Task.

Advise Mr. Mr. Eguma on how to improve on his soil for coffee production Land ownership issue.

15. Masereka owns a gently sloping piece of land on which he wants to grow Irish potato. Irish potato grows well in soils with a pH range of 3 to 5. Part of of his land is being claimed for by his neighbor who has a land tittle for the same piece of land. Masereka is confused and doesn't know what to do with issues concerning that land. The upper part of the land is characterized by red soils and small clearly cut channels. The lower part has soils which are highly plastic and sticky. When he picked soil samples from the upper field to the research center for analysis. The results showed pH of 2 and low amounts of living organisms.

Task.

Advise Masereka on how best he can improve his soil productivity.

16. Musa purchased an acre of steep land for growing of potatoes which perform well in soils with pH of 4.8 to 5.5. The land is entirely in occupied with bindweed which is an alkaline tolerant weed. Part of the land is covered with channels running down the slope. The same piece of land is being claimed by a neighbor whose crops on one side of the land exhibit dead growing points and scotched leaves regardless of good management. Some parts of his land possess a hard and crusty surface while the lower part of his land is entirely occupied with water loving plants. He failed to meet his target

Task

Advise Musa on how to how manage his land and to solve the challenges he faced so that he can improve on potatoes production.

17. Majo a practicing farmer in Kumi district opted for ground nuts growing. He established his project on a piece of land that he verbally inherited from his grandfather. Recently one of his relatives came claiming the ownership of the same land. During cultivation, the soil is seen with declined activity of animal and plant species due to loss of biodiversity. Some parts of his garden have a high soil reaction of 8.0 and lose water easily. After planting viable seeds, some failed to germinate due to high temperatures in the area. (Ground nuts grow well in pH 5.5)

Task.

Design guidelines Majo should adopt for increased groundnut production.

18. Kamu kamu coffee growers in Ntungamu is one of the re-known coffee growing growing in Ntungamu district in Western Uganda. For over 20 years now, they have benefited a lot from their coffee growing .for now past two years, there has been a reduction in their yields due to loss of soil fertility in their coffee garden, the drought season has also imparted a lot in their yield loss. Last season, coffee leaf rust disease damaged all their coffee leaves, their soil was found to have a pH of 3. Gullies have divided their land in irregular plots, the lower part of the land keeps water for a month before it dries. Some parts of the land has has very porous soils that cannot hold water and some parts of the soil has red colour,

these farmers are wondering what can they do to restore their original yields they were harvesting.(Coffee grows well in a pH range of 4 to 6**)**

Task.

Advise these farmers what they should do to produce the best yields from the land again.

19. Osoilo is a farmer who owns a four-acre piece of land he inherited from his father. Parts of the field are flooded with water, and there is continuous flow of running water from neighbouring farms into their garden that sometimes uproots their maize. Osoilo observed purple coloration and poorly developed roots on some crops and he applied urea fertilizer. The soil was extremely alkaline and could not sustain any preferred crops. He wanted to practice soil and water conservation methods, but some of his uncles claim the land should be shared among all male family members but the whole issue was at a mess. They brought the village chairperson to help but still were turned down. The brothers are also uncertain about how to develop decide the land fairly and obtain individual land titles.

Task.

Describe practical ways Osoilo and his uncles can use to address the problems and improve on land productivity.

20. Mr. Beda established a coffee plantation on a fairly flat piece of land that was given to him by his father with no documents attached. His elder brother is claiming that this land belongs to him. The soil are always dry throughout. A small layer of surface soil is blown off by wind in form of dust. In the lower part of the land, water stagnates for almost a month before it dries. The soil sample testing shows that the soil has a pH of 12. (Coffee grows well in slightly acidic soils).

Task

Advise Mr. Beda on how to improve on his soil for coffee production.

21. Bakaatu growers' Cooperative society recently purchased 50 acres of land from Mr. Ndagu under a sales agreement with the aim of expanding maize production for commercial purposes. However, upon physical inspection and laboratory analysis, several limitations were observed on the land. The land is located on the steep leeward side of a mountain, and the lower section contains heavy clay soils with a pH of 4.0 indicating high acidity. Soil observations further revealed that most areas are Stony and deficient in key primary macro nutrients. In the upper section, the soils drain quickly and contains numerous anthills.

If no intervention is made, the land may not support profitable maize production, and this could lead to financial loss and disappointment among the cooperative members. Maize, the cooperative 's target crop, requires deep, well -drained, fertile soils with a pH range of 5.0 to 7.0 to perform optimally.

Task.

Analyze and advise on the limitations of the land for the intended agricultural activity.

22. Majo a practicing farmer in Kumi district opted for ground nut growing. He established his project on a piece of land that he verbally inherited from his grandfather. Recently one of his relatives came claiming the ownership of the same land. During cultivation, the soil is seen with declined activity of animal and plant species due to loss of biodiversity. Some parts of his garden have a high soil reaction of 8.0 and lose water easily. After planting viable seeds, some failed to germinate due to high temperatures in the area. (Ground nuts grow well in pH 5.5)

Task.

Give guidelines to Majo to increase ground nut production.

23. Ujomu owns a two-acre piece of land that he uses to carryout crop farming. Parts of the field are flooded with water, and there is continuous flow of running water from neighbouring farms into his garden that sometimes uproots his crops. Ujomu observed purple coloration. When he tested the soil, the solution in the test tube turned deep green, matching the colour chart at pH 9, which he did not

understand since he was told that tobacco grows well in the pH range of 5 to 7. The soils in the low land are plastic.

Task.

Advise Ujomu how to improve the conditions of his land.

24. Angelina acquired land from her friend on a temporary basis to grow maize. The land has an uneven surface character used by a deep, shallow and long channels. The soil appears pale grey, is sticky and holds water on the surface. The roots of the crops growing on the land are short and branched excessively. Recently, when she uprooted some of the crops, she observed that their roots were decaying. The crop leaves had also turned purplish, so she applied urea fertilizer.

Angelina is worried about the status of her crops and has approached you for possible remedies.

Task.

Suggest to Angelina the remedies she can take to address her worries.(Your suggestions should include reasons).

ANIMAL PRODUCTION

a) cattle production

1. Livestock is beneficial to farmers, they earn income from milk and meat. Obua is one of the livestock farmers for over a decade now. However,bon his farm, he realized something in breeding which has led to undesirable traits in offspring, the Ox cannot work actively because of over fattening, there is a bad smell from the he goats and sheep produce poor quality wool. Also , in kraals and during transportation, animals commonly get injuries. There is regular fighting which lowers the quality of hides and skins.

Task

As an extension officer, prepare a message you would use to advise Mr. Obua to solve his problems.

2. Treasure mixed farm deals in both crops growing and animal rearing. A veterinary officer visited the farm and found out that the animals were too small, had standing hair coat, some were coughing yet others were eating less feeds due to lack of appetite. Also, some animals had lost hair on the body,vdue to scratching on rough surfaces, others had potbelly stomach and in the dung , there were whitish thread like organisms. The general productivity of the farm had reduced and the farm owner is almost giving up on animal rearing.

Task

As a senior agriculturalist in the district, advise the farm owner basing on the observations of the veterinary doctor.

3. Livestock production is one of the lucrative enterprises Uganda. Dr. Olga is a dairy Farmer who keeps four fresian cows under stall feeding (zero grazing). Her structure is always muddy and the skins of the animals have standing hairs. She feeds her animals entirely on forage . Two of her cows calved down a pair of male twin calves each she is worried because male animals eat alot of feeds, takes time to mature and does not sell them when they are still young. She has been advised to feed her animals on balanced rations. She therefore wants to come out with her own mixed feeds using the ingredients, she has bought but she does not know how to mix them. She bought 20% crude protein to use, maize bran containing 10% crude protein and cotton seed cake containing 50% crude protein. She wants to make a ration of 500kgs.

Task.

Guide Dr. Olga on what to do to get high production from her farm.

4. Almost 78.9% of uganda's population is engaged in agriculture activities especially animal rearing, though about 43.2% of the population is involved in subsistence agriculture. The farmers rear traditional breeds which mature slowly

and give low yields of milk and meat. They practice traditional grazing systems in poorly managed pastures and inbreeding is common. Farmers move with their animals looking for pasture and quality water. All these have resulted into poor yields and low GDP to the country. The government has therefore come up with programmes like parish development model (PDM) to support these farmers to boost animals production.

Task.

Make a clear briefing to the farmers on how they can solve the above challenges.

5. Kalunji Dairy Farm, once the pride of Bugodhe Parish, provided employment to many youth and brought social services to the neighborhood. After the death of the capable farm manager, Mr. Munhu, due to COVID-19, Sekolito took over management in 2022. To increase profits, Sekolito made several changes: he reduced the workforce in the calf pens, decreased the frequency of animal dipping from twice a week to twice a month, converted some grazing paddocks to sugar cane fields, limited de-worming to once a year, weeded paddocks twice a year, vaccinated only half the animals, grazed all cattle in one group, stopped buying ear tags, reduced minerals for lactating animals, and allowed animals to keep their horns. After one year, farm production has declined.

Task

As a student of agriculture, write and explain why the management under Sekolito may need changing.

6. Livestock is among the fastest growing industries in Uganda. Mr. Mukasa received two healthy dairy heifers through the government ''Emyooga'' programme. He divided his small grass thatched house into two to create space where the heifers would be housed. The district animal nutritionist advised him to feed them on a ration of 22% crude proteins for the first three months upon arrival. He obtained maize bran of 16% crude proteins and soya bean meal of 48% crude proteins. He plans to mix 1000 kg of the 3 feed every after three weeks

though he is finding it difficult to decide on the amount of each ingredient to use in order to mix the required feed. He realised that foot and mouth disease had affected the herds of some farmers within the community and also his goats had numerous ticks on their bodies. These together with other animals are grazed on free range system in the community. He thought of pausing the business due to fears. Authorities in this region put a ban on the use of Agro-chemicals for parasite control as many were a danger to livestock.

A local veterinary officer through a phone call advised him to always castrate every bull calf that will be born to the heifers in the near future. Before completion, his phone went off and this left Mr. Mukasa wondering why he should castrate his bull calves.

He needed them to grow and mate with his cows. The doctor also emphasized purchasing certain tools and equipment which included a burdizzo, milking bucket, strip cup and a milk can. These appeared to be of no significance to Mr. Mukisa.

Task

As an agricultural journalist, write an article that a local newspaper would publish to help Mr. Mukasa.

