



MAZINGIRA BORA

December 2009 Newsletter



www.tist.org

ENGLISH VERSION

The International Small Group and Tree Planting Program (TIST)

An Environmental, Sustainable Development and Community Forestry Program.



TIST Clusters Trainers and Quantifiers in a recent seminar: Attend your next cluster meeting.

TIST Values: We are Honest. We are Accurate. We are Mutually Accountable. We are Transparent. We are servant to each other.

Inside this Newsletter

- ✓ Join a cluster or make a cluster!
- ✓ Nursery care and protection.
- ✓ Good trees for TIST indigenous trees.

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Or

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- TSE Timau - 0725 - 527 831

- TSE Imenti North - 0726 - 319 539

- TSE Igembe - 0724 - 625 795

- TSE Tharaka - 0721 - 865 864

- TSE Kirinyaga - 0721 - 719 353

- TSE South Imenti - 0723 - 817 552



Join a Cluster or make a Cluster!

It's an exciting time to be a part of TIST. We have planted millions of trees, and, like the trees, TIST is growing in Kenya. New clusters are forming in the Mara area and in Mbeere, and groups around Mt. Kenya are planting more trees and doing more conservation farming.

As we grow, we want to make sure that our roots are strong. This is why we are organizing into clusters. The TIST Cluster is not a model; it is the new way we are organizing TIST to make us even stronger.

Joining a cluster, or recruiting groups to form a cluster has many benefits. Cluster members can take part in exciting new programs, have more opportunities to take on servant leadership roles, have better training and quantification. With clusters, costs are lower so that more money will come to TIST farmers.

Take a look at some of the benefits of clusters below. At your next cluster meeting, talk with other groups about how to make your cluster stronger!

In the coming months in this newsletter, we will share more information on actions you can take to make your cluster stronger.

First, what is a TIST Cluster?

A Cluster made up of TIST Small Groups. It is complete when it has:

- 300-400 TIST farmers within walking distance of each other
- At least 200 hectares of land for tree planting
- At least 200,000 live trees (about 40 groups with 5,000 trees each) Monthly meetings where

TIST participants share Best Practices Excellent education and training for all Small Groups Accurate and transparent Quantification of the Small Group results Rotating Cluster Leadership that provides administration and communication

Why should I join a cluster or make a cluster?

Lower costs, bigger results

In clusters, we can have better training and quantification with lower costs. Right now, travel costs for TIST are very high since trainers and quantifiers have to travel far to reach groups. The more we spend on travel costs, the less we can pay Small Group members. Today, we spend more money for travel to reach groups than we do paying the farmers who planted those trees! Clusters eliminate

the extra travel costs because quantifiers and trainers only serve the groups they can reach on foot.

Because all groups will be within walking distance, it will be easier to have practical demonstrations and visits to demonstration sites in training. Seeing and doing is much more powerful than talking! Better training will help us reach our goals.

Because cluster costs are low, once a cluster has a minimum number of trees, the cluster may choose to count trees and pay groups within their cluster who have smaller numbers of trees. In clusters, since service costs are low since we travel on foot, we can choose to keep TIST open to more people.

Clusters increase the opportunities for TIST members

Being in a cluster means you have new opportunities to learn and lead. Small Group members in clusters can grow in skill and responsibility as rotating elected cluster representatives, as cluster trainers, and cluster quantifiers. As TIST grows, we will need more trainers, more cluster quantifiers, more baseline quantifiers, more TSEs, and more auditors. New servant leaders will be chosen in part by cluster members from strong clusters that are achieving big results. In your cluster, you will have new access to training and to serve TIST in new ways.

Groups in clusters can take part in new programs

This year, thousands of TIST farmers received a loan to buy maize seeds for their Conservation Farming in our Conservation Farming Seed Loan and Reporting program. In the next few months, we will start new programs on indigenous trees, energy saving jikos, and on preventing erosion in areas near rivers and streams. To be eligible to take part in these and in the many new programs, your Small Group must be part of a cluster.

We are on our way! Join the TIST train!

Thanks to our hard work, we are achieving big results. Clusters are working well: clusters have been paid. Clusters have taken part in the CF Seed Loan. Clusters are learning about biodiversity and the greenhouse gas market. As our clusters grow in capacity to train, quantify, and manage, we are looking forward to becoming self-governing and experiencing all of the benefits of clusters. Let's all work to make our clusters stronger.



Nursery care and protection

Nursery care and protection is important in raising up of healthy seedlings. The healthy seedlings grow up to become healthy trees which help in giving us higher returns. Our success in earning higher profits from carbon credits will also depend on how healthy and big our trees will be.

It is therefore, important to take care of our trees right from nurseries. Some of the practices include;

A. Pest control

Organisms like fungi, bacteria, viruses, nematodes and insects (e.g. ants, termites, aphids) can damage seedlings.

A common nursery disease is called *damping off* and is caused by fungi. It causes seeds to rot before germination, roots to decay before the shoot appears and the shoot to become thin and collapse. The typical symptoms are

- The thinning and death of the stem at ground level
- The subsequent wilting and falling over of the seedling.
- The leaves turn yellow.
- The seedling eventually dies.

Control damping off by:

- Changing seedbed soil every 1-2 years. Loosening the soil also helps.
- Immediately removing affected seedlings and burning them
- Avoiding excessive watering
- Ensuring good drainage
- Providing better aeration
- Weeding effectively and on time
- The soil should not be overly fertile. The proper ratios of the soil should be followed. Reduce nitrogen content by applying less manure.
- There should be enough spacing between seedlings to avoid overcrowding.
- Make sure that the nursery is clean at all times.

Diseases can also be managed by the proper

use of chemicals and insecticides. It is best to use natural insecticides as chemical ones can be expensive and may damage the environment. E.g.

- Application of ash.
- Ensure the seedbed is clean to avoid encouraging pests.

B. Root pruning

Move the seedlings around once a week so that the taproots do not sink into the ground and need to be cut. A healthy taproot helps the trees get water after transplanting.

When the seedlings are growing in the pots after 3-4 months (depending on species and climate) their roots start to grow out of the bottom of the pots. These roots should be cut every 1-2 months with knives. Note that care must be taken when lifting the pots so as not to damage the young roots.

