



MAZINGIRA BORA

Feb./March 2009 Newsletter

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ENGLISH VERSION

The International Small Group and Tree Planting Program (TIST)

An Environmental, Sustainable Development and Community Forestry Program.



A TIST farmer preparing Conservation Farming plot. Farmers who practice CF enjoy better harvests.

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How to control soil erosion.

Soil erosion is the loss of soil due to water or wind transportation.

What causes soil erosion?

- a) **Cultivated soil left uncovered:** Digging land loosens the soil and exposes it to erosion. Such soil is vulnerable to erosion unless it is covered by trees or plants.
- b) **Cultivation of easily damaged land:** Certain types of land are unsuitable for agriculture, such as land on steep slopes. When people attempt to cultivate it the soil cannot endure the strain and thus erodes.
- c) **Overgrazing:** When too many animals are allowed to use a piece of land there is loss of vegetation and subsequent soil erosion.
- d) **Cutting down of trees:** When land is cleared of trees soil can become exposed and be eroded.



Planting of trees along the river banks helps prevent soil erosion.

Displacement: When soil erosion degrades land to the extent that it can no longer support agriculture people are forced to move to other land.

Consequences

Food shortage: Soil erosion reduces soil fertility and hence reduces food productivity.

Water impacts: Soil entering water can disrupt habitats, enter the drinking water supply, and carry chemicals used on fields into the water supply.

Hazard risk: Soil erosion can cause flooding. When the soil settles in streams and rivers it raises the water level. It can also provoke landslides.

Spread of deserts: As soil is lost vegetation also decreases and so the climate gradually becomes drier. Eventually the land is at risk of becoming a desert.

How can we reduce the amount of soil erosion?

- ✓ **Practising Conservation farming.** when practising CF or Kilimo hai, the land is left untilled. You only prepare holes. This prevents rill erosion in your plot since the soil structures are firm.
- ✓ **Provide soil cover:** ensure that soil is continually covered e.g. plant a cover crop, intercrop (plant two or more crops together on the same land), and practice agro-forestry (growing trees on the same land as crops).
- ✓ **Plant trees:** trees cover and bind the soil, and are the most effective solution.



Protecting our Rivers and Streams.

Why it is important to protect our rivers and streams?

- ✓ To stop polluting our rivers.
- ✓ To reduce flooding.
- ✓ To reduce siltation of the river which reduces water capacity.
- ✓ To protect other living organisms and creatures that live in the river e.g. fish.

How to protect our rivers and streams

- DON'T PLOUGH - use conservation farming
- Planting trees around the farmyard.
- Planting grass along the river banks.
- Stop cultivating along the river bank. i.e. if the river is 5 meters wide, don't cultivate 5 meters near the river, if the river is 10 meters don't cultivate 10 meters along the river. You should either plant grass and or trees.
- Do not graze along the river. Draw water from the river and take to your cattle. Or cut the grass and take it to the cow.

- Educate other farmers on the importance of protecting the rivers.
- Build barriers along the river banks e.g. gabions.
- Plant water friendly indigenous trees along the banks.
- Plant cover crops on you farm that improve fertility e.g. sweet potato vines, arrow roots, pumpkins, pasparum grass. This will reduce soil erosion
- Conserve the natural shrubs and bushes along the river banks.
- Plant trees water friendly trees like Water berry, Podo Carpus, Prunus African, Ficus cynamora, mwiria, Mware, peacock flower, Mukwego,
- You can as well plant shrubs to reduce erosion. E.g nkamuria, maruru, nthithiu, irinmba, menywa, mutenderuko/ upesi ,stinging nettle, thaa/thabai.

Why Farmers need to take action in protecting rivers.

- ✓ Farmers would want to maintain the soil fertility of their land.
- ✓ To rehabilitate / improve already eroded land.
- ✓ To reduce further degradation of soil.
- ✓ To maintain steady flow of water in our rivers.
- ✓ To have clean water from the rivers, streams and wells.
- ✓ To prevent water borne diseases.
- ✓ To avoid flooding because this would ruin their land
- ✓ To help provide good water for people and animals downstream



Water Pollution. Polluted water is harmful to human and animal health.



Small Group Payments - Requirements for your group to get paid.

TIST Kenya is at final stages preparing payments to the Small Groups. These payments will be made via an improved M-Pesa system. As in previous payments, the groups that meets the below criteria will get their payments. Those that do not meet these requirements will be required to work on areas that make them not qualify so that they payments can be remitted. However, when the Small Group does qualify, all of the back payments will be made as well!



Small Groups that attend Clusters will be given first priority in quantification and in payments.

