

Mazingira Bora



TIST

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

English Version

An Environmental, Sustainable
Development and Community Forestry
Program.



A section of Kwajebi Cluster members during their monthly meeting.

Inside:

TIST: Seed collection. Page 2

Stop Soil Erosion! Page 4

Kwajebi Cluster: Together We Can Achieve More. Page 4

Waste Management. Page 5

Small Group Payment – An Important Decision that Requires Your Voice. Page 5

Stop Deforestation, Plant Trees. Page 6

Opportunity to sell Croton Nuts. Page 6



TIST: Seed collection.

Since most of our seedlings in nurseries have been transplanted this rainy season, it is important that we start preparing new nurseries for seedlings that we will transplant in the next rainy season – October - December.

This article will help you understand some of the issues you need to learn in preparation of your individual or group nursery.

1. Which tree species should we grow in our area?

The best ones are those growing naturally in the area. Select ones that meet your needs. TIST particularly encourages fruit and indigenous trees, and others that will remain in the ground for 30 years or more.

2. Are all trees good?

Not necessarily! Some may be difficult to control, be poisonous to your animals or use too much water. Choose ones you know will benefit your area.

3. Do trees produce seeds every year?

Most trees do, but observe your local trees to be sure. Some may only produce good quality seeds every 2-3 years.

4. Which is a good mother tree to collect seeds from?

- Collect seeds from healthy trees that are good seed producers.
- Avoid isolated trees. In this case the seed is likely to have been self-pollinated which leads to poorer quality seeds.
- Avoid unproductive trees and ones with a bad shape.
- It is better to choose a tree in the middle of a healthy group of trees of the same species. Seeds will be higher quality from trees with flowers that are spread out rather than packed closely together.
- The exact type of tree depends on what you want to use the tree for. For example, good trees for timber are straight, few branches and fast growing. Good trees for fodder should be fast growing, many branches with multiple stems, and fast growing leaves with the ability to recover after being pruned. Good fruit trees

should obviously have good quantities of healthy fruit!

- Try to choose seeds from a tree growing at the same altitude and soil type as where you want to plant.
- Choose a mature tree, not a young one.

5. When do we collect the seeds?

- Learn the time of the year when the seeds are ripe.
- Ask other local people or observe the tree yourself.
- Sometimes seeds are ripe when the fruit or pods change color, become dry, or break easily from the branch.
- Most seeds are ready for collection when they fall from the tree naturally.

6. How do we collect the seeds?

- It is helpful to clear the area around the bottom of the tree first. Many seeds can be collected from the ground. Inspect the seeds for insect damage. The tree can be climbed to collect the seeds, but take care!
- Some fruits dry, open and disperse their seeds without falling to the ground. These are hard to collect if the seeds are small. Collect the fruit or pods after they are ripe but before they have split or fallen to the ground. Then dry the fruit or pod in a clean, sheltered place to obtain the seeds.
- Some seeds can be knocked from the tree with a long stick.
- Try putting a sheet under the tree and gently shaking the tree.
- For tall trees a simple tool can be made by attached one end of a pair of shears to a long, strong stick. The other handle can be attached to a rope.
- Note that some seed species cannot be collected from the ground and have to be collected as *wildlings*. These are newly germinated seedlings found growing under mature trees. These can be transplanted to pots in your nursery. This is often the best method for trees that are hard to grow in a nursery or whose seeds are hard to collect.
- All seeds must be removed from their fruit or pods.



This can be done by hand, or by putting the fruit/pod in the sun and waiting for it to dry and split.

7. How can we tell if the seed is good?

- First look at the seed. Discard ones that are smaller, lighter or a different color than the others. Insects may damage some seeds.
- For some hard-coated species floating in water is a good test. Normally the good seed sinks and the bad seed floats.
- You can do a simple germination test. Take a small counted number of seeds (20-100). Do any pretreatment needed. Put the seeds on a damp cloth in a bowl. Cover with another fold of the cloth, moisten it thoroughly and put in a warm (not hot) place. Check the seeds daily for signs of germination and keep the cloth moist. When germination begins keep a record of the day and number. The test usually lasts about two weeks depending on the species. Germination of over 50% means you have good seed. Small-seeded species having only 5% germination are still worth keeping.

8. Do we plant or store the seeds?

- Some seeds do not store and should be planted straight away (especially soft, fleshy seeds, fruit tree seeds or seeds with high oil content).
- For seeds with harder coats the basic rule is to keep the seed clean, dry and cool.
- Seeds should be removed from the fruit/cone and dried thoroughly. To dry the seeds put them in the sun for 2- 3 days.
- Storing in a paper bag or metal container out of the sun is good (avoid plastic bags as this makes the seed sweat and rot). Make sure the container is clean and airtight.
- Label the container with the name of the seeds and the collection date.
- Remember that the germination ability of the seeds will decrease with time. If seeds have been stored for too long they may expire.

9. Do all seeds germinate?

The percentage of seeds, which germinate, varies greatly between species. Some seeds require some form of pretreatment.

10. What kind of pre-treatment might be needed?

- If the seeds have a very small or thin coat often no treatment will be needed.
- Seeds that have thick coats will need some form of pre-treatment. Some need to have their seed coat cracked with a hammer or a stone. Seeds should be planted immediately after cracking.
- Some seeds just require a small cut in the seed coat to help water infiltrate (nicking). Do not cut the part that was attached to the pod or capsule as this part contains the baby plant.
- Others need to be soaked in mild acidic solutions for 5-20 minutes before sowing.
- Another method for hard-coated seeds is to boil them in water for 5-10 minutes. Then put the seeds in cool water. This weakens the coat and helps water to enter.
- Some seeds can be soaked in normal water for 12-24 hours.
- All seeds, once pre-treated, need to be planted straight away.

11. How do we plant the seeds?

- Some seeds that germinate readily can be sown directly into the field or into pots. Species that require special conditions to germinate are sown into a seedbed first.
- The time taken for germination depends on the seed type, the temperature, the amount of water available and the age of the seed.
- Generally sowing is done just before the rainy season starts.
- As a general guide, for direct sowing seeds should be planted at a depth of two to three times their diameter and should be covered firmly with soil. The soil should then be kept moist.

12. Do seedlings grow only from seeds?

Some tree species produce root suckers (young plants growing from the mother plant's roots). These can be cut and transplanted. Cuttings can be taken of a young tree branch with at least three nodes or buds. Choose a long, healthy branch and make a clean, angled cut then strip off the leaves. Plant the cutting into soil at least two nodal lengths deep, with at least one exposed. Keep it watered until sprouting occurs.

Seedlings grown in this way will have the same characteristics as the parent tree and can be useful for making sure a productive fruit tree is grown.



Stop Soil Erosion!

By David Mawira

Soil erosion is caused by surface running water. It mainly affects where the land is bare, no grass cover and groves with no terraces or little vegetation. Many lands especially in clusters where the topography is steep have been left with rill erosion, in other areas more serious gully erosion.

Tons of fertilizer has gone to waste through soil erosion. Millions of shillings have been lost to the ocean. Yet our lands have been degraded more and more.

I encourage each and every one of us to make the effort to prevent this disaster by planting indigenous trees in our groves and plant grass and other cover crops. This will add value to dairy

farming and reduce expenditure on animal feeds.

Let's embrace protection and conservation ways of covering our streams and rivers with water friendly trees. Also, let's obey the Government laws by avoiding cultivating 30 meters or planting eucalyptus trees 100 meters from these waterways.

Importantly, each of us begins to practice Conservation Farming (CF). CF will help reduce the velocity of surface runoff and in case of insufficient rainfall; the CF holes will hold water for a longer time and increase the chances of a good harvest.

By harvesting rainwater from gutters on the roof of our houses, we can collect water that can be used during a dry spell.

Kwajebi Cluster: Together We Can Achieve More.

By Mary Kathei

After a moment of inactiveness, (deep sleep), Kwajebi Cluster is now awake and willing to join hands with other TIST farmers to benefit from the carbon business.

Kwajebi Cluster is one of the 5 pioneer clusters in Laikipia West started in 2008 by Joshua Irungu as the TSE, now Laikipia County Governor. We now have 56 Small Groups. We are back now and full of energy. Together, we have resolved and agreed the following;

- Each Small Group will have a tree nursery this year.
- Each member will be planting a minimum of 50 trees every rainy season.

- We will spread TIST to our neighbors and friends and recruit more groups to join us.
- We will be reminding each other of these agreements and make follow-ups to see that they are implemented.

We are working hand in hand with Cluster Servants, David Thuku and Mary Kathei in getting our trees quantified. We will continue to support them in their work.

We held our April Cluster meeting on April 18, 2013. We will continue to learn more, share and encourage one another at every monthly Cluster meeting. Together we can achieve more!



Waste Management.

By Joseph Gituma

Waste is any material that is a by-product of human activity and that may not have immediate value, which includes:

- Human excreta/waste
- Domestic rubbish like left over food.
- Waste paper
- Polythene bags
- Scrap metal, old batteries (dry cells)
- Sewage sludge etc.

What Causes Rubbish Problems In Your Community?

Waste is inevitable but is made more problematic by:

- Wasteful/inefficient use of resources
- Lack of methods for reusing waste
- Lack of waste disposal sites (rubbish pits latrines,)
- Lack of knowledge about the dangers of poor waste management

Consequences of Poor Waste Management

- Littering of fields and compounds, loss of beauty of the area

- Pollution of water, air and soil
- Disease outbreaks
- Blockage of drainage channels
- Toxic poisoning and fumes from old batteries

Children and animals may be poisoned or injured if they pick up and play with old batteries or other rubbish.

What can your Small Group do help solve the problem.

- Reduce or minimize the generation of waste.
- Consider using solar powered products instead of those that use disposable batteries when possible.
- Reusing - use materials again where possible (ie. plastic bags)
- Composting - save organic waste (left-over food and fodder) as natural fertilizer for use in gardening.
- Dig a rubbish pit in your compound.
- Remember only to burn paper and card. Do not burn batteries as they may explode. Put them into the pit latrine.

Small Group Payment – An Important Decision that Requires Your Voice.

Many TIST Small Groups have requested that their tree payments be made every 6 months. Presently, Clean Air Action Corporation has an Contractual agreement with TIST farmers to be receiving Ksh 1.50 Cts (or more depending on exchange rates – US Dollar vs Kenya Shilling) every year for each tree that is quantified and kept alive. In the past, CAAC has been paying in quarterly installments. This means each quarter Farmers have been receiving Ksh 0.375 for each

tree. Now, many farmers are requesting that they want to receive their payments semi-annually. Therefore, after every 6 months, they will be receiving Ksh 0.75 (also higher if depending on exchange rates).

We want to hear your view too. Please talk to your Cluster leader and give your choice – to pay semi annually or quarterly. You may also call Grace Gacheri, an Operational Leadership Council member on 0720 918 461



Stop Deforestation, Plant Trees.

By Joseph Gituma

We all see the effects of deforestation, the removal of the woody vegetation cover and trees. In TIST, we work to stop deforestation and reverse some of its worst effects.

Causes of deforestation

- Deforestation occurs when trees are cleared for uses such as firewood, for brick making, fish smoking, and construction, or to open land for cultivation.
- A lot of deforestation results from lack of awareness of the full value of trees.
- In some cases, the value of trees may be known but poverty and perceived lack of alternatives forces people to clear the trees.

Problems caused

- Lack of tree cover and tree roots exposes soil and causes erosion
- Lack of forest resources we all need: removing trees destroys habitats, reduces biodiversity, removes food and medicinal resources and increases competition for construction materials. People have to walk further for firewood, and prices for forest products being bought prices become high.
- Lack of other environmental benefits of trees: Trees act as a windbreak retain moisture, add

oxygen to the air, and add nutrients to soil. Hence without trees the local climate will become drier with increased risk of flooding, wind erosion, decreasing soil fertility and diminished air quality.

Solution to prevent deforestation

1. As TIST farmers we should have tree nurseries and produce seedlings to plant in our Small Group members' land and sell seedlings to community members. We should encourage others to plant trees as well, and to join TIST!
2. Use TIST energy saving cooking stoves, which use less firewood and charcoal, and encourage other community members to do the same.
3. Use alternative sources of energy and fuel where possible (e.g. heating from the sun, sawdust, coffee husks, grass, weeds, crop wastes, animal waste).
4. Carry out tree planting activities in our communities, especially with schools, churches, and near rivers. This really increases TIST's impact!
5. Practice and encourage agroforestry and use of wood lots

TIST – Let's make our world green!

Opportunity to sell Croton Nuts.

A new market for croton nuts has emerged. A company in Naro Moru is buying croton seeds to manufacture biodiesel which can be used to run motor vehicles and other machines.

Eco Fuels Kenya, Ltd is buying crotons seeds at Ksh 6.50 per Kg. Farmers are collecting these seeds from their own private farms or from the nearby forests.

Many TIST farmers find that *Croton megalocarpus*, an indigenous tree, makes a good

windbreak on their farm. This new market for *Croton* seeds is one more benefit to consider when you are choosing which trees to grow.

Eco Fuels arranges for transport once the collection has been made.

For more information, contact:
Cosmas Ochieng: 0725398675.
Email: Cosmas@ecofuelskenya.com.
www.ecofuelskenya.com

TIST: Current Operational Leadership Council Team Leaders.

Beginning May up to August 31, 2013 the following are OLC Leaders.

Jane Kanja – Team Leader / Martin Weru – Co Leader.

If you have complaints, comments or suggestions that you would like to pass to OLC, contact Jane on 0713 436 028 and Martin 0722 846 501

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Inside:

TIST: Kuthurania kwa Mbegu. Page 2

Rigiria gukamatwa kwa Muthetu ni Ruuji? Page 4

Kwajebi Cluster: Turi Amwe no tuthithie Nkuruki. Page 4

Kumenyera Guta Mati na ruko. Page 5

Marii ja ikundi Biniini – Untu bubu ni bwa bata na nibukwenda mugambo jwaku. Page 5

Tutigeni kugiita miti, Anda miti. Page 6

Kanya ga kwendia mpindi cia Croton. Page 6



TIST: Kuthurania kwa Mbegu.

