



## MACADAMIA

### Muchui Women Group

Macadamia belongs to the proteaceat family of which over 1000 species are known but there are over two distinct types found edible and are widely cultivated in places like Australia, Hawaii, California, Costa Rica, South Africa, Israel, Malawi, Tanzania and Kenya.

Kenya produces 8% of the worlds' total production of Macademia nuts. The two edible types include macademia tetraphylla and Macademia intergrifolia.

Macademia is a crop whose characteristics and true types depends entirely on vegetative propagation or what is commonly known as grafting.

The macademia seedlings are raised from the seed nuts, which should be fresh, reliable, and disease free and are capable of producing healthy seedlings. To know if the seeds are fresh and reliable put the seeds in a container of water. Fresh and reliable seeds will sink while the damaged and non-reliable and immature ones will float.



## KIMERU TRANSLATION OFISI YA NTUGI

### Makadamia

### Muchui Women Group

Makadamia jethagirwa jari ja mwiriga jwa proteaceat na ithagirwa iri nkuruki ya mithemba 1000, indi kuri na mithemba iri iria arimagwa na ikatukirwa tas irio thigurune ta ya Australia, Hawaii, California, Costa Rica, South Africa, Isreal, Malawi, Tanzania na Kenya.

Kenya ni iritaga 8% ya maketha ndene ya nthiguru yonthe. Makadamia jaria jari jagwa ni muthemba jwa "Macademia Tetraphylla" and "Macademia Intergrifolia".

Makadamia jaria jethagirwa jari jameega jabandithagua na miti ingi iria itheri, and itina murimo na iria yumba kurita maciara jamega. Wenda kumenya kethira nkandania ciaku ni injega cia kuanda wikire ruujine na iria injeega ikenama nthigururu na iria itikuri cierere ruujine.



The tree also absorbs carbon di-oxide to reduce pollution. The tree also attracts rain and helps conserve the environment.

The tree allows for intercropping with other types of food crops and other cash crops like coffee or tea.

It's a good idea for TIST small groups to plant this tree since its turning to be a major income earner. It is also a good tree for TIST's greenhouse gas business.

Muchui Women Group has realized the importance of this tree and also the importance of raising the tree seedlings and grafting them.

This group is making good income from the sale of grafted macadamia seedlings. This group urges other TIST Small Groups to also plant these trees and reap the benefits. The seeds are raised in sand and flat or raised beds could be used.

It takes ordinary macadamia seedlings 8-12 years to bear crops but with the technology of grafting it takes less than 3-5 years. To keep the trees healthy it should be pruned. The advantage of this tree is that it is planted as a cash crop and gives the farmers money through the sale of nuts that are of high demand at present



### KIMERU TRANSLATION.

Mbeu ciumithaguana muthanga na nyuma ya kuuma ijukagia miaka 8 mwanka 12 kenda ikura.Miti iria ibandithitue ijukagia miaka ta 3 mwanka 5 igikura.Indi kenda ithirwa irina ugima nbubwega nibuirite gucawa.

Wega bwa miti iji iandagirwa mbeca na arimi niboonaga mbeca bendia nkandania iria ciina thoko injega mono nandi.Miti iji nitethagiria

kuguchia ruo  
ruthuku na  
kuthongomia  
nthiguru.Wega  
bwa mikandamia  
ni kithirwa no  
iandanirue na irio  
bingi ta kaua  
kana majani biria  
biandagirwa  
mbeca kana  
kinya irio bietu  
biria tirimaga.

Nii ithugania  
ririega ikundi  
binini bia TIST  
biande miti iji

niuntu nituikite ya kureta mbeca inyingi na nigutetheria kiri biashara ya ruo. Gikundi kia Ekuru ba Muchui nikionete wega bwa miti iji na kubandithia miti kenda ikuranga.Gikundi giki nikionaga mbeca inyingi mono kumania na makandamia na nibakwenda amemba ba ikundi bingi baanda miti iji kenda boona mbeca.