Here below are requirements that a Small Group must meet in order to qualify for payments;

1. You Small Groups should have more than 500 trees. You must have been quantified. If your Small Group has not met this requirement, you will be required to put more effort in planting more trees in the coming rainy season. When you that, make sure that you attend the cluster meetings in your nearest cluster location where you will notify TIST quantifiers on your readiness to be quantified.
2. Your Small Group need to have planted your trees in a proper spacing (best practice 3 -4 m and minimum spacing 2m).Remember, during your January cluster meeting, we agreed that if your trees are in less than two meters spacing, you Small Group need to be re-quantified. This time, trees that are less than 2 m spacing will be skipped and you will be required to thin skipped trees by June 2010.
3. Your Small Group should have less than 33% eucalyptus trees. If you still have more than 33% of eucalyptus trees, you and your Small Group will be required to file with us a written Forestry Plan showing how you will bring your eucalyptus trees to less than 33% of total trees that your Small Group has by December 31st, 2011.
4. Your Small Group members must have signed Green house gas contract individually. You must make sure that the signatures appearing in the contract are true and correct signatures of the members. If the signatures, names, national ID numbers are not correct, you will be required to sign afresh. Your Small Group will only be paid if all these are correct. Remember, It is important that your Small Group be attending the monthly cluster meetings. At cluster meetings, besides getting trainings and new developed and working best practices, you will be getting TIST updates. Small Groups that attend cluster meeting are given the first priority in quantification. We will also be giving them priority in payments. It is therefore that you send at least 2 representatives (members of your Small Group) to each of cluster meetings. At Cluster meetings, you will get a chance to share best practices with other Small Groups. It will be easier to learn what other Small groups are doing and overcoming their challenges.



Tharaka TSE - Practicing CF with higher yields - no hunger!



Nkodi Small Group members at a cluster meeting.

ooh,ooh, can you see ,birds on the air rejoicing
 Tharaka ,Igembe semi arid area
 we can see ,enjoy the climate
 Tharaka, Igembe semi arid area
 Kilimo hai ,growing our food using conservation
 farming
 fruits, income generating ,mangoes ,pawpaw,
 and others
 Tharaka /Igembe we are heading somewhere.

Tunyai cluster of 70 Small Groups. Nkodi cluster
 51, Matakiri 52, Ntahmbiro 45, Kanjoo 51 Small
 Groups. Women and men have joined hands to
 develop our villages. To bring change and
 development.

New practices. Growing comomilla, carcarde,
 lemon grass.

When you want money ...talk of the plant!
 These plants are grown on the slope of Mt
 Kenya, without the use of any fertilizers or
 chemicals by a self help Small Groups. Packed
 and sold herbal as tea bags.

Practicing CF with higher yields - no hunger!
 All types of food grown - vegetables, water

melon, cassava ,sweet potatoes, sugarcanes ,
 sukumawiki.

TIST, we appreciate
 Best practices we are doing. Sharing. Working
 together in our Small Groups. Sharing
 leadership. Building capacity. We are all
 leaders. No one is more senior than the other -
 good achievement!

Different species of trees we are growing, food
 and income generating projects , growing
 mangoes to produce juice for sale.
 Miarobaine, Mukau, Mikorocho the famous trees
 in our area but from the effort of our TSE
 and others forest department and agriculture,
 we have seen we can change our area.
 Join us. Let's plant trees for our benefit.

With CF we have moved a step forward.
 Now we have seen the change. Double maize
 harvest. Yet still other different varieties of
 food in surplus. Others couldn't grow well - we
 harvested! Small portions produce enough -
 higher yields,
 Let's join together - to grow more food - to
 have more yields.

Do you know that you can double your harvest this season by practicing Kilimo hai / Conservation Farming (CF)?