7. Ruhweza rears cattle, poultry and goats all at the same farm. He suffered losses due to frequent repairs of the fence at the section where cattle are kept. The kids born at the farm are very healthy and fed well but the males grow slowly. 8 calves are kept in each calf pen and the urine in the calf pens remains stagnant. Birds are fed only on maize bran. Eggs from poultry houses are collected on a weekly basis.in the brooder, chicks are seen overcrowding in corners. One of the workers at the diary section is nursing wounds he sustained from the cow during milking, the cattle have developed appetite for non-edible materials. After mating with the bulls at the farm, the cows produce off springs with slow growth rate. The goats and cattle have small wounds on their skins and hides.

Task

Assist Mr. Ruhweza on how he can improve production at his farm.

8. Sentamu rears exotic dairy cattle for milk production in kalongo-miti town board. He constructed a calf pen using iron sheets that were leaking. His cows are observed while rubbing their bodies on the walls. One of his animals has sores in the mouth and in between the hooves. He has a lot of green fodder (pastures) during rainy season but runs short of feeds for his animals during dry seasons. Sometimes his milk contains hairs from human beings. During milking, the stubborn animals kick the milk bucks and pours.

Task.

Advise Mr. Sentamu on how he can rear dairy animals profitably.

9. After receiving money from the parish development model programme of the government of Uganda, a farmer in katunguru village bought two zebu cows for milk production. She keeps the cows on a piece of land she owns of land near a wetland that borders a game park. She feeds them mostly on hay and grazes them in the wetland. Cows from a nearby farm also graze in the same wetland. The animals drink water from a pond surrounded by bushes.

She milks the cows and collects the milk in a lastic bucket. Customers usually complain about her milk going bad shortly after buying it.

Task.

Advise the farmer on how to improve milk production on her piece of land and to satisfy her customers.

10. Sara is a beef farmer who would like to expand her herd. She bought four zebu heifers from a neighbour. The farm is located on hilly land where the animals are left to graze freely on scanty dry pastures. The only source of water is a pond with snails and algae. The cattle shed has a leaking roof and rotten poles. The calves are bonny, with a rough skin and watery dung with worms.

Sara uses a cup to administer drugs to the calves. She always gets into disputes with the neighbors over who owns the animals. The animals are slaughtered on the ground immediately after feeding them.

Task.

Based on the above observation, how can Sara improve the productivity of the beef farm?

11. Miss Akello is a small holder farmer managing a small herd of cattle primarily for milk production and occasional sale of calves or meat. She often practices free-range grazing, supplementing with crop residues and sometimes growing some pastures. She constructed a paddock on a steep slope and planted elephant grass at the end of the rain season. The calf pen was made using clay and cow dung. Miss Akello uses oral drugs to control the tick which makes her to spend a lot of money. Some calves were left with horns on the heads and developed bigger scrotums with testis which resulted into into fighting and necessary mating. Miss Akello's workers milk the cow once a day which results into swollen under with pain and blood stains in the milk produced by cows, some always milk the cow with fur on the under and use a dirty milking bucket. The milk was left in an open place and when taken to the market some clients refused to buy it and the little money obtained was stored in the milking parlour.

Task.

Advise Miss. Akello on how she can ensure maximum returns from her small her farm.

12. Cattle keepers in dry corridor areas have enjoyed from sweat. Recently, they have faced unnoticed challenges amidst animal keeping. They keep breeds that mature at a slow rate leading to low accumulation of income. Some establish the dams at the beginning of dry season to keep water for their animals. They usually see footsteps and dung of wild animals around their kraals.

The grazing area are full of thorny short shrubs being kept for charcoal burning and animals are always seen selecting grass during grazing. Some animals were seen rubbing their bodies on tree trunks. Their dung contains some whitish organisms. They feed on woody pastures always for the rest of their lives. The

water available for drinking by the animals is full of marshy plants. The milk from their farms contain human hair and is collected in plastic containers.

Task.

Advise the cattle keepers on what they can do to improve productivity from their farms.

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Task.

Advise the cattle keepers on what they can do to improve productivity

14. Students from busitema University visited a prominent livestock farmer in their neighbouring community. During their visit, they observed Esther the farmer, before actual milking carefully inspecting milk for any abnormalities by pouring samples into her hands for closer examination. Young goats were tied under a tree shade at night, exhibiting rough hair goats and surrounded by watery dung. The farm office walls were wet, and the toilet walls were slightly sinking into the ground. In the evening of the same day when the rainy signs had appeared, Esther was planning to conduct a tick-dipping exercise for her cattle.

She intended to begin by dipping the lactating cows, followed by heifers, bulls and sick calves last. She assembled all her lactating cows in a collecting yard to select those for culling. However, determining which ones to sell off completely failed.

During milking, one of the cows displayed discomfort and sudden movement whenever it's its teats were touched.

Task.

Design a sensitization message to the above livestock farmer that will transform her.

15. Busuulwa obtained 20 local animals to start up his beef animal rearing project. He located his farm on 10 acres of entirely open land. On his farm , he constructed a calf pen entirely made out of a brick wall and a MARIAM floor.

He was advised by a DAO to improve his animals using better semen from NAGRIC however, he was challenged on how to do it. He feeds animals on elephant grass throughout the day. Calves on the farm are weaned at the age of two years. In the nearby sub-county, there is outbreak of a strange disease that kills animals instantly which has troubled him.

He selects I'll animals for Slaughtering and feeds them heavily until the time of Slaughtering. Busuulwa failed to meet his goals.

Task.

Advise the farmer on how to improve beef production in her piece of land.

16. A cattle keeper in kyanja village rears Zebu cattle for milk production. He set up an open roof calf pen for his newly born calves. His Zebu animals entirely feed on forage and hardly take water due to its inadequacy on the farm. His animals are randomly mated by the neighbors' bulls during Communal grazing. These animals give him less milk not to his expectation. Animals are always rubbing themselves on walls of the farm buildings. At night some escape and go and damage village mated crops, some animals cough and are emaciated. He castrates the bulls on his farm when they are one year old using surgical method. He milks his cows near the garden of maize onions and customers are complaining of the onions smell in the milk and don't want to buy his milk anymore.

Task.

Advise the cattle keeper on how he can profitably benefit from his farm.

17. Akile, a young dairy farmer in sorot district purchased three exotic Friesian heifers from the neighbors. She constructed a simple shelter with earth floor, 100m away from the swamp. Dung and urine accumulate around the resting areas.

One of her cows has over grown hooves that have been cut off bit by bit using a panga. She leaves her cows to graze communally with others. During milking some cows kick, causing milk to spill from the bucket.

Akile applies cooking oil on her fingers in preparation for milking to reduce friction and prevent injuries to the teats. The calf pen receives very low natural light. All her equipment including milking tools, ploughing implements, castration instruments, spades for manure collection and hand hoes are kept together in the same store. Akile's farm is located in an area frequented by many stray livestock, including dogs wandering freely around the farm.

Task.

Advise Akile how to improve the conditions on her dairy farm.

18. Abura bought 40 acres of land to rear beef animals. He bought his animals for stocking from nearby animal market. He keeps many animals on the farm beyond the pasture capacity to cater for the high demand for meat production. He divided his land into paddocks while using kie-apple plants. He constructed a number of water troughs on one side of the farm where animals always move for water. The dip tank used to control ticks on farms has walls that are developing cracks. He has a good number of bulls that are always fighting and harsh to casual labourers. He harvests the elephant grass and serves it fresh to the animals the way he obtained from the pasture land. Most of the animals have long horns which make him transport a few numbers on his truck to the slaughter area. He slaughters his animals from the abattoir that has soiled pot holes. The hides have small meats and holes on them.

Task.

Advise Abura on how to benefit profitably from his project.

19. In the semi-arid plains of North Eastern Uganda, Ruk rears a large herd of local cattle and goats for income.

The animals roam freely in search of pasture and walk 10 km daily to drink from a shared water source. They are sprayed once a month and dewormed once a year. At night, they sleep in open space near homesteads.

Livestock and it's products are sold in local markets without standard measurement or pricing systems. Additionally, Ruk has sought advice from the district agricultural officer to decide whether he should quit livestock farming or improve his methods.

Task.

Analyze Ruk's livestock management system and advise on how to improve productivity, security and income generation.

20. Fantom's dairy farm shows several signs that point to underlying issues. In the kraal, there is visible accumulation of urine around the cattle resting areas. Some cows have overgrown hooves that have been slowly cut off bit using a knife. Calves are often seen grazing along side mature cattle. On some cows' hindquarters, marks from beatings are noticeable. During milking, cows sometimes kick the milk bucket, causing milk to spill. To protect the teats while milking, Fantom applies cooking oil on his fingers to reduce friction and prevent injuries. The calf pen is exposed to direct sunlight for long periods. All his equipments including milking tools, ploughing implements, castration instruments, spades for manure collection and hand hoes are kept together in the same store. Fantom's farm is located in an area frequented by many stray animals from other farms wandering freely around the land. Fantom has always fetched low profits from his farm.

Task.

Advise Fantom how to improve the conditions on his dairy farm.

21. Joseph rears five Friesian cows under the zero grazing system. He also keeps a bull for breeding. He planted elephant grass and Greenleaf desmodium to feed the animals. He has a water source located 400 meters away from the zero grazing unit. The water in the drinking troughs appears greenish in colour. After calving, the calf is allowed to suckle the mother for a day after which it is fed on whole milk using a bucket. Some of the calves pass out loose dung with a foul smell. One day, one of the cows developed a swollen stomach and was breathing with difficulty.

Two others had wounds on their bodies inflicted on them by other cows. Joseph milks the cows by holding the teat at the base between the thump and the fore finger and pulls the teats. Usually when he is milking, the cows kick the plastic milking bucket. Joseph complains that he is not getting enough from his farm.

Task.

Explain how Joseph can ensure increased productivity on his farm.

b) goat rearing

1. Bright established a goat rearing project mainly for meat production. He purchased 100 goats belonging to Mubendebreed. The goatsare housed in a structure with a muddy floorand wallsentirely made out of iron sheets. Kids are fed using young grass pastures and clean drinking water from the ageofone week. On his farm, there isa plenty ofelephant grassgrowing howeverthe area experiences a dry spell during the month of July which brings up pasture shortage.

Mating occurs randomly among goats on a daily basis. Some animals were observed with high fever and extreme coughing while some females were observed mounting others with mucus discharge around their vulva which he suspects to be caused by organisms in their dung. Slaughtering of mature goats is done using a blunt knife under a tree next to his home.

Task.

Advise Mr. Bright on how he can overcome his challenge to get more profits from his goat rearing project.

