

# Mazingira Bora



# TIST

The International Small Group & Tree Planting Program

www.tist.org

English Version

TIST is an innovative, time - tested, afforestation program led by the participants.



Karia TIST Cluster, Tharaka-Nithi County. During their meeting held on 9/3/2023.

**Inside:** TIST: How TIST Farmers can help Avoid Double Counting in Carbon Business. Page 2

Jerusha Nakai: I have learnt a lot from Cluster Meetings. Page 3

The Rains Have Come – Time to Plant Many More Trees. Page 4

Thinning your trees for successful growth avoid clear-cutting. Page 5



## TIST: How TIST Farmers can help Avoid Double Counting in Carbon Business.

**T**IST program has been in the carbon market for over two decades now. We have remained meticulous in packaging our carbon. From careful selection of species by our farmers, to good practices in planting trees and taking care of the trees, TIST Farmers have been contributing immensely in having high quality carbon tonnes.

When a Cluster Servant visits a TIST Farmer Grove, they ensure the data they collect is accurate in terms of tree count, tree species, tree ages, tree circumferences and location of the Grove. This gives confidence to our buyers that carbon tonnes created by our farmers are real and accurate.

However, there are some concerns from carbon buyers towards programs doing carbon projects. One of those concerns is **Double Counting of carbon offsets.**

Double Counting of carbon offsets is wrong. It means the carbon buyer will pay twice for same carbon tonnes. Buyers feel cheated when this happens and may stop doing further business with affected projects.

It happens when the following happens:

**A) When two or more carbon programs claim the same carbon tonnes created by same trees.**

This refers to a situation where a carbon program like TIST and another carbon program claim carbon tonnes from the same farmer who is planting trees for carbon.

To avoid this problem, TIST members should not join other programs doing carbon.

Equally, TIST Leaders, Farmers and Servants should not recruit new members that belong to other carbon projects.

If a new carbon project comes to your area, be polite with them and let them know that the TIST program is already serving farmers in your area.

It is important to note, trees already planted for TIST cannot be “transferred to another carbon project”. Such trees become baseline trees for new project. This means the farmer will lose all the carbon his/her trees have created and therefore cannot participate in carbon market.

**B) When one grove is claimed by two or more different farmers.**

This happens when one grove is claimed by two different farmers. For example, where a husband and wife, or any other relative, are members of TIST program, but each of them show the same grove as theirs. Though the TIST program has tools to check and detect this problem, while doing Quantification and in doing Desk Audits, it is important to avoid this from happening.

From the foregoing, we in the TIST program need to continue keeping our carbon tonnes clean and of high quality. We should help avoid conflicts with other carbon projects coming to our area. If we adhere to the TIST Values of Honesty, Transparency, Accuracy, Mutual Accountability, and Servant to each other, while using low budget – high results, our carbon tonnes will continue to fetch good prices in carbon market.



## Jerusha Nakai: I have learnt a lot from Cluster Meetings.

I am a TIST Farmer from Miathene Cluster, Meru County. I joined TIST in 2005. My Small Group is Thaberia D, 2005KEI 171. I am a small-scale farmer.

I requested for this opportunity to share how I have benefitted from TIST. I have read in other *Mazingira Bora* articles success stories shared by other farmers. I feel encouraged and motivated when I learn what other farmers are doing.

I am grateful for TIST Cluster Trainings. I am a faithful attendee of Cluster meetings. I rarely miss Cluster meetings. Through the meetings, I learn new things from other farmers. We also receive TIST Trainings from our Cluster Servant, Alice Nkirote. She has been very supportive and very excellent trainer.

In my small farm, I have planted mixed species of trees. Some indigenous, others fruits and nuts and some more are exotic. This blend of species has really improved my farm. Before joining TIST, I experienced lots of soil erosion during rainy season. Today, my soil is firm, no erosion happens in my farm. The soil has become productive again. Crops yield, especially maize and beans, has increased.

At the Cluster meetings, we are taught how to make compost manure. We are taught to prune our trees annually. When we prune, we get firewood but more importantly, we are taught how to make compost manure out of leaves

from pruned tree branches. So, each year, I do make compost manure for my crops. But since it is the trees that contributed more to this compost manure, I also apply some manure to my trees. This has helped my trees grow stronger and healthier. Pruning also helps other crops receive enough sunlight for their growth.

Today, I do harvest more than one tonne of macadamia nuts annually. I get enough maize and beans from my farm. I even sell surplus. I have added cows into my farm. I am growing with TIST. My Small Groups has been receiving profit share payments from TIST.

I am proud of TIST. I will continue planting more trees while taking great care of existing ones as I continue enjoying the benefits. I would like to encourage other TIST members to take Cluster meetings seriously. You learn a lot at the meetings. Please make a habit of attending your monthly Cluster meetings.



**Jerusha Nakai a TIST farmer from Miathene Cluster in her macadamia tree grove.**



# The Rains Have Come – Time to Plant Many More Trees.

## Preparing seedlings for transplanting (Hardening Off).

Now that the rains have come, seedlings need to be planted out. It is important this month to make sure that seedlings will be ready to be moved from the nursery and planted in the field. Seedlings first need to be prepared for the harsher conditions of the field. If seedlings have been properly looked after in a nursery, they may have received more water and shade than they will have once they have been planted. Gradually reduce the watering and expose the seedlings to full sunlight to make this transition successful.

## Characteristics of good seedlings.

As a general guide (remember different species have different characteristics) good seedling for planting out have the following characteristics:

- The shoot should be twice the length of the roots or the pot.
- The stem should be strong and woody.
- The seedlings should have many thin roots in addition to the main roots.
- Many seedlings will achieve these characteristics two months after germinating.

## Transplanting.

- Transport the seedlings in an upright position.
- Mark out a circle with a diameter of 30cm in the field.
- Remove the topsoil and place in a pile.

- Remove the next soil layer to a depth of 30cm and place in a separate pile.
- Put in a 5cm layer of grass (dry grass in rainy season, fresh grass in dry season, called mulching). Some groups add manure as well.
- Remove the seedling from the polythene bag. Do not break the earth-balls around the roots.
- Place the seedling in the hole.
- Replace the topsoil first, then the second soil layer.
- Some groups do not fill the hole completely, but leave a gap of a few cm. This helps the rainwater enter the hole and infiltrate the soil.
- This can be especially helpful in dry areas.
- Any remaining soil can be placed in a mound on the downhill side of the seedling. This will help trap any rainwater and divert it into the hole.
- Water the seedling.

Also remember that to give your seedling the best chance of survival, you should plant them 3m - 4m apart. If you plant them closer together then the seedlings will not get all the water and soil nutrients, they need because there is much competition. They will become weak and may die so follow the best practice of a spacing of 2.5 - 3m.



## Thinning your trees for successful growth avoid clear-cutting.

**W**e are very proud that almost all TIST members are following the TIST Values and living by the contract that they signed. Very few TIST members have broken the contract, clear cut their trees, and sold them for other uses. In fact, less than 1% of the 40,000 TIST groves in Kenya have been cut during the eighteen years that TIST has been operating in Kenya.

The purpose of having regular thinning is to achieve maximum growth and value of the trees that are left standing. The cuttings also provide firewood, poles, building materials, and other benefits directly to the TIST participant. That is the reason that we have the policy of creating a sustainable forest by only harvesting a maximum of 5% of the trees per year, after the trees are 10 years old.

When an occasional TIST member decides to clear cut their grove, they harm all the rest of the TIST members in their Small Group, in their Cluster and in all of Kenya. The actions of very few people can cause big problems for everyone. We expect other Small Group members and members of the Cluster to pay attention and make sure that no one cuts trees before they are supposed to.

The OLC is going to work with some of the participants who made a mistake and cut the trees to work out a proper plan for those people to reinvest some of their profits into the TIST Program, so they are able to help other farmers rather than hurt them.

When we signed the GhG Agreement, we committed to maintain the trees we plant for TIST to let them grow for 30 years before harvest. This is one reason it's so important to think carefully about what kinds of trees we want to grow on our farms. Thinning and pruning can help keep trees healthy and provide useful products while the trees grow.

The purpose of thinning and pruning trees is to improve individual tree health, as well as overall forest health. This is done by protecting the "best" trees in the forest and thinning the others. Trees may have different needs for space depending on species, site, planting style (woodlot, incorporated into crop fields, or windbreak), and climate, but some general principles apply.

To grow strong, healthy trees, a spacing of two meters or more is recommended. This spacing works for many TIST trees (i.e., grevillea and



cypress), but remember some trees like mango and macadamia require more space. Giving trees proper spacing helps them get enough water and nutrients to grow to their full potential. Closer spacing is acceptable when trees are young. As the trees begin to mature, some trees will be larger and more robust than their neighbors. These are the trees that should be kept. In determining which trees should be removed, look at the best trees and determine if they are appropriately spaced. If they are not, you should remove some nearby trees.

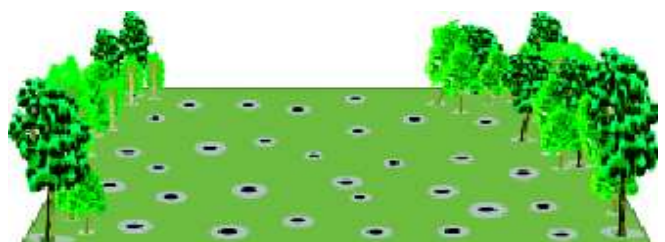
When making thinning choices, remember that growth rate varies greatly by species. If a mango tree is growing near lots of exotic trees, the mango may be far smaller and slower growing than the fast-growing exotic trees, but it certainly should not be cut simply because it is smaller! A mango tree is of great importance due to its usefulness in producing fruit for food and sale.

**Best Practices while Thinning**

- ✓ Allow crop trees to grow to maturity.
  
- ✓ Thin to proper stocking (number of trees per acre). In TIST, we can select up to 5% of our trees, after 10 years, thinning by selecting as they grow, and providing income.

- ✓ Remove dying, diseased, decaying, and poor-quality trees.
  
- ✓ Protect trees from logging damage.
  
- ✓ Use low-impact logging methods.
  
- ✓ Promote tree species diversity.
  
- ✓ Monitor your forest for insect and disease outbreaks.
  
- ✓ Cooperate with government agencies in controlling forest insect and disease outbreaks.
  
- ✓ Prevent wildfire.

**DO NOT do this.**



**Clear cutting.**

**DO THIS.**



**Single tree selection.**

# Mazingira Bora



# TIST

The International Small Group & Tree Planting Program

www.tist.org

Kimereu Version

TIST is an innovative, time - tested, afforestation program led by the participants.



**Karia TIST Cluster, Kundi la TIST la Karia, Kaunti ya Tharaka-Nithi. Wakati wa mkutano wao uliofanyika tarehe 9/3/2023.**

**Inside:** TIST: Njira iria arima a TIST boomba kwigitiira gutara kaboni maita jairi.

Page 2

**Jerusha Nakai: Ninthomete jamaingi kuuma kiri micemanio ya clasta. Page 3**

**Mbura ikwija - Ni igita ria kuanda miti ingi imingi. Page 4**

**Caa miti kenda ikura bwega na turigirie kuriika buru. Page 5**



## TIST: Njira iria arima a TIST boomba kwigiitira gutara kaboni maita jairi.

**M**uradi wa TIST niwithiritwe kiri biacara ya kaboni gwa nkuruki ya miaka mirongo iiri nandi. Nitwithiritue tukiritaniria kiri gwika kaboni yetu. Kwambiria na uandi wa miti iria miega na arimi, njira injega cia kuanda miti na kumenyeera, Arimi a TIST nibajukitie ikinya ri nene muno gutigiira turi na kaboni tani jia kirathi kia iguru.

