

KOALA

SECONDARY

SCHOOL

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SUBJECT: AGRICULTURE

PAPER 3 (REPORT)

# GRAFTING

- This is a technique of uniting two woody parts of different plants for continued growth as one plant.
  - It has the upper part called the scion and the lower part rootstock.
  - When scion and rootstock has the ability to form successful union known as compatibility.
  - It has various methods which are as follows
- ✓ whip grafting
  - ✓ side grafting
  - ✓ notch / wedge grafting
  - ✓ Bark grafting
  - ✓ saddle grafting

Grafting is done by uniting the scion and the rootstock to form one complete tree.

The following are the conditions necessary for the grafting to be successful;

Compatibility where both the scion and rootstock must be of the same species to enhance compatibility. the same temperature is required to cool the process, species of plant to easily form a union, relative humidity should be high and maintained, physiological maturity of plants that is the scion and rootstock should neither be very young nor too mature.

Grafting has the following importance;

It helps to repair the damaged trees.  
Helps to shorten the maturity age of the plants.  
Helps to propagate clones that cannot be propagated in any other way. it makes it

Possible to grow more than one type of fruit or flowers on the same plant.

As an agriculture student I chose to use Avocado Fruit tree for grafting because it can be sold at a higher price and earn more and a lot of income to solve the following problems in the society as the society has major problems,

Better forestation

Unemployment

Malnutrition of the children and hygiene

Poor Roads

Easily marriages

High death rates

Scarcity of water

High birth rates ✓

Illness

Poor health

High rates of school dropout

Low agricultural produce

Soil conservation

Sexual immorality

High crime rates

Low living standards.

# Problem and Project Identification.

## 1 DEFORRESTATION

As we know that deforestation is cutting down of trees, which is very much evident in the surrounding society around our school. This is brought by mass cutting down of trees for domestic uses such as burning of firewood and burning of the charcoal which has effects on the land that is it makes the land unproductive because the micro-organisms which decomposes to the soil to form nutrients used by crops in producing yields are burned.

Also burning of the charcoal produces smoke which interferes with the ozone layer hence leading to low rainfall standards. If the people in the surrounding society are educated about grafting of fruit trees they will be able to plant fruit trees which will provide land covers hence replacing the trees that has been cut in the previous year. After planting the fruit trees the people in the surrounding society will be able to generate income through selling of grafted seedlings and fruit from the grafted fruit trees thus minimising deforestation.

Then the income generated after selling the fruits and seedling from the grafted fruit trees will be used in activities such as Paying school fees for the youths in the community loitering freely hence making them committed into academics.

P

## UNEMPLOYMENT

unemployment is a situation where people have no job opportunities which is the most harmful thing that has increased in the surrounding society around our school. Where most of the people in the surrounding society are unemployed and this is because of illiteracy and high rate of school drop-out that has lead to increase in crimes such as stealing, committing murder, immorality and low living standards.

If the knowledge of grafting is introduced to the people in the surrounding society around our school such that they will be able to graft fruit trees which will make be occupied by a constructive income through selling of the grafted fruits and seedlings from the grafted fruit trees.

After selling the grafted seedlings and fruits they will get income to sustain their families in their daily living life. This can be done by advising people in the surrounding society to plant more grafted fruit trees in their farm and maintain the fruit trees by digging the unwanted weeds from the farm applying fertilisers for faster growth and harvest good grafted fruits; using this method of grafting fruit trees we will reduce the number of people who are loitering around in the rural and urban areas searching for jobs.

## 3

NUTRITION OF THE CHILDREN AND HYGIENE

When we visited different home from the surrounding Society we discovered that a condition of the children was not good and suffering from malnutrition. This is a condition whereby children lack a balanced diet and they are even unhealthy. This is because their parents were unable to provide a balanced diet. If the people in the Society are educated about grafting they will be able to generate income which will enable them buy balanced diet through selling of the grafted fruit from fruit trees.

The income generated will be used to buy food which will provide balanced diet more so to the children and their families. On Poos hygiene we visited the nearby hospital and after conducting oral interviews on the doctors about the health records of the sick people in the society.

