

# Mazingira Bora



# TIST

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

English Version

An Environmental, Sustainable  
Development and Community Forestry  
Program.



**Some of Mitoro TIST Cluster members sharing macadamia seedlings from their common nursery. At the back yard is an irrigated Conservation Farming (CF) plot owned by one of their members**

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# Annual Clusters Meeting: Share your successes to make your cluster and TIST strong.

In TIST, we find strength in taking action together and sharing our successes with others in our Small Groups, in our clusters, and beyond.

In October 2016, TIST Kenya held its first ALL Clusters Meeting at Nanyuki Social Hall, Nanyuki town. Many farmers who attended felt this is a great idea for farmers to learn more about TIST, ask questions about program operations, give suggestions on how to improve service to the farmers, learn from each other Best Practices etc.

TIST Leadership council took views of the farmers. It was suggested that Annual Cluster meetings be held in regions. It was also suggested that only the Best Clusters should be invited to these events.

As such, the following regions have been proposed;

- i) Region 1: Clusters from Meru, Kirinyaga and Embu
- ii) Region 2: Clusters from Nyeri, Laikipia, Nyandarua, Nakuru and Narok/Bomet
- iii) Region 3: Clusters from Machakos, Murang'a and Taita
- iv) Region 4: Clusters from Nyamira, Trans Nzoia and Nandi

For your Cluster to qualify, you need to work together and meet the following criteria;

- 1) Your Cluster must be meeting every month and sending your reports (Both meeting and Accounting reports). If you need help or have questions, talk to your Cluster servant or Jeniffer Kithure, 0726 319 539
- 2) In your Cluster, half or 50% of Small Groups have raised seedbeds. If you need help or have

questions, talk to your Cluster servant or Dorothy Naitore, 0726 788 662

- 3) In your Cluster, you should have planted 25, 000 new trees planted in the past 12 months before the ACM. If you need help or have questions, talk to your Cluster servant or Kimani Mwangi, 0722 477 321
- 4) Half of the farmers in your Cluster should be using improved stoves. If you need help or have questions, talk to your Cluster servant or Charles Ibeere, 0720 474209
- 5) 75% of the farmers in your Cluster should be practicing Conservation Farming (CF). If you need help or have questions, talk to your Cluster servant or Dorothy Naitore 0726 788 662
- 6) At least 5 people in the Cluster should be able to access and get information from TIST websites besides the Cluster Servant. If you need help or have questions, talk to your Cluster servant or Eunice Wambui 0724 431071
- 7) Your Cluster should have developed, used and shared Best Practices with your Group of Clusters Council (GOCC) or whole country. You can share your Best Practices through the GOCC meetings or Mazingira Bora. If you need help or have questions, talk to your Cluster servant or Jeniffer Kithure or Martin Weru, 0722 846501

Remember: A strong cluster should have at least 200,000 Quantified trees, 30-50 active Small Groups who meet each month, elected servant leaders, and be carrying out and reporting on good training and quantification.



## Time to plant! Try these good indigenous trees.

Indigenous trees are tree species that have developed in Africa and are well suited to the environment they developed in. They may improve soil and attract birds and helpful insects. Different trees will grow better in different places.

From TIST Seminars and Cluster meetings, TIST participants have identified types of indigenous trees that are very good and beneficial in their areas. Some of these are described below, and we thank the World Agroforestry Centre for this information on benefits and seed collection and preparation for success. Please consider some of them in your next planting season, and let us know some of the best kinds in your area!

### a. *Prunus africana*

This indigenous tree is mainly found in forest reserves. Seeds are available in forests during the dry season. Collect only dark brown, ripe fruits from the crown of the tree, or the ground. Remove the pulp by soaking for 24 hours, then wash over a wire mesh. Spread in a thin layer in an airy, shaded place to dry – but for 4 hours only. The seed does not store, so use the fresh seed.

Wrapping moist leaves around the seed minimizes moisture loss during temporary transport and storage. Sow directly into the seedbed or pots.

Germination takes 6-8 weeks.

#### Uses:

- **Pest repellent:** Can repel some pests e.g. aphids, nematodes (those which attack crops) by its smell. Flowers have sufficient nectar and pollen for good bee forage. Produces high quality firewood.
- **Medicine:** Liquid extracts from bark are used in the treatment of prostate enlargement. Leaves are used as an inhalant for fever, or are drunk as

an infusion to improve appetite. Water is added to pounded bark, and the red liquid is used as a remedy for stomachache; bark extract may be used as a purgative for cattle.

- **Erosion control:** Trees can be grown along contour ridges and terraces, provides useful shade and acts as a windbreak.
- **Soil improver:** Leaves can be used as mulch and green manure.
- **Ornamental:** It makes an attractive garden shade tree.

### b. *Peacock Flower (Albizia gummifera)*

This tree is commonly found in lowland and upland rainforest and in open habitats near forests.

Fresh seeds need no pre-treatment. Stored seeds are soaked in warm water and left to cool to room temperature. The seed coat may be nicked at the cotyledon end to hasten germination. Seed germination is good, 70-80%, within 10 days. Seeds should be collected while still on the tree to minimize insect damage. Seed can be stored for at least a year, if kept dry and insect free through addition of ash.

#### Uses:

- **Bee-forage, fuel wood, timber, gum, tannin, medicine:** Extracts from the crushed pods are taken for stomach pains and the bark decoction for malaria, erosion control (the root system holds soil and prevents gully erosion).
- **Shade:** Nitrogen fixing (improves the soil). Known as a good mulch tree, as leaf litter is abundant during the leaf shedding season.
- **Ornamental:** Planted in town avenues for its beauty.



- **Boundary planting:** The leaves quicken the ripening process in bananas.

c. ***Olea africana* (African wild olive)**

This tree is found in a variety of habitats, usually near water, on stream banks, and also in open woodland. It is resistant to both frost and drought.

Fresh seeds are used for sowing. Old seeds can be soaked in cold water for 48 hours. Seeds are often pre-treated by cracking with a hand vice, or by rolling a stone over seeds. This is because removing the endocarp can enhance germination.

The seeds can be stored at dry room temperature for a few years.

**Uses:**

- **Food:** The main olive products are olive oil and edible olives.
- **Fodder:** The plants are much browsed on by livestock. Also used for fuel, timber, charcoal, toothbrushes and ornaments.
- **Reclamation:** The high drought tolerance suggests that it is a good candidate for reforestation in semi-arid zones of Africa.
- **Ornamental:** Olive trees have the capacity to beautify the landscape.

d. ***Waterberry* (*Syzygium guineense*)**

This tree usually occurs in lowland rain forest and mountain rain forests. It commonly grows in moist conditions, sometimes even in water, and is usually found along streams.

Seeds need no pre-sowing treatment, as germination rates are good and uniform.

Rates of 80-90% are attained after 20 to 50 days. Direct sowing into pots is recommended. Fruits are perishable, hence should be picked from the ground soon after falling. They may also be

collected by shaking the branches with hooks. After collection, the fruits should be sown out immediately, as seeds will lose viability if they are dried. If this is not possible, fruit can be stored for a few days in moist sawdust and open containers in well-ventilated rooms.

**Uses:**

- **Bee forage, Timber, Fuel wood, Shade, Medicine**

Note: the poisonous bark has been reported to cause human deaths, so advice should be sought from people experienced in using the products for medicine from this tree.

e. ***Melia* (*Melia volkensii*)**

This termite-resistant tree provides good fodder at the end of the dry season when other fodder may be scarce, and so can be valuable for TIST farmers. The trees, open-crowned, with gray bark, may grow to a height of 6 to 20 meters. *Melia* is common in acacia-commiphora bush land with rainfall of 300-800 mm. It sometimes borders seasonal rivers, or wetlands, or appears on rock outcrops. It sheds its leaves twice a year and can be a good choice to plant along with crops.

*Melia* is often started from wildlings or root cuttings, though root cuttings may produce an unstable tree. If grown from seed, the seed should be scarified using fire (fast fires, or dry grass dung), or the seed coat nicked, and then seeds soaked in water for 6 hours before planting.

**Uses:**

- **Fodder:** Excellent fodder for goats and cattle; timber; beehives.
- **Fly repellents:** Leaf preparations are used as flea and fly repellents and are said to be particularly effective on goat kids.
- **Good agroforestry tree**



## Trees make the environment better for us all.

In TIST, we plant trees to take part in the carbon market and earn income from carbon offset sales. However, the other benefits of trees are enormous!

Here are just a few benefits we (and the rest of the world) enjoy:

- ❑ Trees serve as natural habitat to support a wide variety of flora and fauna. They provide a sense of privacy and security to wildlife seeking shelter in the woods and provide them with food. Protecting biodiversity makes our farms and our planet more productive and resilient to climate change and other challenges.
- ❑ Trees improve the quality of air and reduce dangerous pollution. Trees remove excess carbon dioxide and air pollutants including sulfur dioxide, ozone and nitrogen oxide. In return, they give us oxygen required for life.
- ❑ The visual quality of a landscape is improved by planting trees, which, in turn, improves the quality of life. The greenery of trees adds color to the landscape and enhances the picturesque beauty of the environment.
- ❑ Trees control the climate by moderating the effects of sun, wind, and rain. They can help prevent severe floods, landslides, and wind damage. Trees moderate flood hazards by allowing the rainwater to percolate into the soil, instead of running over it.
- ❑ Trees reduce soil erosion. Their roots bind soil that would otherwise wash away in rainstorms and floods. Trees also help improve the fertility of soil. Rich soil transfers nutrients to food, which contributes to human health.
- ❑ Trees are great absorbers of noise. Noise pollution can be reduced to a great extent by planting more and more trees.
- ❑ The demand for clean drinking water can be met by planting indigenous trees. Forests and plant cover naturally slows the runoff of rainwater and filters it into the soil. Once slowed, rainwater seeps down to refill underground aquifers we depend on for our use. Trees also shade rivers, keeping water cool, and slowing its loss through evaporation.

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## Strength in diversity: TIST protects biodiversity.

**B**iodiversity—the richness and variety of nature—is essential to a healthy environment. Variety is especially important for responding to change and challenges, like drought, pests, or climate change. Since biodiversity is so important, you might think that people everywhere are working to make sure we protect and preserve this natural richness. However, each day, because of our human actions, we are

losing species and genetic diversity as forests are cut, wetlands are drained, and resources are over-exploited. We see this loss every day. Think of how many kinds of plants, birds, and animals that you saw often when you, or your parents, were young but that are rare or gone today? There are nine million different species of organisms on our planet, and when we destroy them, it is a permanent loss for each of the seven billion people who share this



planet, for our children, and for their children.

TIST farmers are making a difference, working to preserve this rich diversity. Each tree we plant is an important renewable resource. Each tree we plant reduces pressure on natural, diverse forest, since we can use it instead of cutting forests for fuel wood, timber, and other products. When we plant indigenous trees, as many groups have in riparian buffer groves and thousands of TIST farmers have on their farms, we directly protect biodiversity. These diverse indigenous trees also provide habitat and food for insects, birds, and animals, many of

which are important for pollinating our crops, eating pests, or keeping our soil healthy.

TIST farmers are also sharing their knowledge about biodiversity. Farmers are being interviewed in clusters, in a pilot project to share information about biodiversity in their areas. When we learn more about the plants and animals around us, the changes in these areas, and the threats to this diversity, we can take action to preserve this amazing resource. Let's all come together and share our knowledge, and plant indigenous trees to make a better world for all.

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## **TIST Values: The strength and foundation of TIST.**

**M**ost TIST Small Groups know TIST values. Still, it is important to reflect on these Values and to be sure that we all are truly living by them. The success of TIST is based on the integrity and effort of individual members within TIST. What we can achieve depends on each of us following these Values as we plant and care for our trees, take part in training and other activities, and report our results. Who is TIST? We are!

### **Who We Are**

- 1) We are honest.
- 2) We are accurate.
- 3) We are transparent
- 4) We are servants to each other.
- 5) We are mutually accountable to each other.
- 6) We are Role Models.
- 7) We are Volunteers.

### **How We Do Things *that other people can see***

- 1) We do the work ourselves in Small Groups.
- 2) We develop and use best practices.
- 3) We use our head and hands.

### **What Do We Do**

- 1) We plant variety of trees for long-term.
- 2) We find ways to improve our health.
- 3) We practice Conservation Farming.
- 4) We do other projects and businesses (sustainable agriculture, nurseries, citrus growing, dairy goats and farming, chickens, bee keeping, fish ponds and fish keeping, silkworm farming, etc.).
- 5) We sell carbon credits.

### **What We Create**

When follow these Values as we live and do business, we create something good that was not there before.

- 1) We create Team Work—by doing things this way, we end up working like a team.
- 2) We create Capacity—we create organization, strength, and a system that is strong.
- 3) We create Enjoyment—we see results, we accomplish big things that we enjoy.
- 4) We create Big Results—Big results in planting trees. Big results in Conservation farming and from other projects and business that we do.
- 5) We create Low Budget/Cost, yet we achieve big results.

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## TIST

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**Kimereu Version**

An Environmental, Sustainable  
Development and Community Forestry  
Program.



**Kati ya wanachama wa Mitoro TIST Cluster wakijigawia mbegu za macadamia kutoka Kitalu ya miti. Nyuma yao ni chamba ukulima wa kunyunyizia (CF) inayomilikiwa na mwanachama mmoja wao.**

### ***Ndani ya gazeti:***

**Mucemanio jwa Cluster jwa mwaka: Kuuga area tukinyite kenda ki guikira TIST na cluster inya. Page 2**

**Igita ria Kuanda! Geria miti iji imiega ya gintwire. Page 3**

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**Inya kiri mithemba imingi: TIST nikaragia wingi bwa mithemba. Page 5**

**Jaria TIST iikirite: Inya na musingi jwa TIST. Page 6**



## **Mucemanio jwa Cluster jwa mwaka: Kuuga area tukinyite kenda ki guikira TIST na cluster inya.**

**K**iri TIST, itwonaga inya kiri guita ngugi turiamwe na kwirana area tukinyite na bangi kiri ikundi bietu bibinini na clusters na jangi jamaingi.

