

# Mazingira Bora



# TIST

The International Small Group & Tree Planting Program

www.tist.org

English Version

An Environmental, Sustainable  
Development and Community Forestry  
Program.



Local solutions and working as a group to solve problems. These TIST farmers came together to build a better cook stove for one member. They prepared clay soil for building the stove (inset). File Photo

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# TIST: Best Practice in preparing seed beds - Raised pot beds.

In February, we discussed seed collection and seedbed preparation. This month, we are going to discuss the TIST best practice of preparing raised seedbeds. In TIST cluster trainings, Small Groups are encouraging farmers to try raised beds. We encourage Small Groups to use them because they improve the survival of the trees.



Fig. 1. Represents the old way of arranging pots, as described above.

**Figure 1.** Represents the common way of arranging pots. This traditional system of arranging pots on the ground can produce seedlings with weak roots. This is because the roots coil up inside the poly tube. At transplanting, the roots can be weak and therefore not easily establish in the ground. To avoid this, it is recommended to establish seedlings in open bottom tubes placed on raised beds.



Fig 2: Seedlings of various species arranged in stacks on a raised bed.

**Figure 2.** A raised bed can easily be made from a wooden frame and wire mesh (see photo) or wooden slats. These allow automatic root pruning because when the roots get to the container bottom they naturally drop off (called air root pruning). This means that roots do not get injured through normal root pruning methods. The roots then tend to strengthen without growing further. This produces a healthy root system and the seedling has higher chances to establish faster in the field. It also eliminates the need for labour to do root pruning, a practice that is often forgotten or done too late, causing serious damage to the roots. Weed control under the raised beds is also easier, and the raised beds have excellent drainage so roots are less likely to be damaged by heavy rain. Seedlings grown in raised beds may be fragile in transport, so be careful when moving seedlings for transplanting.

Try raised beds today, and share your results with your cluster and other TIST farmers!

## Leadership and Governance in your Cluster.

**T**oday, TIST has more than 130 active Clusters. In each cluster, Servant Leaders support our success and share their strengths. Each Cluster has governance and leadership as follows:

### Cluster Leadership

- Cluster Leader.
- Cluster Co- leader.
- Cluster Accountability person.

Cluster Leaders, Co-leaders, and Accountability people serve for a period of 4 months. After 4 months of service, the Cluster leader rotates out. The Co-leader becomes the Leader while the Accountability person becomes the Co-leader. Women and men alternate in the elections – if this Accountability Person is a man, the next one elected will be a woman. Your Cluster should democratically elect a new Accountability person.

Cluster elections are important and mandatory for all TIST Clusters.

### Roles of Cluster Leadership

#### Roles of a Leader

1. Should be a servant to the whole cluster and exemplify TIST Values.
2. Leads/facilitates cluster activities: coordinates cluster meeting, quantification and training schedules with other servant leaders.
3. Motivates Groups to achieve big results, including planting trees and practicing CF. Helps the Cluster to remain strong and united
4. Helps plan for well-organized Cluster meetings with other servant leaders and making sure the meetings are properly led and trained.



5. Works with Accountability Person to ensure that Cluster Meeting and Accounting records are kept properly.
6. Works with Accountability Person to ensure monthly Cluster reports and Accounts reports are sent and are accurate.
7. Helps recruit more Small Groups to be registered.
8. Helps Small Groups have their Green House Gas contracts signed, scanned and uploaded
9. Welcomes and introduces any new visitor who might attend the meeting.
10. For payments: gets vouchers and other materials before cluster meeting. Works with Accountability Person to make sure the proper payment process is followed, and communicate any questions or problems to TIST leaders and Payment coordinators.
11. Reminds Small Group members of the next meeting.

***Roles of an Accountability Person***

1. Receives Cluster Budget and announces budget received and spent at each Cluster meeting.
2. Works with the Cluster to plan how to use the Cluster Budget to achieve big results.
3. Keeps and maintains Cluster records in an organized cluster record book, accurately and in proper condition.
4. Allows inspection of Cluster Records to Cluster members and TIST leaders.
5. Sends both Monthly Cluster meeting and Accounting reports every month.
6. Trains the next accountability person
7. Helps and supports other servants to serve the Small Groups.
8. During payments: hands out vouchers to groups with 2 members present, reviews vouchers, communicates with payment support coordinators, and follows the payment process accurately and honestly.

***Roles of a Co-leader.***

1. Takes over when the leader is not there. A co-leader is to serve both the cluster members and the cluster leader.

2. Helps during Cluster Meetings in keeping time
3. Takes records during the cluster meeting.
4. Reads the previous minutes to the meeting
5. Keeps record of the minutes and discussion held in the cluster.
6. Helps train newly elected Accountability People.

**Cluster Representatives.**

Each Cluster democratically elects 2 representatives (1 man, 1 woman) to Group of Clusters Council (GOCC). Your GOCC representatives should serve you for a period of 6 months. Thereafter new elections are held to elect new members to GOCC.

GOCC is composed of 2 -5 Clusters that are close neighbours. GOCC members should meet once per month in the first week of the month.

**Roles of Group of Clusters Council Representatives.**

- 1) Discover and share Best Practices from Clusters;
- 2) Assure high quality training for the Clusters following TIST Values;
- 3) Assure high quality Quantification following TIST Values;
- 4) Maintain working equipment for training and Quantification;
- 5) Report concerns and make recommendations for policies to Regional Council;
- 6) Expand TIST through present Clusters;
- 7) Hold Administrative Hearings if a Quantifier or Trainer is suspended to investigate facts and make recommendations on suspension;
- 8) Hold Administrative Hearings if a Cluster Leader is not following TIST Values;
- 9) Recommend people from the Group of Clusters for additional TIST responsibilities such as Auditor, TSE, or Master Trainer and other responsibilities.

Other TIST servants in the Cluster include Quantifier(s), Trainers (s) and Champions of various activities (e.g. Conservation Farming Champion, Riparian, and Indigenous Trees Champion, TIST Clay Stoves and Manufactured Stoves Champion).



## What your Cluster should do every month to assure success.

*Receiving Budget through Accountability person, Planning for the Budget, and Reporting how you spent your budget.*

In TIST, we find strength in taking action together and sharing our successes with others in our Small Groups, in our clusters, and beyond. Monthly cluster reports on cluster meetings and accounting are an important part of this success. Each cluster is responsible for submitting an accurate cluster meeting and cluster accounting report every month, and should announce how the budget was spent each month during cluster meetings.

*How to report Cluster Budget and Cluster Meetings using SMS.*

Transparency and mutual accountability are key values of TIST. Each TIST cluster must report how it spends its 900/= cluster budget to achieve big results. Since June 2011, TIST has been using a new, easier way for Clusters to report their monthly budget use and their Cluster Meeting Records using SMS. This approach allows a TIST member to send an SMS from their phone to a central phone number. SMS messages are collected and analyzed by TIST staff. If a cluster has access to a working Palm, they should use the Cluster Meeting and Accounting Forms on the Palms. However, with this new method, every cluster should report every month.

This approach simplifies reporting for Cluster Representatives and helps TIST staff support Cluster activities. If we do not receive reports from clusters, TIST staff may assume your cluster is inactive. In this case, you will not receive a budget, service from Quantifiers, or the chance to learn and share at seminars. Let's work to share our reports and our success every month!

### Reminder: for success, every month your cluster should:

- 1) Attend your cluster meeting and remind other groups to attend.
- 2) Review the results your cluster has achieved: new trees planted, groups quantified, and how budget was spent together as a cluster.
- 3) Send reports by Palm or SMS for Cluster Meeting and Cluster Accounting.
- 4) Organize quantification with Quantifiers. Make sure someone from your cluster assists in each quantification!
- 5) Invite your friends and neighbors to join TIST at a cluster meeting. Share this Mazingira Bora and help them with the application process.
- 6) Make bigger results! Plant trees, build or buy an energy saving stove, practice CF. Together, we can achieve anything!

## Arrowroots Conservation Farming (CF).

**K**iengu cluster now trains its members on how to grow arrowroots using CF. In this way, we have been able to grow arrowroots without much water.

### Preparation.

Dig the terrace twenty metres long by 1 metre wide and two feet deep.

### Manure.

Spread ashes at the bottom of the hole. Next, mix compost manure with some ashes and fill the hole with the mixture.

Cover with the topsoil that you removed when you were digging the hole.

### Watering.

Put much water i.e. watering with watering can to prepare your CF for planting the seedlings until it is enough.

### Seedlings.

Plant 3,000 seedlings in the CF terrace. You can collect

these seedlings in the native areas and swamps where the crops are planted by other farmers.

### Maturity.

It takes around 8 months for your arrowroot to be ready for harvest. This practice of arrowroot CF can be cultivated by people who don't have rivers near them.

It is economical because it uses few inputs and gives a big yield from a small piece of land.

### Use.

- For commercial purposes
- Nutritious food for the family

Arrowroots are promising many benefits in Kiengu cluster, since farmers are sharing and developing practices like this as they meet. Two groups recently received tree incentives. As they see the benefits, the number of Small Groups is increasing as many are seeking to join TIST.

**TIST: Together we grow!**



# Thinning and pruning your trees for successful growth.

by Ben Misleh

In general, the purpose of thinning and pruning trees is to improve individual tree health, as well as overall forest health. This is done by selecting the “best” trees in the forest to keep. For many species, including hardwoods, grevillea, eucalyptus and cypress, these are often the largest trees, each with a single, straight stem. Trees may have different needs for space depending on species, site, planting style (woodlot, incorporated into crop fields, or windbreak), and climate, but some general principles apply.

To grow strong, healthy trees, a spacing of two meters is recommended. This spacing works for many TIST trees (i.e. grevillea, and cypress), but remember some trees require more space (mango and macadamia, for example). Giving trees proper spacing helps them get enough water and nutrients to grow to their full potential. Closer spacing is acceptable when trees are young. As the trees begin to mature, some trees will be larger and more robust than their neighbors, and these best trees should be kept. Thin around the best trees to achieve good spacing.

Once you have determined which trees to remove, cut these at the base of the tree. In the weeks and months following cutting, many trees will begin to sprout from the stump (coppice). To keep the tree from coming back, cut or break these sprouts off at the base of the tree.

In general, if all trees of the same species in an area are close to the same age, the larger trees should be chosen to allow to grow. Another good indicator of tree health is the position of the crown of the tree in the canopy. Trees with crowns above the general canopy level can absorb more light than those lower down, and so can grow better. Finally, trees should have a single stem, with no major disease or rot. However, this does not mean that all small trees should be removed! Aim for a minimum of a two meter by two meter spacing so that the trees are as large and as healthy as possible to maximize carbon capture.

When making thinning choices, remember that growth rate varies greatly by species. If a mango tree is growing near lots of eucalyptus, the mango may be far smaller and slower growing than the fast-growing eucalyptus, but it certainly should not be cut simply because it is smaller! In fact, a tree like mango is of great importance due to its usefulness in producing fruit for food and sale. Mango also is better for other crops growing in the field. Eucalyptus can make other trees and crops nearby grow poorly. It is important to remember this as you select which trees to thin. There are many uses for trees, depending upon species besides carbon capture. For example, you may want trees for shade. In this case, you should give the tree more room than usual to expose the tree to more

sunlight. This will stimulate the tree to produce new branches on the main stem and on larger limbs. If you want to use a row of trees as a windbreak, keep trees in that row spaced closely together, but remove trees to either side in order to increase the “bushiness” of the trees.

## Pruning

In a natural forest, trees naturally self-prune. Branches in the upper canopy shade out lower branches. As leaves on the lower branches begin to die off, so does the branch to which they are attached. Dead and rotted branches naturally fall off or are knocked off. While natural pruning may happen on TIST sites, it may be necessary, or beneficial to prune trees by hand. While each tree species requires a different pruning technique, some general principles apply to all trees as you decide which limbs to remove.

Most tree species should have a single main stem at the ground level. Trees with a single stem generally grow faster and are less prone to split during storms. If a tree with multiple stems is chosen as a crop tree, when choosing which stem to keep, generally choose the largest, but make sure it is healthy, with lots of leaves, free of rot, and relatively straight.

Many people think you should cut limbs parallel to the trunk. This is false. Cuts should be made perpendicular to the limb, slightly out from the trunk. This minimizes the amount of exposed wood, and allows the actively dividing cells in the branch collar to grow over the cut over time (see figure 1). This helps the tree to remain healthy and free of rot.

When pruning, don't be overzealous. Tree trimmings are often used for fuel wood or fodder. While this is good, remember that while pruning can improve tree health and increase growth over time, removing leaves will initially reduce the tree's ability to capture sunlight and cause stress to the tree by creating a scar, which it must heal. If you remove too many, the tree will grow slowly or may die. After removing a limb, leave the area cut alone. Do not cover it with tar or any other material, so the tree can expel any toxic material on the wound.

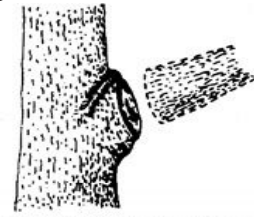
Don't forget that trees tend to produce new shoots near cuts from thinning or pruning. Some species do this more than others. Generally, these are very easy to remove during the first year after cutting by simply snapping off the supple shoots. Shoots will often not grow back.

Some trees, especially fruit trees, produce better yields with multiple stems. These are cut near the base of the stem when they are young in order to stimulate new growth. Once the tree has established these new shoots, they too may be cut in order to produce more

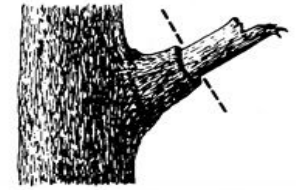


growth. This process may be repeated in order to increase the bushiness of the tree, but be sure to allow at least a few months or more between trimmings so the tree can recover from the stress caused by cutting. Remember that to take part in the carbon market, we have to commit to keep trees for the long term. We should allow trees to grow for at least 30 years, thinning and pruning to produce useful, sustainable forests that provide us benefits for years to come. Coppiced trees may not qualify for the carbon market and so may not be counted as TIST trees.

Figure 3



Pruning cuts should be made just outside the branch collar.



On a dead branch that has a collar of live wood, the final cut should be made just beyond the outer edge of the collar

## CRS and TIST start Green Gram Pilot in Mt. Kenya.

Starting in March, TIST and CRS will be working together to encourage farmers in Mt. Kenya region who farm in arid to semi-arid lands to grow green gram. Green grams grow well in dry areas. They are very nutritious, providing a good source of vitamins, minerals, and protein. Green grams are easy to prepare, and taste great too!

