

Mazingira Bora



TIST

The International Small Group & Tree Planting Program
www.tist.org

English Version

An Environmental, Sustainable
Development and Community Forestry
Program.



Kagaene TIST Cluster meeting last month.

Inside:

What are you using in your tree nurseries in alternative to plastic polytubes? Page 2

TIST: Sustainable Development. Page 3

Small Group Techniques. Page 4

How to practice Conservation Farming. Page 5

Preparing Compost Manure - a natural fertilizer. Page 6



What are you using in your tree nurseries in alternative to plastic polytubes?

It's close to one year since the Government of Kenya banned the use of plastic bags. This ban affected the plastic polytubes used in tree nurseries to raise seedlings. While TIST supports this effort by the Government to rid off these harmful and hazardous plastic materials from the environment, we are concerned about the impact of this ban, specifically in the establishment of tree nurseries and generally in overall tree planting efforts.

This year, TIST farmers in Kenya have agreed on the goal of planting two (2) million new trees. To date, TIST Kenya has quantified 9,507,893 live trees. We want to reach 11 million trees by the end of March 2019.

Some of our farmers have devised creative ways to make alternative polytubes. Some methods are working well, while others need improvements. Some materials being used in making polytubes include:

- ✓ Used plastic bottles that are pierced on the sides. One bottle is cut into two halves and both used as polytube after piercing on the sides.
- ✓ Used grain and cement bags. They are sewed and made into sizeable polytubes.
- ✓ Use of banana leaves/backs. Farmers neatly make them into polytubes.
- ✓ Bundles of used newspapers. Again, they are neatly made but care must be taken when watering seedling so as not to wet them.

Please share this with your Small Group members, as well as your Cluster. Let us hear from you and your Clusters about what methods you are using as alternative to plastic polytubes. Please share it out in your meeting and share with the Cluster Servants.



Simple method of making natural pot bed using local material. It's low budget high result. Look for dry bananas leaves. Cut into pieces length 30cm width 15cm. Fold the length into 2.15cm each. Again fold the width 2 cm each side. Tie with banana rope to be stable. Put the soil. Water and plant seedling. Advantage - it can be reused, easy to make and protect the environment.



TIST: Sustainable Development.

Global Environmental Overview

Kenya does not exist in isolation from the rest of the world and having knowledge about world environmental problems can help to identify future risks to Kenya. It is important to look at the world's environmental problems and understand the negative effects on our environs.

Climate change

The burning of fossil fuels (coal, oil, natural gas) produces carbon dioxide. This traps heat in the atmosphere causing the earth's temperature to increase, polar ice caps start to melt and the sea level rises. This results in an increased risk of flooding and increasing temperatures, which have negative effects for agriculture in parts of the Africa continent and the world.

Air pollution

Poisonous fumes from industries and vehicles can cause respiratory problems to people. The fumes can dissolve in rainwater forming acid rain, which damages plants and buildings. Many cities have problems with smoke, where the pollution hangs over the city like low-lying clouds, or mist that reduces visibility and causes health problems.

Water pollution

Industry waste, sewage and chemical fertilizer waste from farmers can enter streams, rivers and oceans, polluting the world's water sources and causing harm to plants, animals and human health.

Decreasing biodiversity

Biodiversity means the total variety of all different plants and animal species.

Pollution and deforestation decreases the number of living species, with over 100 species becoming extinct each day. This reduces resources used for materials energy and medicine.

Desertification

When land loses all vegetation and the soil becomes dry and blows or washes away, land becomes less productive. This is also known as the 'spread of deserts', turning fields and pastures into barren wastelands encompassing many hectares of land areas, which are potentially at risk.

Hazardous Waste

Toxic and poisonous waste can come from factories using chemical or radioactive materials. The waste

harms all ecosystems through disasters, such as when a Union Carbide pesticide factory leaked chemicals in Bhopal, India, causing the factory to explode.

Acid Rain

Already mentioned the under air pollution, acid rain destroys forests and lakes especially in Europe and North America. When pollution dissolves in water it makes the rain acidic. Trees, plants, fish and even buildings are all affected.

Ozone Depletion

Certain chemicals like chlorofluorocarbons (CFC's) are used in products for refrigeration and other industrial processes, but are now found to destroy the ozone layer. The Ozone layer protects the earth from harmful sunrays known as ultra-violet rays (UV). When the chemicals destroy the ozone layer, increased levels of UV rays can reach the earth's surface and are harmful to human health causing skin cancer and other illnesses.

Urban Problems

Many towns and cities suffer from litter, air pollution, noise pollution, congestion and decreasing areas of countryside.

Resource Depletion

Increased energy and material requirements throughout the world are causing natural resources like oil, coal, minerals and forests to become depleted. This encourages competition for resources causing increased international conflict. Finding more resources for energy requirements will soon become a big problem unless alternative sources of energy are used like water, wind or solar energy instead of using finite resources of oil, coal and gas.

Ask the cluster participants these questions:

Does Kenya suffer the bad effect of some of these problems?

Does Kenya contribute toward or cause any of these problems?

As Kenya develops, which global environmental problems do you think will become worse?

Encourage your TIST clusters and other community members to plant more trees to minimize some of these climatically bad effects so our environment can be better!



Small Group Techniques.

Group interaction

What is the best way to arrange people during a small group meeting?

A small circle is the best. Don't have a table because it creates barriers between people. Don't have a chair and a large seat for the most important person. In TIST, we all sit the same way. We either all sit on the ground, or we all sit on chairs.

What do you do if more than twelve people want to join your group?

If there are more than twelve people interested in joining your group it is best to form a new group. The group can split in two, or three or four members of the original group form the core of the new group. This is better than one member trying to start a group alone. Remember to start using rotating leadership straight away.

What techniques can you use if the group energy is low?

Split up the group into pairs and get each pair to talk about the task. Dramas also help.

Sometimes stopping and each person saying something good that their group is doing can also motivate people again. Also, remember to keep the meeting from becoming too long. By having a co-leader who is keeping time, you can focus the group's energy to making sure the work gets done in the agreed upon time period.

Meeting Schedule

To manage time well, a Small Group should have a well-organized meeting schedule. This is important because it will help you keep focus on your agenda and the most important activities. It is also important because in TIST, we commit to work together for the long-term to grow and maintain our trees for the carbon market. We need to know our fellow Small Group members well, since each person's actions impact our whole group and all of TIST.

It is important, too, for your Small Group to have regular meetings, preferably once a week or once

in two weeks. This will give all members in your group an opportunity to strengthen your group and share and learn new ideas.

During your meeting, it is necessary to focus on important issues. Many TIST Small Groups have found the process below as a best practice for successful meetings:

Step I. Greetings and introductions for any new members (5 – 15 minutes):

Make sure everyone feels welcomed. Make it brief but let each person introduce him or herself.

Step II. Opening prayer (2 minutes):

A short word of prayer can help the group unite.

Step III. Songs (5 minutes):

These could be songs written by your group, or songs that encourage people such as religious songs.

Step IV. Agreement on task and time (5 minutes):

The leader explains what will be done in the meeting and the group members agree to do the task. The time spent on each task or discussion should be agreed, so that the co-leader can help keep the meeting on time.

Step V. Group work on tasks (1 hour):

Ideally, tasks should have been discussed at the end of the last meeting. Tasks might include sharing what each person has done to help TIST activities, sharing best practices, training on some subject of interest, and any other important issue that will help your Small Group to prosper.

Step VI. Kujengana (5 minutes):

Each group member makes one positive, specific statement to that week's leader about his or her observable leadership of the meeting. In addition, anyone may identify a gift seen in the leader.

Step VII. Closing prayer (2 minutes):



How to practice Conservation Farming.

After the harvest, do not burn the crop residues. Instead, leave them on the ground. The more residues left on the ground the better, because they enrich the soil, making it more fertile. A layer of crop residue around the bottom of trees and seedlings will help increase the amount of moisture in the soil which prevents trees from getting too dry. Remember that crop remainders can also be used for compost manure.

- Try to stop animals from grazing on the area. If they graze, there will be less crop remainders left covering the ground.
- Conservation farming holes have to be dug before the rains come. It is therefore vital to start digging them early.
- Mark out where you are going to dig your holes, and get a long piece of rope or string and squeeze bottle tops on to it 70cm apart. Stretch the rope across the width of your field. Each bottle top marks the centre of a hole and makes sure that the holes are correctly spaced out. Mark out the rows of holes using a hoe. Each row should be 90cm apart. Just mark out the rows and holes you think can be completed that day.
- On the same day as you mark a block of holes, dig the holes. The holes need to be oblong. They should be between 15cm wide, 35cm long and 15cm deep.
- When you are ready to plant the grain, it is important to put some very fertile soil into the holes to help the crop to be stronger. Take some manure and good topsoil and mix it together, or use compost manure. Fill the hole with the mixture up to 5cm from the surface. That space will help capture more rain.
- If you are planting maize, soak the seeds in some water for 6-7 hours before planting them. This speeds up germination and ensures that more will survive. When you plant the seeds, plant 4 seeds in the soil across the hole. Cover them with 2.5cm of the rich soil and manure mixture. After this, the soil in the hole should be about 2.5cm below the surface of the field. It should never be more than this. Clods (big lumps of soil) should always be broken up so that the soil makes good contact with the seed.
- If you are planting sorghum, plant 5-6 seeds at each end of the planting hole after a good shower of rain. Cover the seeds with 2.5 cm of the rich soil and manure mixture.
- The space at the top of the hole enables water to get to the plants when the rains come. Without this space the rain will just run off the land, taking a lot of the soil nutrients with it.
- Weed around the holes regularly and each year you will find there will be fewer and fewer weeds.
- Don't be discouraged! Digging the holes now will mean they are ready for this year and you will not have to dig them next year.



Preparing Compost Manure - a natural fertilizer.

Compost manure is a natural fertilizer that helps your crops grow. It is better than chemical fertilizer because it is natural, free, and will not damage crops and the environment as some chemical fertilizers can. There are many ways to make compost manure, but the following method has been useful in some areas. Ask your neighbors in your Cluster what has worked well for them.

Preparation of compost:

1. Choose an area for your compost pit measuring 4m by 4m.
2. Clean the area.
3. Dig a hole of diameter 3 - 4m and 1.5m deep.
4. Collect all the remains of the crops you have (e.g. leaves and stalks of maize, millet, beans) and cut these remains into small pieces.
5. Put these crop remains into the hole up to a depth of 0.5m.
6. Add 5 liters of ash.
7. Next add about 30cm (or as much as available) of animal dung (e.g. dung from pig, cow, goat or chicken).
8. Put another layer of crop leaves and stalks (0.5m).
9. Add another 5 liters of ash.
10. Repeat adding the leaves and stalks again until the hole is almost filled.
11. Finally add a layer of soil until the hole is filled.
12. While filling the hole with soil, put a long stick in the middle of the hole so it reaches the bottom.
13. Leave the compost pit for 90 days (3 months).
14. During this period use your dirty water to water the compost pit. For example, after cleaning your house or clothes, empty the used water over the compost pit. If you have animals, you can also pour animal urine over the pit.
15. This adds extra nitrogen to the compost.
16. Try to water the compost pit in this way every day, or whenever water is available.
17. After 90 days the manure will be ready.

Use the stick as a thermometer – when the compost is ready it should be hot and you may even see steam coming from the stick after you have removed it.

Use of compost:

When you have dug your holes for planting maize, millet or other crops, add one handful of your compost manure to each hole. Watch for the results!

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Kimereu Version

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Kagaene TIST Clusta wakiwa kwa mkutano wao mwezi uliopita.

Inside:

Nimbi ugutumira kiri nasari yaku kuuma maratasi makuregwa. Page 2

Witi na mbele bukumbika. Page 3

Njira cia ikundi bibinini: Gukaranira gwa gikundi. Page 4

Njira ya Urimi bubwega. Page 5

Kuthithia mboleo yaku gwengwa – fertilizer itiongeri into bia kuthithua ni muntu. Page 6



Nimbi ugutumira kiri nasari yaku kuuma maratasi makuregwa.

Riu ni mwaka uthirite kuuma maratasi ja nylon jakuregwa ni thirikali ya Kenya. Kuregwa guku ni gutwikite kigiria kiri uthondeki wa nasari jia miti. Ona kethirwa TIST ni ikugwatanira na thirikali kuregana na utumiri bwa maratasi jaja jakwinyangia riera, TIST ni igutegeera kuingwa guku, muno kiri kuthondeka nasari na uandi bwa miti.