Alternatively, try the raised nursery beds (see July notes) which reduce the need for root pruning as the roots drop off naturally.

C. Watering, weeding and shading

- Sprinklers should be attached to the watering cans so as not to cause soil erosion.
- Avoid too much or too little watering.
- Water every morning and evening when possible.
- Be careful not to damage roots when weeding.
- Do not leave the weeding too late. Weeding is necessary as the weeds increase competition for light, soil water and nutrients.
- Some seeds require shading – make sure simple shades are constructed. During the rainy season, cover the seedlings using dry grasses or hay. Seedlings should be moved away from under trees so water does not drip onto the seedlings and cause damage.
- Fence off the nursery to protect from cattle and playing children.
- Let the seedlings grow to about 30 cm before transplanting. This may take from 1 month to 6 months. See transplanting notes.



Good trees for TIST: Indigenous Trees

This month, we begin a regular feature on indigenous tree species. There are many useful indigenous trees. Tree species that have developed in Africa and are well suited to the environment they developed in. They may improve soil and attract birds. Different trees will grow better in different places.

Each month, we will share information on a few specific indigenous trees, how to grow them, and their benefits. We include the botanical name of the tree as well, since this name is useful for talking with others who speak different languages. If you are interested in growing these trees, check with your group and your cluster to see if you can find members of the TIST family who can share seeds and their best practices.

The best trees for TIST need to be long-term trees. Trees will not be large to get carbon credits until they are mature, maybe after 20 years. When a TIST tree is cut down there are two impacts for the program:

- a. The group will no longer be paid any money for the tree, as only live trees absorb carbon dioxide.
- b. Remember when Clean Air Action Corporation gets money from selling carbon credits, all the costs of the program have to be covered first. Then 70% of the profit goes to the groups. This is stated in the contract. If CAAC has spent a lot of money paying for groups that cut their trees down they have lost a lot of unnecessary money. These costs have to be paid for and so there will be less money for the groups who kept their trees alive. So cutting down TIST trees hurts the program and the small groups.

From TIST Seminars and Cluster meetings, the TIST participants have identified the below types of trees are very good in their areas

Indigenous trees

- a. **Prunus Africana** (Kikyuyu: Muiiri, Kimeru: Mweria)

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: 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 cancer. 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 stomach-ache; 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*, Kikuyu: Mukurwe)

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

Either untreated or soaked seeds are sown. 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, fuelwood, 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 aesthetic purposes), boundary planting, the leaves quicken the ripening process in bananas.

c. Olea Africana (African wild olive, Kikuyu: Mutamaiyu, Kimeru: Muthata)

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, tooth brushes 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*, Kikuyu: Mukoe, Kimeru: Muriru)

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: Food (fruit), bee forage, timber, fuelwood, shade, medicine (fruit is used as a remedy for dysentery, while a decoction of the bark is used to prevent diarrhoea). Note the poisonous bark has been reported to cause human deaths, so advice should be sought from people experienced in using the products from this tree.

Tree: *Cordia africana*, Muruga

Cordia africana is a small to medium sized evergreen tree that is very useful for agroforestry.

Growing *Cordia*:

Collect ripe fruits and sun dry until the coat is hard. Rub together to remove seed coat. Pretreatment is not necessary. Germination can be spotty, and may take three weeks or more, but seedlings grow well after germination.

Seedlings require 4-6 months in a nursery before transplanting. Once started, the tree grows fast and well

Uses:

- 1) Shade: *Cordia* is an excellent shade tree for crops and also provides good mulch.



- 2) Honey: Bees love *Cordia's* sweet flowers, and make high-quality honey from them.
- 3) Wood: light but durable. Used for beehives, furniture, tool handles, and as firewood.

Albizia gummifera, Mukarwe, peacock flower

Albizia gummifera is a large deciduous tree that provides fodder, mulch, and firewood and improves the soil.

Growing *Albizia*:

Albizia is easy to grow. Seeds germinate in one to two weeks. Seedlings may be transplanted in 4-5 months.

Uses:

- 1) Fodder: leaves and young branches can be used for fodder.
- 2) Improving soil: Because *Albizia* is leguminous, it adds nitrogen to the soil, improving soil fertility. It sheds many leaves, which make good mulch.

- 3) *Albizia* leaves quicken the ripening process in bananas.

Prunus africana, Maria, red stinkwood.

Prunus africana is a large evergreen tree that has great value medicinally. It is becoming rare because it is being harvested unsustainably. It generally requires over 800 mm of rain per year.

Growing *Prunus africana*:

Remove seeds from mature fruit. Germinate on sand or a sand/sawdust blend. Germination may take 3 weeks or longer.

Uses:

- 1) Medicinal: *Prunus* is used for many medicines, including treatment of prostate diseases.
- 2) Wood: *Prunus* wood is heavy, hard, and durable, and is useful for heavy construction, furniture, and
- 3) Honey: flowers produce good nectar for bee forage.

Local name	Scientific name	Use
Muruga	<i>Cordia africana</i>	Timber, moringa, totally different from Moringa genus.
Mukurwe	<i>Albizia gum</i> ; peacock flower	Fodder, easy tree to grow.
Mwiria	<i>Prunus africana</i>	Important medicine, made from the bark, though leaves are effective.
Muthaiti	<i>Ocotue usambarcusis</i>	Excellent quality timber.
Mukoyou	<i>Ficus sur.</i> , or <i>Ficus sycamorus</i>	For hotter, drier areas
Muu	<i>Mankhaima lutea</i>	Fuel.
Mugumo	<i>Ficus thoorningii</i>	Sacred tree, great for birds, improving biodiversity



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KIMERU VERSION

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TIST Clusters Trainers na Quantifiers mari seminar: Ririkana mucemano wa cluster yangu uria uroka

***TIST Values: 1. Turi etikua. 2. Turi antu ba uuma bugwa.
3. Turi antu ba weru. 4. Turi atethaniria. 5. Turi amenyaniiri.***

Ndene ya gazeti iji

- ✓ Tonya kiri cluster kana uthithie cluster
- ✓ Umenyeeri bwa nursery
- ✓ Miti imiega ya TIST;miti ya kienyeji

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Tonya kiri cluster kana uthithie cluster

Ni igita ririthongi rina gikeno mono kwithirwa uri ndene ya TIST. Nituandite miti milioni inyingi na ta miti iu, Tist nigukura ndene ya Kenya. Cluster injeru nikuthithua naria Mara na Mbeere na ikundi akui na mulima jwa Mt. Kenya nibikuanda miti ingi na bakithithagia urimi bubwega.