Mwerine jwa October 2016, TIST Kenya ni yaari na mucemanio jwa Clusters cionthe juria jwathithirue Nanyuki Social Hall, Nanyuki. Arimi babaingi ibejire mucemanione na ibonere mantu jaja je jamega kumenya nkuruki mantu jegie TIST, kuuria biuria bia mitaratara, kuejana nkuagaya kiri uria arimi bomba gutetheka na kuthoma kuuma ki bangi.

Anene ba TIST ibajukirie nkuagaya cionthe cia arimi. Ibonere mucemanio jwa mwaka juthithague kiri ntuura cionthe. Ibonere buri bubuega cluster iria nthongi buru cietagwe mucemanione juju.

Kuumania na bou ibonere ntuura ikaganua uju:

- i) Ntuura 1: cluster kuuma meru, kirinyaga na embu
- ii) Ntuura 2: cluster kuuma Nyeri, Laikipia, Nyandarua, Nakuru na Narok/Bomet
- iii) Ntuura 3: cluster kuuma Machakos, Murang'a na Taita
- iv) Ntuura 4: cluster kuuma Nyamira, Trans Nzoia na Nandi

Kenda cluster yenu yumbana, bubatere gwita ngugi bugwatanirite kenda bukinyira mantu jaja:

- 1) Cluster yenu nibatere gucemania o mweri na gutuma riboti cienu cia mucemaniana na mantu ja mbea. Bwenda utethio kana biuria bubatere kwaraniria na mutethia wa cluster jawe Jeniffer Kithure, 0726319539
- 2) Kiri cluster yenu nusu ya ikundi bibinini nibatere kwithirwa na mbeu siandi guntu gukiritue. Bwenda utethio kana bwina biuria

bukaraniria na mutethia wa cluster jawe Dorothy Naitore, 0726788662

- 3) Kiri cluster yenu ibubatere kwithirwa buandite miti 25000 imeuru kiri mieri 12 ikurukite mbere ya mucemanio jwa mwaka. Bwenda utethio kana bwina biuria bukaraniria na mutethia wa cluster jawe Kimani Mwangi, 0722477321
- 4) Nusu ya arimi kiri cluster yenu ibabatere kwithirwa bagitumaira stobu iria ikwendekana. Bwenda utethio kana bwina biuria bukaraniria na mutethia wa cluster jawe Charles Ibeere, 0720474209
- 5) Nkuruki e nusu ya arimi kiri cluster yenu ibabatere kwithirwa bakirimaga urimi buria bubatere jabu Conservation farming (cf). Bwenda utethio kana bwina biuria bukaraniria na mutethia wa cluster jawe Dorothy Naitore, 0726788662
- 6) Antu ti nthi e batano kiri cluster ibabatere kwithirwa bakimenyaga gutumira mutandao jwa internet jwa TIST. Bwina kiuria kana bwenda utethio bukaraniria na mutethia wa cluster jawe Eunice wambui, 0724431071
- 7) Cluster yenu nibatere kwithirwa itite na mbere: gutumira na gutethania na nkuagaya iria njega na gikundi kia cluster council jakio (GOCC) kana nthiguru yonthe. No utethanie na nkuagaya gukurukira micemanio ya GOCC kana Mazingira bora. Ukethirwa wina biuria kana wenda utethio ukaraniria na mutethia wa cluster jawe Jeniffer Kithure kana Martin Weru, 0722846501

Rikana: cluster ina inya ibatere kwithirwa ina miti 200,000 imitare, ikundi bibinini kuuma 30-50 biria bitirimanaga o mweri, mutethia umucagure, na uguita ngugi ewe bwega ya gutuma riboti na kubuthomithia na gutara miti.





## Igita ria Kuanda! Geria miti iji imiega ya gintwire.

**M**iti ya gintwire ni mithemba ya miti iria ikuririte ndene ya Africa na iria ikubuirwa ni naria kumithiurukirite na ikuririte. No ithongomie muthetu na gukucia nyoni na tunyomoo turia tutethagia. Miti mwanya igakuura bwega nkuruki guntu mwanya.

Kuumania na semina cia TIST na micemanio ya cluster, arimi ba TIST nibamenyete mithemba ya miti ya gintwire iria iri imiega mono na iria irina baita kiri ntuura. Miti imwe ya iji niariritue aja nthiguru, na nitugucokeria nkatho kambuni ya World Agroforestry Centre niuntu bwa umenyo bubu kwegie baita na kuuthurania mbegu na kuthuranira niuntu bwa uumbani. Thuganiria imwe igitene riu ringi ria kuanda na utwire miti imwe iria miega nkuruki ndene ya ntuura yaku!

### a. *Prunus africana* (Kimeru: Mweria)

Muti juju jwa gintwire jwonekaga mono ndene ya miitu. Mpindi niciithagirwa cirri miitune igita riria kuumi. Oja ntunda iria aki cigarukite rangi ciairua na iria cigundi kuuma kiri muti kana nthiguru.

Rita kiu kithiurukite mpindi na njira ya kurinda tunda mathaa mirongo iri na jannari unyarie iguru ria wire. Ara utirikanirite antu ari na ruugo na kirundu nikenda ciama- indi ugakurukia mathaa janna. Mpindi itiumbaga gwikwa kwou tumira woja orio. Gukunikira mbegu na mabura jarina ruuji nikunyiagia kuura kwa ruuji igitene ririkai ria gukamata na gwika. Anda munandene kana maratasine. Kuuma kwijaga nyuma ya biumia bitantatu gwita banana.

### Utumiri:

- **Kwinga tunyomoo turia tugitaragia:** No juinge tunyomoo tumwe turia tugitaragia imera niuntu bwa mununko jwaju. Maua jarina sukari ya kung'ana kuthithia naicu. Jurina nkuu injega mono.
- **Ndawa:** Ruuji kuuma gicaune nirutumagirwa kworia kunenea kwa prostate. Mathangu nijatumagirwa gukucia niuntu bwa gwitia kwa mwanki jwa mwiri kana jakanyuwa jakimenuwe nikenda muntu omba kwenda kuria irio. Ruuji

nirwongagirwa kiri gicau gikimenuwe, na ruuji ruru rutune nirutumagirwa kworia kiu; gicau no gitumirwe kiri ndithia

- **Kunyiya ukamati bwa muthetu:** Miti noiandwe nterene cia mitaro na naria kwinji, niejanaga kirundu kiri na baita na ninyiagia ruugo. Nijuthongomagia muthetu: Mathangu no jatumirwe gukunikira muthetu na ta mboleo imbithi
- **Kuthongomia:** Nijuejaga muti jumuthongi jwa kuanda kienine jwa kuejana kirundu.

### b. Peacock Flower (*Albizia gummifera*)

Muti juju mono nijwonekaga naria gutina ibari na miitune iria iri guntu kwa mbura na ndene ya mathaka jaria jatirimagwa akui na miitu

Mpindi cioji orio itiendaga uthuraniri. Mpindi (mbegu) iria ikarite ceki nicirindagwa ruujine rwa murutira na rugatigwa kwora mwanka mwanki jwa nyomba. Gikonde kia mpindi no gikunywe aria mpindi yumagira nikenda yumba kuumanga. Mpindi niu mangaga, na ntuku ikumi. Mbeu niibati gutua cirri mutine nikenda tunyomoo tutikacigitarie. Mpindi no ciikwe nkuruki ya mwaka aki ciekwa antu gukuumo na aria gutina tunyomoo na njira ya kwongera muju jwa riiko.

### Utumiri:

- **Nijutumagirwa ni njuki kuthithia naicu, nkuu, mpao, gum, tannin, ndawa** -kuumania na mpindi cikimitwe nicinyunyagwa kworia thina cia kiu na ruuji kuumania na gikonde kia muti rugatumirwa kworia rwagi, Kunyiyia ukamati bwa muthetu (uria miri iri nigutethagia kugwata muthetu na kunyiyia ukamati bwa ruuji ni ngai),
- **Kirundu,** gwikira ruugo rwa Nitrogen muthetune (kuthongomia muthetu), kuria kujukagua kuri njira inthongi ya gukunikira muthetu niuntu mathangu nijaguaga jamaingi igitene riajo riakugua,
- **Kuthongomia** (Nijuandagwa njirene ya town niuntu bwa uthongi bwaju),



- **Kuanda mianka**, Mathangu nijatumaga marigu jakagundanga.

**c. *Olea africana* (African wild olive, Kimeru: Muthata)**

Muti juju nijwonekaga guntu gukwingi mono akui na nduui na nterene cia miuro iminini n kinya ndene ya miitu ya mpao iminene. Jutigitaragua ni mpio inyingi kana uumo.

Mpindi ciumite muundene orio nicitumagirwa kuanda. Mpindi inkuru no cirindwe ruujine rwa mpio ntuku ijiri. Mpindi niciambagwa kuthuranirwa na njira ya kuuna gikonde na gantu ga kugwata na njara kana kwingiritiria iiga iguru ria mpindi iu. Bubu nibuthithagua niuntu kurita gikonde giki nigutumaga muti jukaumanga. Mpindi iji no ciikwa atu gukuumo miaka imikai.

**Utumiri:**

- **Irio:** Biria muti juju juejanaga na wingi ni maguta na ntunda cia kuria. Imera bibi nibirijagwa ni ndithia mono. Kinya nijutumagirwa ta nkuu, mpao, makara, mirashi ya maigo na kuthongomia.
- **Gucokia uria munda jwari:** Uumbi bwaju bwa gutuura kinya igita ria uumo nibutumaga jukaa muti jumwega jwa kuanjia miitu kairi guntune gukuumo ndene ya Africa.
- **Kuthongomia:** Muti juju nijuumbaga kuthongomia uria muunda jukari

**d. *Waterberry* (*Syzygium guineense*, Kimeru: Muriru)**

Muti juju nijwonekaga ndene ya miitu ya mbura iria iti irimene na kinya iria iri irimene. Mono niuuga guntu kurina ruuji rionthe, mono kinya ndene ya ruuji, na niithagirwa mono nterene cia nduui inini.

Mbegu itiendaga kuthuranirwa mbele ya kuandwa, niuntu kuuma nikwijangaga na kwambagiria o rimwe.

Nijukurangaga niuntu nijwithagirwa jukunenea mono ndene ya ntuku mirongo iiri gwita mirongo itano. Kuanda o rimwe turatasine nigwiikagirwa.

Matunda nijathukangaga na kwou nijabati kwojangwa nthi jarikia kugua orio.

Kinya nojojwe warikia kwainia muti na rwogoro. Joojwa, matunda jaja nijabati kuandwa orio niuntu nijathukangaga jooma. Kethira bubu butiumbika, itunda noriikwe ntuku inkai jaumbiki kiri sawdust na jari mikebene itikuniki nyomba iri na ruugo rurwega

**Utumiri:**

• **Kuthithia naicu, Mpao, Nkuu, Kirundu, Ndawa**

Menyeera: gicau kiu kiri sumu na kairi no gitume muntu akue, kwou nubati kwamba kuuria baria baturite gikonde kia muti juju kiri kuthithia ndawa

**e. *Melia* (*Melia volkensii*)**

Muti juju jutirijagwa ni muthwa ni irio bibiega mono muthiene jwa igita ria uumo riria irio bingi bitikwoneka, na nojwithire jurina bata mono kiri arimi ba TIST. Miti iji, iikunurite iguru, irina gicau kia rangi ya gray, noyume inene mwaka uraja bwa meter ithanthatu gwita mirongo iiri. Muti juju nijwonekaga mono miitune ya miti ya acacia-commiphora iria irina ngai ya milimita magana jathatu gwita magana janana. Rimwe nithagirwa yankanite na nduui cia igita ria mbura kana irimbene kana ikauma maigene jaria jaumirite nthiguru. Nijugwithagia mathangu jairi mwaka, na ni jumwega jwa kuandaniria na imera.

Melia jwaandagwa kuumania na iria yuumite yongwa kana miiri igitwi, kinyethira miiri igitwi no iume muti jutikurungama jungwa. Jwaumithua kuumania na mpindi, mpindi yomba kuritwa kirema na mwanki (mianki ya ntuti kana ya nyaki injumu) kana gicau kia mpindi kiomba guturwa riu mpindi ikarindwa ruujine mathaa jantatu mbele ya kuanda.

**Utumiri:**

- Irio bibiega mono bia mburi na ng'ombe; mpao; mauki
- Mathangu jathithitue nijatumagirwa kwinga ndaa na ngii na nijaritaga ngugi mono kiri twana twa mburi.
- Muti jumwega jwa kuandaniria na imera.



# Miti nitumaga naria gututhiurukite gukethira kuthongi nkuruki kiri batwi twinthe.

**N**dene ya TIST, nituandaga miti nikenda tuumba gutonya thokone ya ruugo na twona mbeba kuumania na kwendia ruugo. Indi-ri, baita ingi cia miti ni inene! Aja ni baita imwe inkai iria batwi (na nthiguru yonthe) twonaga:

- ❑ Miti ni gikaro kia mithemba imingi ya imera na nyomoo. Niiejanaga antu a gucioga kuumania na bangi na gicitho kiri nyomoo cia kithaka iria cigucua gikaro mitine na kucia irio. Gukaria mithemba imingi ya nyomoo na imera nigutumaga miunda yetu na nthiguru yetu ikagia maciara jamaingi nkuruki na ikaregana na kugaruka kwa rera na magitaria jangi.
- ❑ Miti nithongomagia ruugo na ikanyiyia kuthukua gukuthuku kwa naria gututhiurukite. Miti niritaga ruugo ruruthuku rwaingia na bingi biria bithukagia ruugo ta sulfur dioxide, ozone na nitrogen oxide. Gucokia, nituejaga ruugo rurwega ruria rendekaga kiri utuuro.
- ❑ Uthongi kiri metho bwa miunda nibuthongomagua ni kuanda miti, naku gukathongomia miturire. Rangi ya miti niongagira miunda rangi na kuthongomia uthongi bwa kimbicha bwa naria gututhiurukite.
- ❑ Miti nigaruraga rera na njira ya kunyiyia jaria

jaumanagia na riuu, ruugo na mbura. Miti noitethie kurigiria kuigara kwa ruuji, kwaruka kwa nthi na magitaria ja ruugo. Miti ninyiagia mathukia ja mbura inyingi na njira ya kureka ruuji rwa ngai rutonya muthetune antu a guitira iguru ruri muguo.