Niuntu Mbegu cietu iria nyingi niirikitie kuritwa minandene igita riri ria mbura, ni untu bwa maana twambirie kuthurania minanda imieru nikenda twambiria kuthamia mbegu cietu igitetene riu ringi ria mbura mweri jwa inana na jwa ikumi na iri

Mantu jaja jaandiki aja jagagutethia kwerewa nkuriki mantu jamwe jaria ubwiri kumenya kiri uthuraniri bwa minanda iji wi wenka kana buri gikundine.

1. Ni miti mithemba iriku bwaanda ruteerene rwenu?

Iria miega buru ni iria ikuraga yongwa rutere rwenu. Thuura miti iria igukinyaniria mantu jaku. Tist mono mono niyendaga antu baanda miti ya matunda kana miti ya gintwire na ingi iria igakara Nthi miaka mirongo ithatu na nkuruki.

2. Miti yonthe ni imiega?

Ari ti mwanka miti yonthe ithirwe iri imiega. Imwe no ithirwe iri na inya kumenyera, ingi no ithirwe iri na sumu na ingi niendaga ruuji rurwingi kenda ikura bwega. Niuntu bwa mantu jaja. Thuura miti iria ikethirwa iri na utethio kiri ruteere rwenu.

3. Miti niejanaga mbegu o mwaka?

Miti imingi niejanaga Mbegu o mwaka indi ni bwega gutegeza miti miti ya ruteere rwenu kenda umenya bwega. Imwe iejanaga mbegu injega ndene ya miaka iri mwaka ithatu.

4. Ni muti juriku jumwega jwa kurita Mbegu?

- Rita mbegu yaku kiri miti iria iri na inya na iria ithagirwa iri imiega kiri kuejana mbegu injega
- Ebanira na miti iria ikuraa yonka. Kuri na withire bunene ati muti juu juciranaga jungwa na mbegu ya ju itithagirwa iri injega
- Ebanira na miti iria iticiaraga na iria iri na miumbire itibui na imikigamu
- Ni bwega gutaara muti juria juri gatigati ka miti ingi iria iri na inya na ya mwiriga jumwe. Mbegu cia miti iria iri na maua jaumanite cikethirwa iri cia kiwango kia iguru nkuriki ya ya jaria jakunikene amwe.
- Thuura mbegu kuringana na gitumi kiria ugatumira nakio muti juu. Kwa Ngerekanio, Miti imiega ya Mbau ithangirwa iri imitamburuku, na iri na mpagi inkai na ikuraga na mpui. Miti imiega ya iria ibwiri gukura na mpui, iri na mpangi inyingi na mabura jagukura na mpui na iria ikomba kuuma na kugwata inya nyuma ya gwita mariiri. Miti imiega ya matunda nayo ibwiri kuithirwa iri na matunda jamaingi jari na inya.
- Geria kuthura mbegu kuma kiri miti iria igukura

ruteerene rumwe na muthetune jumwe na naria ukwenda kwaanda miti yaku.

- Thuura muti jugukura kura, ukathuura kamiti kanaana.

5. Ni igita ririku tuthuranagia mbegu?

- Meenya igita ria mwaka riria mbegu ciathagirwa igundi cia kuthurania
- Uria mutuuri waku kana muntu wa ruteere ruu kana wambe umitegere wengwa.
- Igita rimwe mbegu nigundaa riria matunda jaju kana macau jagarura rangi, jooma kana jagwa kuma kiri mpangi na uuthu
- Igita ria kwoja mbegu rithagirwa rikinyite riria ciagwa kuuma mutine ciongwa.

6. Ni njira iriku tutumagira kwoja mbegu?

- Ni bwega kutheria gitina kia muti mbere. Mbegu iria nyingi ciojagwa kuuma nthiguru. Tegera bwega kethira mbegu iji nicirumi ni tun'ginyo. Muntu noatie mitine kuthurania mbegu iji indi umenyeere kugwa!
- Matunda jamwe jomaga jagatuka na jakanyagia mbegu kinya jatigwite kuuma mutine. Mbegu jaiji iri thina kwoja, mono mono kethira cigwite muthetune. Ni bwega kuumia matunda jau antune atheru jakunikiri kenda umba kwoja mbegu iu.
- Mbegu imwe nocituwe muutine na kimuti kigiraaja
- Ni bwega gwika gintu gia kwambiria gitinene kia munti riu ugacoka okaninia muti mpaara
- Kiri miti imiraaja nowogeere ruteere rumwe rwa magasi Kiri muti jumamatu na ruteere ruu rungi nowogeere mukanda kana murigi
- Ni bwega kumenya ati mbegu imwe itiumba kwojoa nthi muthetune na no mwanka ciojwe ja mbegu cia kithaka. Iji ni mbegu iria ikurite orio iria cionagwa mono mono itinene bia miti imikuru. Mbegu iji nocithamirue nyongune igekwa minandene. Iji niyo njira iria njega ya kumithia mbegu iria iri inya kuuma munandene kana mbegu iria inya ya kwoja.
- No mwanka Mbegu cointhe ciitwe matundene kana macaune jacio. Ngugi iji no iritwe na njara kana gwika matunda kana macau jau riuene kenda joma na jathanduka

7. Ni njira iriku tutumagira kemenya kethira Mbegu niinjega?

- Mbere amba utege mbegu/mpindi. Taa iria ikwonania inyii kiri ingi, kana cierui nkuruki ya ingi kana iri na rangi mwanya na ingi. Tug'inyo notwithstanding turite mbegu/mpindi iu
- Kiri Mpindi/mbegu iria iri na gikonde gikiomo, kwereria ruujine ni njira ingi injega ya kumenya



kethira niinjega. Mbegu/mpindi injega ikagwaa kibaabene kiria wikirite na iria nthuku cierere ruujine

- No uthithie kithimi kingi wona kethira mbegu iu ikauma. Jukia kithimi gia mpindi/mbegu mirongo iri mwanka igana (20-100). Thithia uraguri buria bumba kwendeka. kunjia mpindi/mbegu na gitambaa kiiri ruuji na wikire mbakurine. Kunikira na rukunjo rungi rwa gitambaa kiria. Minyiria gitambaa kiria ruuji kairi na wike mbakuri iria antu kuri na muritira (Ti mwanki). Tega mpindi ciaku ontuku wone kethira cina kionaniria gia kuuma. ciambiria kuuma ika maandiko ja ni mpindi mbegu ingana cikwonania kuuma na ni ntuku iriku kana ntariki o cia ntuku ntuku. Kithimi kii kithithagua ndene ya biumia biiri kuringana na muthemba jwa Mbegu/mpindi. Mbegu/mpindi ciauma nusu(50%) ya iria urathithairia kithimi nikwonania mbegu yaku ni injega. Kiri mbegu iria iri mpindi niini, ciauma o ithano kiri igana(5%), mbeu iu bando no injega na no umiike.

8. Twaande mbegu kana twike?

- Mbegu imwe itibwiri guikwa na cibwiri kwaandwa orio (mono mono mpindi iria iri imboro na iri na gikonde gikioro amwe na mbegu cia matunda kana iria iri na kithimi gikenene kia maguta ndene yacio)
- Kiri mbegu/mpindi iria iri na gikonde gikiumo, watho ni mbegu/mpindi iji cibwiri gikwa antu gukutheru na antu gukanyaru kuri na mpio itingii.
- Mpindi cibwiri kiritwa kiri matunda kana gikonde na ikomua bwega. Kuumia mbegu/mpindi bwega cianike riuene ntuku ijiri kana ithatu
- Ni bwega gwika mbegu iu ndene ya muuko kana mukebe jwa Cuma kuraja na riuu. (ni bukuru bugatumira miuko ya maratasi ja plastiki niuntu mbegu/mpindi iju gaikora niuntu bwa kuthithina)
- Andika ritwa ria mbegu/mpindi amwe na ntariki iria ciothuranitue.
- Rikana gukura kwa mbegu iu gugeta gukinyia ouria ntuku igwita. Mpindi ciekwa igita riraraja mono coimba kuthuka buru.

9. I mbegu/mpindi cionthe ciumaa?

Kuuma kwa mbegu kuringana na muthemba jwa mbegu/mpindi. Kinya uraguriri bwacio ibutumaga imwe ciuma kana irega kuuma

10. Ni uraguri buriku bumba kwendekana kiri mbegu/mpindi mbere ya kwanda?

- Kethira mbegu iri na gakonde ka iguru gakothu kana kanini guti uraguri bukendekana
- Mpindi/mbegu ingi iri gikonde gikiumo kia iguru na niuntu bubu uragururi bwa mwanya bukendekana. Imwe ikenda gwaturwa na nyondo kana iga. Iji nacio cienda kwandwa orio ciathiria gwaturua na iga kana nyondo.
- Mbegu/mpindi ingi ciendaga gutemwa a nini gikondene kenda ruuji rumba gutonya. Ukatemera aria mpingi/mbegu yagwatanirite na gikonde kiayo niuntu ni o ikaumira
- Ingi nicienda kurindwa ruujine rwina acidi itingii ndaika ithano mwanka ikumi (5-20). Mbeere ciandwa
- Mpindi/Mbegu iria iri na gikonde gikuomo mono ciendaga kutherukwa ndaika ithano mwaka ikumi (5-10) Riu igacoka igekirwa ruujine rwa mpio. Njira iji itethagiria kworoyia gikonde kia iguru kia mbegu/mpindi kenda riria ikaandwa ruuji rumba gutonya kiri yo.
- Mbegu/mpindi ingi nocirindwe ruujine rwa withire mathaa ikumi na jairi mwanka miringo iri na jana (12-24)
- Mbegu/mpindi cionthe ciathithurua uragururi buu nicibwiri kwaandwa orio

11. Natia twaandaga mbegu/mpindi iji.

- Mbegu imwe iria ciumaga orio no ciandwe nthi muthetune kana nyongune. Kiri muthemba jwa mbegu jwendaa kuthithirua mantu ja kimwanya , iji nacio ciamba kwandwa munandene mbere.
- Igita riria mbegu ijukagia kuuma, iringana na muthemba jwa mbegu, murutira jwa nthi na ruuji ruria rukwonekana na miaka ya mbegu
- Mbegu iji ciandagwa mbeere ya igita ria mbura
- Mawatho jangi ja withire ni ati mindi/mbegu ciandagwa na worokeru maita jairi kana jathatu, na waarii bwa cio na cigakunikirwa bwega na muthetu. Muthetu juu nijubwiri kwithirwa jwina ruuji igita rionthe.

12. Mbegu iji ri, ciumaa kiri Mpindi aki?

Mithemba imwe ya mbegu niuama miriine. (tutu ni tumera tutwanake kuma kiri miiri ya kimera gigikuru) Iji kinya cio no cithamue ikaandwa antu angi.

Ntemwa cia muti jumwanake ciina ntumuti ijiri kana ithatu.

Ni bwega kuthuura iria ndaja iri na inya, ugite ntemwa intheru ingananiritie na ukure mabura.

Muntira ntemwa ciaku nthi muthetune wikirite ntumuti ijiri nthi na imwe iri iguru ria mithetu

Mikire ruuji mwanka yambirie kuuma.

Mbegu iria ikuritue uju cinguanana na muti juria mbegu yatemi kuuma kiri ju na nojutetherie kumithia miti ingi imiega.



Rigiria gukamatwa kwa Muthetu ni Ruuji?

ni David Mawira

Gukamtwa kwa muthetu kumanagia na ruuji ruria rukurukagira muthetune. Mono mono Munda jutigagwa jumutheri guti na nyaki kana mitaro kana kinya kithaka o kiriku

Miunda imingi kiri Clusters naria gwitiritie nugutigi gukutheri na mithetu gukamatwa. Mboreo ya miunda inyingi niinyangikite niuntu bwa gukamatwa kwa muthetu ni ruuji. Mamilioni ja mbeba nijathambitue jagaikua iriene riria rinene ria Indian Ocean na gutiga miunda yetu itaukiri mono mono.

Ni nkuria oumwe wetu kujukia itagaria nikenda tuumba kurigiria muthetu gukamatwa ni ruuji. Twaande miti ya gintuire amwe na kwanda nyaki na mimera ingi iria igatatetheria gukunika na kugwatira muthetu jwetu jutigete na ruuji. Njira iji igatethia kinya urimi bwetu bwa n'gome cia iria and

tunyiye kugura irio bia ngome

Nitugwate mbaru njira cia kurigiria na gwika nduji cietu bwega na na kwanda miti iria itinyunyaga ruuji rurwingi. Nitwathikire mawatho ja thirikari jaria jaugaga tukarima uraja bwa mita mirongo ithatu kuma kiri ruuji na tutige kwanda miti ya Mipau maguta

(Eucalyptus) mita igana kuuma ruujine o riruku.

Bwa bata mono ni tuthithie urimi bwa kurigiria buria bwitagwa Conservation Farming. Urimi bubu bugatethia anene kunyiya rwirowuria muthetu jwetu jugukamatwa ni ruuji mono mono mbura yarega kungana. Marinya ja CF jakagwatira ruuji igita riiraja na jongoere maketha jamega.

Kugwatia ruuji rwa mbura kuuma kiri mabati ja nyomba cietu kinya yo ni njira injega ya kurigiria muthetu gukamatwa na ruuji ruru ni tutumaira riria gitiraura rua.

Kwajebi Cluster: Turi Amwe no tuthithie Nkuruki.

ni Mary Kathei

Nyuma ya ndaika cia gukira (kumama mono) Cluster ya Kwajebi niukirite nandi na yagwatanira na arimi bangi ba TIST niuntu bwa gwitethia kumania na ngugi ya Carbon.

Cluster ya Kwajebi nimwe ya cluster cia mbere buru ndene ya Laikipia West yambiritue mwaka jwa 2008 ni Joshua Irungu ari TSE. Nandi niwe Laikipia County Governor. Nandi turi na ikundi mirongo itano na bitantatu (56)

Ni tucokerete and tujuri ni inya. Turi amwe nitwitikaniritie na mantu jaja:

- O gikundi gikenthirwa kiri na munanda jwa mwiti mwaka juju.
- O mumemba akaanda kithimi kia miti mirongo itano kwa unini o igita ria mbura.

- Tugatambia TIST kiri aturi betu na acore betu na tikiraa bangi bathithie ikundi kenda bagwatanira natwi.
- Tukarikanagia o umwe wetu mantu jaja o kagita na tithingathie twone mantu jaja nijakuthithua.