CRS has been working with farmers in Embu to test a new variety of improved green gram seed (B20). This variety is fast maturing (45 days), allowing the plants to produce quickly before the crop can be destroyed by drought.

TIST farmers in selected clusters will be growing this new variety of green gram, and starting a seed bank from which TIST farmers in dry areas can purchase seed for next planting season. In the coming months, CRS will be training TIST trainers on the storage and marketing of green gram, empowering farmers to get the best possible prices for their crop.

Keep your eyes open for more articles in upcoming Mazingira Boras about how the green gram program is progressing and how you too can benefit from this cash crop!

## TIST and its benefits continue to grow!

By Aaron Kaindio

As TIST expands to new areas within our country, more and more Clusters are being formed, and existing clusters are growing as neighbors join to create new TIST Small Groups. TIST benefits are being shared and experienced in new areas.

Today, more than 130 active clusters have been formed. We are working hard to increase the number of Clusters to 200 by the end of this year.

We thank our TIST Leadership Council for their hard work and dedication to ensure that each and every cluster is well organized served and is moving ahead to meet the TIST goals.

As we all know, we all need to work together to help TIST and its benefits grow. We can plant trees, and develop and use other TIST Best Practices like sustainable agriculture or conservation farming (CF), planting and caring for diverse trees to make our clusters strong as we improve our own farms and lives.

When you plant a tree, know that you are helping even the future generation so they will have a good, clean and beautiful environment. They shall appreciate that we worked so hard to fight climate change and to eradicate poverty. This is why we in TIST are more selective on what species of trees to plant in on our lands and along our riverbanks. We are planting not just for ourselves, but also for our children, and theirs.

Some trees can be harmful to our environment in some areas, though they have other benefits. Trees like eucalyptus grow very quickly because they consume a lot of water and soil nutrients. For this reason, this tree can be good for commercial purpose, but may harm the environment in some areas, especially along rivers and in wetlands.

We are planting trees, which shall last for the long-term (30 years and over) as required by carbon markets. Farmers in Small Groups with high percentage of eucalyptus should try to achieve the TIST recommendation of having no more than 33% eucalyptus trees, by planting indigenous trees on new land or thinning some eucalyptus and replacing them with other trees, especially indigenous trees. This is especially important along rivers. Remember that the government discourages planting of eucalyptus near rivers and in riparian areas. Plant water friendly indigenous trees, and follow best practices, and you may be able to qualify for the additional incentive for indigenous trees in riparian areas. You'll be making rivers healthier for your family, for people downstream, and for generations to come.

Let all do this so that we can sustain our TIST program and also our entire environment. The writer is TIST Quantifier, Kigucwa Cluster. [aronkandio@tist.org](mailto:aronkandio@tist.org).

# Mazingira Bora



www.tist.org

**Kimereu Version**

An Environmental, Sustainable  
Development and Community Forestry  
Program.



**Njira cia kuthiria thina twingwa na gwitaniria ngugi ta gikundi kuthiria thina. Arimi baba ba TIST beejire amwe gwaka kiriko gikiega nkuruki kia mumemba umwe. Nibathuranire muthetu jwa kiimbene jwa gwaka riiko riu riri mbichene.**

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# TIST: Mwitire juria muthongi buru kiri kuthuranira munanda jwa kuanda mbegu- minanda ya miuko iukirite.

**N**dene ya mweri jwa iiri itwariririe kuthurania mbegu na kuthuranira munanda. Mweri juu tukaariria mwitire juria mwega buru juria jutaari ni TIST jwa kuthuranira minanda iukiritue. Ndene ya moritani ja TIST ja cluster, ikundi bibinini nibiikagira inya arimi kugeria minanda iukirite. Nitwathaga ikundi bibinini kumigeria na gutucokeria ripoti ya kethira njira iu nithongomagia maketha kana kethira itithongomagia, na mathuganio jaria jomba gutuma maketha jaja jathongoma nkuruki.



Mbicha namba 1 nikwonania njira iria itumagirwa ni babaingi kubanga miuko, jauria tuugite aja iguru.

Mbicha ya mbele nikwonania njira iria itumagirwa ni antu baria baingi kubanga miuko. Njira iji ya tene ya kubanga miuko nthiguru no itume imera bikauma biri na miri itina inya. Bubu niuntu miri gicikunjanagia ndene ya mubuko. Riria muti jukuthamua, miiri no ithire inya na kwou ikaremwa kugwatanga muthetune nampwi. Kuebanira na bubu, ni bubwega kuumithia miti ndene ya miuko itikuniki nthiguru irikiri minandene iukiritue.



Mbicha ya ijiri: Bianana bia mithemba mwanya ya miti bibanganitue na milaini munandene juukiritue.

Mbicha ya ijiri no ithithue na mbao na wire (Tega mbicha) Bubu nibutethagia miri yongwa kugituka niuntu miri yakinya muthia jwa mukebe nthi nigitukaga yongwa. Guku nitakuuga miri itigitaraga gukurukira kugitwa gwa kawaida. Miri nandi nigijaga inya kinya kethira itineneaga kairi. Bubu nibutumaga miiri ikagia thiria na muti jukoombanga kugwatanga jwaikua muundene. Kairi nibunyiagia ngugi ya kugiita kana kunyiyia miri, untu buria buurairia kana bukathithua buchereri, bugatuma miri ikagitara nainya. Kumenyeera iria ritikaume minandene iu iukiritue gutijukagia ngugi inyingi, na minanda iukirite niinyurukaga ruuji bwega nikenda miri itikeeje kwija kuthukua ni ngai inyingi. Miti iumithitue minandene iukiritue no igitare igitaria kuthaamia, kwou menyeera riria ukumithamia. Geria minanda iukiritue narua, na ugaane iketha riaku na cluster yaku na arimi bangi ba TIST!

## Utongeria na wathani ndene ya cluster yaku.

**N**arua, TIST irina nkuruki ya cluster igana rimwe na mirongo ithatu iria cithithagia mantu ja TIST rionthe. Ndene ya cluster cionthe, atongeria bauthumba nibatutethagia na bakagaana inya ciao. O cluster irina wathani na utongeria ja uju:

### Utongeria bwa cluster

- Mutongeria wa cluster
  - Mutetheria wa mutongeria ndene ya cluster
  - Mwiki mauku na mumenyeeri mbecha cia cluster
- Atongeria ba cluster, atetheria ba atongeria na amenyeeri mauku na mbecha cia cluster baritaga ngugi ndene ya igitaria mieri inna. Mieri inna ya ngugi yathira, mutongeria wa cluster naumaga utongeriene. Mutetheria wa mutongeria naejaga mutongeria riu mwiki mauku na mbecha cia cluster akaa mutetheria wa mutongeria. Cluster yaku nibati kuithuurira mwiki mbecha na mauku ja cluster

umweru. Ithurano bia cluster biri bata na nibia mwanka kiri cluster cionthe cia TIST.

### Ngugi cia atongeria ba cluster

*Ngugi cia mutongeria*

1. Nabati kwithirwa ari nthumba kiri cluster yonthe na nabati gwitira mantu jaria TIST iukirite.
2. Natongagiria mantu ja cluster: natongagiria micemanio ya cluster, utari miti na mibango ya uritani bwa cluster amwe na atongeria bangi.
3. Neekagira ikundi motisha ya kwenda kuthithia mantu jamanene, amwe na kuanda miti na kurima na urimi bubwega. Natethagiria cluster gukara irina inya na ngwataniro
4. Natethagia kubangira micemanio ya cluster amwe na atongeria bangi na kumenyeera ati micemanio nigutongerua na nikuritanwa bwega.





5. Naritaga ngugi na Mwiki mbeba na mauku ja cluster kiri kumenyeera ati rekondi cia micemanio ya cluster na utumiri mbeba nigwikwa bwega.
6. Naritaga ngugi na Mwiki mbeba na mauku ja cluster kumenyeera ati ripoti cia mweri cia cluster na cia utumiri mbeba nicitumi na cirri cia jaria jario jongwa.
7. Natethagiria gutonyithia ikundi bibinini bingi kiri TIST nikenda biandikithua.
8. Natethagia ikundi bibinini gusaina kandarasi cia GhG na gucitonyithia kiri computer
9. Nagwataga ugeni na akamenyanithia mugeni umweru uria withirikua ari mucemanione.
10. Igitene ria kuria ikundi: nagiiraga vocha na into bingi biria bikuendeka mbele ya mucemanio jwa cluster. Naritaga ngugi na Mwiki mauku na mbeba cia cluster kumenyeera ati njira iria ibati nigutumirwa kiri kuria na akareta biuria na thina iria ciumira kiri atongeria ba TIST kana abangiri ngugi ya kuria mbeba.
11. Narikanagia amemba ba ikundi bibinini ntuku ya mucemanio jou jungi.

#### *Ngugi cia Mwiki mbeba na mauku ja cluster*

1. Najukagia mbeba cia cluster cia o mweri na akeera cluster mbeba iria baei na uria itumiri kiri o mucemanio jwa cluster.
2. Naritaga ngugi na cluster kubangira njira ya gutumira mbeba cia cluster kiri kuthithia mantu jamanene.
3. Neekaga na aakamenyeera rekondi cia cluster ndene ya iuku ribangi bwega ria rekondi ciamma cia cluster na njira iria ibati
4. Neetikagiria gutegwa kwa rekondi cia cluster ni amemba ba cluster na atongeria ba TIST.
5. Natumaga ripoti cia mucemanio jwa cluster na utumiri mbeba o mweri
6. Naritanaga mwiki mauku na mbeba cia cluster uria ukathurua nyuma yawe.
7. Natethagia na gwikira inya atongeria bangi kuritira ikundi bibinini ngugi.
8. Igitene ria kuria: nanenkanagira vocha kiri ikundi biria amemba bairi kana nkuruki bari mucemanione, agategera vocha, akaria na atetheria ba kuria na akathingatira njira ya kuria uria ibati na umma

#### *Ngugi cia mutetheria wa mutongeria*

1. Najukagia utongeria riria mutongeria atiku.

Mutetheria wa mutongera nabati kuritira amemba ba cluster na mutongeria ngugi .

2. Natethagiria gwika mathaa micemanione ya cluster
3. Najukagia rekondi micemanione ya cluster
4. Nathomaga mantu jaria jaririrue mucemanione jwa muthia ndene ya mucemanio jwa cluster
5. Neekaga rekondi cia mantu jaria jariritue ndene ya cluster.
6. Natethagiria kuritana mwiki mauku na mbeba cia cluster umweru.

#### **Arungamiri ba cluster.**

O cluster niithuraga arungamiri bairi(murume na muka) ba kubarungamira kiri kiama kia gikundi gia cluster inkai (GOCC).Arungamiri benu ndene ya GOCC nibabati kuburitira ngugi igita ria mieri ithanthatu. Nyuma ya igita riri, ithurano bibieru nibithithagua kuthuura amemba baberu ba GOCC. GOCC nithagirwa iri ya cluster ijiri gwita ithano iria ciri atuuri. Amemba ba GOCC nibabati gutirimana rimwe o mweri ndene ya kiumia kiambele kia mweri.

#### **Ngugi cia arungamiri ba cluster ndene ya kiama gia gikundi gia cluster.**

- 1) Kumenya na kugaana miitire iria miega buru kuumania na cluster;
- 2) Kumenyeera uritani bwa iguru buru bwa cluster bukithingatagira jaria TIST iikirite;
- 3) Kumenyeera utari miti bwa iguru buru bukithingatagira jaria TIST iikirite;
- 4) Kumenyeera into bia ngugi bia kuritana na gutara miti;
- 5) Gwikia mantu jaria jagusumburana na kuatha kiama kia ntuura inene mantune ja kuthithia mawatho;
- 6) Gutaambia TIST gukurukira cluster iria irio;
- 7) Kuthithia micemanio ya kugambithia riria mutari miti kana muritani arungamua ngugi nikenda bategera jaria jakarikite na baathana kwegie kurungamua kou;
- 8) Kuthithia micemanio ya kugambithia riria mutongeria wa cluster atikuthingatira jaria TIST iikirite;
- 9) Kuatha kwegie antu baria babati kuumania na gikundi gia cluster kiri ngugi ingi ndene ya TIST ta mutegi ngugi, TSE kana muritani umunene

Atongeria bangi ba TIST ndene ya cluster ni amwe na atari miti, aritani na atongeria ba mantu mwanya mwanya ( ta urimi bubwega, kumenyeera nteere cia ruuji na miti ya gintwire).



## Uria cluster yaku ibati kuthithia o mweri nikenda buumbana rionthe.

*Kujukia mbeba cia o mweri gukurukira mwiki mbeba na mauku ja cluster, kubangira mbeba iji, na kuandika ripoti ya uria mbeba iji itumiri*

Ndene ya TIST, nitwonaga inya ndene ya kujukia matagaria twinthe na kugaana jaria tuumbanite kirijo na bang indene ya ikundi biete bibinini, ndene ya cluster cietu na na bangi babaingi. Ripoti cia o mweri cia cluster kwegie micemanio ya cluster na utumiri mbeba ni mantu jari na bata ndene ya kuumbana guku. O cluster irina ngugi ya gukokia ripoti cia jaria jathithikite mucemanione jwa cluster na utumiri bwa mbeba o mweri na niibati gutumiria mucemanione jwa cluster uria mbeba cia o mweri citumiritwe.

*Uria umba gutuma ripoti cia utumiri mbeba na mucemanio ugitumagira ntumwa ya thimu*

Weru na kumenyanira ni mantu jarina bata mono ndene ya TIST. O cluster yonthe ya TIST niibati kucokia ripoti yegie uria itumirite Magana kenda jayo kuthithia mantu jamanene. Kuuma mweri jwa itantatu mwaka jwa 2011, TIST nithiritwe ugitumagira njira injeru iria itina inya ya gutuma ripoti cia utumiri mbeba ciao cia mweri na rekondi ciao cia micemanio ya cluster bagitumagira ntumwa cia thimu.