O uria tugukura , nitukwenda kumenyeera ati mri yetu ina inya. Nikio nontu tugucibangania kairi na cluster. Cluster ya TIST ti gintu gia gucionania, ni njira injeru iria tukubanga TIST nayo nikenda tugia inya nkuruki.

Gutonya kiri cluster kana gutonyithia ikundi bithithia cluster ina baita inyingi mono. Amemba ba cluster bakomba gutonya kiri mibango imieru imithongi, bakona kanya ga gutongereria bangi, bakaewa moritani bwega nkuruki na kinya uteri bwa miti bukabua nkuruki. Na cluster, utumiri bwa mbeba bukanyia nikenda mbeba kiri arimi ba TIST cikongereka.

Tega baita imwe cia TIST aja nthiguru. Kiri mucemanio jwenu jwa cluster, arieni na ikundi bingi mantu jegie uria bumba kuthithia cluster yenu igia inya! Mieri iji ijite ndene ya gazeti iji, tugaana mantu jangi jegie matagaria jaria umba kujukia kenda wikira cluster yaku inya.

Mbele, cluster nimbi?

Cluster ithithagua ni ikundi bibinini bia TIST. Iujuraga riria iri na:

Arimi ba TIST 300-400 baria batitariene na guntu gukunene nkuruki ya aria gwitiwa na maguru.

Nkuruki ya 200 hectare cia munda jwa kuanda miti.

Nkuruki ya miti iri mwoyo (ikundi nkuruki ya 40 o gikundi kiri na miti 5000)

Micemanio ya o mweri naria antu ba TIST bakagaana mitire iria miega buru ya kuthithia mantu mwanya mwanya.

Umenyo na uritani bubwega kiri ikundi bionthe.

Uteri miti bwa mma na butina mawitho bwa miti ya ikundi bibinini.

Utongereria bwa kuthiuruka buria buejanaga wathani bubwega na kumenyithania mantu

Niki mbatiri gutonya kiri cluster kana kuthithia cluster?

Utumiri bwa mbeba bubunini mantu jamanene.

Tha iji ngarama cia ngari cia TIST ni inyingi mono nontu aritani na Atari miti nibetaga kuraja mono naikenda bakinyira ikundi bibinini. O uria tugutumira mbeba inyingi nou mbeba iria tumba kuria mumemba wa gikundi ikunyia. Narua nitugutumira mbeba inyingi nkuruki kiri ngarama cia njira kenda tukinyira ikundi nkuruki ya iria tukuria arimi bau baandite miti iu. Cluster niciitaga buru mbeba iu cia ngarama nontu Atari miti na aritani baritagira ngugi ikundi biria bakumba gukinyira betite na maguru.

Nontu bwa uriti nainya bwetu bwa ngugi nitukuthithia mantu jamanene. Cluster nicigwita ngugi bwega, cluster niciriitwe mbeba, cluster nicijukitie mukobo jwa mbeu jwa urimi bubwega. Cluster nicikugua umenyo bwegie guturanira kwa imera na thoko ya ruugo ruruthuku. O uria cluster cietu ikunenea kiri umbi bwao kuritana, gutara na gwita na mbele bwega, nou tuguetera na wiru cluster cietu ciumba guciatha ciongwa na kwona baita cionthe cia cluster. Turiteni ngugi twikire cluster cietu inya.



Umenyeeri bwa nursery

Umenyeeri bwa nursery nibwendekaga mono kiri gukuria imera biina inya ndene ya nursery. Imera bibi biina afya bigakuura bie miti ina afya iria igatuma twone baita inene na inyingi nkuruki. Gukuruka gwetu ni kuona baita inene kumania na thoko ya ruugo iria irianaga kulingana na inya na unene bwa miti yetu. Kwou nikwendekanaga mono batwi kumenyeera miti yetu o kuuma iri kiri nursery cietu. Mantu jamwe jaria jabui tuthithia ni;

A. kunyiyia mirimo kiri imera

nyomoo imwe ja fungi, bacteria, virusi, nematodes na insects (ja muthwa, nthuya na aphids)nicithukagia imera.

Murimo jumwe juria jwonekaga nursery inyingi ni 'dumping off' na jutumagwa ni fungi. Nijutumaga mbeu ikarota mbele ya ciuma, miiri ikoora mbele ya mutumi jumira na mutumi juu gucheng'a na kunika.

Murimo juju jwonanagua ni mantu jaja;

- gucheng'a na gukua kwa muti mbele ya jumira iguru
- kuuma na gukua gwa kimera
- mathangu jakagaruka rangi kua yellow
- kimera gikooma
- Murimo juju jwomba kunyiua gukurukira;
- guchenchia muthetu jwa aria uumithagiria mbeu o mwaka jumwe kana iri- kuungania muthetu kinya ku nigutethagia
- ritaga imera biria biri na murimo orio na ubiithirie
- ugekira ruuji rurwingi mono
- kua miti iu kanya gakega ga gukucia ruugo
- kurimira bwega na igita ririo
- muthetu jukaingiyia mboleo mono. Ungania mbolea na muthetu uria kwendekanaga. Nyiyia nitrogen ya muthetu gukurukira gwikira mboreo inini
- miti ithire itariene bwega kenda itirainyane
- menyera nursery ithire itheri igita rionthe

Mirimo yomba kunyiua kinya gukurukira utumiri bubwega bwa ndawa. Nibwega gutumira ndawa cia kienyeji niuntu cia

kuthithua niciguragwa na goro na nocithukie. Ndawa cia kienyeji nita;