Tugaitaniria ngungi na ariti ngugi ba Cluster David Thuku na Mary Kathei nikenda miti yetu itarwa. Tugeta na mbere bubagwata mbaru ndene ya ngugi ciao.

Twari na mucemanio mweri jwa ina jwa Cluster ntariki ikumi na inyananya mwaka jwa 2013 (18.04.2013). Tugeta na mbere kuthoma jangi jamaingi na tutethanie na twikanire inya kiri micemanio iu ingi ya o mweri ya Cluster.

Turi amwe notuthithie mantu jamaingi nkuruki!



Kumenyera Guta Mati na ruko.

ni Joseph Gituma

Mati ni gintu kionthe kiumanagia na ngugi iria muntu aitaga ntuku cionthe agatiga biria atikwenda na no bithirwe bitina gitumi orio. Into bibi nija

- Kioro kia Muntu
- Into bia Nja ja irio biria bitigere
- Maratasi
- Maratasi ja Nylon/plastiki
- Chuma na maiga ja tochi jamathiru
- Sewage

Ni mbi iretaga thina iji

Mati kana Ruko ruru ni gintu tutiumba kwebera na nijathukagua nkuriki ni

- Kurega gutumira into bietu bwega
- Kwaga njira injega cia gutumira into biria kairi
- Kwaga gintu kana into bibiega bia gutera mati na ruko ruru
- Kwaga umenyo na uume bwa ati ruko ruru ni ruruthuku na ruthukie uturo bwetu.

Guta mati na ruko ruru na njira iria itibui keretaa:

- Kwagia bieni na nja cietu uthongi
- Kuthukia riera, ruuji na muthetu jwetu
- Kureta mirimo ya mithemba
- Kuinga mibaibo iria itejaga ruko
- Sumu gutamba

Twaana na nyomoo cietu biomba kugwatwa ni sumu iji kana kuringwa beta gutindania na ruuko ruru kana nyomoo cietu ciaria nyaki iji

Natia Ikundi bietu bikomba gutetheria kuthiria thina iji

- Kunyiya gutumira ruko
- Gutumira into biria bigutumira mwanki jwa riuu jaju Solar antu agutumira biria bitumagira maiga ja guta jathira inya
- Gutumira into bimwe kairi aria gukumbika ja maratai ja nailoni
- Kuthithia mboleo na irio biria biatigara antu aguta
- Kwinja kirinya gia guta mati njeku
- Kurikana kwithia maratasi aki ja ti ja nylon na ukaithia maiga ja tochi nontu jomba gutunduka. Jaja jabwiri gutewa kiorone kia nthi.

Marii ja ikundi Biniini – Untu bubu ni bwa bata na nibukwenda mugambo jwaku.

Ikundi bibingi bia TIST niboritie marii jao ja miti jathithague o mieri itantatu. Nandi Clean Air Action Corporation beena mutaratara jwa gwitikaniria na arimi ba TIST bariagwa Kshs. 1:50 Cts (kana kuringana na uria mbea cia America iguchinjanua na shilingi ya Kenya) O kiri muti juria jutari na juri moyo. Au mberene CACC barariaga o nyuma ya mieri ina guku nijakuga o murimi aronaga Kshs 0.375. o kiri muti. Nandi arimi nibakuromba

barigwe jairi mwaka kana o nyuma ya mieri itantantu. Kwou nyuma ya Mieri Itantatu bakariagwa Kshs.075 (Iji mbea iri iguru kuringana na thoko ya mbea)

Nitukwenda kuigua mugambo jwenu kumania na ntento iji. Arieni na mutongereria wenu na bubere kethira burienda kuriagwa o nyuma ya mieri ina kana itantatu. No uringe thimu kiri Grace kana Gacheri ba Operational Leadership Council Member on 0720.918.461.



Tutigeni kugiita miti, Anda miti.

Ni Joseph Gituma

Twinthe nitwonaga kugita miti uria kuthithagia, gwitwa kwa imera bia mpao na miti. Ndene ya TIST, nituritaga ngugi gutigithia kugitwa kwa miti na kugarura mantu jamwe jaria mathuku buru jaria jaumanagia na bubu.

Kiria gitumaga miti igitwa

- Kugitwa kwa miti kuthithikaga riria miti yagitwa nikenda itumika iri nkuu, kuthithia maiga, kunyaria makuyu na gwaka, kana kurugura muunda nikenda jurimwa.
- Kugitwa kwa miti kuria kwingi kuumanagia na kwaga umenyo bwa goro yongwa ya miti.
- Magitene jamwe, goro ya miti no imenywe indi ukia na njira ya kuthugania imbii ati guti kingi kiumba gutumirwa niitumaga antu bakagiita miti.

Thiina iria ciumanagia na kugita miti

- Kwaga gia gukunikira muthetu na miri nigutumaga muthetu jukarekua na jugakamatwa.
- Kwaga into bia miitu biria twitagia: kurita miti nikuthukagio ikaro, gukanyiyia nyomoo, imera na tunyomoo, gukarita irio na ndawa na kwingiyia gushindanira into bia gwaka. Antu nibambairia gwita kuraja niuntu bwa nkuu, na uguri bwa into bia mwitu bukanenea.
- Kwaga baita cia naria gututhiurukite iria

ciumanagia na miti: miti ninyiagia ruugo, nitethagia gwika ruuji igita riraja nkuruki, nionagaira ruugo rurwega ruugone na ikongera bia kunoria muthetu. Kwou gutina miti, rera ya antu au ikooma na kugie kuigara kwa ruuji, gukamatwa kwa muthetu ni ruugo, kunyiyia kwa unoru bwa muthetu na utheru bwa ruugo bunyie

Njira ya gutigithia ugiti miti

1. Ja arimi ba TIST nitubati kwithirwa turina minanda na tuumithie miti ya kuanda ndene ya miunda ya amemba ba gikundi gikinini na tukendia miti kiri aturi. Nitubati gwikira bangi moyo kuanda miti kinyabo, na gutonya kiri TIST!
2. Gutuumira mariko ja nkuu na makara jamakai, na gwikira moyo amemba bangi ba ntuura kuthithia ou.
3. Gutumira njira ingi cia mwanki riria kuumbika (mung'uanano, mwanki kuumania na riuu, mati ja miti, mati ja kauwa, nyaki, maria, matigari ja imera, ntaka ya ndithia)
4. Anda miti ntuurene, mono cukuru, makanisene na akui na nduuji. Bubu nibumenyithanagia TIST na njira inene!
5. Rima na wikire bangi moyo jwa kurima miti na imera amwe na kuanda tumiunda twa miti

TIST –Tuthithieni nthiguru yetu ie ya rangi ya imera!

Kanya ga kwendia mpindi cia Croton.

Thoko injeru ya Croton niambitie. Kambuni imwe Naro Moru nikugura mpindi cia Croton nikenda ithithia maguta jaria jomba gutumika ngarini kana kiri mashini ingi.

Eco Fuels Ltd nikugura mpindi cia Croton na shilingi ithanthatu na cumuni o kilo. Arimi nibakwojania mpindi iji kuuma miunda yao bongwa kana kuuma miitu iria iri akui. Arimi babaingiba TIST niboonete ati *Croton megalocarpus*, muti jwa gintwire, ni jutethagia kunyiyia ruugo aanene miundene yao.

Thoko injeru ya mpindi cia Croton ni baita ingi imwe ya kuthuganiria riria ugutaara ni miti iriku ukwenda kuanda.

Eco Fuels niibangaira gukamata mpindi iji ciarikia kuuthuranua.

Wenda kumenya nkuruki, ringira
Cosmas Ochieng: 0725398675.
Email: Cosmas@ecofuelskenya.com.
www.ecofuelskenya.com

Mazingira Bora



TIST

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

Kikuyu Version

An Environmental, Sustainable
Development and Community Forestry
Program.



A section of Kwajebi Cluster members during their monthly meeting.

Inside:

TIST: Ungania wa mbegu. Page 2

Gitira tiiri kumana na gukuuo ni maai! Page 4

Cluster ya Kwajebi: turi hamwe notuhote maundu maingi. Page 4

Gute Giko. Page 5

Marihi ma ikundi – Itua riabata rirabatara mugambo waku. Page 5

Tiga gutema miti, Handa miti. Page 6

Mweke wa kwendia Nginduri. Page 6



TIST: Ungania wa mbegu.

Na tondu mimera iria irari tuta-ini niirahandirwo migunda-ini kimera kia mbura, niwega twambiririe kuhariria tuta ingi niguu tugie na mimera ingi ya kuhanda kimera giukite October-December.

Rugano ruru niruguguteithia gutaukwo ni maundu maria wagiriirwo ni guthoma niundu wa kwambiriria tuta ya gikundi.

1. Nimmithemba niriku ya miti yagiriirwo ni kuhandwo kwanyu?

Iria miega ni iria ikuraga na njira cia ki-nduire kwanyu. Thuura iria iraringana na mabataro maku. TIST ni ihinyagiriiria arimi mahande miti ya matunda na ingi iria ingiikara gwa kahinda ka makiria ma miaka 30.

2. Miti yothe ni miega?

To muhaka! Ingi niikoragwo na hinya kumenyerera, igakorwo na thumu kana ikagucia maai maingi. Thuura iria iguguteithia kwanyu.

3. Miti irutaga mbegu a mwaka?

Miti miingi niikaga guo, no nourore kwanyu wone uria kuhana. Ingi noirute mbegu thutha wa miaka 2-3.

4. ni miti iriku migea ya kunganiria mbegu cia kuhanda?

- Ungania mbegu kuma miti iri na hinya.
- Ndukonganie kuma kuri miti iri yoiki mugunda-ini.
- Ndukonganie kuma miti itaciaraga.
- Chagura miti iria iri gatagati.
- Muthemba mwega wa miti uringanaga na mabataro maku. Kwa muhiano, miti miega ya mbau ni mirungaru, itari na hongwe nyingi, irakura na-ihanya. Miti miega ya matunda yagiriirwo gukorwo na matunda mega.
- Geria guchagura miti irakura na riera rimwe na muthemba umwe wa tiiri.
- Thuura miti miiganu na ti miti minini.

5. Niri twagiriirwo ni kungania mbegu?

- Menya kahinda ka mwaka riria mbegu ciri nguru.
- Uria andu angi makurorere na wirorere.
- Mahinda mangi mbegu cikuraga matunda macio macenjia rangi na makahoha kana makagua kuma muti-ini.
- Mbegu cia miti miingi cikoragwo ciri nguru riria ciagua kuma muti-ini.

6. Mbegu ciunganagio atia?

- Niwega gutheria gitina-ini kia muti mbere. Mbegu nyingi nociunganio thi. Rora mbegu wega niundu wa tutambi. Nouhambe muti utue mbegu no wimenyerere.
- Mbegu ingi niciumaga, igatuka na igaita mbegu citakuma muti-ini. Ici niciri hinya kungania angikorwo mbegu ninini. Ungania mbegu kana matunda riria mari makuru no mbere ya matukite magaita mbegu thi. Umithia matunda ucoke urute mbegu.
- Mbegu ingi nougutte na muti muraihu cigue.
- Ara ikonja gitina-ini kia muti ucoke uinainie muti.
- Kuri miti iria itari miritu, nowoherere kindu mutiirni na urute mbegu.
- Ririkana ati mbegu nyingi citingiunganika thi nomuhaka ucingunie ciri tumimera tunini. Ici nocithamirio mikebe-ini, ino muno niyo njira iria njega ya kungania miti ino iri na hinya.
- Mbegu ciothe niciagiriirwo kurutwo matunda-ini.
- Nouhuthire moko kana umithie riua-ini nginya cirekanie.

7. Ungimenya atia mbegu ni njega?

Wambere rora mbegu. Eheiria iria itari nene na huthu kana ciri na rangi ngurani na iria ingi na citari ndie ni tutambi.

- Kuri mithemba iria ikoragwo na makoni momu, noucikie maai-ini wone kana ni njega. Mbegu njega nicirikagira na iria citari njega cakarera noucigerie kumerithia. Oya mbegu nini na



ucitatre(20-100), cithondeke na dawa uria ciagiriirwo. Ikira mbegu gikuo-ini kihehu na wikire maai mararu. Rora mbegu o muthenya na uige gikuo kiri kihehu. Riria ciambiriria kumera, oya namba ya ya iria ciamera o muthenya. Kigerio giki kioyaga kahinda ka ciumia 2 kuringana na muthemba. Umeri wa gicunji kia 50% ni kuuga uri na mbegu njega. Mbegu iri na umeri wa gicunji kia 5% nocihandwo onacio.

8. Mbegu ciagiriirwo ni kuhandwo kana nikuigwo?

- Mbegu ingi citiagiriirwo nikuigwo, ciagiriirwo nikuhandwo orio(na muno iria ngororo, cia matunda na ciri na maguta).
- Mbegu iria ciri na ngothi nyumu niwega guciga ciri theru, nyumu na hehu.
- Mbegu ciagiriirwo kurutwo kuma matunda-ini na ciumithio biu. Niguo kumithia mbegu wega huthira kahinda ka thiku 2-3.
- kuiga iratathi-ini kana kindi gia cuma handu hatari na riuu niwega(ndugekire thiini wa plastic tondu mbegu nicikuguma).Tigirira haria wekira nihatheru.
- Andika haria wekira na wandike muthemba wa mbegu na riria wonganirie.
- Ririkana ati uhoti wa kumera wa mbegu niunyhaga na mahinda. Angikorwo mbegu nicikarite citahanditwo nocithuke.

9. Mbegu ciothe nicimeraga?

Gicunji kia mbegu, iria cimeraga kiringanaga na mithemba. Mbegu ingi nicibataraga guthondekwo.

10. Ni uthondeki uriku wagiriire mbere ya kuhanda?

- Angikorwo mbegu ni njeke kana ciri na ngothi huthu, uthondeki wa mbegu ici nimwagiriru. Ingi nicibataraga ngothi gwaturwo na nyundo kana ihiga. Mbegu ciagiriirwo ni kuhandwo orio cioragwo.