Njira iji niitikagiria mumemba wa TIST gutuma ntumwa kuumwa kiri thimu yawe gwita kiri thimu imwe iria ithuri. Ntumwa iji nijukagua na igategwa ni atongereria ba TIST. Kethira cluster irina Palm igwita ngugi, nibabati gutumira fomu cia mucemanio jwa cluster nay a utumiri mbeba ndene ya Palm. Indi-ri, na njira iji njeru, o cluster no

mwanka itume ripoti o mweri. Njira iji niuthagiria arungamiri ba cluster ngugi ya gutuma ripoti na igatethia atongereria ba TIST gutetheria mantu ja cluster. Twarega gukinyirwa ni ripoti kuuma kiri cluster, atongeria ba TIST no bathuganie ati cluster yenu uti ikuthithia. Kwou, butitumirwa mbeba cia o mweri, ngugi ya Atari miti kana kanya ga kuthoma na kugaana ndene ya seminar. Turiteni ngugi kugaana ripotu na mantu jaria tuthithitie o mweri!

### Gintu gia kuriikana: kenda buumbana cluster yenu niibati:

- 1) Gwita micemanione yenu ya cluster na kuriikania ikundi bingi gwita mucemanione.
- 2) Tegeereni mantu jaria cluster yenu ithithitie: miti imieru iria iandi, ikundi biria bitariri miti na uria mbeba cienu citumiri ja cluster.
- 3) Tumeni ripoti cienu cia micemanio ya cluster na utumiri mbeba bwa cluster na Palm kana ntumwa ya thimu.
- 4) Bangireni utari miti na Atari miti. Menyeereni ati muntu umwe ndene ya cluster nagutetheria kiri utari miti!
- 5) Iteni acore benu na aturi gutonya kiri TIST ndene ya micemanio ya cluster. Gaaneni Mazingira Bora iji na bubatetherie kiri gutonya.
- 6) Thithieni mantu jamanene nkuruki! Andeni miti, akeni kana bugure riiko ria gutumira nkuu inkai, tumireni urimi bubwega. Amwe, gutikio tutiumba kuthithia!

## Kurima matuma na urimi bubwega.

**C**luster ya Kiengo nandi niritanaga amemba bayo uria bomba kuanda matuma na njira ya urimi bubwega. Na njira iji nitumbite kuanda matuma na ruuji rurukai.

### Kuthuranira.

Inja mutaro jwa uraja bwa metre mirongo iiri na waarie bwa metre imwe na kwina fiti ijiri

### Mboleo.

Ituura muju nthi buru ndene ya kirinya. Riu, unganina mboleo ya kuthithia na muju jumukai na uujurie kirinya nayo

Kunikira na muthetu jwa iguru juria witire riria ukuinjaga kiriinya kiu.

### Gwikiira ruuji.

Ikira ruuji rurwingi, ikira na kibuyu kiria gia gutuura ruuji kuthuranira muunda jwaku kuandwa mbeu mwanka rung'ane.

### Mbeu.

Aanda mbeu ngiri ithatu mutarone jou jwa urimi bubwega. No ucue mbeu naria matuma jamaaga jongwa na naangi naria arimi bangi baandite matuma.

### Gukura.

Ijukagia mieri inana nikenda gituma giaku gikura kiumba kwinjwa. Urimi bubwega bwa matuma no buthithue ni antu baria batina miuro ya nduui akui nabo.

Urimi bubu nibubwega kimbeba niuntu nibutumira into bibikai na nibukuejaga iketha ririnene kuumania na kamuunda kanini.

### Utumiri

- Kwendia thokone
- Ni irio bibiega kiri nja yaku.

Matuma nijakua cluster ya Kiengu baita inyingi niuntu arimi nibakugaana na bakamenya njira ja iji o uria bagutirimana. Ikundi biiri ruua nibiaerwe motisha ya miti. O uria bakwona baita ikiingia, ikundi bibinini nibikwongereka niuntu babaingi nibagucua gutonya kiri TIST.

**TIST: Amwe ni tugukura!**



## **Kunyiya na kugiita miti yaku biang'i nikenda inenea na ikura bwega.**

Ni Ben Misleh

**A**ntune anene, kunyiyia miti na kugiita biang'i, nigutethagia kuthongomia thiria ya muti amwe na thiria ya mwitu junthe. Bubu buthithagua gukurukira gutaara miti iria mithongi buru ndene ya mwitu. Kiri mithemba ya miti imingi, amwe na mibao, mikima na mithithinda, iji niyo miti iria minene buru, o muti juri jumwe jutiumirite ingi rutere na jumutamburuku. O muthemba jwa muti nijwendaga mantu mwanya kulingana na muthemba, antu aria juri, uria juandi (iandi yonka, iandi gati gati ka imera, kana iandi kunyiyia ruugo) kana rera, indi kuri mantu jethagira jario kunthe.

Gukuria miti irina inya na thiiria injega nikwendekaga utarania miti bwega (Meter ijiri). Gutarania na meter ijiiri nikukwega buru kiri miti imingi ya TIST (ta mibao, mikima na mithithinda), indi ririkana ati miti imwe niendaga gutarania gukunene nkuruki (ta miembe na mikandamia). Gutaarania miti bwega nikumiejaga kanya ga gukinyirwa ni ruuji na irio bing'ani, biria bitethagia miti kunenea mwanka aria ibati. Kuanda miti akui nigwitikiritue riria miti ianaki. Riria miti ikwambiria gukura, kuri na miti iria ikaneneanga na kugia inya kiri ingi. Iji niyo miti iria ibati gutigwa muundene, (Imera miti). Kiri gutaara ni miti iriku ikagitwa, tega miti iji mithongi na umenye kethira nitarenie bwega. Kethira ititarenie bwega, miti iria iri akui ikendeka kugitwa.

Warikia kumenya ni miti iriku ikugitwa, migitire nthiguru buru. Ndene ya biumia na mieri iria ikathingata, miti imingi ikambiria kumira au gitinene. Nikenda muti jutiraume kairi, iji ikuumira niigitwe kana iunirwe nthiguru buru.

Njira imwe iria mbuthu buru kumenya kethira muti nijubati kugitwa ni gutege uria jung'ana ugiteganagiria na miti iria iri akui ya ukuru o ja bwaju. Ririkana ati gukura kwa muti gukaringana na muthetu, ruuji na jangi jamaingi. Antune aria anene, kethira miti yonthe iria iri amwe iri na ukuru akui bumwe, miti iria minene niyo ibati gutaarwa gutigwa muundene. Gintu kingi kiria umba gutege thiria ya muti nakio ni aria mathangu jaria maingi ja muti jou jari wateganiria na ingi. Miti iria iri mathangu jamaingi iguru ria miti ingi niumbaga kujukia weru bubwingi nkuruki ya iria iri nthiguru na kwou igakura bwega nkuruki. Kuthiria, miti iria igutigwa no mwanka iithirwe iri imitamburuku itiumiriite ingi rutere na itina mirimo kana kurota. Indi bubu ti kuuga ati miti yonthe iria itinenenei igitwe. Muntu nabati gutegeera gutarania kwa meter ijiiri nikenda amenya miti ikunenea na yagia thiria injega buru nikenda ruugo rurwingi ruruthuku rumba kujukua.

Riria ukuthithia mantu jau jariau iguru, rikana ati gukuranga kwa muti ni mwanya mono kiri mithemba mwanya ya miti. Kethira muembe jurikura akui na mibao imingi, muembe nojwithirwe junii mono na jugikuraga gapori nkuruki ya mubao juria jukurangaga, indi jutibati kugitwa nontu niyu munini! Kwaria mma, muti ta muembe ni muti kimera juria juri bata niuntu bwa utumiki bwaju ja kuejana irio. Kurina utumiri bungi bubwingi bwa miti, kulingana na muthemba, tutigutara kugwatia ruugo ruruthuku. Mung'uanano, muti nojwendeke niuntu bwa

kirundu kiaju. Antune aja, nubati kua muti kanya nkuruki ya ingi nikenda jukinyirwa ni riuu, riria rigatuma muti jugia biang'i bibieru kiri gitina na kiri biang'i biria biri iguru. Ukenda gutumira miti kunyiyia ruugo, nubati kumenyeera ati miti iu iri lainine nikwianiritie, indi rita miti nteere cionthe nikenda juumba kwingiyia mathangu na biang'i amwe.

### **Kunyiya mathangu**

Ndene ya mwitu jwa kuuma jungwa, miti nicinyiagia mathangu yongwa. Biang'i biria biri iguru buru nibigwithagia biang'i biria biri rungu. Ouria mathangu jakuuma kiri biang'i bia nthiguru nou kinya kiang'i kiria mathangu jau jari kiendeleagaa kuuma. Gukurukira kugaruka kwa rera ya ntuku, biangi biria bikuite na biria biori bikagua kana bigwithue. Kinya kethira miti nicinyiagia mathangu yongwa miundene ya TIST, kwethira kubui kana kurina gitumi kunyiyia mathangu na njara. Riria ukuthuura ni biangi biriko ukugiita, nubati kuthingatira mantu jamakai. Kinya kethira o muthemba jwa muti nijwendaga njira mwanya ya kunyiyia mathangu, mantu jamwe nijathithagua kiri miti yonthe.

Mithemba imingi ya miti nibati kwithirwa irina gitina kimwe nthiguru. Miti iria irina gitina kimwe niyo ikurangaga na itiunikangaga igita ria ruugo kana ngai inyingi. Muti jurina itina bibingi jwatarwa gutigwa muundene, kurina mantu jamaingi jaria uumba gutegeera riria ugutara ni gitina giku ugutiga. Ja uria uumba kuthugania, gitina kiria kinene nikio kibati gutarwa gutigwa. Kwongera, gitina kiu kithirwe gitikurota, kionanie kiri na thiria (ta kithirwe kirina mathangu jamaingi), na kithirwe gitamburuki.

Gintu kimwe kithuganagirua uria gitibati niati nuubati kugita kiang'i, winami bwa gitina. Bubu ni urongo. Ubati kugita uumarite bwa ome ya gitina. Njira iji ninyiagia antu aria ugukunura na igetikiria muti juumba guciorangia kironda nyuma ya igita. (Tega Mbicha I), untu buria butethagia muti gukara juri na thiria na jutikwoora. Riria ukunyiyia mathangu ukenda kuthithia uju mono. Biang'i na mathangu jaria jagitagwa nijatumagirwa mono ja nkuu kana iria. Kinya kethira bubu nibwitikiritue buru, rikana kunyiyia mathangu nogutethie kuthongomia thiria ya muti na kujuneneangia igitene, indi kurita mathangu gukamba kunyiyia kuumba kwa muti kugwatia riuu na nogutume muti jukaga inya nontu bwa kujwikira kironda, kiria no mwanka kiore. Warkia kugita kiang'i, au kugita gutibati gutongwa. Ugagukunikira na gintu kinya gikari, nikenda muti jumba kurita maira kirondene. Iji noyo njira iria mwiri jwa muntu jutumagira riria jukworia kironda.

Ukorirua riria kunyiyia mathangu na ukunyiyia miti ati miti niomagira itina bingi akui na aria kwagitwa. Mithemba imwe nithithagia uju nkuruki ya ingi. Antune anene, itina bibi nobiritwe na uuthu mwakene jwa mbele nyuma ya kugita na njira ya kuuna aki. Jaria maingi itina bibi bitiuma kairi.

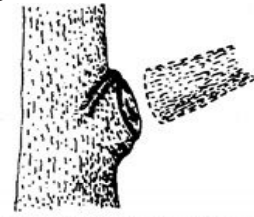
Miti imwe, mono mitunda, ikaciara bwega nkuruki irina itina bibingi. Iji nigitagwa akui na muthia jwa gitina iri iminini nikenda itina bingi biumira. Muti jwarikia kuuma



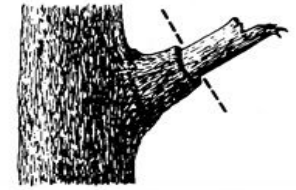
tutina tunini, kinyatu notugitwe nikenda tungi tuuma. Bubu nobucokerwe nikenda muti jumata, indi menyeera ati nukua muti mieri imikai kana imingi nikenda yumba kwora kuumania na kugitwa kou.

Rikana ati gutonya thokone ya ruugo, nitubati gwika wirane gwika miti yetu igita ririnene. Nitubati gwitikiria miti ikuura mwanka miaka mirongo ithatu, tukiminyiagia na kunyiyia mathangu nikenda yumba kua miitu ya bata na iria tukomba gwika itue baita miaka iria iijite. Miti iria igita yaumira itibua ya gwikua thokona ya ruugo na kwou ititarwa iri miti ya TIST.

Figure 3



Pruning cuts should be made just outside the branch collar.



On a dead branch that has a collar of live wood, the final cut should be made just beyond the outer edge of the collar

## CRS na TIST nibambiritie mubango jwa kwambiria jwa ndengu ndene ya ntuura ya Mt Kenya.

**K**wambiria Mweri jwa ithatu, TIST na CRS bakaritaniria ngugi gwikira inya arimi ndene ya ntuura ya Mt Kenya baria barimaga guntu gutina mbura na naria kuri na mbura inini kurima ndengu. Ndengu nikuraga bwega guntu gutina ruuji. Ndengu niinjega kiri mwiri, nicingagira mwiri into biria jugwitia. Ndengu citi inya kuruga na cirina murio! CRS nithirite igitanagiria ngugi na arimi ba Embu kugeria mbeu injeru injega nkuruki ya ndengu igitwa B20. Ni ndengu ikurangaga ( ntuku mirongo inna ithano), igitikagiria imera guciaranga mbele ya kimera kithukua ni thano.

Amemba ba TIST ndene ya cluster inthure

bakarima mbeu iji njeru ya ndengu na bambirie banki ya mbeu kuumania na aria amemba ba TIST ndene ya ntuura itina ngai bakomba kugura niuntu bwa ianda riu ringi. Ndene ya mieri iu iijite, CRS ikethirwa ikiritanaga aritani ba TIST kwegia gwika na kwendia ndengu na gwikira inya arimi gucwa thoko iria njega buru iria yumbika ya iketha riao.

Kara urugurite metho jaku nikenda wona mantu jangi kiri Mazingira Bora iria ciijite kwegia uria mubango juju jwa ndengu jugwitia na mbele na uria kinya gwe uumba kwona baita kumania na kimera giki gia gukuretera mbeca!