Mwaka juju, arimi ba miti ba Kenya nibetikaniritie kuanda miti milioni 2 imweru. Mwaka nandi TIST Kenya ni itarite miti 9,507,893 na iri na mubango jwa gukinyia miti 11 million mbere ya March 2019.

Arimi bamwe nibathuganitie njira mwanya jia kuthondeka miuko ya kuumithia miti. Njira imwe ni igwiita bwega na jiingi ni ikwenda kuthuganirua nkuruki. Njira imwe iria igutumirua ni iji:

- ✓ Cuba jia plastic iria ituritwe miena. Cuba iji kugitanwa maita jairi na gutumirwa ja muuko jwa miti
- ✓ Miuko ya irio cia nyomoo na simiti. Miuko iji irigitanua na gutuumirwa ja miuko ya miti kulingana na kithimi o kiria ukenda.
- ✓ Utumiri bwa mathangu ja marigu. mathangu ja marigu kuthondekwa bweega ja kamuuko.
- ✓ Maratasi ja ngatheti. ngatheti iji irithondekwa bweega na umenyeri bu nene kagiita ka gwikira ruuji.

Ntumiiri iji ni imenyithue ikundi bi nini na nkinya Clusters. Ikundi na Clusters ni ikurombwa imenyithanie njira jiingi iria bagutumira kuthondeka nasari gukurukira Cluster Servant.



Njira imputhu ya kuthondeka muuko jwa miti ugutumagira into jiina rahisi kuoneka. Ni njira ina matumiri ma nini na mpumi inene. Ceria mathangu ja marigu ja maumu. Gitania na icunji cia 30cm na 15cm. Kunja mwena u muraja 2.5cm. Ooga na murigi jwa irigu nikenda kagwatane bweega. Ikira muthetu, ruuji na uande muti untu bwa bata ni ati no gatumirwe maita ja maingi, kuthondeka gutina inya na ni gakumenyeera riera.



Witi na mbele bukumbika.

Gutegera mazingira ndene ya nthiguru yonthe.

Nthiguru ya Kenya itithagirwa iri antu amwe yonka kuraja na nthiguru ingi na kwithira irina umenyo bwegie thina cia nthiguru yonthe ciegie naria kuthiurukite nogutethie kwonera thina iria cikwenda kwija Kenya kuraja. Burina bata gutega thina cia naria kuthiurukite na kwelewa mantu jamathuku kiri naria gututhiurukite jaria jejanagia na thina iji.

Kugaruka kwa rera.

Kuithua kwa maguta (maguta ja maiga, maguta jongwa na gasi ya gintwire) nikurita ruugo rwa kaboni. Ruru nirugwatagia kirutira ndene ya nthiguru na gutuma murutira jwingia, mitwe ya irima ya nkamia kwambiria gukeruka na ruuji ndene ya iria kwongereka. Jaja nijaongagira kuigara kwa ruuji rwa mbura na kwongera murutira, mantu jaria jaretaga thina kiri urimi ndene ya Afrika na nthiguru yonthe.

Kuthukua kwa ruugo.

Toi cirina sumu kuuma kiri kambuni cia kuthithia into na ngari noirete thina cia gukucia miruki kiri antu. Toi iji nocitonye ruujine rwangai na kuthithia ngai ya acidi iria ithukagia imera na nyomba. Tauni inyingi cirina thina ya toi niuntu niitagia iguru igakara ta matu jamarito kana ta nduume iria itumaga antu baremwa kwona kuraja na iria iretaga thina cia mwili.

Kuthukua kwa ruuji.

Ruuko kuumania na factory cia kambuni na ruuko na fertilizer kuuma kiri arimi norutonye nduujine na iriene na kwou rukathukia biumo bia ruuji bia nthiguru yonthe na kugitaria imera, antu na thiria ya antu.

Kunyiiya mithemba ya imera na nyomoo iria igukaraniria.

Biodiversity ni mithemba yonthe mwanya ya imera na nyomoo.

Kuthukia na kugiita miitu nikunyiagia mithemba ya biumbe biria biri moyo na gutuma nkuruki ya mithemba igana mwanya ithira buru nthigurune o ntuku o ntuku. Bubu nibunyiagia into biria bitumagirwa kuruga na ndawa.

Gutamba kwa uumo.

Riria muunda jwathia imera na muthetu jwooma na jwakamatwa, muunda nijunyiagia unoru. Gutamba guku kwa uumo nikugaruraga miunda na antu a kuriithia gukaa antu guticiara kinya mbi na nokujukie hectare inyingi cia munda, juria juri akui.

Ruuko ruria rugitaragia na njira inene.

Ruuko rumba kwajithia kana rurina sumu kuuma kiri factory iria igutumira chemical kana into bingi biria bitibui kiri thiria ya mwiri. Ruuko ruru nirugitaragia into bionthe biria biri moyo gukurukira mantu jaria jatieteretwe, mung'unano, riria factory ya kiama ya kuthithia ndawa ya iria yeeturire chemical iji naria Bhopal ndene ya India, factory niyalipukire.

Ngai ya acidi.

Nigwetetwe au iguru kiri kuthukia ruugo, ngai ya acidi nigitaragia miitu na nduui mono ndene ya Europe na North America. Riria ruuko ruru rwatonya ruujine na rwatuma ngai igia acidi, miti imera, makuyu na kinya miako nigitaragua.

Kuthiria nkuniki ya ozone.

Chemical imwe ja CFC nitumagirwa kiri into biria bitumagirwa nikenda into biungwa gwika igita riraja bitirathuka na kiri kuthithia into bingi, indi nandi nimenyekene ati nicithukagia nkuniki iu ya Ozone. Nkuniki iji niithaga nthiguru kuumania na miale ya riuu iria igitaragia iria itagwa ultra-violet rays (UV). Riria chemical iji ciathukia nkuniki iji, riuu ririthuku riu UV nirikinyagira nthiguru na rikagitaria thiria ya mwili ya antu na gutuma bajua ni cancer ya ngozi na mbajua ingi.

Thina cia tauni.

Tauni inyingi cira thina cia ruuko, kuthukua kwa ruugo, gituma, kwingia gwa antu na ngari na kunyia kwa naria gutina nyomba cia biashara.

Kuthirua kwa into bia gutumira.

Kwongereka gwa utumiri bwa maguta na nkuu na into bingi nthigurune yonthe ja maguta, maguta ja maiga, na miitu no gutume into bibi bithire. Untu bubu nibwongagira gushindanira into bibi na kwou ndua cia nthiguru ikaingia. Gucua into bibi bia gutumira akui mono gukareta thina mono tiga aki into bingi bigatumirwa antua bibi, into bibi ni ja ruuji, ruugo kana nuclear antu a gutumira biria biumba kuthira ta maguta, maguta ja maiga na ngasi.

Aritani, urieni amemba ba cluster biuria bibi:

Kenya nionaga mantu jamathuku jaria jaumanagia na imwe cia thina iji?

Kenya nionagagira kana nitumaga kugia imwe cia thina iji?

O uria Kenya igwita na mbele, ni thina iriku cia nthiguru yonthe ukuthugania igeta ikiingiaga nkuruki?

Ikira inya cluster cia TIST na amemba bangi ba ntuura kuanda miti ingi imingi nikenda thina imwe cia rera cinyia nikenda naria gututhiurukite kuthongoma nkuruki!



Njira cia ikundi bibinini: Gukaranira gwa gikundi.

a) Ni njira iriku iri injega buru ya kubangania antu mucemanione jwa gikundi gikinini?

Kithiururi gikinini ni njira iria njega buru. Gukethirwa kurina metha niuntu nitumaga gukagia kigitaria gati gati ka antu. Gukethirwa kurina giti kana giti gikinene kia muntu uria urina gitio kiria kinene buru. Ndene ya TIST, twinthe tukaraga nthi na njira imwe. Twinthe tukaraga nthi muthetune kana tugakarira iti

b) Niatia buumba kuthithia kethira antu nkuruki ya ikumi na bairi ibakwenda gutonya gikundine kienu?

Kethira kurina antu nkuruki ya ikumi na bairi baria bakwenda gutonya gikundine kienu, ni bwega nkuruki kwambiria gikundi gikieru. Gikundi nokigaane jairi, kana amemba bathatu kana banna ba gikundi kiu gikuru baambie gikundi gikieru. Iji ni njira injega nkuruki ya mumemba umwe kugeria kwambiria gikundi wenka. Ririkana kwambiria utongeria bwa kithiuruko orio.

c) Ni njira iriku umbu gutumira kethira inya ya gikundi iri nthiguru?

Gaana gikundi kie antu bairi bairi na antu bau bairi baririe ngugi iria irio. Matinda kinya jo nijatethagia. Rimwe na rimwe kurungamithia na kuuria o muntu auge gintu kimwe gikiega kiria gikundi kienu gikuthithia o gutethia gwekira antu motisha ingi. Ririkana kinya kumenyeera ati mucemanio jutarea mono. Na njira ya kwithirwa kurina muthetheria wa mutongeria wa gwika mathaa, bukomba kwerekeria inya ya gikundi kiri kumenyeera ati ngugi ikathithika ndene ya mathaa jaria ibangiri.

Mubango jwa mucemanio.

Kenda mathaa jatumika bwega, gikundi gikinini nikibati kwithirwa kiri na mubango jubangi bwega jwa gwitithia mucemanio. Bubu burina bata niuntu bugatetheria kumenyeera ati mathuganio nijerekerete mantu jaria jabangiri na mantu jaria jarina bata nkuruki. Kinya burina bata niuntu ndene ya TIST, nituciritahira gwitaniria ngugi amwe kenda igitene riraja tukura na twika miti yetu bwega niuntu bwa thoko ya ruugo. Nitugwitia kumenya amemba ba gikundi gietu gikinini bwega niuntu mathithio ja o muntu nijathithagia mwanya kiri gikundi na TIST yonthe.

Kairi burina bata gikundi giaku kinini gwita micemanio ya igita nyuma ya igita, mono o kiumia kana rimwe ndene ya biumia biiri. Bubu bukaa amemba bonthe ndene ya gikundi giaku kanya ga gwikira gikundi inya na kugaana na kuthoma mantu jameru.

Mucemanione, kurina bata kwerekeria mathuganio mantune jaria jarina bata nkuruki. Ikundi bibinini bibingi bia TIST nibionete njira iji iri mwitire juria mwega buru kiri kuthithia micemanio ya bata:

Itagaria ria mbele. Gukethania na gucimenyathia kwa amemba baaberu (Dagika ithano gwita ikumi na ithano): Menyeera ati muntu wonthe nakwigua ang'anirite. Dagika inkai itumirwe indi umenye ati o muntu nakwimenyithania wengwa.

Itagaria ria jairi. Iromba ria kwambiria (Dagika ijiri): Iromba ririkui noritethia kureta gikundi amwe.

Itagaria ria jathatu. Ndwimbo (Dagika ithano): Iji nociithirwe ciandiki ni gikundi kienu kana ndwimbo cia gwikira antu inya ta ndwimbo cia kidini.

Itagaria ria janna. Gwitikaniria ngugi na mathaa (Dagika ithano): Mutongeria naugaga jaria jakathithua mucemanione na amemba ba gikundi bagetikaniria kurita ngugi iu. Mathaa jaria jagatumika kuthithia o ngugi kana kwaniria nijabati gwitikanirua nikenda mutetheria wa mutongeria agatetheria gwika mathaa ja mucemanio.

Itagaria ria jatano. Gikundi gikarita ngugi iria irio (Ithaa rimwe): Kiri njira iria bwega buru, ngugi nicibati kwithirwa ciaariritue mucemanio jugikinya muthia. Ngugi nociithirwe ciri amwe na kugaana jaria o muntu athithitie gutethia mantu ja TIST, kugaana mitire iria miega buru, kuritana kwegie mantu jaria antu bakwenda na gintu kingi kiria kirina bata na kiria gigatethia gikundi giaku gwita na mbele.

Itagaria ria jatantatu. Gwakana (Dagika ithano): O mumemba wa gikundi auge gintu kimwe gikiega kiri mutongeria wa kiumia kiu kwegie utongeria buria bwonekete ndene ya mucemanio. Kwongera, muntu omba kuuga kiewa kiria oonete ndene ya mutongeria ou.

Itagaria ria mugwanja. Iromba ria kuthiria (Dagika ijiri):



Njira ya Urimi bubwega.