- Mbegu ingi cibataraga gutinio o hanini ngothi-ini niguo guteithiriria maai kuingira thiini. Ndugatinie mwena utua inyitithanitie mbegu na ngothi tondu niguo umeraga.
- Ingi nicibataraga kurindwo maai-ini kana dawa-ini gwa kahinda ka ndagika 5-20 mbere ya kuhanda.
- Njira ingi ya mbegu cia ngothi nyumu ni gutherukia na maai kahinda ka ndagika 5-10 ucoke wikire mbegu maai-ini mahehu. Uu nigukuhuthia ngothi na maai mahote gutonya.
- Mbegu ingi nocirindwo maai-ini gwa kahinda ka mathaa 12-24.
- mbegu ciothe, riria ciathondekwo mbere ya cihanditwo nicigiriirwo kuhandwo haraihu

11. niatia twagiriirwo kuhanda mbegu?

- Mbegu ingi iria cimeraga naihenya nocihandwo mugundaini o rimwe kuma mikebe-ini. Mithemba iria ibataraga maundu ngurani niguo imere niyo yambaga kuhandwo tuta-ini.
- Kahinda karia kahuthikaga niguo imere karinganaga na muthemba wa muti, urugari na muigana wa maai uroneka kana ukuru wa mbegu.
- Muno uhandi wa mbegu uhanikaga kimera kia mbura.
- Kiri ta githomithania, mbegu iria cihandagwo migunda-ini orio ciagiriirwo kuhandwo cirikitio na tiiri uikare uri muguny.

12. Mimera ikuraga kuma hari o mbegu?

Mithemba ingi niirutaga miri ingihandwo. Noumiteme na uhande mugunda-ini. Tumiti notutinio kuma hari miti itari mikuru muno. Cagura iria miraihu, iri na honge ciri na hinya na utinie na njira njega na ucoke urute mahuti. Handa tumiti mugunda-ini na uriku muiganu, na utonyererie marunngo meri na rimwe rikorwo ritari rithike. Itiriria maai nginya tuthunduke.

Mimera iria ikuritio na njira ino niikoragwo na maundu mahanaine na haria yatinitio kuma na nimiega gutigirira miti miega ya matunda niyoneka na yakurio



Gitira tiiri kumana na gukuuo ni maai!

Mwandiki: David Mawira

Tiiri gukuuo ni maai kurehagwo ni maai gutengera. Niguthukagia migunda iria itari na tiiri munyitu na utari muhande kindu na gutari na mitaro. Migunda miingi na makiria thiini wa cluster iria gukoragwo kuinamite niguthukagio ni ugwati uyu, kundu kungi nikwenjekaga na njira nenen muno.

Muiganan munene wa fertilizer niuthukaga kuhitukira gukuuo gwa tiiri ni maai. Mbeca nyingi niciuragira iria-ini na migunda ikahinjio biu.

Nindirahinyiriria o umwe witu oe ikinya ria kugitira ugwati uyu na kuhanda miti ya ki-nduire migunda-ini na kuhanda nyeki na mimera ingi. Njira ino niikwagirithia urimi wa mahiu na kunyihia mahuthiro ma irio cia mahiu.

Reke tuiyukie njira cia ugitiri na umenyereeri wa kuhumbira njuui na miti iria miega. Na ningi, nitwathikire thirikari na kwaga kurima 30m kuma ruui-ini na kuhanda miti ya mibau 100m kuma ruui-ini.

Undu wa bata, o umwe witu niagiriirwo nikwambiriria kurima Kilimo Hai. Kilimo Hai nigitheithagia kunyihia migunda gukuria irio na mbura nini. Marima ma urimi uyu nimaigaga maai gwa kahinda karaihu na njira ino ikongerera magetha.

Riria twatega maai kuma nyumba-ini ciitu, notumahuthire riria riu rianeneha.

Cluster ya Kwajebi: turi hamwe notuhote maundu maingi.

Mwandiki: Mary Kathei

Thutha wa kahinda ga kuruta wiira, cluster ya Kwajebi riu niyukirite na iri na uhoto na wendi wa kunyitanira na arimi nigu mateithike na wendia wa carbon.

Cluster ya Kwajebi ni imwe ya cluster 5 ciambiriirie Laikipia West mwaka wa 2008 ni Joshua Irungu iri ta TSE, uria riu niwe Governor wa Laikipia County. Turi naikundi 56. nitucokete na hinya mweru. Ithuothe nitwitikiraniirie maundu maya.

- O gikundi nigigukorwo na tuta mwaka uyu.
- O memba niakuhanda miti itanyihire 50 o kimera kia mbura.

- Nitugotheremia TIST matuuraini na kuri arata na tuandikithie arimi angi aingi.
- Nituriririkananagia maundu maria twaiguithaniria na tukamarumirira nigu tutigirire nimarutithio wiira.

Niturarutithania wira na ndungata cia cluster, David Thuku na Mary Kathei hari gutigirira miti iitu niyataro. Nituguthii na-mbere kumanyitirira thiini wa wira wao.

Nitwagiire na mucemano wa cluster mweri 18 April 2013. nituguthii na-mbere guthoma makiria, guthomithania na gwikirana hinyamicemano-ini ya o mweri. Turi hamwe notuhote gukinyira maundu manene!



Gute Giko.

Mwandiki: Joseph Gituma.

Giko ni kindu o giothe kimanaga na mawira ma mundu na ni;

- Mai ma mundu
- Matigio ma irio
- Maratathi mahuthiku
- Cuma nguru na mahiga ma tochi makuru
- Sewage.

Mathina ma giko marehagwo nikii micii-ini?

Giko gitingiithemeka no githukagio muno ni;

- Uhuthiri muuru wa ino
- Kwaga njira cia kuhuthira indo nguru
- Kwaga kundu gwa gute giko
- Kwaga umenyo wa mogwati maria marehagwo ni giko.

Mathina maria marehagwo ni giko

- Guitanga mahuti nja na kunina uthaka wayo.

- Guthukia riera, tiiri na maai.
- Kurehe mirimu.
- Kuhinga kuria maai ma giko mageraga.
- Guthukia riera makiria na mahiga makuru ma tochi.

Ciana kana nyamu nocikorwo ugwati-ini riria ciongania mahiga maya ma tochi na giko kingi.

Mungika atia muri gikundi guteithiriria kunina thina uyu?

- Nyihia-i uteangi wa indo.
- Huthira-i hinya wa riuu handu ha mahiga ma tochi.
- Huthiraga-i indo nguru riria kwahoteka.
- Thondeka-i thumu na matigio ma irio.
- Enja irima ria giko gwaku.
- Ririkana gucina maratathi. Ndugacine mahiga ma tochi tondu nomarute mwaki, maikie kiro.

Marihi ma ikundi – Itua riabata rirabatara mugambo waku.

Ikundi nyingi cia TIST nimoritie marihi mao makaheagwo thutha wa mieri 6. gwa kahinda gaka, Clean Air Action Corperation iri na uiguithanio na arimi a TIST kwamukagira KSH 1.50 Cts (kana makiria kuringana na uria dollar iracenjanio na Ksh) o mwaka kuri muti wothe utaritwo na ugaikara uri muoyo. Hau kabere, CAAC ikoretwo ikiriha marihi maita 4 hari mwaka. Uu

nikuha hari mieri 4 o murimi niamukagira Ksh 0.75(kana makiria).

Niturenda kuigua mawoni maku. Araniria na mutongoria wa cluster na uheane uge waku kana ukwenda marihi makaheanwo maita 2 o mwaka kana 4. ningi nowaranirie na Grace Gacheri member wa kanju ya utongoria kuhitukira thimu 0720 918 461.



Tiga gutema miti, Handa miti.

Mwandiki Joseph Gituma

Ithuothe nitwonete maciaro ma gutema miti, kweheria miti iria minene na iri na mahuti maingi. Thiini wa TIST nitutigagirira miti ndinatemwo kwa uingi na tukageria kuhurana na mathina maria marehagwo ni utemi wa miti.

Itumi cia gutema miti.

- Gutema miti kwonekaga riria turenda ngu, gwaka na mangi maingi.
- Miti kaingi niitemagwo niandu kwaga umenyo.
- Mahinda mangi bata wamiti niukoragwo ukimenyeka no ukia ugakorwo uri muingi na andu magacaria njira ciagwetha mbeca.

Mathina maria monekaga riria twatema miti.

- Kwaga miti miingi na kwauguo tiiri ukaga giakuhumbira.
- Kwaga indo iria ciumaga mititu: kunina micii ya nyamu ohamwe na guthukia riera, kunina dawa iria ciumaga miti-ini ohamwe na kunyihia indo ciagwaka nacio.

- Miti niihuthikaga kunyihia ruhuho, kuiga ugunyu na kwongerera oxgen riera-ini ohamwe na kwongerera unoru tiiri-ini. Riria twaga miti, maundu maya tutingimona.

Kihonia kia utemi wa miti

1. Turi arimi a TIST twagiriirwo gukorwo na miti ohamwe na mimera thiini wa ikundi ciitu na twendie mimerea ino kuri aria angi. Nitwagiriirwo nikuhinyiriria aria angi mahande miti na maingire TIST.
2. Huthira mariiko ma TIST maria matahuthagira ngu nyingi na makara, na uhinyiririe andu gwika uguo.
3. Huthira njira ingi cia kuruga riria wahota (ta kuhiuhia na maai na riuu kuhuthira muura, makoni ma kahua, nyeki na ingi nyingi.)
4. handithia miti kwanyu na makiria macukuru, kanitha na njuui-ini.
5. Handa miti kuria urarima.

TIST – reke tugemie kuria turaikara na miti.

Mweke wa kwendia Nginduri.

Thoko njeru ya Nginduri niyumirite. Company iri Narumoro niragura nginduri cia guthondeka maguta ma gutwarithia ngari na machini ingi.

Eco Fuels Kenya Ltd niiragura nginduri na 6.50/kg. Arimi nimarongania mbegu ici kuma migunda-ini yao kan ithaka-ini.

Arimi aingi a TIST nimonire ati miti ya mikinduri, iria niya ki-nduire niihotaga kunyihia

ruhuho migunda-ini. Thoko ino njeru ya nginduri ni wega ungi wakurora riria urathuura miti ya kuhanda.

Eco Fuel niigiraga nginduri riria cionganio.

Kwa ugoro makiria, araniria na:

Cosmas Ochieng: 0725398675.

Email: Cosmas@ecofuelskenya.com

www.ecofuelskenya.com

Mazingira Bora



TIST

The International Small Group & Tree Planting Program
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Kiswahili Version

An Environmental, Sustainable
Development and Community Forestry
Program.



Baadhi ya wanachama wa Kwajebi Cluster kwenye mkutano wao wa kila mwezi.

Ndani

TIST: Ukusanyaji wa mbegu. Ukurasa 2

Achisha mmomonyoko wa udongo! Ukurasa 4

Kwajebi Cluster: Pamoja twaweza kufanya zaidi. Ukurasa 4

Usimamizi wa taka. Ukurasa 5

Malipo ya vikundi vidogo –Uamuzi wenye maana kubwa unaohitaji sauti yako. Ukurasa 5

Wacha Ukataji miti, Panda miti. Ukurasa 6

Fursa ya kuuza mbegu za Croton. Ukurasa 6



TIST: Ukusanyaji wa mbegu.

Kwa kuwa miche yetu mingi katika viwanda imehamishwa hadi mashambani msimu huu wa mvua, ni muhimu tuanze kutayarisha viwanda vipya vya miche tutakayohamishia mashambani msimu wa mvua hujao- octoba-Desemba.

Chapisho hili litakusaidia kuelewa masuala machache unayohitaji kusoma kuhusiana na kiwanda chako au cha kikundi chako.

1. Ni miti ya aina gani tunayofaa kukuza katika eneo letu?

Iliyo bora zaidi ni ambayo hukua yenyewe katika eneo letu. Chagua itakayotosheleza matakwa yako. TIST san asana huhimiza mitunda na miti ya kiasili, na mingineyo inayokaa udongoni kwa muda wa miaka thelathini au zaidi.

2. Ni miti yote iliyo mizuri?

Si lazima! Mingine yaweza kuwa ngumu kupimia, iwe sumu kwa mifugo yako au itumie maji mengi zaidi. Chagua unayojua italeti faida katika eneo lako.

3. Miti huzaa mbegu kila mwaka?

Miti mingi huzalisha mbegu, lakini ichunguze miti iliyopo ili kupata uhakika. Mingine huzalisha mbegu ya hali ya juu kila baada ya miaka miwili au matatu.

4. Ni mti upi ulio bora zaidi wa kukupa mbegu?

- Kusanya mbegu kutokana na miti iliyo na afya ambayo huzalisha mbegu nzuri.
- Epuka miti iliyo pweke. Hapa mbegu yaweza kuwa imejizalisha jambo ambalo huleta mbegu ya hali ya chini.
- Ni vizuri kuchagua mti ulio katikati ya kikundi cha miti yenye afya ya aina moja. Mbegu zitakuwa za hali bora kutoka miti yenye maua yaliyojitandaza kuliko yaliyojisukuma pamoja.
- Aina yenyewe ya mti italingana na unavyotaka kuutumia huu mti. Kwa mfano, miti mizuri ya mbao ni nyororo, ina matawi machache na hukua kwa haraka. Miti mizuri ya chakula cha wanyama iwe inayokua haraka, yenye matawi mengi yaliyo na mashina mengi na majani yanayokua haraka na yanayoweza kupona haraka baada ya kupogolewa. Miti mizuri ya matunda bila shaka ni iliyo na matunda mengi yenye tunda zuri!

- Jaribu kuchagua mbegu kutokana na mti unaokua katika eneo lenye urefu mmoja na udongo mmoja na unapotaka kupanda.
- Chagua mti uliokomaa, si mchanga.

5. Tukusanye mbegu lini?

- Jua wakati wa mwaka ambao mbegu ukua mbivu.
- Uliza wakazi wengine au uchunguze huo mti wewe mwenyewe.
- Wakati mwingine mbegu ni mbivu wakati tunda au ganda linapogeuzaa rangi, linapokauka au kuvunjika kwa urahisi kutoka tawini.
- Mbegu nyingi huwa tayari kukusanywa inapoanguka yenyewe kutoka kwa mti.