With the knowledge of grafting fruit trees as communicated earlier in my presentation the generated income will assist the community at large to improve their hygiene hence this will reduce malnutrition and encourage a healthy life.

## 4. POOR ROADS.

It is also observed that feeder roads in our surrounding society are very poor. It has lead to poor transport more so during rainy seasons. During rainy seasons perishable fruits like mangoes, vegetables and orange are likely to rot due to delation caused by the roads. Also during rainy seasons mud roads prone to occur accidents because they are slippery and this may cause death of the drivers or damage of the fruits.

During dry seasons, roads are dusty. The dust tends to make the drivers suffer from fevers or chest pain and can also lead to breathing problems of which the time he takes to heal he could have used it to transport more fruits to the market. It creates high market demands of the fruits in the market. To save this problem, people are educated on grafting of fruit trees, because they need to use these roads when transporting those grafted fruits and seedlings.

Then after selling the fruits and seedlings they will be able to generate income. The income generated after selling the fruits and seedlings from grafted fruit trees they will be forced to make roads more passable for all weather conditions thus the problem of poor roads is solved.

## 5

## EARLY MARRIAGES.

Early marriages is another problem that is affecting the society around our school. This has led to generation of poverty that is highly affecting the society at large through the knowledge of grafting, Parents can generate income through selling the grafted income can be used to pay school fees for their children thus containing them in school and minimising the early marriages.

Early marriages are also encouraged by lack of basic needs for the girls. This make them to see marriage as a solution for their problems. This makes them to be married at a very young age and this also increase the birth rate in the community at large numbers. If the parents are educated about grafting of fruit trees this will enable them to sell fruit trees this will enable them to sell fruits and feeding from fruit trees thus making them generate income which will be used to paying school fees, satisfy their basic needs and provide for them in everything thus making all the youths be continued in school hence reducing early marriage and also reducing high birth rate in the community.

## 6

HIGH DEATH RATES

We also discovered that around the school society we noted that water is a major challenge. This is due to lack of trees in the society which helps in bringing rain. The trees have been cut down for no major reason. Due to lack of water the livestock and people are dying as there is no moist land to plant crops. Searching for water which has led to pain and suffering of the people in the society.

If the people in the society are educated about the grafting of fruit trees they will be able to generate income through the selling of the grafted fruits and seedlings from the planted fruit trees. The planted fruit trees will provide land cover which will help in bring rainfall in the society hence this will reduce scarcity of water. Then the income generated will help them supply water in the whole society hence this will reduce water scarcity and lead people to live a better life in society.

## SCARCITY OF WATER

As we toured around the school society we noted that water is a major challenge. This is due to lack of trees in the society which helps in bringing rain. The trees have been cut down for no major reason due to lack of water. The livestock and also people are dying as there is no moist land to plant crops. People in the society walk for long distances searching for water which has led to pain and suffering of the people in the society.

If the people in the society are educated about the grafting of fruit trees they will be able to generate income through the selling of the grafted fruits and seedlings from the planted fruit trees. The planted fruit trees will provide land cover which will help in bring rainfall in the society hence this will reduce scarcity of water. Then the income generated will help them supply water in the whole society hence this will reduce water scarcity and lead people to live a better life in society.

# 8

## HIGH BIRTH RATES

Due to School drop out many youths have involved themselves to early intimate relationship and also involved themselves into early marriages which has lead to high birth rate in the society in every day childrens are born in large numbers of which has encouraged Poverty in Society as the numbers of educated people is very low hence this leads to lack of knowledge of giving birth to few kids.

For example lack of food, shelter, clothes and money to pay school fees for their born kids and also the money to take care of their born kids. so you find in the society young girls are engaged in marriage so that they can get the basic needs they want.

If the people in society around our school, are educated about the grafting of fruit trees they will be able to plant the fruit trees which will enable them generate income through selling of the seedling and fruits from fruit trees. The income generated will help them to pay school fees for their children hence preventing large numbers of school dropout hence minimizing early engagement and marriages which will reduce birth rates in the society and large numbers of young children in the society will settle.

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## IDLENESS.