Warikia guketha utibati kuithia matigari ja imera. Antu a kuithia, jatige nathi. Wajatiga jamaingi nathi nibwega nkuruki niuntu jakanoria muthetu nikenda jugia maciara nkuruki. Matigari ja imera akui na miti iminene na iminene jagatethia kwongera ruuji muthetune untu buria bumenyagiira miti itiume. Rikana Matigari ja imera nojatumurwe kuthithia kinya mboleo.

- Geria kumenyeera nyomoo itareta kuriao niuntu ciarea ni imera bibikai bigatigwa nthiguru.
- Marinya ja CF nijabati kwinjwa mbele ya kuura na kurina bata kwambiria kujeenja kurio.
- Maka aria ukeenja marinya jaku, riu ucue murigi na uoge nkuniki cia cuba citarenie na centimita mirongo mugwanja. Kucia murigi kugitania munda jwaku nikenda o nkuniki ithirwa iri gati gati ga kirinya na ikamenyeera ati marinya jaku nijatarenie uria jabati. Tumira gicembe kumaka milaini ya marinya nikenda o milaini ithira itarenie na centimeta mirongo kenda. Maka milaini na marinya jaria ukomba kuthiria ntuku iu.
- O ntuku iu ukamaka marinya, jeenje jarina nteere inya intamburuku. Nijabati kwithirwa jarina warie bwa centimita ikumi na ithano, uraja bwa centimita mirongo ithatu na ithano na kwinama centimita ikumi na ithano.
- Riria waa tayari kuanda mbeu, burina bata gwikira muthetu jumunoru nkuruki ndene ya marinya nikenda jutethia gwikira imera biaku

inya. Ungania na mboleo inkai na muthetu jwa iguru jumuthongi, kethira urina lime kana fertilizer, ikira ndene kirinyene na ujurie o kirinya na muunganio juju mwaka gutigare centimita ithano.

- Kethira urianda mpempe, riinda mbeu ruujine mathaa jatantatu kana mugwanja mbele ya kuanda. Bubu nibutumaga ikauma ntuti na inyingi cikomba gutura. Riria ukuanda mbeu, anda mpindi inya ndene ya muthetu kugitania kirinya na wikunikire na centimita ijiri na nusu cia muthetu jumunoru juungenue na mboleo. Muthetu ndene ya kiriinya jubati kwithirwa jutigeria centimita ijiri na nusu kirinya kiujura. Ithumbwa bibiumu bia muthetu nibibati kuunangwa rionthe nikenda muthetu jukinyira mbeu bwega.
- Kethira ni mwere ukuanda, anda mpindi ithano kana ithanthatu kiri o muthia jwa kirinya gia kuanda kwarikia kuura bwega na ukunike mpindi na centimita ijiri na nusu cia muthetu jumunoru jungenue na mboleo.
- Kanya kau kari iguru kirinyene nigatethagia ruuji gukinyira imera riria kwaura. Gutina kanya kau, ruuji rwa ngai rugakamatwa iguru ria muthetu na rukamate unoru bubwingi bwa muthetu.
- Rimira kuthiuruka kirinya o igita. O mwaka gukethirwa kurina maria jamakai na jamakai nkuruki.
- Ukagituka moyo! Kwinja marinya nandi nikuuga jakethirwa jari tayari gutumirwa mwaka juju na utitia kwinja kairi mwaka jou jungi.



Kuthithia mboleo yaku gwengwa – fertilizer itiongeri into bia kuthithua ni muntu.

Mboleo ya kuthithia na imera ni fertilizer ya kuumania na into bitina ugwati ya gutethia imera biaku bikura bwega. Ni injega nkuruki ya fertilizer cia nduka niuntu icithithitie yongwa na itina ugwati kiri imera na kiri naria kuthiurukite. Kurina njira inyingi cia kuthithia mboleo, indi njira iji ithingatite nitethetie ndene ya guntu kumwe. Uria muturi waku ndene ya cluster yaku jaria jabatethetie nkuruki.

Kuthithia mboleo:

- 1) Taara antu aria ukeenja kirinya giaku kia warie bwa mita inya na uraja bwa mita inya.
- 2) Theria antu au
- 3) Inja kirinya kirina warie bwa mita ithatu gwita inya na mita imwe na nusu kwinama.
- 4) Uthurania matigari ja imera biaku jaria urinajo na ugitange tue tunini. (mung'uanano mathangu na mati ja mpempe, miere na ming'au)
- 5) Ikira matigari jaja kirinyene mwanka gitigare nusu mita.
- 6) Ongeera lita ithano cia muju
- 7) Riu wongere centimita mirongo ithatu (kana o iria ikwoneka) cia mburi kana nguku).
- 8) Ongeru matigari ja imera nusu mita
- 9) Ikira lita ingi ithano cia muju
- 10) Ongeru matigari ja imera kairi mwanka kirinya kiende kuujura
- 11) Muthia, ikira muthetu mwanka kirinya kiujure
- 12) Ukiujuria kirinya na muthetu, tonyithia muti jumuraja gatigati ga kirinya mwanka jukinye nthiguru buru.
- 13) Tigana na kirinya giki ntuku mirongo kenda (mieri ithatu)
- 14) Igitene riri tumira ruuji rwaku rwa ruko gwikira boleo. Mung'uanano, warikia kuthambia nyomba kana nguo ciaku, ituura ruuji ruru ugutumagira kirinyene. Kethira urina ndithia ituura maumago jacio iguru ria kirinya.
- 15) Untu bubu nibwongagira nitrogen kiri mboleo yaku
- 16) Geria wikagire kirinya kiu ruuji na njira iji ntuku cionthe kana oriria ruuji rurio.
- 17) Ntuku mirongo kenda ciathira, mboleo ikethira iri tayari.

Tumira muti kuthima mwanki – mboleo yayia no mwanka ithirwe irina mwanki mwanka toi yoneke ikiumaga mutine wajurita ku.

Utumiri bwa mboleo:

Warikia kwinja marinya jaku ja kuanda mpempe, muya na imera bingi, ongeru nkundi ya mboleo yaku kiri o kirinya. Etera wone uria gugakara!

Mazingira Bora



TIST

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www.tist.org

Kikuyu Version

An Environmental, Sustainable
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Program.



Kagaene TIST Clusta mari mucemano-ini wao mweri muthiru.

Thiini wa ngathiti:

Nikii urathira nathari-ini yaku kuuma mihuko ya nylon yaheo mikana? Page 2

Mogaruruku mangihoteteka. Page 3

Maundu ma ikundi: Uikarania wa ikundi. Page 4

Uria wagiriirwo ni gwika riria ugutumira urimwi mwega wa Conservation Farming. Page 5

Kuhariria thumu wa mborera – bataraita ya kimerera. Page 6



Nikii urathira nathari-ini yaku kuuma mihuko ya nylon yaheo mikana?

Ni kahinda ka mwaka umwe kuuma riria Thirikari ya Kenya yahuranire na uhuthiri wa maratathi ma nylon. Mukana uyu niwahotomirie maratathi maria arimi a miti mahuthagira hari nathari ciao. Onagutuika TIST niranyita thirikari mbaru hari mbara ya kuhurana na maratathi ma nylon maria makoretwo magithukia maria maturigiciirie. No twena kieha ati mukana uyu niutumite uhandi wa miti na kuhariria nathari uhuuke.

Mwaka uyu, arimi a TIST mena itanya tia kuhanda miti milioni igiri (2). Gukinyanagia riu, twina miti 9,507,893 iri muoya na mitare. Turenda gukinyia million 11 gugikinyia mweri wa gagatu 2019.

Arimi amwe nimakoretwo makihuthira nira ngurani hari guthondeka tumihuko twa gwikira miti. Njira imwe ici ni iraruta wira wega na iria ingi ni ikwenda kugacirio. Nira imwe iratumika nita;

- ✓ Kuhuthira mikembe ya plastic iria itumikite. Ukurenga cuba maita mere na utumire icunji ciere. Niwega uture turima miena.
- ✓ Kuhithira makonia na mihuko ya thimiti. Utinie wega na utume timihuko twaku.
- ✓ Kuhuthira migoto ya marigu.
- ✓ No utumire gukunja kia ngathiti. Na umenyerere riria ukuhe maai, umenyerere ndukaihugie ngathiti.

Niwega waranirie na Gakundi gaku hamwe na Cluster yaku nira iria ingi urathuthira kana oo marahuthira. Niwega utumenyithie kuhitukira Cluster servant waku.



Njira huthu ya guthondeka polytube ya unduire ugutumira indo iria turinachio. Ni maumirira ma iguru ya bajeti ya thi. Etha macoya momu na magoto. Tinangia tuchunji tunini uraihu wa 30cm warie wa 15cm. Oha uraihu wa 2.15cm o kamwe. Oha ringi warie wa 2cm o mwena. Ohania na mugoto manyitane wega. Ikira tiri. Mai na kuhanda mbegu. Fainda - no mahuthike ringi, ni huthu guthondeka na kugitira maria maturigiciirie.



Mogaruruku mangihoteteka.

Kurora maria maturigiciirie na thi na njira nguhi.

Kenya ndikoragwo keheri-ini kuma kuri thi yothe na riria twagia na umenyo wa mathina ma maria maturigiciirie notuhote kumenya ugwati uria utung;etheire turi Kenya. Niundu wa bata kurora mathina ma maria maturigiciirie thi yothe na tutaokwo ni mathina maria mangirehwo kuri ithui.

Ugaruruku wa riera.

Gucinwo kwa indo cia tene ta (coal, maguta na natural gas) nikuingihagia carbon dioxide. Njira ino nihitagiriria urugari riera-ini na kwa uguo gutuma thi kwongerereke urugari. Barafu cia riera-ini cikambiriria gutwekuka na maai ma iria makambatira. Maundu maya nimatumaga kugie na miiyuro ya maai na kwongerera riera njira iria ikoragwo na mathina ma kuhotomia urimi na makiria icigo cia Africa thiini wa thi..

Uthukia wa riera.

Ndogo njuru na iri na giko kuma iganda-ni o hamwe na ngari nocirehe thina wa mahuri kuri andu. Ndogo ino riria yathii riera-ini niithondekaga mbura iri na acid, iria ithukagia mimera na miako. Cities nyingi nicioetwo na thina wa ndogo kuria ndogo ino iinyitagirira na igacuha ta matu kana thatu na andu makaga gukorwo makiona wega ohamwe na gukorwo na ugima muuru wa miiri.

Uthukia wa maai.

Giko kia iganda, giko kia cioro ohamwe na fertilizer kma kuri arimi ncingire njuui-ini na iria-ini na cithukie maai na mimera ohamwe na indo iria ckaraga maai-ini na ningi ugima wa miiri ya andu.

Kunyahia biodiversity.

biodiversity nikuuga mithemba yothe ya miti na ya nyamu.

Uthukia na utemi wa miti niunyihagia muigana wa mithemba ya indo iria cikoragwo thi na igathira na muigana wa 100 o muthenya. Njira ino niunyihagia indo iria ithondekaga hinya na dawa.

Desertification.

rira mugunda wanina miti na mimera yothe na tiiri waniara biu, mugunda ucio niunyihagia maciaro maguo. Njira ino ningi niitagwo "spread of desert" kugarura migunda ituike mihinju na gutuma migunda miingi muno igie na mogwati maingi.

Giko kiri na ugwati

giko kiria gikoragwo na poison nokiume thiini wa factories iriri cihuthagira chemical na indo iria cikoragwo ciri radioactive. Giko giki nigithukagia ecosystems kuhitukira ugwati ta wa riria Union Carbade kiganda kiria githondekaga dawa cia tutambi kiaunithiirie chemicals thiini wa Bhopal, India na gutuma kigana kiu gituthuke.

Mbua iri na acid.

Kuri maundu maria magwetagwo ma uthukia wa riera, mbura ya acid niithukagia mititu na iria na muno Europe na North America. Riria giko kiaingira maai-ini nigitumaga mbura igie na acid. Miti, mimera, thamaki na miako cigakorwo ugwati-ini.

Ozone Depletion.

Chemicals ingi ta chlorofluorocarbons (CFC's) nichuthagirwo hari kuhehia na njira ingi thiini wa iganda. No riu nionekeke nocitukie layer ya ozone. Layer ya ozne igitagira thi kumana na miruri ya riu iria itagwo Ultra Violet rays (UV). Riria chemical yathukia ozone, muigana wa UV niukinyafira thi na nourehe murimu wa cancer ya ngothi na mirimu ingi miingi.