2. Tumwine picked interest in goat rearing project of recently. He bought kigezi breed of goats that mature slowly. He roofed the goats pen 1m high from the ground. He usually sees water droplets on the surface of the roof, he constructed a barbed wire fence on his farm to restrict the goats from unnecessary movement. These goats have long horns that injure one another sometimes his goats are seen with droppings stuck on the hair around the tail. His goats have a difficulty in movement due to long hooves. He used a back colour for identification of his goats. He slaughtered one for me at on the ground with grass and skinned/flayed it immediately.

Task.

Help Tumwine with the basic principles of goat rearing for high profits.

3. Tumwine picked interest goat rearing project of recently. He bought kigezi breed of goats that mature slowly. He roofed the goats pen 1 m high from the ground. He usually sees water droplets on the surface of the roof. He constructed a barbed wire fence on his farm to restrict the goats from un necessary movement. These goats have long horns that injure one another. Sometimes his goats are seen with droppings stuck on their hair around the tails. His goats have a difficulty in movement due to long hooves. He used a black paint for identification of his goats. He slaughtered one for meat from the ground with grass and skinned (flayed) it immediately. The animal husbandry officer advised 2m high from the ground for a goats pen.

Task

Advise Tumwine on how to improve goat rearing for high profits.

c) fish farming

1. Musa is a fish farmer in kyando village, he constructed his pond and embarked on the journey of rearing fish he is seen every three days topping up the water in the pond as he prepared to introduce fingerings in the pond. He received fingerings from nearby fish farmer and transported them to his farm using sealed

Jerry cans to keep them from escaping. He then poured the fingerings in the pond. He has two attendants who feed fish on different days and at different times. The soil on the dykes falls in the pond water each time an attendant walks on it. He applies farmyard manure every week to fertilize the pond. A green mat of plants covers the pond. The attendants kill two snakes every after two days around the pond area. When Musa visited the pond he found some fish that had died with their mouths open other fish that were sampled had white patches on grills and some had discoloured skins. The average fish weight was taken after a month and it was 500 grams the average weight was taken again after 3 months and it was 600grams Musa is frustrated with his investment.

Task.

Write a set of recommendations you can give to Musa to enable him benefit from his investment.

2. Mr. Kajoba is a fish farmer in nazigo village. He rears tilapia fish because if their high demand. He constructed the fish pond in a seasonal swamp which has water fluctuations. The pond water has a pH of 3 yet fish does well in the water if pH between 6.5 - 9.5 and is covered with too much algae. He feeds his fish once a day at midday. Some fish are eaten by predator birds causing him losses. He uses a stick to pick the mature fish for selling.

Task.

Advise Mr. Kajoba on how he can improve on the fish production.

3. Hafsa deals in fresh fish at a landing site on lake Victoria. She carries the fish in an open container and this attracts flies.

By evening time, the fish becomes soft and changes colour to dark green. Due to the condition of her fish, customers buy from her at very low prices . She often quarrels with customers out of anger.

Most times she sells to the customers the fish when it is unwrapped. The unsold fish is usually thrown away. She now intends to buy a bicycle to ease the transportation of fish but her money is not enough.

She believes that with quick means of transport, she could make more profit.

Task

Advise Hafsa on how she can solve her challenges so as to get more profit from her business.

4. Muleme is a fish farmer in Dundu village. He rears tilapia fish due to its high demand. He constructed the fish pond in sandy area where water levels fluctuate during sunny days.

He poured the fingerings in his pond at the same time of stocking. The pond water has a pH of 5. He feeds his fish once a day and only on alfalfa leaves. Some fish were eaten by predators, causing him losses. The pond was surrounded by a bush and algae. He harvests the tilapia after four months of maturity for selling using a mosquito net. (Fish does well in the water of pH 6.5 -9.5, and can be harvested at 8 months of maturity)

Task.

Advise Muleme on how he can improve the fish production

5. Fish is a high protein, low-fat food that provides a range of health benefits . Mr. Ssewajje a farmer in Mugulu village picked interest in the activity due to the high demand . He constructed the fish pond in the area with sandy soils. 10km a way from his home. He poured the fingerlings of cat in his pond at the time of stocking. The pond was in an open area with many entry points for animals and predators. The pond water was very clear when tested with the secchi disc. He feeds his fish once a day and only on rice bran. Some fish are seen having colourless skin protrusion and rotting fins. When the pond is full to capacity using hooks. (Cat fish can be harvested at 5 months of maturity)

Task.

Advise Mr. Ssewajje on how he can improve on the fish production.

6. Fish is a high protein, low fat food that provides a range of health benefits. Mr. Mugoya a farmer in kyambogo village picked interest in fish farming. He

established the pond in an area of high water permeability thus changes in water levels.

7. He poured the fingerlings of the Nile perch in his pond during the time of stocking. The pond was established in an area with many entry points of predators. He constructed the pond dykes in a way that running water easily flows into the pond to keep the water level. A lot of algae is observed on top of water with some floating fish. He feeds the fish all the time with some feeds rotting on top of the water.

When it rains the ponds are flooded and some fish washed away. He feeds fish on green plants throughout. He harvests fish using a sharp stick at the age of 2 months. (Fish can be harvested at 5 months of maturity)

Task.

Advise Mr. Mugoya on how he can improve the yields of fish at his farm.

8. Mr. Epeju is a fish farmer in baale village. He rears tilapia fish because of their demand. He established a fish pond in a season swamp which has water fluctuations. He poured fingerlings in the pond during stocking. The is in area with many entry points for predators. The screen of the outlet pipe has a wider gap for proper outfpw of water. He applied lime even when the pH of the pond water was 9.5. a lot of algae is observed on the water surface. He feeds his fish once a day. Some fish is preyed on by rats from the nearby bush. He uses a sharp stick to harvest fish at the age of 2 months for selling. He has made losses in his business. (Fish does well in the water pH between 6.5 to 9.5 and matures at 5 months in words.

Task.

Advise Mr. Epeju on how he can improve on fish production.

9. Martin established a fish farming project. He selected a bushy site farm away from his home for pond construction. He constructed a pond on sandy soils to provide room for his fish. He introduced fingerlings into the pond a day after application of manure to encourage growth of plankton's for fish feeding. After

some time, some plants were observed growing in the pond water which he claimed to act as fish feeds. This forced him to feed his fish once a day. Upon close monitoring, some fish were observed with swollen gills, rotten fins and reduced feeding While others were seen eaten by unknown organisms on pond sides.

The little fish that were present in the pond where Harvested using basin. The Harvested fish was packed in the tight black polythene and taken home for further consumption.

Task.

Guide Martin on how to manage fish better for increased production.

10. Ogari runs a busy tilapia fish farm where space is used efficiently. The ponds are densely stocked. One pond is located on sandy clay soil. The pond was dug in a circular shape. When the tilapia fingerings arrived, many were inactive, and some developed wounds on their fins.

Floating plants cover parts of the water surface. The first harvest was done after four months. During water changes, fish losses occur because fewer fish are counted after refilling the pond. At harvest, some mature tilapia slip through nets and fall back into the water. Feed scattered on the surface is often left uneaten, decomposing in the pond. (Tilapia reach harvest maturity around 240 days).

Task.

Sensitize Ogari to improve the quality and quantity of fish production.

11. Fish is a high protein, low-fat food that provides a range of health benefits. Mr. Josh a farmer in kituntu village picked interest in the activity due to the high demand. He constructed the fish pond in an area with sandy soils 0.5 km away from home. He poured the fingerlings of cat fishing his pond at the same time of stocking. The pond was in an open area with many entry points for animals and predators. The pond water was very clear when tested with the secchi disc. The outlet pipe has a screen with big gaps to allow big volumes of water to pass through during the time of changing pond water. He feeds his fish once a day and

only on leaves of sweet potato vines. He harvests the cat fish after two months of maturity for selling when the pond is full to capacity using hooks. Cat fish can be harvested at 6 months of maturity.

Task.

Advise Mr. Josh on how he can improve on the fish production for profit maximization.

d) rabbit rearing

1. In the suburbs of Bukoto, Ntinda and Najera are numerous obese rich people who prefer goat meat to any other types of meat available. The other meats on market in these communities are only beef and mutton. This was according to the survey that was conducted by the Young Future Farmers ofAfrica (YoFFA). As you walk around common vegetable markets in these areas, are discarded cabbage remains whereas along fence boundaries and abandoned sites fully occupied with sweet potato vines and black jack among other common weed plants. These communities have some rabbit farmers whom the population is questioning whether rabbits should be consumed.

2. Rabbit farmers have resorted to eating them to reduce their numbers since they had become exceedingly high and feeding them on concentrates that had become extremely expensive. Upon visiting one of the rabbit farmers, it was observed that the door wire mesh was of his rabbit cages was torn and green watery faeces oozing out of the base wire mesh. Besides, there was a stingy smell all over the homesteads and some rabbits had rough hair coat coupled with black-like living organisms and numerous small wounds around the ears. This was further proven as some of these rabbits were lifted while tightly holding their ears and presented to YoFFA members for close observation. Some farmers also raised concerns of some rabbits that are properly fed following the recommended

standards but in end weigh less than expected. Furthermore, they reach breeding stage slightly late compared to their counterparts with about 2 -3 bunnies per birth.

Task

Design a sensitization message to this community of rabbit farmers, using the knowledge ofAgriculture.

3. Chelangat bought a number of rabbits of the local breed to rear for meat. The hutch (rabbit house) which was placed on the ground had a rough floor and was covered with wood on the sides. Some rabbits were frequently seen scratching their ears, shivering and shaking their heads. Others had droppings covering their hindquarters

To the shivering rabbits, chelangat orally administered in herbal extract, however, the rabbits still continued to shiver.

Some rotten remains of feeds are always in the hutch and some usually clogged the feeders. She uses a knife to cut off the overgrow nails of the rabbits. Usually her rabbits are sold off for meat whey they are 3 months old.

Available information shows that rabbits require a lot of fresh air and mature at 6 months.

Task.

Guide chelangat on how to manage rabbits better for increased production of quality meat.

4. Mr. Kaguhe keeps local rabbits for meat for sale. He constructed his hutches using new iron sheets on all sides including the roof. He placed them on the ground for stability. The feed troughs have moulds growing on them. There are piles of unfed feeds that have stayed for many days in the hutch. Water troughs are stained and slippery inside on touching. He castrates the male rabbits using a burdizo in order to control breeding on the farm. Some rabbits have open wounds

on their toes. Then rabbits are always scratching on their bodies. They produce young ones in the feed troughs. He sells his rabbits when they are 2½ months old for meat.

Task

Write a massage advising Mr. Kaguhe on how best he can get profit from his project.