## TIST na baita ciayo nicigwita na mbele kunenea!

Ni Aaron Kaudio

**O**uria TIST igutamba kiri ntuura injeru ndene ya nthiguru yetu nou cluster ingi na ingi ikuthithua na cluster inkuru igakuura o uria aturi bagutonya na kuambiria ikundi bibieru. Baita cia TIST nikugaanwa na cikoonwa ndene ya ntuura injeru.

Narua, nkuruki ya cluster igana na mirongo ithatu iria cithithagia mantu ja TIST rionthe nicithithue. Nitugwita ngugi nainya kwingiyia cluster ikinya magana jairi mbele ya muthia jwa mwaka juju.

Nitugucokeria nkatho atongereria betu ndene ya Kenya niuntu bwa ngugi yao inene na guciitaniria kwao kumenyeera ati o cluster niibanganitia bwega kiingugi na niitite na mbele gukinyira bioneki bia TIST.

Ja uria twinthe twiji, twinthe nitugwitia kurita ngugi amwe gutethia TIST na baita ciayo kunenea. No tuande miti, tukaambiria na gutumira miitire iria miega buru ya TIST ta urimi bwa kumenyeera biria turi nabio na urimi bubwega, kuanda na kumenyeera miti ya mithemba imingi nikenda twikira cluster cietu inya o uria tukuthongomia miunda na miturire yetu.

Riria waanda muti, menya ati nugutethia kinya nthuki iria ciijite nikenda beethirwa bari na guntu gukuega, gukutheru na gukuthongi kuria kubathiurukite. Bagaikumiria ati nitwaritire ngugi nainya kurua na kugaruka kwa rera na kuthiria ukia. Giki nikio gitumi batwi ndene ya TIST tuthuraga mono mithemba miti yakuanda ndene ya miunda yetu na nterene cia nduuji cietu.

Miti imwe niigitaragia naria gututhiurukite ndene ya ntuura imwe, kinya kethira irina baita ingi. Miti ja mibao nikuraga ntuti niuntu nijukangagia ruuji rurwingia na irio bibingi. Niuntu bwa gitumi giki, muti juju no jwithirwe juri jumwega jwa kwendia kana gutumira, indi no jugitarie naria kuthiurukite ndene ya ntuura imwe mono nterene cia nduuji na naria kuuraga mono.

Nitukuanda miti, iria igakara igita ririraja (miaka mirongo ithatu na nkuruki) kulingana na uria thoko ya ruugo igwitia. Arimi ndene ya ikundi bibinini biria birina mibao imingi nibibati gukinyira uria TIST yendaga kwithirwa gutina mibao nkuruki ya mirongo ithatu na ithatu kiri o miti igana, kana gukurukira kuanda miti ya gintwire muundene jungi kana gutaura mibao na kuanda antu ayo miti ya mithemba ingi, mono miti ya gintwire. Buburina bata mono nkuruki nterene cia nduuji. Rikana ati thirikari niregaga uandi bwa mibao akui na nduuji na nterene cia ruuji. Aanda miti ya gintwire iria ikaranagia na ruuji bwega, na uthingatire mitire iria miega buru na ukomba kuewa motisha ndene ya mubango jwa miti ya gintwire ndene ya ntuura iria ithiurukite nduuji. Ukethirwa ukuthongomagia ruuji kiri thiria ya nja yaku, kiri antu baria bari bwagaiti yaku na kiri nthuki iria ikeja.

Gatuthithie uju twinthe nikenda tukoomba gwika muradi jwa TIST na kinya naria gututhiurukite. Mwandiki uju ni mutari miti ndene ya cluster ya Kigucwa. aronkandio@tist.org.

# Mazingira Bora



www.tist.org

**Kikuyu Version**

An Environmental, Sustainable  
Development and Community Forestry  
Program.



## TIST

The International Small Group & Tree Planting Program

**Aikari a itura makiruta wira ta gikundi. Arimi a TIST manyitana guthondeka stove ya kuhuthia mirugire. Maharagiriria tiri wa rumba kumba stove (Thiini). File Photo**

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**TIST na mawega mayo guthii na-mbere na gutherema! Page 6**



# TIST: Mitaratara miega ya kuhariria tuta – Raised pot beds.

Kuri mweri wa February, nitwathomire uhoro wigii kungania mbegu na kuhariria tuta. Mweri uyu, nituguthoma mitaratara miega ya TIST ya kuhariria tuta. Thiini wa githomo gia cluster, ikundi nini nicirahinyiriria arimi kuhuthira raise beds. Naithuii niturahinyiriria ikundi kuhuthira njira nio niguu mongerere ukuria wa miti.



Figure1: Njira cia tene cia kuhariria tuta ta uria citariirio.

### Figure 1:

Irarataria njira iria ciuikaine. Njira ino ya kubanga nyungu mugundai-ni njira ino ya kinduire ya kubanga nyungu noirute mimeri iri na miri itari na hinya. Na nitondu miri ithioragirira nyunguini. Riria urathamia miti yaku, miri noikorwo itari na hinya nay age kwinyitirira tiiri-ini wega. Kugiririria uu, niwega guthondeka tuta yoetwo iguru.



Figure2: Mimire ya mithemba ngurani cibangitwo tuta-ini.

**Figure 2:** tuta yoetwo iguru noyakwo na uthu ukihuthira mbau na waya. Tutta ino niitumaga guceha miri kuhuthe riria miri yaneneha. Uu nikuga ati, miri ndithukagio ta uria ithukagio ugiceha na njira ici ingi. Miri niigiaga hinya yacehwo na mimeri ikahota gukura wega na naihenya migunda-ini. Ningi niinyihagia wira wa guceha, maundu maria mariganagira na makagwa gwikwo na magatuma mimeri ithuke. Kurima riia thiini wa tuta ino nikuhuthu na mimeri nihotaga gukinyirwo ni maai wega na ndingithukio ni maai maingi. Mimeri iria ikuriirio tutaini ino niyagiriirwo ni kumenyererwo igithamio. Geria tuta ino njoe iguru umuthi na wone maciaro na wire arimi aria ang!

## Wathani na utongoria thiini wa Cluster.

Umuthi TIST iri na makiria ma cluster 130. O thiini wa cluster, atongoria nimanyitagirira uhotani na uhoti witu. O cluster ni iri na wathani na utongoria ta uu.

### Utongoria wa cluster.

- Mutongoria
- Munini wa mutongoria.
- Muigi mathabu

Mutongoria wa cluster, munini wake na muigi mathabu matongoragia gwa kahinda ka mieri 4. Thutha wa mieri 4 ya utongoria, utongoria niuthiururukagio. Munini wa mutongoria agatuika mutongoria nake muigi mathabu agatuika munini

wa mutongoria. Athuri na atumia nimacenjanagia giti kia muigi mathau. Cluster yaku yagiriirwo niguthurana na kihooto na utheri na nomuhaka o murimi athurane tondu ithurano ni cia bata munene.

### Wira wautongoria wa cluster.

#### Wira wa mutongoria

1. Agiriirwo nigutungata akirumirira watho.
2. Gutongoria mawira ma cluster: kuhariria micemano, utari wa miti na gothomo.
3. Gwikira ikundi hinya niguu magie na maciaro mega ta Kilimo Hai na gutigirira cluster niyanyitanira.



4. Kuhariria micemano ya cluster hamwe na atongoria angi na gutigirira micemano niyathomithanio.
5. Kurutithania wira na muigi mathabu gutigirira rekodi cia micemano na mathabu niciaigwo.
6. Kurutithai wira na muigi mathabu gutigirira ripoti ya o mweri niyatwwo na ninginyaniru wega
7. Kuingiria na kwandikithi ikundi nini.
8. Guteithiriria ikundi nini gwikira kiore kandarathi ya Green House Gas na gutuma.
9. Kwamukira na kumenyithania ageni aria maceera.
10. Hari marihi: kugiira voucher ya marihi na indo ingi mbere ya mucemano. Kurutithani wira na muigi mathabu na kumenyithania ciuria na mathina kuri atongoria a TIST na arihani.
11. Kuririkania amemba a ikundi nini muthenya wa micemano.

***Wira wamuigi mathabu.***

1. Kwamukira budget ya cluster na kumenyithania mathabu mucemano-ini.
2. Kurutithania wira na cluster kwona uria makuhuthira budget.
3. Kuiga na kumenyerera rekodi ibuku-ini.
4. Gwitikiria mathabu marorwo ni amemba a cluster na atongoria a TIST.
5. Gutuma ripoti ya mathabu nay a micemano o mweri.
6. Guthomithia muigi mathabu uria ukumumirira.
7. Guteithiriria atongoria angi gutungatira ikundi nini.
8. Hingo ya marihi, kuheana voucher, kumenyithania na arihani na kurumirira mitaratara miega ya TIST.

***Mawira ma munini wa mutongoria.***

1. Kuoya utongoria riria mutongoria Atari kuo.
2. Kuiga mathaa ma micemano.
3. Kuiga rekodi micemano-ini.
4. Guthoma minutes cia mucemano ucio ungi.
5. Kuiga minutes cia mucemano ucio ungi.
6. Guthomithia muigi mathabu mweru.

***Arugamiriri a Cluster.***

O cluster niithuraga na njira ya kihooto arugamiriri eeri( mutumia I na muthuri I) kuri gikundi gia kanju ya clusters(GOCC). Arugamiriri a GOCC yaku magiriirwo niguthungata kahinda ka mieri 6.Thutha ucio githurano gikwo na arugamiriri angi mathurwo. GOCC ithondeketwo ni cluster 2-5 iria cikuhaniriirie. Amemba a GOCC magiriirwo nigucemania mweri rita I kiumia kia mbere.

***Mawira ma arugamiriri a GOCC.***

- 1) Guthundura na kuonania mitaratara miega.
- 2) Gutigirira githomo nikia ngathi ya iguru kuri cluster.
- 3) Gutigirira utari wa miti niwa gikiro kia iguru.
- 4) Kuiga indo cia utari wa miti na githomo.
- 5) Kumenyithania mawoni na wendi wa arimi kuri kanju ya icigo.
- 6) Guthemia TIST kuihitukira cluster.
- 7) Guthikiriria maciira na gutuiria uma
- 8) Guthikiria maciira angikorwo mumemba ndaretikirow ni TIST
- 9) Kuheana mawira kuri arimi a cluster ta auditors, TSE kana athomithania.



## Atongoria angi ta Atari a miti, athomithania kana angi.

Uria atongoria magiriirwo ni gwika o mweri.

Kwamukira budget o mweri kuhitukira muigi wa mathabu, kubanga budget na kuripoti uria mahuthira budget

Thiini wa TIST, nitugiaga hinya riria twoya makinya hamwe na kuheana ugoro wa utoria hamwe na ikundi nini, thiini wa cluster na makiria. Ripoti cia o mweri cia micemanio na mathabu nicia bata. O cluster yagiriirwo gutuma ripoti nginyaniru o mweri, na maenyithanie uria mahuthirite budget yoa o mweri thiini wa micemanio

*Uria ungituma ripoti ukihuthira njira ya SMS*

Utheri na kwihokeka ni ciabata. O cluster niyagiriirwo nikuga uria ihuthirite 900/=. Kuka June 2011, TIST ikoretwo ikihuthira njira njeru na huthu ya kuripoti mahuthiro ma budget na ripoti ya micemanio kuitukira SMS.njira ino ihotithagia amebakuma thimu-ini ciao nginya thimu imwe. SMS niciunganagio na igathurimwo ni aruti wira a TIST. Angikorwocluster iri na palm nomahuthire fomu ya micemenio na mathabu no ona kuri ouguo, o cluster no muhaka itume ripoti o mweri.njira ino

niinyihagia wira wa kuripoti kuri arugamiriri na igateithiriria aruti wira a TIST na maundu maingi. Tungiaga kwamukira ripoti kuma kuri cluster, tuaga cluster yanyu ndiraruta wira. Na kwa uguo ndukwamukira budget na utari wa mit kana mweke wa guthomithio. Nitutume ripoti cia o mweri.

### **Kirikania: niguu kugia na maciaro, cluster yagiriirwo:**

- 1) Thii mucemanio na uririkanie angi.
- 2) Roar maciaro ma cluster yanyu: uhandi wa miti, gutarirwo miti na uria muhuthirite budget muri hamwe ta cluster.
- 3) Tumai ripoti na palm kana sms cia micemanio na mathabu.
- 4) Jariria utari wa miti hamwe na aria maratara miti. Tigrira mundu umwe kuma cluster niateithiriria.
- 5) Ingiria andu angi thiini wa TIST micemanio-ini ya cluster. Heana Mazingira Bora na umateithiririe kwiyandikithia!

## Nduma (Kilimo Hai)

Cluster ya kiengu riu niirathimithia amemba aao ukuria wan duma makihuthira Kilimo Hai. Njira-ini ino nituhotete gukuria nduma tutakuhuthira maai maingi

### **Uhariria**

Enja mutaro wa uraihu wa 20m, warii wa 1m na uriku wa 2ft.

### **Thumu**

Ita muhu thi ya iria. Tukania thumu wa mahuti na muhu ucio na uihurie muaro. Humbira na tiiri uria ukwenjete.

### **Kuhe maai.**

Ikira maai itiriria nan doo mbere ya uhandite. Mimera.

Handa mimera 3000 thiini wa mutaro. Nounganie mimera ino kuma kuria kuhanditwo nduma ni arimi angi.

### **Gukura.**

Cioyaga kahinda ka mieri 8 niguu cikure na cigethwo. Njira ino ya kuhanda nduma niinyihagia mahuthiro na noihuthirwa niandu aria matakorago na njuui namagie na magetha maingi.

### **Mahuthiro**

Nduma cia kwendia Ciakuruga mucii

Nduma nicikoragwo na maciaro mega na arimi aingi kuma cluster ya Kiengu nimonete uguo. Ikundi igiri niciamikirite nyongerera. Magithiaga na mbere kwona maciaro, muigana wa ikundi nini niwongererekete.

Niurenda kuingira TIST?