Mathina ma town.

matown maingi nimakoragwo na thina wa giko, guthuka kwa riera, inegene na muhinyano wa andu na kunyahia andu ichagi-ini.

Kunyahia kwa indo cia bata.

Kuongoerereka kwa ma-hinya ma ai ma kinduire thiini wa thi nigutumite mahinya ma ki-nduire ta maguta, coal, minerals na mititu cinyihe. Njira ino niiratumama macindano ma indo ici cia bata makorwo iguru thi yothe. Kuhota kuona indo ici ci kinduire niugukorwo uri thina munene muno gutangikorwo na njira ingi ta maai, ruhuho na hinya wa nuclear handu ha kuhuthira maguta, coal kana gas.

Athomithania uriai ciuria ici kuri arimi a cluster.

Kenya niikoragwo ni mogwati ma mathina maya? Kenya niichangagira kana igatuma kugie na mathina maya?

O kenya igithiaga na mnere, ni thina uriku munene urona ta ungineneha makiria?

Hinyiriria amemba a cluster yaku kuhanda miti miingi niguo kunyahia mathina ma ki-rirea niguo tuthondeke maria maturigiciirie.



Maundu ma ikundi: Uikarania wa ikundi.

a) Ni njira iriku njega ya kubanga andu mucemano-ini wa ikundi?

Githiururi kinini nikio kiega. Mutigakorwo na metha tondu niikoraga mikira andu-ini. Mutigakorwo na giti kinene kuri iria ingi kia mutongoria. Thiini wa TIST, ithuothe tuikaraga andu umwe. Tuikaraga thi kana tugaikarira iti.

b) Twikaga atia riria andu makiria ma 12 magia na wendi wa kuingira gikundi?

Riria kwagia na andu makiria ma 12 marena kuingira gikundi, niwega guthondeka gikundi kingi. Gikundi giki nokigayanio maita 2 kana 3 ona kana 4 na niwega andu a tene gikundu mambiririe icio ingi mari o. njira ino ni njega gukira amemba eru makigeria guthondeka gikundi kieru mari oiki. Ririkanai guthiururukia utongoria.

c) Ungika atia riria hinya wagikundi wathii thi?

Gayania amemba eri eri na umere mariririe uhoro ucio. Geriai guthaka mithako ya ngerekano tondu niiteithagia. Maita maingi riria mundu umwe arugama kuga maundu maria mega muhotete gwika niguteithagia muno na gugekira hinya ringi. Na ningi ririkana ndukareke micemano inenehe muno. Riria muri na muteithia wa mutongoria uria uraiga mathaa, nouhote kuhuthira mucemano wega na mukaiguithaniria.

Mutaratara wa mucemano.

Niguo kuhuthira mathaa wega, ikundi ciagiriirwo nigukorwo na micemano mibang wega. Njira ino niya bata tondu niigutuma murumirire mutaratara na muhote kwaririria maundu maria ma bata. Nangingi niyabata tondu thiini wa TIST nitukoragwo twiheanite gukiria na gutungata miti gwa kahinda kanene niundu wa thoko ya carbon. Nitwagiriirwo nikumenya arimi othe a ikundi wega, tondu ciiko cia I mundu nicia bata kuri gikundi.

Niundu wa bata, na makiria kuri gikundi gukorwo na micemano ya o hindi na mungihota o wiki. Uu niukuhe amemba thiini wa gikundi kamweke ga gwikira gikundi hinya.

Riria muri na micemano, niwega murore maundu maria ma bata. Ikundi nyingi niconete mutaratara uyu ukimateithia muno.

Ikinya ria I: Kugeithania na kumenyithania amemba eru(Ndagika 5-15):
tigirira o mundu niaigua amukiritwo wega. Mutikoe kahinda kanene no utigirire andu nimemenyithania.

Ikinya ria II. Mahoya ma kuhingura (Ndagika 2):
Mahoya manini nimateithagia kunyitithania giundi.

Ikinya ria III Ruimbo(Ndagika 5):
Ici nocikorwo iri nyimbo citungitwo ni gikundi kana ciagwikira andu hinya na cia kugooa Ngai.

Ikinya ria IV. Kuiguithania kiria gikwariririo na mathaa(Ndagika 5):
Mutoingoria agatariria maundu maria makwariririo nao amemba magetikaniria. Mahidam a r i a makuhuthirwo kwaririria makaiguithanirio niguo muteithia wa mutongoria akahota kuiga mathaa.

Ikinya ria V. Kwaririria maundu (ithaa I):
Niwega maundu maria makwariririo makoragwo mathondeketwo mucemano-ini urcio ungi. Maundu maya nita uria andu mahotete gukuria TIST, guthomithania maundu na mitaratara bata iria iguteithia gikundi gukura wega.

Ikinya ria VI. Kujengana(ndagika 5):
O memba wa gikundi niaheanaga kaundu kega ka wiki iyo na akauga uria onete utongoria thiini wa mucemano. Na makiria, mundu o wothe akauga kiheo kiria onete hari mutongoria.

Ikinya ria VII. Mahoya ma kuhinga (Ndagika 2):



Uria wagiriirwo ni gwika riria ugutumira urimwi mwege wa Conservation Farming.

Thutha wa kugetha, ndugacine mabebe kana matigarino mothe. Wagiriirwo ni kureka mahuti macio matuike thumu nigetha muganda waku uthii na mbere na kunora. Thumu ucio niutethia mimera yaku kana on miiti igie na ugunyu wa kuigana. Ririkana na mabebe macio niuhuthire guthondeka thumu.

- Niwagiririo ni kugitira mugunda waku hari kurithia mahiu. Riria mahiu mathie mugunda niguthukia mathukagia tiiri na kuria mahuti maria mangithondekire unoru
- Enja marima maku ma CF mbere ya mbura yurite
- Ithimi cia marima maku ciagiriirwo ni gutigana kuuma irimwe nginya riria ringi ta uu. 70 cm mwena wa ukigie na 90 cm mwena wa guikuruka. Geria uhuthire rurigi wohereire mbota
- Githimi kia irima riria ukuhanda mbembe ni 15cm warie, 35cm uraihu and 15cm uriku.
- Hindi ya kuhanda tukania tiiri wa iguru uria munoro na thumu waku. Ikiria irima na utigie

mweke wa 5cm . Koguo ndukaiyurie irima riaku biu.

- Angikorwo ni mbembe urahanda, niwega ucirindi maaini gwa kahinda ka mathaa matandatu nginya muganya. Gwika uguo ni guteithagia mbegu ciaku imera na ihenya na gucigitira kurio ni tutambi. Wagiriirwo ni kuhanda mbembe inya o hari irima. Mbegu ihando hakuhi na kona ya irima iri imwe.
- Angikorwo ni muhia urahanda, no uhanda mbegu 5 nginya 6 o hari irima thutha ya mbura kuura. Ota irima ria mbembe, tukania tiiri wa iguru na thumu waku wega.
- Mweke uria tutigirie hari irima twaga kuihuria tiiri na thumu ni getha ria mbura yaura , mweke ucio ugakorwo ukiiga maai . Mumera waku niugorwo na ugunyu gwa kahinda karaya. Hamwe na uguo, thumu wa mumera ukagitiro gukuo ni kiguo.
- Hindi ya kurimimira wa giriirwo ni gukonya ria hau irimaini na kuuu kungi utugute. No ndukarime na icembe kana kahu.
- Ambiria kwibanga riu.



Kuhariria thumu wa mborera – bataraita ya kimerera.

Thumu wa mborera ni bataraita ya kimerera iria iteithagia mimera gukura wega. Bataraita ino ni njega gukira ya nduka tondu I ya kimerera, ndiri thogora, ndithukagia mimera hamwe na maria maturigiciirie ta uria bataraita imwe cia nduka ciikaga. Kuri njira ngurani uria unghota gwithondekera thumu waku wa mborera. Hari njira imwe iria tuguthomithia iria ikoretwo igitumirwo ni andu aiangi. Niwega urie arimi aria angi muri mucemanio wa cluster ni njira iria matumagira.

Kuhariria guthondeka thumu:

1. Chagura handu haria ikwenja irima riaku ria mita inya kwa inya.
2. Theria handu hau.
3. Haririria kana uchimbe irima ria warie wa mita ithatu nginya inya na iriku wa mita imwe na nuthu.
4. Cokeria hamwe maragara maku moth eta mahuti, mabebe , maboco kana muhia na umatinangie tuchunji tunini.
5. Ikia maragara macio irima-ini riaku kwa uriku wa nuthu mita.
6. Ongerera lita ithano cia muhu.
7. Thutha ucio, ongerera thumu wa ng'ombe kana mburi kana nguku kana nguruwe kwa uriku ta fiti imwe.
8. Ongerera maragara mangi inguru ta nuthu mita.
9. Ongerera lita ithano cia muhu.
10. Ongerera maragara maku nginya irima riaku rikirie kuiyura.
11. Wa muthia, humbura na tiiri nginya iria riyyure
12. Hindi iria urahumbira na tiri, handa kamuti nginya kahutie irimariaku gitina.
13. Eterera gwa kahinda ka thiku 90 kana mieri itatu.
14. Gwa kahida gaaka korwo ugitiriria thumu waku maai maku ma giiko. Ungikorwo ni ukuhota ona mathugumo ma mahiu maku uitiririe.
15. Mathugumo ni mateithagia kuongera nitrogen.
16. Geria guitagiriria maai na muthugomo kwa mahinda makuhi.
17. Thutha wa thiku mirongo kenda, thumu waku ugakorwo uri muhiu.

Tumira kamuti karia uhandire ta githimi giaku. Hindi iria thumu waku wahia, wagiririrwo gukorwo wi muhiu na wacomora kamuti niwagirirwo ni kurata ndogo ya urugari.

Uhuthiri wa thumu waku wa mborera:

Warikia kuhariria marima maku ma mbembe kana muhia kana o mimera iria ingi urahanda, ikira thumu muigana wa m oko maku o hari o irima. Eterera wone maciaro!

Mazingira Bora



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Kagaene TIST Clusta wakiwa kwa mkutano wao mwezi uliopita.

Ndani ya Gazetti:

Je! Unatumia nini katika vitalu vya miti yako kwa mbadala kwa polytubes ya plastiki? Uku. 2

Maendeleo Endelevu. Uku. 3

Mbinu za vikundi vidogo: Mwingiliano wa kikundi. Uku. 4

Jinsi ya kulima kwa njia ya kilimo hai. Uku. 5

Kutengeneza mbolea kutokana na mimea – mbolea ya kiasili. Uku. 6



Je! Unatumia nini katika vitalu vya miti yako kwa mbadala kwa polytubes ya plastiki?

Ni karibu mwaka mmoja tangu Serikali ya Kenya ilikataza matumizi ya mifuko ya plastiki. Marufuku haya yaliathiri polytubes ya plastiki kutumika katika vitalu vya miti ili kuongeza miche. Wakati TIST inaunga mkono jitihada hii ya Serikali ili kuondokana na vifaa hivi vya hatari vya plastiki vilivyotokana na mazingira, tuna wasiwasi kuhusu madhara ya marufuku haya hasa katika kuanzishwa kwa vitalu vya miti na kwa ujumla katika jitihada za kupanda miti kwa ujumla.

Mwaka huu, wakulima wa TIST nchini Kenya wamekubaliana na lengo la kupanda miti milioni mbili. Kufikia sasa, TIST Kenya imepanua miti ya kuishi 9,507,893. Tunataka kufikia miti milioni 11 hadi mwisho wa Machi 2019.

Baadhi ya wakulima wetu wamepanga njia za ubunifu za kufanya polytubes mbadala. Mbinu zingine zinafanya kazi vizuri, wakati wengine wanahitaji kuboresha. Vifaa vingine vinavyotumiwa katika kufanya polytubes ni pamoja na;

- ✓ Vipu vya plastiki vilivyotumika ambazo hupigwa pande zote. Chupa moja hukatwa katika nusu mbili na wote wawili hutumika kama polytube baada ya kupiga pande.
- ✓ mifuko ya nafaka na saruji. Wao ni hushonwa na kufanywa kuwa polytubes ukubwa.
- ✓ Matumizi ya majani / migongo ya ndizi. Wakulima huwafanya kuwa polytubes
- ✓ Bundles ya magazeti ya kutumika. Tena ni vyema kufanywa lakini uangalizi unapaswa kuchukuliwa wakati wa kumwagilia miche ili usiwavue.