1. gwikira muju
2. kumenyeera utheru bwa aria nursery iji iri nikenda nyomoo cia mirimo itikeje

B.Kugita miri

Itaitithia imera bia nursery o rimwe kiumia nikenda miri itigatonye nthiguru irumata riu ija kugitwa. Muri jumwega juri na afya nijutethagiria muti guchua ruuji jwaikua muundene. Riria imera bigukurira kiri tumibuko nyuma ya mieri 3-4 (kulingana na muti na rera)miri yabio niyambagiria gukura ome ya mubuko. Miri iji no mwanka igitwe o mweri jumwe kana iiri na gaciu. Menyeera riria uguukiria mubuko nikenda utathukie miri iu

Antu a kuthithia uju, nougerie kuthithia nursery yuukiritue (tega MB ya July) iria ikanyiyia bataya kugita miri nontu miri nitwikaga yongwa

C. Gwikira ruuji, kurimira na gukunikira

- tuminyi tubati kugwatithanua na can iria cia gwikira ruuji nikenda tutigatume muthetu jukamatwa ni ruuji
- ugekira ruuji rurwingi mono kana rurunini mono
- ikira ruuji o rukiri na ugoro kethira nukumba
- menyeera utikaringithie miri riria ukurimira
- ukareka gukara mono gutirarimirwa. Kurimirwa nikwendagwa niuntu iria niriingiagia mashindano ja kwona weru, ruuji na irio.
- Mbeu imwe niciendaga gukunikirwa-hakikisha gantu ga gukunikira nikathithitue.
- Igita ria mbura, kunikira imera na nyaki injumu. Imera bitwe rungu rwamiti nikenda ruuji kuuma kiri mathangu rutiragwire imera na rubithukia.
- Irigira nursery kumirigiria kuuma kiri ndiithia na aana batachethere kuu.
- Reka kimera gikure gikinyie 30cm mbele wikia muundene. Bububujukagia ta mieri1-6. tega aria kwandiki mantu jegie kuthamia imera kuuma nursery gwita muundene



Miti imiega ya TIST;miti ya kienyeji

Mweri juu tukambiria kuleta mantu jagie miti ya kienyeji kiri mazingira bora na jaria jakethagirwa jario o mweri o mweri. Kuri na miti imingi iria yendekanaga mono ya kienyeji. Miti mwanya mwanya iria ikuririte Afrika na iria ibujanagira na naria ikuririte. Noithongomie muthetu na gukucia nyoni cija. Miti mianya ikuraga bwega guntu mwanya.

O mweri, tukagaana mantu jegie miti ya kienyeji imikai, uria tuumba kumikuria na wega bwa o muti. Tugekira kinya maritwa ja miti iu ja gisayansi nontu nijo jatumagirwa riria bukwaria na muntu uria utikwaria um na ugwe. Kethira kumania na jo nukwenda kuanda miti iu,tega kiri antu ba gikundi na cluster yaku wone nibau kiri njaa ya TIST barina ju na bomba gukugaira mbegu cia miti iu na kugaana nagwe njira iria njega buru gukuria na kumenyeera miti iu.

Miti iria miega ya TIST ni iria iri ya igita ririnene. Miti itinenea yumba gwikua thokone ya ruugo mwanka ikure,mbuga nyuma ya miaka 20. riria muti jwa TIST jugitagwa kuri mantu jairi jakarikagakiri program;

- a) Gikundi gitiriwa mbeca cia muti juu kairi; nontu ni miti iria aki irio ijukagia ruugo ruruthuku
- b) Rikana ati riria Clean Air Action Corporation yonaga mbeca yendia ruugo,mbeca iria citumagirwa ni program gwita na mbele no mwanka ciambe ciriwe, riu 70% igeta na ikundi. Bubu nibugitwe kiri kandarasi iria bwacainire.kethira CAAC nitumirite mbeca inyingi kuria ikundi biria biagitire miti yao, nibatejaga mbeca inyingi iria batibatiri. Mbega iji no mwanka ciriwe na kwou gukethirwa kuri na mbeca inini cia kunenkera uria miti yawe iri moyo. Kwou kugita miti ya TIST nikugitaria program na ikundi bibinini.

Kumania na semina cia TIST na micemanio ya cluster, antu ba TIST nibombite kuuthurania umenyo ati miti iji iri aja nithithagia bwega mono ndene ya area yao.

MITI YA KIENYEJI

a) **Prunus Africana (kikuyu; Muiri, kimeru; Mwiria)**

Muti juu jwa kienyeji jwonekaga mono miitune. Mbeu cirio miitune, igita riria guti na mbura. Jukia aki ntunda inene cia brown na iria igundi kuuma kiri muti iguru buru kana nthi naria ciitiki. Rita gikonde kiu kieguru gukurukira kurinda mathaa 24, riu uthambirie iguru ria wire.

Tandika guntu kuri na ruugo rwa kung'ana indi kirundune kenda ciama-mathaa janna aki.

Mbeu iji itikaraga kwou tumira mpindi imbiithi ouu.ongera mathangu jena ruuji igururia mpindi iu kenda iniyia kuura kwa ruuji igita ria gukamata na gwika. Anda kiri mibuko kana nursery ya nthi. Kimera kiumagirabiumia bitantantu gwita banana.

UTUMIRI;Nijwingaga tunyamu turia twinyangagia imera ta aphids,nematodes gukurukira muruki jwa muti juu,maua jaju jethagirwa jari na nectar na pollen inyingi iria itumagirwa ni njuki kuthithia naicu, nijwithagirwa juri na nkuu inthongi mono. Ndawa;ruuji ruria rumaga gicaune kiau nirutumagirwa kworia cancer ya kiu. Mathangu jaju nijanunkagirwa kunyiyia mwanki jwa mwiri, kana jakanyuwa kenda jaa muntu amu ya kuria irio. Ruuji nirwongagirwa kiri gikimi na ruuji ruru ruutune rugatumirwa kworia murimo jwa kiu. Gicau no gitumirwe kiri ng'ombe ta purgative.muti juu nijunyiagia gukamatwa kwa muthetu ;jwaandwa mitarone kana benchine nijuejanaga kirundu na jukanyiyia nyiyia ruugo. Kuthongomia muthetu. Mathangu nijatumagirwa kumamia muundene kana ta mboleo. Kuthongomia; muti juu ni muti jumuthongi mono riria juandi ome jwa kuejana kirundu