**TIST:TUKURE HAMWE!!**





# Gutagania na guceha miti niguu ikure wega.

Mwandiki Ben Misleh

Githumi gia guceha na gutagania miti nikwongerera miti hinya o hamwe na mutitu wothe. Thuura miti iria iri na hinya thiini wa mugunda, iria ungitigia. Mithemba miingi ya miti nginya miti miumu, grevillea mibau na thithinda iria ikoragwo iri minene. Miti noikorwo ikibatara handu hanene kuringana na muthmba , mugunda na njira ya kuhanda na riera. Niguu gukuriamiti iri na hinya, utaganu a 2m niwagiriire. Utaganu uyu niurutaga wira muno kuri miti miingi thiini wa TIST ta (ie. Grevillea na cypress), no ririkana miti ingi niibatara utaganu munenanene (maembe, macadamia). Gutagania miti kumihotithagia gukinyirwo nimaai na unoru muiganu niguu ikure uria yagiriire. Utaganu muini nimwitikiriku riria miti iri minini. Miti yathii nambere na gukura imwe niigukorwo iri minene gukira iria ingi na ithereme, na niyo yagiriirwo nigutigio. Tagania miti iria minene na iri na hinya. Riria wamenya miti iria ukweheria, mitinie gitinaini na thutha wa mweri githuki ni giguthunduka na niguu muti ucio ndigakure tinia mahuti macio mathunduka.

Angikorwo miti ya muthemba umwe ni ya riika rimwe, iria ,minene niyo yagiriirwo nigutigio. Njira ingi yakumenya miti miega nikurora uraihu wayo miti iria miraihu kuri iria ingi niyo yagiriirwo nigutigio tondu niyamukagira riuu riega gukira iria ingi, na noikure wega. No ona kuri o uguo, uu tikuga miti yothe itemwo. Gia na utaganu wa 2m niguu miti ikure wega na igie na carbon nyingi. Riria uratua matua ma guagania, ririkana gukura kwa miti kuringanaga na mithemba. Muti wa marmbe ungikura hamwe na mibau, maembe nomakure kahora gukira mibau iria ikuraga na-ihanya, no ndiagiriirwo nigutemwo tondu ni minini! Muti ta muembe niwabata niundu wa mahuthiro maguo na gutuhe matunda ma kwendia. Muembe niwa bata kuri indo iria ingi cirakura mugunda-ini. Niwega kuririkana maundu maya riria uratagania miti yaku. Mabata ma miti nimaingi kuringana na mithemba ona gukira kuruta carbon. Kwamuhiano noubatare miti ya kiiruru. Na uu, niwagiriirwo nikuhe muti

handu hanene hakwaramiria mahuti niguu honge cinenehe. Angikorwo niurenda miti ya kunyihia ruhuho, ndugatagania miti iyo muno niguu mahuti manyitane.

Guceha.

Kuri mutitu wa kinduire, miti niicehaga. Mahuti ma na-thi nimetinagia na makagua na mangi mgakura na-iguru. Honge ira cibuthite niciiguithagia. Ona miti igiicehaga, nitwagiriirwo nikwoya makinya ma kumiceha na moko. Na riria miti ngurani ibataraga ucehi ngurani, hari na maundu maria magiriirwo nikurumirirwo riria uraceha. Miti miingi yagiriirwo nigukorwo na rutungu rumwe haha thi. Miti iria iri na rutungu rumwe nnikuraga na-ihanya na ndingimunywo ni ruhuho. Angikorwo niugucagura iria iri na ndungu nyingi niguu umitigie, cagura iria minene na utigirire nimiega na iri na mahuti na timiruaru nan i mirungaru.

Andu aingi meciragia wagiriirwo nigutinia ruhonge uigananitie na muti, uguo tiguu kuri, wagiriirwo nigutinia ukometie. Njira ino niigitagira nnuti kumana na mirimu na miti igakura na hinya. Riria urahurura miti, ndukahurure muno. Miti iria yahururwo niithuthagirwo ta ngu kana kuhe maiu. Ona undu uyu uri mwega ririkana ona kuhurura gugiteithagia miti, kuhura miti nigukwamba kugiria muti gukinyira riuu na gwikira miti ironda iria nomuhaka ihonie. Ungihurura miti muno, muti no ume kana ukure kahora muno ndukahumbire haria watinia ruhonge niguu muti uhote kuruta giko giothe ugiitaga thi.

Ndukariganirwo miti ithundukagira haria watiniria ruhonge na mithemba ingi niithundukaghuthua muno gukira iria ingi. Miti ino niikoragwo na uhuthu kugiria mahuti maria mathunduka matikanenehe tondu no kumabura. Miti ingi, na muno miti ya matunda, niikuraga motunda hongeini nyingi. Ici citinagio haha thi riria miti iri minini niguu ikure wega. Riria miti yathundukka nonginya mahuti macio matinio. Uhoro uyu wagiriirwo nigucokerwo ringi na ringi.



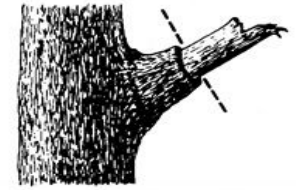
No utigirire niwahee miti kahinda kaiganu ga kuhurura.

Ririkani niguu unyite itemi thokoini ya carbon nomuhaka tuthondeke miti iitu gwa kahinda kanene. Nitwagiriirwo nikureka miti ikure gwa kahinda ka miaka 30. Kuhurura na gutagania miti niguteithagia mititu kugia na miti iri na hinya na iri na uteithio. Miti itari mitaganie ndingitikirika TIST na ndingitarwo.

Figure 3



Pruning cuts should be made just outside the branch collar.



On a dead branch that has a collar of live wood, the final cut should be made just beyond the outer edge of the collar

## CRS na TIST kwambiriria uhandi wa nddengu Mt. Kenya.

Kwambiriria march, TIST na CRS nimakurutithania wira hamwe kuhinyiriria arimi a Mt. Kenya aria makoragwo kundu kumu mahande ndengu. Ndengu nicikuraga wega kuria kuu. Nicikoragwo na hinya na vitamins o hamwe na mawega mangi maingi. Nihuthu kuhariria na cicamaga wega muno.

CRS niikoretwo ikirutithania wira na arimi a Embu niguu kugeria mithemba ngurani ya ndengu(B20). Mbegu ici nicikuraga naihenya mbere ya guthukio ni riua.

Arimi a TIST a cluster thuure nimagukuria ndengu ici, na kwambiriria ikumbi riria arimi mangiruta mbegu. Mieri yukite, CRS niiguthomithia athomithania a TIST uria mangihota kuiga mbegu na wendia wa ndengu, gwikira arimi hinya niguu magie na maciaro maingi

Hinguria maitho maku niguu wone ngathiti ingi cia Mazingira Bora cia uria ungikuria na wendie ndengu.

## TIST na mawega mayo guthii na-mbere na gutherema!

Mwandiki Aaron Kaudio.

OTIST igithiaga na mbere gutherema guku bururi-ini, cluster nyingi makiria nicirathondekwo, na iria iriku nicithiite na-mbere na gukura na arimi angi makiingagira, ikundi nini cigathondekwo. Mawega ma TIST nimathiite na-mbere na kwoneka miena miingi.

Umuthi makiria ma cluster 130 nicithondeketwo. Niturerutaniria gukinyia namba ino nginya 200 tugikinya muthia wa mwaka uyu.

Nituracokeria kanju ya utongoria ngatho ni wira munene marutaga gutigirira o cluster niiratiini na mbere wega. No tuhande miti, na turumirire mitaratara ingi niguu kwagirithia TIST ta Kilimo Hai, kuhanda miti ngurani niguu gwikira cluster hinya na kwagirithia miturire iitu.

Riria wahanda muti, menya ati urateithia njaro nyingi iguo cigakorwo na riera riega. Nimagakenerawira uria turaruta wa kwagirithia riera na kunina ukia. Na nikio ithui TIST tuthuranagia miti iria turahanda migunda-ini iitu na njuui-ini. Tutirahanda niundu witu na nginya ciana ciitu na ciana cia ciana ciitu.

Miti ingi noikorwo na ugwati kkuri maria

maturigiciirie miena miingi, ona gukorwo niikoragwo na mawega mayo. Miti ta mibau ikuraga naihenya muno tondu niigucagia maai maingi muno na unoru wa tiiri. Niundu wa uguo, muti uyu nimwega wa biashara no nouthukie riera na muno njuui-inni.

Turahanda miti iria igutura miaka makiria ma 30 gikiro kiria gitikiritio ni thoko ya caron. Arimi thiini wa ikundi nini aria mari na miti miingi ya mibau nimagiriirwo ni gukinyia gikiro kia TIST kia gicunji kia 33% miti ya mibau na kuhanda miti yak i-nduire migundaini na kunyihia na gutema mibau na ucokie miti ya kinduire. Njira ino ninjega muno njuui-ini na uririkane thirikari niinhinyagiriria arimi matikahande miti ya mibau njuui-ini na kuria kuumu. Handa miti iria iiguanaga na maai na urumirire mitaratara miega na nouhote kwigwatire mikahuro. Niukwagirithia njuui nundu a mucii waku na aria mari hakuhi na njuui nginyi njioro ciao.

Rekey twike uu niguu tunyitirire TIST namaria maturigiciirie.

Mwandiki ni mutari wa miti cluster ya Kigucwa. aronkandio@tist.org

# Mazingira Bora

**Kikamba Version**

An Environmental, Sustainable  
Development and Community Forestry  
Program.



www.tist.org



**Kukwata usungio wa nthini munini ta aimi ma TIST kukomana vamwe na kuseuvia muthanga wa kwaka maiko kwa memba umwe.**

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## TIST: Nzia Nzeo Sya Useuvya Ivuio - Ivuio Nthini Wa Itanda Syi Iulu.

Mwaini wa keli nitwaneenanisye kukolany'a / kumbania mbeu na kuseuvya kivuio. Mwai uyu ni tuukunikila nzia nzeo sya TIST sya kuseuvya ivuio syi yiulu kitandani. Nthini wa movundisyo maseo ma TIST tukundi tunini nituendee na uthuthya aimi matate kutumia ivuio syi iulu. Twi thuthya tukundi tunini kutumia nzia ino nikana mone undu miti itonya kwithiwa na kuvitukiwa nesa vate mathina na asala.



Fig. 1 Ivisa yii yionany'a nzia ya tene ya miti undu ivangitwe kivuioni.

**Ivisa ya mbee.** Ivisa yii yionany' nzia ila itumikaa kaingi kivuioni kuvanga miti ila yi mathanguni. Nzia ino ya kitene ya kuvanga miti mathanguni/mbisuni muthangani niyumasya mbeu yina mii itemilumu nundu mii yayo kaingi ikitaa kwikunzia ithanguni vandu va kuthi na nthi. Miti ino yathamw'a kuma kivuioni yathi kuvandwa niyithiawa itena utonyi mwianiu wa kwilumiliilya muthangani nundu mii yayo ndina vinya. Kusiiia nthina uyu nituukulwa tuvande miti mathanguni makunue itina twiliilite itandani syi iulu.



Fig2: Miti ya mithemba kauta yiliilwe kivuioni kya kitandani kiiulu

**Visa wa 2.** Kivuio kii ki iulu nikitonya useuvw'a kuma mbwani na waya wina maima. Kivuio kii nikinengae muimi nzia nzeo ya kunzea mii nundu mathangu timakunike itina namii yavituka ithangu nitonya kisewa ila yaumaala kuma ithanguni. (Air root pruning). Kii kitumaa mii itaumia na mii ila yithini wa ithangu yila muti usu ui ikwata vinya noyithia nimilumu. Nzia ino itumaa mii yithiwa na vinya nawithia muti usu wathi kuvandwa muthangani niwakwata na mituki na weeyambia, kwoou uyithia miti ila yooma itina wa kuvandwa niminini. Ingi niyivasya wia wa kunzea mii, kula kaingi nikulaa kana kukekwa kwi kuselee. Ingi kuimia miti ino yi nthini wa kivuio kii kiiulu kwi laisi, kivuio kiiulu kitetheesya kiwu kuny'aa mituki kwoou ona kiw'u kikingi kiitonya kwananga miti. Miti ya kivuio kii nitonya kwithiwa yimuisyoni ivinda ya kumithamya na kumitwaa kithekani kwoou niyendaa ukwatwa isuviwe ila ikuthamw'a. Tata ivuio sya iulu/itandani umunthi na uitutavya vaita wasyo na aimi ala angi ma TIST.

## Utongoi Na Uungamii Nthini Wa Ikundi.

Umunthi TIST yona ikundi syina ngwatanio mbee wa 130 ila syiwiani, Uthukumi wa utongoi numwe utumite tuendee na mbee nundu nimatetheaniasya. Kila kikundi na ngwatanio yina utongoi uilye ta uu

### Ngwatanio Ya Ikundi.

- Mutongosya
- Munini wake na mwii wa kinandu
- Atongoi ma ngwatanio

Munini wake na mwii wa kinandu mathukumaa vandu va myai ina na maithyululukana vala mutongoi umiaa munini wake nake mwii wakinandu aitwika muniniwake na maisakua mwii ungi wa kinandu aume na aka vala ethiwa ula eimwii wa kina ni munduume ula usakuawa vandu vake ni mundu muka.ngwatanio yenyu yaile kusakua mundu wa masavu kyenini. usakuani wa ngwatanio sya tist niwalasima na ni wavata.

### Utongoi wa ngwatanio

#### Mawia ma mutongoi

1. aile ithiwa muthukumi wa ngwatanio ayonania ngelekany'o ya mawalan'yo ma TIST.
2. Nimatongoeasya ala angi ma ngwatanio kwithiwa na mbumbano, uthiani, kuvitukithw'a nakumanyiw'a iulu wa uthukumi wa utongo.
3. kuthuthya ngwatanio kuvikiia ma walany'o ma yo vamwe na uvandi wa miti na uimi wa kusuvia(CF).
4. Utetheesya mawalany'oni ngwatanio ino na kuikiithya mbumbano nisyaeendeew'a nesa vamwe namovundisyo.
5. Kuthukuma vamwe na mundu wa kinandu Kuikiithya masavu nimeekwa nesa na Mavuku nimaandikwa undu vaile.
6. Kuthukuma vamwe na mwii wa kinandu kuikiithya livoti sya mavuku nisyatungwa na nisyaw'o.



7. Kutetheesya kwiana kwa tukundi tunini na kumamanyisya undu matonya kwiyiandikithya nthini wa TIST.
8. Kutetheesya tukundi tunini kwithiwa na “green houses” na iyikwa scanning na kwikiwa nthini wa Internet.
9. Kuthokya na kumamanyithania aeni ala mavika mbumbanoni sya ngwatanio.
10. Kwa Ndivi: Kwosa mathangu ma ndivi (vouchers) na syindu ingi ila sya ngwatanio na kukwatania na mwii wa kinandu kuikiithya nzia ila syaile sya ndivi nisyaaatiwa na ethiwa vena nthina kana makulyo kuvikya utongoini wa TIST nikana uthinikiwe.
11. Kulilikany’a ikundi nini iulu wa mbumbano ila iatiie.