Kagita karia clasta servant eeta muundene jwa murimi wa TIST, atigagiira data iria ukujukia ni cia uuma bungwa kiri gutara miti, mithemba ya miti, miaka ya miti, uriku wa miti na nkinya naria miti iandi. Untu bubu nibuejaga aguri ba kaboni inya na uuma ati kaboni iria arimi bathondekete ni ya uuma bungwa.

Kunari uu, aguri ba kaboni nibendaga kumenya uria miradi yonthe igwita ngugi iji ya kaboni. Untu bumwe bendaga kumenya ni kethira kaboni iji ni igutarwa nkuruki ya maita jairi.

Gutara gwa kaboni maita jairi ni makosa ja manene. Guku ni kuuga muguri wa kaboni akagura maita jairi kaboni tani oo imwe. Aguri nibegujaga bairitue riria untu bubu bwakarika na no batige kugurira kaboni miradi ja iji.

Untu bubu bukarikaga riria:

### **A) Riria miradi iiri kana nkuruki ya kaboni ikuuga niyo ithondekete kaboni tani na miti o imwe.**

Bubu bukarikaga riria muradi ja TIST na muradi jungi bakwariria kaboni tani jia murimi o umwe uria ukuanda miti ya kaboni.

Kweberia thina ja iji, Arimi ba TIST batikagatonye kiri miradi ingi ya kwendia kaboni. Kwa njira inkuhi, Atongerira ba TIST, arimi na nkinya clasta servant bati geete

mbere kwandikithia arimi bajeru baria bari ki miradi ingi ya kaboni.

Kethira kuri na muradi jungi jwa kaboni jweja ntura cienu, Jukia kaanya ga kubamenyithia ati muradi wa TIST nijugwita ngugi na arimi kiri matura jenu.

Kuri na gitumi kuririkana, miti iria iandi niuntu bwa muradi wa TIST itiumba gwita kiri muradi jungi. Miti ja iji ituikaga baseline trees kiri muradi jungi jumweru. Guku ni kuuga murimi akona acara ya kaboni iria irathondeki ni miti iji na atiumba gwita na mbere kiri muradi wa wendia wa kaboni.

### **B) Riria muunda jumwe jwandikiri arimi bairi kana nkuruki.**

Untu bubu bukarikaga riria nkuruki ya arimi bairi bakuuga munda jumwe ni jwao. Kwa ngerekano, aria mukuuru na mwekuru kana muntu wa mucii bari amemba ba TIST na o muntu akonania muunda o jumwe ja jwawe. Nkinya kethira muradi wa TIST uri na machine ya kumenya thina ja iji kagita ka utari miti kana gutega kiri mitandao, nibwega kumenyeera kuthithia ngugi ja iji.

Kuuma kiri ngugi cietu, batwi turi TIST nitukwenda gwita mbere gwika kaboni tani cietu iri injega na iri jia kirathi kia iguru. Nonkinya tutetherie kweberia gukongana na miradi ingi ya kaboni iria ijiite naria turitaga ngugi. Tukathingatiira TIST Values: Turi antu ba uuma, turi ba utheri, tuthingagiira uuma bungwa, nitwithagirua turi tayari kuurua na gucokia jiuria kuumania na ngugi cietu, turi atungataniri, tutumagira mbeca inkai kwona mpumi inene, tukoomba kugwata mbeca injega kiri wendia wa kaboni thokone.





## **Jerusha Nakai: Ninthomete jamaingi kuuma kiri micemanio ya clasta.**

**U**ni ndi murimi wa TIST kuuma Miathene clasta, Meru county. Ndatonyere TIST mwaka jwa 2005. Gakundi gakwa kanini getagwa Thaberia D, 2005KEI 171. Uni ndi murimi u munini.

Nindarombere kanya gaka ndibumenyithie uria ngwatiite baita kuuma kiri TIST. Ninthomete ngano ingi cia witi na mbere kiri mazingira bora ciandiki ni arimi bangi. Ningijaga na inya ndamenya uria arimi bangi bagwita ngugi.

Ndina nkatho niuntu bwa ithomo jia TIST. Uni nticeragirwa ni micemanio ya clasta. Kiri micemanio, ninthomaga mantu ja meeru kuuma kiri arimi bangi. Nkinya nitugwataga mathomo ja TIST kuuma kiri clasta servant wetu, Alice Nkirote. Alice niatutetheretie muno na ni muritani u mwega.

Ndeene ya kamuunda gakwa, Nimbandite miti mithemba i mingi. Miti imwe ni ya kinduire, ya matunda, ya makandi na nkinya miti ya kigeni. Mithemba iji imingi ni itetheretie muunda jwakwa. Mbere ya kuthungira kiri TIST, mithetu ni yetaga muno na mbura. Narua iji, mithetu ni imenyeri bwega, guti mithetu itaga na nduuji. Mithetu nandi iri na maciara ja meega. Maketha ja mpempe na ming'au ni jongerekete.

Kiri micemanio ya clasta, nituthomite kuthondeka mboleo ya mati ya compost. Nituthomete mantu ja kuthiga miti o mwaka. Kagita karia twathiga miti yetu nitwonaga nku na makiria mabura jaja jagatumikakiri kuthithia mboleo. Kwou o mwaka ninthithagia mboleo

ya imera ciakwa. Niuntu miti niyo impejaga mboleo iji, nimbikagira miti mboleo iji. Miti nandi ni igukura na inya na iri imiega muno. Kugita mpang'i imwe nigutethagiria kureta riuga ria kung'ana na miti igakura bwega.

Narua iji, ninkethaga nkuruki ya makandamia tani imwe o kiri mwaka. Ninkethaga mpempe na ming'au ya kwigana kuuma kiri muunda jwakwa nkinya nkendia imwe. Nimpongerete ng'ombe muundene jwakwa. Ningukura na TIST. Gakundi gakwa kanini ni gakugwata mbeca cia baita kuuma kiri TIST.

Ndina gikeno na muradi wa TIST. Ngeeta na mbere kuanda miti ingi imingi o ngitaga mbere kumenyeera iria mbandite na gwita mbere kugwata baita. Ninkujukia kaanya gaka gwikira inya arimi bangi ba TIST kujukia micemanio ya TIST na gitumi nkuruki. Ukathoma ja maingi ndeene ya micemanio. Ndakuomba utuikie mutugo gwitaga micemanio ya clasta ya TIST o mweri.



**Jerusha Nakai mkulima wa TIST kutoka Nguzo ya Miathene katika shamba lake la miti ya makadamia.**



## **Mbura ikwija - Ni igita ria kuanda miti ingi imingi.**

### **Kuthuranira miti iria iumithitue ithamua ita muundene (Kumithithia uria ikomba kuumiria muundene)**

Nandi niuntu mbura ikwija, miti iria iumithitue nigwii kuandwa ome ya munanda. Burina bata mweri juju kumenyeera ati miti iu yaku iri tayari kuthamua kuuma munandene iandwa muundene. Miti iji iumithitue mbele nikwenda kuthuranirwa niuntu bwa mantu jamomu nkuruki naria muundene. Kethira miti nithiritwe ikimenyirwa bwega munandene, no ithirwe ikiiri ruuji na kirundu gikingi nkuruki ya kiria kiri muundene yarikia kuandwa. Mpari mpari nyiyia ruuji ruria ukumikiira na umirugurire riu rionthe nikenda yumba gukara bwega yathama.

### **Miti ya kuanda iria miega ithagirwa irina jaja.**

Ta njira ya kawaida (ukirikanaga mithemba mwanya irina mantu mwanya) miti imiega ya kuanda niithagirwa irina jaja:

- Gitina kiria kiumirite kithirwe kiri na uraja bwa miri kana mubuko jairi.
- Gitina kithirwe kirina inya na kiri gikiumu.
- Miti ithirwe irina miri imiceke imingi na imwe iminene.
- Miti iria mingi nikinyithagia mantu jaja na igita ria mieri iiri yarikia kuuma.

### **Kuthamiria miti muundene.**

- Kamata miti irungi.
- Maka kithiururi kiri na warie bwa 30cm muundene kana aria ukwenda kuanda.

- Rita muthetu jwa iguru na urikire amwe.
- Rita muthetu jou jungi mwanka 30cm kwina na urikire muthetu juju angi.
- Ikira nyaki centimeter ithano ( nyaki imbumu riria gukuura, nyaki itiumi igitene ria uumu).
- Rita muti mubukone. Ukagwithia muthetu jou jugwatene na miri.
- Ikira muti kirinyene.
- Cokia muthetu jwa iguru mbele, riu jou jungi jwa iiri.
- Ikundi bimwe bitijuragia kirinya buru, indi nibatigaga kanya ga cm inkai. Bubu nibutethagia ruuji rwa mbuura gutonya kirinyene na kwou gutonya muthetune. Bubu nobutethie mono mono naria kuri gukumu.
- Muthetu jungi juria jumba kwithirwa jutigere nijwikagwa na kibango bwagaiti ya muti. Juju nijugwatagia ruuji rwa mbuura na jukarutongerua gutonya kirinyene.
- Ikira muti ruuji.

Ririkana kinya ati nikenda ua muti kanya gakanene ga gukura nuubati kuanda utarenie meter ithatu gwita inya. Waanda ikwianiritie nkuruki miti itikinyirwa ni ruuji na irio biria ikwenda nontu kwina gushindana gukwingi. Ikaaga inya na no ikue, kwou thingata mwitire jumwega buru jwa gutarania na meter ijiri na nusu gwita ithatu.



## **Caa miti kenda ikura bwega na turigirie kuriika buru.**

**I**tukwiguna mono tontu akui amemba bonthe ba TIST ibakuthingaatira maritano ja TIST gukurukiira gucaina gwa contract. Ni amemba bakai ba TIST batiumbite gwika wirane, bagitite miti buru na bendia niuntu bwa ngugi ingi. Amu nthiguru ya imwe kiri igana (1%) ya tumwitu 40,000 twa TIST ndene e Kenya nitugiti igitene ria miaka inana iria TIST ithiritwe ikiritaga ngugi Kenya.

Gitumi gia gucaa miti nikenda miti iria itigarite ikura bwega. Gucaa igutethagiria na nkuu, ikingi, into bia bwaka na ibitethagiiria amemba ba TIST. Kiu nikio gitumi twithagirwa turina policy ya kugita miti gacunci ka ithano kiri igana (5%) o mwaka miti yakinyia ukuru bwa miaka ikumi keenda tumwitu tutikathire.