Tafadhali shiriki na wanachama wako wa Vikundi Vidogo pamoja na Cluster yako. Hebu tujisikie kutoka kwako na Makundi yako ni njia gani unayotumia kama mbadala kwa polytubes ya plastiki. Tafadhali shiriki kwenye mkutano wako, ushiriki na watumishi wa Cluster.



Njia rahisi ya kufanya polytube asili kutumia vifaa vya ndani. Ni matokeo ya juu ya bajeti ya chini. Angalia majani ya ndizi kavu. Kata vipande vipande urefu wa 30cm upana 15cm. Weka urefu ndani ya 2.15cm kila. Tena tena upana 2 cm kila upande. Funga na kamba ya ndizi ili imara. Weka udongo. Maji na kupanda mbegu. Faida - inaweza kutumika tena, rahisi kufanya na kulinda mazingira.



Maendeleo Endelevu.

Kuangalia mazingira ya dunia kwa ufupi.

Kenya haijatengwa kutokana na sehemu zingine za dunia na kuwa na ujuzi kuhusu matatatizo ya kimazingira ya dunia nzima kwaweza kusaidia kutambua hatari kwa Kenya kwa umbali. Ni muhimu kuchambua matatatizo ya dunia ya kimazingira na kuelewa madhara hasi yanayoweza kufikia mazingira yetu.

Madaliko ya hali ya anga ya muda mrefu.

Kuchoma ngataa au mafuta (makaa yam awe, mafuta, gesi asilia) hutoa hewa chafu ya kaboni. Hii hewa hutega joto katika anga na kusababisha joto duniani kuongezeka, kofia za barafu katika maeneo ya milima kuanza kuyeyuka na kiwango cha maji katika maziwa kupanda. Haya husababisha uwezekano wa mafuriko na joto kupanda jambo ambalo huwa na athari mbaya kwa kilimo katika sehemu za bara la Afrika na dunia nzima.

Uchafuzi wa hewa.

Mafusho yenye sumu kutoka viwandani na kwa magari yaweza kusababisha shida za kupumua kwa watu. Mafusho haya yaweza kuingia katika maji ya mvua na kutengeneza mvua wenye asidi, ambao hudhuru mimea na mijengo. Miji mingi huwa na matatizo ya moshi ambapo machafuko hutanda juu ya miji kama mawingu ya chini na kupunguza uwezo wa kuona mbali na kusababisha shida za kiafya.

Uchafuzi wa maji.

Maji na uchafu kutoka viwandani na kemikali kutoka kwa wakulima zaweza kuingia katika vijito, mito na maziwa na kuchafua vyanzo vya maji vya dunia nzima na kudhuru mimea, wanyama na afya ya binadamu.

Kupunguza bionuwai.

Baonuwai ni wingi wa aina mbalimbali za mimea na wanyama. Uchafuzi na kukata miti hupunguza nambari ya viumbe hai na kumaliza zaidi ya aina mia moja kila siku. Jambo hili hupunguza rasilimali inayotumika kama vifaa, nishati na dawa.

Kuenea kwa jangwa.

Ardhi inapopoteza mimea na udongo unapokauka na kubebwa, ardhi hukuwa na uzalishaji uliopungua. Hili pia linajulikana kama 'kuenea kwa jangwa' na hugeuza mashamba na mahali pa kulisha wanyama kuwa ardhi isiyona uzalishaji iliyo hectare nyingi, zilizona uwezekano wa kupotezwa.

Uchafu wenye madhara.

Uchafu wenye sumu unaotoka kwa viwanda vinavyotumia kemikali na mionzi. Taka hii hudhuru mazingira yote kupitia majanga kama kiwanda cha chama cha kutengeneza dawa ya magugu kilipovuja kemikali huko Bhopal, India, kiwanda kililipuka.

Mvua ya acidi.

Imetajwa hapo juu chini ya uchafuzi wa hewa, mvua ya acidi huharibu misitu na maziwa hasa katika Europa na Amerika Mashariki. Uchafuzi unapoingia majini na kufanya mvua kuwa yenye acidi, miti, mimea, samaki na hata mijengo huathirika.

Kupungua kwa safu ya ozoni.

Baadhi ya kemikali kama chlorofluorocarbons (CFC's) hutumiwa katika vitu vinavyotumika katika majokofu na katika taratibu nyinginezo za viwandani lakini sasa zinaonekana kudhuru safu ya ozone. Safu ya ozone hulinda ardhi kutokana miale hatari ya jua inayoitwa ultra-violet rays (UV). Kemikali zinapoharibu safu ya ozone, kuongezeka kwa miale ya UV hufika ardhini na kudhuru afya ya binadamu huku ikileta kansa ya ngozi na magonjwa mengineyo.

Matatizo mijini.

Miji mingi hukabiliwa na shida za taka, uchafuzi wa hewa, kelele, msongamano na kupungua kwa maeneo yakuishi.

Kupungua kwa rasilimali.

Ongezeko la mahitaji ya nishati na rasilimali katika dunia nzima linasababisha rasilimali ya kiasilia kama mafuta, makaa ya mawe, madini na misitu kuisha. Jambo hili linaongeza ushindani wa rasilimali jambo ambali linaleta migogoro ya kimataifa. Kutafuta rasilimalizaidi ili kutimiza mahitaji kutakuwa shida kubwa hivi karibuni isipokuwa vyanzo vya nishati badala vvitumike kama maji, upepo au nishati ya nyuklia badala ya rasilimali inayopimika kama mafuta, makaa ya mawe au gesi ya kiasilia.

Wakufunzi, uliza wanacluster maswali haya:

Je, nchi ya Kenya hufikiwa na athari za baadhi ya shida hizi?

Je, Kenya huchangia au kusababisha yoyote ya shida hizi?

Jinsi Kenya inavyokua, unafikiria ni shida zipi za kidunia zitakuwa mbaya zaidi?

Hamasisa cluster yako ya TIST na wanajamii wngine kupanda miti zaidi ili kupunguza baadhi ya athari hizi mbaya kwa hali ya anga ili mazingira yetu yawe bora zaidi!



Mbinu za vikundi vidogo: Mwingiliano wa kikundi.

a) Ni njia gani bora zaidi ya kuwapanga watu wakati wa mkutano wa Kikundi kidogo?

Msiwe na meza kwa sababu inajenga vuzuizi kati ya watu. Msiwe na kiti cha kukaliwa na mtu aliye na muhimu zaidi kati yenu. Katika TIST, sote twaketi kwa njia iliyofanana. Sote hukaa chini udongoni au sote kukalia viti.

b) Mtafanyaje kukiwa na watu zaidi ya kumi na wawili wanaotaka kujiunga na kikundi chenu?

Kama kuna zaidi ya watu kumi na wawili wanaotaka kujiunga na kikundi chenu ni vizuri zaidi kuanzisha kikundi kipya. Kikundi chaweza kujigawanya na kuwa vikundi viwili, ama wanakikundi asili watatu au wanne wawe msingi wa kikundi kipya. Hii ni vizuri kuliko mwanakikundi mmoja kujaribu kuanzisha kikundi peke yake. Kumbuka kuanza uongozi wa mzunguko kutoka mwanzo.

c) Ni mbinu zipi mwaweza kutumia ikiwa nishati ya kikundi iko chini?

Gawanya kikundi kiwe wawili wawili na uulize kila jozi kujadiliana kuhusu kazi iliyopo. Michezo ya kuigiza husaidia pia. Mara kwa mara kuwasimamisha na kila mtu kusema kitu kizuri ambacho kikundi chao kinafanya husaidia kuwapa watu motisha nyingine. Pia kumbuka kuuachisha mkutano usiwe mrefu. Kwa njia ya kuwa na msaidizi wa kiongozi anayesaidia kuweka masaa, unaweza kuelekeza nishati ya kikundi kuhakikisha kazi inafanyika katika muda uliopangiwa.

Ratiba ya mkutano.

Kutumia muda vizuri, kikundi kidogo chapaswa kuwa na ratiba ya mkutano iliyopangika vizuri. Hii ni muhimu kwa sababu itakusaidia kuzingatia yaliyo katika ajenda na mambo yaliyo muhimu zaidi. Ni muhimu pia kwa sababu katika TIST, tunajitolea kufanya kazi pamoja kwa muda mrefu ili kukua na kudumisha miti yetu katika soko la hewa. Tunahitaji kujua wanakikundi wenzetu vizuri, kwa sababu matendo ya kila mtu hushikilia kikundi chote na TIST yote.

Ni muhimu pia, kwa kikundi chako kidogo kuwa na mikutano ya mara kwa mara, ikiwezekana mara moja kila wiki au mara moja kila wiki mbili. Hili litawapa wanakikundi chenu nafasi ya kuimarisha kikundi na kugawana na kujifunza mafunzo mapya.

Wakati wa mkutano, ni muhimu kuzingatia mambo yaliyo muhimu. Vikundi vingi vya TIST vimeona utaratibu unaofuata ukiwa mwenendo bora zaidi ili kuwa na mikutano ya kufanikiwa:

Hatua ya kwanza. Salamu na kujijulisha kwa wanakikundi wapya (dakika tano kufika kumi na tano): Hakikisha kila mtu anajisikia nyumbani. Hakikisha ni fupi lakini muache kila mtu ajijulisha.

Hatua ya pili. Maombi ya kuanza (Dakika mbili):

Ombi fupi laweza kusaidia kuunganisha kikundi.

Hatua ya tatu. Nyimbo (Dakika tano):

Hizi zaweza kuwa zilizoandikwa na kikundi chako, au nyimbo zinazowatia watu nguvu kama nyimbo za kidini.

Hatua ya nne. Kuitikiana kuhusu kazi na masaa (Dakika tano):

Kiongozi anaeleza yatakayofanyika mkutanoni na wanakikundi waitikie kufanya kazi hiyo. Masaa yatakayotumika kwa kazi hiyo au mjadala yakubalianwe ili msaidizi wa kiongozi aweze kuweka masaa ya mkutano.

Hatua ya tano. Kazi ya vikundi (saa moja):

Ili kufanya vizuri zaidi, kazi yapaswa kujadiliana mkutano wa mwisho ukiisha. Kazi zaweza kuwa pamoja na kugawana ni nini kila mtu amefanya ili kusaidia kazi za TIST, kugawana mienendo bora zaidi ya kufanya mambo tofauti, kufunza kuhusu vitu fulani na jambo lingine lolote la maana litakalosaidia kikundi chenu kukua .

Hatua ya sita. Kujengana (Dakika tano):

Kila mwana kikundi anasema jambo moja nzuri kwa kiongozi wa wiki hiyo kuhusu uongozi wake ulioonekana katika mkutano. Kuongezea, mtu yeyote aweza kusema ni zawadi gani katika uongozi ameona katika kiongozi huyo.

Hatua ya saba. Ombi la kufunga (Dakika mbili):



Jinsi ya kulima kwa njia ya kilimo hai.

Baada ya kuvuna, usiyachome mabaki ya mimea, badala yake yaache chini. Jinsi unavyoacha mabaki zaidi chini ndivyo unavyorutubisha udongo na kuufanya kuwa wenye rutuba. Safu ya haya mabaki yakizunguka chini ya mti au miche husaidia kuongeza kiwango cha maji katika udongo jambo ambalo huzuia miti kutokana na ukavu mingi. Kumbuka kuwa Mabaki ya mimea yanaweza pia kutengeneza mbolea.