**Jonathan Muriuki; World Agroforestry Centre (ICRAF), Meru Raised Seedbed.**

When a farmer goes to a tree nursery to buy seedlings for planting in his field, one thing is in his mind, the products and/or services he expects to get from the trees. The earlier he can get these products/services the better it is for her. This implies that she must buy the seedlings with the highest chance to provide these products/services early. With this expected scenario then, the nursery operator must ensure he produces tree seedlings of high quality able to satisfy the customer. But what is meant by seedling quality?

Tree seedling quality is the ability of the seedling to establish quickly in the field and to bring out a tree which gives the desired products and services early. To establish well in the field, a seedling needs a strong root system comprising of roots that are not damaged (injured) or weak (coiled). The most common nursery production system in the tropics is raising seedlings on polythene tubes with a closed bottom and laying them on the ground in well arranged stacks (Fig 1). Watering and other nursery practices are then conducted when seedlings are in that state until they are ready for transplanting. It is cost effective to the nursery operator and majority of common tree species do not take a long time in the nursery hence the production system is sufficient. Some species, however, take a long time in the nursery either because the seedlings take long to establish (such as tropical indigenous species) or value



Seedlings of Moringa oleifera arranged as a stack on the ground

**KIMERU TRANSLATION  
Jonathan Muriuki -World Agro forestry Centre (ICRAF)  
Rutara rwa kumithia Miti.**

Riria murimi eeta muundene jwa kuumithia miti ni ethagirwa arina ithugania ria kwona umithio kumania na miti yawe na mpui uria kumbikana.Riria murimi akwenda kwona maciara jaja mutaaramu wa kuumithia miti niabaterie kwithirwa ari na mbeu injega iria ikoomba gukenia murimi.Maana ja mbegu injega nimbi??

Mbegu injega ni iria yumbaga gukura na mpui muundene na ikarita maciara jamega kurioo.Keenda mbegu yumba gukura bwega niibaterie kwithirwa iri na miiri iri na inya.Kenda miti iria yumithitue

kamundene gaku igia na inya, yendaga kumithurua turatacine turia tuiingi rutere rumwe icoke ibangwe bwega amwe tauria yikunania mbicene iji.Kumenyera mbegu ciaku na gwikira ruuji nikwithtagirwa kuuri na raisi mwanka riria mbegu ciaku igakinyi kagiuta ka kuandwa muundene.

Njiira iiji niithagirwa iti na goro kiri muandi wa miti niuntu mithemba iria mingi ya miti itithagirwa ikijukia kagita kaaraja muundene.Indi miti ya ntwiire nikaraga muundene kagita gakaraja mono na nikio gitumi kia kumibandithia na miti iria ikuranganga.Miti iji ijukagia kagita kaaraja mono muundene nitethagiria kiri kutheria ruo mono na itumagirwa kiri mirandi ya kwendia ruo ta jwa TIST.

improving practices such as grafting are carried out which require staying in the nursery for longer. Such slow growing species are of high value to carbon credit schemes such as TIST.

The ordinary polythene sheet has smooth sides around which roots tend to coil. At transplanting, the roots are so weak and can not easily anchor in the ground. Roots also tend to coil around or penetrate the container bottom which requires root pruning, easily injuring the roots. To avoid these disadvantages it is recommended to establish seedlings in open bottom tubes and place them on raised beds (Fig 2). These allow automatic root pruning without injury of the roots since when the roots get to the container bottom they get air pruned and tend to strengthen without further elongation. This produces a vigorous 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 late with grievous damage on the roots. Weed control under the beds is also easier.

The raised beds might appear to raise the amount of water spent in nurseries which might be a constraint to nurseries in arid and semi arid areas. Nursery operators have however devised innovations to deal with this constraint. A good innovation observed in Tanzania is digging a trench, placing planks of wood or wire mesh on it and placing the seedlings on the planks or wire mesh. The seedlings thus appear to be on the ground level but the trench under them provides the space which aids air root pruning.