Riria mumemba umwe wa TIST abangaga kugiita miti yonthe, ugwati ibutonyaga kiri amemba bangi bonthe ndene ya gikundi, ndene ya cluster na Kenya. Ii mma tumantu tuu tutuniini ituretaga thiina kiri muntu wonthe. Itukwirigiira amemba ba cluster na ikundi bakathingatiira uju na gutiwe ukagiita miti riria itibati.

OLC niitite gwita ngugi na amemba baria beeirie

na kugita miti kenda boomba kubanga uria bagatethia antu bau gutumira baita yao kiri mitaratara ya TIST ya gutethia arimi. Riria twacainire gwitikaniria kwa GhG, twaciejanire kumenyeera miti iria twandite ya TIST na kumirekeria ikura kagita ka miaka mirongo ithatu mbere ya gutemwa. Giki nikiabata kenda tuumba kumenya miti iria tukaanda miundene yetu. Gucaa na gukuura igutethagia miti gukura bwega.

Gitumi kia gucaa na gukuura miti nikenda o muti gukura bwega amwe na mwitu. Bubu buthithagua na njira ya kumenyeera miti iria miega na gukuura ingi. Kiri mithemba imingi ja miti imiumo, giriberia, mibao mauta na cypress, iria ikuuragwa ni imenene na itamburuki. Miti irina mobataru mwanya gukurukiira mithemba, aria yaandi, uria iandi na naria yaandi indi mantu jangi ijabati kuthingatirwa.

Gukuria miti irina na inya, waarii bwa mita ijiri ibu bubati. Waarii bubu ibubujaira mono miti ya TIST i.e. giriberia na cypress indi riikana miti ingi ta miembe na mikandania yeendaga waarii nkuruki. Kwaa miti waarii bubwega ibutumaga ikoona ruuji rwa kung'ana na ruuji nkuruki



kenda ikura uria ibaterie. Gukuiianiiria kwa miti kwendekanaga miti iri micanchaana. Miti yaambiriiria gukura, imwe ineneaga nkuruki ya ingi, iji nio ibati gukurua. Kenda umenya ni miti iriku ubati gukuura, tega miti iria miega na wone kethira irina waarii buria bwagirite. Kethira tiu, kuura miti iria iri akui.

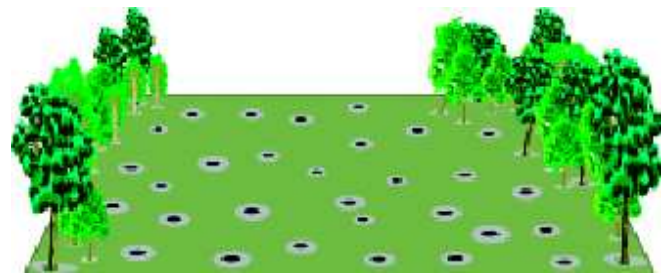
Riria ugucaa menya, miti ikuraga mwanya kuringana na muthemba mwanya. Kethira muembe ijugukurira akui na mubau mauta, jugakura mpaari nkuruki ya mubau mauta, indi jukagitwa nontu l muniini! li mma muembe jwina bata mono nontu ijuciaraga matunda ja kuria na kwendia.

### **Njira injega ya gucaa.**

- ✓ Eteera miti ikure buru.
- ✓ Chaa kuringana na wingi (kuringana na miti kiri acre). Kiri TIST, tuthuuraga gacunci ka ithano kiri igana (5%) kiri miti yetu, nyuma ya miaka ikumi tugicaaga kuringana o uria igukura na gutwaa baita.
- ✓ Kuura miti iria ikwora, ikunyaara, irina murimo na iria itigukura bwega.

- ✓ Rigiiria miti ityakarikwe.
- ✓ Riika na njira iria yaagirite.
- ✓ Anda miti ya mithemba imingi.
- ✓ Menyeera mwitu jwaku nontu bwa mang'inyo na mirimo.
- ✓ Gwatanira na thirikari niuntu bwa kumenyeera mang'inyo na mirimo.
- ✓ Rigiiria mianki ya mwitu.

### **Ukathithia uju.**



### **Kugiita miti buru.**

### **Thithia uju.**



### **Kugiita muti jumwe jumwe.**

# Mazingira Bora



# TIST

The International Small Group & Tree Planting Program

www.tist.org

**Kikuyu Version**

**TIST is an innovative, time - tested, afforestation program led by the participants.**



**Karia TIST Cluster, Tharaka-Nithi County. Mari mucemanio-ini wao uria wahanikire 9/3/2023.**

**Inside:** TIST: Uria arimi a TIST mangiteithia kunina gutarwo maita meri biacara-ini ya Carbon. Page 2

Jerusha Nakai: Ni thomete maundu maingi kuma micemanio ya clasta. Page 3

Mbura niyurite – kahindaga kuhanda miti makiria. Page 4

Guceha na gutagania miti yaku niguo ikure wega. Page 5



# TIST: Uria arimi a TIST mangiteithia kunina gutarwo maita meri biacara-ini ya Carbon.

**M**ubango wa TIST ukoretwo thoko-ini ya carbon handu-ini ha makiria ma miaka mirongo iri. Tukoretwo turi ehokeku ukutia-ini wa carbon. Kuma uthuraniri wa mbegu kuma kuri arimi, kinyagia uhandi mwega wa miti na kumimenerera. Arimi a TIST makoretwo mari muhari wa mbere wa kugetha carbon tonnes iria njega muno.

Hindi iria muruti wira wa clasta acerera ngurubu ya arimi a TIST, matigagiriria data iria yongangio ni njega kuringana na utari wa miti, mithemba ya miti, ukuru wa miti, warie wa miti na itura riria ngurubu. Undu uyu utumaga aguri a carbon tonnes maiganire ati arimi aitu ni ama na uma.

Ona kuri uguo, kuri amwe a aguri a carbon kuri mubango mekaga ukuria wa carbon. Umwe wa aya ni **Double Counting of carbon offsets**.

Double Counting of carbon offsets ti njega. Yugaga ati aguri a carbon makuriha maita meri hari carbon tonnes imwe. Aguri maiguaga mahenetio riria kwahanika uguo na no marugamie kuruta biacara na ikundi ici.

Kuhanikaga uguo riria maundu maya mahanika:

## **A. Hindi iria ikundi cia carbon igiri kana makiria ciauga nicio ciene carbon tonnes imwe cithondeketwo ni miti imwe.**

Uu ni kuga ati riria gikundi gia carbon ta TIST na gikundi kingi gia carbon kiauga ati carbon tonnes kuma kuri murimi umwe uria uhandite miti niundu wa carbon.

Kwigitira na thina uyu, amemba a TIST matiagirirwo ni kuingira mubango-ini ungi wa carbon. Hamwe na ugwo, atongoria a

TIST, arimi na aruti wira matibatie kuingiria a memba eru kuma ikundi ingi cia carbon.

Riria mubango mweru wa carbon wakinya itura riaku, mere uma ati mubango wa TIST niguo uratungata itura riaku.

Ni wega umenye, miti iria mihande hamwe na TIST “ndingithamirio gikundi kingi gia carbon oro giothe”. Miti iyo ikoragwo iri muthingi wa gikundi. Uguo ni kuga ati murimi agute carbon iria miti yake ithondekete na kwa uguo ndangikorwo thoko-ini ya carbon.

## **B. Hindi iria gikundi kiahimbirio ni arimi eri kana makiria.**

Undu uyu uhanikaga riria ngurubu yahimbirio ni arimi eri matiganite. Kwa muhiano, riria muthuri na mutimia, kana andu angia metainwo, mari a memba a mubango wa TIST, no oro mundu akonania ati miti iyo ni yake. Oro ona akorwo mubango wa TIST no uhote kumenya thina uyu, riria maratara miti na gwika mathabu mao, ni wega kwigitira maundu maya kuhanika.

Ni undu wa uthii wa na mbere, ithui ta gikundi gia TIST no tuguthii na mbere kumenyerera carbon tonnes na iri theru na ya kirathi kia iguru. Ni tubatie kwiyeheria na ndugamano na ngurubu iria ingi cia carbon itura ritu. Tukurugama na murugamo witu wa TIST Values cia uigiririki, waragania, uma, murugamo na uthukumi hari uria ungi, riria turatumira budget nini – maciaro mega, carbon tonnes itu iguthii na mbere gutuhe maciaro mega thiini wa thoko ya carbon.



## Jerusha Nakai: Ni thomete maundu maingi kuma micemanio ya clasta.

**N**ii ndi murimi wa TIST kuma Miathene Cluster, Meru County. Ndaingirire TIST mwaka-ini wa 2005. Ngurubu yakwa nini ni Thaberia D, 2005KE1171. Ndi murimi munini.

Hoete kanya gaka kugayana uria ndeithikite kuma gwa TIST. Nithomete ngathiti ingi cia *Mazingira Bora* uria arimi angi mateithikite. Ni njiguaga ndi na umiriru na kwenda guthii na mbere riria ndathoma uria arimi angi mekaga.

Ndi na gikeno niundu wa githomo gia TIST Cluster. Ngoragwo ndi mwihokeku guthii micemanio ya clasta. Nditiraga micemanio ya clasta. Micemanio-ini, ni thomaga maundu maingi kuma kuri arimi aria angi. Oro ho tugathomithio mathomo ma TIST kuma kuri muruti wira wa clasta, Alice Nkirote. Akoretwo ari muhari wa mbere gutunyitirira na mwarimu mwega.

Kamugunda-ini gakwa, handite mimera itiganite ya miti. Imwe yayo ni ya kiunduire, iria ingi ni ya matunda na iria ingi ya kiiriu. Miti ino ni itumite mugunda wakwa wagirire. Itanaingira TIST, ndari na thina wa tiri gukuo ni kiguu mahinda ma mbura. Umuthi, tiri wakwa ni wanyitire, gutiri na gukuo gwa tiri ni kiguu mugunda-ini wakwa. Tiri wakwa niutwikite munoru ringi. Magetha, makiria mbembe na mboco, niciongererekete.

Micemanio-ini ya clasta, ni tuthomithagio uria tungithondeka thumu. Tugathomithio guceha miti oro mwaka. Riria twaceha miti, tugiaga na ngu ma makiria ya mothe, tuthomithagio uria tungithondeka thumu kumanagia na mathangu

ma miti iria twaceha. Kwa uguo, oro mwaka, nithondekaga thumu wa mimera yakwa. Na tondo no miti itumaga thondeke thumu, oro nayo ni ndimiheaga thumu. Undu uyu utumaga miti yakwa ikure iri na hinya. Guceha no gutumaga mimera igie na utheri wa riuwa niundu wa gukura kwayo.

Umuthi, ni ngethaga makiria ma tonne imwe ya macadamia oro mwaka. Ni ngiaga ma mbebe na mboco nyingi kuma mugunda wakwa. Ona ngendia matigari. Ni nyongereire ngombe mugunda-ini wakwa. Ni ndirakurania na TIST. Ngurubu yakwa nini ni ikoretwo ikiamukira fainda ya marihi kuma TIST.

Ndina gikeno niundu wa TIST. Nguthii na mbere kuhanda miti miti oro hamwe ngithiaga na mbere kumenyerera iria handite oro ngithiaga na mbere kwamukira maciaro. No nyende kumiriria amemba aria angi a TIST matige kuoya micemano ya clasta na itheru. Ndamuthaitha itikirai guthiaga micemanio ya clasta.