b) **Peacock Flower (Albizia Gummifera, Kikuyu; Mukurwe)**

Muti juu jwonekanaga mono kiri miitu iri irimene na iria iri nthiguru na kinya naria gutirimagwa akui na miitu. Womba kuanda mpindi citithithiritue untu



kinya buriku kana cirinditwe. Mpindi ciumite mutine utiu ciendaga kuthithirua. Mpindi iria ciiki cirindagwa na ruuji rwa mwanki riu rukrekwa rukoora mwanka mwanki jwa kawaida jwa nyomba. Gichau kia mpindi no giturwe kenda mbeu yumanga. Mbeu niurangaga na ntuku ikumi kana nthiguru ya ikumi. Mpindi ciuthuranagua kuuma mutine jungwa kenda citirathukue ni tunyomoo twa munda. Mpindi no ciikwe mwaka kana nkuruki igekwa guntu guti na ruuji kana tunyomoo wekira muju.

UTUMIRI; njuki nicionaga biakuthithia naicu, muti jwa nkuu, mbao, ngamu, ndawa (kuuma kiri mpindi cikimwi niyoragia kiu na gicau nikioragia murimo jwa rwagi) nijutethqagia kunyiyia gukamatwa kwa muthetu (miri nirumataga muthetu na kunyiyia gukamatwa kwa muthetuni muguu), nijuejanaga kirundu, nijwikagira nitrogen muthetune (muthetu jukabua nkuruki), nijugwithagia mathangu jamaingi kwou jukanoria munda, nijuthongomagia (juandagwa town kuthongomia), nijutumagirwa kwonania mwanka na mathangu nijatumagirwa kugundia marigu

c) Olea Africana (African Wild Olive, Kikuyu; Mutamaiyu, Kimeru; Muthata) muti juju nijwonagwa guntu gukwingi, mono akui na nduuji na kinya miitu ya miti ya mpao. Jutithukagua ni mpio inyingi kana riu riringi.

Mpindi ciumite mutine orio niciumithagua. Mpindi inkuru no cirindwe ruujine rwa mpio ntuku ijiri. Mpindi niithuranagirwa gukurukira gucikabura na njara kana kwingiritiria iga iguru riacio nontu gwita gicau nigutumaga mbeu ikaumanga. Mpindi no ciikwe nyomba itina ruuji miaka imikai

UTUMIRI; irio (maguta ja muti juju kana ntunda), irio bia ndiithia; ndiithia niciendete mati ja muti juju, nkuu, mbao, makara, mikinyi ya maigo na kuthongomia. Niiandagwa naria miiitu igiti mono guntu gukuumu Afrika nontu niumbaga gukara bwega kuri na mpio kana murutira jumwingi. Kuthongomia; miti iji nithongomagia guntu mono

d) Waterberry (Syzigium Guineense, Kikuyu; Mukoe, Kimeru; Muriru)

muti juju mono jwithagirwa juri mitune naria kuuraga andi kuraja na irima. Nionekanaga mono naria kuri na ruuji na kinya ruujine ndene na akui na nduuji inin. Mpindi itiendaga kuthuranirwa mbele ya ciumithua nontu niciurangaga na niciumanagiria. Niumbaga kuuma na rate ya 80-90% ntuku mirongo iiri gwita ntuku mirongo itano. Kuumithia mibukone nigwikagirwa moyo. Matunda ja muti juju nijorangaga na kwou nijabati kwojwa jaguar orio. Nojothuranue gukurukira kwainania muti na rwogoro. Jothuranua, matunda nijabati kuandwa orio nontu mpindi citiumbaga kuuma ciooma. Bubu bwarema, matunda najekwe ntuku inkai ndene ya sawdust ina ruuji kana ndene ya mikebe itikuniki nyomba ina ruugo bwega

UTUMIRI; irio (matunda), njuki kuthithia naicu, mbao, nkuu, kirundu, ndawa (matunda nijatumagirwa kunyiyia dysentery na ruuji rutherukituena gicau kurigiria diarrhea) menya ati gicau nikithitangitwe gutuma antu bakua kwou umenyo nibwambe bucuwe kuuma kiri baria bameretie gutumira into bia muti juju

Cordia Africana (muringa)

Cordial afriacana ni muti jumunini gwita jung'aniri juria jwithagira juri na mathangu igita rionthe na juria jutumagirwa mono riria miti na imera bikunganua muundene jumwe.

Kuanda Cordia

Oja matunda jamagundu ja muringa na ujomie riuene mwanka gikonde kieme. Ciikithe nikenda urita gikonde. Gutu ungi mpindi iji yendaga kuthithirua. Kuuma gwa kimera kuuma kiri mbegu no gukare mono ta biumia bithatu kana nkuruki indi kimera kiarikia kuuma nigikuraga bwega na nampui.

Utumiri

1. kirundu-Cordia ni muti juri na kirundu gikithongi mono gia kuthiika imera na nijukunikagira muthetu kuuma kiri riu ruuji rutiraure
2. Naicu-njuki niciendete mono maua ja Cordia jamathongi na nicithithagia najo naicu inthongi mono



3. Mpao-mpao ciaju ni imbuthu indi nicikaraga igita ririraja iria citumagirwa kuthithia maugu,into bia nyomba, into bia gutumira gwaka na kinya nkuu.

Albizia gummifera (mukurwe, peacock flower)

Albizia gummifera ni muti jumunene na jugwithagia mathangu jonthe rimwe mwaka na juria jwithagirwa juri iria ria ndiithia, jukunikaga muthetu kuuma kiri riu na juejanaga nkuu na kunoria muthetu.

Kuanda Albizia

Albizia ni rahisi kuanda. Mpindi ciaju niciumaga na kiumia kimwe gwita biiri. Imera nobithamirue muundene nyuma ya mieri inna kana itano.