- Jaribu kuweka mifugo mbali kwani mifugo ikila itaacha mabaki machache yakifunika udongo.
- Mashimo ya kilimo hai yafaa kuchimbwa kabla ya mvua kuja na ni muhimu kuanza kuyachimba mapema.
- Tia alama utakapochimba mashimo yako, halafu utafute kamba ndefu na ufungie vifuniko vya chupa vikitengana na centimita sabini. Nyoosha kamba kuvuka shamba lako ili kila kifuniko kiwe kati kati ya shimo ili kuhakikisha kuwa mashimo yana nafasi inayofaa kati yao. Tumia jembe kutia alama ya kuonyesha mistari ya mashimo ili kila mstari uwe centimita tisini kutoka kwa huo mwingine.
- Siku hiyo hiyo unapotia alama, chimba mashimo yaliyo na umbo la mvingo. Yafaa kuwa na upana wa centimita kumi na tano, urefu wa centimita thelathini na tano na centimita kumi na tano kwenda chini.
- Unapokuwa tayari kupanda mbegu, ni muhimu kuweka udongo wenye rutuba shimoni ili kusaidia kutia mimea nguvu. Changanya mbolea na udongo mzuri wa juu, au utumie mbolea ya mimea. Ikiwa una saruji na mbolea ya viwanda, iweke shimoni na ujaze kila shimo na mchanganyiko huo hadi centimita tano chini ya ardhi ya kawaida.
- Ikiwa unapanda mahindi, lowesha mbegu kwa maji masaa sita kufika saba kabla ya kupanda. Jambo hili hufanya mbegu kuota haraka na kuweza kuishi. Unapopanda mbegu, panda mbegu nne udongoni kuvuka shimo na ufunike na mchanganyiko wa udongo mnono na mbolea sentimita mbili na nusu. Udongo katika shimo utakuwa sentimita mbili na nusu chini ya ardhi ya kawaida. Mavimbe makubwa magumu ya udongo yanafaa kuvunjwa ili udongo ufikie mbegu vizuri.
- Iwapo unapanda mtama, panda mbegu tano au sita katika kila mwisho wa shimo baada ya mvua nzuri halafu ufunikie mbegu na centimita mbili na nusu za udongo wenye rutuba uliochanganyika mbolea.
- Nafasi inayoachwa juu husaidia maji kuingia kwa mimea wakati mvua inapofika. Bila nafasi hii maji ya mvua yatabebwa juu ya ardhi na kubeba virutubisho vingi.
- Toa magugu karibu na mashimo kila baada ya muda na kila mwaka hutapata kutakuwa na magugu machache na machache zaidi.
- Usife moyo! Kuchimba mashimo sasa kutamaanisha yatakuwa tayari mwaka huu na hutachimba tena mwaka ujao.



Kutengeneza mbolea kutokana na mimea – mbolea ya kiasili.

Mboleo ya majani ni mbolea ya kiasilia ya kusaidia mimea yako kukua. Ni bora zaidi ya mbolea za viwanda kwani ni ya kiasili na haina athari za kuumiza mimea na mazingira. Kuna njia nyingi za kutengeneza mbolea, lakini njia ifuatayo imekuwa saidifu katika baadhi ya maeneo. Uliza majirani zako katika cluster yako ni gani imewaonekana.

Preparation of compost:

- 1) Chagua eneo lenye upana wa mita nne na urefu wa mita nne la kuchimba shimo lako la taka
- 2) Fagia sehemu hiyo
- 3) Chimba shimo la mduara lenye upana wa mita tatu au nne na mita moja na nusu kina.
- 4) Kusanya masala yote ya mimea uliyo nayo na uyakate kuwa sehemu ndogo ndogo (kwa mfano majani na mashina ya mahindi, mtama, maharagwe)
- 5) Weka masala haya ya mimea katika shimo ilo hadi kina cha nusu mita.
- 6) Halafu ongeza lita tano za jivu
- 7) Halafu uongeze centimita thelathini (ama kiwango kilichopo) za kinyesi cha mifugo (kwa mfano kinyesi cha nguruwe, ng'ombe, mbuzi au kuku).
- 8) Ongeza safu nyingine ya majani ya mimea na mashina (nusu mita)
- 9) Ongeza lita zingine tano za jivu.

- 10) Ongeza majani na mashina tena hadi shimo likaribie kujaa.
- 11) Hatimaye, ongeza safu ya udongo hadi shimo lijae.
- 12) Unapokuwa ukiweka udongo shimoni, ingiza fimbo ndefu katikati mwa shimo hadi ifike chini ya shimo.
- 13) Liache shimo la taka kwa miezi mitatu (siku tisini).
- 14) Katika kipindi hiki tumia maji yako machafu kuweka katika shimo hili. Kwa mfano, baada ya kuosha nguo au nyumba, yamwage maji uliyotumia juu ya shimo. Ikiwa una mifugo waweza pia kumwaga mikojo ya mifugo juu ya shimo.
- 15) Jambo hili litaongeza naitrojeni kwa mboleo yako.
- 16) Jaribu kuweka maji kila siku kwa njia hii, ama wakati maji yapo.
- 17) Baada ya siku tisini mbolea itakuwa tayari.

Tumia fimbo kama kipima joto – mbolea inapokuwa tayari lazima iwe na joto na waweza kuona mvuke ukitoka kwa fimbo hiyo baada ya kuitoa.

Matumizi ya mbolea hii:

Ukishachimba mashimo yako ya kupanda mahindi, mtama au mimea mingine, ongeza mboleo kiwango kinachotoshea katika kiganja chako katika kila shimo. Angalia ili kujua matokeo!

Mazingira Bora



TIST

The International Small Group & Tree Planting Program
www.tist.org

Kikamba Version

An Environmental, Sustainable
Development and Community Forestry
Program.



Umbano wa mwai muthelu wa ngwatanio ya TIST Kagaene.

Inside:

Nikyau muutumia nthini wa ivuio syenyu yu kutena mathangu ma nailoni? Page 2

Maendeeo ma kwikala meanite. Page 3

Nzia ila itumiawa ni tukundi tunini: Ta kulikangana na kukwatangana. Page 4

Undu nima ya kusuvia yikawa. Page 5

Kuseuvia vuu wa yiima -Vuu ute na kemikoo. Page 6



Nikyau muutumia nthini wa ivuio syenyu yu kutena mathangu ma nailoni?

Nivakuvi mwaka muima kuma silikali ya kenya yavatana utumii wa mathangu ma nailoni. Kuvatanwa kuu nikwatumie tuthangu twa uthamiisya miti kuma kivuioni onatw'o tuthela. Ona TIST ikwatambau kithito kii kya silikali kya kumina mathangu ma nailoni ala methiawa muisyo kwa mawithyululuko. Nituuthinikia kuvetangwa kuu kwa mathangu ma nailoni muno nundu wa kumya miti ivuioni na uvani wa miti kwa vamwe.

Mwaka uyu aimi ma TIST Kenya nimetikilanile kuvanda miti ta milioni ili. Kuvika umuthi TIST Kenya nivitukithitye miti 9,507,93 miti ila yivo. Twienda uvikia milioni ikumi na imwe tuivika mwai wa katatu 2019.

Aimi amwe maitu nimaseuvitye nzia sya umatetheesya vala manatumiaa mathangu ma nailoni. Nzia imwe ila ietetwe ni aimi ma tist ni nzeo na nitetheesye kwailya mawithyululuko. Syindu imwe ila iutumiwa kuseuvya tuvisu tuu nita:

- ✓ Suva susya plastic ivuthuangitwe maima nalingo syothe, suva wamina utilanwa uuseuvya tuvisu twili na uivuthuanga maima.
- ✓ Makunia na mathangu ma simiti. mundu etilanga na ituma tuvisu tunini.
- ✓ Matu ma maiu na mithamba, Aimi nimeusevya tuvisu otondu tumuandikie vaaya mwambiio.
- ✓ Mathangu ma makanzeti makwataniw'e, ingi uimangithya niwaile usuvia maikatembuke.

Kwandaia tutavye kakundi kenyu kena nzia myau ya useuvya tuvisu twa uthamiisya miti kuma kivuioni kwisila kwa kuneenania na ngwatanio yenyu vandu va utumia tumivuko twa nailoni. nenaniai nthini wa mbumbano sya ngwatanio sya kila mwai nikana tumanyianie kwisila kwa muthukumi wa ngwanio yenyu.



Nzia yi laisi na ya mituki ya useuvya tuvisu twa uthamiisya miti kuma kivuioni. Nzia ino ndi ngalama na nietae usungio museo. Matha matu momu ma maiu, matilange tulungu twa uasa wa 330cm na uthathau wa 15cm kila yimwe. Ingi tulaniila ta 2cm kila ngaliko na uyova na ikanda kuma matuni ma maiu, ikia muthanga, ngithya na uikuiisya miti yaku kuma kivuioni. Ingi twina vanda nundu niutumika ingi, nikusuvia mawithyululuko.



Maendeeo ma kwikala meanite.

Undu Nthi yonthe isiasya na kwona mawithyululuko.

Kenya ndikalaa yiyoka itena ikonyo ingi sya nthi. Kwina umanyi iulu wa manthina ala methiitwe na mawithyululuko ni utetheesya Kenya kumanya iulu wa mathima ala makoka ivindani yukite. Ni useo kusisya mathina ala methiitwe mawithyululukoni nikana kuelewa mothuku ala methiawa kwa mawithyululuko.

Movinduku ma Nzeve.

Kuvivv'a kwa mauta na makaa ma coal nikumasya nzeve itavisaa. Kii kietae uvyuvu mawithyululukoni na kwoou kwambatya uvyuvu wa nthi, Kula kwithiawa na ia yiyambiia uyaiika na utwika kiw'u na kyalika ukangani naw'o uyambiia kwambata na kuvwika nthi nyumu. Kii kitumaa kwithiwa na mavuliko na nzeve kuvyuva na kwoou nima iyanangika munamuno isioni sya ilembeta ya Africa na nthi yonthe.

Kuthokoanwa kwa nzeve

Miuke kuma kwa maindasituli na ngali nimaetae mauwau ma mimeo na manthina kwa andu maveva nzeve isu. Miuke ino nitonya kulika kiw'uni kya mbua na kutuma kithiwa na asiti na kuete wanangiko kwa mimea na myako. Misyi mingi yithina wa nzeve kuthokoanw'a ni miuke vala yikalaa iniine ta matu kana muumbi na kuola metho kwona na ni itonya kuete mathina ma uima wa mwii.

Kiw'u kuthokoanwa.

Kiko kuma kambunini sya useuvya syindu na siwengyi, vatalinza kuma miundani nutonya uluka mikaoni, mbusini na kula kiw'u kyumaa na kwananga mimea na kuete uwau kwa andu na nyamu.

Kuoleka kwa mithemba kivathukanyo.

Mithemba ya yamu, miti, ikuthi ona mimea yothye niyiolekaa yila kweethiwa na nzeve ka kumiwa kwa nzeveni na miti kutemwa vakuvi mithemba 100 niyaa kila muthenya. Kii nikiolaa matilio na kundu kula kumaa vinya na kula ndawa ikwatikanaa.

Kutwika weu/Ing'alata.

Yila nthi yaasya ngua syayo ila ni mimea muthanga niwumaa na nukuawa ni kiw'u kana nze na uyithiwa utena w'umi nesa. Ingi ii niyiawa ni nzia ya kunyaiikya mang'alata.

Kiko kina sumu.

Kiko kuma kambunini kana vakitolini nikithiawa na kemikoo na matilio itonya uete na kuaa syindu kwa kulivuka kana kuivivya syonthe syi thau. Kwa ngelekany'a yila kambuni kuma India imwe (Bhopal) ya useuvya ndawa sya kuaa mitutu yeethiwe iyita kemikoo matesi niyalivukile.

Mbua ya Asiti.

Kiw'u kii kina asiti ni kyanangaa mititu na masiwa munamuno ta ngaliko sya Europe na North America. Yila kiw'u kya mbua kyalikana na kuthokoanw'a ni asiti niw'o kiseuvasya mbua ya asiti.

Miti, Makuyu na myako niw'o kietae wanangiko.

Itu yila yivwikite wingi wa sua kuendee na kwanangika.

Yila ndawa thuku (kemikoo) ta Chlorofluorocarbons (CFC's) syatumika syinduni kuete mbalavu na kwa indasituli kuseuvya syindu ukunikili weekwa nisyonekete kana nimwe kati ka syindu ila ikwananga itu yila yisiiaa sua kuatha (kuola uvyuvu wa sua) na kwananga (UV "ultra violet rays"). Yila kemikoo syaananga itu yii niw'o UV syongelekaa kuvika nthi na kuete mauwau kwa andu ta uwau wa kenza ya kikonde na mauwau angi.

Mathina ma misyi minene ya mataoni

Mataoni maingi mina nthina wa kiko kya mavuti, nzeve kumiiwa, kelele, kusuania na kunyiva kwa isio sya miundani.

Monou manthi kunyiva.

Kwongeleka kwa wendi wa matilio sya kutumika ni andu nthi yonthe uthwii wa nthi ta mauta, mavia mavisaa (coal) na mititu niendee kuoleka. Kii kithuthasya na kuthingiisya masindano na kuete uvituukanu wa nthi kivathukany'o. Kumatha mothwii ma nthi ma kutunenge vinya na mwaki omituki nukwithiwa wi nthina munene ateo vethiwe na nzia ingi sya kukwata mwaki na vinya ila nisyindu sya vata muno ta kukwata syindu ithi kuma kiw'uni, nzeveni na neukilia vandu va utumia mothwii ala manini ta mauta ma nthi, mavia mavisaa (coal na Nzeve ya kuma nthi.