**Jerusha Nakai murimi wa TIST kuma Miathene Cluster ari mugunda-ini wake wa macadamia.**



## **Mbura niyurite – kahindaga kuhanda miti makiria.**

### **Kuhariria mimera niguu kuhanda mugundaini.**

Riu tondu mbura niyurite, mimera niyagiriirwo nikuhandwo migundaini kuuma nthari. Niwega mweri uyu gutigirira mimera iri ho ya kuhandwo.

Mimera yagiriirwo ni wambere kuharirio niundu wa riera iritu mugundaini. Angikorwo mimera nditoretwo wega iri nathariini, akorwo niirahetwo maai maingi na kiiruru gukira uria yagiriirwo kana gukira uria ikuheo yathii mugundaini. Kahora kahora nyihia muhere wa maai na wehutie kiiruru hari mimera niguu ihote guikara migundaini

### **Mimera miega ikoragwo na.**

Ta kioereria kiega, (ririkana mithemba ngurani ya miti ndihanana) mimera miega ya kuhanda ikoragwo na;

- o Mimera uraihe maita meeri gukira muri.
- o Mumeru ukorwo na hinya.
- o Mumeru ukorwo na miri miingi.
- o Mimera miingi niikinyanagiria maundu maya thutha wa mieri 2.

### **Guthamia miti.**

- Thamia mimera irugamite na iguru.
- Cora tuthiururi twa warii wa 30cm mugundaini.

- Eheria tiiri wa iguru.
- Eheria tiiri ucio ungi urumiriire nginya uriku wa 30cm.
- Ikira mahuti urku wa 5cm( nyeki nyumu hingo ya mbura nanjigu hingo ya riuu) ikund ingi cihuthagira thumu.
- Ruta mimera kuuma maratathiini na ndugatinie gatiiri karia kari muthiaini wa muri
- Ikira mimera irimaini.
- Ikira tiiri wa iguru na ucokerere na ucio ungi.
- Ikundi ingi citihuragia irima na tiiri biu. Njira ino niiteithagirira maai ma mbura kuingira irimaini na gutonya tiiriini na njira ino ninjegamahinda ma riuu.
- Tiiri uria ungikorwo utigarite nouguo nakianda ia irima niguu uhingiririe maai.
- Itiriria mimera maai.

Ningi tigurira niwahee mimera maundu mega niguu ihote gukura wega na kuhanda na utaganu wa 3cm-4cm. ungimihanda ikuhaniriirie ndikuhota gukinyirwo ni maai na unoru wa tiiri uria irabataru tondu kuri na ucindani na indo ingi. Niikwaga hinya na noyume, kwa uguo rumirira maundu ma gutagania 2.5-3cm





## Guceha na gutagania miti yaku niguo ikure wega.

**T**hiini wa TIST, nitwirutagira guturia miti iria twahanda na tukatreke ikure miaka itanyihiire 30 mebre ya gutemwo. Giki nikio gitumi kinene giagutuma twicirie muno mithemba ya miti iria turahanda migunda-ini iitu. No ona kuri o uguo, guceha na ggutagania miti niguteithagia miti gukura ii na hinya na kuheana umithio mwega riria irakura.

Hamwe, gitumi kia guceha na gutagania miti ni kwongerera ugima wa muti kiumbe na wa mutitu uri wothe. Uu wikikana kuhitukira gucchagura miti iria miega thiini wa mutitu. Kuri mithemba miingi, hamwe na miti iria itagwo hardwoods, grevilea na mibau na mithithinda, niyo muno ikoragwo iri minene gukira iria ingi iri mitungu wega. Miti niibataraga muigana wa mugunda ngurani kuringana na muthemba wago, kuria uri, muhandire na riera no maundu mangi nimatumaga.

Niguo muti ukure uri na hinya, utaganu wa 2 mtrs niwagiriire. Utaganu uyu wagagirira miti miingi (ta grevilla na cypress), no uririkane miti ingi niibataraga utaganu munenanene (ta maembe, macadamia). Riria wahee miti utaganu muiganu nigutumaga miti ikinyirwo ni maai na unoru wa tiiri ni igakura wega na iri na hinya. Utaganu munini wa miti nimwitikiriku riria miti iri minini. Na riria yambiriria kugimara, miti ingi niigukorwo iri miraihu gukira iria ingi. Ino niyo

miti iria yagiriirwo gutigwo mugunda. Niguo umenye miti iria ugutema, rora miti iria miraihu na wone kana niitaganitio wega na angikorwo timitaganu no uteme imwe yayo.

Thutha wa kumenya miti iria ugutema, mitemere haria gitina-ini. Thutha wa ciumia na mieri, imwe yayo niithudukaga. Na niguo ndigakure ringi, tinia mahuti maria marathunduka kuma githuki-ini.

Njira imwe ya iria huthu ya kumenya muti kana niwagiriirwo nigutemwo nikurora unene wayo uringithanitie na iria iriganitie nayo iri ya riika na mutemba umwe. Gukura kwa miti nogukorwo kuri na utiganu kuringana na tiiri na maai na mangi maingi. Angikorwo miti ya muthemba umwe mwena umwe iri na ukuru uiganaine, miti iria minene niyagiriirwo ni gucagurwo niguo ikure. Njira ingi ya kumenya ugima wa miti ni kurora mururi wago. Miti iria iri na mururi muraihu gukira iiria ingi noihote kwamukira utheri muiganu na ikure na ihenya. Na muthia, miti yagiriirwo gukura na mwahu umwe, na itari na mirimu minene kana ironda. No ona kuri o uguo, uu tikuga ati miti yothe minii niyagiriirwo nigutemwo! Tigirira utaganu niwa 2-3mtrs niguo miti ikure iri minene niguo ihote kugucia carbon nyingi.

Ugitua matua ma gutagania, ririkana mukurirme wa muti ningurani kuringana na muthemba wa



muti. Angikorwo miti ya maembe irakuranira na mibau, maembe nomakure mari manini na ikure kahora muno gukira mibau iria ikuraga na ihenya, na ndiagiriirwo nigutemwo tondu niminini! Muti ta muembe niwabata niundu wa matunda maria ukuragia na makendio.

Maembe nimakuranagira na indo ingi migunda-ini. Mibau ndirekaga muti kana mumera ungi ukure hakuhi. Niwega kuririkana uguo riria uracagura miti ya gutagania.

Miti niikoragwo na mabata maingi kuringana na muthemba waguo. Kwa muhiano, nowende muti niundu wa kiruru. Niundu wa uguo, niwagiririrwo kuhe muti mweke muiganu niguu utheremie mahuti.

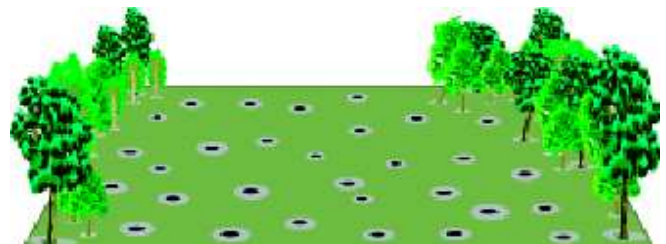
Angikorwo urenda gukuria muhari wa miti niundu wa kunyihia ruhuho, tigrira miti niyakuhaniriria no wehutie iria itari mahariini niguu ndugathondeke githaka.

**Mitaratara ya gutagania.**

- ✓ Reke miti ikure nginya igimare.
- ✓ Korwo na namba ya miti iratwarana na muigana wa mugunda waku. Thiini wa TIST, noucagure gicunji kia miti kia 5%, thutha wa miako 10, gutagania miti o igikuraga na kurehe umithio.

- ✓ Eheria miti iria irakua, iri na mirimu na itari na ugima mwega.
- ✓ Gitira miti kumana na utemi utari mwitikiriku.
- ✓ Tema miti na njira itakuhukia mutitu waku.
- ✓ Handa miti mithemba miingi.
- ✓ Rora mutitu waku ndugatharikirwo ni tutambi.
- ✓ Nyitanira na honge cia thirikari niguu kugitira mirimu.
- ✓ Gitira miaki.

**Ndugeke uu.**



**Kuheria gutheria.**

**Ika uu.**



**Guthuraniria miti.**

# Mazingira Bora



www.tist.org

**Kiswahili Version**

*TIST is an innovative, time - tested, afforestation program led by the participants.*



**Karia TIST Cluster, Kundi la TIST la Karia, Kaunti ya Tharaka-Nithi. Wakati wa mkutano wao uliofanyika tarehe 9/3/2023.**

**Ndani ya gazetti.**

**TIST: Jinsi wakulima wa TIST wanaweza kusaidia kuepuka kuhesabu mara mbili katika biashara ya carbon. Uku. 2**

**Jerusha Nakai: Nimejifunza mengi kutoka kwa mikutano ya nguzo. Uku. 3**

**Mvua imefika - Wakati wa kupanda miti mingine mingi. Uku. 4**

**Kupunguza miti yako ili ikue vizuri, jiepushe na kukata miti yote. Uku. 5**



## TIST: Jinsi wakulima wa TIST wanaweza kusaidia kuepuka kuhesabu mara mbili katika biashara ya carbon.

**M**pango wa TIST umekuwa kwenye soko la kaboni kwa zaidi ya miongo miwili sasa. Tumbakia kuwa waangalifu katika ufungaji wa kaboni yetu. Kuanzia uteuzi makini wa spishi unaofanywa na wakulima wetu, hadi upandaji miti na kutunza miti, Wakulima wa TIST wamekuwa wakichangia pakubwa katika kuwa na tani za kaboni za hali ya juu.

Mtumishi wa Nguzo anapotembelea Mkulima wa TIST, anahakikisha kwamba data wanayokusanya ni sahihi kulingana na idadi ya miti, aina za miti, umri wa miti, mzunguko wa miti na eneo la Kichaka. Hii inatoa imani kwa wanunuzi wetu kwamba tani za kaboni zinazoundwa na wakulima wetu ni halisi na sahihi.

Hata hivyo, kuna baadhi ya wasiwasi kutoka kwa wanunuzi wa kaboni kuelekea programu zinazofanya miradi ya kaboni. Mojawapo ya maswala hayo ni Kuhesabu **Maradufu kwa vipunguzo vya kaboni.**

Kuhesabu Maradufu kwa vipunguzo vya kaboni si sahihi. Inamaanisha kuwa mnunuzi wa kaboni atalipa mara mbili kwa tani sawa za kaboni. Wanunuzi wanahisi wametapeliwa hili linapotokea na wanaweza kuacha kufanya biashara zaidi na miradi iliyoathiriwa.

Inatokea wakati yafuatayo yanatokea:

### **A) Wakati programu mbili au zaidi za kaboni zinadai tani sawa za kaboni iliyoundwa na miti sawa.**

Hii inarejelea hali ambapo programu ya kaboni kama TIST na programu nyingine ya kaboni inadai tani za kaboni kutoka kwa mkulima yuleyule anayepanda miti ya kaboni.

Ili kuepuka tatizo hili, washiriki wa TIST hawafai kujiunga na programu nyingine

zinazofanya kaboni. Vile vile, Viongozi wa TIST, Wakulima na Watumishi hawafai kuajiri wanachama wanya ambao ni wa miradi mingine ya kaboni.