6. Tukusanye mbegu kwa njia ipi?

- Ni kitu saidifu kutoa kila kitu chini ya mti kwanza. Mbegu nyingi zaweza kuokotwa chini. Angalia mbegu isiwe imeumwa na wadudu. Waweza kupanda mtini kukusanya mbegu, lakini jichunge!
- Matunda mengine hukauka, kufunguka na kurusha mbegu zao bila ya kuanguka udongoni. Hizi ni ngumu kukusanya kama mbegu ni ndogo. Kusanya matunda au maganda yanapoiva lakini yakiwa bado kufunguka au kuanguka. Halafu hukaushe tunda au ganda mahali pasafi na penye vuli ili kupata mbegu.
- Mbegu zingine zaweza kugongwa kutoka mtini na fimbo refu.
- Jaribu kutandaza guo refu chini ya mti na kuutetemesha mti kwa upole.
- Kwa miti mirefu tengeza kifaa kwa kufungilia mwisho mmoja wa makasi kwa fimbo refu na yenye nguvu. Upande mwingine hufungiliwe kwa kamba.
- Aina zingine za mbegu haziwezi kuokotwa chini na hubidi kukusanya zikiwa zimekua zenyewe. Hii ni miche iliyokua inayopatikana chini ya miti iliyokomaa. Hii yaweza kuhamishiwa mifukoni katika kiwanda chako. Hii ni njia iliyo bora zaidi mara nyingi kwa miti inayokua kwa ugumu viwandani na ambayo mbegu zao ni ngumu kukusanya.
- Mbegu zote lazima zitolewe tundani au gandani.

Hili laweza kufanyika kwa mikono au kuweka tunda au ganda juani na kulingoja kukauka na kuvunjika.

**7. Twaweza juaje kama mbegu ni nzuri?**

- Kwanza angalia mbegu. Tupa zilizo ndogo, zisizo nzito au zenye rangi tofauti na zingine. Wadudu huharibu mbegu zingine.
- Kwa aina zenye ngozi ngumu kuelea katika maji ni jaribio zuri. Kwa kawaida mbegu nzuri huanguka majini na mbegu mbaya uelea.
- Waweza kufanya jaribio jepesi. Chukua mbegu chache zilizohesabiwa ishirini kufika mia moja). Tayarisha inavyofaa. Weka mbegu katika nguo lenye upevu na katika bakuli . funika na ngua nyingine na uiweke maji vizuri kasha uweke mahali penye joto (si moto). Angalia mbegu kila siku kuona dalili za kukua na uhakikishe nguo ina upevu, mbegu ikianza kukua, weka rekodi siku na nambari. Jaribio huchukua wiki mbili kulingana na aina. Kama mbegu asilimia hamsini imekua inamaanisha mbegu yako ni nzuri. Aina zenye mbegu ndogo na zilizokua asilimia tano zaweza pia kutumika.

8. Tupande au tuweke mbegu?

- Mbegu zingine hazikai muda mrefu na kwa hivyo zipandwe mara moja (sana sana mbegu zilizo nyororo, mbegu za mitunda au mbegu zenye mafuta mengi).
- Kwa mbegu zenye ngozi ngumu, sheria ni kuziweka zikiwa safi, kavu na mahali pasipo joto.
- Mbegu zafaa kutolewa tundani au gandani na kukaushwa kabisa. Kukausha mbegu, ziweke kwa jua siku mbili au tatu.
- Kuweka katika mifuko au mikebe ya chuma m, bali na jua ni kuzuri (Epuka mifuko ya mpira kwani mbegu huoza). Hakikisha mkebe ni safi na hauingizi hewa.
- Andika mkebe jina na siku ya kukusanya mbegu hiyo.
- Kumbuka kuwa uwezo wa mbegu kukua unapunguka muda unavyosonga. Kama mbegu imewekwa kwa muda mrefu sana inaweza kuharibika.

9. Mbegu zote hukua?

Asilimia ya mbegu inayokua, hulingana na aina. Mbegu zingine huhitaji njia moja ya kutayarishwa.

10. Ni matayarisho yapi yanayotakikana kabla ya kupanda mbegu?

- Kama mbegu ina ngozi ndogo au nyembamba hakuna matayarisho huhitajika.
- Mbegu zilizo na ngozi ngumu zitahitaji njia mojawapo ya matayarisho. Zingine huhitaji

ngozi zao kuvunjwa na nyundo au jiwe. Mbegu ipandwe mara moja baada ya kuvunjwa.

- Mbegu zingine huhitaji tu kutobolewa ngozi kusaidia maji kuingia. Usikate mahali ilipokuwa imeshikana na ganda au tunda kwani sehemu hii ndiyo iliyo na mmea mshanga.
- Zingine huhitaji kuweka katika maji waliyona acidi kwa dakika tano kufikia ishirini kabla ya kupanda.
- Njia nyingine ya kutumia kwa mbegu yenyue ngozi ngumu ni kuchemsha majini kwa dakika tano kufika kumi. Halafu uweke mbegu katika maji baridi. Jambo hili humaliza nguvu ya ngozi na husaidia maji kuingia.
- Mbegu zingine zaweza kuwekwa katika maji yenye joto la kawaida kwa masaa kumi na mawili kufika ishirini na nne.
- Mbegu zote, zikitayarishwa, zahitaji kupandwa mara moja.

11. Tupande mbegu vipi?

- Mbegu zinazokua haraka zaweza kupandwa shambani maramoja au mifukoni. Aina zinazohitaji hali spesheli kukua hupandwa kwatika kiwanda kwanza.
- Muda wa kukua hulingana na aina ya mbegu, joto, maji yaliyopo na uzee wa mbegu.
- Kwa kawaida kupanda hufanyika kidogo kabla ya mvua kuanza.
- Kama elekezo la kila wakati, wakati unapanda mbegu shambani bila ya kupanda kiwandani kwanza, mbegu ipandwe urefu mara mbili au tatu upana wa mbegu na ifunikwe vizuri na udonggo. Udonggo huwe na maji kila wakati baada ya kupanda.

12. Miche hukua kutoka kwa mbegu pekee?

Miti ya aina nyingine huzalisha mizizi ya upande (Mimea michanga inayokua kutokana na mizizi ya mmea mzazi). Hii yaweza kukatwa na kupandikizwa. Pia yaweza kukatwa kutoka kwa matawi machanga yaliyo na matawi madogo yaliyojitokeza matatu. Chagua tawi refu na lenye afya na ukate kwa upande mara moja halafu huyatoe majani. Panda makato ndani ya udongo angalau nodal mbili refu moja wazi. Hakikisha unaitunza kwa kuipa maji mpaka uchipua utokee. Panda mmea huu udongoni

Miche inayokuzwa kwa njia hii hukua sawa na mti mzazi kwa kila kitu na waweza kutumiwa kuhakikisha mtunda wenye matunda mengi umekuzwa.



Achisha mmomonyoko wa udongo!

Umeletewa na David Mawira

Mmomonyoko wa udongo husababishwa na maji yanayopita juu ya udongo. Sana sana huonekana mahali pasipo na mimea, pasipo na nyasi na mashamba yasiyo na mitaro ama yenye mimea michache. Mashamba mengi san asana katika cluster zilipo mahali pasipo tambarare yameachwa na mmomonyoko wa udongo kwa njia ya maji kurusha mchanga, na maeneo mengine maji ya mitaro yamebeba udongo.

Mbolea za viwanda tani mingi zimepotea kupitia mmomonyoko wa udongo. Mamilioni ya pesa yamepotelea ziwani. Kuongezea mashamba yetu yameharibika zaidi na zaidi.

Nahimiza kila mmoja wetu kutia nguvu kuachisha jambo hili kwa kupanda miti ya kiasili katika mashamba yetu na kupanda nyasi na mimea

mingine ya kufunika udongo. Hili litaongeza dhamani ya ukulima wa mifugo ya maziwa na kupunguza gharama ya chakula cha mifugo.

Tujihusisheni na njia za kulinda na kutunza mito yetu midogo na mikubwa kwa kutumia miti ya kiasili. Pia, tutiini sheria za serikali kwa kujiepusha na kulima mita thelathini ama kupanda mikaratusi mita mia moja karibu na mito hii.

Muhimu zaidi, kila mmoja wetu aanze kilimo hai. Ukulima wa kilimo hai hutasaidia kupunguza kasi ya maji yanayopitia juu ya udongo na iwapo kuna upungufu wa mvua; mashimo ya kilimo hai yataweka maji kwa muda mrefu zaidi na kuongeza nafasi ya kupata mazao mazuri.

Kwa kushika maji ya mvua kwa kutumia mabati ya nyumba zetu, tunaweza kupata maji ambayo yanaweza kutumika wakati wa kiangazi.

Kwajebi Cluster: Pamoja twaweza kufanya zaidi.

Umeletewa na Mary Kathei

Baada ya mapumziko ya muda, cluster ya Kwajebi imeamka sasa na inajitolea kujiunga na wakulima wengine wa TIST kufaidika kutokana na biashara ya kaboni.

Cluster ya Kwajebi ni mojawapo ya cluster zilizoanza katika eneo la Laikipia West mwaka 2008 na Joshua Irungu aliyekuwa TSE na sasa ni gavana wa kaunti ya Laikipia. Kwa sasa tuna vikundi hamsini na sita. Tumerudi na kwa nishati ya juu. Pamoja tumeangazia na kukubaliana yafuatayo;

- Kila kikundi kitakuwa na kiwanda cha miti ikifikia mwisho wa mwaka huu.
- Kila mwanacuster atakuwa anapanda miti isiyokuwa chini ya miti hamsini kila msimu wa mvua.

- Tutaeneza TIST kwa majirani na marafiki na tutaingiza vikundi zaidi wajiunge nasi.
- Tutakuwa tukikumbushana kila mojawapo ya makubaliano haya na kufuatilia ili kuhakikisha yamefanyika.

Tunafanya kazi pamoja na watumishi wa cluster, David Thuku na Mary Kathei ili kuhesabu miti yetu. Tutazidi kuwasaidia katika kazi hii.

Tulifanya mkutano wetu wa cluster wa mwezi wa Aprili tarehe kumi na nane, Aprili mwaka 2013. Tutazidi kuyajua mengi, kugawana na kuhimizana kaatika kila mkutano wa kila mwezi wa cluster. Pamoj, twaweza kuyafanya mengi zaidi!



Usimamizi wa taka.

Umeletewa na Joseph Gituma

Taka ni kitu chochote kinachotokana na mazi za binadamu na yaweza kukosa utumizi wa mara moja, na ni pamoja na:

- Choo cha binadamu
- Uchafu wa nyumba kama mabaki ya chakula.
- Makaratasi yasiyotumika
- Mifuko ya mpira
- Chuma, betri zimeisha (seli kavu)
- Maji taka sludge nk

Ni nini husababisha shida za taka katika eneo lako?

Taka haiwezi kuepukika lakini yafanywa kuwa shida zaidi na:

- Matumizi mabaya ya rasilimali
- Ukosefu wa njia za kutumia tena
- Ukosefu wa mahali pa kutupa taka (mashimo ya taka, vyoo vya kuchimba)
- Ukosefu wa ujuzi wa hatari za usimamizi mabaya wa taka

Usimamizi mabaya wa taka husababisha

- Uchafuzi wa mashamba na viwanja, kupoteza urembo wa eneo hilo

- Uchafuzi wa maji, hewa na udongo
- Kuenea kwa magonjwa
- Kufungana kwa paipu za kuondoa maji taka
- Sumu na moshi mbaya kutokana na betri nzee

Watoto na wanyama waweza kupata sumu au kuumizwa wakiokota na kucheza na mawe mazee na taka nyinginezo.

Kikundi kidogo chako chaweza kufanya nini kutatua shida hii?

- Kupunguza kutengeneza kwa taka.
- Fikiria kutumia vifaa vinavyotumia nishati kutokana na jua badala ya nishati inayotokana na betri inapowezekana.
- Kutumia tena – tumia vitu tena inapowezekana (mfano, mifuko ya mpira)
- Kutengeneza mbolea – weka uchafu unaoza (mabaki ya chakula cha binadamu na cha mifugo) kama mbolea ya kutumia katika kulima.
- Chimba shimo la taka kiwanjani mwako.
- Kumbuka kuchoma makaratasi na kadi pekee. Usichome betri kwani yaweza kulipuka. Yaweke katika vyoo vya shimo.

Malipo ya vikundi vidogo –Uamuzi wenye maana kubwa unaohitaji sauti yako.

Vikundi vidogo vingi vya TIST vimeulizia kama malipo ya miti yao yanaweza kufanywa kila baada ya miezi sita. Kwa wakati uliopo kampuni ya CAAC ina kadarasi na wakulima wa TIST kupata shilingi moja na cumni (ama zaidi kulingana na soko la hisa- Dolla dhidi ya shilingi ya Kenya) kila mwaka kwa kila mti ulio hesabiwa na ulio hai. Hapo nyuma, CAAC imekuwa ikilipa kila baada ya miezi minne. Hii ni kumaanisha kuwa kila miezi minne wakulima wamekuwa wakipata shilingi za Kenya 0.375 kwa kila mti. Sasa, wakulima

wanaulizia kulipwa mara mbili kila mwaka. Hivyo basi, kila baada ya miezi sita, watakuwa wakipata shilingi za Kenya 0.75 (pia zaidi kulingana na soko la hisa).

Twataka pia kuyasikia maoni yako. Tafadhali ongea na kiongozi wako wa cluster na umpe chaguo lako – kulipwa mara mbili kila mwaka au kila baada ya miezi minne. Pia waweza kumpigia Grace Gacheri, mwanachama katika chama cha uongozi wa TIST kwa sasa kwa nambari 0720 918 461



Wacha Ukataji miti, Panda miti.

Umeletewa na Joseph Gituma

Sisi sote tumeona madhara ya ukataji miti, kutolewa kwa mimea yenye mbao na miti. Katika TIST, sisi hufanya kazi kuachisha ukataji miti na kugeuza mengine ya madhara yake mabaya zaidi.

Sababu za ukataji miti

- Ukataji miti hufanyika wakati miti inakatwa ili kutumika kama kuni, kutengeneza matofali, kukausha samaki, na kujenga, ama kufungua shamba ili liweze kulimwa.
- Ukataji miti mwingi hutokana na kutokuwepo kwa ujuzi kuhusu thamani kamili ya miti.
- Wakati mwingine, thamani ya miti yaweza kuwa inajulikana lakini umaskini na kutambulika kusio sahihi kuhusu ukosefu wa lingine la kufanya hulazimisha watu kukata miti.