5. Adikin has reared rabbits for meat production for meat production for the last 5 years in Kamuli village. He rears his rabbits using modernized hutches but recently he observed that there was water passing water passing through the roof of the hutch. The overhang put to control rain water from hutch was too short. One side of the hutch had a wire mesh with widely torn gaps. One of the hutches was placed on the ground because it was heavy to lift it up. His rabbits have long claws. He feeds them on fresh sweet potato vines always. The rabbits are always scratching themselves. The male rabbits always fight within the hutch. He slaughters his rabbits from a soiled ground using a knife with a blunt blade.

Task.

Advise Miss Adikin on how he can rear rabbits profitably.

6. Hajji Lwanga is a prominent rabbit farmer in Wobulenzi town council. He rears his rabbits for meat production. Rabbits reach slaughter age at 6 months. Hajji uses modernized hatches but recently he observed that there was water passing through one of the hatches. The roof hanging over to control rain water from the hatch was too short. One side of the hatch has wire mesh widely torn parts. One of the hatches was placed on the ground.because it was too heavy to lift up. His rabbits have long claws. He always feeds them on fresh sweet potato vines. The rabbits scratch themselves. The male rabbits always fight in the hatch. He slaughters his rabbits at the age of two months for meat using a surgical blade.

Task.

Advise Hajji Lwanga on how he can rear rabbits profitably.

7. Benz has reared rabbits for meat production for the last in village. He rears his rabbits using modernized hutches but recently he observed that after roofing, there was water passing through the roof of the hutch. The overhang put to control rain water from the hutch was too short. One sides of the hutch had a wire mesh with widely torn gaps. One of the hutches was placed on the ground because it was heavy to lift it up. His rabbits have long claws. He feeds them on fresh sweet potato vines always. The rabbits are always scratching themselves. The male rabbits always fight within the hutch. He slaughters his rabbits from a soiled ground using a knife that hardly cut through the neck.

Task.

Advise Mr. Benz on how he can rear rabbits profitably.

c) poultry production

1. Mudingo has always been interested in raising layers using the deep litter system. He applied for funds from the Parish Development Model to start his business. After receiving the money, he ordered day – old chicks from a nearby government stock farm, with the birds set to arrive in two weeks. However, Mudingo has no experience in caring for chicks from day – old to five weeks of old age. He plans to raise the birds in his garage until they are four weeks old.

Task

As a poultry student, write a message suggesting how Mudingo can overcome his challenges.

2. John a poultry farmer rears layers and broilers. He employs several workers in various sections of the farm and pays them according to working hours. Eggs are collected per day and kept in boxes in the store. They are counted at the end of a week. Some buyers of the eggs and birds pay cash while others take on credit. Some workers complain of under payment and others no payments. However, others were happy about surprise increments in payments. John and his workers could not exactly tell the debts of the farm and dates for various management practices, hours worked for and productions from the section of the farm. This

was because of poor memories to recall and useful information written on pieces of papers that would get lost.

Task

If John employs you as a farm manager, suggest how the problems on the farm could be minimized detailing the types of information to keep.

Inaccurate Employee Payments

3. Tamusa a poultry farmer keeps local chicken for commercial egg production in Rwamukundi village. He keeps them on free range and most of them have been eaten by predators. Birds stay in a leaking poultry house with no ventilators. They drink stagnant water on the ground in the farm. He gives then broken maize bran only on feed troughs with gaps on sides and moulds inside. Some of the eggs laid have soft shells which normally break. Some hens break and drink the layed eggs. He treats his birds with ash and red pepper when they are sick. Some eggs are laid in the compound where they cannot be easily traced for proper record keeping. After collecting eggs he puts them in buckets.

Task

Write a message advising Tamusa on how to gain profit from his farm.

4. A farmer started up a poultry rearing project aimed at egg production. He obtained local chicks from one of the neighbors and placed them in a kitchen which they shared with two goats. Upon arrival, chicks were fed on plain water and clean food remains from the kitchen. Aburning piece of wood was placed in the room to provide both light and heat.

After 3 weeks, the few birds that were still alive were transferred to another room. They exhibited nasal discharge, blood stained droppings and flopping feather which left him puzzled. He gave them tradition herbs to restore their condition. The few birds that were left started laying at the age of 7 months. Eggs were laid on the ground though some were eaten by birds.

Task.

Advise the farmer on how he can handle his project to get the best out of it.

5. Mr. Wabuge who is a poultry farmer from nakatoke village, bought 700 one-day old chicks from Bulemezi poultry farm so that he can rear them on his gentle sloping area with a lot of stagnat water. He constructed a deep litter house but within 75 days, the wall of the poultry house developed cracks with leaking roof. He decided to use coffee husks but used too old coffee husks and could not absorb poultry droppings. Light was too much and resulted into egg eating especially the non-laying birds in the house,some birds were seen pecking toes and vents of others.some birds produced soft shelled eggs which had no market, eggs were collected once a day from the deep the deep litter house. He wanted to increase the size of the flock but did not have enough capital. There were few buyers of eggs within the market of wakatabi which reduced his income from the sales of the eggs. The less money obtained by Mr. Wabuye used it to bet on Madrid and lost 2:1 to Bayern.

Task.

Basing on the information above, how can Mr. Wabuye improve the productivity of his poultry farm?

6. A month later, he made a surprising discovery where a significant number of his birds were males, despite being informed that all the chicks were females when he purchased them. Karim's poultry housing had a strong lockable door, walls that were two feet high, a leak-proof roof and one ventilator just above the door.

Some of his birds were observed with fresh wounds around the vent area, missing feathers around their wings, and damaged combs. Every after three days, karim would collect eggs from the litter house, only to find an average of 10 broken eggs on every collection, which were evenly distributed throughout the deep litter house.

Meanwhile, karim's new healthy stock of chicks, which had just arrived at the brooder in mityana from the kabale hatchery, were given adequate plain water immediately unfortunately, many of the chicks were weak and struggled to walk as many were instead lying down. The brooder was well-equipped with adequate

drinkers for 690 chicks and six feeders, which he filled with water and layers mash respectively. At seven months, 40% of Karim's layer birds had just begun laying eggs. Lastly, it is recommended that the feeder to chick ratio should be 1 feeder for every 30 chicks.

Task.

Advise Karim how to improve production of high quantity and quality eggs.

7. With the increased demand for local birds and eggs due to the increased population in Kampala. Rtd. LT. Lutwama a resident of kamwokya decided to start a poultry project using his retirement package. He constructed a deep litter house using the old iron sheets which had holes. The wire mesh surrounding the litter house had wide gaps that would allow in wild birds. The foundation of the poultry house was sunk in the ground and running water would enter whenever there was a heavy downpour. He bought the breeding stock to rear from his neighbor who had local birds on free range. He used to feed his birds on maize brand daily and in the evening gives them soapy water after washing due to water scarcity in town. He normally punishes birds that eat eggs by denying them food for a day or two days. The litter in the poultry house looks dump and caked. He collects the eggs from the poultry house after three days when eggs have accumulated in number. He only sells his birds for meat when they have fallen sick.

Task.

Write an essay to advise Rtd. Ltd. Lutwama and other farmers of that category to profitably benefit from poultry production.

8. Sophia decided to start a poultry project for egg production. She bought a good number of exotic birds that are not used to harsh environment and reared on free range system. Every evening the number of birds keeps reducing as birds as they move in search of food. The little litter in the house sticks on the floor surface raising cleaning issues.

He due process, birds mate randomly with others from the community resulting to the rise of inferior traits. Birds spend most of the time running chasing insects

for food resulting loss of weight. She vaccinates her birds with bitter plant juice using a dropper stick. Birds excessively scratch themselves. She sells her eggs which are soiled with some having cracked shells.

Task.

Advise Sophia how she can produce high quality and good quantity of eggs for profits in her project.

9. With the right demand of meat (chicken) by the growing population, mebbo decided to start a poultry project. She bought a good number of local chickens to rear from the neighbouring village farmer. She put them in a poultry structure with a roof that allows sunrays to pass through, it also has a wide torn wire mesh around it for ventilation, the door is left open to give birds freedom to go out anytime they want. The litter in the poultry house is damp and caked.

The walls are cracked and hide parasites. Birds scratch themselves excessively and have broken feathers,she feeds them on maize brand throughout. Some of the drinkers have cracks at the bottom, the birds have have running noses and uses bitter juice (Alovera) to treat the sick birds,vshe sells her local birds for meat when they have attained 2 Kgs in a period of 8 months.

Task

Advise mebbo to produce good quality and quantity of chicken meat profitably.

10. In a congested trading centre, KAPO keeps 600 fast-growing broiler birds inside a single garage with no windows and the wide door remains unlocked, exposing the birds to adverse weather conditions and predators.

The garage floor is bare and only cleaned once every 7 days. Feeding is done once a day at noon, using broken maize grains placed in 5 old plastic plates. Overtime, several birds began coughing and appeared emaciated, which led KAPO to seek help from the sub-county veterinary officer. When asked about the history of the birds, KAPO had no background records to present. He decided to sell the birds at five weeks, but buyers offered very low prices due to their poor condition.

Disappointed by the outcome, KAPO now wishes to understand how he can improve broiler production and profitability.

Task.

Guide Mr. KAPO on how to improve performance of his farm.

11. Sophia decided to start a poultry project for egg production. She bought a good number of exotic birds that are not used to harsh environment and reared on free range system. Every evening the number of birds keeps reducing as birds move in search of food. The little litter in the house sticks on the floor surface raising cleaning issues.

In due process, birds mate randomly with others from the community resulting to the rise of inferior traits. Birds spend most of the time running chasing insects for food resulting loss of weight. She vaccinates her birds with bitter plant juice using a dropper stick. Birds excessively scratch themselves. She sells her eggs which are soiled with some having cracked shells.

Task.

Advise Sophia how she can produce high quality and good quantity of eggs for profits from her project.

12. Jena rears chickens on a small scale using the deep litter system. She obtains chicks for rearing by hatching eggs from her own hens in a small incubator. She picks eggs for incubation at random. She introduces the chicks into a rectangular brooder made of cardboard with sharp inner corners. Some chicks crowd in the corners of the brooder and others eat litter. Some of the chicks are found dead in the brooder. Jena follows the normal routine of vaccination and also treats sick chicks routinely.

After brooding, the growers are transferred to the growers' house whose floor is covered with coffee husks. Open wooden feeders are used to provide feeds to the growers while water is provided using automatic drinkers. Greens to feed the birds are spread on the litter. Raking of the litter is done once a month. All the eggs collected are cleaned using a wet cloth and are later kept in a box before

being taken for sale. Jena sells the birds at 50 weeks of age as off-layers. She says that the business is performing below her expectations.