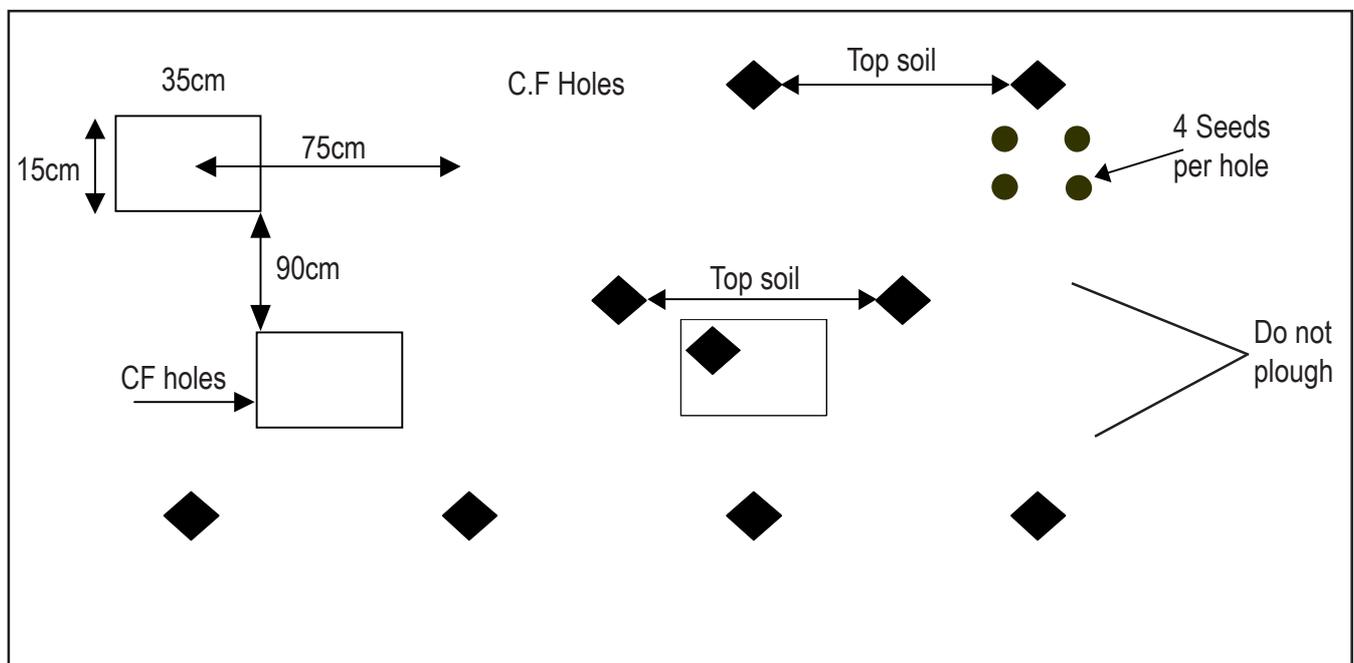
Practicing Conservation Farming is simple.....

- Clear your plot out of weed and bushes. Do not plough.
- Prepare your holes oblong (rectangle) shape. They should be between 15cm wide, 35cm long and 15cm deep. Space holes at least 75cm apart.
- Take some manure and good topsoil and mix it together, or use compost manure. Fill the hole with the mixture up to 5cm from the surface.
- When you plant the maize seeds (1 -2 days before rains start), plant 4 seeds in the soil across the hole.

If you are planting sorghum, plant 5-6 seeds at each end of the planting hole after a good shower of rain.

- Cover the seeds with 2.5cm of the rich soil and manure mixture. After this the soil in the hole should be about 2.5cm below the surface of the field.
- The space at the top of the hole enables water to get to the plants when the rains come.
- Weed around the holes regularly

You do not need chemical fertilizer on the kilimo hai/ conservation farming plot!



Do not plough your plot

Remember....

1. Do not till the land. Just clear the weeds and make the holes as shown above.
2. Do not burn of the remains on the plot. Leave the residue leave them on the ground so that they make the soil more fertile. Crop remainders can also be used for compost manure.
3. Do not graze cattle in the plot.

4. Do not use chemical fertilizer on the conservation farming plot. Your crops will still do better without chemical fertilizer.
5. Do not weed the entire plot completely. Just weed around the holes. Use a panga to clear weeds between the lines or spaces from one hole to the other.

And don' t forget

- 1) To start planting indigenous trees along the farm boundaries, and especially along the streams and rivers. Do **NOT** plant Eucalyptus trees anywhere near a stream or river!

WORK WITH YOUR GROUP TO PREPARE YOUR HOLES NOW AND BE READY FOR THE RAINS!



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KIMERU VERSION

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Murimi wa gakundi kanini ga TIST akihariria mugunda wake kwa njira ya Kilimo hai kana CF. Urimi wa Kilimo hai niukoragwo na magetha maingi.

NDENE YA NEWSLETTER IJI;

- ✓ Kuniyia gita kwa muthetu. Pg. 2
- ✓ Kumenyeera nduuji cietu inene na inini. Pg. 3
- ✓ Kuliwa gwa small small groups. Pg. 4
- ✓ Tharaka TSE; Nibagutumira urimi
- ✓ bubwega na kwona maciara jamaingi nkuruki-Guti mpara Pg. 5
- ✓ Ni wiji no wone machiara mahinda jairi ikirimaga urimi bubwega (kilimo hai/ conservation farming) kimera kii? Pg. 6



Niatia tuumba kunyiyia gukamatwa kwa muthetu ?

Soil erosion ni gukamatwa kwa muthetu kuuma miundene gukurukira gukamatwa ni ruuji kana ruugo

Nimbi itumaga muthetu jukamatwa?