- ❑ Miti ninyiagia gukamatwa kwa muthetu. Miri yayo nigwataga muthetu juria antune angi juringi gukamatwa mburene. Miti kinya nitethagia kunoria muthetu. Muthetu jumunoru nijukagira irio nutrient na kwou bikathongomia thiria ya miri.
- ❑ Miti nijukagia gituma na njira inene. Kuthukia kwa naria gututhiurukite ni gituma kwomba kunyiwua na njira inene na njira ya kuanda miti ingi na ingi.
- ❑ Kwendeka kwa ruuji rurutheru rwa kunyua kwomba gutetheka na njira ya kuanda miti ya gintwire. Miitu na imera nibinyiagia kumatuka kwa ruuji rwa ngai na kurukemba mbele ya rutonya muthetune. Kumatuka kwaru kwanyiwua, ruuji rwa ngai nirutonyaga nthi kuujuria marinya jaria jari ndene muthetune na jaria jari bata mono kiritwi. Miti kairi nikunikagira nduuji, ruuji rugakara rurina mpio na mpaari ikanyiyia kuura kwa ruuji gukurukira kujukua ni riuu.

## Inya kiri mithemba imingi: TIST nikaragia wingi bwa mithemba.

**W**ingi bwa mithemba—unoru na wingi bwa nyomoo na imera—burina bata kiri guntu kurina thiria. Wingi buri na bata nkuruki niuntu bwa kuthiria kugaruka na magitaria ta uumo, tunyomoo tutui, kana kugaruka kwa rera. Niuntu wingi bwa mithemba burina bata mono, nouthugagnie ati antu kunthe nibakurita ngugi kumenyeera ati nitugwika wingi bubu buturaga o. Indi-ri, o ntuku, niuntu bwa mantu jaria

antu bathithagia, nituguta wingi bwa mithemba na ruciara o uria miti ikugitwa, irimba bikanyarua, na into biria tui bigatumirwa nkuruki ya uria bibati. Nitwonaga kuura guku ntuku cionthe. Thuganiria ni mithemba ing'ana ya imera, nyoni na nyomoo iria woonaga akui rionthe riria ugwe kana aciari baku bari babethi indi nandi ni inkai kana itio narua? Kurina mithemba milioni kenda mwanya ya nyomoo na imera ndene ya nthiguru iji, na riria



tuminyangagia, ni kwaga kwa mwanka gutirio kiri antu bilioni mugwanja baria bagaanaga nthiguru iji, kiri aana betu na kiri aana bao.

Arimi ba TIST nibakuthithia mwanya, kurita ngugi gwika wingi bwa mithemba. O muti juria tuandaga ni gintu gia gutumika kirina bata. O muti juria tuandaga nijunyiagia urito kiri miitu iria irina mithemba imingi iria ituuraga o niuntu notumitumire antua kugiita miitu nikenda twona nkuu, mpao na into bingi. Riria tuandaga miti ya gintwire, ta uria ikundi bibinini biria birina miunda iri nterene cia ruuji na ngiri cia arimi ba TIST barinayo miundene yao, nitukaragia wingi bwa mithemba. Mithemba iji imingi ya miti ya gintwire kinya ni gikaro na irio kiri tunyomoo, nyoni na nyomoo, nyingi cia iria

cirina bata mono kiri guciara kwa imera bietu, kuria tunyomoo tutui kana gwika muthetu jwetu jurina thiria.

Arimi ba TIST kinya nibakugaana umenyo bwao kwegie wingi bwa mithemba. Arimi nibakuurua biuria ndene ya cluster kiri mubango jwa kwambia jwa kugaana umenyo kwegie wingi bwa mithemba ndene ya ntuura ciao. Riria tukathooma jangi kwegie imera na nyomoo iria cituthiurukite, kugaruka kuria kuri kiri ntuura iji, na magitaria kiri wingi bubu, tutoomba kujukia itagaria gwika gintu giki gia kurigaria. Twijeni twinthe amwe, tugaane umenyo na tuande miti ya gintwire nikenda tuthithia nthiguru injega kiritwi twinthe.

## Jaria TIST iikirite: Inya na musingi jwa TIST.

**I**kundi bibinini biria bingi bia TIST nibiiji jaria TIST iikirite. Amwe na bou, kurina bata kuthuganiria mantu jaja na kumenyeera ati nitujathingatira na umma. Kuumbana gwa TIST gukaumania na kuthingatira kwa jaria jabati na ngugi ya o mumemba wonthe ndene ya TIST. Jaria tukomba gukinyira jakaringana na uria o umwe kiritwi akathingatira mantu jaja riria tukuanda na kumenyeera miti yetu, tugwita kiri uritani na kiri mantu jangi, na tugacokia ripoti kwegie jaria tuthithitie. TIST nibao? Ni batwi!

### Turi bao

- 1) Turi ba umma
- 2) Turi ba jaria jongwa jario
- 3) Turi ba weru
- 4) Turi atungataniri
- 5) Turi ba kumenyanira twingwa.
- 6) Turi ming'uanano imiega
- 7) Turi ba kuiritira

### Uria tuthithagia mantu jaria antu bangi bakoona

- 1) Turitaga ngugi twingwa ndene ya ikundi bibinini.
- 2) Nituthuganiria na gwitikaniria mitire iria miega buru ya kuthithia mantu.
- 3) Tutumagira mitwe na njara cietu.

### Nimbi tuthithagia

- 1) Nituandaga miti mithemba imingi ya igita riraja.
- 2) Nitucwaga njira cia kuthongomia thiria yetu ya mwiri.
- 3) Niturimaga na njira ya Urimi bubwega (Kilimo Hai)
- 4) Nituthithagia miradi na biashara ingi (urimi bwa gwika unoru bwa miunda yetu igita riraja, minanda, kurima ntunda, mburi cia iria na kurima, gwika njuki, gwika makuyu, kurithia imemeo na jangi jamaingi)
- 5) Nitwendagia ruugo

### Jaria tuthithagia

Riria twathingatira mantu jaja o uria tugutuura na kuthithia biashara, nituthithagia gintu gikiega kiria gitirario mbele.

- 1) Nituumbaga kuritanagiria ngugi amwe—gukurukira kuthithia uju, turigayia kurita ngugi ja timu. .
- 2) Nitwakaga—Nituthithagia kambuni, inya na njira iria irina inya.
- 3) Nitugwiragua—twona maciara, nituumbaga kuthithia mantu jamanene jaria tukenagira.
- 4) Nituthithagia mantu jamanene—Mantu jamanene kiri kuanda miti. Mantu jamanene kiri urimi bubwega na mibango na biashara ingi iria tuthithagia.
- 5) Nitutumagira mbeba inkai, indi tukathithia mantu jamanene.

# Mazingira Bora



# TIST

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

**Kikuyu Version**

An Environmental, Sustainable  
Development and Community Forestry  
Program.



**Amwe a amemba a Mitoro TIST Cluster makiigairia mbegu cia makadamia kuma tuta imwe yao. Thu wao ni mugunda wa kurima na mai (CF) wa umwe wa gikundi kiao.**

## ***Thiini wa Ngatheti:***

**Mucemanio wa Mwaka wa Clusters: Njira ya kugayana uhotani nigetha tuthii na mbere na gukuria Clusters na TIST. Page 2**

**Ni ihinda ria kuhanda miti! Geria miti ino miega ya ki-nduire. Page 3**

**Miti niyagirithagia maria maturigiciirie. Page 5**

**Hinya hari ukuuranu wiu: TIST niigitagira biodiversity. Page 5**

**Ikundi nyingi cia TIST niciui values cia TIST. Page 6**



# Mucemano wa Mwaka wa Clusters: Njira ya kugayana uhotani nigetha tuthii na mbere na gukuria Clusters na TIST.

**T**uri TIST, tugiaga na hinya riria twarutithania wira hamwe na riria twacjenania meciria ma uhotani witu kumanagia na uhotani witu ririaturu ikundi-ini, micemano ya Cluster na kuungi kuingi.

Mwari-ini wa ikumi, 2016, TIST niyakorirwo na mucemano wa mbere wa Clusters ciothe (ACM) muciiini wa Nanyuki. Arimi aangi nimonire riciria riri riri riega tindu niriamaheire kamweke ka kumenya maingi makonie TIST, kuria ciuria, kuheana mawoni, na guthoma kuma kuria angi na mangi maingi

Kanju ya TIST Leadership council niyamukiririe mawoni kuma kuri arimi. Mawoni macio mendikithirie gukorwo na micemano icigo ngurani. Ni kwandikithirio Clusters iria itoranitie ikaheo kamweke ga guitwo micemano-ino iyo.

Kuri uguo, icio ici ni ciendekithirio;

- i) Gichigo 1: Clusters kuuma Meru, Kirinyaga and Embu
- ii) Gichigo 2: Clusters kuuma Nyeri, Laikipia, Nyandarua , Nakuru na Narok/Bomet
- iii) Gichigo 3: Clusters kuuma Machakos, Murang'a na Taita.
- iv) Gichigo 4: Clusters kuuma Nyamira, Trans Nzoia na Nandi.

Niguo Cluster yaaku itwo mucemano uyu, niyagiriirwo ni kuhingia maundu maya;

- 1) Cluster no nginya ikorwo igicemania o mwari na gutuma riboti cia muemano na mathabu . Ungikorwo niukenda uteithio kana wina kiuria, araniria na Cluster Servant waku kana Jeniffer Kithure, 0726 319 539
- 2) Cluster-ini yaku, no nginya nuthu (50%) ya ikundi ikorwo na tuuta cia kuoyo na iguru (raised seed bed) Ungikorwo niukenda

uteithio kana wina kiuria, araniria na Cluster Servant waku kana Dorothy Naitore, 0726 788 662

- 3) Cluster-ini yaku, no nginya mukorwo muhandite miti mieru 25,000 gwa kahinda ka mwaka umwe mbere ya mucemano wa ACM. Ungikorwo niukenda uteithio kana wina kiuria, araniria na Cluster Servant waku kana Kimani Mwangi, 0722 477 321
- 4) Nuthi ya arimi Cluster-ini yanyu no nginya makorwo magitumira mariko mega. Ungikorwo niukenda uteithio kana wina kiuria, araniria na Cluster Servant waku kana Charles Ibeere, 0720 474209
- 5) Gicunji kia 75% kia arimi thiinii wa Cluster yangu no nginya makorwo mena urimi wa Conservation Farming (CF). Ungikorwo niukenda uteithio kana wina kiuria, araniria na Cluster Servant waku kana Dorothy Naitore 0726 788 662
- 6) Andu matanyihire atano utagutara Cluster Servant thinie wa Cluster yanyu nimagiriirwo na gukorwo na uhoti wa kugwata uhoro kuma rurenda rwa TIST Ungikorwo niukenda uteithio kana wina kiuria, araniria na Cluster Servant waku kana Eunice Wambui 0724 431071
- 7) Cluster yaku niyagiriirwo ikorwo ithondekete , gutumira na kugayanga njira imwe njega ( Best Practice) na Clusters iria ingi kana ngathini ya Mazingira Bora. Ungikorwo niukenda uteithio kana wina kiuria, araniria na Cluster Servant waku kana Jeniffer Kithure kana Martin Weru, 0722 846501

Ririkama. Cluster ikinyiire yagiriirwo nigukorwo na miti makiria ya 200,000 na ikundi 30-50 iria iracemania o mwari, ikorwo na atongoria athure ni members, na ikorwo na ithomo njega na uteri wa miti mukinyaniru.



## Ni ihinda ria kuhanda miti! Geria miti ino miega ya ki-nduire.

**M**iti ya ki-nduire ni miti iria ikoretwo kuo thiini wa Africa na itwaranaga na riera riakuo. Niwagirithagia tiiri na ukaguciriria nyoni na ugakuria tutambi. Miti ngurani niikuraga kundu ngurani.

Kuma semina ya TIST na micemanio ya cluster, Arimi a TIST nimonete miti ya ki-nduire iria ingikura kwao. Miti ta ino igwetetwo haha, na nituracokeria World Agroforestry Center niundu wa gutuhe uhoro uyu wa kungania kwa mbegu na gucihariria niguu tugie na umithio. Geria imwe yayo ukihanda na utwire iria yakwagirira!

### a. *Prunus africana* (Kikuyu: Muiri)

- **Muti uyu wonekaga mititu-ini.** Mbegu nicondekaga mititu-ini riria kuri na riuu. Ungania mbegu iria nguru kana matunda maguo.

Rida maai-ini niguu ngothi ya iguru yume wega gwa kahinda ka 24hrs na uthambirie iguru ria mesh wire. Aragania wega handu kiruru-ini niguu ciume gwa kahinda ka mathaa mana tu. Mbegu citikaraga na kwa uguo huthira iria njiugu na citaikarite muno.

Oha na mahuti niguu ndugate ugunyu uria ungikorwo ho. Handa thiini wa tuta kana mikrbe-ini.

Cimeraga thutha wa 6-8 weeks.

### Mahuthiro:

- **Niuingataga tutambi:** no uingate tutambi ta aphids, nematodes kuhitukira munungo waguu. Mahua maguo nimakoragwo na mahungo ma uuki maigi.niukoragwo na ngu njega.

- **Dawa:** Maai maguo nimahuthagirwo guthondeka kunenehia undurume. Mahuti nimathondekaga homa na kwongerera wendi wa kuria. Maai nimongagirirwo kuri mutu wa makoni na maai macio matune nimathondekaga nda na guthondeka mahiu.

Kugitira tiiri: niukuraga kuria kuinamu na ugakorwo na kiiruru kiega na ukanyihia ruhuho.

- **Kwagirithia Tiiri:** mahuti maguo nimahuthagirwo guthondeka thumu.

- **Uthaka:** niuthondekaga mugunda ugathakara muno.