A lot of people are idle in the community surrounding our school this is affecting mostly the youths for example when we visited the market, place during the day we found many groups of young boys and girls doing nothing, idleness can also lead to committing crimes such as stealing where they can sit down and plan on how they can break into banks markets or even supermarkets ~~to~~ take some items.

So that they can fulfill their needs and if they are caught stealing they can be stoned to death hence leading to poor population of youths in the society idleness has also led to drug abuse which has resulted to drug addiction for example at the market place there were many young boys who looked like mad people but in their real sense it's just the effects of the drugs they ~~take~~ fake.

We have decided that by educating the youths; about grafting of fruits trees they will have something to do and so occupied during the day thus the numbers of idlers in the market places and at home will reduce. Number of crimes in the society will reduce hence reducing drugs and drug abuse.

# 10

## POOR HEALTH

As we toured around the surrounding society around our school we discovered that many people suffered from poor health where this is a major problem because of the poor living standards such that they do not have work which can enable them generate income. Since they are jobless they are unable to buy balanced diet for their families, they will be also unable to take care of their sick people. Where this has led to reduced or low human labours.

Also as we visited the market near the school we noticed that a lot of sewage were unclean and stagnant water which made a lot of people to suffer from cholera also there were many children suffering from malaria and other related diseases because of the poor living conditions such that most of them lacked money to go to hospital or money to buy medicine. And others also can't afford a balanced diet.

Through the knowledge of grafting fruit trees the society will be able to generate income through selling of the grafted seedlings and grafted fruits from fruit trees whose the income generated will be used to take care of health of their beloved ones and used to clean all the markets and sewages to prevent spread of mosquito.

## 11 HIGH RATES OF SCHOOL DROPOUT.

One of the things that are pulling back the growth of the surrounding society is the school dropouts. This is where by young boys and girls stop going to school before completing the primary, secondary or even tertiary education. This is caused by poor living standards which limit the parents from paying school fees for their sons and daughters thus unable to sustain them in school.

This has lead to generational poverty in the surrounding society to be high. Through the knowledge of grafting fruit seedlings the people will be able to sell grafted seedling and the produced fruits. the generated income can be used to pay school fees for their children thus sustaining them in school.

Again the parents will be able to provide all the basic needs required by their children thus ~~minimising~~ minimising the number of school dropout in the society surrounding our school.

## 12 LOW AGRICULTURAL PRODUCE

low agricultural produce is a situation where the farm and livestock yields are reduced due to weather and climatic conditions such as low rainfall standards and job opportunities.

Many people in the society suffer as they walk for long distances looking for jobs and water. As many rivers are seasonal and they dry up immediately after the season ends.

As we visited the community around our school and conducted some oral interview we discovered that the agricultural produce of the society generally is very low. This has led to food shortage to the community. The people from urban centres have been relying on agriculture which is mostly practiced in rural areas.

If the people are educated about fruit trees they would be able to sell the grafted seedlings of fruit produced by fruit trees and the income generated can be used to buy food and sustain their families. It will also increase farm labour and hence increase food demands of the agricultural produce and help those in urban areas have enough food to deduce expenses.

## 13 SOIL CONSERVATION

As we moved around the surrounding society we discovered that soil erosion is highly pronounced. This is because of deforestation is practiced mostly in the society and lack of land to carry generally some of the common types of soil erosion.

in the society are; the splash erosion, rill erosion, gully erosion and sheet erosion. where the impact of water drops are directly on the soil particles or on thin water surfaces. It strikes on bare soil hence it disperses the soil particles by detaching and transferring the splashes and leaving the land crusted.

When the land is crusted it leads to low agricultural produce where people can suffer from starvation as the community has no good and fertile soil to plant. though the knowledge of grafting people in the society will be able to plant fruit trees which will provide land cover as a result of conserving. The fruit tree planted whose root will help to hold the soil particles together thus minimising soil erosion also the remains of the fruit trees like leaves decomposes thus adding fertility to the soil and conserving the soil which will increase the growth of agricultural produce.

### 13. SEXUAL IMMORALITY

After visiting the community around our school we conducted oral interviews which made us know that sexual immorality is commonly practiced in the society. This has been caused by high rate of school dropout and low living standards that is when

People are raped or commit adultery the easily get pre-mature or early pregnancies which make the dropout of school.