- ✓ Mithetu irimi gutigwa itikunikiri-kurima muunda nikuaraganagia muthetu jugatiga kugwatana na kwou jukaa raisi gukamatika. Muthetu ja juju tinga jugakunikirwa nijukamangawa.
- ✓ Kurimwa kwa miunda iria ithukangaga-miunda imwe itithaira ibui ya kurima(ta miunda iria iri kibarine). Antu riria bgeragia kumirima muthetu jutiumagiria urito bubu na



Uhandi wa miti thigirikaini cia njui niguteithigia ugitiri wa tiiri.

- ✓ kwou muthetu nijukamatangawa na uraisi Kuriithia ndiithia inyiingi nkuruki ya uria muunda jumba kuumiria- ndiithia inyiingi ciarithua kamuunda kanini imera nibithukagua, muthetu naju jugakunurwa jugakamatwa
- ✓ Kugita miti- riria miti igitagwa muthetu nijukunurawa na kwou jugakamatwa

- ✓ Kuthamithua kwa antu- muthetu jwakamatwa na maciara janyia, antu nibathamaira miunda ingi
- ✓ Gutaamba kwa uumo-o uria muthetu jukuura nou imera binyiaga na rera ikathuuka naku gukooma. Muthiene, muunda nijwithagira jwina mutino jwa kuuma

Jaria jakarikaga muthetu jwakamatwa

- ✓ Irio nibinyiaga-gwita kwa mithetu nikunyiagia unoru bwa muunda na nyumene maciara ja muunda jakanyia
- ✓ Kiri ruuji- muthetu jwatonya ndene ya ruuji nijuthukagia ikaro bia nyomoo cia ruuji, jukathuukia ruuji rukarema kunyuika na kinya jukaleta dawa cia muunda ruujine
- ✓ Uthuku- gukamatwa kwa muthetu nigutumaga ruuji rukaingia mwanka rukaigara . muthetu jwamarira ruujine ruuji nirwitayia na nobutume kinya kugituka kwa mithetu

Niatia tuumba kunyiyia gukamatwa kwa muthetu kuuma miundene yetu?

- ✓ Gutumira urimi bubwega- riria twatumira urimi bubwega, muunda jutirimawa. Ni marinya jenjawa. Bubu nibunyiagia kuura kwa muthetu nontu muthetu nijugwatene
- ✓ Gukunikira muthetu - muthetu nijukunikwe magita jonthe. Anda imera bia gukunika muthetu, kana uunganie imera(biiri kana nkuruki), kana uande imera amwe na miti muundene jumwe
- ✓ Kuanda miti-miti nikunikaira na kurikia muthetu. Iji niyo njira iria njega buru



Kumenyeera nduuji inene na inini

Niki kubui kumenyeera nduuji?

- ✓ Gutigithia kuthuukua kwa ruuji kana gwakwa ruuko
- ✓ Kunyiyia kuigara kwa ruuji
- ✓ Kunyiyia muthetu juria juri ruuji
- ✓ Kunyiyia muthetu juria juri ruujine juria junyagia ruuji ruria ruriku
- ✓ Kumenyeera nyomoo iria ikaraga ruujine ja makuyu

Niatia tukamenyeera nduuji inene na inini?

- ✓ Ukarima na mulau-tuumira urimi bubwega
- ✓ Anda miti ithiurunkite muunda
- ✓ Ukarima akui na nteere cia ruuji. (kethira ruuji rwina waarie bwa 5m ukarima 5m akui na ruuji, kethira rwina waarie bwa 10m ukarima 10m akui na ruuji). Anda nyaki kana miti aja
- ✓ Ukariithia akui na ruuji. Taa ruuji na wikirie ndiithia kana ugite nyaki wikirie ndiithia.

- ✓ Thomithia arimi bangi uria kumenyeera ruuji gutethagia
- ✓ Inja mitaro akui na nteere cia ruuji
- ✓ Anda miti iria ibujanaira na ruuji ya kienyeji nteerane cia ruuji
- ✓ Anda imera bia gukunikira muthetu muundene jwaku kenda woongera unoru bwa muunda. Imera bibi nit a nkwaci cia mukuuo, matuma, malenge, na nyaki ya pasparum. bibi bikanyiyia gukamatwa kwa mithetu
- ✓ Tiga tumiitu tutunini turia turi akui na nduuji
- ✓ Anda miti iria ibujanaira na ruuji ta waterberry, podocarpus, prunus africanus, ficus cynamore, mwiria, menywa, mutenderukoupesi, thaa

Niki kubui arimi bajukia itagaria kumenyeera ruuji

- ✓ Arimi nibakwenda gukaara na unoru bwa miunda yao
- ✓ Kenda bongera unoru bwa miunda iria



Uthukia wa mae ma rui ni ugwati kuri andu na mahiu.