Amathisya ma Tist nimakulasya ala mekw'o kwoondu wa ngwatania syoo makulyo aya:

Kenya nikwatawaq ni mathina amwe ala maetetwe ni manthina aya twasisya vaa iulu?

Kenya ni imwe kati wa nthi ila ietae wongeleku wa mathina aya?

Oundu Kenya iendee na kwiana nimawiko meva ukwisilya maendee matonya kuendee na kwinthiwa me nthina munene oundu Kenya iendee na kwiana?

Thuthya ala mwi imwe nthini wa ngwatania yenyu ya tist undu wa kuendee na uvanda miti kunyivya mathina ala maetetwe thini wa mawithyululuko na kuete uvinduku wa nzeve ni mawiko ma andu kwoondu wa mawithyululuko maitu methiwe manzeo!



Nzia ila itumiawa ni tukundi tunini: Ta kulikangana na kukwatangana.

a) Ni nzia yiva nzeo ya kuvanga andu tukundi yila mwi mbumbanoni?

Kilinge kinini nikiseo muno. vaikethiwe na mesa kati nundu noithukume ta ukuta kati wa andu vaikethiwe uvanthukanu wa kila kikwikalilwa ethiwa ni kivila ateo kwa mundu munengete ndaia mbee. Ingi nthini wa TIST ithyoo the twikalaa nthi undumwe ethiwa ni muthangani kana ivilani kwa kila umwe.

b. Nata mutonye kwika ethiwa andu mbee wa 12 nimekwenda kulika kakundini kenyu?

Ethiwa ve andu aingi mekwenda ulikana nenyu nikavaa kusevya kakundi kangi kana tungi twili vena mainyiva ene ana kana atatu kuma kakundini kala kambee (amemba ala akuu). Uu ni useo mbee kwi mundu umwe kwenda kwambiia kakundi eweka. Lilikanai kwambiia utonoi na kusumia nzia ya utongoi wa kithyululu.

c. Ni nzia myau utonya utumnia ethiwa vinya wa kakundi winthi?

Aanai withie ni andu eli eli na kila umwe ayosa undu uu ta muio wake. Ingi mathau ma malimano na nthekany'a ni matetheeasya kwongela ngwatanio vinya na uthangaau. Ingi kunee niea wia wenyu museo kwakwiyonany'a mwi mbee nikutumaa angi makwata vinya na thambuu. Lilikanai yila mwoombana kulea kuselewa na kumina mbumbano tene. Kwithiwa na munini wa muungamii imusyaisya wa masaa nokutume kila umwe ekia vitii na kuthangaa kwona wia ula walanitw'e niwathela masaani ala maile.

Walany'o wa kukomana

Nikana musuvie ivinda tukundi tunini nitwaile kwia walany'o museo wa mbumbano. uu ni useo nundu nukumwia mwina mwolooto wa kila angyendani ya muthenya usu na mawia ala maile kwianiw'a muthenya usu. Ingi ni useo nundu nthini wa TIST nitweeyumisye kuthukuma vamwe kwa ivinda yiasa kuvanda na kuea miti yiane kuvikia soko wa nzave itavisaa. Nitukwenda kumanya tukundu tunini twitu na ena mwatw'o na kwona ni itambya yiva tutonya kwosa kuikiithya ithyotho na TIST nitweethiwa na kivathukany'o.

Ni undu wavata kumanya kakundi kaku kanini nikaile kumbana kaingi ona ethiwa ni keli kwa mwai. Kii nokiete kwosa vinya kwa kikundi kyenyu kwa kuthuthany'a na kila umwe kunenga ula ungi utao na undu wikite kwake omithenya ila mutela onana na kila kinakivathukany'o na kitonya uete ualyuku museo kwa kila umwe vamwe na uu mawoni meu.

Yila mwoombana niuseo kwia mbee maundu ala mavata. Tukundi tunini twingi nitwoonie kuatiia nzia ithi syi vaa nthi kwi kwavata nthini wa mbumbano, na matambya asu ni:

Itambya 1. Ngethi na kwimanyithany'a kwondu wa andu ala eu kikundini (Ndatika 5-15):

Ikiithyayi kila umwe niweew'a e muthokye, kila umwe etavany'a kwa mituki.

Itambya 2. Mboya sya kwambiia (ndatika ili (2))

Mboya nini nguvi noitethye kwa kwongela ngwatanio.

Itambya 3. Wathi (ndatika itano 5)

Uyu no withiwe wi wathi usevitw'e ni kikundi kyenyu kana wathi wa Ngai wina uthuthio kwa kila umwe

Itambya 4. Kwiw'ana undu mukwika na mwitumia ivinda yiana ata (Ndatika itano(5))

Mutongoesya akaeleany'a kila kikwikwa wumbanoni na ene kikundi mayitikila kwika. Masaa ala meutumika kwa kila undu nonginya mambe uneenewa na munini wa mutongoesy no ethiwe emusyaisya wa masaa.

Itambya 5. Wia wa kikundi (Isaa yimwe I)

Nonginya muimina kila wumbano nimwithiawa muneene wia ula mukoka uthukuma wumbanoni ula ungi. Ngelekany'o ethiwa no kila umwe kutunga livooti ya undu wikite kutetheesya TIST na mawalany'o na uthukumi wayo museo. Kumanyiany'a nzia nzau na maundu angi mavata ala matonya utuma kakundi kenyu keana na kwaila.

Itambya 6. Kwakana (ndatika itano (5))

Kila mumemba kunengane ondeto imwe ya kwakana onaethiwa ni yiulu wa utongoi. ingi kinengo kila kikivathukany'o kyonekete kwa mutongoi nikyaile uwetwa ethiwa kivo.

Itambya 7. Mboya ya kumina/ kvinga wumbano (ndatika ili (2))



Undu nima ya kusuvia yikawa.

Itina wa ngetha ndukavivya matialyo ma mimea. Vandu va kuvivya ekana namo nundu nimeunenge

muthanga unou yila me kwoa ona ingi nimavwikite muthanga ethiwa kuna mbua. ukavwika mimea vaa wungu na matilyo asu niwasiia kiw'u kuny'aa na uyithia kimeu nikyekala kwa ivinda iasa na uyikala uteungithya miti / mimea isu kwa kavinda nundu kimeu kivo. Ingi lilaka matialyo asu no umatumie kuseuvya vuu wa yiima.

- Tata usiie indo iikalike muundani na kuya vo, nundu mimea na mavuti ala mavwikite muthanga nitonya uya ikamina kyothe kila kiwwikite muthanga.
- Ingi maima ma nima ya kusuvia maile kwiswa mbee wa mbua itanambiia. Kwoou ni useo kumesa tene.
- Ikiya uvano vala ukwenda kwisa maima, osa ikanda iasa kana ulii na uyiveea tuvululu twina utaaniu wa 70cm. Tambuukya ikanda /ulii usani wa muunda waku. Kila kavululu ni vala ukwisa yiima na katetheeasya kwikia utaaniu wianene. Vana utaaniu wa misitali uitumia iembe. Misitali yaile utaaniu wa 90cm. Ikiya uvano wa maima na misitali ila ukwona utonya umina muthenya usu.
- Muthenya ula weekia uvano now'o waile inza maima asu. Maima aya maile ithiwa mena uthathau wa 15cm na uasa wa 35cm na uliku wa 15cm.

- Wamina kwiyumbania uvanda ni useo utumie muthanga ula munou kuvika mbeu nikana imee yina vinya. Osa vuu na muthanga wa yiulu uvulanie vrika naw'o yiima utie uliku wa 5cm wa kutetheesya kutwiikania / kutuumania kiw'u kwaua.
- Ethiwa wivanda mbemba inda vandu va masaa 6-7 mbee wa kuivanda. kii kitetheeasya mbemba kumea na mituki na mbingi kwikala. wamina vanda mbeke inya uasani wa yiima. Vrika na muthanga wina vuu ta uliku wa 2.5cm. Itina wa uu mwanya ula uutiala wiithia nita 2.5cm. uliku ula uutiala ndwaile ithiwa muliku kwi uu, maveli indi yothe nimaile uawa mbee nikana muthanga uvikie mbeu nesa.
- Etiwa wivanda muvya ngii / mbindi 5-6 nisyaille uvandwa yiimani yimwe itina wa mbua kua nesa. vrika na muthanga uvulene na vuu uliku wa 2.5cm.
- Mwanya ula watiwa maimani aa utetheeasya kutuumania / ukwatya kiw'u kiikanthi kitananya nthi. Vande mwanda uu wa nyiima kiw'u ni ukita uyululuka na kuthi kikuite muthanga na unou waw'o.
- Ima uthyululukile maima aya kaingi nikana kuveta yiia na withie niyaoleka muno.
- Ndukakw'e ngoo! Inza maima maku oyu wetelee mbua yukite na ndukenza ingi mwaka wukite.



Kusevya vuu wa yiima - Vuu ute na kemikoo.

Vuu wa yiima ni vuu usevitw'e vate ndawa na mimea kuma muundani na nutumaa mimea yiana nesa. Ni museo kwi vuu wa kuuu ula wina kemikoo nundu niwakuma mniemani na niwamana ti wakuu na nwanangaa liu kana mawithyululuko ta vuu /vatalisa wa kuuu. Ve nzia mbingi sya usevya vuu uyu, lakini ve nzia imwe nzeango kwi syothe isioni imwe. Kulya mutui waku wa ngwatanio yenyu kila kithukumite nesa kwoo.

usevya vuu wa yiima.

- 1) Kusakua kisio kya matambya 4 x 4m na kwisa yiima.
- 2) Enga kisio.
- 3) Inza yiima uthathau wa 3 - 4m na 1.5uliku.
- 4) Kolany'a matialyo ma mavemba, muvya, mavoso na uutilanga tulungu tuniini.
- 5) Ikiya yiimani itumie uliku wa 0.5m.
- 6) Ikiya muu wa lita itano.
- 7) Ongela kyaa kya indo ethiwa kivo kya uliku wa 30cm ethiwa vaii oundu kiana (uyu ni vuu wa nguluwe, ng'ombe, mbui kana nguku).
- 8) Ongela matu na makusa uliku ungi wa 0.5m.
- 9) Ikiya muu ungi wa lita itano.
- 10) Ongela matu na makusa withie yiima notayausua.
- 11) Ususya yiima na muthanga.
- 12) Uyususya yiima ikia muti muasa kati withie utinite yiimani ungu.
- 13) Eka yiima yiu yiyiue vandu va myai itatu kana mithenya miongo kenda.
- 14) Ivindani yii yonthe osaa kiw'u kila kina kiko uketa vo ngelekany'o kila wavua nakyo kana kuthambya miio. Ethiwa wina maumao ma indo no wite vo.
- 15) Kii nikyongelaanzeve ya Nitrogen nthini wa vuu.
- 16) Tata navinya ungithye yima yii kila muthenya kwa nzia ila utonya.
- 17) Itina wa mithenya miongo keenda vuu wiithiwa wi tayali.

Tumia muti uyu wikati ta kithimi kya uvyuvu. Vuu wasuva ukeethiwa wimuvyu na nowone muti uuyu waumya uitoa.

Utumii wa Vuu wa yiima.

wenza maima ma uvanda mbemba, muvya kana o mimea ingi ikia ngundi imwe ya vuu kila yiimani. Syaiisya wone kila ukwata kuma vo!

Mazingira Bora



TIST

The International Small Group & Tree Planting Program
www.tist.org

Kipsigis Version

An Environmental, Sustainable
Development and Community Forestry
Program.



Enorit Kagaene TIST Kilasta entuiyetabarawetnekokobata.

Inside:

Nee tuguk chebo isiene nkabe tisek ye kiin matako mugak keboisie nseleleisiek? Page 2

Keri b bandabtai. Page 3

Mitindoishek chepo groupishek che meng'echen: Kotuyet tap ke en Groupishek. Page 4

Ole kisibto. Page 5

Ketoo keturrek chebo minutik. Page 6



Nee tuguk cheobo isiene nkabe tisiej ye kiin matak mugak keboisie nseleleisiek?

Ne kiit kenyitagenge ye kingoger serikali keboisien seleleisiek kouchebo kabetsiek. Kitinyech missing amun matakei tyikibiit keswek kabketik. Echeken TIST kokigiyochi serikali akoboni tonamun tinyegeia kwegeta bitonda bemetak kitinyemagetab kotesta iminetab ketik.