Utumiri

1. Iria ria ndiithia-mathangu na maang'I jamaanaku nijarijagwa ni ndiithia
2. Kuthongomai muthetu-nontu Albizia ina miri ina legumes, niongeraga madini jagwitwa Nitrogen muthetune na kujunoria. Muti juju nijugwithagia mathangu jamaingi mono jaria jakunikagira muthetu kuuma kiri riu.

3. Mathangu ja Albizia nijatumaga marigu jagundanga

Prunus Africana (mwiira, red stinkwood)

Prunus Africana ni muti jumunene juria jwithagirwa juri na mathangu rionthe na juri na utumiri bubunene kiri ndawa. Jutikwonekananga ntuku iji nontu nijukethetwe guti na mubango. Nijwendaga kurina ngai igukinya 800mm o mwaka.

Kuanda Prunus Africana

Rita mpindi kuuma kiri itunda rikuri. Umithia muthangene kana kiri muthanga jungene na sawdust. Kuuma nikujukagia biumia bithatu kana nkuruki.

Utumiri

1. Ndawa – prunus niitumagirwa ta ndawa ya mirimo imingi kinya kworia mirimo ya prostate.
2. Mpao- mpao cia Prunus ni indito, imbumo na iria ikaraga Mono na citumagirwa kiri miako iminene na into bia nyomba
3. Naicu - maua nijaritaga nectar injega iria itumagirwa ni njuki kuthithia naicu.

Riitwa ria Kimeru	Riitwa riau riongwa	utumiri
Muringa	Cordia africana	mpao
Mukurwe	Albizia gum,peacock flower	Irio bia ndiithia, jukuraga na mpwi
Mwiria	Prunus africana	Ndawa injega mono kuuma kiri gicau kia ju,kinya mathangu nojathithie
Muthaiti	Ocotue usambarcusis	Mpao injega mono
Mukoyou	Ficus sur., or Ficus Sycamorus	Juandagwa guntu gukuumo na kuri na mwanki jumwingi
Muu	Mankhaima lutea	Nkuu kana makara
Mugumo	Ficus thoorningii	Muti juju nijutiitwe ni ndini imwe, nijumwega kiri nyoni na nijutethagia biria biri akui na ju



MAZINGIRA BORA

December 2009 Newsletter



www.tist.org

KIKUYU VERSION

The International Small Group and Tree Planting Program (TIST)

An Environmental, Sustainable Development and Community Forestry Program.



TIST Clusters Trainers na Quantifiers mari seminar: Ririkana mucemano wa cluster yangu uria uroka

TIST Values: 1) Turi eehokeku. 2) Ithui turi andu a uria kuri. 3) Turi andu autheri. 4) Turi atungataniri. 5) Turi a and aigiririku.

Maria mari thiini wa gazeti ino

- ✓ Ingira kana uthondeke Cluster!
- ✓ Kumenyera na kugitira Nathari
- ✓ Miti miega kuri TIST: miti ya ki-nduire

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Ingira kana uthondeke Cluster!

Ni kahinda kega gukorwo uri umwe wa TIST. Ni tuhandite miti million nyingi na, Ota miti, TIST ni ikurite Kenya. Ikundi ingi nicithondeketwo mwena wa Mara na Mbeere, na ikundi thiini wa gicigo kia Mt. Kenya nimathiite na mbere kuhanda miti O hamwe na Kilimo Hai.

O tugithiaga na mbere niturenda gutigirira ati miri iitu ni mirumu na nikio, Turathondeka ikundi. Gikundi gia TIST ti kionereria no ni njira njeru ya guthondeka TIST wega na kumikira hinya.

Kuingira cluster kana guthondeka Cluster ni kuri na umithio.

A memba a ikundi no manyite itemi hari mitaratara miega, na magie na mieke ya kugia na utongoria mwega na magie na githomo kiega. Ikundi-ini mahuthiro ni maanini kwa uguo kuhotithia murimi gukinyirwo ni mbece nyingi.

Tarora mawega ma ikundi haha muhuro na mucemano-ini uyu ungi warie na gikundi giaku uria mungikira gikundi hinya mieri yuukite ngathiti-ini ino nitukurora mibango iria mugirumirira kugacirithia gikundi.

Wambere TIST Cluster ni kii?

Gikundi kinene gia TIST kiri na ikundi nini. Gikinyanirite riria kiri na;

- Arimi 300-400 thi-ini wa gicigo kinini.
- Mugunda muigana utanyihire Hacteres 200 ya kuhanda miti.
- Miti iri muoyo itanyihire 200,000 (ikundi ta 40 ciri na miti 500 o gikundi)

Micamano ya o mweri kuria muraririria mibango miega. Githomo na urutani mwega kuri ikundi nini ikiro cikinyaniire hari maumirira ma ikundi nini. Utongoria wa guteithania.

Gitumi kia uingire Cluster kana uthondeke cluster

Mahuthiro manini na maciaro maingi na mega.

Ikundi-ini no tugie na githomo kiega na mahuthiro manini. Gwa kahinda gaka mahuthiro mari iguru ni tondu athomithania na arori nimathiaga kundu kuraihu gukinyira ikundi nini. Oro uria turahuthira mbece nyingi noguo marihi mari manini kuri arimi. Umuthi turahuthira meca nyingi gukira iria turariha

murimi! Ikundi iranyihia mahuthiro ma iguru tondu arori na athomithania matumikagira ikundi iria iri handu hakuhi mangikinya matakuhuthira ngari. Ni gukorwo ikundi ciothe iri hakuhi niuhuthu kugia na cionereria uthomithaniaini na gucerera migunda ya uthomithania nitondu kuona gukirite kuigua. Githomo kiega nikirituhotithagia gukinyiria kioneki giitu.

Nitondu mahuthiro mari thi, hingo iria gikundi kiri na miti minini, no mathure gutara na kuriha ikundi iria iri na miti minini. Niundu wa mahuthiro kunyiha ma ukinyaniria wa utungata no tuhote kuhingura TIST kuri mundu o wothe.

Cluster ni ciongereaga mieke kuri arimi.

Uri thiinii wa Cluster ni kuonania ati uri na mueke wa guthoma na gutongoria. A meba a Ikundi nini nimakuraga gi githomo na utongoria mari ta atongoria athomithania na arori.