**Mawia ma Mwii wa kinandu**

1. Kukwata mbesa sya ngwatanio na kunengane kieleelo kya undu syaile utumika nthini wa kila umbano wa ngwatanio.
2. Kuthukuma vamwe na ngwatanio kwona mbesa syoo undu ikutumika na kwa nzia ila yaile.
3. Kwia mavuku ma ngwatanio kwa nzia nzeo na mena uw’o.
4. Kwitikilithya kukunikilwa na kusiw’a kwa mavuku niene ngwatanio
5. Kutumaa livoti sya mbumbano sya kila mwai na masavu ma kila mwai
6. Kuvundisya ulawanyuvwa kwithiwa e mwii wa kinandu ayuma.
7. Kutetheesya athukumi ala angi na ikundi ila nini
8. Ivindani ya ndivi kunengane mathangu ma mbesa (Vouchers) kwa ene ikundi ala mena andu eli mevo, kukunikila mathangu aya mandivi na kuneenany’a na ala manenganae ndivi ino kuikiithya uw’o na ula waile niwe waivwa.

**Mawia ma munini wa mutongoi**

1. Kuungama vandu va mutongoi yila utevo na aimathukuma ene ngwatanio.
2. Ivindani ya mbumbano sya ngwatanio kuikiithya saa nisyaaatiwa
3. Kuandika kila kiendee nthini wa mbumbano

4. Kusoma kila kyaendeeie nthini wa wumbano muvituku
5. Kwia mavuku ma kila kyaneenaniw’a na kila kikaneenaniw’a
6. Kutetheesya kuvundisya alamanuvwa ta aii ma kinandu.

**Ala Maungamie Ikundi.**

Kila kikundi nikinyuvaa andu eli (mundu ume na mundu muka) kwithiwa nthini wa kanzu ya ngwatanio (GOCC). Ala munyuvite ma GOCC nimaile kwikala uthukumini usu vandu va myai nthathatu. Itina wavau usakuani ungi niwaile kuendeew’a kusakua andu angi.

GOCC yinthiwa yi ya andu maumite ikundini ta 2-5 ila ithengeanie. Memba ma GOCC nimaile ukomana imwe kila mwai nthini wa kyumwa kya mbee kya mwai.

**Mawia Ma Kanzu Ya Ngwatanio Ya Ikundi.**

1. Kumantha nzia nzau sya uimi
2. Kuikiithya kumanyiw’a kwa ngwatanio iatiie nzia nzeo sya TIST
3. Kuikiithya kuvitukithwa kwa kindu kina value yila uthiani wa miti ukwikwa
4. Kuikiithya miiyo ya uthukuma na kumanyisya nimiseo na ndina nthina
5. Kukuna livoti na lunengane mawoni kwa Kanzu ya kisio kyenyu
6. Kuthathasya TIST kwisila kumanyisya ikundi nini.
7. Kusila ethiwa umwe wa atongoi ma ngwatanio niwaungamw’a. Kwika ukunikili na kunengane mwoloooto iulu wa itambya yiu.
8. Kusila ethiwa mutongoesya wa ngwatanio ndekuatia mawalany’o ma TIST.
9. Kunenga ene ngwatanio ino wia ta wa kwika ukunikili (aduting) na mumanyisya munene na mawia angi.

Athukumi angi nthini wa ngwatanio ino nita Athiai/ Avitukithya (Quantifiers), Amanyisya (Trainers) na aangamii ma maundu mekiavathukany’o ta uimi wa kusuvia, Riparian, miti ya kiene, Maiko ma TIST na kuseuvya maiko aya na angi maingi.



## Undu ngwantanio yenyu yaile ika kila mwai kuikiithya ukilyo.

Kukwata mbesa kwisila kwa mwii wa kinandu, kumavanga na kutunga livoti ya utumiku wa mbesa ithi Nthini wa TIST nitwosaa vinya kwa kuthukuma na kwosa itambya vamwe na kuaana vaita ula twakwata nginya kwa tukundi tunini ona mbee. Kutunga livoti kwa kila mwai iulu wa mbumbano, masavu na utumiku wa mbesa sya kinandu ni ngaliko imwe ya vata kwa kwaila kwa kieleelo kitu. Kila ngwantanio na ikundi syayo niyithiawa na wia wa kutunga livoti kila mwai livoti yaw’o iulu wa utumiku wa ilovia sya kila mwai na ingi nimatangaanza umbanoni wa kila mwai undu ilovia ithi itumikite.

Undu wa utunga livoti ya ngwantanio iulu wa mbumbano na utumiku wa ilovia sya ngwantanio kwasia ya utumani mukuvi simuni (SMS)

Kuikiika na kwithiwa na utheu wa masavu ma kinandu ni maundu amwe ala methiawa mavata nthini wa mawalany’o ma TIST. Kila ngwantanio ya TIST nomuvaka itunge livoti ya utumiku wa ilovia ila ni 900/ = kuvikia ngolu. Kwambiia June 2011, TIST yithiitwe iitumia nzia nzau ya mituki kutunga livoti sya kila mwai iulu wa utumiku wa kinandu na kila kyaneenaniw’a nthini wa mbumbano kwa nzia ya utumani mukuvi wa simu (SMS). Nzia ino ninenga ene TIST ivuso ya kutuma livoti ya kila mwai na namba ya simu ila ya vamwe na livoti yoo isomwa na kukunikilwa ni athukumi ma TIST. Ethiwa ngwantanio yina mathangu ma Working Palm nimaile utumia mathangu aya ma Working Palm nthini wa mbumbano sya kila mwai kwa masavu moo na uandiki wa kila maendeesya. Onakau kila ngwantanio niyaile utuma livoti kila mwai itumia nzia ya utumani

mukuvi wa simu (SMS). Nzia ino nivithasya wia wa kutunga livoti na itetheesya athukumi ma TIST kukwatambau mawalany’o ma ngwantanio ithi. Ethiwa tuinakwata livoti kuma ngwatanioni yenyu athukumi ma TIST no mesilye ngwantanio isu nita ngw’u na kwoou mailea ukwata ilovia sya kinandu, uthukumi wa athiani (quantifiers), kana ivuso ya kumanyiw’a na kwithiwa na semina. Tuthukume vamwe tuitunga livoti kila mwai nikana tutetheanisye kumanyiany’a kila amwe mesi angi matesi kila mwai.

### Kulilikany’a: Kwa ukilyo, kila mwai kikundi kyenyu nikyaile.

1. Vika umbanoni wa kila mwai na uililikany’a amemba ala angi kuvika
2. Thuimai kilamuvikiite na kwika, miti my’eu ila muvandite, ikundi ila ivitukithitw’e na undu mutumiite ilovia syenyu sya kinandu.
3. Kutuma livoti kwa nzia ya utumani mukuvi kana mathangu ma Palm iulu wa masavu na mbumbano sya kila mwai.
4. Kwalany’a kwikwa kwa uthiani/uthuimi mwivamwe na athiani na kuikiithya kana umwe wenyu niwatetheesya uthuimini uyu.
5. Kuthokya anyanya na atui kulika nthini wa TIST yila mwina mbumbano na kumanenga Mazingira Bora masome na kwika undu masoma.
6. Kuseuvya w’umi mwingi ta kuvanda miti, kwaka kana kua maiko ma utumia mwaki munini kutumia nzia ya uimi wa kusuvia (CF). Kwa vamwe vaiundu tuteka!

## Matuma Ma Uimi Wa Kusuvia (CF)

Ngwantanio ya Kiengu yu nikuvundisya amemba undu matonya uvanda matuma kwa nzia ya uimi wa kusuvia (CF) ona vandu vate kiw’u kingi.

### Kwiyumbany’a

Inza mutau wa uasa wa matambya miongo ili na uthathau wa itambya yimwe na uliku wa viti ili.

### Vuu

Ita muu mutauni uyu, syoka wite vuu wa yiima uvulanitye na muu wususye yiima na uyusuiisya na muthanga ula wauma yiimani yiu.

### Kungithya

Itikisya kiw’u mbaka kikole mbee wa utana kuvanda matuma maku

### Mbeu

Vanda thongoo ta 3.000 mutauni uyu, mbeu ino

nutonya umikwata kuma kwa ala mavandaa matuma isooni.

### Kuketha

Matuma aya nimakuaa ta myai nyaanya mbee wa mavikie kukethwa. Nzia ino ya uimi wa kusuvia (Cf) ya kuvanda matuma nitonya kutumiwa ona niandu matena isoo (vakuvi na mbusi). Ninzia imwe itenda syindu mbingi no ngetha yayo yi iulu na nimbingi.

### Utumii

Mundu noatumia nzia ino kwa kuima matuma ma uta Mundu no amatumie kwa liu wa musyi. Matuma nimaendee na kwithiwa mema ueti kwa ekali na aimi ma ngwantanio ya Kiengu nundu aimi nimaendee na utaana undu mundu utonya uvanda na uketha matuta kwa nzia ino ya uimi wa kusuvia. Yu tui tukundi twili nitukwatite mbesa sya uthuthio nundu wa wia museo ula maendee naw’o na tukundi tungi onatw’o no tuendee na kwenda kulika nthini wa TIST.

**TIST: Kwa Vamwe Ni Tukwiana!**



# Kutaanisya Na Kusea Miti Nikana Yiane Nesa.

na Ben Misleh

Kwa vamwe kutaanisya na kusea miti nikwailasya uima wa miti na indi uyithia mititu kwa vamwe niyeethiwa yi myailu. Undu uu wikawa kwa kusisya miti ila imeete nesa yina vinya na uthangaau ukamitia kwa kuveta ila myonzu. Kwa mithemba mingi ya miti yivo miti myumu, mikuvulya, misanduku na minyoonyoo nundu ino niyo miti ila minene yina muthamba muthathau uasavaa vate ngava miti kivathukany'o niyendaa utaanw'a kivathukany'o kwianana na wendi wayo na vata wayo (ethiwa ni ya kusii nzeve, kutema ya mwako) na ingi kwianana na nzeve ya kisio nitumaa miti yenda usewa na utaanw'a kivathukany'o.

Nikana miti yiane na ulumu niyendaa utaanw'a kaingi ta matambya eli kaingi kwa miti ya TIST ila ni ta mikuvulya na minyoonyoo. Lilkana kana miti ya matunda ta iembe, makandania niyendaa utaanw'a munango kwi miti ingi nikana itonye kwithiwa na usyao ula waile. Miti ithengeanie niyitikilitw'e miti yiminini indi undu iendee na kwiana now'o iendeeaa na kwenda mwanya munene nikana ikwate liu na kiw'u nesa itonye kwiana na kunengane usyao waile. Kii nikyo kitumi kaingi miti yendaa usewa na utaanw'a kwa kukua ila itaendee nesa uimisianisya na ila uvandite vamwe.

Wamina kusianisya na kwona ni miti yiva ukuveta tilila miti ino vaaya ungu vakuvi vya na muthanga nikana withie yathogooa nokukavulanga thongoo isu.

Kwa kawaita ethiwa miti ila uvandite ni muthemba umwe na ya ivinda yimwe usiasya muti ula wianite nesa kwi ila ingi uitaanisya nikana uteme ila myonzu. Kindu kingi kitumanyithasya muti ula ukutiwa ni ngava syaw'o vala ii. Nundu muti ula wina ngava/uthui wi iulu withiawa na ivuso iseo ya utuma ikwata kyeeni na kusevya liu waw'o kwi muti ula uthui na ngava syinthi. Ona kau kuutikwasya miti yonthe mikuvi kana ngava syayo syinthi niyaile utemwa nundu nokwithiwa wina ulumu kwi ungi ukwoneka wimuasa. Muti niwaile ithiwa utena uwau kana muinyu nikana ukwe na utaanu ula waile. Lilikana utaanu wa matambya eli kwa eli niwaile nikana miti yithiwe itonya kwosa nzeve itavisaa kwa nzia ya iulu.

Yila uendee na usisya nimuti wiva ukuveta lilkana kana muthemba wa muti na kwiana kwaw'o kwithiawa kivathukany'o. Ethiwa kiembe nikivanditwe vakui na miti ya misanduku kiembe kii nokithiwe kikinini muno wakisianisya na miti no ingi ndundu muembe umeaa mbola kwi misanduku, kwoou ndutonye utema kiembe nundu nikyo kinini any'ee kwaw'o kiembe nikya vata muno ona kwi musanduku onavala kiana kavola nundu ni liu na usyao wakyo noutewe kuete mbesa. Ingi nikana kiembe kivandanw'e na mimea ingi niyikaa nesa kwi ivanditwe vamwe na misanduku. Undu uu niwaile uwikia

akilini nikwithiwa miti tikwa uta nzeve kw'oka indi uveta kana kusea muti nusiasya niwavata mwau ethiwa ni muunyi, Matunda knana kusii nzeve. Nundu muti wa muunyi wendekaa wina ngava mbingi, ethiwa niwa nzeve nyendaa uvandwa iatianie na laini ithengeanie nikana kila muti uthukume wia waw'o miti itaanw'e undu vaile.

## Kusea

Nthini wa mititu ya kwimesya miti niyiseaa. Yila ngava syamea iulu ila syinthi nisyooa na kutilika na kuvaluka nundu ona matu ma ngavaisu methiawa memetiku. Oyila kwisea kutonya kuendee nthini wa mititu ya TIST kaingi nituu kulw'a tusee ithyi kwa nzia ila yaile.

Mithemba mingi ya miti niyendaa kwitiwa itena ngava mbingi kuma muthangani nundu miti ya muthamba umwe imeaa na mituki kwi miti ya ngava mbingi na yithiawa navinya ona yila kwinkuutani ndikavukaa ta miti ya ngava mbingi. Ethiwa muti wa ngava mbingi niwasakuwa ta mbeu sisya ula wina ngava numu na wina matu maingi na wina vinya utena muinyu na mulungalu.