- ✓ mithetu ikamati
- ✓ Kunyiyia gukamatwa kwa mithetu miundene yao
- ✓ Kumenyeera ruuji kenda rutanyie kana ruingia mono
- ✓ Kuithira kurina ruuji rirwega kuuma kiri nduuji inene, inini na ithima
- ✓ Kurigiria mirimo iria ijanagia na ruuji rwa ruuko
- ✓ Kurigiria kuigara kwa ruuji nontu rukathuukia muunda
- ✓ Gutetheria antu na nyomoo iria igutumira ruuji gaiti ka ruuji bona ruuji rurwega



Small group payments-mantu jaria ikundi biinini bibati kuthithagia kenda binenkerwa mbeca

Tist Kenya ii makinyene ja muthia ndene ya kwambiria kuria ikundi binini. Marii jaja jakathithua na m-pesa. O ta payment ingi iria ithithitue, ikundi biria bikurukitiemantu jaja nibio bikariwa. Biria bitikurukitie bikaamba kujakurukia kenda mbeca ciao citumwa kiribo. Ikundi bibi bikariwa aki biamba kujathithia.



Ikundi iria irithiaga micemanio wa Cluster niiriheagwo mweke wa mbere hari gutarirwo miti yao na amwe na kurihwo.

Kenda gikundi gikinini kiriwa na mwanka mantu jaja jethire jario;

- ✓ Gikundi kithire kina miti nkuruki ya Magana jatano(500) naithire itari. Kethira gikundi giaku gitithithitie uju no mwanka bwongere miti ingi kwaura. Bwathithia uju no mwanka buite cluster meeting aria kuri akui kenda bwira Atari miti ba tist ati bwi tayari gutarirwa miti
- ✓ Gikundi gikinini kithire kiandite miti itaariene bwega(njira injega ya 3-4m na 2m riria iinyene buru). Riikana ; cluster meeting ya January , nitwetikaniririe miti iria yaanditwe itariene na nthiguru ya 2m igatarwa kairi. Igitarwa riri miti iria itariene na nthiguru ya 2m igakurukirwa uee kanya ga kugita imwe mbele ya June 2010
- ✓ Gikundi gikinini giaku gikethirwa kirina mipao imingi nkuruki ya 33%. Kethira bwina nkuruki, ugwe na gikundi giaku bugatwaandikira mubango jwa uandi miti

jukiugaga uria bubangite kunyiyia mipao yenu mwanka nthiguru ya 33% mbele ya 31, December 2011

- ✓ Amemba ba gikundi gikinini giaku bethire basainite contract ya green house gas o muntu yawe yawe. Uhakikishe saini iria iri ndene ya contract ni yamma ya mumemba wonthe. Kethira saini, mariitwa na namba cia kibande ti cia mma, bugasaini ria jairi. Bukariwa kethira jaja jonthe ni jam ma.

RIIKANA; ibubui gikundi gikinini giaku gita micemanio ya cluster ya mweri. Amwe na moritani na njira injega injeru, bukerwa mantu jameru ndene ya Tist. Ikundi binini biria bigeta micemanio ya cluster nibio biithairwa bii bia mbele gutarirwa miti . bikaewa kinya mbeca bii bia mbele . kwou, ni bwega gutuma noo antu bairi okuuma gikundi gikinini kiri micemanio yetu ya cluster. Ndene ya micemanio ya cluster, ukaewa kaanya ka kugaana njira injega na ikundi bibinini bingi



Tharaka TSE-nibagutumira urimi bubwega bakona maketha jamega-guti mpara



Ikundi nini kuuma cluster ya Nkodi Small maari mucemanio.

Ooi, ooi, nibukwona, nyoni cia iguru cigwiritue
Tharaka, Igembe guntu gukuumu
Nitukwona rera nigarukite
Tharaka, Igembe guntu gukuumu
Urimi bubwega, kurima irio bietu
tugjtumaira urimi bubwega
Matunda, ijakuleta mbeca; maemba,
mababai, na jangi
Tharaka, Igembe kuri nao twitite

Tunyai cluster ya ikundi binini mirongo
mugwanja, Nkondi cluster mirongo itano na
imwe
Ntahmbiro mirongo ina na itano, Kanjoo
mirongo itano na imwe ikundi bibinini
Ekuru na akuru nibagwatene njara gukuria
ntuura cietu. Kuleta kugaruka na guita na mbele

Njira injeru. Kurima comomilla, carcade, lemon
grass.