Ikiwa mradi mpya wa kaboni unakuja katika eneo lako, uwe na adabu nao na wajulishe kwamba mpango wa TIST tayari unahudumia wakulima katika eneo lako.

Ni muhimu kutambua, miti ambayo tayari imepandwa kwa ajili ya TIST haiwezi “kuhamishiwa kwenye mradi mwingine wa kaboni”. Miti kama hiyo huwa miti ya msingi kwa mradi mpya. Hii ina maana kwamba mkulima atapoteza kaboni yote ambayo miti yake imetengeneza na hivyo hawezi kushiriki katika soko la kaboni.

### **B) Wakati shamba moja linadaiwa na wakulima wawili au zaidi tofauti.**

Hii hutokea wakati shamba moja linadaiwa na wakulima wawili tofauti. Kwa mfano, ambapo mume na mke, au jamaa mwingine yeyote, ni washiriki wa mpango wa TIST, lakini kila mmoja wao anaonyesha shamba sawa na lao. Ingawa programu ya TIST ina zana za kuangalia na kugundua tatizo hili, wakati wa kufanya Uhesabuji na katika kufanya Ukaguzi wa Dawati, ni muhimu kuepuka hili kutokea.

Kutokana na yaliyotangulia, sisi katika mpango wa TIST tunahitaji kuendelea kuweka tani zetu za kaboni safi na za ubora wa juu. Tunapaswa kusaidia kuzuia migogoro na miradi mingine ya kaboni inayokuja katika eneo letu. Ikiwa tutazingatia Maadili ya TIST ya Uaminifu, Uwazi, Usahihi, Uwajibikaji wa Pamoja, na Mtumishi kwa kila mmoja, huku tukitumia bajeti ya chini - matokeo ya juu, tani zetu za kaboni zitaendelea kupata bei nzuri katika soko la kaboni.



## **Jerusha Nakai: Nimejifunza mengi kutoka kwa mikutano ya nguzo.**

**M**imi ni Mkulima wa TIST kutoka Nguzo ya Miathene, Kaunti ya Meru. Nilijiunga na TIST mwaka wa 2005. Kikundi changu Kidogo ni Thaberia D, 2005KEI 171. Mimi ni mkulima mdogo.

Niliomba nafasi hii kushiriki jinsi nilivyonufaika na TIST. Nimesoma katika makala nyingine za Mazingira Bora hadithi za mafanikio zilizoshirikiwa na wakulima wengine. Ninajisikia kutiwa moyo na kuhamasishwa ninapojifunza kile ambacho wakulima wengine wanafanya.

Ninashukuru kwa Mafunzo ya Nguzo ya TIST. Mimi ni mshiriki mwaminifu wa mikutano ya Cluster. Mimi mara chache hukosa mikutano ya Cluster. Kupitia mikutano, ninajifunza mambo mapya kutoka kwa wakulima wengine. Pia tunapokea Mafunzo ya TIST kutoka kwa Mtumishi wetu wa Cluster, Alice Nkirote. Amekuwa msaada sana na mkufunzi bora sana.

Katika shamba langu dogo, nimepanda aina mchanganyiko za miti. Baadhi ya asili, wengine matunda na karanga na baadhi zaidi ni kigeni. Mchanganyiko huu wa spishi umeboresha shamba langu. Kabla ya kujiunga na TIST, nilikumbana na mmomonyoko mwingi wa udongo wakati wa msimu wa mvua. Leo, udongo wangu ni thabiti, hakuna mmomonyoko unaotokea katika shamba langu. Udongo umekuwa na tija tena. Mavuno ya mazao hasa mahindi na maharage yameongezeka.

Katika mikutano ya Nguzo, tunafundishwa jinsi ya kutengeneza samadi ya mboji. Tunafundishwa kukata miti yetu kila mwaka. Wakati tunapogoa, tunapata kuni lakini muhimu zaidi, tunafundishwa jinsi ya kutengeneza mboji kutoka kwa majani kutoka kwa matawi ya miti iliyokatwa. Kwa

hivyo, kila mwaka, mimi hutengeneza mbolea ya mboji kwa mazao yangu. Lakini kwa vile miti ndiyo iliyochangia zaidi kwenye mbolea hii ya samadi, pia mimi huweka samadi kwenye miti yangu. Hii imesaidia miti yangu kukua imara na yenye afya. Kupogoa pia husaidia mazao mengine kupokea mwanga wa jua wa kutosha kwa ukuaji wao.

Leo, ninavuna zaidi ya tani moja ya karanga za makadamia kila mwaka. Ninapata mahindi na maharage ya kutosha kutoka shambani kwangu. Mimi hata kuuza ziada. Nimeongeza ng'ombe katika shamba langu. Ninakua na TIST. Vikundi vyangu Vidogo vimekuwa vikipokea malipo ya hisa kutoka TIST.

Ninajivunia TIST. Nitaendelea kupanda miti mingi zaidi huku nikiitunza sana iliyopo huku nikiendelea kufurahia manufaa yake. Ningependa kuwahimiza washiriki wengine wa TIST kuchukua mikutano ya Cluster kwa uzito. Unajifunza mengi kwenye mikutano. Tafadhali jenga mazoea ya kuhudhuria mikutano yako ya kila mwezi ya Nguzo.



**Jerusha Nakai mkulima wa TIST kutoka Nguzo ya Miathene katika shamba lake la miti ya makadamia.**



# Mvua imefika - Wakati wa kupanda miti mingine mingi.

## **Kutayarisha miche ili kuihamisha (Kuitayarisha kuishi katika hali ngumu)**

Sasa kwa kuwa mvua imefika, miche inahitaji kupandwa. Ni muhimu mwezi huu kuhakikisha kuwa miche iko tayari kuhamishwa kutoka kitaluni na kupandwa shambani.

Miche kwanza inahitaji kutayarishwa kwa hali ngumu iliyo shambani. Kama miche imekuwa ikichungwa vyema kitaluni, inaweza kuwa ikipata maji zaidi ya ambayo itapata ikishapandwa shambani. Kidogo kidogo, ipunguzie maji unayoipa na uifungulie jua lote kuhakikisha itaweza kuhimili uhamisho huu inavyofaa.

## **Sifa za miche mizuri.**

Kama mwelekezo wa kijumla (ukikumbuka namna mbalimbali huwa na sifa mbalimbali) miche mizuri ya kupanda huwa na sifa zifuatazo:

- Shina linapotokeza lafaa liwe na urefu wa mizizi au mfuko mara mbili.
- Shina lafaa kuwa lenye nguvu na gumu.
- Miche inapaswa kuwa na mizizi myembamba mingi pamoja na mizizi mikubwa.
- Miche mingi itakuwa na sifa hizi baada ya miezi miwili ikishaota.

## **Kuhamisha.**

- Beba miche ikiwa imesimama inavyofaa
- Pima duara lenye upana wa sentimeta thelathini shambani.
- Toa mchanga wa juu na huuweke kwa pango.

- Toa safu la pili la mchanga hadi sentimeta thelathini na uweke kwa pango lingine.
- Safu la nyasi sentimeta tano ( nyasi kavu msimu wa mvua, nyasi mbichi msimu wa ukavu). Vikundi vingine huongeza mbolea pia.
- Toa mche mfukoni. Usivunje mchanga uliozunguka mizizi.
- Weka mche shimoni
- Rudisha mchanga wa juu kwanza, halafu safu la pili la mchanga.
- Vikundi vingine havijazi shimo hadi pomoni, ilhali huacha pengo lasentimeta chache. Hili husaidia kuingiza maji ya mvua shimoni na mchangani. Hili sana sana husaidia maeneo makavu.
- Mchanga ambao hubaki unaweza kuwekwa kwa pango kwa upande wa chini wa mche. Tendo hili husaidiakushika maji yoyote ya mvua na kuyarudisha shimoni.
- Chotea mche maji.

Kumbuka pia kuwa ili kuupa mche wako nafasi nzuri ya kuishi inafaa huipande ikitengana meta tatu kwenda nne . Ukiipanda karibu kuliko hivyo, miche yako haitapata maji na madini ya mchanga yote inayoitaji kwa sababu ya ushindani mwingi. Itakosa nguvu na yaweza kufa, kwa hivyo fuata mwenendo mwema zaidi wa kutenganisha kwa meta mbili na nusu kwenda tatu.



## **Kupunguza miti yako ili ikue vizuri, jiepuche na kukata miti yote.**

**T**unajivunia sana kuwa wanaTIST wote wanafuatilia maadili ya TIST na kuishi wakizingatia kandarasi waliyotia saini.

Ni wanaTIST wachache waliovunja mkataba huo, wakakata miti yote na kuiuza kutumika vinginevyo. Kwa kweli ni chini ya asilimia moja ya mashamba elfu arobaini katika Kenya imekatwa katika miaka nane ambayo TIST imekuwa Kenya.

Madhumuni ya kupunguza miti ni ili miti iliyobaki ikue na dhamani yake ipande inavyofaa. Miti hii iliyokatwa pia hutupa kuni, fito, vifaa vya ujenzi na faida nyinginezo kwa mshiriki wa TIST. Hii ndio sababu tuna sera ya kuanzisha msitu endelevu kwa kuvuna miti isiyopitisha asilimia tano baada ya miti kufikisha miaka kumi.

Wakati mwanaTIST mmoja napoamua kukata shamba lote, wanadhuru wanaTIST wote katika kikundi chao, katika cluster yao na katika Kenya yote. Kwa kweli, matendo ya wachache hao yaweza kuletea shida kila mmoja. Tunatarajia wanakikundi wengine na wanacluster kuwa makini na kuhakikisha kuwa hakuna anayekata miti kabla ya wanapopaswa.

Kikundi cha OLC kitafanya kazi na baadhi ya washiriki waliofanya kosa na kukata miti kufanya mpango wa hao watu kurudisha sehemu ya faida

yao katika mradi wa TIST ili waweze kusaidi wakulima wengine badala ya kuwaumiza.

Tulipotia saini mkataba wa makubaliano wa GhG, tuliahidi kutunza miti tunayopanda katika TIST na kuiacha kukua kwa muda wa miaka thelathini kabla ya kuvuna. Hii ni sababu moja ya kwa nini ni muhimu kufikiria kwa makini kuhusu ni miti ya aina gani tunayotaka kukuza katika mashamba yetu. Kupunguza miti na kupogoa kwaweza kusaidi kuweka miti ikiwa yenye afya na kutupa vitu vinavyotumika miti bado ikikua.

Kwa ujumla, maana ya kupunguza na kuipogoa miti ni kuboresha afya ya kila mti, pamoja na ya msitu wote. Hili litafanyika kupitia kuichagua miti iliyo bora zaidi katika msitu. Kwa aina nyingi za miti, pamoja na miti ya mbao, grevilea, mikaratusi na cypress, miti hii san asana huwa miti mikubwa zaidi, kila mti ukiwa na shina moja lililonyooka. Miti yaweza kuwa na mahitaji mbalimbali ya nafasi kulingana na aina, mahali, ilivyopandwa (miti iliyo mashambani ya mimea ya vyakula ama miti iliyopandwa ili kupunguza upepo) na tabia nchi, lakini kuna kanuni zingine za kijumla hutumika.