### b. *Peacock Flower* (*Albizia gummifera*, Kikuyu: Mukurwe)

Muti uyu wonekaga kundu kwaraganu na kwambatiru kuria kuri na mititu .

Mbegu ciaguo citirabatara guthondekwo mbere ya kuhandwo na cirindagwo maai-ini mararu na cigatigwo. Makoni ma mbegu nomoragwo niguu cimere na-ihenya. Mbegu nicimeraga wega, na gicunji kia 70-80% na cikamera thutha wa thiku 10. mbegu ciagiriirwo kunganio ciri miti-ini niguu citigathukio ni tutambi. Mbegu nocigwo gwa kahinda ka mwaka 1 cingikorwo ciri nyumu wega na niwega wikire muhu.

### Mahuthiro:

- **Mahungo ma uuki, ngu, mbau, nganu na dawa** (makoni nimahonagia ruuo rwa nda hamwe na Malaria), niugitagira gukuuo gwa tiiri (miri yaguo niinyitaga tiiri wega),



- **Kiiruru:**, kwagirithia unoru wa tiiri, mahuti nimathondekaga thumu mwega muno.
- **Uthaka:** uhanditwo town nimuthaka muno. Mihaka, mahuti maguo nimeruithagia marigu na-ihanya.

**c. *Olea africana* (African wild olive, Kikuyu: Mutamaiyu)**

Muti uyu niwonekaga kundu kuingi muno na makiria njuui-ini na migunda-ini. Niwiritiragia riuu.

Mbegu nichuthagirwo kuhandwo. Mbegu njithi nicirindagwo maai-ini mahehu gwa kahinda ka 48hrs.

Mbegu nicithondekagwo na njira ya gwaturwo na ihiga. Uu nitondu kuruta gikoni niuhotithagia kumera.

Mbegu nocigwo handu homu kwa miaka miingi.

**Mahuthiro:**

- **Irio:** indo nyingi cia maguta niconekaga. Irio cia mahiu: mahuti maguo nimendetwo muno ni mahiu. Niukoragwo na nbau na ngu njega ohamwe na makara na mikinyi na ciuma.

**d. *Waterberry* (*Syzygium guineense*, Kikyuyu: Mukoe)**

Muti uyu makiria wonekaga kuria kwaraganu na irima-ini. Ikuraga kundu kugunyu na maita maingi maai-ini na njuui-ini.

Mbegu citibataraga guthondekwo mbere ya kuhandwo tondu nicimeraga na njira njega. Cimeraga na gicunji kia 80-90% na ni thutha wa 20-50 days.

Kuhanda mugunda-ini nikwega. Matunda maguo nimathukaga na-ihanya na kwa uguo nimagiriirwo gutuo na kunganio na ihanya, handa mbegu orio niguu citigakorwo ciathuka. Angikorwo uu gutingihoteteka, matunda nomaigwa gwa kahinda hanu hagunyu hari na muura kundu kuri na riera riiganu.

**Mahuthiro:**

- Mahugu ma uuki, mbau, ngu, kiiruru na dawa.
- **Ririkana:** makoni nimari poison na nomorage mundu, uririria uria ukuhuthira dawa kuma muti-ini uyu.

**e. *Melia* (*Melia volkensii*)**

Muti uyu uria wiritiragia muthua niukoragwo na irio njega cia mahiu kimera kia riuu riria miti iria ingi yothe iitite mahuti na noukorwo uri wa bata muno kuri arimi a TIST. Muti uyu uria ukoragwo na makoni ma grey miukuraga na uraihu wa 6-20 meters. Muti uyu muno wonekaga kuria kuri na mbura githimi kia 300-800 mm. Muno niukoragwo ruteere-ini ra njuui kana itomboya-ini. Uitaga mhuti maita 2 hari mwaka na ni muti mwega kuhandaniria na irio mugunda.

*Melia* wambiriirie na miri kuma githaka onagutuika miri noikorwo itari na hinya muiganu. Ungikurio kuuma mbegu-ini, mbegu ciagiriirwo gucinwo kana ciaturwo na ihiga mbere ya kuhanda.

**Mahuthiro:**

- Mahuti na irio cia mahiu, mbau, njuki.
- Mahuti nimaigataga tutambi tuothe na nimega kuri twana tunini.
- **Nimwega kuhandaniria na irio muguda-ini.**





## Miti niyagirithagia maria maturigiciirie.

**T**hiini wa TIST, tuhandaga miti niguu tukorwo thoko-ini ya carbon na tugie na marihi kumana na wendia wa carbon. Na ningi, mawega mangi ma miti nimaingi!

Maya ni mamwe ma mawega.

- Miti niituteithagia kwagirithia maundu ma ki-nduire. Niituheaga kwiikaria na kuhe nyamu wihitho na micii ohamwe na irio ciacio. kugitira biodiversity migunda-ini iito na gutuma thi yothe yongerere umithio na kwagirithia riera.
- Miti niyagirithagia riera na kunyihia uthukangia wario. Miti niyehutagia carbon hawe na indo ingi ta Sulfur dioxide, ozonena nitrogen oxide. Naithui tukagia na oxygen njega niundu wa miturire miega.
- Uria migunda iitu iikarite niwagirthagio ni miti iitu na miturire igathakara. Uthaka wa iti niukoragwo uri mwega na tukagia na mbica njega ya migunda iitu.
- Miti niiroraga riera na kunyihia riuu, ruhuhona mbura. Miti noigitire kumana na muiyuro wa maai, ituika, na ugwati wa ruhuho. Miti niitumaga gutikagie na ng'aragu nitondu niitoteithagia maai gutonya tiiri-ini wega handu ha umaruta.
- Miti niitumaga tiiri ndugakuuo ni maai. Miri yayo niyumagiriria tiiri na kuuhe unoru. Tiiri munoru niutumaga irio cikure na njira njega.
- Miti niinyihagia inegene. Inegene norinyihe na njira nene unghanda miti.
- Kugia na maai matheru nogukinyirike riria twahanda miti ya ki-nduire. Mititu na miti ingi niitheragia maai na kumacunga. Riria uteng'eru wa maai wanyiha maai nimatheraga. Kiiruru kia miti nigiteithagia njuui kumana na kuhua.

## Hinya hari ukuuranu wiu: TIST niigitagira biodiversity.

**B**iodiversity na kwagira kwa maundu ma nduire ni kwa bata hjari ugima wa miiri itu na mituurire iitu na muno niundu wa mogaruruku maria tuona ma riera, ngaragu, tutambi. Na tondu biodiversity ni ya bata, no wicirie andu angi nimararuta wira gutigirira nitwa inyitira, no ona kuri o uguo o muthenya niundu wa maundu maria twikaga niturate indo cia hinya na cia bata niutu wa gutema mititu. Maai makahua na indo ingi cikooru.

Tageria gwiciria ni mithemba iriku ya nyoni wonaga tene ugikura na riu ndumionaga? Kuri na mithemba 9 million ya indo iria iri muoyo thiini wa thi na riria twacianaga ni tukurirwo ni indo nyingi ithui andu 7 billion aria tukoragwo thi.

Arimi a TIST mari na ugaruruku, kwirutaniria kugitira deversity. O muti twahanda niwabata. O uti twahanda niwagirirthagia maundu na handu hagutema miti niundu wa ngu na indo ingi handa na



umimenerere. Riria twahanda miti ya ki-nduire, ta uria ikundi nyingi ciikite kuria kwaraga hamwe na migunda-ini ya makiri ma arimi, nituragitira biodiversity. Miti ngurani ya ki-nduire niiheaga nyamu gwa guikara hamwe na kuhe tutambi irio hamwe na nyoni na nyamu ingi, nyingi ciacio niciteithagiriria kuhirithia irio, kunina tutambi na gwikira tiiri unoru.

Arimi a TIST nimarathomithania ugoro wigii biodiversity. Arimi nimaragerio thiini wa cluter hari mubago wa kugerio wa guthomithania megii biodiversity kwao. Riria twathoma makiria ciigii miti na nyamu iria turi nacio, mogaruruku na mogwati maria turi namo, no twoe makinya kugitira maundu maigi. Itunyitane, tuthomithanie na tuhande miti ya ki-nduire niguo twagirithie thi yothe.

## **Ikundi nyingi cia TIST niciui values cia TIST.**

**N**a ningi, nniwega kurora values ici niguo gutigirira ati turatura hamwe nacio. Umithio wa TIST ukwoneka riria twagia na uigiririki na wirutiri wa amemba thiini wa TIST. Maundu maria tungihota mararingana na values ici riria turahanda miti na tugathomithania na tukaheana maumirira. TIST nima? Turi!

### **Ithui turi:**

1. Turi ehokeku.
2. Turi akinyaniru.
3. Turi andu a utheri.
4. Nitutungatanaga.
5. Turi na uigiririki.
6. Turi cionereria njega
7. nitwirutagira.

### **Niatia twikaga maundu maria andu angi mangiona?**

1. Niithui twirutagira mawira thiini wa ikundi.
2. Nituhuthagira mitaratara miega.
3. Tuhuthagira hakiri na moko.

### **Niatia twikaga.**

1. Tuhandaga miti mithemba miingi ya gutuura.
2. Nitwagirithagia ugima mwega wa mwiri.

3. Nitukoragwo na mitaratara ingi na biashara ingi(urimi wa guteithia, tuta, ukuria wa machungwa, uriithi wa mburi, nguku na uigi wa njuki ohamwe na thamaki na kuiga igunyu cia silk.
4. Niturimaga Kilimo Hai
5. Nitwendagia carbon.

### **Kiria tuthondekaga.**

Riria twarumirira mitaratara ino na twatura na kuruta wira, nituthondekaga maundu maingi gukira mbere.

1. Turutaga wira turi hamwe – ugikaga maundu an njira ino niturutaga wira turi timu.
2. Niturekira uhoti – nitwikiranaga hinya nakugia na mitaratara iri na hinya.
3. Nituthondekaga ikeno – nituonaga umithio na tukahota maundu maingi maria tukenagira.
4. Nitukoragwo na umithio mwega – maumirira mega riria twahanda maiti, maumirira mega riria twahurthira Kilimo Hai na mitaratara ingi miingi.
5. Nitugiaga na maumirira mega na mahuthiro manini..

# Mazingira Bora



## TIST

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

**Kiswahili Version**

An Environmental, Sustainable  
Development and Community Forestry  
Program.



**Kati ya wanachama wa Mitoro TIST Cluster wakijigawia mbegu za macadamia kutoka Kitalu ya miti. Nyuma yao ni chamba ukulima wa kunyunyizia (CF) inayomilikiwa na mwanachama mmoja wao.**

### ***Ndani ya gazeti:***

**Mkutano wa Clusters wa Mwaka: Shiriki mafanikio yako ili kufanya nguzo yako na TIST imara. *Page 2***

**Wakati wa Kupanda! Jaribu miti hii mizuri ya Kiasili. *Page 3***

**Miti huboresha mazingira kwa ajili yetu sote. *Page 5***

**Nguvu katika Utofauti: TIST hulinda bionuwai. *Page 5***

**Maadili ya TIST: Nguvu na msingi wa TIST. *Page 6***



# Mkutano wa Clusters wa Mwaka: Shiriki mafanikio yako ili kufanya nguzo yako na TIST imara.

**K**atika TIST, tunapata nguvu katika kuchukua hatua pamoja na kugawana mafanikio yetu na wengine katika vikundi vyetu vidogo, katika makundi yetu, na zaidi.

Mnamo Oktoba 2016, TIST Kenya ilifanya Mkutano wake wa kwanza wa Clusters katika Jumba la Jamii la Nanyuki, mji wa Nanyuki. Wakulima wengi ambao walihudhuria waliona kwamba hii ni wazo nzuri kwa wakulima kujifunza Zaidi kuhusu TIST, kuuliza swali kuhusu shughuli za programu, kutoa maoni juu ya jinsi ya kuboresha huduma kwa wakulima, kujifunza kutoka kwa kila mmoja Mazoezi bora nakadhalika..

Baraza la Uongozi wa TIST lilichukua maoni ya wakulima. Ilipendekezwa kuwa mikutano ya Cluster ya kila mwaka itafanyika katika mikoa. Ilipendekezwa pia kuwa Makundi bora tu yanapaswa kualikwa kwenye matukio haya.

Kwa hiyo, mikoa ifuatayo imependekezwa;

- i. Mkoa wa I: Makundi kutoka Meru, Kirinyaga na Embu
- ii. Mkoa wa Embu 2: Makundi kutoka Nyeri, Laikipia, Nyandarua, Nakuru na Narok / Bomet
- iii. Mkoa wa 3: Makundi kutoka Machakos, Murang'a
- iv. Mkoa wa Taita 4: Makundi kutoka Nyamira, Trans Nzoia na Nandi

Kwa Cluster yako ili kustahili, unahitaji kufanya kazi pamoja na kufikia vigezo vifuatavyo;

- I. Cluster yako inapaswa kukutana kila mwezi na kutuma ripoti zako (Taarifa zote za mkutano na Uhasibu). Ikiwa unahitaji msaada au una maswali, wasiliana na mtumishi wako wa Cluster au Jeniffer Kithure, 0726 319 539

2. Katika Cluster yako, nusu au asilimia 50 ya vikundi vidogo vimekuza mimea. Ikiwa unahitaji msaada au una maswali, wasiliana na mtumishi wako wa Cluster au Dorothy Naitore, 0726 788 662
3. Katika Cluster yako, unapaswa kupanda mimea 25,000 iliyopandwa katika miezi 12 iliyopita kabla ya ACM. Ikiwa unahitaji msaada au una maswali, wasiliana na mtumishi wako wa Cluster au Kimani Mwangi, 0722 477 321
4. Nusu ya wakulima katika Cluster yako inapaswa kutumia pofu bora. Ikiwa unahitaji msaada au una maswali, wasiliana na mtumishi wako wa Cluster au Charles Ibeere, 0720 474209
5. 75% ya wakulima katika Cluster yako wanapaswa kufanya mazoezi ya Uhifadhi wa Ukulima (CF). Ikiwa unahitaji msaada au una maswali, wasiliana na mtumishi wako wa Cluster au Dorothy Naitore 0726 788 662
6. Angalau watu 5 katika Cluster wanapaswa kufikia na kupata taarifa kutoka kwenye tovuti za TIST badala ya Mtumishi wa Cluster. Ikiwa unahitaji msaada au una maswali, wasiliana na mtumishi wako wa Cluster au Eunice Wambui 0724 431071
7. Cluster yako inapaswa kuendeleza, kutumiwa na kushiriki Mazoezi bora na Baraza lako la Makundi ya Cluster (GOCC) au nchi nzima. Unaweza kushiriki mazoea yako bora kupitia mikutano ya GOCC au Mazingira Bora. Ikiwa unahitaji msaada au una maswali, wasiliana na mtumishi wako wa Cluster au Jeniffer Kithure au Martin Weru, 0722 846501

Kumbuka: kikundi kikubwa kinapaswa kuwa na miti 200,000 yenye kuthibitishwa, Vikundi vidogo vidogo vya 30-50 vinavyokutana kila mwezi, viongozi waliochaguliwa, na kufanya na kutoa ripoti juu ya mafunzo mazuri na kuhitimu.