Wenda mbeca aria bwa imera!
Imera bibi birimawa kibarine kia Mt
Kenya, gutiutumirwa fertilizer kana dawa ni
tukundi
tutunini twa gwitethia. Bigapakwa na bikendua
ta majani

gutumira urimi bubwegana maciara jamaingi-
guti mpara

irio bionthe nibirimagwa-vegetables,
watermelon, mianga, mikuo, igwa, nyani

TIST, nitugwirairua
Njira injega nitugutumira. Nitukugaana.
Guitanira ngugi tukundine tutunini. Kugaana
Utongeria. Gwakana. Twinthe twi atongeria.
Gutiwe unenei kiri ungi-ni untu buunene!

Mithemba imingi ya miti nitukuanda, irio na
project cia kuleta mbeca,
Kurima maembe ja kuthithia juici ya
kuendia
Miarobaine, mukau, mikorocho miti iria ijikene
gwetu indi gukurukira guciumia kwa TSE
Na department ingi cia miitu na urimi, nitwonete
kugaruka kwa ntuura yetu.
Unganeni natwi. Tuandeni miti itutethie.

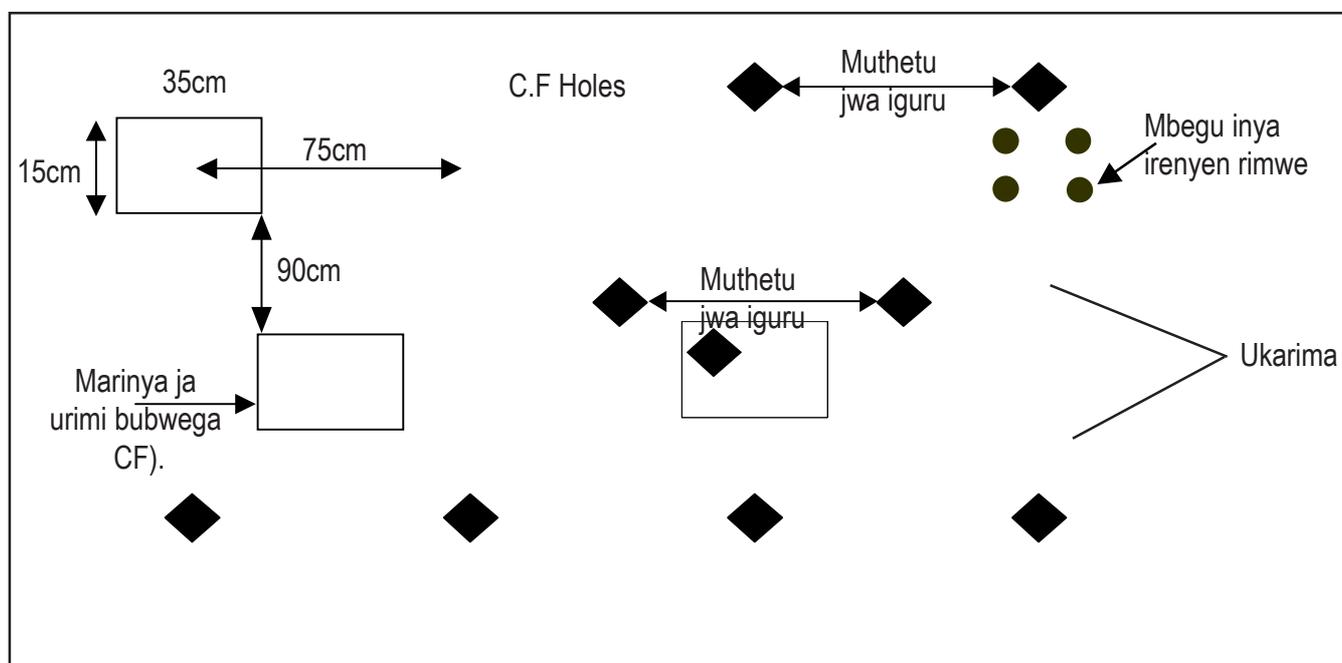
Gukurukira urimi bubwega nitujukitie itagara
mbele
Nandi nitwonete kugaruka. Maciara ja mpempe
mainda jairi. na kinya mithemba ingi ya
Irio iri oo. bingi biria bitibujaga
bwega nitukethete. Tumbegu tuniini tukaleta
maketha
Jamanene. Tugwatanireni tuande irio bibiingi
twone maketha jamaingi

Ni wiji no wone machiara mahinda jairi ikirimaga urimi bubwega (kilimo hai/ conservation farming) kimera kii?