TIST igithiaga na mbere, niturabatara arori aingi na TSE aingi, na Atari aingi. Atongoria eeru marithuragwo ni a meba kuma ikundi iria cirri na maumirira mega na ikundi cirri na hinya. Gikundi-ini giaku niukuhota gukinyirwo ni githomo kieru gutumikira TIST na njira njeru. Ikundi nocinyite itemi hari mitaratara mieru.

Mwakaini uyu makiri ma arimi nimahotire kugia na ngombo ya kugura mbegu cia mbe, be cia Kilimo Hai hari mutaratara witu wa Conservation Farming Seed Loan and Reporting. Hari mieri yukite, nitukuambiriri mibango niundu wa miti ya ki-nduire na riko riakuhuthira hinya munii na kugiririria tiiri gukuo ni kiguu njuui-ii.

Nigetha uhote kunyita itemi hari maundu maya na mangi no muhaka gikundi giaku kinini kiingire gikundi gia TIST.

Turi njira-ini! Ingira mugithi-ini wa TIST!

Ni wega niundu wa wira mwega, nituragia na maumirira mega. Ikundi niciraruta wira wega: Ikundi ni ndihe. Ikundi ni cigite na ngombo ya mbegu. Ikundi niithomete biodiversity na green house. O ikundi igikuraga na uhoti wa guthomithia, gutara na kurora, turenda gutuika ta thirikari na kugia na maciaro reke turute wira na hinya gwikira Cluster yanyu hinya.



Kumenyerera na kugitira Nathari

Kumenyerera na kugitira nathari ni kuhotithagia mimera gukura wega nginya igatuika miti iri na hinya na noguo ikoragwo na maciaro mega. Maciaro maitu ni kugia na mbeca nyingi kumana na cabon credit iria iringanaga na utungu na uraihu wa muti.

Kwa uguo ni hari na bata kumenyerera miti ir o minini na njira ta ici.

a) Kugitira kumana na tutambi.

Indo ingi ta fungi, viruses nematodes na bacterias an tutambi ta (muthua, muthigiriri) no ithukie mumera

Hari murimu witagwo damping off na urehagwo ni fungi. Utumaga mbegu igume mbere ya imerete, miri ithuke na mumera gutuika miceke ikimera. Dalili ciaguo ni;

- Gucekeha na kuhoha
- Kuhoha na kugua kwa mumera
- Mathangu gutuika ma yellow
- Gukua kwa mumera. Giririria damping off na njira ino.
- Cenjia tiiri wa gitanda o thutha wa miaka 2-3.
- Ehutia na icine mimera iria minyite ni murimu na ihenya
- Ndugaitiririe mai maingi gukira githimi
- Mai magiriirwo gutherera wega
- Miti yagiriirwo ni gukinyirwo ni riera riiganu
- Rimira hindi iria yagiriire
- Tiiri wagiriirwo gukorwo uri munoru.

Rumirira githimi kia mutukanio wa tiiri na wikire thumu munini.

- Tigithukania mimera
- Gitanda kiagiriirwo gukorwo kiri githeru.

Mirimu no ininwo na dawa. Niwega kuhuthira dawa cia ki-nduire tondu cia nduka-ini cirri goro na no cithukie maria maturigiciirie.

- a. Huthira muhu
- b. Gitanda gikorwo kiri githeru kugiririria tutambi.

b) Root pruning

Nyegenyia mimera rita rimwe hari wiki kugiririria miri kugwata. Muriwa itimu uri na hinya uteithagiriria muti gukinyira mai thutha wa kuhandwo. Hingo iria mumera urakura maratathi-ini thutha wa mieri 3-4 (kuringana na muthemba na riera) miri yambagiriria gukura kuma na thi wa iratathi. Miri ino yagiriirwo gutinio thutha wa mieri 1-2 na kahiu

Kwa njira ingi, geria nathari yoetwo iguru iria iniyihanyihagia miri kuneneha.

c) Kuhe mai , kurimira na kiruru

- Miberethi ya kuhe mai yagiriirwo kunyitithanio na ndoo ya kuhe mai kugiririria tiiri gukuo ni mai.
- Ndugaitiririe mai manini muno kana maingi muno
- Itiriria mai kiroko na hwaini
- Menyerere ndugathukie miri ukirimira
- Rimira tene kugiririria mimera gucindana na riia.
- Mimera ingi ni ibataraga kiruru, thondeka handu ha kiruru.
- Kimera-ini kia mbura humbira mimera na mahuti. Mimera yagiriirwo kwehutio mitiini minene kugiririria guthukio ni mai kuma miti-ini.
- Gitira nathari na mahuti kumana kuri nyamu na ciana.
- Rekereria mimea ikure uraihu wa 30cm mbere ya kuhandu mugunda-ini. No ihuthire kahinda ka mieri 1-6



Miti miega kuri TIST: miti ya ki-nduire

Mweri-ini uyu niturambiriria uhoro wa miti ya ki-nduire. Nikuri miti miigi ya ki-nduire ingihuthika. Miti iria yonekete thiini wa gicigo kia Africa na iratwarana na riera. No ithondeke tiiri a kuguciriria nyoni. Miti ngurani no ikure icigo ngurani.

O mweri nituriroraga uhoro kuringana na miti ya ki-nduire, uria ungikuria na mawega mayo. Niturekira mariitwa ma githom kia iguru nitondu maritwa maya ni ma bata ukiaria na ruthiomi rwa miti kuri aria mataiguaga ruthiomi rwaku. Angikorwo ni urenda gukuria miti ino roar kana niukuona andu magukuhe mbegu gikundi-ini giaku.

Miti miega ya TIST ni iria iikaraga miaka miingi. Miti to nginya ikorwo I minene nigetha igie na carbon credit, no nginya igimare thutha wa miaka 20. Miti ya TIST yatemwo maundu meri nimahanikaga:

- a) Gikundi gitingirihuo muti ucio ringi tondu no miti iria iri muoyo yagiriirwo ni kurihwo
- b) Ririkana riria Clean Air Action Corporation iragia na mbeba kumana na carbon credit yambaga kuriha mbeba cia mutaratara mbere thutha gicunji kia 70%

gikariha ikundi, nowone uhoro ucio uiguaniro-in. angikorwo CAAC ni ihuthirite mbeba nyingi kuriha miti itariho kwoguo ni iteangite mbeba nyingi tuhu. Marihii maya magiriirwo kurihwo.