Kukuza miti iliyo na nguvu na afya, nafasi ya mita mbili hupendekezwa. Nafasi hii ni sawa kwa miti



mingi ya TIST (grevillea na cypress), lakini kumbuka kuwa miti mingine huitaji nafasi zaidi (miembe na mikandamia, kwa mfano). Kuipa miti nafasi inayofaa huisaidia kupata maji na virutubisho tosha vya kuikuza hadi panapowezekana. Nafasi ndogo zaidi inaruhusiwa miti ilipo michanga. Miti inapokua, miti mingine itakuwa mikubwa kuliko majirani. Hii ndiyo miti wapaswa kuacha. Kuchagua ni miti gani ya kukata, angalia miti iliyo bora zaidi na ujue kama ina nafasi ifaayo. Kama haina, wafaa kutoa miti mingine iliyo karibu.

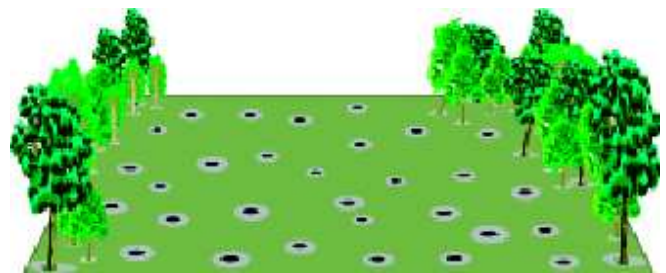
Unapofanya uhamuzi wa kupunguza miti, kumbuka kuwa kiwango cha ukuaji hutofautiana kulingana na aina ya mti. Kama mwembe unakuwa karibu na mikaratusi mingi, mwembe unaweza kuwa mdogo na unaokua pole pole zaidi ya mikaratusi inayokua haraka, lakini kwa uhakika haupaswi kukatwa kwa sababu ni mdogo zaidi! Kwa kweli, mti kama mwembe ni wenye umuhimu mkubwa kwa sababu ya matumizi yake katika kupeana matunda ya kula na ya kuuza.

### **Mazoezi bora unapopunguza miti.**

- ✓ Iruhusu miti kukua hadi ukomavu.
- ✓ Punguza hadi inavyofaa (nambari ya miti katika ekari). Katika TIST, twaweza kuchagua hadi asilimia tano ya miti yetu, baada ya miaka kumi, kupunguza kupitia kuchagua inavyokua na kutuletea pesa.

- ✓ Kata miti inayokufa, iliyo na magonjwa, inayooza na isiyo na ubora.
- ✓ Linda miti kutokana na uharibifu kutakana na ukataji wa magogo.
- ✓ Tumia njia za ukataji magogo zenye athari chache inapowezekana.
- ✓ Himiza wingi wa aina za miti.
- ✓ Fuatilia msitu wako ili kujua kukizuka wadudu na magonjwa.
- ✓ Shirikiana na kampuni za serikali katika kudhibiti kuzuka kwa wadudu na magonjwa.
- ✓ Zuia mioto ya msitu.

### **USIFANYE hivi.**



**Kukata miti yote.**

### **FANYA hivi.**



**Chagua mti mmoja mmoja.**



# Mazingira Bora



# TIST

The International Small Group & Tree Planting Program

www.tist.org

**Kikamba Version**

*TIST is an innovative, time - tested, afforestation program led by the participants.*



**Ngwatanio ya TIST Karia, Tharaka-Nthi County. Ivindani ya umbano woo matuku 9/3/2023.**

**Inside:** TIST:Undu aimi ma TIST matonya utetheesya katalwa kwa miti ya viasala wa nzeveitavisa keli. *Page 2*

**Jerusha Nakai:** Ninimanyiitye muno kuma mbumbanoni sya ngwatanio. *Page 3*

**Mbua niyukie - Ivinda yingi ya uvanda miti ingi mingi. *Page 4***

**Kutaanisa miti kwa kwiana kwailu kwa miti, ndukenge. *Page 5***



## TIST: Undu aimi ma TIST matonya utetheesya kutalwa kwa miti ya viasala wa nzeveitavisa keli.

**W**alanio wa TIST niwithiitwe ndunyuni ya nzeve itavisaa kwa myaka miongo ili yu. Nitwithiitwe na utuika wa kwova nzeve yitu itavisaa. kuma aimi kusakua mivai miseo ya mbeu, mawiko maseo ivindani ya mbanda na kusuvia miti. Aimi ma TIST nimethiitwe meyumitye muno kwithiwa na kithimo kiseo kya tani sya nzeve itavisaa.

Yila athiani na athukumi ma ngwatanio sya TIST mavika miundani na mitituni ya aimi ma TIST, nimaikiithasya kana uvo uli mekwosa niwaw'o na miti ila matala yivo kwinana na mithemba, ukuu wa miti, uthathau na vala miti isu ivanditwe. Kii nikinengae aui ma tani sya nzeve itavisaa uny'au na uikiiku kumanya kana aimi maitu matesaa kila kivo na kyaw'o.

Onakau, vena makana/nzika na aui amwe na bzeve itavisaa iuluwa walanyo uu wa nzeve itavisaa. Umwe wa nzika sietwe nikwona taveutaliku **wa mala eli kwa ndivi ya nzeve ino itavisaa.**

Kutalwa mala eli kwa ndivi ya nzeve itavisaa ni uthuku. Kii nikwasya kana muui aivia tani imwe mala eli. Aui nimew'aa me akenge yila undu ta uyu weethiwa na kii nokitume aui asu maeka kua isioni ila syina nthina usu.

Undu uu withiawa ata:

**a) Yila mawalanio eli kana maingi meekwatiliilya tani imwe ila iseuvitw'e ni miti imwe.**

Kii kithiwawa yila walanio wa nzeve itavisa wa twika niwa ngwatanio ya walanio wa Tist navayuka walanio ungi onaw'o ukutala tani ii kuma mitini imwe ila ivanditwe ni muimini umwe kwondu wa soko wa nzeve itavisaa.

Kuveta nthina uyu nikana amemba na aimi ma TIST mayaile ulika mawalanioni ang

mena viasala wa nzeve itavisaa. Kwa wiananau, atongoi ma TIST, aimi na antukumi mayaile ulikya amemba eu ala mena ngwatanio ingi syina walanio wa kuta nzeve itavisaa.

Ethiwa walanio wa nzeve itavisaa niwooka kisioni kyaku, kwa uuu mamanyithey kana withinini wa walanio wa TIST ila iendeesye uthukumi na aimi kisioni kyaku.

Ni undu wavata kumanya kana miti ila ivanditwe walanioni wa TIST nditonya kuthamiiw'a walanioni ungi wa nzeve itavisaa. Miti isu itwikaa ya walanioo uli wamyambiie. Kuu nikwasya kana muimi nukwasya eeka uu na eithiwa atatonya kuvikia soko wa nzeve itavisaa.

**b) Yila nguthu imwe ya miti ikutwika nitaya ikundi ili sya aimi kana ikundi mbingi.**

Kii kithiawa yila aimi kivathukanio mambiia kwasya nguthu ino ya miti niyoo. Kwangelekanio, Vala kivetu kana muume kana andu mamusyi umwe ni amemba ma walanio wa TIST, indi kila umwe aasya nguthu ino ya miti niyake. Onakau TIST yina walanio wayo waumanya yila mekuvitukithya na kwika utali ni useo kusuvia nthina uyu ndukethiwe.

Kuma mwambiliilyo nikana walanio wa TIST niwaile kuendee na tabni sya nzeve itavisaa kwikala syitilikite nundu wa useo wasyo. Nitwaile kutetheesya kuola kuemanwa nthini wa walanioni wa nzeve itavisa na isio situ. Twekala nthini wa TIST na ukiiku, umilu, uw'o, utalikun athukumi wa umwe kwa ula ungi tuitumia mbandyete nini na kwithiwa na ukwati mwingi, tani situ sya nzeve itavisaa nikuendee na ukwata thooa museo nthini wa soko wa nzeve itavisaa.



## Jerusha Nakai: Ninimanyiitye muno kuma mbumbanoni sya ngwatanio.

**N**ye ni muimi wa TIST kuma ngwatanioni ya TIST Miathene, Meru county na nalikile nthini wa TIST 2005. Kakundi kakwa ketawa Thaberia D, 2005KEI171, nimuimi munini.

Nininakulilye ninengwe ivuso yii ya kuneenea vaita ula ngwatite kuma kwa TIST. Nisomete ithangu ya *Mazingira Bora* nakwona undu aimi angi manenganae ngewa sya undu TIST imaililye ukwati. niniw'aa nathuthika na kukwata vinya ila namanya kuma kwa aimi angi undu maendee.

Ninamuvea kwa momanyisyo ma ngwatanio sya TIST. nimukiiku kwa kuvika mbumbanoni sya ngwatanio na vevinya kwakwa kulea uvika. Kwisila mbumbanoni ithi ninimanyiite maundu meu kuma kwa aimi aingi. Ingi nitumayiaaw'a ni muthukumi wa ngwatanio ya TIST Alice Nkirote. Niwithiitwe aitukwata mbau na nimuseo kwa umanyisya.

Nthini wa katheka kakwa, ninivandite mithemba ivulene ya miti. Miti ya kiene, miti ya matunda na mbindi na miti yakuma kuasa. Kuvulany'a kuu kwaw'o nikutethetye na kwailya muunda wakwa. Mbee wa ndanalika TIST naina nthina wa muthanga kukuwa kila ivindani ya mbua. umunthi muthanga wa muunda wakwa nimulumu na vai muthanga kukuwa. Muthanga uyu nutwikite munou ingi. Ngetha nimbailu muno ya mbemba na mboso nimbongeleku.

Nthini wa mbumbano sya ngwatanio nitumanyiitw'e undu wa useuvya vuu wa yiima. nitumanyiaw'a undu wa usea miti yitu kila mwaka. Yila twasea miti nitukwataa ngu na kyavata muno nitumanyiawa undu wa useuvya vuu wa yiima kutumia matu na ngava ila twasea.

Kwoou mwaka uyu ninguseuvya vuu wa yiima kwa muunda wakwa.

Naingi nundu nimiti itetheeasya vanene kuseuvya vuu uuyu, unayo nonimikiaa vuu. kiinikitetheesye miti yakwa kwina yimilumu. Kusea nikutumaa mimea ikwata sua ya kwiana kwoondu wayo kwiana.

Umuthi, ningethaa tani imwe iulu ya ngandania kwi undu nakethaa vau mbeange kila mwaka. Ningwataa ngetha ya kiana ya mebmba na mboso kuma muundani wakwa. nindesaa ila syatiala. Ninongelile ngombe muundani wakwa. Ninianite na TIST. Kakundi kakwa nikethiitwe kaingwata ndivi ya kuaana kuma kwa TIST.

Ningwiyonea TIST. Ninguendee uvanda miti kwa wingi na kusuvia ila mbandite niendee utania vaita. ingi nithuthya aimi ma TIST kwosa mbumbano sya ngwatanio na uito nundu numanyaa maundu maingi kwisila mbumbanoni ii. Kwandaia itwike tavia yaku ya uvika umbanoni wa ngwatanio wa kila mwai.