Kuthithia kilimo hai (CF) ni njira ibuthu

- Clear you plot out of weed and bushes. Do not plough.
- Marinya jakethirwa jari ja corner (rectangle). Jethirwo jari ja warii bwa 15cm, uraaja bwa 35cm nakworokera kwa 15cm. kuuma irinya gwita ringi ni 75 cm na kuuma mustaari mwanka jungi 90cm.
- Ungania mboreo na muthetu jwa iguru, kana utumire mati jaria jooraga (compost manure) ujuria irinya na muthetu juria unganirie utigarie 5cm kuuma iguru.
- Wakari kwaanda, aanda mbeu inya (4) muthetune irinyene. Kethira urianda muya aanda mpindi 4 -6 irinyene ngai yaura aki.
- Kaanya karia utigire utirojuria muthetu ni gagutuma ruuji rutonya kimerene riria ngai ikaura.
- Rimagira kithurukane kia marinya jaku.

Ugatumira fertilizer kamundene gaka



Ugatiira munda buru. Tuguta iria aki winje marinya.

Ririkana

1. Ugatiira munda buru. Tuguta iria aki winje marinya.
2. Ukaithia iria mundane juju. Tigana na mati mundane kenda janoria munda.
3. Ukarithia ndithia mundane juju.
4. Ugatumira fertilizer kamundene gaka. Imera biaku bikabua nkuruki utitumirite fertilizer.
5. Ukarimira mundane junthe. Rimira kithiurukone kia marinya aki. Jukia kibanga utugute gatigati ka mistari na kuuma irinya mwanka ringi.

Ukorirwa

- 1) Ukaiambiriria kuunda miti ya gituiire na ja matunda ndene muunda jwaku na juuine.
Ukaanda mbau mauta kana minyua nijii hakui na mihuro (mierene)

TURITENI NGUGI TU AMWE NDENE YA TUKUNDI TWETU TUNINI TUAMBIRIRIE KUJEJANIRA MARINYA MBERE YA NGAI IURA.



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Thi-ini wa Ngathiti ino.....

- ✓ Uria tungigiriria gukuo gwa tiri ni kiguu. Pg. 2
- ✓ Kugigitira na kumenyerera njui na ithima citu. Pg. 3
- ✓ Small Groups payments: Maundu maaria mubatie kuhingia Pg. 4
- ✓ Tharaka TSE: Nimarimaga urimi wa iguru wina magetha maingi-Gutiri na ngaragu. Pg. 5
- ✓ Hiji niui ati unghithira urimi mwega wa Kilimo hai / Conservation Farming (CF) niukugia na magetha maita meri kimera giki? Pg. 6



Uria tungigiriria gukuo gwa tiri ni kiguu.

Gukuo gwa tiri ni kiguu ni guteyaga mai kana ruhuho.

Niki kirehaga gukuo gwa tiri ni kiguu.

Gutemanga miti gutigaga tiri utari muhumbire. Kurima mugunda ni guteyaga tiri na gukarehe gukuo gwatiri ni kiguu. Tiri tocio ndungiteithia gukuo gwatiri ni kiguu otiga tuhandire miti kana mimea.



Uhandi wa miti thigirikaini cia njui niguteithigia ugitiri wa tiiri.

- a) **Gutemanga kwa miti ni guthukagia mugunda:** Migunda teo timiega na urimi, tamugunda muinamu. Hindi iria andu marageria kuhanda mimea tiri ndungihota

gweterera guthukangio na kunyihia udu uria munene.

- b) **Uriithi wa mahiu.** Hindi iria nyamu nyingi ciretikirio kuhuthira mwena umwe wa mugunda nigukoraguo na wagi wa mimea na guthii na mbere tiri gukuo ni kiguu.
- c) **Utemangi wa miti :** Hindi iria miti ya temenguo mugunda tiri utigaguo uteri muhumbire na kunyihia undu uria munene.

Maumirira.

Wagi wairio: Gukuo gwatiri ni kiguu ni kunyihagia tiri uria munoru na kunyihia magetha.

Guthukia mai: Tiri waingira mai-ini niuthuburaga kuria nyamu ckaraga, ukaingira mai-ini makunyua ,na gukua ndawa iria ihuthirituo tirini-ini nginya maria mai mageragira.

Maugwati. Gukuo gwatiri ni kurehaga muiyuro wa njui. Hindi iria tiri weiga githma-ini na rui githimo kia mai ni kiongererekaga. nirehaga mugunda muinamu

Guthama: Hindi iria tiri wakuo ni kiguu nigithukagia mugunda nginya ndiri hindi

ingiteithiriria arimi na gutuma mathii migunda-ini ingi.

Kuongerereka kwa migunda miumu: Hindi iria tiri wate mimea na kunyihia ,kwoguo weru-ini gugatuika kumu. muico-ini mugunda ugatuika mumu.