En kenyin ikotinye temikche mien TIST maget kominketik cheite 2million kongeten kanametab kenyini. En ikuni ketinye ketikchesobtos 9,507,873. Kitinyemaget kelekoit tearawe tabsomok 2019 komiten ketik 11million.

Ala kentemik kokocho chigitukuk chebo isienen kabetsiek kwak. Ala kentugu choton koboisie komie koalak komoche kotagi gimitasi koboiskomie. Chotonche boisiekou,

- ✓ Mitten chuboisiek chebo plastic chekimuche kepche ikoyobo engu.
- ✓ Kimuchekeboisien kunietab bande kananne bocementi kinobekosib geiak maget ne imoche.
- ✓ Balaleni kabindi siotkoi klolet boisienitok komie.
- ✓ Karta sisiek cheka kimaman konyi kisitak keribasi komaichotbek.

Kimo chekabwatet nengwon genkurubit, aken kilasta. Nee tuguk cheboisien chemo seleleisie kotes taien tuiyosiek kogoyo megeiak kiboitiotab kilasta.



Ongalalene nkurubitakmembraekakentuiyetabkilasta. Kimochekenyorunkabwatet age akobotugukcheobitenketikenkabetsiek. Nitonkotinyealietnemingwonyakkenyorunenmelektionemitenbarak. Cheng balaliatabindisiotneyamattilkoin dab 30cm tebesindoko 15cm mamankoit 2.5cm en age tugul. Arunytebesindokonyor 2cm akichengborowetabindisiotigichenkogimitagimichikeswot.



Keri b bandabtai.

Geretab ole kimenye en nguong kenya komomiten inegen kotabanat kition en nguong komugul miten kotinye kabwatet en koimutik che nyoru ak kogere agobo mengotodiek en agobo mengotosiek en agobo betusiek chebwone, bogomonut mising ye kiger koimutichuton ak kiguiyo ngemisiet ne konu waletab mengotosiek.

Waletab emet.

Ye kibel ngetuna nikab tiongik (coal, oil, natwal gas) kogonu koristo ne ya (carbon dioxide) niton kogochin kotal burgeiyet ne miten soet kogochin ng'ontet koet burgeiyet, nyoru nyanchosiet chemiten murot nebo katam kotesak beak amun chotos koigab beak, bitunen maranet nebo oinosiek, rurutik komonyor kelchin amun etu burgeiyet en ne met (kement) en africa ak en ngu'wong komugul.

Air pollution.

Koristo nebunu karisiek ak industries konyorunen bik kaimetab ge amun moitin konyor koristo ne kararan, ye imuka en soet nesechuton ko yerobon ekochote ak goik (acid rain) ne imuchi kowech menutik ak teksosiek, en mengotosiek cheech komiten kewelnatet nebo iyet neimuchi kosoginin en town koige bolik ne moimuchi biik kosoita ak kogonu miyonuek.

Beek chenobirotin.

Beek chemongunen (industries) chemongunen kabngatat, kerichek che mongunen imbarenik kotetechin oinosiek ak nyanchosiek kongochin kotametusiekab beek, nyorunen tiongik ak minutik ak biik mionuwek.

Ichuchuchi minutik ak tiongik.

Nyorunen ketik ak minutik kobosok amun en waletab emet, ak tiyongik nyabira niton ak tiletab ketik kobose inyotetab mengikab timuwek en kila belut bose kora tuguk chegiteksen ak kerichek.

Kaumanikab beek cheyachen

Chuton ko beek cheyachen mising chebunu factorisk che imuchi kobutok anan kongemak ko weche emet.

Robta netinye acid.

Kagemwai entai agobo niton kiristo ne nyabirat, chetinye acid weche niton timwek ak oinosiek cheech en europe ak murot nebo katam en america, yon korobon kobitu beek chetinye acid ko ketik, minutik, nchirenik ak teksosiek ko ngeme.

Istoetab burang'etitab nguong.

Miten anyun kerichek cheu (chlorocarbons) chekiboisien kogotiten mongutik chebo factory chuton anyun kongeme burangetitab nguong, burongetini kotuche nguondet asi monyor burgeiyet neo mising, ye bii miyonuek kou; lubaniatab magatet ak miwonuek cheter ak chetes.

Nyoru koimutik mengotosiekab barak.

En toonisek ak cilies konyor murindo neo, koristo, bolotosiek, chiletabgei ak kobosok ole kemenye.

Rorunetab kelunoikab emet.

En amun kimogingei tuguk chechang chegiboisien en nguong komugul kobitu rorunetab tuguk kou, oil, coal, mineral ak timwek kobenti kobetos, en rorunetab tuguchu kogonu boriosiek, komalo kobitu kewelnatosiek amun en rorunetab kimnotetab mat ne kimogingei baten kecheng oretagei kou beek ak koristo ne kata oil, coal.

Konetikab cluster oteben biik tebutichu.

tos nyoru kenya youtichu yachen, tos toreti kenya anan tesini koimutichuton, oketeben kenya agobo tetet, ainon koimutiet nebo mengotet ne gibuoti kele nyone koyoitu missing oginet biik en tuiyopsiekab kilasta ak biik alak komin ketik en chonginto asi komuch kotes tuguk alak che wole emet, asi kenyorun mengotet ne kaigai



Mitindoishek chepo groupishek che meng'echen: Kotuyet tap ke en Groupishek.

a) Ne oret ne kimuche kepanganen pik en tuyoshek chepo groupit?

Oret ne kararan ko kechop circle. Matonde mezoshek amun iku koimutyet. Matochop ngecherok che echen anan ko ngecherok alak tugul chebo pik che bo maana. En TIST, ketibotosi tukul kokerkeit. Kimuche ke toboten tugul en ng'echerok anan ketobote en ng'weny.

b) Nen ne iyoe yon moche kochut pik che ite taman ak oeng' grouit?

Angot komi pik che sire taman ak oeng' che moche kochut groupit kokararan inda kichope groupit ake. Imuch kebchei groupit koyop oengu, anan konget membaek somok anan ko angwan chebo groupit neta kochop core nebo groupit ne kitou. Inoni ko kaikai kosir koto membayat ageng'e. Obwat oboishen zungganet ab kandoinatet kobore konam.

c) NE oret ne omuche oboishe yon kiten inguvut nebo groupit,?

Bchei groupit korop pairishek. Toret kora drama. Saaishek alak ketononi, ak kekaskomwa chi tugul ki ne ibwate agobo groupit. Obwat kora orib saaishek asimakoit tuyet. Yomeke kecheng' netoreti kondoindet en ripet 'ab saaishek, Imuche igeshi nguvushek chepo groupit iger ile kakai kasit nekokitokchinke.

Ole kiyuito tuyet.

Asi kerip sait komye, Groupit ne kiten koyoche kotinye schedule nebo tuyet. Inoniton koba maana angamun kere kole kotar agendas chebo maana koron. Kora koba maan en TIST angamun, kikekonu ke en boishet nebo minet 'ab ketik, kemin ak kerip ketik chebo carbon markets. Yoche kora kenai membaekchok en groupishek che meng'echen komye, angamun chitukul kotinye jukumu en groupit ak en TIST kotugul.

Bo maana kora koyai groupishek tuyoshek kila mara, sana sana en kila wikit anan ko oeng' en wikishek oeng'. Inoniton kokochin membaek koneteke

en groupit ak kotech groupit ko mugul ak konai tuguj che imbya.

En tuyoshek chuton, kobo maana keker tuguk che bo maana. Groupishek che chang' en TIST kokoker kole boishe mtindo ne isubu en tuyoshek.

Stepit neta: Kokotiet ak Tachet 'ab membaek che imbya (5 - 15 minutes):

Hakikishan ile kokas chitugul komi komye. Ingonwakit lakini bokokchin chitugul komwa ge.

Stepit nebo oeng: Saet ne kiyoten tuyet (2 minutes):

Saet yon kinome tuyet kotoreti groupit koik kibageng'e.

Stepit nebo aomok: Tyenwokik (5 minutes):

Imuche koik tyenwokik che kisire membaek, anan ko tyenwokik che ituitos pik kou chepo kanisa.

Stepit nebo angwan: kiyonchindos sait ak boishonik (5 minutes):

Ororu kondoindet boishonik che kiyoe en groupit ak koyon chin membaek koyai kasishek choton. Kasarta neki boishen en kasit ake tugul koyoche kiyonchin asi kong'et co-leader kotoret korip saishhek en tuyet.

Stepit nebo mut. Kasishek ab groupit (1 hour):

Yoche kokidiscussen boishonik en tuyet ne kikobata. Boishonik komuch koik tuguk che kikoret chitugul groupit groupit anan ko TIST, training en tuguk che bo maana, ak ki ake tugul ne imuch kotoret groupit kota kwo taa kosir ole mi.

Stepit nebo lo. Techet 'ab ke (5 minutes):

Kila membayat koyoi teset en TIST. En teset komuche kobor chei kit ne talenta en kondoindet.

Stepit nebo tisab. Saet ne kikeran tuyet (2 minutes):



Ole kisibto.

Ye kaiges kesutik komat ibel
ngetunanik ingotebi imbar asi
kogochorotiyo asi konyor

okwoindo ngungunyek, nebo oeng ko kochin
imbar kotitindo. Agot ketik kosiche beek agichek.

Kimuchi ke tounen keturek.

- Amat ichomchi tuga kwam mobek amun
mongetu ngetunanik ago menyoru rurutik
chechang tun.

- Keringonik kesib kebole en kasartab
kemeut.

- Lewen oleimoche ibal icheng borowet ne
goi asi imuch koteta keringonik en
kokwoutik ak en tebesindo ko (90 cm).

- Kokwoutikab keringet kouni:15cm wide,
35cm long and 15cm deep.

- Ye negit igolse ituch ak ngungunyek
chebusbusen asi tun kogimit rurutik.Tesin
keturek ak iburuchen tugul ingonget 5cm
en barutab keringet.

- Agot ko bandek koibie kesuwek 4
keringet,tesin ngungunyek kogeny got
konget 2.5cm nito ko si kotoche beek

- En mosonyik ko 5-6 ak iyai kou bandek.

- Semberet kitutin keringet orit en kobogora
asi kogochi kesiwot koet ak kokimit. En
kwenutab tebesinto kesuwoche ak ketugen
lainit asi kotoret en beek anan ngot ko
susuwek ibaen tuga.

- Keringonik imuchi iboisien en kenysisiek
chema ngerin yeirib kome.



Ketoo keturrek chebo minutik.

Keturek ko toreti mising minutik kochok en ngungunyek. Ago kororonen amun motinye ngemet en rurutik ago nyumnyum kenyor ago motiye oliyet neo mising, motiye ngemet en agobo Itondab emet.

Miten anyun orinuwek chechang che kimuchi ketounen keturek en koborunet ne isibu ko kigoyomnda biik chechang temik. Otebenge en Kilasta ole kiboisio to biik alak.

Tounet ketoo kechob keturek.

1. Lewen ole imuchi ichoben keturek (4m by 4m).
2. Itilil yoton.
3. Bal keringet netinye kokwoutik 3m - 4m - 1.5m kochut orit.
4. Iyum anyun ngetunanikab imbar tugul ak itonaton komengegitun ak itorchik keringet chon ko kou (sogegab ketik mobekkab bandek, ngendek) ak alakau.
5. Torchi keringt koit 0.5m.
6. Tesin beekab 5ls chebo orek.
7. Tesin sorowekab tuga, neng, lgogenik kot koit 30cm.

8. Tesin ngetunanaik kot koit 0.5m.
9. Tesin beek 5ls chebo orek.
10. Testai itesi ngetunanik got konyi keringet.
11. Tesin baragut ngungunyek.
12. Ye itestai icheng bitoiyot ne koi ak ilumchi kwenutab keringet kot kotiny kwony.
13. Igomuny keringet kotar betusiek 90(orowek somok).
14. En kasariton tugul itestai itumchi beek chon kiunen tuguk en kaa. Ingot itinye tuga imuchi iyum sogororek asi itesi keringet.
15. Niton kotesin nitrogen.
16. Yai kouniton en betusiek tugul.
17. Ye kagobata orowek 3 ko koruriyo keturek.

Togunen burgeyet ne mi keringet.

Boisietab keturek:

Ye kagoit ichob imbaret inam ibal keringonik kosibgei ak minutik cheimoche igol. Keringet angenge koibe keturekab rubeito, rib anyun wolutik che bitunen imbarengu.