Andu aingi mesilasya nimaile utila ngava ila iendanyite na muthamba lakini uundwaile, kusea kana kutila ngava kwaile ikwa utiete kalungu kuma muthambani. Kii kitetheesya muti kulea ukwatwa ni uwau kwisila kitauni kiuu na muti kwiana na kuvwika kitau kiuu. Wamina kutema/kusea tia kitau kiu kikyoka ndukakivwike kikaete wou nthini wa muti.

Yila ukusea ndukethiwe na itomo ati nikana ukwate ngu mbingi kuma ngavani ila ukusea kana kukwata uithyo wa indo. Lilikana kana kusea yila nikwaile na nikuseo kwa muti nokuete muti uwau na kuwuaa ethiwa niwaw'umya matu maingi nundu utumaa muti uyu ueka kwosa sua nesa kana kitau kii kikaete muinyu kana wou. Ndukavwike kitau kya muti wamina kusea eka kitemwe ni seve na kiyumya sumu ula withiwa wii mutini.

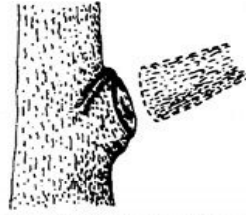
Ndukolwe kana muti wamina kusewa nuthongooa vakuvi na vala vasewa kwoou nduketele thongoo ithi syiane muno ikavulange itanawata vinya. Lilkana miti yithiawa na utonyi wikivathukany'o wa kuthongooa kwianana na muthemba waw'o. Ngavulanga thongoo ithi itanamina mwaka ikeethiwe ineyambia.

Miti imwe munamuno miti ya matunda nisyya nesa yina ngava mbingi. Miti ino nayo niseawa yi minini nikana withie niyatuma muti uyu uthongooa ingi na mituki kuete ngava syina vinya na muthamba kwiana. Kusea kuu nokutungiliilwe kuthukya muti uyu, lakini lilkana niwaile uunenge ivinda utanasea ingi ndukauthiny'e ukite kuma. Lilikana kutaanisya miti ni nzia imwe ya uimi

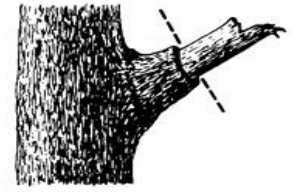


wa nzeve nunginya tuamue kuima miti kwa ivinda iasa ta iiyiva mwaka mingo itatu (30years). Kusea na kutaanisa miti tukwate viata wayo, kwikalya mititu ila tutumiaa kwa nzia mbingi na itunengae vaita kwa nzia mbingi na kwa myaka yukite. Ikuthu kana miti muthungu itena nzeve kana utaaniu ula waile nditonya uvitukithw'a ta ya soko wa nzeve itavisaa (Carbon market) kwoou nditonya utalwa ta ya TIST.

Ivisa numbe 3.



Pruning cuts should be made just outside the branch collar.



On a dead branch that has a collar of live wood, the final cut should be made just beyond the outer edge of the collar

**CRS Vamwe Na TIST Kwambiia Muvango Wa Uvanda Ndengu Kisioni Kya Mt. Kenya.**

Kwambiia mwai uyu wa katatu (march) TIST na CRS nimeuthukuma vamwe kuthuthya imi kwambiia kuma ndengu kisioni kya Mt. Kenya nakula kumu. Ndengu niliu museo na wivinya mwiini. Nisyithiawa na Vitamins. minerals na proteins na ingi syilaisi kuua na syimuyo.

CRS niyithiitwe iithukuma na aimi kuma Emby kusyimithya muthemba mweu wa ndengu witawa B20 ula ukuaa ivinda inini kusyaa na kukethwa ta mithenya 45. ila ni mituki na nisyaa mbee wa kukwatwa ni sua.

Aimi ma TIST thini wa ngwatanio imwe ila yuve nimeutetheew'a kwambiia muvango uyu wa uvanda ndengu vala makethiawa matonya uteeea aimi angi ala meisioni yumu mbeu ino ivandani yukite. Myai yukite TIST na CRS makeethiwa maimanyisya aimi undu matonya kwia na kuta ndengu kwa thooa museo.

Ikala uvinguite metho kwa masomo ala me nthini wa Mazingira mbora iulu wa ndengu na uimi wasyo kwa uvikiie kwitethya kwa kuita.

**TIST Na Vaita Wayo Kuendee Na Kwiana!**

na Aaron Kaindio

Oyila Tist iendee kunyaiika isioni syikivathukany'o nthini wa nthi yaitu now'o ngwatanio nzau iendee na kwithiwa na ila nguu kuendee na kwiana kwa kwithiwa na amemba eu na tukundi tweu na kuendee na kutaana iulu wa nzia nzeo sya uimi.

Umunthi mbee wa ngwatanio 130 nisiendee na kuthukuma na kithitwo kwona nisyongeleka na kwithiwa na ngwatanio ivika 20 tuivika mwiso wa mwaka uyu 2012.

Twitungia utongoi wa Kanza ya TIST muvea nundu ni ikiithitye kana ngwatanio na ikundi nisyeeethiwa na utongoi museo na syamanya undu itonya kuvikia mutw'i masyo ala mewalany'oni wa TIST.

Otondu twisi nitwaile uthukuma vamwe kwona moseo ma TIST mayiana. Kuvanda miti na kutetheesya kwona uimi museo wa TIST ta uimi wa kusuvia (Cf) niwaendee na kusuvia miti ya kiene kuikiithya ngwatanio situ nisyeeethiwa na ulumu kwa kwika maundu na kutumia nzia ila nzeo sya TIST miunda yitu.

Yila wavanda muti manya kana watethya ona syawa ila ikoka kwithiwa na mawithyululuko matheu na mena nzeve nzeo. Makatania na kutunga muvea wia witu nundu wa kuthukima na kithito kuseuvya mawithyululuko na kuseuvya nzeve vamwe na kuvetanga ukya. Kiinikyo kitumite nthini wa TIST tuisakua mithemba ya miti ila tukuvanda nguumoni sya mbusi na miundani yitu. Tuiuvanda tu nundu witu indi nundu wa nginya syawa ila ikoka.

Miti imwe yithiawa yiya muisyo kwa mawithyululuko onakau noyithiwe yina moseo angi. Miti ta misanduku niyianaa na mituki na inyusaa kiw'u kingi na unou wa muthanga mwingi. Nundu wa kitumi kii muti uyu nowithiwe wimuseo kwa viasala indi nuthukasya mawithyululuko munamuno nguumoni sya mbusi na kula kwi kiw'u.

Twivanda miti ila itonya kwikala ivinda iasa ta myaka miongo itatu tondu kwendekanaa nthini wa soko ya nzeve itavisaa (carbon market). Aimi ma tukundi tunini na mena misanduku mingi nimaile makatata na vinya kuvikia kilio kya 33% kila kyendekaa nthini wa tist kwa kuvanda miti ya kiene kwa nzia yakuitaanisya misanduku ino ula maveta makavanda muti wa kiene. Undu ni wavata muno vya nguumoni sya mbusi na syandani. Lilikana kana silikali nilianite na uvandi wa misanduku nguumoni sya mbusi na kula kwina kiw'u. Vanda miti ila itendaa kiw'u kingi ya kiene na ila isuviaa kiw'u nutonya uvitukithw'a kukwata ndivi ya kuvanda miti ya kiene ila yithiawa na ndivi ya uthuthio. Wiithiwa uiseuvya mbusi kwondu wa musyi waku/wenyu na ala angi me itheo usini usu na syawa ikoka.

Ekai ithyoothe twike uu kwona TIST niyaungama muvangoi wa kuseuvya mawithyululuko kila vandu.

Muandiki ni Muvitukithya/muthiani (Quantifier), Ngwatanioni ya Kigucwa (Kigucwa cluster). aronkandio@tist.org.



# Mazingira Bora

**Kipsigis Version**

An Environmental, Sustainable  
Development and Community Forestry  
Program.



www.tist.org



Local solutions and working as a group to solve problems. These TIST farmers came together to build a better cook stove for one member. They prepared clay soil for building the stove (inset). File Photo

## ***Inside:***

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**TIST ak baratentin kotesetai koetu ! Page 6**



**TIST: Tetutik chekororon en chobetab kabetishek-kabetishek che kikanaptoi.**

En arawetab aeng , ko kikisoman agobo oleyumtoi tenterek ak olekichaptai kapetishek. En arawani, kebendi keng'ololen agobo tetutik chekororon chebo TIST en chobetab kapetishek che kikikanapta.En tuiyosiekab TIST chebo klasta, kurupishek che mengechen ko kikimite temik koyomta kapetishek che kakikanapta. Kikimite kurupishek che mengechen koboisien amun igimitei sobetab ketik.



**Pichait 1. Kobaru oret nebo keny ne kipangndoi kartasisiekab ketik kou ole kakiarorunda en ngwong.**

**Pichait 1:** Kobaru oret nebo kotugul nekitetei terenik. Niton ko oret nebo gaa ako imuche konem ketik chemengech che makimen. Niton ko amu kwolegei en orit nebo selele. En minset, komuche komakimen tikitik ak kopgochin niton kouit kosopcho en n'gwony.



**Pichait 2. Ketik che mengech che terterchin ,che kakipangan en kapetishek che kakikanapta.**

**Pichait 2:** Kimuche kechap en nyumnyumindo keboisie pakoinik ak asingeyet. Niton kokonu tiletab tikitik che koen amun yeit tikitik che koen ngwongut nebo kibabet kobutos. Niton koboru kole magotunoksei tikitik kou en tilet nebo kotugul. Kimekitu tikitik amatesetai kobitos. Niton kokonu tikitik che kimen ako kotinyei baraindo neo kobityo en chokchinet en imbaret.niton ko toreti amun mami boisiet neo nebo tiletab tikitik che koen ako niton ko boisiet ne utie bik che chang ak ngot keyai eng boroindo nebo let missing komuche kowech tikitik. Istoetab timdo eng terenik chekikanptai konyumnyum missing ak kotinyei randaetab bek ne kararan en ngungunyek ak ko ui kongem ropta. Minutik chemiten kabetishek chebo kotugul komuch kobutok yaniiebei koba imbar, noto anyun makat keib eng ribet neo koba imbar.

**Kandoinatet ak Bounatet en klasta neng'ung.**

En nguni kotinyei TIST klasta I30 che mitei en boisiet,.En klasta age tugul, kandoik che konugei kogitetai kotoret en boisiet ak kimnatenywa. Klasta agetugl kotinyei bounatet ak kandoinatet ne u;

**Kandoinatetab klasta**

- Kandoindetab klasta
- Rubeiwotab kandoindet
- Chitaab hesabu

Kandoindetab klasta, rubeiwotab kandoindet ak chitab hesabu koboisie en kasartab arawek angwan. Ye ibata arawek angwanu en boisiet, kandoindetab klasta koistoigei. Rubeiwotab kandoindet koegu kandoindet ak chitab hesabu koegu rubeiwotab kandoindet. Kwonyika ak murenik kowalegei en lewensiet- ngot ko chitab hesabu ko age ne kilweni konyolu ko kwondo. Klastaingwong konyolu kolewen en imanit chitab hesabu.

Lewensiet ko bo kamanut ak kobo imanit ak ko nyolu keyai en klasta tugul che bo TIST.

**Boisietab kandoindetab klasta.**

1. Nyolu koek ne yaei kasit en klastait tugul ak magutikab TIST.
2. Nyolu kondochi kasitab klastait , kondochi tuiyoaiekab klasta,kaitisietab ketik ak kanetisosiek kobangani ak kandoik alak.
3. Kokimit kurupit si onyor magutik che echen, che boto minetab ketik ak yomtaetab CF, kotoreti klasitait koeg ne kim ak aenge.
4. Kobangan en ntonunetab banganetab tuiyosiekab klasta ko boto kiboinik alak che bo kurupit ak kogeer kole kaindochi tuiyosiek komie ak kanetisiet.



5. Kobois ak chitab hesabu koger kole banganutikab tuiyetab klasta ak banganutik alak kokagikonor komie.
6. Kobois ak chitab hesabu kogeer kole logoiwekab kila arawa ak che bo hesabu kogokiyokto ak ko bo iman.
7. Kotoret ko sir kurupisiek alak che lelach en klasta.
8. Kotoret kurupisiek che mengechen konde sein baronokab GH C, kebir picha ak kigokto.
9. Kotaach ak komwaita toondet ge tugul ne imuch kogannyo tuiyetab klasta.
10. En libanet :konyor baronokab libanet komait betutab tuiyet. Kobois ak chitaab hesabu kogeer kole banganetab libanet ko ne noton ago kagisib ak komwaita tebut age tugul ana ko uindo koitchi kandoikab TIST anan ko kandoikab libanet.
11. Komwachi bikab kurupisiek che mengech agobo tuiyet ne nyonei.

**Boisietab chitab hesabu.**

1. Kotaach boisietab rabinikab klasta ak komwachi ak koboisien en tuiyetab klasta.
2. Kobois ak klasta kobangan ole kimuche keboisioitoi rabinikab klasta si kenyor magutikab barak.
3. Kogonor ak korib record che bo klasta en kitabutab record che bo klasta, komie ak en oret ne kararan.
4. Kogoito kitabusiek kechigil membaek ak kandoikab TIST.
5. Koyokto tugul record che bo tuiyetab klasta ak report che bo hesabu che bo kila arawa
6. Konet chitab hesabu ne nyonei.
7. Kotoret ak kogimit kiboitunik alak che bo kurupisiek che mengech.

8. En kasartab libanet: kogoito baronokab libanet koboto membaek aeng che mi, kochigil baronok ak kogoito geeret koitchi kandoik che libani, kosibi komie ak en iman.

**Tonondaikab klasta.**

Leweni klasta agetugul tonondoikwak aeng, muren ak kwony agenge kochap kansil nebo kurupishekab klasta. Tonondoichuto bo klasta koboisie en arawek lo ak kelemen alak yeibata kasaratan. Kansol init obo klasta kotinyei klasta 2-5 che tetegei. Tuitos membaek konyil agenge en arawet noto ko en wikit netai.