Kuma ngwataniro na micemano ya ikundi ya TIST amemba nimonete miti ino iri ya bata maturaini mao.

Miti ya ki-nduire

a) **Prunus Africana**(Kikuyu: **Muri**, Kimeru: **Mweria**)

Muti uyu wa ki-nduire wonekaga ithaka-ini. Mbegu nicionekaga o kuu githakaini kimera kia riuu. Ungania mbegu iria cirri na rangi wa gitiri na njiru kuma makoni-ini kana thi. Ruta ngothi ya iguru na kurinda mathaa 24 ucoke uthambirie gicungi-ini. Haragania handu hari na kiruru na riera riiganu kahinda ka mathaa 4 tu.

Mbegu citikaraga kwa uguo huthira iria citaikarite muno. Kwoha na mathangu magunyu ni kugiragiriria mbegu gute ugunyu wacio. Hura orio gitandaini, cimeraga thutha wa ciumia 6-8.

Mahuthiro: ni uingataga tutambi na munungo woguo. Mahua maguo nimateithagia njuki kuhunga uki.



Ukoragwo na ngu njega, dawa, na mai ma makoni nimahonagia murimu wa prostate cancer. No ugucie munungo wa mahuti kana utherukie niundu wa homa na kuongerera wendi wa kuria. Mai maguo ni mahonagia guturwo ni nda na guthondeka mahiu. Ni ugiragiriria gukuo gwa tiri ni kiguu: no ukurio muthia-ini wa mugunda. Ni ugiragiriria ruhuho na kuongerera unoru wa tiiri na mahuti no mahuthirwo na guthondeka thumu. Niukoragwo na kiruru kiega.

b) Peacock Flower (Albizia gummifera, Kikuyu: Mukurwe)

Muti uyu wonekaga mitituiniya ciandaini na migundaini ya andu.

Mbegu itarithondeke na itarinditwo no cihurwo. Mbegu citaikarite citibataraga guthondekwo no iria cikaite nicibataraga ohamwe na kurindwo na kurekwo cume. No urage mbegu haria cimeragia nigetha guteithiriria kumera. Nicimeraga wega na gicunji kia 70-80% gwa kahinda ka matuku 10. Getha mbegu iri o mutiini kugiririria guthukio ni tutambi. Ikira mbegu muhu nigetha cikare mwaka umwe citaguthhuka.

Mahuthiro: guteithiriria njuki kuhunga, ngu, mbau gum, tannin na dawa (ni ininaga ruo rwa nda na Malaria)

kugiririria tiiri gukuo ni maai (miri yaguo ni mirumu) kururu gwikira unoru tiiri-ini, guthondeka thumu gwikira uthaka na gwikira mihaka na kwiruithia marigu naihenya.

c) Olea Africana (African wild olive, Kikuyu: Mutamaiyu, Kimeru: Muthata)

Muti uyu niwonekaga migundaini na mienaini ya njui. Niuhotaga gwitiria mahinda ma heho na ma riuu.

Mbegu citari njikaru nicio cihuthikaga na kuhurwo. Iria nguru no urinde mai-ini mahehu kwa mathaa 48 thondeka mbegu na kuraga na ihiga tondu kuruta ngothi ya iguru ni guteithagiriria kumera. Mbegu nocigwo handu hari na urugari.

Mahuthiro: irio: maguta ma kwihaka na ma kuria irio cia mahiu, maguta, mbau, makara, mukinyi, na indo cia kwigemia. Gucokia: gucokia miti kuria gutari na gukorwagwo na riuu.

d) Waterberry (Syzygium guinneense, Kikuyu: Mukoe, Kimeru Muriru)

Muti uyu wonekaga mitituini. Ukuragio kuria kuri na ugunyu naringi maii0ini, na njui-ini.



Tonginya uthondeke mbegu ukihura, tondu ni imeraga wweaga. Mumerere ni gicunji kia 80-90 thutha wa matuku 20-50. No uhande mbegu marima-ini, matunda maguo ni mathukaga na ihenya kwa uguo magiriirwo kunganio thutha wa kugua. No ugethe na kuinainia muti na kuhuro oro rio.

Mbegu nouige handu hari na ugunyu na riera riiganu.

Mahuthiro: irio(matunda), njuki kuhunga, mbau, ngu, kiruru, dawa (matunda nicinyihagia kuharwo) makoni nomarehe gikuu kwoguo etha mataro kuri aria mari na ugi wa muti uyu.

e) Muti: Cordia Africana, Muruga

Cordia Africana ni muti uteri munene muno uri na rangi mweaga unghithika hari agroforestry.

Gukuria Muringa:

Ungania matunda meeru na umomithie nginya gikoni kiume. Ruta mbegu.

Guthondeka mbegu gutiri bata. Umeri no uhuthire ciumia ithatu kana makiria no mimera ni ikuraga wega thutha wa kumera.

Mimera ibataraga mieri 4-6 nathari-ini mbere ra guthamia. Thutha wa uguo miti ikuraga wega na naihenya.

Ritwa ria kiunduire	Ritwa ria Giscience	Uria utumikaga
Muruga	<i>Cordia africana</i>	Ni mweaga na Mbau
Mukarwe	<i>Albizia gum; peacock flower</i>	Irio cia mahiu, Ni muti wa gukura na ihenya
Mwria	<i>Prunus africana</i>	Ni mweaga na ndawa
Muthaiti	<i>Ocotue usambarcusis</i>	Ni mweaga muno na mbau
Mukoyou	<i>Ficus sur., or Ficus sycamorus</i>	Ni mweaga kundu kuria kumu
Muu	<i>Mankhaima lutea</i>	Ni mweaga na ngu.
Mugumo	<i>Ficus thoorningii</i>	Andu amwe ni mahoyagira runguru mugumo