## KIMERU TRANSLATION.

Kaingi ukiumithia miti miri ya mbegu ciaku ni iremagwa kuumira kiri miuko ya kumithia (turataci) na ikaaga inya na riria ikagitwa kagita ka kunda niigijaga na thina. Kurigiria thina taiji mbegu ibaterie kuumiithua kamundene gokiritue na miukone iria ituri nteere ijiri na urikiirwe rutareene taruru ruri mbicene iji. Riri miri ikauma ikethirwa iri na kanya ka gukura na yumiire rungu rwa rutara na ikagia na inya na iringwe ni ruo. Njira iji nitethagiria miri ikuraanga na miti ikoomba kugwata na mpui riria ikathamirua muundene na ikanyia ngugi ya kwamba kugitagita miri mbere ya kuanda mbegu na iji yomba kureta thina inene mono kiri miiri ya mbegu ciaku. Mono mono mantu jaja nijauragiria kana jakathithua jacereri. Njira ya gutumira ruatara nitethagiria kumba kuthiria iria kiri muunda jwaku.

Njira ya gutumira rutara niyongagira ruuji ruria rutumiri kiri mbegu ciaku na iji ni thina inene kiri guntu kuria gutina mbura ya kung'ana. Ataaramu ba kumenyera tumuunda nibathuganiritie njira ingi injega cia kumenyera tumuunda kuuma naria Tanzania ya kwinja muguuru, na kurikiira mbegu ciaku matarabucine kana kiri rutara ruungi. Mbegu ciaku igakara taka irikiri nthiguru indi kurina kanya kuma nthiguru ka gutetheria mbegu ciaku na ruo.

Ruuji rwaku rukategua ni muguru juju na riria kwagia na riu ruuji ruru rukatetheria mbegu ciaku na nikeenda rukatetheria kunyia maita jaria ukenda gwikira mbegu ciaku ruuji. Noowikire karatasi ka nyoni muguurune juju kenda ruuji rwaku rutikanyuwe ni muthetu. Njira ta iji ni itethagiria kunyia ngarama ta cia gwaka rutara rwa kumithia miti.



Seedlings of various species arranged in stacks on a raised bed



The water is trapped in the trench and through evaporation will moisturize the seedlings and reduce the need for very frequent watering. A polythene sheet can also be placed in the trench to ensure water does not seep into the ground. Such innovations also reduce the cost that may appear to increase with the use of raised seedling beds.

### LAMURIA OFFICE

Our office is based in Laikipia East covering Lamuria, Tigithi, Marura and Nanyuki locations. We have new trainers on board who are giving us additional capacity to train the Small Groups in our area.

We have established nodes in sweetwaters, Labua and parts of Mirera. This month we are hoping to setup nodes in Matanya, Sirima, Ngari nyiro and Mwiyo. We are now receiving heavy rains and our Small Groups have to plant more trees and practice Conservation farming so that they can get more yields.



So far we have around 150 registered groups in our office area.

### CHUGU OFFICE

Chugu office is currently serving Small Groups in six divisions in Meru Central. Small Groups in our office are happy with the TIST program because of the benefits they are receiving from the program and also the cash incentives for their trees. Groups are expecting that TIST pays them at least twice a year.

### KIMERU TRANSLATION.

#### OFISI YA LAMURIA.

Ofisi yetu ithagirwa iri Laikipia East na itungataga ntuura cia Lamuria, Tigithi, Marura na Nanyuki. Ofisi yetu iri na aritani baria bagututetheria na kuritana ikundi bietu.

Nituumbite kuthithia nodi ntureene cia Sweetwaters, Labua na Mirera. Mweri juju tubangite kuriungira ntuura cia Matanya, Sirima, Ngari nyiro na Mwiyo. Mweri juju nituumbite kwona mbuura inyingi mono na tukageria kuthithia urimi bubwega (Kilimo Hai) nikeenda amemba beetu bomba kuona maciara jameega. Mwanka nandi ofisi yetu niumbite kuandikithia ikundi nkuruki ya 150 ntuurene cietu.