Shida zinazojitokeza

- Ukosefu wa miti ya kufunika ardhi na mizizi huacha udongo hatarini na huruhusu mmomonyoko wa udongo.
- Ukosefu wa rasili mali ya msitu tunayohitaji: kukata miti hugaribu mahali pa wanyama pa kuishi, hupunguza viumbe hai/ bioanuwai, hutoa rasili mali ya chakula na dawa na huongeza ushindani ili kupata vifaa vyz ujenzi. Watu wanahitajika kutembea mbali zaidi ili kupata kuni, na bei za bidhaa zinazotoka misituni zinapanda juu sana.

- Ukosefu wa faida nyinginezo za miti za kimazingira: miti hupunguza upepo, uhifadhi unyevu, huongeza hewa safi hewani, na huongeza virutubisho udongoni. Kwa hivyo bila miti hali ya anga ya mahali hapo itakuwa kavu zaidi na kuongeza hatari ya mafuriko, mmonyoko wa udongo unaosababishwa na upepo, kupunguzwa kwa rutuba ya udongo na kupunguzika kwa usafi wa hewa.

Suluhisho la kuzuia ukataji wa miti

1. Kama wakulima wa TIST twapaswa kuwa na vitalu vya miti na kukuza miti ya kupanda katika mashamba ya kila mwanakikundi na kuuza miti kwa wanajamii. Twafaa kutia moyo wengine kupanda miti pia, na kujiunga na TIST!
2. Tumia meko ya TIST ya kuokoa nishati, ambayo hutumia kuni na makaa chache, na tutie moyo wanajamii wengine kufanya vivyo hivyo.
3. Tumia nishati badala inapowezekana (kwa mfano, joto la jua, machujo ya mbao, maganda ya kahawa, nyasi, magugu, mabaki ya mimea, taka za wanyama).
4. Kujihusisha na shughuli za upandaji miti za jamii, san asana katika mashule, makanisa na karibu na mito. Hili kweli litaongeza matokeo ya TIST!
5. Utendaji na kuhimiza kilimo mseto na matumizi ya mashamba madogo ya miti.

TIST –Tufanyeni dunia yetu iwe kijani kibichi!

Fursa ya kuuza mbegu za Croton.

Soko jipya la Croton limejitokeza. Kampuni moja iliyo Naro Moru inanunua mbegu za Croton ili kutengeneza diseli ya kutokana na mimea ambayo yaweza kutumiwa kuendesha magari na ata mashine nyinginezo.

Kampuni inayoitwa Eco Fuels Ltd inanunua mbegu za croton kwa bei ya shilingi sita na sumni kila Kilo. Wakulima wanaokota mbegu hizi kutoka kwa mashamba yao au misitu inayokaribia.

Wakulima wengi wa TIST wanajua kuwa mti

huu wa Croton megalocarpus, Mti wa kiasili, huwa njia nzuri ya kupunguza upepo katika mashamba yao. Soko ili jipya la mbegu za Croton ni faida moja ya kufikiria wakati unapochagua miti ya kukuza. Eco Fuels hupangia usafiri baada ya kuchukua mbegu hizi.

Kujua mengi zaidi, pigia

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www.ecofuelskenya.com

Mazingira Bora



TIST

The International Small Group & Tree Planting Program
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Kikamba Version

An Environmental, Sustainable
Development and Community Forestry
Program.



Kilungu kya Kwajebi Cluster ivinda ya umbano wa mwei.

Nthini

TIST: Kukolany'a Mbeu. Page 2

Ungamya Kukuwa Kwa Muthanga. Page 4

Ngwatanio ya Kwajebi (Cluster): Kwa vamwe no tuvikie maunene. Page 4

Kwithiwa na ukumu iulu wa takataka/mavuti. Page 5

Ndivi ya tukundi tunini - Utw'i museo ula ukwenda wasy'a waku. Page 5

Eka kwenga (kutema miti), vanda miti. Page 6

Vuso ya kuta mbaiki (Groton Nuts). Page 6



TIST: Kukolany'a Mbeu.

Tondu mbeu mbingi ila twinayo ivuioni nina vandiwe miundani ivindani yii ya mbua, Ni useo kwambiia useuvya ivuio sya kuseuvya mbeu ya kuvanda mbua yukite (Nthwa) (October - December). Ithangu yii ni yiukutethya kuelewa na kumanya iulu wa kuseuvya kivuio ta kikundi kana we mwene.

1. Ni muvai mwau wa muti ula twaile uvanda isioni situ?

Muvai museo muno mbee nula wimeasya w'o mwene. Sakua ila ikulikana na mavata maku. Tist kaingi ithuthasya kuvanda miti ya matunda na ya kiene na ingi ila itonya kwikala uimitumia kwa ivinda iasa ta myaka 30 na mbee.

2. Ni miti yonthe miseo?

Ti yonthe miseo, imwe noyithiwe yi sumu kwa indo na ingi ikethiwa vinya kumisuvia kunyaiika kula itekwendeka na ingi ikethiwa inyusaa kiw'u kingi. Sakua mithemba ya miti ila wisi nikuete utethyo na useo kwa kisio kyaku na kwaku we mwene.

3. Miti nisyaa mbindi/Ngii kila mwaka?

Mithemba mingi ya miti nisyaa kila mwaka, lakini ia usyaiisyonni miti ya kisio kyenyu umanye nesa nundu mithemba imwe ya miti nokwithiwa yinthiwa na ngii / Mbindi nzeo itina wa ivinda ya myaka 2 -3.

4. Ni muti wiva museo kwa kwosa mbeu yaw'o?

- Osany'a mbeu kwa miti yina uima museo ila isyaite nesa.
- Ndukendeew'e ni muti ula umeete vandu wiw'oka
- Ivathany'e na miti itasyaa nesa na yina sula nthuku
- Kavaa kusakua muti umwe katikati wa miti ya muvai umwe isyaite nesa. Mbeu kuma mutini wina malaa manyaiiku yithiawa yi nzeo mbee kwi malaa mathunganie.
- Muthemba wa miti uendanasya na utumiku waw'o. Ngelekany'o miti miseo ya mbwau nikuma mitini ila milungalu na itena makuku na yanaa kwa mituki itena ngava mbingi. Miti miseo kwa uithyo nila yanaa mituki na yithiawa na ngava mbingi na matu meanaa kwa wingi na mituku oundu matwitwe. Miti miseo kwa matunda nila yina usyao museo na mwingi.
- Tata usakue mbeu kuma mutini ula umeete muthangani na nzeveni ya kisio kila ukwenda kuvanda.
- Sakua muti muimu na utena uwau.

5. Ni indii twaile ukolany'a mbeu?

- Imanyisye iulu wa ivinda ya mwaka yila mbindi na ngii syithiawa syi mbiu.
- Kulya andu ala angi mwikalaa kisioni kiu kana wike usyaiisya we mwene
- Mavinda angi mbeu niyithiawa yi mbiu yila itunda kana mikea yasesya langi, kana yooma kana kutwika kwa mituki.
- Mbindi/ngii mbingi nisyithiawa syi tayali yila syavaluka kuma mutini syene.

6. Undu wa ukolany'a mbeu?

- Ni useo kuthesya kisio kila ki ungu wa muti ula ukwenda kwosa mbeu mbee wa itana kwambiia uvalukanga. Nundu mbindi/ngii ikitaa ukolanwa kuma nthi. Sisya kana mbindi/ngii ithi ni mbanange ni tusamu. Mundu nokulisa mutini kukolany'a mbeu indi ayithiwa esyaitye ndakavaluke.
- Matunda amwe ni momaa na kwatuka namainyaiikya mbindi/ngii vate kuvaluka muthangani. Mbeu ino yivinya kukolany'a nundu tukili twayo twinthiawa twi tunini kaingi. Nutonya ukolany'a mikea kana matunda meew'a mbee wa itanatuka na kuvaluka nthi na indi uisyanika vandu vatheu vala syatuka utonya kumbanya.
- Mbeu imwe nutonya kuikuna ivaluke kuma mutini uitumia muti muasa.
- Tata kwalany'a kindu ungu wa muti na uithingithya wite usyao.
- Kwa miti miasa nouseuvye kindu kya utw'a na uyoveea ikandani.
- Lilikana kana ti miti yonthe utonya ukolany'a mbindi syayo kuma nthi nundu imwe nunginya wosany'e mbeu ila imeete ungu wa muti usu na ukua ukavande kivuioni kana tuvisuni. Ino niyo nzia nzeo kaingi kwa miti ila yinthiawa na vinya kumea nthini wa ivuio kana ngii syayo syi vinya kukolany'a.
- Matunda kana mbindi syoonthe no muvaka syumwe mikeani kana matundani. Undu uu no wikwe kwa kw'oko kana kwanikia mikea sua yatuke yo mbene.

7. Tutonya umanya ata kana mbeu ni nzeo?

- Mbee sisya ingii, veta ila nini, syina langi utailye wa ila ingi kana ila ndye ni tusamu.
- Yila weekia mbeu kiw'uni ila syathambalala



waile uveta nundu mbeu ila nzeo ndyaile uthambalala.

- Nutonya kusisya undu ikumea kwa kuvanda mbindi imwe nini ta 20-100 wikite kusiita undu syaile. Syikie ikulani yiu na uyia vandu ve mutia sisya kila muthenya kana nisyambiie kumya ming'uthe/kumea na uyiendee na kwikalya ikula yiu yi yiu. yila syambiia kumea ia lekoti ya muthenya na nisiana syambiie umea. Ukunikili uyu nukukua ivinda ya sumwa ili kuatania na muthemba wa muti. Kumea kwa kilungu kinene kwi 50% ni kwonanya wina mbeu nzeo. Mbindi/ngii nini syina kumea kwa 5% nisyaille kwiw'a.

8. Ni twaile uvanda kana twaile kwia mbeu?

- Mbeu imwe iyaile kwiwa nisyaille uvandwa syauma ukethwa munamuno ila mbololo, mitunda na ila syina mauta maingi.
- Kwa ngii/mbindi syina ikonde yumu nisyaille ikalw'a syi mbumu, na syi theu vandu vathithu.
- Ngii nisyaille umwa matundani na iyanikwa iny'aa. Anika suani vandu va mithenya ili kana itatu.
- Kwia na ithangu kana ileveni/mukeveni wa kyuma vandu vate sua ni useo (ndukendeew'e ni mathangu ma nailoni nundu nimanyalaa na kwosya mbeu). Ikiithya vala weekia mbeu ni vomu na nivatheu na nukunikite nesa vaiulika nzeve.
- Ikiia alama ya kila muvai/muthemba wa mbeu ya muti na matuku ma kwonany'a yila weekiie vau.
- Lilikana kana vinya wa kumea kwa mbindi/ngii kuendeeaa kuolekete na ivinda. mbeu yaiwa muno niwithiaa nditonya umea.

9. Ni mbeu syoothe imeaa?

Kilungu kila kimeaa kaingi kiendanasya na muthemba wa muti. Nundu mbindi/ngii imwe nisyendaa kuiitwa mbee wa kuvandwa.

10. Ni muiito mwau ula utonya kwithiwa uyendeka?

- Ethywa ngii/mbindi ni nini na syina ikonde yite yumu vai muiito withiawa uyendeka
- Mbeu ila syinthiawa na ikonde/ikole yumu ya nza nisyoyenda kuutwa mbee. Imwe nisyendaa kwatuwa yikonde na kiiva kana ivia. na syamina kwatuwa iivandwa vau kwa vau.
- Mbeu imwe nisyendaa kwatuwa ovanini yikonde kutenthesya kiw'u kulika. Ndukatile

vala veikwatanitye ngii na mukea nundu vaa nivo ve thiawa na mung'uthe na nivo mbeu yambiila kumeela.

- Mbeu imwe nisyendaa kuindwa kiw'uni kina asiti vandu va ndatika ta 5-20 mbee wa kuvandwa.
- Nzia ingi ya kuiita mbeu syina kikonde/ikole yumu ni kwa kusiinda kiw'uni kivyuu vandu va ndatika ta 5-10 kana kuitheukya na indi uisyikia kiw'uni kithithu. Kii nikivuthasya ikonde na kutuma kiw'u kilika mbindini/ngiini.
- Mbeu imwe nisyenda kuindwa kiw'uni kya kawaita vandu va masaa 12-24.
- Mbeu syoothe sya mina kuiitwa syendaa uvandwa vate kwiwa.

11. Nata tutonya uvanda mbeu ithi?

- Mbeu imwe nimeaa kwa mituki syamina uvandwa muundani kana mikeveni. Mithemba ila yithiawa na mawendi kivathukany'o niyambaa uvandwa kivuioni mbee.
- Ivinda yila yikuaa kumea yiendanasya na muthemba wa mbindi/ngii, uvyuvu kana uthithu, kiw'u undu kiana na ivinda yila mbeu isu yiikalite mbee wa kuvandwa.
- Kaingi kuvanda nikwikawa mbee wa mbua kuinga.
- Ta walany'o kwa mbeu ila ivandawa muundani/mikeveni imwe nisyaille uvandwa ulikuni wa kundu kwili kana kutatu kwa uthathau wasyo. na kuvwikwa nesa muthangani na muthanga uyikalw'a wi mwiu.

12. Nilasima imee kuma mbindini/ngiini?

Mithemba imwe ya miti nimeasya nthongoo ila ikuawa na kuthi kuvandwa. Imwe nitemawa l ngava ila syithiawa na nthongoo ta iyiiva itatu. Sakua ila ndasa, ukava utena uwau, mutheu na uitila na wea na uyumya matu. Vanda itilo yiu ya muti muthangani inyiva thoongoo ta ili syithiwe ungu wa muthanga vena thongoo ta imwe ititwe iulu wa muthanga . Ikala ungithitye nginya yila ukwambiia kumea na kuthongooa.

Miti ivanditwe kwa nzia ino yithiawa na mwikalo ta wa muti ula syaumiw'e kwaw'o, na niyithiawa na utumiku kwa kuikiithya mbeu ila mundu wanyuva ni nzeo na nitonya usyaa nesa yavandwa.