**Muimi wa TIST Jerusha Nakai kuma ngwataniono ya TIST Miathene nguthuni yake ya miti ya makatania.**



## **Mbua niyukie - Ivinda yingi ya uvanda miti ingi mingi.**

### **Kusevya miti yikivuioni nikanya ithyamiiw'e muundani/kithekani (Kumiumiisya)**

Nundu yu mbua niyukie, miti ila yikivuioni niyaile uvndwa miundani. Ni useo kuikiithya miti ila yikivuioni yina ivinda yaile ya kuthamiiw'a miundani.

Miti ino niyaile kuumiiw'a kwa kumyeteelya kuvanda kuithekani vala iteusuviwa muno ta kivuioni. Ngelekany'o ila yikivuioni nikwataa kiw'u kingi, muunyi kwi yathamiiw'a kithekani. Nikana iumiiie niuseo kuola kiw'u kila uungithya na mavinda ala uungithya na kumiveta muunyi nikana wamithamya ndikew'e thina yithiwe itonya kumiisya.

### **Mbeu nzeo iilye yithiawa na mawonany'o mailye ata.**

Kwa mithemba yoonthe nikana mithemba kivathukany'o yithiawa na mawonany'o kivathukanyo. Miti ya mbeu nzeo iilye uu:

- Munguthe wayo ni muasa kundu kwili kwa mwii kana mbisu.
- Muthamba withiawa na vintya na wimunou.
- Ingi yaile ithiwa natumii tungi twingi vamwe na mwii ula munene.
- Mithemba mingi ya miti yaile ithiwa na mawonany'o aya itina wa kumea.

### **Kuthamya.**

- Mikue iungye ndukakulumanie.
- Thima kyelenge kina uthathau wa 30cm kithekani vala uuvanda.
- Umya muthanga wa iulu na uyumba kavumbu.
- Umya muthanga ula uatiie ta uliku wa 30cm na uyumba kavumbu kangi.
- Ikiya nyeki susue kisio kya 5cm ethiwa kwi mbua ongela vuu.
- umya ithanguni kana mbisuni na uyumya nesa ndukatilange mii.
- Vanda yiimani yiu.
- Ususya na ula muthanga wayiulu
- Ikundi imwe iyusuasya muthanga vya nimatiaa mwanya wa kiw'u. Kii kithiawa kiseo kya utwiikana kiw'u yila mbua yaua na kutetheesya kiw'u kunywa muthangani.
- Ngithya mbeu isu wavanda.

Ingi lilikana kunenga muti usu wavanda ivinda ya kwikala na uivanda utaaniu wa matambya 3-4. Wamivanda itherngeanie ndikwata kiw'u na unou mwianiu. Wavanda ithengeanie yiithiwa yimimosu na nitonya ukwa kwoou nikavaa kuvanda utaniiu wa 2.5-3m



## **Kutaanisa miti kwa kwiana kwailu kwa miti, ndukenge.**

Ithi nthini wa TIST vakuvi ithyoothe nituatiiaa mawalany'o na nzia nzeo sya TIST tuatiie na kwikala kuatiiana na wiw'ano ula tweekie sai. Ni andu anini ala matulile wiw'ano uu na meenga miti yoo yonthe na mamita kutumiwa nziani ingi. kwa w'o ni anini kwi kilio kya 1% kati wa miti ila ivanditwee nguumoni syi mbee wa 40,000 sya TIST nthini wa Kenya ila syengetwe myakani 8 ila TIST yithiitwe ithukuma vaa Kenya.

Kitumi kya kutaanisa miti kila ivinda ni kuvikia kwa miti kwiana vya vate kuvingiisana na ingi na vaita wa muti ula watiwa kwongeleka. Kutaanisa kuu nikunenganae ngu, miti ya kwaka, na moseo angi ala maumaas mutini muteme kwa ene TIST. Kii nikyo twithiawa na walany'o museo wa kwikalya mititu kwa kuketha iyingiva 5% ya miti ila twinayo kwa mwaka ethiwa yina myaka ikumi kwambata no ti itheo wa myaka isu.

Yila memba wa TIST waamua kwenga miti yake, ni uumiasya kakundi kake kala ke nthini wa ngwatanio ya tist nthini wa Kenya. Kwa w'o wiko uu wa andu asu anini nuetae nthina munene kwa kila umwe. Twiikwata tukundi tunini na a member oothe kumanya na kuikiithya vaiumwe unatemanga miti yake itavikiite ivinda ya utemwa.

OLC nikuthukuma vamwe na amwe ala meekie makosa ma kutema miti yoo yoonthe na kusisya walany'o ula matonya utumia kuikiithya andu asu nimavanda ingi ukwati woo nthini wa walany'o

wa TIST nikana methiwe matonya kutethya aimi vandu va kumaumisyo.

Yila twee kia sai wiw'ano wa GhG Agreement, twithwaa tweeyumya kwikalya miti yitu ila tuvandite ta ya Tist vandu va myaka 30 mbee wa kumiketha. Kii nikimwe kati wa itumi ila twaile usisya mbee wa kuvanda miti ni miti yiva tukwenda nthini wa miunda yiotu na ikwithiwa itonya kwikala kwa ivinda yiu iteutemwa. Kusea na kutaanisa miti ni useo nundu niku nengae miti kwiana nesa na kuitunenge vaita wa utumia usyao wa miti o iendee na kwiana.

Kwa vamwe vata wa kusea na kutaanisa miti ni kwailya uima wa muti na mutitu w'onthe. Uu wikawa kwa kusuvia miti ila miseo mutituni kwa kuveta ila itena uima museo na ila itonya kutuma uyu museo uteana nesa. Kwa mithemba mingi ya miti ta mikuvulya, minyoonyoo, misanduku miti ya kuveta ni ila minene ila yina muthamba umwe mulungalu. Miti niyithiawa na mawendi kivathukany'o ya mwanya kwianana na muvai wa muti na niva ivanditwe na ivandiwe ki (ta miti ivandaniw'e na liu kana ya kusii nzeve), uvinduku wa nzeve onakau mawendi amwe methiawa kwa kila muvai.

Kumea yina vinya, na yaile miti kaingi niyendaa utaaniu wa matambya eli kana maingi. Mwanya uyu wa matambya eli kaingi uthukumaa kwa miti ta mikuvulya na misanduku. lilikana ka miti ingi niyendaa mwanya munenange ta miembe na



mikandania. kunenga miti mwanya ula waile ninengae miti ivuso ya kukwata kiw'u nesa na unou kuma muthangani na kwiana undu vaile. Kuvanda miti uthungianie vanini nikwitikilikaa kwa miti yi mini indi oundu miti iendee na kwiana imwe niyonekaa yi minene kwi ingi. Miti ino minene kwi isu ingii niyo yaile kuekwa na ila minini iteanite nesa kuvetwa, Sisy miti ila minene na miseo yila usakua miti ya kutia uendee na utaanisya miti. Ethiwa yothe no miseo sisya uole imwe nikana ivikie utaniu ula waile na yithiwe itonya kwiana nesa.

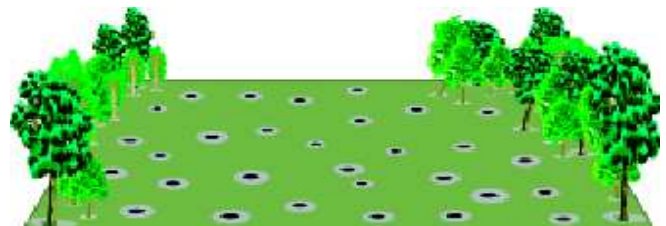
Yila usakua miti ya kuveta lilkana, kwina kwa miti kuendanasy na muvai wa muti nundu mithemba imwe niyianaa kwi ingi. Ethiwa ni kiembe kimeete vakuvi na musanduku, kiembe nikyonekaa ta kite kwiana nundu musanduku wianaa mituki, kii ti kitumi kya kuveta kiembe nundu ni kinini anyee. Sisy useo na vaita wa muembe ni mwingi kwi wa musandu nundu muembe no utumike ta liu na no ukunenge mbesa wata matunda maw'o.

### **Mawiko maseo yila utanisya miti.**

- ✓ Eka miti ila ya liu yiane nginya ivike.
- ✓ Ola miti yianie ila yaile uyiatiia walany'o wa miti ila yaile kwithiwa nthini wa eka umwe. Nthini wa TIST no tusakue nginya 5% ya miti yitu itina wa myaka ikumi.
- ✓ Kutaanisa oundu iendee kwiana na iiendee kutune ukwati.

- ✓ Kuveta ila myumu, miwau, iendee kwoa na ila itemiseo.
- ✓ Suvia miti kumana na kiw'u kuema uthi.
- ✓ Tumia nzia ila itatuumanasya kiw'u.
- ✓ Kwata mbau uvandi wa miti mithemba kivathukany'o.
- ✓ Syaiisya mutitu waku kumana na tusamu tula twanangaa na uwau.
- ✓ Ngwatana na athukumi kuma ngwatanioni sya selikalini kusiiia mowau na tusamu tula twanangaa mititu.
- ✓ Siiia mwaki wa kitheka.

### **NDUKEKE UU.**



### **Clear cutting.**

### **IKA UU.**



### **Single tree selection.**

# Mazingira Bora



# TIST

The International Small Group & Tree Planting Program

www.tist.org

**Kipsigis Version**

**TIST is an innovative, time - tested, afforestation program led by the participants.**



**Karia TIST Cluster, Kundi la TIST la Karia, Kaunti ya Tharaka-Nithi. Wakati wa mkutano wao uliofanyika tarehe 9/3/2023.**

**Inside:** TIST: Ole imukto kotoret koistoenge Temikab TIST Koitosiek Che Nyile Oeng' en Mung'aretab Koristo. Page 2

Jerusha Nakai: Kianetgee che chang' en Tuiyosiekab Isasamet. Page 3

Iwatgut inguni: Ongemin ketik. Eng kasari komiten Robta neo ogemin ketik. Page 4

Kechoror ketiguk sigogorogitu ak ibagach kolulet. Page 5



# **TIST: Ole imukto kotoret koistoenge Temikab TIST Koitosiek Che Nyile Oeng' en Mung'aretab Koristo.**

**T**etutietab TIST ko kikotebeen sireetab aldaetab koristo en kasarta ne sire kenysisiek 20. Kikeigu che utotiin en ole kirotitoi koristo. Kongeteen leweneet ne mie nebo temikiok, akoi rtinweek che miacheen chebo ole kimiinto ketik ak ribeet ne mie nebo ketik, ko temikab TIST ko kikoik che konu tannisiek che miach chebo barak che kioldo.

Oloon karutechi Kiboityotab Isasamet Timtab Temindet, ko yoche kogeer kole konyoor koitet ne noton nebo ketik, ketik che terterchin kole ata, kenysisiekab ketik, toldolindab ketik ak olemi timoton bo ketik. Noton kogochin olikiok kayanet neo tannisiekab koristo neinemu ketikab temikiok k obo iman ako che nin.