#### OFISI YA CHUGU.

Ofisi ya chugu itumikagira ikundi binini bia TIST kiri division itantatu ndene ya Meru Central. Ikundi bietu nibikenete mono nintu bwa maciara jaria boonete kuumania na murandi juju jwa TIST. Mono mono

nibakenetue mono ni marii ja miti yao na nibakoromba marii jaja jejage maita jairi o mwanka kenda boonaga mbeba inyingi nkuruki. Ofisi yetu irinamubango jwa kwithirwa barina na ntuku inene ya kuanda miti ofisine ya cibi wa Chugu na miti iji ikamenyagirwa ni amemba ba ofosi iji. Amemba ba ikundi bietu nibakenetue mono ni uritani bubwega bwa TIST bwa urimi bu bwega (Kilimo Hai) na ni bombite kwona maketha jamaingi mono. Ofisi yetu niumbite gwitithia murandi juju na mbele mwaka Meru South na baandikithia ikundi 67 nteere cia Chogoria, Igwanjau, Chuka, Muthambi, na Kiurani na nibombite gutarira ikundi 14 miti na 8 nibombite kuriwa mbeba cioa.



Chugu office is looking forward to holding a TIST day at the Chugu Chief's camp where the land has been dedicated for TIST trees to be maintained by the Field office members.

The Small group members in our office area are grateful for the training they have received on Conservation Farming which has given great yields for the seasons they have been practicing it. We have extended the TIST program to Meru South district where we have 67 registered groups in Chogoria, Chuka, Igwanjau, Muthambi and Kiurani and so far we have quantified 14 groups of which 8 groups have received payment.

### **NAROMORU OFFICE**

Naromoru office has been able to establish links with other organizations which deal with not only environmental conservation but in human health as well since that is also one of the TIST program's core components. The office members attended a Red Cross course on 20th to 22nd October in Nyeri and they were able to learn and be certified in first aid skills.

With the help of TIST the program has established a sub branch of Kenya Red Cross and will open a physical office in Naromoru near the DO's office. The office is in the process of resuscitating nodes and we have realized the objective of a cluster and we are looking forward to accommodating all our groups in different clusters.

### **KIMERU TRANSLATION OFISI YA NAROMORU.**



Ofisi ya Naromoru niumbite kuthithia ngwataniro na mirandi ingi o tiga mantu ja kumenyera nthiguru kuri na kinya umenyeeri bwa ugima bwa mwiri na bubu nibumwe bwa mantu jaria TIST ikaagira. Amemba ba ofisi yetu nibeetire mucemanione jwa Red Cross kuuma ntariki 20 mwanka 22 cia mweri jwa ikumi bakiritanagwa mantu ja utethio bwa mpwi kagita karia kathina kooneka.

Kuumani na ofisi ya Naromoru ya TIST murandi jwa Red Cross nijuumbite kurugura ofisi Naromoru akui na kwa DO. Ofisi yetu irinjirene ya kwambiria nodi na kugeria kumenya wega bwa kuthithia mwaburi juri jukamemenyera ikundi bietu kiri mwaburi. Kuringana na mbura inene iria tuumbite kwoona, ofisi yetu niumbite kuritana ikundi mantu ja kuumithia miti na kuanda miti iria miega na ikathithia bwega gwetu.



This being the rainy season, our office is focusing its efforts on training Small Groups on transplanting their seedlings. We are asking Small Group members to take advantage of the rains and transplant seedling at the right time. We are also providing training on good tree species to plant.

## KIMERU TRANSLATION

### SEMINA YA IKUNDI BININI BIA TIST.

Kuumani na semina ya ikundi binini bia TIST mweri jwa inana, ikundi bibi ni biaugire mantu



### BEST SMALL GROUP SEMINARS

During the Best Small Group (BSG) seminars in August, the BSGs reported their achievements on the 40-day action plan developed during the June BSG seminars. All groups reported that they had recruited and trained new groups that were within walking distance of each other. Nine out of the twenty BSGs reported that they had formed a cluster in their area that has at least 40 small groups that are all within walking distance of each other.

jaria bombite kuthithia ndene ya ntuku 40 iria babangite kuthithia kagita ka semina ya mweri jwa itantatu.

Ikundi ni biombite kuritana ikundi bibieru kiri antu aria boomba gwita na maguru. Kuumani na ikundi 20 biria biega ikundi 9 nibiombite kuritana na kuandikithia ikundi binini 40 kana nkuruki kiri ntuura ciao naaria boomba gukinya na maguru.



At the time of the June seminar in Meru, there were 1,587 registered small groups in Kenya. At the time of writing this newsletter, there are 2,189 registered small groups in Kenya. In a period of about 4 months, 602 new Small Groups have been registered. This rapid recruitment of new Small Groups was made possible by the efforts of the BSGs. By doing the recruitment within walking distance to form clusters we can ensure that the TIST program is operated in a cost effective manner while continuing to expand the program.