## Wakati wa Kupanda! Jaribu miti hii mizuri ya Kiasili.

**M**iti ya kiasili ni aina ya miti ambayo imekua ndani ya Africa na inayofaana na mazingira ambayo imekulia. Yaweza kuboresha udongo na kukuvutia ndege na wadudu wenye manufaa. Miti tofauti humea vizuri zaidi katika maeneo tofauti.

Kutokana na Semina za TIST na mikutano ya cluster, wahusika wa TIST wamebainisha aina nyingi za miti ya kiasili ambazo ni nzuri sana na zenye faida katika maeneo yao. Baadhi ya aina hizi zimeelezwa hapa chini, na tunashukuru Kituo cha dunia mzima cha kilimo cha Mseto (World Agroforestry Centre) kwa sababu ya maelezo kuhusu faida na ukusanyaji na maandalizi ya mbegu ili kufanikiwa. Tafadhali fikiria kupanda baadhi ya aina hizi msimu ujao wa kupanda, na utuambie baadhi ya aina bora zaidi katika eneo lako!

### a. *Prunus africana*

Mti huu wa kiasili unapatikana sana katika hifadhi za misitu. Mbegu zipo misituni wakati wa kiangazi. Kusanya tu matunda yaliyoiva ya hudhurungi kutoka taji la mti ama ardhini.

Toa rojo kwa kulowesha masaa ishirini na nne, kisha uoshe juu ya waya wenye matundu. Eneza kwa safu nyembamba katika eneo lililo na hewa na lililo na kivuli ili kukauka- lakini kwa masaa nne pekee. Mbegu haikai kwa hivyo tumia mbegu mpya.

Kufungia majani yakizunguka mbegu hupunguza upotevu wa unyevu wakati wa kusafirisha na kuweka.

Panda kitaluni au mifukoni moja kwa moja. Kuota huchukua wiki sita kufika nane.

### Matumizi:

- **Dawa ya kukimbiza wadudu waharibifu:** yaweza kukimbiza wadudu waharibifu kama chawa, viwavi (ambao hushambulia mimea) kwa harufu yake. Maua yana nta na poleni tosha ya kulisha nyuki. Ina kuni bora.

- **Dawa:** Rojo kutoka kwa gome hutumiwa kutibu uvimbe wa kibofu. Majani hutumiwa kuvuta ili kutibu homa ama kunywa kama njia ya kuboresha hamu ya kula. Maji huongezwa kwa gome lililopondwa na maji hayo mekundu kutumiwa kutibu maumivu ya tumbo; dondoo la gome kutumiwa kulisha ng'ombe.

- **Kuzuia mmomonyoko wa udongo:** Miti yaweza kupandwa matutani, huwa na kivuli chenye manufaa na huzuia upepo. Huboresha udongo. Majani yaweza kutumiwa kufunika udongo ama kama mbolea.

- **Urembo:** Huwa mti mzuri wa kivuli unaovutia katika bustani.

### b. *Peacock Flower (Albizia gummifera)*

Mti huu hupatikana sanasana katika misitu ya mvua iliyo mahali tambarare au nyanda za juu na katika makazi wazi karibu na misitu. Mbegu safi hazihitaji kutibiwa kwanza. Mbegu zilizowekwa huloweshwa katima maji yenye joto na kuachwa kupata baridi kwenye joto la kawaida. Gome la mbegu laweza kuvunjwa ili kuharakisha kuota. Mbegu huota vizuri, asilimia sabini kufika themanini katika siku kumi. Mbegu zafaa kukusanywa zikiwa bado mtini ili kupunguza uharibifu wa wadudu. Mbegu yaweza kuwekwa kwa muda wa mwaka mmoja ikiwekwa ikiwa kavu na mbali na wadudu kwa njia ya kuongeza majivu.

### Matumizi:

- **Chakula cha nyuki, kuni, mbao, gundi, tanini, dawa** (dondoo kutokana na kuponda maganda hutumiwa kumaliza uchungu wa tumbo na maji ya gome kutibu malaria), kuzuia mmomonyoko wa udongo (mizizi hushika udongo na kuzuia mmonyoko wa udongo kupitia mitaro),



- **Kivuli**, kuweka naitrojeni (huboresha udongo), hujulikana kama mti mzuri wa kufunika udongo kwa sababu majani yanayoanguka ni mengi wakati wa msimu wa kuangusha majani,
  - **Urembo** (Hupandwa katika miji kwa sababu ya urembo wake),
  - **Kupanda mipaka**, matawi huharakisha kuiva kwa ndizi.
- c. **Olea africana** (African wild olive, Kikyuyu: Mutamaiyu, Kimeru: Muthata)  
Mti huu hupatikana maeneo mengi, sana sana karibu na maji, mito na ata maporini. Ni sugu kwa baridi na kwa ukavu.

Mbegu kutoka kwa matunda hutumika kuotesha. Mbegu nzee yaweza kuloweshwa kwa maji baridi kwa masaa arobaini na nane.

Mbegu sanasana hutibiwa kwa kuvunja na kifaa au kwa kuachilia jiwe juu ya mbegu. Hii ni kwa sababu kutoa ngozi ya ndani ya mbegu husaidia kuota haraka. Mbegu huwekwa mahali pakavu na penye joto la kawaida kwa miaka michache.

#### Matumizi:

**Chakula:** Bidhaa kuu ya mzeituni ni mafuta na matunda yanayoliwa.

**Lishe:** mimea hii huliwa na mifugo. Hutumika pia kama kuni, mbao, makaa, miswaki ya meno na kurembesha.

**Kuimarisha:** kuwa sugu kwa ukavu inapendekeza kuwa mti huu waweza kutumika kuimarisha maeneo Africa yenye ukame.

**Kurembesha:** mzeituni huweza kurembesha ardhi/mazingira.

#### d. **Waterberry (Syzygium guineense)**

Mti huu sana sana hupatikana misitu iliyo kwa tambarare na iliyo milimani. Hukua sana mahali penye unyevu, mara nyingine ndani ya maji na hupatikana kando ya mito

Mbegu hazihitaji kutibiwa, kwani huota haraka na vizuri. Huota kwa asilimia themanini kufika tisini kwa siku za kwanza ishirini hadi hamsini. Kuotesha mifukoni hupendekezwa. Matunda huharibika kwa yanafaa kuokotwa mara moja yakishaanguka. Yanaweza pia kwa kutikisa matawi. Ukishakusanya, matunda yanafaa

kuoteshwa mara moja kwani yanaweza kupoteza uwezo wake wa kuota yakikauka; kama ili haliwezekani, matunda yanaweza kuwekwa kwa siku chache kwa machujo ya mbao na ndani ya mikebe kwa chumba chenye kuingiza hewa tosha.

**Matumizi:** Chakula (Matunda), lishe ya nyuki, mbao, kuni/makaa, kivuli, dawa (tunda utumika kutibu ugonjwa wa kuhara damu, maji ya gome nayo hutumika kuzuia ugonjwa wa kuhara).

Kumbuka gome ili lenye sumu limeripotiwa kuuu watu, kwa hivyo tafuta ujumbe tosha kwa watu wenye uzoefu wa kutumia bidhaa za huu mti.

#### e. **Melia (Melia volkensii)**

Mti huu usioliwa na mchwa ni chakula kizuri cha mifugo mwishoni mwa msimu wa kiangazi wakati vyakula vingine vinapopatikana kwa ugumu na kwa hivyo ni wenye umuhimu kwa wakulima wa TIST. Miti hii, ina taji lililofunguka, iliyo na gome la kijivu, yaweza kukua hadi urefu wa mita sita kufika ishirini. Melia ni mti unaoonekana sanasana katika vichaka vya acacia-commiphora iliyo na mvua wa milimita mia tatu kufika mia nane. Wakati mwingine inapakana na mito ya kimsimu ama mahali majimaji au kuonekana juu ya mawe yaliyotokea juu ya ardhi. Mti huu huangusha majani mara mbili kwa mwaka na waweza kuwa chaguo nzuri la kupanda pamoja na mimea

Melia sana sana hukuzwa kutokana na miche iliyomea yenyewe au mizizi ikiwa imekatwa, ata kama mizizi iliyokatwa yaweza kukuza miti isiyo na nguvu. Ikikuzwa kutokana na mbegu, mbegu yafaa kuchomwa (moto wa kasi au wa nyasi iliyokauka) ama gome la mbegu linatobolewa halafu mbegu inaloweshwa majini kwa muda wa masaa sita kabla ya kupanda.

#### Matumizi:

- **Chakula kizuri kwa mbuzi na ng'ombe;** mbao; mizinga
- Majani hutengenezwa na kutumiwa kuwafukuza chawa na nzi na husemekana kuwa nzuri zaidi kwa watoto wa mbuzi.
- **Mti mzuri wa kutumika katika kilimo mseto.**



## Miti huboresha mazingira kwa ajili yetu sote.

**K**atika TIST, sisi hupanda miti ili kujiingiza katika soko la hewa na kupata mapato kutokana na kuuza hewa hii. Hata hivyo, faida zingine za miti ni kubwa!

Zifuatazo ni faida chache ambazo sisi (pamoja na dunia yote) hufurahia:

- ❑ Miti hutumika kama makazi asili ya kusaidia aina nyingi za mimea na wanyama. Hupeana faragha na usalama kwa wanyama wa pori wanaotafuta makazi mitini na huwapa chakula. Kulinda bionuwai au viumbe hai hufanya mashamba yetu na sayari yetu kuwa yenye uzalishaji zaidi na pingamizi dhidi ya mabadiliko ya tabianchi(hali ya anga ya muda mrefu) na changamoto nyinginezo.
- ❑ Miti huboresha hewa na hupunguza uchafuzi wa hatari. Miti hutoa hewa ya kaboni ya ziada na vichafuzi vya hewa kama dioksidi sulsuri, ozoni na naitrojini yenye oksidi. Kurudisha, hutupa oksijeni inayohitajika kuishi.
- ❑ Uboru unaoonekana wa ardhi pia unaboreka kwa kupanda miti ambayo, inaboresha maisha. Rangi ya kijani ya miti huongeza rangi kwa ardhi na kuongeza urembo wa kipicha wa mazingira.
- ❑ Miti hudhibiti tabianchi kwa njia ya kupunguza athari za jua, upepo na mvua. Yaweza kusaidia kuzuia mafuriko kali, miporomoka ya ardhi, uharibifu wa upepo. Miti hupunguza madhara ya mafuriko kwa kuruhusu maji ya mvua kuingia udongoni badala ya kupita juu yake.
- ❑ Miti hupunguza mmomonyoko wa udongo. Mizizi yake hushika udongo ambao badalayake hungebebwa wakati wa dhoruba za mvua na mafuriko. Miti pia husaidia kuboresha rotuba ya udongo. Udongo wenye rotuba huhamisha virutubisho hadi kwa chakula, jambo ambalo huchangia kwa afya ya binadamu.
- ❑ Miti ni mizuri katika kunyonya sauti. Uchafuzi wa kelele waweza kupunguzwa sana kwa kupanda miti mingine na mingine.
- ❑ Mahitaji ya maji safi ya kunywa yaweza kukamilishwa kwa njia ya kupanda miti ya kiasili. Misitu na mimea hupunguza kasi ya maji ya mvua na huyachuja yanapoingia udongoni. Yanapopunguzwa kasi, maji ya mvua huingia ardhini kujaza vyanzo vya maji vilivyo chini ya maji na ambavyo tunategemea ili kuishi. Miti pia huipa mito kivuli, na kuyaacha maji kukaa baridi na kwa hivyo kupunguza kasi ya kupotea kwa maji kwa njia ya uvukizi.

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## Nguvu katika Utofauti: TIST hulinda bionuwai.

Bionuwai—utajiri na aina mbali mbali za maumbile—ni muhimu kwa mazingira yenye afya. Aina mbali mbali ni muhimu sana kwa kubaliana na mabadiliko na changamoto, kama ukame, wadudu na mabadiliko ya tabia nchi. Kwa sababu bionuwai ni muhimu sana, waweza kufikiria kuwa watu kila mahali wanafanya kazi kuhakikisha kuwa tunalinda na kuhifadhi utajiri huu wa kiasili. Hata hivyo, kila siku, kwa sababu ya matendo ya binadamu, tunapoteza spici na aina za maumbile misitu

inapokatwa, ardhi pevu kukaushwa na rasilimali kutumiwa kupita kiasi. Tunaona upotevu huu kila siku. Fikiria ni aina ngapi za mimea, ndege na wanyama ambazo uliona mara nyingi wakati wewe au wazazi wako walipokuwa wachanga lakini leo ni chache au zimeisha? Kuna spici milioni tisa za viumbile tofauti katika sayari yetu, na tunapoziharibu, ni hasara ya kudumu kwa kila mmoja wa watu bilioni saba wanaogawana hii sayari, kwa watoto wetu na kwa watoto wao.