Research data shows that layers should bo sold off at 72-80 weeks of age.

Task.

Guide Jena on how to improve the performance of her poultry business.(Your guidance should include reasons)

CROP PRODUCTION

a) vegetable production

1. Having realized how profitable farming is, Mrs. Kamoga picked interest in growing vegetables. He decided to buy land which is 10 acres so as to do serious business in farming. The land which she bought had a part which steep sloping with thin shallow infertile soils. Crops planted in this part could not come out properly and had poor yields. The low-lying part of the land could flood whenever rains come and all the crops were washed away. Mrs. Kamoga was advised to take some soil samples for testing at national soil testing centre and it was discovered that the soils were lacking some nutrients and the pH was too low compared to the required levels for vegetable growing. She decided to quit the business (farming) and go back to trade and commerce.

Task

Write a message to Mrs . Kamoga advising her on the improvements she can do in order to stay in vegetable growing.

2. Mr. Mbwemo is a prominent cattle keeper in karagwe village. He decided to start a simple vegetable growing project to supplement for n his income. He got a portion of his land where he grew cabbage, he begun with a nursery bed establishment which he prepared well in a swampy area with too much water. Seeds germinated but were too thin and yellowish because of the water. After 3 weeks, he prepared the seedbed where he transplanted his seedlings but some died after transplanting because he just uprooted them from the nursery bed.

After one month, the whole garden was filled with many other plants and also the cabbage had holes on the leaves . The yields from the garden were too low compared to the expected yields. Mr. Mbwemo lost morale and decided to close up the business.

Task

Basing on the scenario, write a message to Mr. Mbwemo advising him on what to do in order to boost his cabbage project.

3. Busega horticulture co-operative farmers decided to grow vegetables. They had arguments among themselves on the procedures they should follow when growing vegetables. Some members advised that they plant seeds directly into the soil. Others said sterilizing the soil was a waste of time while others opted to use herbicides in clearing the area to save time. While other members also suggested that they should buy ripe tomatoes, squeeze out the seeds and then plant. Later on, they agreed that they should buy seeds and plant directly in the main garden. A few seeds germinated but were slender with mottled leaves and weak stems.

Task.

Advise the farmers on the basic principles they would follow to produce vegetables

4. Upon securing a loan from Pride Micro-Finance, Henry rented a piece of land for two years where he chose to establish a tomato garden on one hectare. He selected a suitable site for the nursery bed and planted the seeds which were later seen on the soil surface.After a week, some seeds had developed into seedlings and were very close to one another as some seeds on the soil surface were still intact. During the time of transplanting, he pulled the seedlings using his fingers one at a time from the soils at around mid-day of a sunny day. Seedlings were well placed in the planting holes at a distance of 2x2 meters and after a week a few dried up and died. Tomato plants were later observed with tiny rotting stems, small bruised and rotten fruits which had holes on them. He

decided to break off some branches on the plants which were not bearing fruits at fruiting stage.

Together with his wife they harvested their tomatoes when the garden was almost fully ripe with some tomatoes that had started rotting in the field. In order to ease transportation of the tomato fruits to the store, he transported them in a wheel barrow that had just collected manure from the cattle kraal. After a year in tomato growing, he changed to pine tree growing as he aimed at harvesting poles that would be used for rural electrification. When the poles were 13 months only, Henry was served a notification of vacating the piece land of land where he had established his pine trees.

The land lord had already rented the piece of land to another person who incidentally also wanted to grow pine. Henry wants to report the matters to the courts of law.

Task

As a learner ofAgriculture, guide Henry how he should carry out a successful business.

5. Milly established a nursery bed of tomatoes in an area where she had previously grown egg plants, she cleared the area and made nursery beds that measure 4 meters wide, she carried out deep ploughing and she immediately scattered the seeds in the nursery beds. She moves for about 15 minutes to fetch water she uses to irrigate the seedlings 6 times a day. On germination, seedlings were congested and she maintained them since she was going to plant in a large area. Some seedlings started toppling over since they had rotten stem bases. She uprooted the mature seedlings and wrapped them in a sack and transported them to the main garden where she had made holes at a spacing of 120 cm by 120 cm. The leaves of some tomatoes had dry patches, the mature tomatoes that where harvested had a lot of soil and some had started rotting. The yields she got where low than what she had expected.

Task.

Write a message to Milly assisting her to improve the yields in her garden.

6. Mjomba is a vegetable farmer specializing in the growing of cabbages on his two hectares of land. He selected a site for a nursery bed near a pond with well drained soils. The nursery bed was prepared well, seeds sown and covered lightly well.vwatering was carried and the seeds germinated well, grew and covered the nursery bed. The seedlings were left to grow till the time of transplanting. Due to shortage of labour Mjomba decided to transplant his seedlings whole day till evening. Some seedlings dried and failed to take off. Those that survived seemed not to be healthy with many leaves and heads rotting. During harvest, the cabbage was picked and packed in polythene bag ready to be taken to market. Unfortunately, transport was a problem for a full week.

Task

Advise Mjomba on how to correctly produce the vegetables he specialized in.

7. Vegetable growing has become a profitable project that has sustained lives of many Ugandans today. In many rural communities, Vegetable nursery beds are established with a width of 6.6 ft and with any length. Farmers put shade over the seedlings that are about 30cm from the ground. He waters the seedlings in the nursery bed every after two hours for effective growth. They put a heavy mulch after putting seeds in the nursery and leaves it till the time of transplanting to keep moisture. Farmers control the pests in the nursery bed using local herb concoctions. Some seedlings dried off leaving gaps in between plants in the main garden. Tomato gardens have plants and their fruits touching the ground since they are heavy. Some established crops in the main garden have yellow leaves. They harvest their vegetables especially African night shade (nakati) after flowering and tomatoes when they are still deep green.

Task.

Advise these farmers in rural communities on how to benefit from vegetable growing.

8. Mr. Nyangoma, a vegetable farmer in ngoma is well known for tomato growing. He plants his tomato seeds in the garden directly and most of them failed to germinate. After germination, very many spaces were observed where seeds did not germinate. The weeds quickly covered up those that germinated. After 2 weeks, some dark spots started appearing on the leaves, the leaves started becoming yellowish. Some pests started eating up the leaves and when they started flowering, all of them bent to the ground because they were too heavy to support themselves. When they started maturing, Nyangoma Harvested tomatoes when they are green in colour, packed them in white polythene to wait for market day which was 4 days ahead and they all got rotten before reaching the market day. Nyangoma was very disappointed and confused what he should do.

Task.

Advise Mr. Nyangoma on what he should have done.

9. Matatu grows tomatoes in lukiri sub-county. He prepared the seedbed and left the active anthills in the garden. He bought ripe tomatoes, squeezed them to get seeds for drying. He planted tomato seeds directly in the planting holes in the main garden. He spaced the planting holes using the hoe handle. After one week, he observed that there were many seedlings per hole and wider gaps between planting holes. Some young tomato fruits had small holes on them. The plants looked healthy and bushy limiting light penetration. He harvests his tomatoes when they are very soft on touching. He throws them in a basket which is at distance during harvesting. He has fetched low profits from project.

Task.

Advise Matatu on how he can maximize profits from his project.

10. During a visit to Miti sub-county, the district agricultural officer observed several practices affecting farm productivity.

Most farmers hand planted crops on the land that had been prepared using forked hoes and slashers in the initial be preparation. Many gardens had unwanted plants and parastic insects that affected crops. Some farmers had

delayed planting by up to two weeks after the onset of seasonal rains, while others had planted seeds borrowed from their neighbors. Additionally, crop residues from the previous season were left unmanaged in gardens.

After harvesting, farmers were drying their crops for only one day directly on the bare ground and storing the produce in old tins hung under trees.

Task.

Advise farmers from Mitti sub-county on the improved techniques that would enhance both crop quality and yield.

11. After learning about the high profits associated with tomato growing, Harriet decided to grow tomatoes in her avocado farm. She obtained seeds of a tall tomato variety from an agricultural shop. She made planting holes in the spaces between the avocado trees at a spacing of 30 cm x 20 cm and planted the seeds. After germination, she maintained all the branches on the tomato plants to maximize the number of fruits per plant. Some crops had their fruits lying on the soil surface. Others had leaves that were rolled along the edges and with yellow patches on the lamina. To her surprise some plants wilted even when the rains were sufficient. These were found to have swellings on the roots when she uprooted them.

At harvest, she gently pulled the plants with pink fruits out of the soil. Harriet did not get the high profits she anticipated and is wondering what she can do to maximize profits as she embarks on a second season.

Tall varieties of tomatoes should be spaced at 90cm x 45cm.

Task.

Explain to Harriet how she can maximize profits from her tomato enterprise in her second season.

<u>b) legumes and oil seeds crops growing</u>

1. Sandra's father picked interest in growing beans after watching harvest money expo on one of the television channels. However, it was amidst planting season, so he decides to just slash his garden area and immediately started planting using a hoe with a blunt blade. He ordered for the planting materials from one of the leading agricultural produce supplier in the city. When he received the seeds, they were tiny, wrinkled and had holes but he was not bothered. The bean seeds we're mixed with other seeds from wild plants that germinated before the beans. A few bean seeds germinated and he had to buy more other seeds for planting. She used a non-selective herbicide to remove un wanted plants. She had no harvests that season.

Task

Give advice to Sandra's father on what he should do next season of planting beans.

2. After finding out that Kamuli district has over six groundnuts' processors, also Kakooza purchased a machine for processing groundnuts at the start of the year 2024. He uses a lorry to transport his 20 bags of groundnuts from the suppliers to his business premises. This lorry has a capacity of carrying to120 bags at the same cost and it's the only means of transport available. His processed groundnuts were observed to be a mixture of half broken and well grinded ones.

Three days after the grinding, groundnuts in his shop were observed to contain a whitish layer on the surface with an unusual smell. In one of the hotels where Kakooza supplies grinded groundnuts, a customer chewed a stone as she was consuming the groundnuts paste. Recently Kakooza learnt of an opportunity to export his groundnuts to Saudi Arabia. He has a capacity of supplying 2000kg yet the total demand is 20,000kg. This is likely to disqualify him from this opportunity. Farmers in villages usually supply him groundnuts on credit and he pays them after making sales.

On paying them, he physically delivers their money by driving a distance of about 230km a journey that consumes fuel worth 320,000. This has severely affected his net profits in the end.

Task

Write guidelines to Kakooza that would help him improve his business.