Anganda uu noton, ko mi kabwatet en olikab koristo alak ne tongingee ak tetutietab koristo. Agenge en kobwotutichoton ko koitet ne kinyilen oeng' en ketik che inemu koristo.

Koitet ne kinyilen oeng' en ketik che konu koristo ne kioldo k obo iman. Iboru kele alindetab koristo ko liponi konyil oeng' en koristo ne ka kialda konyil agenge. En yoton ko keere olik kole kokiboisien lembech ako imuche kotonosi alisietab koristo en betusiek che mi taa en tetutiet nebo aldaetab koristo.

Noton ko yookse en ortinwek che isibu:

## **A) Olon koiityige tetutiet agenge anan ko che sire tannise chebo koristo che bunu ketik che kergee.**

Inoni ko yaakse olon kang' eet tetutiet neu nebo TIST ak tetutiet age komwa kole tannisiekab koristo che yobu temindet agenge ne mine ketik ko nenyuan.

Asi kimuch keistoenggee koimutioni, ko mo nyolu kochut membaekab TIST tetutik alak che yoe mung'aretab koristo. Kora, Kandoikab TIST Temik ak Kiboitinik ko mo

nyolu kosir membaek che lelach che bo Tetutik alak chebo koristo.

Nda nyone tetutiet ne leel nebo koristo komostang'wong', ong'ololchi en mutionet ak omwochi olenchi mi olong'wong' Tetutietab TIST ako tesetai koyachin boisiet temik en yoton.

Bo komonutiet kenai kele ketik che kikeminchi TIST ko mokimuche kisitptechi tetutiet age nebo koristo. Ketik cheu choton ko ole tienge tetutietab ketik che lelach. Noton koboru kele ibeete temimdet koristo tugul ne kikotoo ketikyik ako kou noton ko mo imuche kotesta an sirtab aldaetab koristo.

## **B) Olon mi tiyet en temik oeng' akobo timto agenge**

Inoni ko yoogse olon komoiyo temik oeng' timto agenge. En korogut, olon boiyot ak chepyoset anan ko konyitenik alak ko membaekab TIST tuan ako iboru age tugul megeet en timoton bo ketik kole ne nyuan. Anganda tindo karik ak kamuget TIST kochigil ak konai koimutioni, olon kiyoe koitosiek ak chigiletab koitosiek, ko no komonut kegirinda koimution komait koyaak.

Kotienggee chu tugul, ko echeek en tetutietab TIST kemoche keribe koristonyoon en tililindo ak tebeet nebo barak. Nyolu keistoenggee tiyet ak tetutik alak chebo koristo chebuone komoctanyoon. Nda kisibi Makutik che Miach chebo TIST ak keiku che tokunotin, chebo ne nin, che kiiku tugul che tinye walutik ak keiku kiboitimikab iko ak keboisien rabisek che tutigin – ak walutik chebo barak, ko mung'arenyon nebo koristo ko nyoru lipanosiek chebo barak.





## **Jerusha Nakai: Kianetgee che chang' en Tuiyosiekab Isasamet.**

**A**ne ko temindetab TIST kobun Isasametab Miathene, en Meru County. Kiachute TIST en kenyitab 2005. Kayumetabgee ne Mingin ne nyun ko Thaberia D, 2005KE1171. Aa temindet ne ming'in.

Ki asoom kasarta en yu kepjei olekioborte en TIST. Kiasoman en Mazingira Bora alak atindonikab tuneneet nebo temik alak. Kiacherage ak anyoru maat anai tuguk che yoe tmik alak.

Amwae kongoi en Konetisietab sasamet nebo TIST. Ane ko agenge en che mosire tuiyetab Isasamet. Matatian kosiron tuiyosiekab Isasamet. En tuiyosiechoton, ko anetegee tuguk che lelach kobun temik alak. Kinyoru kora kanetisietab TIST kobu Kiboitiotab Isasamet, Alice Nkitote. Kikobunchi komonuut ako kanetindet ne mie missing'.

En mbarenyun ne kiiten, atindoi ketik che terterchin. Alak ko kipgaa, alak ko logoek, ako alak ko che mobo kipgaa. Ketichu kiing'olng'olak ko kikokimit mbarenyun missing'. Kin kotomo achut TIST, ko kimii ibetab ng'ing'unyeek neo missing' en kasartab ropuek. Raini, ng'ung'unyeekiuk ko uuen. Momo ibetab ng'ung'unyek en mbar. Kikotoldolit mbaret kou en taa. Ruruitik kou chebo bandek ak ng'endeek ko kikotesak.

En tuiyetab Isasamet, kineteach ol kichoptoo keturek. Kineteach ole kichorundoo ketik en kenyit age tugul. Olon kakichoor ketik, kenyoruu kwenik kobateen nebo komonuut

missing ko ole kichoptoo keturek koyob sogek chebo temenik che kichoru. So en kenyit amuche acoop keturek chebo minutikiuk. Kobaaten amun ketik cheinemu keturek, akochini ketichoton keturek ak ichek. Kikotoretan inoni kokiimit ketikiuk ak koik che miachen, kochorunet kora ko toreti minutik alak konyoor asista asikomuch kobwa komie.

Raini, akese che sire tnnit agenge chebo macadamia en kenyit age tugul. Anyoru kora bandek ak ng'endeek che yomon en mbarenyun. Amuche kora aalda alak. Kiates tuga en mbarenyun. Ateseta aetu en TIST. Katuiyenyon ne Ming'in ko teseta konyoru lipanosiek koyob TIST.

Abaibai en TIST. Atesetaa amine ketik ak aribe che kiamin olon abaibaienchini melekweek en TIST. achere temik alak chebo TIST kokochi komonutiet tuiyosiekab Isasamet. Imuche inai tuguk he chang en tuiyosiek. Kaikai iingoik atebeet neng'ung' iwe tuiyosiekab Isasamet en arawet age tugul.



**Jerusha Nakai mkulima wa TIST kutoka Nguzo ya Miathene katika shamba lake la miti ya makadamia.**



# Iwatgut inguni: Ongemin ketik. Eng kasari komiten Robta neo ogemin ketik.

**Chobchingei chitugul eng arawani ile kegol eng chonginto.**

**Nebotai ko kechobchigei kesuwek:**

Chobchigei eng kabeti amun miten beek chechng. Eng kabeti iger ile keter beek komowech ak ingany uruwet asi mowechok ketik en kabeti.

**Kosibet ne karan nebo kesuwek:**

(en abogora kotiye ketik terchinet eng kabeti kotienge korikab ketik.) Tinye ortinuwek che uchu:

- o Metitab kesuwot kotiye kebarta oeng kosir tigitiyot.
- o Nyonu kogimit temet
- o Nyonu kotiye tigitik chemengechen chechang.
- o Nyonu en orowek oeng kotiye oteboni.

**Minet:**

- Min ketit kotonon komie.
- Bal keringet nebo 30cm kotuyo.
- Itaban ngungunyek chebo barak.
- Itaban chebo orit ak ichek.
- Inte susuwek cheyomiyotin koit 5cm ak itesi keturek.
- Itutun ketit mat imin ak selele.
- ingoto nguggunye chetai.
- Mat inyit nguggunyek kerimget asi kotoche beek.
- Ingo nyor koguwouti 3m-4m asi komuchi koet ak kosich omituwogik.



## Kechoror ketiguk sigogororogitu ak ibagach kolulet.

**K**iboboi mising amun kingen kele membakab TIST kosibi tolochikab TIST ak kotebie en koyochinet ne kioyan. Ngerin temikab TIST che kibun koyochinoton, miten che kilit ketik ak kuwalta koboisien, kebeberiatan 1% en imbarenik 40,000 che kigimich ketikab TIST en kenya ko kogonam kotit ketik en kastab kenysisiek sisit kongeten igeto TIST en kenya.

Amune asi kechochor ketik kosigobwa kome ak konget kotonontos kinyoru kuwetik, postisiek ak chegitesen en eche temikab TIST niton anyun komitenngatutiek neribe osnet anan asi konget ketik muwoe kole keges kebertab 5% en ketik cheitinen en kasartab kenysisiek taman kongeten igemin nyon kabit imbaret ne kogitinen ketik tugul, kogonu asenet neo mising en kurubit, en kilasta ak en emet tugul. Biik chengerin cheimuchi kogochi biik alak asenet neo. Kimongu biikab kurubisiet chemengech ak kilasta kogasit komtil ketik en kasarta nemonyolu.

Kondoikab oli kotonyi boroinde koboisi biik che kogikochi lelutiet kou tiletab ketik amun kimogin biik konyor melegto en ketik asi kotestai tetetab TIST.

Kin kogagiochin en koyosienyon (ghg) kogimitech niton kerib ketik chegigemin ago moetenech keges koit kenysisiek sosom, niton kogobwotutiet ne kararan missing kibwat kele ketik ochon chegimuchi kegol en imbrenikyok kechoror ketik ko kararan amun kinyorune kelut ak kobwa kochok ketik.

Ye kiyoe kouniton kogochin ketit konyor itondo ne kararan ak kobit osnet ne kararan niton koribetab ketik ak kemin alak miten alage kou kipkaa, sebesebe, chepkogutgei ak cheborus ko ketik chegitu agomotinye temenik chechang, ketik agetugul kotinye mogutik kiik, anage kobo kwenik, tere alage koristo alage kemine ak rurutik. Alage kowole itondab emet.



Nyolunet anyun kemin ketik kokwontik oeng anan kosomok, asi konyor kimlotet ketik niton ko koyochinetab TIST. Ketik alak (kou maembe ak avocado) komoche kokwoutik chechang chesire mut, enyor ketit kokwoutik cheyome konyoru beek ak omitwogik cheyome go etu kitit komie. Monyolu kemin ketik kochilgei amun moegitu ago norchin omitwogik alage koechen.

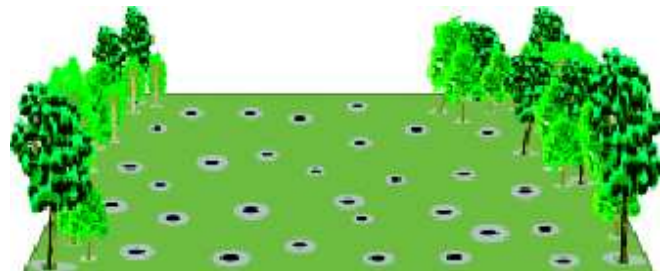
- ✓ Min ketik chegororon.
- ✓ Ruten iger ketikuk igomiten ne mioni anak kogonam isirek.
- ✓ Oyomegei ak biikab sirigali asi komuch koter miyonuwokik anan ko isirek che ome ketik.

**Koborunet ne karan ak minet.**

- ✓ Ogeter anan ogerib mat.

- ✓ Chomchin ketik korut kot koit kogong .
- ✓ En TIST kochamtaat inges ketik kebebtab 5% en ketik cheitinye chebo kenyisieik taman asi inyoru melegto.

**DO NOT do this**



**Clear cutting**

- ✓ Isten ne meat, ne mioni ak nemotinye kenut.
- ✓ Boisien tugul cheitinin chimiten kwony en oliyet.

**DO THIS**



**Single tree selection**