Wakulima katika TIST wanaleta mabadiliko, wakifanya kazi kuhifadhi utajiri huu wa kiaina. Kila mti tunaopanda ni asilimali inayoweza kutumika tena na tena. Kila mti tunaopanda hupunguza shinikizo kwa misitu ya kiasili yenye aina mbalimbali kwa sababu twaweza kuitumia badala ya kukata misitu ili kupata kuni, mbao na bidhaa zingine. Tunapopanda miti ya kiasili, kama vikundi vingi vilivyofanya katika mashamba yaliyo kando ya mito na vijito na maelfu ya wakulima wa TIST waalizonayo katika mashamba yao, tunalinda bionuwai moja kwa moja. Aina hizi nyingi za miti ya kiasili pia huwapa wadudu, ndege na wanyama makazi na chakula, wengi wa wale ni muhimu katika

kuchavua mimea yetu, kuwala wadudu waharibifu au kuweka udongo ukiwa na afya.

Wakulima katika TIST pia wanagawana maarifa kuhusu bionuwai. Wakulima wanaulizwa maswali katika cluster katika mpango wa kuanzisha wa kugawana habari kuhusu bionuwai katika maeneo yao. Tunaposoma mengine kuhusu mimea na wanyama wanaotuzunguka, mabadiliko katika maeneo haya na hatari dhidi ya wingi wa aina, twaweza kuchukua hatua kuhifadhi rasilimali hii ya kuajabisha. Tujeni sote pamoja, na tugawane maarifa tuliyonayo, na tupande miti ya kiasili ili kuwe na dunia bora kwetu sote.

## Maadili ya TIST: Nguvu na msingi wa TIST.

**V**ikundi vidogo vya TIST vyajua maadili ya TIST. Bado, ni muhimu kuyafikiria haya maadili na kuhakikisha kuwa tunayafuayilia kiukweli. Kufanikiwa kwa TIST kunazingatia uadilifu na juhudi ya kila mwanaTIST. Tunayoweza kufikia kutategemeana na kila mmoja wetu kufuatilia haya maadili tunapopanda na kuihudumia miti yetu, tunapojiunga na mafunzo na mambo mengine na kuripoti matokeo yetu. TIST ni nani? Ni sisi!

### Sisi ni

- 1) Sisi ni Waaminifu
- 2) Sisi huwa sahihi
- 3) Sisi ni wenye Uwazi
- 4) Sisi ni watumishi kwa kila mmoja wetu
- 5) Sisi ni wenye kuwajibika kati yetu wenyewe
- 6) Sisi ni mfano wa kuigwa
- 7) Sisi ni wenye kujitolea

### Tunavyofanya mambo ambayo wengine wanaona.

- 1) Tunafanya kazi wenyewe katika vikundi vidogo.
- 2) Tunaanzisha na kutumia njia bora zaidi za kufanya mambo.
- 3) Tunatumia vichwa na mikono yetu.

### Tunayofanya

- 1) Tunapanda miti ya aina mbali mbali kwa muda mrefu.
- 2) Tunapata njia za kuboresha afya yetu.
- 3) Tunalima na njia ya Kilimo Hai.
- 4) Tunafanya miradi na biashara ( kilimo endelevu, vitalu, kukuza matunda ya jamii ya machungwa, mbuzi wa maziwa na ukulima, kuku, nyuki, mabwawa ya samaki na kuweka samaki, kulima buu na kadhalika ) zingine
- 5) Tunauza hewa tunayosafisha.

### Tunayojenga

Tukiyafulia haya maadili tunavyoishi na kufanya biashara, tunajenga kitu kizuri ambacho hakikuwa hapo mbeleni.

- 1) Tunapata Kujenga kazi ya pamoja —Kwa kufanya hivi, tunaishia kufanya kazi kama timu.
- 2) Tunapata kujenga uwezo—Tunajenga ushirika, nguvu na mfumo ulio na nguvu
- 3) Tunapata kujifurahia—tunaona matokeo, tunafikia mambo makubwa tunayofurahia.
- 4) Tunapata matokeo makubwa—Matokeo makubwa katika kupanda miti. Matokeo makubwa katika Kilimo Hai na katika miradi na biashara zingine tunazofanya
- 5) Tunapata kutumia gharama nafuu, hata kama tunapata matokeo makubwa



# Mazingira Bora



## TIST

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

**Kikamba Version**

An Environmental, Sustainable  
Development and Community Forestry  
Program.



**Amwe ma Ngwatanio ya TIST Kuma Mitoro mayiaana mbeu ya mikandania kuma kiviuni kyoo. Vau itina nituona Muunda wa umwe woo ula uungithw'a na wikitwe nima ya kusuvia (CF) (19/10/2017)**

### ***Nthini wa gazetti:***

**Mbumbano sya ngwatanio sya muthya wa mwaka. Manyania umwe kwa ula ungi maundu ala mwikite na makaila nikana meyake na kwaka TIST yina Vinya. Page 2**

**Ni ivinda ya kuvanda! Tata kuvanda imwe kati wa miti ino ya kiene ila ni miseo. Page 3**

**Miti nisevasya mawithyululuko kwitu ithyoothe. Page 5**

**Ulumu nthini wa kuyaiika (Diversity): TIST nisuviaa kuyaiika kwina uvathukanu wi kivathukangany'o. Page 5**

**Moseo ma TIST: Misingi na molumu ma TIST. Page 6**



# **Mbumbano sya ngwatanio sya muthya wa mwaka. Manyania umwe kwa ula ungi maundu ala mwikite na makaila nikana meyake na kwaka TIST yina Vinya.**

**N**thini wa TIST nitukwataa vinya nthini wa kuthukuma vamwe na kwosa itambya vamwe, kuthuthania umwe kwa ula ungi nthini wa ikundi na ngwatanio situ ona mbeange.

Kwi mwai wa ikumi 2016, TIST Kenya niyeethiwe na umbano wa ngwatanio syoonthe nthini wa Nanyuki Social Hall, ila yi musyini munene wa Nanyuki, Aimi aingi ala mavikie umbanoni uu nimendeeiw'e na moona wi woni museo wa kutethya aimi na kumamanyisya mbeange iulu wa TIST, kukulya makulyo ma undu mawalanio ma TIST mathukumaa, kuete mawoni ma undu tutonya kwailya uthukumi witu wa aimi na kwimanyisya undu wa nzia nzeo sya uimi na maundu anga maingi.

Kanzu ya Utongoi wa TIST niyoosie mawoni kuma aimini. Na nikweethiwe na woni wa kana wumbano wa muthya wa mwaka wa ngwatanio waile umbanawa kwianana na isio. Ingi nikweethiwe na witano wa kana ngwatanio ila nzeo nisyo syaile uthokw'a nthini wa mbumbano ithi.

Na nundu wa uu isio ii nisyo syolootetwe.

- i) Kisio 1. Ngwatanio sya Meru, Kirinyaga na Embu.
- ii) Kisio 2. Ngwatanio sya Nyeri, Laikipia, Nyandarua, Nakuru na Narok/Bomet.
- iii) Kisio 3. Ngwatanio sya Masaku/Machakos, Murang'a na Taita.
- iv) Kisio 4. Ngwatanio sya Nyamira, Trans Nzoia na Nandi.

Nikana ngwatanio yenyu kwitwa nthini wa mbumbano ii yaile ithiwa ivikiite mawalanio aya;

1. Ngatanio yenyu nonginya yithiwe ikomanaa kila mwai na kutunga livoti ya masavu na wumbano. Ethywa wina ikulyo neena na muthukumi wa ngatanio Janiffer Kithure 0726 319 539
2. Nthini wa ngwatanio yenyu nyusu kana 50% ya tukundi twaile ithiwa na kivuio kya kitanda. Ethywa wina ikulyo kana wienda utethyo kunia muthukumi wa ngwatanio Dorothy Naitore 0726 788662

3. Nthini wa Ngwatanio mwaile ithiwa muvandite miti inyiva 25,000 nthini wa myai 12 mithelu mbee wa Wumbano wa muthya wa mwaka (ACM) Ethywa wina ikulyo kana wienda utethyo iulu wa undu uu kunia muthukumi wa ngwatanio Kimani Mwangi 0722 477 321
4. Nyusu ya aimi ala me ngwaanioni yenyu maile ithiwa maitumia maiko ma kusuvia ngu. Ethywa nukwenda utethyo kana wina ikulyo iulu wa undu uu neena na muthukumi wa ngwatanio kana Charles Ibeere 0720 474 209
5. 75% ya aimi ala me nthini wa ngwatanio yaku maile ithwa mayika nima ya kusuvia (CF). Ethwa nukwenda utethyo kana wina ikulyo neena na muthukumi wa ngwatanio kana Dorothy Naitore 0726 788 662
6. Mainyiva andu 5 kuma ngwatanioni yaku maile ithiwa matonya kukwata uvoo kuma kwa internet. Nthini wa Website ya TIST vamwe na muthukumi wa ngwatanio. Ethywa nukwenda utethyo kana wina ikulyo neena na muthukumi wa ngwatanio kana Eunice Wambui 0724 431071
7. Ngwatanio yenyu yaile ithiwa iseuvitye, kutumia na kutethya na kumanyithya aimi anga iulu wa nzia nzeo ila mutumiite na ikaila mwi kakundi kwa kanzu ya ngwatanio (GOCC) kana nthi yonthe. Nutonya uelesya na kumanyisya iulu wa nzia nzeo ila mutumiite kwisila wumbano wa GOCC kana inthangu ya Mazingira Bora. Ethywa nukwenda utethyo kana wina ikulyo iulu wa undu uu kulya muthukumi wa ngwatanio Jeniffer Kithure kana Martin Weru 0722 846501

Lilikana: Ngwatanio numu yaile ithiwa na miti mivitukithye iinyiva 200,000, tukundi 30-50 tula tuuthukuma na tukomanaa kila mwai, atangoi anyuve na utongoi wa kithyululu kwoneka uendee na indi mwaile ithiwa mitunga livoti ya kila mwikite na iulu wa momanyisyo maseo na uvitukithya waile.



## Ni ivinda ya kuvanda! Tata kuvanda imwe kati wa miti ino ya kiene ila ni miseo.

**M**iti ya kiene ni mithemba yi kivathukany'o ila imeaa ilembetani ya Africa na niyithiawa yaile isioni ithi yianiaa. Niseuvasya muthanga na kuthengeesya tusuni tula natw'o tuilaa iinyu ila syanangaa. Miti mithemba kivathukany'o nimeaa na kwika nesa isioni kivathukany'o.

Kuma semina ya TIST, ala mavikite nimaneenei miti kivathukany'o ila yikaa nesa isioni kivathukany'o na ya kwendeesya na ila yithiawa na vaita kivathukany'o isioni kivathukany'o. Imwe kati wayo nituumineenea vaa itheo, nituutungia ngwatanio ya World Agroforestry centre muvea nundu wa kututetheesya kukwata uvo u u vamwe na kututetheesya kukolany'a mbeu sya miti kivathukany'o na kuseuvya kwoondu wa kuvanda. Kwandaia sisy uvande mithemba imwe yila uuvanda mbua ingi nundu nimiseo na ututethya kwa kutunenga uvo wa miti ingi miseo kisioni kyenyu/kyaku ila yukaa nesa.

### a. **Prunus Africana**

Muti uyu kaingi wonee mitituni yoka na ngii syaw'o syonekaa mitituni ivindani ya sua. Kolany'a ngii ila syina langi wa muthanga mukwatu kuma ungu wa muti kana mbindi ila mbiu kuma mutini iulu. Inda vandu va masaa 24, thambya noyanika kisungini kya waya muunyini vandu va masa ana. Itina wavau vanda nutonya kwia kwa kumikundikia matuni ma maiiu nikana ndikany'ae ethiwa wimitwaa vandu vaasa. Ethiwa nduutwa vandu vaasa wamina kwanika vanda kivuioni na nikumea itina wa sumwa 6 - 8.

### Utumiku

- **Kulungya tusamu:** Muti uyu nutumikaa kulungyatusamu tula twanangaa liu ta iinyu na syingolondo kwa muuke waw'o. Malaa nimanengae nzuki liu ula itumiaa kuseuvya uki, Ngu syaw'o ninzeo muno.
- **Ni Muiito:-** Kiw'u kyaw'o kuma ikoleni/ ikonden yaw'o kithiawa muiito wa mee kuneneva. Matu maw'o nimanyungiawa kuola ikua kana mundu anywa/kumatayuka

nikunengae mundu mea ma liu. Kiw'u kyaw'o kuma makoleni na matuni kyavulanywa nikitumiawa ta ndawa ya ivu na ingi kiw'u kuma ikoleni ni ndawa ya indo.

- **Kusuvia muthanga:** Nisuviaa muthanga yavandwa iatanie nthini wa mitau. Matu nomatumiwe ta vuu na niyanakavasya muunda na noitumiwe ta muunyi wa muthanga na kusiiia kiseve kukua muthanga muundani.
- **Kwanakavya:-** Niseuvasya muuthyi wa kwendeesya muundani.
- b. **Peacock Flower (Albizia gummifera)**  
Muti uyu kaingi withiawa ivauukoni na kula kwi mititu ya mbua na vakuvi na mititu.

Ngii syaw'o noiindwe kana ikalea kuindwa mbee wa kuvandwa munamuno ila syauma ukethwa iyenda kuindwa. Ngii ila siitwe syendaa kuindwa kiw'uni kimuutia nakiyekwa kivoe. Noutile muthya wa mbindi ithi kuitetheesya kumea na mituki. Ngii ithi imeaa nesa kilio kya 70-80% na ikuaa ivinda ya mithenya ikumi. Ngii ithi nisyendaa kukethwa syiomutini kusiiia kwanangwa nitusamu ta ngulu. Ngii/mbindi ithi nitonya kwiwa vandu va ivinda ya mwaka umwe kethiwa nisyongeletwe muu kuisiia kulikwa ni ngulu na syimbalutya.