This has led to high death rates as people suffer from sexual transmitted disease such as gonorrhea HIV AIDS and many others and if people are educated about grafting they will be able to sell fruit trees and selling to generate income the income generated will be used by people in the community to get their basic needs without engaging in sexual immorality and harassment.

## 15. HIGH CRIME RATES

When we visited the community around our school we noticed that many idlers have engaged themselves into drug abuse which has led to more occurrence of crimes in the society. This has caused insecurity in the community because when a farmer has planted many items and are already ripe the idlers can plan on how to steal the farm produce hence leading to starvation and lack of wealth to most farmers.

Also when many people in the society have lost their jobs and others don't have and they have been looking job vacancies

and yet there is no subs they can plan on how to go to a certain village, house shop supermarket and also groceries to steal the items so that they can sustain and satisfy their needs and the needs of their families.

If the people in the society are equipped with the knowledge of grafting fruit trees they will be able to generate by selling the grafted seedlings and fruits from the fruit trees. This will provide job's for those who don't have and then to provide basic needs for their families using legal ways hence minimising high crime rates in society and to maintain peace.

## 16. Low living standards.

low living standards can be brought up by lack of food clothing basic diets and others. After touring the society around our school we discovered that many people have low living standards it has led to depression and isolation.

Depression is that where one is stressed beyond control and isolation is the state where one likes living alone without interacting with other people they have stress because they don't have money to buy food or basic diets for these children some don't have even money to pay school fees so you find that there

children have been sent a way to bring money and the parents don't have the money. The parent may have the stress.

Through the knowledge of agriculture the people in the society will be able to sell fruits and seedlings from fruit trees to generate income. The income generated will be used to improve their living standards and satisfy their needs, like paying school fees and that's how the problem of low living standards is solved.

### Group Discussion and Presentation:

We agreed to do grafting on avocado trees (pesta americana). We discussed the presentations in a group of four as shown below;

Ann Nwethya Makau 18807307003

Faith Mueni Mutiso 18807307010

Consolata Kanini Musyimi 18807307011

Grace Ikwanya Muthew 18807307025

- ✓ Deforestation
- ✓ Low living standards
- ✓ Unemployment
- ✓ Soil conservation
- ✓ Poor roads
- ✓ Sexual immorality
- ✓ Early marriages
- ✓ Crime rates
- ✓ Scarcity of water
- ✓ Malnutrition of children and hygiene
- ✓ High death rates
- ✓ High ratios of school dropouts.
- ✓ Idleness
- ✓ High birth rates
- ✓ Poor health
- ✓ Low agricultural produce

After discussing about grafting of avocado we discovered that the above problems were solved.

### GROUP PROJECT IDENTIFICATION

We identified out Project in a group of four as illustrated below;

| GROUP THREE |                          | INDEX          |
|-------------|--------------------------|----------------|
| NO          | NAME                     | INDEX          |
| 1           | Ann Mwethya Makau        | 18 307 307 003 |
| 2           | Faith Mueni Mutiso       | 18 307 307 010 |
| 3           | Consolata Kanini MuSyimi | 18 307 307 011 |
| 4           | Grace Wavinya Nethu      | 18 307 307 025 |

### Project

### Problem

### Implementation

Grafting is a technique of uniting two woody parts of different plants for continued growth as one plant.

The plant is cut into two pieces where the upper part is the scion and the lower part is the rootstock.

The scion has buds which develop into the future plant.

A successful union between scion and rootstock is called compatibility.

There was an elder man who came to give us directives on how to do grafting. Then we did it individually.

We used whip and side grafting where

Whip grafting means you graft using a plant whose scion and rootstock has the same diameter. A slant cutting is made using a sterilized scalpel. Then the parts are fitted together and wrapped with a grafting polythene paper.

Side grafting is where the stock had a large diameter than the scion then the same process is done on the side of a plant.

Problem and project identification - 33 mks

Group discussion and presentation - 36 mks

Group project poster - 5 mks

Project implementation - 42 mks

Reporting on progress - 20 mks

Project report - 20 mks