3. Pienne grows a new variety of simsim which has a good taste and highly nutritious. After harvesting, he put the seeds on a dry firm ground to dry under the sun. The dried simsim seeds where then scooped from the ground and packed in large polythenes. The polythenes where then transferred in store which had cracks on it's walls. The following day the polythenes of simsim where packed on open lorries and transported to market centres. Pienne then started packing the simsim in small packaging to ease selling. Despite the variety being good, piene receives few people who came to buy his simsim, those who buy it appreciate it's good taste but also complain that it's gritty. They can't also tell the quantities and date of expiry of the simsim they buy. The small organisation where piene and other farmers keep their money closed suddenly and the operators disappeared with piene's savings, he then obtained small loans from different money lenders to enable him widen his business and took some of the money vin betting with hope that he will get double the money he has staked. He plans to setup a simple processing plant for his simsim but he lacks the resources to do so.

Task.

Advise Piene on how he can overcome his challenges in order to benefit from his business

4. After visiting Bukalasa agriculral college, Addo school students established a simsim garden. They prepared a rough seedbed using a tractor. After one week, they planted the seeds that they bought from nearby shops by broadcasting. They covered the seeds with a thick layer of soil and clods. A few seeds that were sowed germinated. Some other unclear plants were growing in the garden at a very fast rate. They sprayed their crops against pests early morning once a week before they enter classrooms for lessons. They harvested their crop when the pods were dry and open.

Task

Advise students on how they can produce simsim profitably.

5. Musa established a bean growing project. He selected seeds for planting from what he harvested the previous season. Some seeds where small in size while others had wrinkled surfaces but bigger in size. He cultivated his land once using a tractor and dug planting holes of depth equivalent to 30cm following a spacing of 3cm by 3cm. He sowed four seeds in each planting hole.

After two weeks, the few plants that established and germinated exhibited yellowish leaves. Some bean plants were observed with dark sunken lesions on leaves/pods and simple holes on their stems. Upon maturity, he harvested beans after extreme dryness with some bean seeds scattered all over the garden. All in all, he had a poor season. He is willing to try again next season.

Task.

Advise him on how he can deal with the situation above to get the best results the following season.

6. Mulungi, an agriculture extension worker, visited a farmer who was complaining of low yields of groundnuts. In his report, he indicated that seed bed was cleared by slashing the grass, the seeds obtained for planting were seeds from the previous harvest which were hybrid seeds and planted two months after the on set of rains, the seeds planted at depth of 10cm, weeding and fertilizer application was done after flowering. Most of the leaves were mottled and curled. The farmer harvests the ground nuts one month after flowering using a hoe.

Task.

Based on the report from Mulungi, how can the farmer improve the yields of groundnuts?

7. Legumes and oil seeds are valued as sustainable meat alternative and are considered the second most important crops after cereals. After attending agriculture science fare, Ojoki established a simsim garden. He prepared the seedbed roughly and some undecomposed plant remains were not buried properly. After one month of the rainy season, he planted seeds of the previous

harvest. He planted the seeds when the temperatures were too low below 30°c. A few seeds germinated leaving wider gaps between plant. He thinned his plants at a knee height. He used plant extracts to spray his crops against weeds when it was threatening to rain. He harvests his simsim when the capsules were too dry and open by picking one at a time. (Simsim has very tinny seeds therefore should be planted in a well fine seedbed at a temperature of 32 to 35°c)

Task.

Advise Ojoki on how he can benefit from his project.

8. Namungoma established a garden of beans (climbing variety) for commercial purposes. She cleared the bush using a panga with a broken handle and carried out cultivation. Immediately after cultivation, she broadcasted the bean seeds with plans of finishing planting on time. She left big clods of soil in the garden after planting.

After germination,the bean seedlings (plants) were congested in some areas while some other areas had no bean plants but only strange plants growing.

Some bean plants are climbing on the plants in the garden and others have interlocking shoots making it difficult for a farmer to pass through the garden.

She harvested the beans for drying when the pods were still green on a rainy day..

Task

Write a letter advising Miss. Namungoma on how to increase on the quality and quantity of beans from her garden.

9. Oil seeds crops are grown primarily for the oil contained and nutritional value of proteins they provide of about 20-45%. Kajub established a 10-hectare sunflower project in his village using the tools that cannot cut the soil to the depth of 1.2 inches. He planted the seeds he got his friend some with broken cotyledons by broadcasting. A few seeds germinated leaving gaps between plants. Some plants are seen having curled leaves. His plants were crowded in some parts of the garden and he sprays them against pests using plant extracts. He Harvested

his sunflower when the heads were soft with a moisture content of 10% by cutting the heads one at a time.

(Sunflower is planted at a depth of 1.5 to 2.5 inches. Therefore should be planted in a well fine and harvested when the moisture content is 20 to 25%)

Task.

Advise the farmers how to productivity of Sunflower .

10. Omaren planned to grow cowpeas on her 12000m x 2000m field. She bought seeds labelled with 50% viability, planted them using the recommended spacing of 60cm between rows and 20 cm between plants mid rainy season. Aday after tilling the land. Weeks later, she noticed patchy growth- some rows were well filled, while others had large empty gaps.

Weeding became difficult as grass grew closely between cowpea plants, making it easy to uproot or cut the crop by mistake.

In the next season, she reused seeds from the previous harvest, she noticed they were dry , with a hard trsta. As the plants grew, she observed tinny white eggs under the leaves. She mixed a fungicide in a basin and sprinkled it using a broom. During harvest, Omaren, her husband and their 8-year old daughter slashed all cowpeas plants at once, but many were either under or over mature. The yield was low, and the saved seeds looked weak for future planting.

Task.

Guide Omaren on how she can improve cowpea productivity in the next season

11. Nalongo grows climbing beans variety for commercial purposes. She cleared the bush using a slasher which could hardly cut the grass. She planted one seed per hole with hopes of getting high yields. After putting the seeds in the planting holes. She pressed firmly with the foot to the seeds. The beans were closely planted in rows. Some planting holes were observed with no seedlings after one week of germination.she carried weeding of couch grass in the garden of beans by uprooting using hands. The beans's tendrils were crossing over each other

creating a web. Some bean pods have brown powderish substances. She picked green pods for drying. He uprooted all the climbing bean plants when they still had flowers at their tops.

Task.

Advise Nalongo on how she can increase her farm production.

12. Mr. Kati, a long-time resident of a rural farming community, has been engaged in bean production for the past 12 years. In his most recent planting season, he began by clearing land through burning and cultivating it with forked hoes. He selected a rocky slope of a hill that was heavily lined with eucalyptus trees,whose shade he believed would benefit the crops. Without following proper planting guidelines, he showed seeds randomly across the the land, and several planting holes where seedlings failed to germinate were simply left unattended to.

Throughout the season, weed control was done only once and by hand pulling. As the beans developed, many plants were seen with yellowing leaves and stunted growth, but no action was taken. At harvest , fresh pods were removed and left to ferment for several weeks, then dried on bare ground for only two days. The beans were later sold in tins to interested buyers without proper grading or weighing.

Task.

Advise Mr. Kati on the appropriate methods to improve productivity and ensure sustainable bean production.

13. Oil seeds crops are grown primarily for the oil contained and nutritional value of proteins they provide of about 25%-45%. Kajubi established a 10-hectare sunflower project in his village using tools that cannot cut soil to the depth of 1.2 inches. He planted the seeds he got from his friend some with broken cotyledons by broadcasting. A few seeds germinated leaving gaps between plants. Some plants are seen having curled leaves. His plants were crowded in some parts of the garden and he sprays them against pests using plant extracts. He harvested

his sunflower when the head were soft with a moisture content of 10% by cutting the heads one at a time.

(Sunflower is planted at a depth of 1.5-2.4 inches therefore should be planted on a well fine and harvested when the moisture content is 20-25%)

Task.

Advise Mr. Kajubi on how to improve sunflower production

14. Ritah planned to grow cowpeas on her 8000m x4000m field and wanted to estimate the plant population to project sales. She bought seeds labelled with 60% viability and unsure how to determine the exact number of plants , planted them using the recommended spacing of 60cm between rows and 20 cm between plants, a day after tilling the land. Weeks later, she noticed patchy growth- some rows were well filled, while others had large empty gaps. Weeding became difficult as grass grew closely between cowpea plants, making it easy to uproot or cut the crop by mistake. In the next season, she reused seeds from the previous harvest. As the plants grew, she observed tiny white eggs under the leaves. She mixed a fungicide in a basin and sprinkled it using a broom. During harvest, Ritah collected the cowpeas by slashing when most pods were dry and open.

Task.

Advise Ritah on how she can improve cowpea productivity in the next season.

<u>c) cereal crop production</u>

1. Mugera is a prominent village commonly known for maize production. Farmers grow maize and get good yields from the gardens but after harvesting, they put their maize in the store so as to wait for higher prices of the maize crop. One day, a farmer opened his store and found out that the grains were rotting because of a leaking roof, others were eaten by rats and other pests. Another farmer found his store broke and all the grains were taken. Some farmers pour the maize grains direct on the ground without packaging in the store. Most farmers end up making loses from their maize project.

Task.

As an expert in crop handling, give a piece of advice to the farmers if Mugere community SSS.

2. In masaka district, farmers grow their maize their maize for home consumption and income. In a season, they harvest over 1200 bags in different hectares of land. This motivated them to grow maize continuously on this land. After harvesting, they burn the maize stalks and all other vegetation in preparation for the next planting season. However, this year, their harvest has dropped to less than 800 bags due to a number of unknown reasons. One farmer visited his maize garden and observed that the field was too dry and plants had stunted growth. The maize plants had different colours on the leaves, small cobs andhe realized that the top soil had been washed away on the gentle slope down to the valley.

Task

Suggest to the farmers the different practices they can employ on their land for better maize yields.

3. Most maize farmers in Kasorwe village are not benefiting from growing the crop and are switching to sugar cane. Upon assessing the situation, it was observed that many gardens had stunted crops with yellow leaves, and half of the gardens showed crop leaves and stems with holes indicating pest damage.

Farmers who harvested crops stored the fresh cobs under tree sheds, dried the shelled maize grains on bare ground, and kept the dry seeds for planting in gourds and old tins.Some farmers ground the grains on stones to make posho for food, and those wishing to sell dry grains struggled to find a market.

Task

As an agribusiness student, advise the farmers in Kasorwe village on how to produce maize for maximum profits.

4. Cereal crop growing is now done world wide. In Uganda, maize is commonly grown in many parts of the country and has become a staple food. Mr.