### Utumiku wa muti uyu

- **Malaa nimatumiawa ta liu wa nzuki,** niwunawa ngu, ukatuwa mbwau, ukaiita ithuma, ukaumwa ngamu kana nguluu, muiito vamwe nakwithiwa ngiisyaw'o syakimwa/syathiwa nitumiawa ta muiito wa ivu na makonde na muiito wa ndetema. Ingi nisuviaa kukuwa kwa muthanga nundu mii yayo nilumasya muthanga,
- **Nitumiawa kwa kuete muunyi,** kuseuvya nzeve ya muthanga ila yitawa "Nitrogen", Nunoasya muthanga nundu niwitaa matu waw'o kaingi,



- **Kwanakavya:** Nitumiawa kwanakavya ona kundu kwingi nuvanda nthini wa misyi minene (mataoni),

Nuvandawa mivakani naingi matu maw’o nimatumiawa kuinda maiu nundu nimakalaataa kwiw’a kwamo.

**c Mukuyu (Olea Africana, African wild olivu)**

Muti uyu numeaa kundu kwi kivathukany’o ta vakuvi na kiw’u, nguumoni sya mbusi, kundu kutekuthungu. Niwumiiasya sua na mbaa. Ngii nzau nitumiawa kuvandwa naethiwa ningii nguu nisii ndawa kiw’uni kithithu vandu va masaa ta 48. Ingi ngii isu nitonya kwatuwa na kw’oko kana ivia yikavingilitw’a iulu nikana syatuke ila itetheeasya kwatua ikonde nikana ikamea na mituki syavandwa. Ngii sya muti uyu nusiwe vandu va myaka kauta.

**Utumiku:**

- **Ni liu** - niinenganae mauta ala matumiawa ta liu na ta mauta, niliwa wa indo nitumiawa ta ngu, kwatua mbwau, makaa, muswaki na nitumiawa kwanakavya.

Nundu wakwithiwa ni yumiiasya sua niwithiawa wimuseo wa kuvandwa kundu kula kumu na kusevya mititu ya kundu kwingi kwa Africa.

Miti ino niyitiawa itonya kwanakavya withyululuko.

**d Waterberry (Syzygium guineense)**

Muti uyu kaingi numeaa kula kwi mbua ya weu na mbua ya iima. Kaingi imeaa kula kwi kiw’u na kuthithu kwina kimeu kaingi nguumoni sya tulusi na syandani.

Ngii syaw’o iyendaa kuiitwa mbee wa kuvandwa na nimeaa nesa itekwaa na kilio kya 80-90% nthini wa mithenya kati wa 20 na 50. Kuvanda imwe mikeveni mbee wa kuvuia nikwithiawa kwaile. Matunda maw’o moaa na mituki na nimendaa ukolanw’a mavaluka oou kuma mutini. Ingi nouthingithye muti nikana mavalukange ukolany’e, na itunda yii yivandawa

yumite mutini nikana yiikasye vinya wa kumea(yiyaile kwanikwa yikany’aa) Matunda aya nomaiwe kikoni kya musumeno kusiiiaa kwasya kiw’u vandu va mithenya minini.

**Utumiku:**

- **Nitumiawa ta liu wa nzuki, kwatua mbwau, ngu, muunyi,** Ndawa (matunda nimaiitaa munyili nayo ikonde yaw’o niyiiiitaa wituuu).

- **Manyu/ukany’o:** Makavo maw’o nimaetae kikw’u kwa mundu kwoou uiutumia ta muiito/ndawa nonginya wonw’e undu utumiawa nala maautumia.

**e Melia (Melia volkensii)**

Muti uyu nduisawa ni muthwa na ivindani ya sua niwithiawa wi uithyo museo wa indo yila kwithiawa liu wa indo utekw’o kaingi kwoou nowithiwe wa vata mbee kwa aimi ma Tist. Muti uyu withiwa na ngwava mbingi nd ikole/ ikonde yaw’o ni wiu muuluku na wianaa uasa wa matambya ta 6 kuvika 20. Muti uyu kaingi niwithiawa weuni kula kumu nundu wendaa mbua nini ya ta 300 - 800mm. Ingi niwithiawa nguumoni sya mbusi sya kavinda naingi mivakani ya kula mbua itavikaa nesa ona kula kwi mavia. Ni witaa matu maw’o keli kwa mwaka na nimuseo kuvandaniw’a na liu (mimea).

Muti uyu wa melia kaingi uvandawa ukavo waw’o kana mwii onakau mwii muti wamea withiawa utumulumu. Ethywa wivanda muti uyu kuma mbindini/ngii nomuvaka uivitilye mwakini ilasye kana mwakini wa nyeki kana utile munya na uyiinda ndandu va masaa 6 mbee wa kuvanda.

**Utumiku:**

- Nimuseo kwa liu wa indo munamuno liu wa mbui, ngu na uithi wa nzuki.
- Matu maw’o nimalungasya ndaa na ngi kaingi kwa tutena twa mbui.
- **Nimuseo kwa kuthungya mititu.**



## Miti niseuvasya mawithyululuko kwitu ithyoothe.

**T**hini wa TIST nituvanaa miti nikana twithiwe sokoni wa nzeve itavisaa na kuta na kuseuvya mbesa. onakau moseo ma miti ikwitu nimaingi. Vaa ve amwe kati wa moseo asu tukwataa kuma miti ino onakau tumivandaa ta ya uta nzeve itavisaa (carbon market). Moseo aa nitutaniaa vamwe na nthi yonthe:

- Miti yithiawa yi mawikaloo ma wanake, na useo mbee nundu niyithiawa yi wikalo wa nyamu na kuinenge liu. Kusuvia uvathukanu nikutumaa miunda yitu na ilembeta yitu yithiwa yi inou na kutune liu na kwailya movinduku ma nzeve.
- Miti niseuvasya nzeve ila tuvevaa kwa kuola kiko kila kilikaa nzeveni, kaingi miti niyumasya nzeve ila itavisaa kuma nzeveni na nzeve ingi thuku ta Nitrogen Oxide, Sulfur dioxide na Ozone. itina wa miti kutumia nzeve ithi thuku nitunengae nzeve nzeo ya kuveva (Oxygen) ila yendekaa kwikala thayu.
- Miti nitumaa vandu voneka vevailu na ve vavata na kwailya mathayu ala mevo na niyongelaa langi kwa nthi na kumyanakavya.
- Miti nietae movinduku ma nzeve na kuola uvyuvu kana uthithu ta sua, mbua, nzeve. Nitetheeasya kusuvia kiw'u kingi kukua, na nzeve kwananga.
- Miti ni iolaa kukuwa kwa muthanga nundu mii yaw'o nitumaa muthanga na kuukwatany'a, kiw'u ukethia nikyaolwa uthangaau ula kiiendete naw'o. Kuete unou wa muthanga yila yita matu na moa na kunenge tusamu/tulinyu tula twikalaa muthangani kukwata liu na kwoou mundu nake akwata liu umwianie yila waima muthanga usu.
- Miti niolaa kineene.
- Miti niseuvasya kiw'u kwa kukithesya. mititu na miti ya kiene yavandwa niseuvasya kiw'u kwa kusiiia muthanga na kiko kukuiiwa kula kiw'u kitwiikene kya kutumia. miti niyikiaa muunyi na kusiiia kiw'u kukuwa ni nzeve kwoou uyinthia kivakuvu kwa mundu kwisa na kukitjumia.

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## Ulumu nthini wa kuyaiika (Diversity): TIST nisuviaa kuyaiika kwina uvathukanu wi kivathukangany'o.

**B**iodiversity - uthwii wa nthi ni wavata kwa uima wa mawithyululuko. Kivathukany'o ni kya vata muno nundu wa kuete matatwa kivathukany'o ta yua, iinyu/ngulu tusamu tula twanangaa mimea kana movinduku ma nzeve. Nundu kivathukany'o na moalyuku ni mavata, nowisilye anu kila vandu nimeuthukuma kusuvia uthwii wa nthi (nature). Onavala kila muthenya nundu wa mawiko maitu andu nituendee na kwasya kivathukany'o kiu kya mawithyululuko nundu wa kutema miti, isio sya kiw'u kutumika nai na mititu

ila yumaa mbusi kwanangwa na kutumiwa nai kwa muthanga. Ni twonaa wasyo uyu kila muthenya. Isilye ni mithemba yiana ata ya miti, tusuni, nyamu woonaa tene wimunini kana asyai maku mawetaa moonaa yi kw'o yu? Kwi milioni kenda sya mithemba ya syindu, tusamu, nyamu syaikw'o nayu vaii, nitwasyanangie nayu iiketiwa vo ingi nthi yonthe. livo naiikethiwa ingi ona ethiwa nisyatumikaa ikaatumika kwa isyo ila ingi syukite nundu nisyaaanangiwe.



Aimi ma TIST nimaendee na kuete kivathukany'o kwa kuthukuma vamwe kusuvia Uvathukanu uu wa syindu/kundu/ivinda (diversity). Kila muti wa vandwa ni wavata nundu niuendeeasya kisuyo kya muti usu, kila muti wavandwa nusuvia mawithyululuko na mititu nundu vandu va kwenga mititu tuimatha ngu na kila kiwatikanaa mitini nituutumia ino yitu tuvandite kwa nzia ya kusuvia. Yila twavanda miti ya kiene na utee wa mbusi na ta miti mithungu kwa vamwe kwaw'o twithiawa tuisuvia mawithyululuko na uvathukanu ula wivo uendee na kwithiwa. Miti ino ya kiene nisuvia muthanga, ikatune liu, ikithiwa yi wikalo wa nyamu na nyunyi, wikalo wa tusamu ta iinyu ila ietae unou wa muthanga na syingolondo na tusamu tungi twingi

na kwikalya muthanga wi munou.

Aimi ma TIST nimaendee na kuaiana umanyi ula menaw'o iulu wa uvathukanu uu wa isio na mawithyululuko. Aimi nimaendee na kwithithwa mutiani nthini wa ngwatanio sya isio (clusters) nthini wa wia wambee wa kuaiana umanyi iulu wa Uvathukanu wa uthwii wa nthi isioni syoo. Yila twamaya iulu wa miti na nyamu ila itwithyululukite, kivathukany'o kila kiendee na kwithiwa, na kutisw'a kula kwivo kwa Uvathukanu uu, nitwosaa itambya ya kusuvia uvathukanu uu wa uthwii wa nthi. Tukei ithyoothe vamwe tu aane umanyi na utuika ula twinaw'o iulu wa miti ya kiene, na mawithyululuko maitu na mothwii maitu ma nthi kwailya l nthi nundu wa useo wa yu na uni.

## Moseo ma TIST: Misingi na molumu ma TIST.

**I**kundi mbindi sya TIST nisyisi mawalany'o na miao ya TIST. Ingi ni useo kusisya vaita / mawalany'o aya ma TIST nikana twikale twisi nesa na kwikala namo undu vaile. Kwaila kwa TIST kwithiawa kwi ungu wa molumu na mawalany'o/misingi ino na kila umwe nutataa nikana amivikie kwoondu wa useo wa kila umwe. Kila tutonya uvikia kiendanasya na undu kila umwe ukuatiia mawalany'o aya na kusuvia miti na kwithiwa e umwe wa ala memanyiasya kuvanda na mawiko ma tist kuvikia matunda ala twiete mbee.

### TIST Nuu? Twi:-

1. Twi aiikiku
2. Twithiawa na uw'o
3. Twikaa maundu maitu kyenini
4. Twi athukumi umwe kwa ungi
5. Twithiawa tuisuviana umwe kwa ungi
6. Twi ngelekany'o
7. Ni twi yumitye

### Undu twikaa maundu ala andu angi monaa.

1. Tuthukumaa twi tukundi tunini
2. Nitiaa mawalany'o na kutumia nzia nzeo
3. Nitutumiaa mitwe na moko maitu.

### Twikaa ata

1. Nituvandaa miti kivathukany'o vandu va ivinda iasa.

2. Nitumathaa nzia sya kwailya uima witu
3. Nitutumiaa nzia ya uimi wa kusuvia
4. Nitwikaa maundu angi vamwe na viasala ingi (ta uimi uungamiika, ivuio, kuvanda misungwa, kuithya mbuis sya yiia, kuithya nguku, kuithya nzuki, kuithya makuyu na iinyu sya kuseuvya ndii na maundu angi maingi).
5. Nitutesaa nzeve itavisaa (Carbon credits)

### Kila tuseuvasya

Yila twaatiia mawalany'o aya yila tukwikala na kwika viasala nituseuvasya kindu kiseo kila kiteiivo mbeeni

1. Nituseuvasya kuthukuma vamwe - nundu wa kwika maundu vamwe muthya withiaa twithukuma ta kikundi
2. Nituseuvasya ngwatanio - nitwikianaa vinya na kuseuvya ngwatanio numu.
3. Nituseuvasya muyo - yila twavikii walany'o witu ithyoothe nitwiwaa muyo na kila umwe ayendeew'a
4. Nituetae usyao munene - Nitukwataa usyao munene nundu yila twavanda miti ti kuta nzeve kwoka tutethekaa nakw'o indi ve ngu, unou wa muthanga na kuseuvya mawithyululuko kwa kila umwe.
4. Nituetae utumiku munini na kuvikia matunda manene.

# Mazingira Bora



# TIST

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

**Kipsigis Version**

An Environmental, Sustainable  
Development and Community Forestry  
Program.



**Membraekab mitoro kilasta kobchee ketikab Macadamia en kabeti ne nyuana. En batetab yoton komiten imbaretab (CF) ne kigirechi beek nebo a'genge en membaek.**

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# Tuyeitab kenyit nebo kilasta: Ongebcheei kelunoikiyok asi kotegak kilasta ak kigimit TIST.

**E**n TIST kenyorunen kimnot ye kiboisie en kibagenge ak ye kibchei keretab kelunoik che kenyoru en TIST che kitinye en kurubisiek kiyok en kilasta ak kebetai.

En October 2016, ko kimiten tuiyet nebo TIST kenya tugul en Nanyuki social Hall. Nanyuki Town. Kinyorunen temik che kimiten yoton che chang koguyetab TIST ak ole wendito bandabtai en TIST, kitiye biik tebutik ak kabuwate ole kimuchi ketoretito temik, konetisosik koyob biik che terchin agobo boisiet ne kararan.

TIST Leadership counci ko kiyor ak ichek keret en temik. Kibit anyun tetet kele nyolu komiten tuiyet nebo keretab kenyit en region age tugul. Kiyonchin kele kilasta ne kayai nemie konyoru boroinde nebo konetisiet.