Ungamya Kukuwa Kwa Muthanga.

na David Mawira

Kukuwa kwa muthanga kuetawe ni kiw'u kusembela muthangani vate kindu kiusiia ta nyeki kana ikuthu kana mitau. Itheka mbingi munamuno sya ngwatanio (Clusters) ila syi kundu kutiuuku nitiitwe na matwiku muthanga watuuka na kukuwa ni kiw'u.

Unou/vuu mwingi wa muthanga niwaite kwisila kukuwani kwa muthanga na mbesa mbingi kwaa na kulika ukangani na itheka situ niendee na kwanangika.

Ni thuthya kila umwe kwikia vitii kusii kukuwa kwa muthanga kwa kuvanda miti ya kiene na nyeki vamwe na mimea ila ingi ivwikaa muthanga. undu uu ni ukwongela useo kwa aimi ma ndithya ya ng'ombe sya yiia na kuola utumiku wa mbesa

kumathia ngombe liu.

Tutanie kusuvia na kuvwika isio ila syi vakuvi na mbusi na tulusi kwa kuvanda miti ila itatumiaa kiw'u kingi. Ingi tuatii miao ya silikali ya kulea kuima vakuvi na usi (matambya 30) na kuvanda misanduku matambya (mita) ta 100 vaasa na mbusi.

Kya vata kila umwe witu niwaile kwambiia kutumia nzia nzeo ya uimi wa kusuvia (CF). uimi wa kusuvia nuutetheesya kuola kusemba kwa kiw'u iulu wa muthanga na ethiwa mbua ni nini maima ma CF nimeukwatiia kiw'u vandu va ivinda iseo na kuikiithya ngetha nzeo.

Kwa kuketha kiw'u kya mbua kuma ialani sya nyumba, kila nitutonya utumia ivindani yila kwimwoo wa kiw'u.

Ngwatanio ya Kwajebi (Cluster): Kwa vamwe no tuvikie maunene.

na Mary Kathei

Itina wa ivinda ya kwithiwa tuteuthukuma (tukomete), ngwatanio ya Kwajebi yu niamukite na yi tayali kukwatana moko vamwe na aimi angi ma Tist kutetheka kuma viasalani wa nzeve itavisa (Carbon business).

Kwajebi ni imwe katika ngwatanio ila syai sya mbee itano kuma Laikipia West ila yambiiwe mwakani wa 2008 ni Joshua Irungu ta TSE, yu ula ni Governor wa Laikipia County. Twina tukundi 56 na yu nitusyokete twina vinya. Kwa vamwe nituamuite na tukaeleanwa atii:-

- Kila kakundi nikaile ithiwa na kivuio kyako mwaka uyu
- Ni tukuyaiikya useo wa Tist kwa atui na anyanya

maitu vamwe na kuthuthya tukundi tungi kukwatana naitu.

- Tukalilikananasya umwe kwa ula ungi iulu wa wiv'ano uyu na kuatii kuisya ni tweeka undu twiv'anite.

Twithukuma kwa vamwe na athukumi ma Tist ala ni David Thuku na Mary Kathei kuikiithya miti yitu niyavitukithw'a. Nitukuendee umakwata kw'oko na kuthukuma vamwe namo.

Umbano witu wa mwai wa kana nitwee kiie matuku 18/04/2013. Nitukuendee kusoma muno na kuthuthania umwe kwa ula ungi kwa mbumbano sya kila mwai. Kwa vamwe no tuvikie maunene!



Kwithiwa na ukumu iulu wa takataka/mavuti.

na Joseph Gituma

Takataka ni kyothe kila kyumanaa ta utialo wa mawiko ma mundu na kitena vaita kwake, na ithi nita:-

- Mai ma mundu
- Kiko kuma ikoni ta matialyo ma liu
- Mathangu
- Mathangu ma nailoni
- Syuma nguu, mavia ma tosi
- Kiko kuma kambunini

Nikya kietae nthina wa mavuti nthini wa mbai yenyu?

Takataka no muvaka no utwikaa nthina:-

- Ethiwa vai nzia nzeo ya kutumia syindu
- Ethiwa vai nzia nzeo ya kuutumia ingi
- Ethiwa vaina vandu va kwikya ta maima, syoo
- Ethiwa andu maina umanyi iulu wa mathina ala maetawe ni kiko/takata/mavuti

Mathina ala maumanaa na nzia nthuku sya kuvea takataka

- Kuthokoany'a iwanza na kuveta wanake wasyo

- Kuthokoany'a kiw'u, nzeve na muthanga
- Kuete uwau
- Kulinda nzia sya kuveta kiw'u
- Kutwika muisyo kwa kumya sumu ta kuma maviani ma tosi makuu

Syana na indo nitonya kukwata ni sumu uyu kana kuumia ethiwa ikathauka na mavia ma tosi makuu kana mavuti/takataka ungi.

Nata kakundi kenyu katonya kwika kuola nthina uyu?

- Kuola nzia ila ietae takataka/mavuti kwa kutumia syindu nesa
- Kutumia syindu ila iutumia mwaki wa sua vandu va mavia ma tosi ethiwa nivatonyeka
- Kutumia ingi kila kitanangikaa kwa mituki ta mathangu ma nailoni
- Kwinza maima ma kwikia kiko/mavuti ta liu ula watiala na mavuti kuma muundani na kuseuvya vuu.
- Inza yiima ya kiko kwaku na kyoo
- Lilikana kuvivya mathangu na ti mavia ma tosi nundu no mavulike. Mavia mekie kyooni kya iima.

Ndivi ya tukundi tunini - Utw'i museo ula ukwenda wasy'a waku.

Tukundi twingi tunini nitukulitye ndivi yoo yikawe itina wa kila myai thathatu. Umunthi Clean Air Action Coporation mena wiw'ano na Aimi ma Tist kukwataa ndivi ya Ksh1.50 (kana mbee kwianana na undu mbesa iukuanwa sya Ndola ya USA na silingi ya Kenya) kila mwaka kwa kila muti uvitukithitwe na muima na wivo. Ivinda ivituku, CAAC niyithitwe iyiiwa kana kwa mwaka. Uu wionany'a kana aimi nimethitwe maikwata ndivi ya 0.375 kwa kila muti

wivo. Yu, aimi aingi nimakulitye makwatae ndivi keli kwa mwaka ila nita Ksh. 0.75 (kana mbee kwianan na undu ukuany'a wa mbesa uilye).

Twienda kwiw'a woni waku naw'o. Vatonyeka neenai na mutongoi wa ngwatanio yenyu na muimutavya unyuvi wenyu kana mwienda kuivwa keli kwa mwaka kana ni kana kwa mwaka. Ingi no mukunie Grace Gacheri, ula ni Operational Leadership Council memba nambani ino 0720 918461.



Eka kwenga (kutema miti), vanda miti.

na Joseph Gituma

Ithyoontho nitukwona uvinduku ula uetetwe ni kwengwa na kutemwa kwa miti. Nthini wa Tist twithukuma kuunganya utemi na kwengwa kwa miti vamwe na kuvanda ingi nikana tuole mauvinduku ma nzeve ala mathuku maetetwe ni utemi uu wa miti.

Itumi sya miti kutemwa na itheka kwengwa

- Utumiku wa ngu thini wa kuvivya ndumbia sya mavali/matuvai na kunyasya makuyu, myako na kwenga nundu wa kuima.
- Kingi kitumaa miti itemwa ni andu kulea kuelewa vaita ila ietawe ni miti.
- Kundu kumwe vaita wa miti nowithiwe wisikie indi nundu wa ukya na nthina na kwaiwa ni undu ungi wakwitethya andu maikita kwenga na kutema miti metethye kwa kusevya maaka ala matesaa na kukwata mbesa.

Mathina ala maetawe ni kutemwa kwa miti

- Kwithiwa muthanga utemuvwike nikutumaa miti ila yivo mii yayo ithambalala nundu wa kukuwa kwa muthanga
- Kwithiwa tutena mothwii ala makwatikanaa mitituni ta, mawikalo, liu, ndawa, na syindu sya mwako ta miti na iituma thoowa wasyo wambata.
- Moseo ala methiwa mawithyululukoni

maetetwe ni miti ta kusii kinzeve, kutunenge nzeve ya uveva (nzeve ila ivisaa), kusisiia kwaa kwa kimeu, na unou wa muthanga. Nundu vate miti uvyuvu na mutia wanhi nikeukaa kukethiwa na mauvinduku ma nzeve na kuyithiwa na yua, isio ingi ikatwika mang'alata/maweu, kukuwa kwa muthanga na muthanga kumosa na nzeve kwithiwa itenzeo.

Usungio wa kusii kutemwa/kwanangwa kwa miti

1. Ta twi aimi ma TIST nitwithiwa na ivuio sya miti na nitutesaa ila yatiala atui natuimathuthya kutumia nzia nzeo sya tist kumivanda kana malike nthini wa TIST.
2. Kutumia maiko ma kusuvia mwaki ta ala ma TIST na kuthuthya atui na kumony'a vata wa kutumia maiko aya.
3. Kutumia nzia ingi sya kukwata mwaki (ta kutumia sua, yia, nyeki, matialyo ma kaawa, na mututu wa musumeno na kyaa kya indo).
4. Kwosa itambya ya kuvanda miti isioni sya andu onthe ta masukulu, makanisa, vakuvi na mbusi. Nzia ino niyonanasya kaingi mawiko ma TIST.
5. Kuthuthany'a iulu wa kuvanda miti na liu vamwe.

Nthini wa TIST twiasya tutwikithye nthi yitu ngilini!

Vuso ya kuta mbaiki (Croton Nuts).

Ndunyu nzau ya kuta mbaiki niyumilite. Ve kambuni yi Naro Moru ikua mbaiki na iyi itumia kusevya mauta ma tonya utumiwa ni ngali na masini sya ukuna kiw'u ta tutuma. Kambuni ino ikwitwa Eco Fuels Kenya Ltd ni ikua ngii sya mbaiki kwa Ksh6.50 kwa kilo. Aimi nimeukolanya ngii/mbindi ithi kuma miundani yoo kana mitituni ila yivakuvi namo.

Aimi aingi nimesi kana mbaiki (Croton megalocarpus) ula nimuti wa kiene niwithiwa

wimuseo kwa kusii kiseve miundani. mbaiki nisietete useo mbee nundu yu muimi niwe ukunyuva muti ula ukwenda kuvanda.

Eco Fuels nimatae ngali syakukua mundu amina kumbanya.

kwa uvoo mbeange neena na:
Cosmas Ochieng: 0725398675
Email: Cosmas@ecofuelskenya.com
www.ecofuelskenya.com

Mazingira Bora



TIST

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

Kipsigis Version

An Environmental, Sustainable
Development and Community Forestry
Program.



A section of Kwajebi Cluster members during their monthly meeting.

Inside:

TIST: Kayumet 'ab keswek. Page 2

Ongeter soil Erosion ! Page 4

Kwajebi Cluster: En kibageng'e kimuche kenyoru che chang'. Page 4

Ribet ab waste (saratik) Page 5

Libanet 'ab groupishek chemeng'echen – uamuzi nebo maana nemoche ngal kobun inye. Page 5

Ongebakach tilet 'ab ketik, ak kemin alak. Page 6

Boroindo nebo aldaet 'ab Croton Nuts. Page 6



TIST: Kayumet ‘ ab keswek.

Angamun che chang’ en keswek ‘ab ketik ko kogisibto en orowechu kobo robwek, kobo maana kinaam kechob betishek chebo ketik che kimine en orowek chebwonon chebo robwek– October - December.

Toretin ngalechu sirotin en yu inaii agobo oratinwek che imuche iboishen en minet ‘ab ketik ak chobet ab betishek.

1. Species achon chebo ketik che yoche kemin komoswek chok.

Che kororon ko chon rutu en komosoton kong’eten keny. Cheng’ choton che imogchini ‘ge. Yome TIST konet bik komin logoek ak ketik ‘ab timin, ak che imuche kobur en ng’wony agoi kotar kenysishek sosom.

2. Iman kororon ketik tugul?

Mo lazima! Alak komuche kouwen ole keribto, ko sumu en tyong’ik ak anan kotore bek che chang’.chaguan chebo maana en komoswek che imiten.

3. Iman kole icheru keswek ketik en kila kenyit?

Ketik chechang’ kocheru, lakini yon imoche inai komye iger ketik chemiten en koretng’u. Alak kocheru keswek en kenysishek 2-3.

4. Ainon ketit ne yoche keibunen keswek?

- Ibunen kesweguk ketik che tinye afya negararan ako tam kocheru keswek chekororon.
- Matiibunen ketik che miten ichegen. Imuche ko keswondonoton kogiyai pollination innegen.
- Matiibunen ketik che motinye shapishek chekororon.
- Kararan yon kogilewen ketit ne miten kwenet en ketik chetinye afya negararan. Kororonegitun ketik en keswek chetinye tabtok.
- Tiyenge kit ne imoche iboishen ketoton koboit. Kou ingunon , ketik che kororon en bogoinik ko che teyootin, ago motinye temenik chechang’. Ketik chekororon en fodder ko che tinye, temenik che chang’, ak sogek che sipkorutu. Ketik che kororon en logoek ko chetinye logoek che kimen!

- Yom imin ketik en altitude ne kerkergei ak ole nomegen ak kora nomege ak ng’ungunyek.
- Cheng’ ketit ne kigoyet komye, mo ne mingin.

5. Ou ole yoche kiyumi keswechuton bo ketik.

- Inetge kosorwek ‘ab kenyit che korornen keswek’ab ketik.
- Teben bikj ab kogokwet anan iger inyegen kosorwek che kororon ketik.
- En kosorwek alak kotogunen ruret ‘ab keswek logoek yon kopiregitun, yon kagoyomyo, anan yon koistoge en temenik ab ketik.
- Keswek che chang’ en chon tururuge en ketit kokoyamge kemin.