The next follow-up BSG Seminar will be held in Meru from November 13th to November 18th. For this seminar we are inviting not just the existing 20 BSGs, but we are also inviting other Small Groups that have qualified to be BSGs. In October the TIST field offices were asked to distribute the BSG application forms so that groups that thought they qualified could apply to become BSGs. The following criteria are to be met for your Small Group to qualify as a BSG:

- Number of TIST trees planted by your group that are alive should be 1,200 or more
- Number of TIST Eucalyptus trees planted by your group that are alive should be less than 33% of total live trees
- All of your group members should be practicing Conservation Farming
- Your group should have in its nurseries more than 2,000 seedlings.
- Number of Eucalyptus seedlings your group has in its nurseries should be less than 33% of total live seedlings.
- Your group should have control of enough land to plant 8,000 trees in 8 years. This can include land currently under control and land that your group members can get permission to plant trees in.
- Your group should have signed GHG contract

## **KIMERU TRANSLATION.**

Kagita ka semina ya mweri jwa itantatu meru ni kwari na ikundi 1587 biandikithitue kiri computa. Nandi tukiandika gathiti iji turi na ikundi 2189 biandikithitue Kenya. Nyuma ya mieri 4, ikundi 602 nibiandikithitue. Kuumbana guku kwa kuandikithia ikundi 602 kuumanie na ngugi iria iriti ni ikundi bibi biega bia TIST. Gutumira njira ya ikundi bibiega bia TIST, nituumbite gwitithia murandi jwa TIST na mbere na njira iji nigutumira mbeca inkai.

Semina iu ingi ikathithua kuuma Ntariki 13 mwanka 18 cia mweri juju naria Gitoro conference Centre. Semina iji ikethirwa na ikundi bingi bibiega bia TIST biria biumbite kuujuria wirane bwa ikundi bibiega na bietwa semina kuumania na fomu iria gikundi kiojuririe. Gikundi kiria gikurukite kwithirwa kiri gikundi gikiega kia thurirwe kuringa na njira iji:-

- Miti iria gikundi kiandite na iri miti ithirwe iri moto ithirwe iri miti 1200 kana nkuruki.
- Miti ya mibao ithirwe itikurukite 33% ya miti iria amemba ba gikundi baandite.
- Amemba bonthe bethirwe bakithithagia urimi bubwega (kilimo Hai).
- Nasari ya amemba ba gikundi ithirwe iri na miti nkuruki ya 2000.
- Mbegu iria yumithitue nasari igakuruka 33% ya miti iria baumithitie.
- Amemba ba gikundi bethirwe bari na muunda jwa kung'ana jwa kuunda miti 8000 ndene ya miaka 8 iria ijite. Muunda juju jwithirwe juri amwe na muunda juria juri jwa thirikari na juria bomba kuewa ruutha rwa kuanda miti.
- Gikundi kithirwe gisainite kontrakti ya Green house Gas (GhG).





- Group should have proof that its members have been meeting regularly and rotating their leadership.
- Group member should be fully aware of TIST values and should abide by those values.

If your group has met all of the above criteria, then please request for a BSG application form from your field office and fill out the same and return to the field office. Your group will then be visited by TIST auditors who will verify if your group has met all the above criteria and if you have provided accurate information on your BSG application form. Once audited successfully your group will be qualified as a BSG and will be invited to the next BSG seminar.

- Gikundi kionanie wiiru bwa kung'ana kethirwa ni bacemanagia na ni bacinjanagia utongeria bwa gikundi.
- Amemba ba gikundi bethirwe bakimejaga mantu jaria TIST ikagiira(TIST Values).

Kethira gikundi kienu nikiingitie mantu jaja, bwitie fomu iji kiri ofisi yenu ya TIST bujuririe na bucie kiri ofisi. Gikundi kienu kiije kiriungirwe na antu ba ofisi cia TIST na kethira nibuingitie mantu jaja gikundi gikaandikirwa barua ya gwitwa semina iu ingi.