Kou regions che kigiyomo,

- i) Region 1. Kilasta koyob Meru, kirinyaka ak Embu.
- ii) Region 2. Kilasta koyob Nyeri, Laikipia, Nyandarua, Nakuru, Norok/Bomet.
- iii) Region 3. Kilasta koyob Machakos, Muranga, Taita.
- iv) Region 4. Kilasta koyob Nyamira, Tran Zoia ak Nandi.

Asi komuchi kilasta koiti mogutichon, komoche kobois en kibagenge ak kotuyosi moguyik kou.

- I. Nyolchin kilasta koitin tuiyet en kila arawa ak koyoto rebot tuiyet ak Legut.Yeimoche

toretet inyoru kiboitiyotab kilasta anan ko Jeniffer kithure 0726319539.

2. Angot kotinye kilasta,nusu, 50%en kurubit kotiye kabeti ne kanabtaa ke nyoru Dotothy Naitore 0726788662.
3. En kilasta koyolu kotiye ketik 25,000 che kogotar kenyit igemin, kotomo koit keyai tuiyet nebo keretab kenyit. Nye imoche toretet inyoru Kimani Mwangi (0722477321).
4. En temik chemi kilasta ko nusu konyolu kotinye koikab maa chebo kasari kinyoru Charles Ibeere 0720474209.
5. En temik en kilasta konyolu 75% kotinye imbarenik che makibat (CF) kinyoru Dororthy Naitore 0726788662.
6. Kimoche komiten biik mutu che imuchi koboisien TIST website ago nemo kiboitiyotab kilasta, kinyoru Eunice wambui 0724431071.
7. Nyolu komiten korurugutik chebo kilastaisiek che teche GOCC asi komuch kobchei wolutik che miten en GOCC ak en mazingirabora. Nemo kiboitiyotab kilasta, kinyoru Jeniffer Kithure or Martin Weru, 0722 846501

Ongibwat kele kilasta mekim konyolu kotinye ketik 200,000 che kigiit ak kurubisiek 30-50 che boisie ak koyoto woluti tugul chebo kilasta en kila arawa.





## Kasarta nebo minset ! Yom ketichu Indigenous.

Indigenous trees ko ketik che kirute en Africa koboche keny' amun enn noton konomeke ak emon'iton. Imuche kochob ngu'ngunyek ak koik ole menyen tasiritik ak tyong'ik che meng'echen. Ketik che terterchin korutu en ole terchin.

Koyob TIST seminars ak tugoshek kokonai membaek ketik che kororon che indigenous che nomeke ak komoswek chuton. Alak en chuton kosirotin en ngweny yon, kongoi en World Agroforestry Centre en ngalak che kikonech agobo seed collection ak preparation asi koruruyo. Kaikai yom iboishen alak en chuton en kasartab minset ne isubu ak kora inaisiyech agobo indigenous trees che miten komoswek kwok!

### a. *Prunus africana*.

Sana sana kenyoru en forest reserves. Keswek kwai kenyoru en osnet en kasartab asis . Icherun che biriren kityo anan en ketit anan ko che mi ngweny.

Icherun pulp , kindo bek en saaishek 24, akityo iun en wiremesh. Asi kosoyo, inde ole miten koristo ak urwet en saaishek 4.

Boishen sokek iter komaistoke bek en keswek yon kibokemine . Min directly kochut seedbed anan ko pots.

Asiko rut kotore weekishek 6 - 8.

### Boishonik kwai:

- Bore pest: imuche kowon anan kobar pest cheu. Aphids, nematodes (che nome minutik) angamun en smell nenywanet. Kiboishen ko kwenik.
- Kerichek: Bek chebo keti keboishen kiyoe prostrate enlargement. Sokek keboishen keisto fever anan ko keboishen keimproven appetite. Bek keteshen baldet ab ketoton ak bek chon biriren keboishen kinyoen moet; kora extracts chebo tabandab ketit keboishen kinyoe tuga.

- Keteren ketik komala bek ngungunyek: Ketik komuche korut en ridges ana ko terraces, koiku uronok che kororona k koter koriswek che yechen. Tese ng'ungu; nyek sokek kimuche keboishen koik mulch ak green manure.

- Ornamental: Keti kochobe biyut ne karan en compound.

### b. *Peacock Flower (Albizia gummifera)*

Sanasana kenyoru ketiton en lowland ak upland rainforest anan ko olenekityin ak osnoshek.

Keswek che tako fresh komomokchin ke treatment alaktugul. Keswek che kakekonor kindo bek che burgei, akityo kide ko. Kimuche ke-'nicken' seed coat en cotyledon end asi kosib korut ketit. Rutunet ab ketiton kokararan, 70% - 80% en betushek 10. Keswek konyolu kisib kicher en ketit kotomo konam tyongik che meng'echen. Kswek kwai kimuche kekonor agoi kotar kenyit, en ole momiten be kana ko tyongik che meng'echen.

### Boishonik kwai:

- Bee-forage, kwenik , bokonik , gum, tannin, kerichek (bek chekicherunen ketiton konye moet ak komuche kobos malaria), tere ng'ng'unyek komala bek (tikitik kwai kotere bek 'ab robta komal ng'ung'unyek).
- Urwet, nitrogen fixing (improveni ng'ung'unyek), naat ko good-mulch tree angamun sokek kwai kochoruke en season nebo sheding.
- Ornamental (kimuche kemin keti en avenues en townishek)



- Kimine en tobonwokik, sokek kwai kotese ruret 'ab indizinik.

**c Olea africana (African wild olive)**

Kinyorunen keti, tobonwokik 'ab oinoshek ana ko tabaita anan ko open woodland. Kiboishen keswek che fresh yon kimine. keswek ceh yosen kindo bek koroon en saaishek 48. Kitreaten keswek chutonen en oratinik cheu kerolleni en koik anan kecracken. Istoet ab endocarb kotoreti en germination. Keswondoni kimuche kekonor agot kenysishek cheite oeng'.

**Boishonik:**

- Omitwokik: Olive products cheu olive oil ak olives che kiyome. Fodder: kititon sanasan koyome tuga. Kwendet, bokoyot, mkaa, chepsitwet.
- Reclamation: Angamun ketiton komuche komuita kasarwek 'ab asiista kimuche keboishen en ole kiketil ketik en semi-arid zones en Africa.
- Ornamental: Kitit 'ab olive kokororonite imbarenika ak emit komugul.

**d Waterberry (Syzygium guineense)**

Kititon kinyorunen lowland rain forest ak mountain rain forests. Saidi korutu en ole miten bek, anan ogo en oinet orit, anan ko tobonwoki 'ab oinoshek. Keswek komomokcinke pre-treatment, angamun rutunetnywai kokararan. 80 - 90% en betushek 25 - 50. Nyolu kemin directly koba pots. lokoek komuche koyachekitun, en noton koyoche kicher en haraka yon kokolulyo en ketit .Anan ko ne'mo non kitumtum ketit kororok lokoek. yoche kemin keswek saait noton, anan angot

komoimugoksei inde keswek choton ole mitin sawdust che miten bek

**Ole kiboishoito:**

- Bee forage, bokoiyot, kwendet, urwet, kerichek. **Note:** lbwat ile tabonwokik 'ab ketiton komuche kore meet, en noton koyoche kenyor chito ne ingen asi keboishen koik kerichek.

**e Melia (Melia volkensii)**

ketiton ne termite-resistant tree kokonu fodder yon bekunote arawek 'ab asista , yon tuten fodder en ketik alak , komuche kobunchi maana en temik 'ab TIST. Keti chuton , open-crowned, chetinye gray bark, komuche korut agoi 6 - 20 m. Melia kenyoru sanasan en acacia-commiphora bushland che'tinye rainfall nebo 300 - 800 mm. Kimuche kenyor kora en seasonal rivers anan ko rock outcrops . Sokek kwai koistoke mara mbili kila kenytit ago kimuche kemin ak minutik alak.

Melia kimuche kinam en tilet 'ab tikitik, ang'andan tilet 'ab tikitik komuche kochob ketit ne mo stable. Yon kakimin en keswot, koyoche ke scarifyen keswot noton (keboishen mat anan ko suswek che yonyotin) anan kenicken keswondonoton akityo kinde bek en saaishek 6.

**Boishonik:**

- Fodder nebo tuga ak nego; Bokoiyot, anan kechoben beehives.
- preparation nebo sokek keboishen en wonet 'ab flys ako tam mkoboishe sanasana en goatkids.
- **Kararan ko ketit 'ab agroforestry.**



## Ketik kokororonite emet nyon komyeit.

**E**n TIST, kemine ketik asi ketestch en carbon markets akityo kesich chebkondo chebo carbon sales .lakini manufaachebo ketik kochang ochei.!

lchochu ko alak en manufaa che kinyoru en keitik;

- ❑ Ketik ko ole menye tyongik che chang' chebo flora ak fauna. Ikochin tyongik ole urenke ak ole unyen ke asi makibar . ribet 'ab osnoshek ko toreti minutik chok komosib komeyo yon miten climate change.
- ❑ Ketik kokonu koristo ne kararan ak koisto koriswek che yachen en emet. Ketik koisto carbon di oxide chechng' an emet ak koriswek che yachen cheu sulfur dioxide, ozone ak nitrogen oxide. Akityo kokonech oxygen nekimokchinike .
- ❑ Kororonindab emet ketesen minet 'ab ketik , ne en let kotese kororonindab sobet . yon nyalil emet kokararan.

❑ Ketik kocontroleni atepab emet kou asista, koristo ,ak robta. Imuch koter floods, landslides, ak koriswek che yachen . ketik kotere floods yon kochomchi bek koba ngweny, ne katarwae en barak .

❑ Ketik kobose ibet 'ab ng'ung'nyek yon korobon . tikitik kwai koyoe ng'ung'nyek konamke ne katarwoe ak bek. Ketik kora koimproveni fertility nebo ng'ung'nyek. Ng'ung'nyek che kororon kokochin minutik omitwokik asitya en let koik echek chesiche health nekararan.

❑ Isto bolet . Noise pollution kimuche kebos yon kakimin ketik .

❑ Maket 'ab bek che tililen kimuche kenyor yon kokimin ketik che indegenous.. ketik kokochin uronok bek 'ab oinoshek , agityo koyai kokoititekibun akityo kobos evaporation nebo bek.

## Kimnotet en terchinoik : TIST kotere biodiversity.

**B**iodiversity-mokornotet 'ab terchinet 'ab nature -kobo maana en environment. variety ko bo maana sanasana yon miten

yomutik ak wolutik en emet , kou asista newon, pests, anan ko climate change.angandan kararan biodiversity, ko kila betut angamun en tuguk che kiyoe echek, ketese ta kibete species chebo ketik alak, emotinwek che twonen keistoen bek, ak ketore resources chemiten emet. kikere kobetoniton kila betut. lbwat agobo chongindab minutik, toritik, ak tyongik che kitam ikere kin ko imingin lakini ko momiten en inguni anan ko

kikotutikenekibun? Miten nine million species chebo organisms en emoniton nyonet, ak yon kakebar choton, kokoibet chito agetugul en ngwony agot lakog che takesiche komoitchin koker.

Temik 'ab TIST koibu walet, kokile ke korib diversity initon. Ketit agetugul nekimine ko renewable resorses. Ketit age tugul nekiine kobose pressure ne miten nature , diverse forest angamun kimuche keboishen choton nekotokitile ketik , bokoinik, ak products alak. Yon kakimin ketik che indigenous, kou ole tinye groupishek



chechang' en riparian buffer groves ak thousands en temik 'ab TIST kotinye imbarenik kwai , kiribe diversity koechek. kora diverse ketik che indigenous kokonu menget ak omitwokik in tyongik, taritik, achtoreti en pollination chebo minutik, ome pests, anan koribwech ngungunyek chok.

Temik ab TIST kora konete kokwotinwek agobo biodiversity. Temik keintervieweni en clusters en pilot project kebchei ngal agobo biodiversity en komoswek kwai. Ongenam ke eun tugul, agebchei ngomnotoniton, ak kemin ketik che indigenous asi kechob emet ne kararan.

## **TIST Values: Kimnotet ak foundation nebo TIST.**

**C**hechang' en groupishek chemengechen kongen agobo TIST values. Kora kobo maana keker values ichuton asi kenai angot kisubi. Boratet 'ab TIST kotienke kokilet 'ab ke nebo chi tugul nemiten en TIST. TIST ko ngo? Eчек ko ki!

### **Eчек ko ki**

- 1) Kibo imanit.
- 2) Ki accurate en che kiyoe.
- 3) Kiyoe kasit en ole maungat
- 4) Ki kiboitinik ab alak .
- 5) Ki accountable agobo agetugul en eчек .
- 6) Ki kborunet.
- 7) Ki konuke en kasit.

### **Ole kiyoitoi kasishek kokoker alak .**

- 1) Kiyoe kasit ko eчек en groupishek.
- 2) Kinomchinike oratinwek che chechoget.
- 3) Kiboishen metoekchok ak eunekchok.

### **Kasishek che kiyoe**

- 1) Kimine ketik che terterchin en long-term

- 2) Kicheng'e oratinwek chekimuche keimprovenen health neyonet
- 3) Kiyoe Conservation Farming.
- 4) Kiyoe kasishek alak che (sustainable agriculture, nurseries, citrus growing, dairy goats and farming, chickens, bee keeping, fish ponds and fish keeping, silkworm farming, etc.).
- 5) Kioldoi carbon credits.

### **Eчек ko ki**

### **Yon kakisib values ichuton chebo TIST keyoe**

- 1) Kechobe Team Work-yon kakiyai kou niton ke iku teamit nekararan.
- 2) Kechobe Capacity-kenyoru organization , kimnotet ak system.
- 3) Kechobe Enjoyment-kikere rurutik ak keyai tuguk che yechen
- 4) Kenyoru rurutik chechang'-rururtik chechag' en mine tab ketik . results che yechen en Conservation farming ak projects alak che kiyoe .
- 5) Kiyoe bong'onutik ne miten ng'wony ak kenyoru rurutik chechang'.