6. Kiyumdoi ano keswechuton?

- Bo maana keisto timdo en tobonik ab keswot kotomo kebol. Keswek che chang’ kimuche kiyum en ng’wony. Ker keswechuton angot kotinye tyong’. Kimuche kelany ketit ak kicher keswechuton, ak iribge!
- Logoek alak koyomdos, ak kobista keswekchwak . Ichochu kouwen ole kiyumdo sanasana yon meng’echen keswek. Yoche iyum logoek yon kogoruruyo ago tomo koyomyo. Agityo iyamsi logoechuton en ole miten asisita asi nyoru keswek.
- Keswek alak kimuche kekwer kochorge en ketik.
- Yom inde sitit ng’eny agityo itumtum ketit.
- En ketik che koen imuche ichob ketit ne kim.olda ingo nebo eut kimuche kenamda ak rogoet.
- Ibwat ile keswek alak komoyoche kicher en ng’weny lakini yoche kicher ko *wildlings*. Ichochu ko keswek chemeng’echen cherutu en ole rubege ak ketiti newon. Ichochu kimuche keib koba betitshek chebo ketik. Oraniton kogararan en ketik che morutu en betishek anan ko chemogimuche kiyum.
- Keswek tugul koyoche kicher en logoek kwai. Kimuche keyai kasiniton ak eut , anan kinde logoyat asista ak kegany koyam ak koistoge chebo barak.

**7. Kimuche kenaiten ano kele kararan keswot?**

- Neta iker keswek . Isten keswek che meng'echen ,che terter anan ko chewolotin color nenywanet. Imuche kobar tyong'ik chemeng'echen keswek alak.
- En alak kimuche kekeren angot kobure en barak nebo bek. En kawaida ko che kororon kotebunen ng'weny en bek.
- Imuceh iyai test ne rahisi nebo germination (rutune 'ab keswek).Icheru keswek tuten maara ko(20-100).Yochin kanyoiset age tugul ne magat . Inde keswechuton en kibogulit netinye bek.Tuch ak ingoryet nitinye bek,agityo inde ole miten asista ago burgei. Cheken kila angot kokorut ,ak iribe angot kokorut .Yon kokorut keswchuton isire betunoton ak numbarit ab ketik chekirut.Testi initon kotore weekishek oeng'.Rutunet neite 50% kokororonen.Kora keswek chemeng'echen cherutu agoi 5%, kimuche kotage rib.

8. Kmne anan kigonori ketichuton meng'echen anan ko keswek?

- Keswek alak komogimuche kegonor noton amune asikoyoche kemin,keswek che (terteren , chebo logoek anan ko keswek chetinye ooil chechang').
- En keswek chetinye magandok che uwen koyoche kokonor en ole titll ago yamaat ago katit.
- Yoche kicher keswechoton en logoek . Asi koyomyo keswechutono koyoche kinde ole mten asista.
- Kararan yon kagkonor en paper bag anan ko kbabok 'ab chumonik (matinde polythene bags angamun yoe keswot koche bek aktyo koyait en let).Ker ile itililot ole ikonoren.
- Sir kainer 'ab keswondonoton ak nambarnyin.
- lbwat ile rutunet 'ab keswek kotiyenge kasarta ne kagikonor, yon kaigage keswek saidi kowe hogsek.

9. Iman rutu keswek tugul en ng'weny?

Nambarit 'ab keswek cherutu en ng'weny kotiyenge species che kagimin . Keswek alak komogchinge kinya kora asikemine.

10. Ne kanyaaniton mogchnge keswek?

- Angot kotinye keswot balalyat ne mingin komoyoche keyoche pretreatment.
- Keswek chetinye balalenik che yechen koyoche keyochi pretreatment. Alak komogchnge kebchei ak nyundoit.Yoche kemin keswek saainoton kobore kipchee.
- Keswek alak komogchinge ketil eb balalyat asi kochomchi bek kochut. Matitil komoson kinomchige balalyat angamun komositon nerutunen.
- Keswek alak komogchinge kinde acid en mintishek 5-10.Asikihcher.
- Oret age en keswek chetinye balalenik che uwen ko kiyo en bek chepele bik en minitishak 5-10.Agityo kinde keswechuton bek che kulu. Inoniton kotoreti balalyat 'ab keswot koterteritun, ago chomchi bek kochut.
- Keswek alak kimuche kinde bek en saaishek 5-12.
- Keswek tugul, kobore kagyochi kanyaet, koyoche kemn saainoton.

11. Kimindoi ano keswek?

- Keswek che imuche korut, koyoche kemin imbarenik anan ko en pots. Species che moimuche korut en imbarenk aen saainoton , kimuche kemin petishek.
- Kasarta netore keswek as korut kotiyenge ainaa nebo keswot , burgeyet 'ab ng'weny, bek che btunat kasarta ne kigo tar keswot kongeten kinngesto en logoyat.
- Sanasana mnet 'ab ketik keyoe en kasorwek 'ab robwek.
- Kogoborunet ,yoche ko kila saait ko twonen ng'ung'unyek en ole kiminen ketit.

12. Iman rutu seedlings kobun keswek ichegen?

Species alak koche root suckers (Ketik che meng'echen cherutunen tigitik 'ab ketit). Ketichuton meng'echen kimuche ketil agityo keib koba kemin. Cuttings kimuche kicherunen . Lewen ketit ne koi, agityo itil ak iiste sogek . Min cuttings choton en ngweny, ole tilil .yoche inde bek kila agoi kot korut.

Ketk che kagimin en oraniton ko kerkergeitun ak ketit ne ki kamet.



Ongeter soil Erosion !

By David Mawira

Soil erosion, anan ko kamwestoet ‘ab ng’ung’unyek koibu bek che koib ng’ung’unyek yon rwoe. Imuche koyaak en ole momiten minutik alak tugul , momiten susuwek kora komomten minutik alak tugul. Mbarenik chechang’ ko chemiten en ole ribrib emet koyoe soil erosion, en komoswek alak koyoogsek gully erosion.

Mbolea che chang’ kogikoba wastage angamun en komwestoet ‘ab ng’ung’unyek . Kigibet rabnik mmillionishek koba oinoshek ak oceans . Ago kigewechochwech imbarenikchok.

Osome age’tugul en echek korib imbarek yon kogimin ketik che indigenous ak susuwek koig cover en imbarenikchok. Kogwoutoniniton koite kotes

omtwogik ‘ab tugchok ak kora koribwech imbarenkchok.

Ongenam oratinwek cheribe oinoshekchok yon kagimin ketik che moweche oinoshek. Kora, ongetegis ngotutik chebo serikali, komagimin ketik en 30m en ole rubege ak oinet anan ko 100 meters yon eucalyptus.

Nebo maana saidi ,koginaam agetugul en echek keyai Conservation Farming (CF). CF kotoreti bek koma rwai en ng’weny saidi ak ngot komomiten robta ; kotoreti keringoik ‘ab CF korib bek en kasarta negoi ak en let kenyoru rurutik.

Yon kogitaach bek chebo ropta en korigchok keboishen gutters ,ko bechuton kotoretech koribwech emet en kosorwek che momiten ropta.

Kwajebi Cluster: En kibageng’e kimuche kenyoru che chang’.

By Mary Kathei

Kingobata kasarta ne kibo rwonik , (deep sleep),en Kwajebi Cluster kogogosir en inguni ago tayar koyai kasit ak temik alak chebo TIST asi komuch konyor rabinik chebo carbon business.

Kwajebi Cluster ko ageng’e en pioneers mut chebo clusters en Laikipia West ko kiginome en 2008 by Joshua Irungu negi TSE en kasaraton , en ko inguni Laikipia County Governor. Agoi rani ketinye groupishek alak che meng’echen 56. Kogewege inguni anyun ak maat negim. En kibageng’e kogigiyonchine keyai che isubu;

- Agetugul en groupishek chemeng’echen konyolu kotinye petit komobek kenyit.
- Kila membayat konyolu kogogomin ketik 50 en kosorwek ‘ab robwek.

- Kiomdoi ng’olyot ‘ab TIST koitichi bik ab kokwotinwekchok ak koyom ketes groupishek.
- Kibwotchinige agobo koyonchinoni en kila kasarta ak koyom keger kele kagitimisan.

Kiyoe kasit en kibageng’e ak Cluster Servants, David Thuku ak Mary Kathei koyom keger kele kagiquantifyen ketik chetagong’etunotin. Kiyome ketoret en kasishekchwag kila en kila.

Kigitinye tuyenyon nebo Cluster en April 18, 2013. Kiteseta kinetege chechang’, ak kigile agetugul en echek en tuyoshek chebo clusters en kila arawet. Yon kitinye kibagenge kitimisoni chechang’!



Ribet ab waste (saratik)

By Joseph Gituma

Waste anan ko saratik ko ki age tugul ne mamagat yon kagobek kasit agetugul ne koyoe kimugulmet ago imuche komotinye manufaa en saaitnoton:

- excreta/waste chebo binadamu
- Omitwogik che kong'et anan ko tuguk che chafu en korigchok.
- Karatasishek che kigeboishen.
- Polythene bags
- Chumoinik che Scrap, Koig che kigobek (dry cells)
- Sludge en Sewage etc.

Ne ne ibu rubbish en korotinwekchok ?

Saratik ko mogimuche kimwestoenge lakini tesokse yon:

- Mogiboishen resources komye
- Yon momiten oratinwek che kimuche keitoen saratik, kochong'oegitun.
- Yon mogitinye (rubbish pits latrines,) ole kiwirchini saratik.
- Yon momiten naaet agobo amune asikoyoche kibose saratik en emet.

Ubaya Nebo Waste Management neya.

- Bete kororonindab emet, yon kachang'a saratik.
- Wechet 'ab bek, koristo, ak ng'ung'unyek.
- Chong'oegitun mionwogik.
- Imuche kogerak pipushek 'ab sewage.
- Wechet ab koristo kochanga sumu , chebunu koig che kigoyachegitun.

Sumu chemmiten koig che kigoyachegitun, anan ko saratik alaktugul, komuche koig sumu en tyong'ikchok anan ko lokog .

Ne ne imuche koyai groupishek chemeng'echen asi koter kiiton.

- Kobos kocherunet 'ab waste.
- Koyom koboishen koig chebo solar, angamun mosib koweckokse.
- Yon imugogse iboishen tuguk kora matkewirta kou(ie. plastic bags)
- Koig mbolea – Konor waste che organic kou (omitwogik chekong'et anan ko fodder) koig mbolea en imbarenikchok.
- Tech ole kindo saratik en imbareng'ung.
- lbwat ile imuche ipel kartasishek ichegen. Matipel koig angamun imuche kotyolso. Inde toilet(pit latrine).

Libanet 'ab groupishek chemeng'echen – uamuzi nebo maana nemoche ngal kobun inye.

Chechang' en groupishek chemeng'echen en TIST kogokosom kole kigochi lipanet en kila orowek lo. En inguni , Clean Air Action Corporation kotinye agreement ak temik 'ab TIST kigochi robinik Ksh 1.50 Cts (anan ko che tagochang' kotiyeng'e ak – US Dollar ak Kenya Shilling) kila kenyit koyiyenge ak ketik cheminotin. En keny , kogiliboni CAAC koboishen quarterly installments. Inoniton komoonishoni kole en kila quarter konyoru temik Ksh 0.375 en kila ketit . En inguni,

kosome temik kole moche konyor lipanetnywan en nusu nebo kenyit . Kobor kole en kila orowek lo , konyoru Ksh 0.75 (anan kosire chu , tiyenge exchange rate,).

Kimoche kegas ki ne imoche imwa. Ongalalchinen ak cluster leader neng'wong'et asi kenai mogutikwok – kelipan en kila nusu nebo kenyit anan quarter nebo kenyit. Imuche ibirchi Grace Gacheri, memberyat 'ab Operational Leadership Council iboishen nambarishechu 0720 918 461.



Ongebakach tilet ‘ab ketik, ak kemin alak.

By Joseph Gituma

Kikere tugul ,tilet ‘ab ketik ne tese ta en emet. En TIST,Keyome kitonosi tilet ‘ab ketik ak keker kele kakimin alak.

ng’weny ak kora kotere koriswek che imuch koib rurutik.

Ne neibu tilet ‘ab ketik:

- Tile bik ketik asi koboishen koik kwenik,asi keminsen imbaret, en tekset anan okot yon iyomsie inchirenik.
- Bik chechang’ kotile ketik ko moingen maana nenywan.
- En komoswek alak komuch kotil bik ketik angamun motinye komosto age ne imuch kolobotchi.

Shidaishek che kikenyoru:

- Ibet ‘ab ng’ung’unyek yon kobit robta.
- Yon momiten osnoshek kobetos ,kerichek, ole menyey tyong’ik ,omitwokik ak en let kotesak beit ‘ab tuguk ‘ab ketik.
- Ketik koune koristo ,kotese mbolea chemi

Ole kimuche keterten tilet ‘ab ketik.

1. Echek ko ki temik ‘ab TIST kimuche kechop betishek ‘ab ketik chekimine en imbarenik ‘ab membaek akealde seedlings ichuton en kokwet. Yoche kemwoitechin choronokchok kochut TIST!
2. Keboishen TIST energy saving stoves cheboishen kwenik che tuten ak korib makaa
3. Keboishen ortinwek alak neko ta kwenik(e.g. kou asista, sawdust, coffee husks,suswek, chemasai, waste chebo minutik, tukuk ‘ab tuga).
4. Ketes minet ‘ab ketik en kokwet kou en kanisoshek ,sukulishek ak en tobonwokik ‘ab oinoshek.
5. Kinet bik akobo agro forestry, ak ketes boishet ab wood lots.

TIST – Ongeyai emet konyalilit!

Boroindo nebo aldaet ‘ab Croton Nuts.

Kokobit market ne impya chebo croton Nuts. Kampunit nemiten en Naro Moru ko’konam koal cotton nuts asi kochoben biodiesel che kimuche keboishen en karishek ak tuguk alak chebo machinishek.

Eco Fuels Kenya, Ltd ko ole croton nuts en olyet ‘ab Ksh 6.50 per Kg. Temik koyumi nuts ichuton en imbarenik kwai anan ko en osnoshek. Temik che chang’ en TIST ko’kokoker kole *Croton megalocarpus*, ketit nebo keny, kotere

koristo(chebibiyet) neya en imbarenikkwai. Market initon impya nebo *Croton* seeds ko agenge en manufaa che ikere yon imine ketik..

Eco Fuels kochobchinke transport yon kakiyum nuts.

Imuche ibirchi simoit ,contact Cosmas Ochieng: 0725398675. Email:Cosmas@ecofuelskenya.com. www.ecofuelskenya.com