Ssemutenga has one hectare of land allocated for maize growing. The seeds for planting were from the previous harvest which had holes, some broken and some with dark stained embryos. During land clearance, the bush was set on fire. He used a forked jembe to dig the piece of land and the planting holes. The planting holes were spaced at 1m x1m. Unfortunately, some of the seeds did not germinate. Weeds grew very fast out competing the maize plants that became stunted with yellow leaves. Weeding was done once after two months and harvesting after four months by uprooting the whole plants. The cobs were noted to be very small and some cobs did not have seeds making the total yield far less than was expected.

Task

Advise Mr. Ssemutenga on how he can obtain the expected yield from his farm.

5. Namwezo deals in maize growing in wattuba village. She prepared her piece of land manually using hoes with broken handles.she place 4 seeds in each planting hole. All the seeds germinated. She weeded her maize garden after plants had put on cobs. At knee high stage, maize plants had holes in the stems and damages on leaves. Some of the crops have yellow stripes along the leaves veins. She harvests her maize using hands but when some seeds have started germinating from cobs.

Task.

Advise miss. Namwezo on how she can improve on her production of maize.

6. Kagore is a famous maize farmer in Kisoro district. She prepared her 20 acres of land using hoes. She planted her maize two months after rains have started. She placed 4-5 maize seeds in each planting hole. Some of the seeds failed to germinate after planting them at a depth of 30cm. The planting holes were spaced 10cm x 15cm. When maize plants had reached a knee height, he observed holes in the stems and leaves. He then splayed the crops to control pests using very dilute mixture of the recommended pesticides. The maize cobs of some plants have black powdered substances and burst grains. She harvests her maize using hands when ears are still green.

Task

Advise Kagore on how she can successfully produce quality maize for sale

7. Okul is a famous sorghum farmer in Otuk village. He tills the land using a blunt hoe. He plants his sorghum one month after rains have started. He placesten seeds in each planting hole. These seeds were certified and all germinated. The planting holes were spaced 2 cm by 11 cm. At the knee height stage, some sorghum plants had holes in the stems and leaves. He sprayed his crops to control pests immediately after it rained. Towards flowering, the leaves of some plants had yellow stripes along the veins. He harvests his sorghum when some heads are green using a panga.

Task.

Suggest ways in which Okul should act to have a successful maize production.

8. Otafire grows millet in mitooma sub-county. He carried out seedbed preparation roughly using a tractor. The big tree stumps were left standing, after one week, he planted the seeds he bought from the nearby shop by broadcasting. The seeds were covered with a thick layer of soil. A few seeds germinated leaving wider gaps between plants. His garden has other unclear plants growing at a fast rate. He carried out Thinning after flowering. He sprays his crops against pests when it is threatening to rain. He harvests his millet when most of the seeds have dropped down using a blunt knife. (Millet has tiny seeds and therefore should be planted in well fine seedbed).

Task.

Advise Otafire on how he can benefit from his project.

d) fruits and beverages

1. In Muduuma farming community, many farmers carry out coffee production. During harvesting season, the farmers' sale their coffee to individual middlemen who at times pay less money. Most farmers use up their money without saving

anything while others dig pits/holes in the houses where they put the money. Sometimes thieves attack them and Rob all the money. One time, these farmers tried to make a farmers' group but they failed since it did not follow principles and members were not cooperative.

Task

Basing in the scenario, which advice would you give to the people of Muduuma?

2. The establishment of Soroti fruit processing factory has attracted many farmers in this region and the neighbourhood into fruit crop production. Some of the farmer groups that specializes in grafted mango production harvested two tonnes of big nice looking mango fruits which upon cutting, many had a very an unpleasant smell and some 4 maggots within.

One of the plantations that was established on 10 hectares and it appears that all the mongo seedlings planted were able to grow; some seedlings' roots were observed exposed on the soil surface with no signs of soil erosion whereas for the already mature trees were numerous flowers that had poured on the ground. The mango plantation had a dense canopy with a powdery dusty substance on the leaves and flowers. Farmers decry accidents which result from falling down as they climb to harvest the mature fruits. The height of their trees ranges between 12 to 15 meters tall. All the activities carried out during mango fruits production are well written using a piece of charcoal on the walls of a grass thatched fruits' stores that are detached from the pit latrine. For some other activities, they are able recall what transpired during production.

Task;

Write a letter that would be of help to mango farmers of Soroti district.

3. Guchina deals in mango growing in bamunanika subcounty. After harvesting, it was observed that the ripe mango fruits had damages that were inflicted during packaging from the garden. Big and small sized mango fruits were packed together in the same sacks and taken to kalerwe market for sale. No sooner had

he reached, than the market prices for mango fruits fell sharply. This frustrated Mr. Guchina who had a loan to pay from the sales of his mango fruits.

Task

Write a letter to Mr. Guchina advising him on how he can benefit highly from his mango project.

4. Mwanje, a resident in one of the districts in Uganda decided to establish tea plantation on his 80 hectares of land. He employed manual labour to prepare the seedbed, establish a nursery bed, transplant and manage crops. The tea seedlings were transplanted when they were 10cm high. Two seedlings were planted per hole at a spacing of 0.6 m by 0.45m.

Wood Ash was applied to the crop against black tea thrips(pests). The tea plants were allowed to grow to a height of 1.5 m before harvesting began. Harvesting was done by plucking one leaf and a bud in the evening.

According to the district agricultural officer, tea plants are kept just about a waist height of an average adult human. They pick two young leaves and a bud for processing. The plants should be spaced at 1.05 m by 0.75 m.

Task.

Guide Mwanje on how to improve his tea production from his garden.

5. Makona established a mango growing project for export market. He obtained seedlingsunder a mango tree that were growing on their own. He cleared his land using a panga and immediately dug the planting holes. The seedlings were planted following a spacing of 0.5m by 0.5m. The few plants that established showed dead growing tips and scotched margins on their leaves. Whenever, he moved close to mango plants some organisms would be observed flying allover the place.

Some plants were observed with numerous branches and immature fruits scattered all over the ground. Upon maturity, mango fruits that were very soft with dark brown patches were harvested using stones followed by packing in

black polythene bags for safe transportation to home. All in all, Makona failed to meet his target.

Task.

Advise Makona on how he can handle his mango growing project in order to meet his target.

6. Cocoa is a significant agricultural export in Uganda contributing 3.8% of the total export according to Uganda export promotion 2002 report. Mafabi picked interest and established a cocoa plantation in his five hectares of land. He prepared the seedbed manually using rudimentary tools that cannot dig deep into the soil. He planted the seedlings at a spacing of 5cm x 10 cm in the main garden. He transplanted the seedlings midday on a sunny day. He used ash and pepper to control cocoa mealybugs. Couch grass was aggressively growing in his gardens. During rainy season, the plants over branch crossing each other. Some of his plants have black pods on the leave surface. He Harvested his cocoa when the pods were still green at the age of 2 years after planting using pangas to cut the pods.(Available information show that the recommended spacing for cocoa is 3 m x3m and can be harvested when the pods have fully ripened using pole pruners)

Task.

Advise these farmers in rural communities on how to benefit from cocoa growing.

7. Cocoa is a significant agricultural export crop in Uganda. In Kasese district, farmers establish cocoa nursery beds with 2 metres wide and with any length. They put the shade and it remains until the time of transplanting.

They water their nursery beds once a day due to shortage of water. Farmers plant seedlings at a spacing between 3ft x 3ft in the seed bed. Some seedlings dry off and leave gaps in the garden. Some of their plants have black spots on the leaf surface and farmers use bitter plant extracts to spray against pests in the cocoa gardens. Some plants have branches touching on the ground and have no fruits.

They harvest their cocoa when pods are still green at the age of one year after planting using pangas.

(Recommended spacing for cocoa is 3m x 3m and can be harvested when the pods have fully ripened at the age of 3 years and above using poll pruners.

Task.

Advise these farmers on how they can benefit from their project.

8. Coffee is one of the important agricultural export crops that earns Uganda a lot of foreign exchange. A group of coffee farmers in kyotera district in a farming organization called POWESA established a nursery bed with 2.5 meters wide. They put a shade on their nursery bed and retained it until the time of transplanting. They watered their nursery bed once a day due to shortage of water in their region. Both health and unhealth seedlings are transplanted to achieve an optimum population in their gardens.

Farmers plant seedlings at a spacing of 4ft by 3.5ft in the seedbed. Some seedlings did not establish leaving gaps in the garden. Farmers use accaricides to control pests in their gardens. Some plants have six to eight branches but bear few berries. They harvest their coffee berries all of them at once when some show signs of ripening. Some farmers harvest by cutting down the tall branches with berries. The recommended spacing between trees should be 2.5 to 3 meter.

Task.

Guide farmers in kyotera on how to maximize profits from their project.

9. Musa started a coffee growing project. He obtained seedlings that were growing in a neighbor's coffee garden. He prepared land by slashing and dug planting holes 30cm deep. He placed seedlings in the planting holes and covered them with sub soil.

After some time, the few crops which had established possessed numerous branches. Part of his garden was occupied with couch grass which was eliminated by slashing. Coffee plants at extreme end of the garden possessed berries and

branches with holes while leaves were observed with orange like substances and dark spots.

Coffee was Harvested by stripping all berries with mixed colours onto the ground.

Task.

Guide Musa on how to improve his coffee production from his garden.

10. Cocoa is a significant agricultural export crop in Uganda contributing 3.8% of the total export according to Uganda export promotion 2002 report.

Mafabi picked interest and established a cocoa plantation in his five hectares of land. He prepared the seedbed by spraying herbicides. He planted the seedlings at a spacing of 5cm x 10cm in the main garden.

He transplanted the seedlings midday on a sunny day. He used ash and pepper to control cocoa mealybugs bugs. Cough grass was aggressively growing in his gardens. During rainy season, the plants over branched crossing each other. Some of his plants have black pods.

He Harvested his cocoa when the pods were still green at the age of 2 years after planting using pangas to cut the pods. (Available information show that the recommended spacing for cocoa is 3m x 3m and can be harvested have fully ripened using pod pruners)

Task.

Advise these farmers in rural communities on how to benefit from cocoa growing.

11. Mrs. Baana hired 5 hectares of land for growing oranges. She established the orange plantation on the land using seedlings obtained from unlicensed tree nursery operator. The seedlings were transplanted between at mid-day(12:00 noon) on a sunny day. She planted the dwarf variety at a spacing of 4ft x 3ft for optimal growth and fruit production. They were watered once a day. After a few days, some seedlings started wilting and others dried out completely. She grafted some of the seedlings using coffee as a stock while oranges remained scions. The

excess branches of the established orange trees vigorously for the fruits to fall. Many of the fruits had damages due to falling on a hard ground. Baana's neighbors tell her that most of the practices on his plantation are not appropriate.