**Boisietab lewenaikab kurupitab kansol chebo klasta.**

1. Kosich ak kopchei boisionik chemiach missing kobun klasta
2. Kogeer kole mitei kanetishet ne inet en klasta kesubi magutikab TIST.
3. Kogeer kole mitei tuguk chechang kesubi magutikab TIST.
4. Ripsetab tuguk chekiboisie en kanetishet ak pimanet.
5. Kobor magutik ak kokon takchinetab ng'atutik kobechi kansol nebo komoswek.
6. Kobarait TIST kobun klasta chemitei.
7. Kochab ng'alaletab kandoinatet ngotkeisto pimanindet anan ko kanetindet kochigil imanit ak kokon takchinet en istoet.
8. Kochab ng'alalet ngot ko mesubi kandoindetab magutikab TIST.
9. Kokon takchinetab bik kobun kurupishekab klasta en tesetab boisionikab TIST che tetatin cheu kerindet, TSE anan ko kanetindet neo ak boisionik alak.

Bik alak cheboisien TIST kou; pimanindet, kanetik ak sirikab boisionik cheterterchin kou sirindetab ripest ak kabatishet ak sirindetab ketikab kipkaa, chopikab stopishekab menet ak chabikab stopishek.



## Tuguk chemakatin iyai arawet agetugul si kobit isich barotet.

Taksetab bajet kobun ripindetab rapishek, tetetab bajet ak mwaitaetab olekibois bajetinoton.

En TIST kesiche kimnatet en boisiet ne kiyaei tugul ak en bcheetab baratenyo ak bik alak en kurupishek che mengech en klasta chechok ak kotestai. Ripotishetakab arawet agetugul chebo tuiyosiekab klasta ak esabukab rapishek ko kobokamanut en boratet. Klasta agetugul komakat kogoito ripot nenywanet ne inet ak kobor rapishek tugul che kiboisie en arawet agetugul.

Oret neboisie en konunetab ripot nebo bajet ak tuiyosiekab klasta

Imanit ak kabarunet nbe rapishek che kikobois ko tuguk che kimen missing en TIST. Klasta agetugul komakat konem ripot en oleboisiaytoi 900/= che bajet nebo klasta si kobit kosich mang'tik che echen. Kong'ete arawetab lo en kenyitab 2011, kokoboisie TIST oret nelel ak ne mie cheboisien kokon ripot nebo arawet age tugul nebo rapishek ak rekod chebo tuiyosiekab klasta koboisien SMS. Oraniton kogochin membaekab TIS5TT koyokto SMS en simoisyekkwak koityio nambait neo. Ng'alekab SMS kiyumi ak kochigil kibaitinikab TIST. Ngort kotinyei klasta mashinitab palm neboishei, konyolu koboishen fomishekab klasta chebo tuiyet ak chebo esabu. Ngandan, koyop oret ne leel,

klasta age tugul konyolu kokoito ripot arawet age tugul. Oraniton konyunyume kogochinetab ripot chebo kandoikab en boisionikwak. Yon makinyoru ripot chebo klastaishek, koibeit TIST kole klasta ingwong komatesetai komie. En niton, komaimuch konyor rapinikab arawet age tugul, koitishetab ketik anan boroindo osoman ak opchei ripot en ak boisienyon en arawet agetugul!

### Kabwatutiet: En baratet arawet age tugul konyolu koyai klasta neng'wang:

1. Keba tuiyetab klasta ak kibwatyi kurupishek alak koba
2. Kigeere mang'utik chekinyor klasta: ketik chelelach che kikimin, kurupishek che kikiityi ketik ak ole kikiboisietyto rapinik kipagenge en klasta.
3. Kiyokto ripot chebo tuiyetab arawet agetugul ak bpoisietab rapinik keboisie palm anan SMS.
4. Ketet kaitishet ak kaitik. Ogeer ole chi agenge en klasta ingwong ko katoret en koitishet age tugul!
5. Otaach choronokwak ak bikab kokwet kochut TIST en tuiyetab klasta. Obchei Mazingira Boraini ak oret en teteta b siretabgei.
6. Oyai tuguk che echen! Omin ketik, otech anan oal chikoshek che ribei mat ak oyomte CF. Kibagenge kimche kenyorun kiy agetugul.!

## Minsetab nduma keboisien (CF).

Kiengu klasta ngunon konete membaek ole kimuche keminda nduma keboisien CF. En orani, kogikimuch kemin nduma en oret ne ter komgiboisien beek che chang

### Chobeet

Tem keringonik che bo koindaab mitaiiek 20 en mitaiot agenge baraindo ak 2 kwo orit

### Keturek

Nde orek en ngwony en keringonik. Ne isibu, inde keturek che kagingol ak orek ak kinyit keringet. Tuch keringoni ak ngungunyekab barak che kegecheru ken ibale keringet.

### Kandoetab Beek

Nde been che chang iboisien kibabetab kabisisiet si mochobok keringonik en minset.

### Keswek

Min 3000 keswek en keringetab CF. Imuche ium

kesechu en bikab kokwet ak ole rubegei ak ainosiek yon kamin temik alak

### Ruret

Ibe kasartaab arawek 8 si korur nduma en keset. Tetani bo minsetab nduma keboisein CF kotoreti bik che matinyei ainosiek che negiten komin. Nymnyum ago ma imuch keboisien tuguk che chang en imbaret ne mining.

### Boisiet

- Kialdoi
- Amitwogikab gaa

Nduma kogochin borotet ne o en Kiengu Klasta, kongeten temik kopcheitai ak kogimite tetani yon katuiyo. Kurupisiek aeng koginyor rabinik che tesunot en ketikwak. Yon geere borotet kotesaksei kurupisiek che mengech amun che chang komache kochut TIST.

**TIST: Kibagenge keechegitu**



# Serishet ak chororet ketiguk sikobwa komie.

Kasirei B en Misleh.

Tugul en tugul, boisietab serishet ak istoetab sakek chechang kotetat kotoret chametabgei nebo ketit ak timdo tugul komugul.. Niton keyaei kokakewei ketik chekararon en timdo tugul. En ketik chechang kou chebo gaa,krivelia,blukam ak saipres ,chuton ko ketik che echen en tugul ak kotinyei temet agenge ne chulat. Makchingei ketik poroindo ko tiengei ole pitei, ole kakikolda ak etaptab barak lakini imuche kobais tugul alak.

Sikopityo komie ketik, komakatin mitainik aeng en kwenetab ketik. Niton ko eng ketik che chang chebo TIST kou krivelia ak saipres nganda mache ketik alak paraindo neo cheu maembe ak makademia. Igochin paraindo ne mie ketik kosich bek ak tuguk che igochin kurut komie. Iyanat paraindo ne kiten yontakomengech ketik.Yan ekitu ketik, koegitu alak kosir alak. Kisere ketik si korut en boraindo ne yamei.

Yekailewen ketik che kiistoi, ketilei chuton en ng'wony.Yeipata wikisyek ak arawek, kotoi kobityo ketik alak eng ketatan amu ing'ata. Kiiriye ketichuton mengech en ng'ony yon imache mapityo. Ngot ko chang ketik chekergei en oldo agenge keistoi ketik chemengech ak kebakakta cheechen kobityo. Atebetab metitab ketit ko kit age nebo komon. Ketik che tinyei metoek che baraan komuche konam kimnatetab asista kosir chemiten ng'wony ak komuch kobwa komie. Ne letunen, temik chetinyei kwenut agenge chematinyei mianwogik anan ko kiging'em. Nesire komoibaru kole ketik tugul che nuagen konyoru keisto! Barchingen baraindop mitaishek aeng sic kjomuch kokimegitun ak koechegitun akomuch koam koristo neo.

Yan imache iseraser ketik, konyolu inai ile ketik che terterchin koechegitu kotiengei kineu. Ngot

konyonen maembe ak yemi blakam che chang, komuch kominginit kosir olemiblukam che kachan'ga. Maembe komuch korut kosir blukam chechagu, noto anyun konyalu ketil amun mingin.en imanit, ketit neu maembe kobokamanut missing amun en tuguk che konu cheu lokoek che kiamei ak kialdoi. Maembe kora ko kararan en minutik alak che rutu en im bar. Blukam komuch kowech ketik alak ak minuti komarut komie. Bo kamanut kibwat niton yan ileweni ketik che iseraseri.miten boisionik che chang chebo ketik kotiengei kit neu ketit kotabala ametab koristo. Kou en kabarunet, imuch imache ketik che konin uruet. En niton, konyolu igochi paraindo ketik kosir ole chamikochindoi sikonyorf asista neo. Niton kogochin ketit koet ak kogochin temenik che chang en ketit. Kot ketik che tertai koristo en lainit imuch inde ketik korupkei nganda nyolu keisto ketik chemi komoswek si kotes timwek.

Chororet

En timdo nebo ketikab kipgaa kochororigei ehegen.Temenik chemiten barak kotuchei chemite ng'wony. Yon inamei komeyo sokek chemitei ng'wony komeei kora temenik chenamei sakechuton. Temenik chekikosaiyo ak che kikochoroty kobutos ichegen. Imuche kochororak sagek ichegen en imbarenikab TIST nganda toreti ngeisto sokek keboisie eunek. Nganda mache ketik cheterter olekichortai koterterchis komiten oratinwek che ratinwek che boisie en ketik tugul.

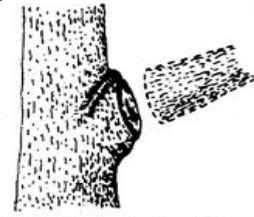
Ketik che chang ko magat kotinye temet agenge en ngwony. Ketik che tinyei ketit agenge koetu en chokchinet ak ketile yon miten robta. Ketit ne tinyei bitunwek che chang keibe koek minutik, yon kichenge ketit ne kiribe, cheng ne o en tugul



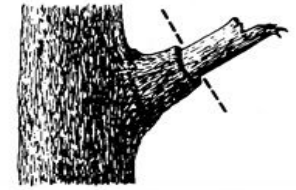
ak inai ile matnyei miando age tugul ,ak kotinyei sogek ak ko tomo konun ak ko chulat.

Bik che chang kobwate kole kitile temenik en che matuitos al temenik. Inoni ko lembech. Tilet ko nyolu kotuiyo ak temenwet konegitchi ketit. Inoni koboose ole yataat ak kobagachi en orititab ketit si kogochi ketit koet komie en kasarta ne mie.

Figure 3



Pruning cuts should be made just outside the branch collar.



On a dead branch that has a collar of live wood, the final cut should be made just beyond the outer edge of the collar

## CRS ak TIST kogiinam minsetab ndenguk en Mt. Kenya.

Kinaame arawetab somok, TIST ak CRS konamme koboisie kibagene kogimit temik en Mt. Kenya che minse en ole yamaast ak ole mache koyaamat komin ndenguk. Ndenguk korutu komie en komoswek che yamaat. Tindoi anyinyindo ak kogonu vitamin ,chumbik ak proteins. Ndenguk konyumnyum kechop ago anyiny kora!

CRS kigikotestai kobois ak temik en Embu koyomta oret ne lel ne kimindoi ndegukab (B 201). Keswechu korutu en chokchinet (betusiek 45). Igochin ketit kosich en chokchinet komaimuch kowech kemeut.

Temik en klasta che kigilewen kobendi komine keswechu bo ndenguk ak kinaame kegeer ole rutundoi en komaswek che yamaatin ak kimuch kial en temik si kemin en minset nenyonei . En arawek che bwonen CRS kobendi konete temik ole kigonortoi ak kialdaita ndenguk kogimite temik kosich kesutik che mi barak en kolsenywan.

Oyaat konyekwok so osoman logoiwek en Mazingira Bora che bwonen en ole kimuch e keminda ndenguk ak ole testoitoitai banganani ak komuch kotoret temik kogochi rabinik

## TIST ak baratentin kotesetai koetu !

Kosirei Aaron Kaindio

Yon tesetai TIST kenamei en komoswek che ter en emenyon, klastaek che chang kinamei, ak chemiten kotesetai tai koechegitu yon chutu bikab kokwet konam kurupishek alak che mengech chebo TIST. Borotoshekab TIST kepcheei ak kenomei en komoswek chelelach

Klastaishek che sirei 130 cheboisie komieko kikinam. Kigilegei ketes klastaichuton koityi 200 koite let nebo kenyini.

Kiwekchini kongoi TIST ak kandoinatenyin (LC) en boisiet neo ak kogochinetabgei kogeer kole klasta agetugul kotinyei panganet ak keboisiechi en nyorunetab magutikab TIST.

Kou ye kingen tuguk, nyalu keboishen kibagenge ketoret TIST si kotesak borotet. Kimuche kemin ketik chechang ak kinam ak keboisien tetutik chekororon cheu boisiet ne mie anan ripsetab ng'ung'unyek(CF), minset ak ripsetab ketik che terterchin si kigimit klastainyon, imbarenikchok ak sobenyon.

Yon kemin ketik, inai ile ketestai itoret ibinwek chebwonei si konyor timwek che kororon , chetililen ak che kororon. Tun boiboinchin kole kikakiboisie en kimnatet kewan itonwekab emet ak keiste bananda. Noton amune echek en TIST kecheng'e en ng'omnatet ketik che kimine en imbarenik ak ole rubeigei ak ainoshek. Makiminchinigei ketik kityok ngandan akot lagokyok ak che chwak.

Keti alak komuche kowech timwek en komoswek alak, ngandan tinye boisiosiek che miach. Ketik che u bluegum ko echekitu enchokinet amumn ee bek che chang ak amitwogik en ngungunyek. En niton , keti komuch kokaran en aldaet, ngandan imuch kowech timwek en kpomoswek alak cheu olenekityin ak ainet anan ko ole mi bek.

Kimine ketik che imuch kotar kenysishek che koen (30 ak kosir) kou ole kimaktai en ndonyo nebo koristo. Temik en kurupishek che mengech chetinyei blukam chemi barak , konyolu koyor magutikab TIST kesich 33% nebo timwek ko blukam, kolsetab ketikab kipgaa en imbarenik ak keseraseri blukam ak kemine ketik alakchebo gaa. Niton kobo kamanut missing en olenekityin ak ainoshek. Ibwat ile serikalit koetei kolsetab blukam en olerubegei ak ainoshek. min ketik che maei bek missing chebo gaa, ak isip tetutik che kororon ak imuch inyorulipanet ne mi barak en kolsetab ketikabgaa en oinosiek. Iwendi iyaei ainoshek ko kararanitun en bikabab kapchi, bik che mi ngwony en ainoshek ak ibinwek che bwanei. Ongyai niton tugul si kigimit tetutietab TIST ak en timwekyok.

Sirindoni ko koitindet ,klasta ne bo Kigucwa, aronkandio@tist.org