Task.

Advise baana on the suitable practices he should carryout to improve production.

e) <u>Root crop production</u>

1. In a traditional Ugandan tribe, it is commonly believed that cassava can thrive in any environment. Mr. Nkubba decided to grow cassava and prepared his 10 - acre uncultivated land by making holes one foot deep, spaced 100m x 100m apart. He requested cuttings from his neighbour's 3 months old cassava plants, which he cut to 10cm length and removed the buds. He planted one cutting per hole, fully covering them with soil just before the seasonal rains. Nkubba hired one casual laborer to weed the garden after the rains began. The few plants that sprouted showed curled, muffled leaves and stunted growth. At harvest, he obtained only 1000kg of small tubers from the entire land.

Task

As an agronomist specializing in cassava production, guide Mr. Nkubba on how to make his cassava farming profitable.

2. Afarmer's organization in one district acquired 20 hectares of land for sweet potato growing. The land is very dry most times of the year. There is a sweet potato processing plant within the district.

The farmers cultivated the land, the seedbed was rough with a lot of trash. The farmers made ridges and planted the orange flesh potato variety. The spacing used was 55cm between ridges and 20cm between plants.

Removal of spear grass was done by slashing. Harvesting was done by firmly holding the potato stems and then pulling out the tubers from the soil. A few tubers were obtained, some were bruised(had scratches) while others had tunnels in them.

According to NAADS, the recommended spacing of potato plants is 30 cm apart in a row and the rows are about 90cm.

Task.

Write the information you would give the Farmers' organization to sensitise the members on how to solve their challenges to improve on sweet potato growing

3. Nyeko is a sweet potato grower in Rukungiri district. His land is bushy with tall woody plants. He clears the bush using herbicides. He then made small heaps of soil (mounds) and planted vines very close. He weeded his garden once using a forked hoe. Some tubers were exposed and with holes in form of tunnels. He harvests sweet potatoes using sticks when soil are dry.

Task

Write a message advising Nyeko on how he can produce good quality and quantity products.

4. In palisa district most of the farmers grow root crops on both commercial and subsistence mode of farm in order to obtain income to clear all their needs. Mr. Ogotta owns a fragmented piece of land which is waterlogged with less organic matter on which to plant on cassava. He cleared the land using an axe to plant on his crop. He obtained cuttings from his friend in soroti which had no buds on the stem and those that had them were too small in size and short in length. He dug the holes at a spacing of 25cm×40cm, some germinated and others did not, some volunteer crops were seen within the main seedbed, the cassava plant developed mottled leaves with reduced size of the tubes. Mr. Ogotta harvested cassava

tubes with a blunt hoe which damaged them resulting into rotting on some parts. The cassava Tubers were stored in a traditional Granary that had cracks on the walls. He took cassava on the day when most of the buyers had left the market and sold them at a very low price.(Cuttings should have 15-25cm in length and with suitable size)

Task.

How can you help Mr. Ogotta to produce marketable cassava for commercial purposes.

5. During the planting of cassava stem cuttings by the senior three class, they selected cuttings that had a few holes in them and planted them on a newly purchased piece of land. They straight away dug the planting holes without disturbing anything that was already established on the land. The distance between one cassava plant and another was 30 cm. When the class planted again, some of the cuttings germinated while others didn't sprout at all. The ones that germinated had curled or wrinkled leaves. When the cassava was at knee height, it was barely recognizable among the numerous other plants that had covered the entire ground. Some parts of the cassava root tubers were seen on the soil surface when they visited the garden for inspection.

At the harvesting stage, the soil was extremely hard and dry, so the learners had to pull out the plants by holding the stems in order to retrieve the tubers underground. Only a few tubers were obtained, and most of them were damaged. Agronomist recommend that for proper growth and high yields, cassava plants should be spaced at least three and half times the distance used by the senior three class. All the cassava harvested was fresh yellow and sour.

Task.

Write guidelines that would enable the senior three class students improve their cassava production.

6. Opodong established a carrot growing project in karamoja district. He bought seeds of Nantes variety which perform well under cool temperatures of 5°c to

10°c. He cleared the piece of land and ploughed it once followed by creating a flat bed. He planted seeds in rows. Rows were spaced at a spacing of 5cm.

Some rows were observed with many carrot plants growing closely. Some parts of the garden is occupied by other unknown plants that grow vigorously. Carrot plants were observed with holes on their leaves. After four weeks, the plants that were surviving possessed powdery substances and yellow patches on their leaves.

Harvesting was done by extraction of carrot tubers with entirely green leaves in an extremely dry ground. Opodong obtained less profits compared to his expectations.

Task.

Write the information you would give Opodong to sensitize him on how to solve his challenges to improve on carrot growing.

7. In the community of Kabwangasi village in palisa district. Most people engage in cassava production. Mr. Nabende has got an acre of land in a wetland area that holds a lot of water. He cleared it using a blunt hoe to plant his cassava. He got his planting materials from his best friend in the neighbouring village, makes shallow planting holes for planting with a spacing of 15cm x 30cm and some holes had no germinated plants after three weeks of planting. Some volunteer crops are also seen growing within the cassava garden. Recently, he saw his plants develop mottled leaves, short internodes and others have stunted growth. He uprooted some of the affected cassava plants and used them as mulches around other growing cassava plants. Some plants have their tubers exposed to sunshine, during harvesting, using hand uprooting method, he found some tubers are eaten up by unknown organisms that make holes around the plants. The cassava Tubers are broken into pieces unknowingly while harvesting. (Cassava should be spaced 3ft x 3ft).

Task.

Advise Mr. Nabende on what to do to produce quality cassava on the farm.

8. Kenzo's passion for farming was clear in the green hills of southwestern Uganda. However, challenges quickly surfaced. The sweet potatoes he sourced looked shriveled, discoloured, cracked, and four days later, under warm and high humidity storage, a few had already sprouted. The field was also littered with big soil clods, sachets and bottles of used pesticides scattered around. Seeds of potatoes were planted at a soil depth of 10cm..

As the season progressed, the crop grew unevenly and some tubers were exposed, other plants looked healthy while some struggled to develop despite adequate rains. Throughout the field, unfamiliar broad-leafed, thin-stemmed plants spread quickly. Kenzo also noticed small moving specks under the leaves, and the foliage showed signs of damage with tiny holes and tears. Many of the harvested tubers had deep cuts, others were bruised or broken and were harvested when the tops of the plants were green and vigorously growing.

(The recommended planting depth of the seed potato is 5-6cm and mature tubers should be harvested when leaves turn yellow and begin to die back.)

Task.

Guide Kenzo how to improve his production.

OTHER CROPS

1. Dumba decided to establish congo signal grass to feed his animals. He prepared a seedbed with large lumps of soil on his two hectares of land. He then obtained seeds from the open market and planted them at a rate of one kilogram per hectare. Upon germination, couch grass was also seen in the pasture land.

He allowed the animals to graze on the pasture soon after establishment and grazing continued throughout the year. During this time, he removed weeds from the pasture and also applied fertilizers. The animals were drinking from one watering point. During the rainy season, Dumba uprooted the pasture plants that had flowered and used them to make silage. Dumba realized his pasture was not doing well and has approached you for technical advice on how to improve its yields.

The recommended seed rate for congo signal grass pasture establishment is 2.5 to 10 kg per hectare.

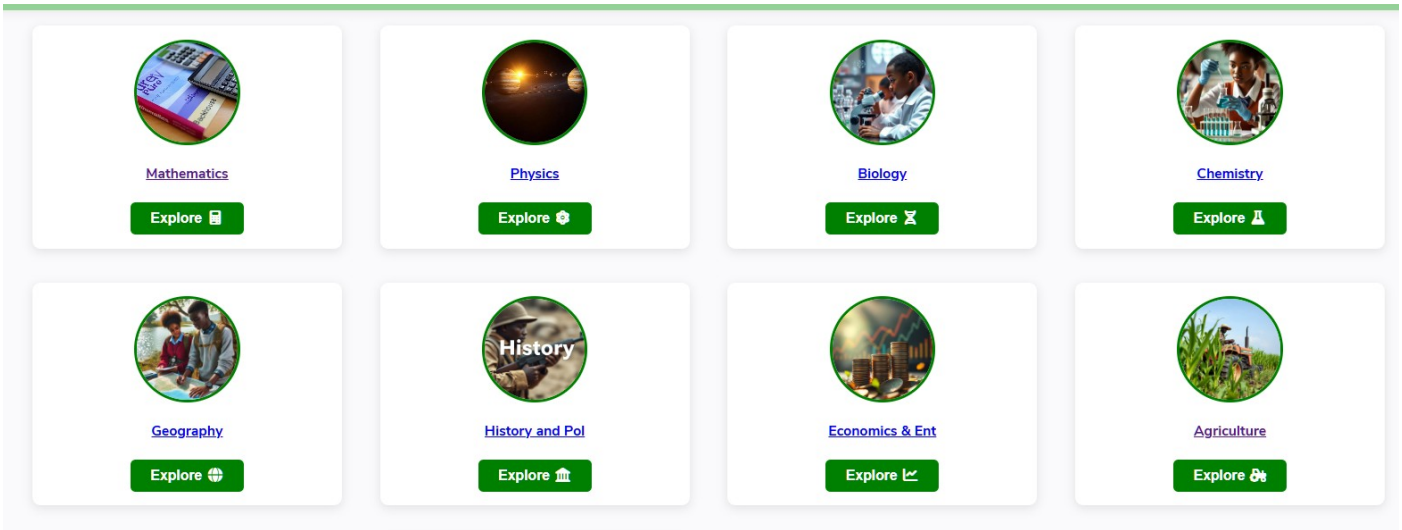
Task

Advise Dumba on how he can improve the yields from his pasture.(Your advice should include reasons)

2. Banana is one of the major food crops in the central region of Uganda. Farmers under the umbrella of Masaka Banana Growers Association (MABAGA) seek to invite the district agricultural extension officer upon registering a decline in their yields since the year 2021. These are farmers who own 40 hectares of gently sloping land although only 20 are presently in production as the other half of the land was abandoned due to its reddish colour and a soil pH of 2. Meanwhile, the 20 hectares under production are yielding very small bunches with the land surface characterised with numerous lines of depressions cutting across from different ends. At the start of the business in 2016, the association had a vision of doubling their average production in order to penetrate into the European market by 2025.

Task

As the district agricultural extension officer, write an advisory message to Masaka Banana Growers Association (MABAGA).



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