Tunginyihanyihia atia wongerereku wa gutwaruo gwa tiri ni kiguu

- ✓ **Urii wa Kilimo hai kana CF (conservation farming).** Riria ukurima kuhuthithira njiro ino ya CF, ndwagiriirwo ni guchimba mugunda waku. Uria wagiriirwo ni kwenja marima kuringana na ithimi iria uthomithitio. Njira ino niirigagiria gukuo gwa tiiri ni kiguu tondu tiiri ukoragwo unyitanite.
- ✓ **Kuhuthira mulching:** kumenyerera tiri ni mugitire mahinda mothe kwa muhiano, Handa mimera mithemba itahianaine (handa mithemba iri kana mingi hamwe mugunda-ini umwe) na kuhanda miti na irio thi-ini wa mugunda waku
- ✓ **Kuhanda miti:** Miti nihumbagira na kurumia tiri, na njira iria njega ya kuhuthiruo.



Kugitira njui na ithima.

Twagiriirwo kugitira njuii ciitu nikii?

- ✓ Gutiga guthukia njui citu (water pollution).
- ✓ Kunyihanyihia kiguu..
- ✓ Kunyihia kuhua kwa njui.
- ✓ Kugitira tunyamu twimuoyo na turia tuikaraga njui-ini kwa muhiano, thamaki.

Tungirigiriia atia njui na ithima citu.

- Ndukarime -handa miti ,na niukurigiriria tiri gutwaruo ni mai.
- .Handa miti uthiururukirie mugunda.
- .Handa nyeki hugururu-ini cia rui.
- Tiga kurima hugururu-ini cia rui.ta.ongikoruo warii wa rui ni fiti 5,tiga kurima fiti ithano hakuhi na rui,angikoruo warii wa rui ni fiti 10 ndukarime fiti 10 hakuhi na rui.Nouhande miti kana nyeki.
- Ndukariithirie hakuhi na rui.Taha mai rui utwarire ngombe.kana utugute nyeki na utwarire ngombe.
- Thomithia arimi acio angi bata wa kugitira njui.

- Aka kindu giakurigiriria gutwaruo gwa tiri mwenaini wa rui.kwa muhiano makarabati.(gabions)
- Handa miti ya kinduire iria itanyuaga mai hugururu-ini.
- Handa mimea ya kuhumbira mugunda iria ikuongerera unoru, kwamuhiano, mirio,ikua, mieu, marenga, nyeki. Ino nikunyihia gukuo gwatiri ni kiguu.
- Gitira githaka na mutitu uria wihahuhi na hugururu cia rui.
- Handa miti ya iria itanuaga kana yanagagirira na mae ta Water berry, Podo Carpus, Prunus African, Ficus cycamora, mwiria, Mware, peacock flower, Mukwego,
- Ona no uhande nkamuria,maruru, nthithiu,irinmba, menywa, mutenderuko/upesi ,stinging nettle,thaa/thabai.

Niki gitumaga arimi magitire njui.

- ✓ Arimi mendaga kumenyerera unoru wa tiri



Uthukia wa mae ma rui ni ugwati kuri andu na mahiu.

- gimunda-ini yao.
- ✓ Gucokia unoru wa tiri hari mugunda muthukie ni muiyurwo wa tiri.
- ✓ Kunyihanyihia guthi na mbere guthukio gwatiri.
- ✓ Kumenyerera guthii kwa mai thi-ini wa njui citu.
- ✓ Gukoruo na mai matheru kuma njui, ithima ,na marima.
- ✓ Kurigiriria mirimu iria irahaguo ni mai.
- ✓ Kurigiriria kiguu tondu nigithukagia migunda yao.
- ✓ Niheyaga andu na nyamu mai mega.



Small Groups payments: Maundu maaria mubataire kuhingia

TIST Kenya nikurikia kuhariria marihi ma ikundi nini. Marihi maya makarihwo na M-pesa. Otamarihi macio mangi. Ikundi iria igukoruo na mabataro maya mehaha muhuro. .Aria matagurwo mahingitie mabataro maya , nimekubatara kuruta wira na matukike ona oo makurihwo. Mbeca ciao ciothe makarihwo marikia kuhingia mabataro maya



Ikundi iria irithiaga micemano wa Cluster niirheagwo mweke wa mbere hari gutarirwo miti yao na amwe na kurihwo.

Haha thi hena mabataro maria ikundi nini ciagiriruo gukoruo mekite nigetha marihwo;

1. Gakundi kanini kanyu no muhaka gakorwo na miti mingi gukira 500. Angikoruo gikundi giaku kinini gitigukoruo kihingitie ibataro riri, mwagiriiruo kuongerera kio gia kuhanda miti mingi kimera giki kingi kiambura yukite. Ni mwagiriirwo niguthiaga micemano ya Cluster nigetha mukarikanira na Atari a miti ario Quantifiers riri mugatarirwo miti yanyu.
2. Gikundi giaku nigikubatara kuhanda miti itaganite wega (kuuma mita 3-4m(nigu kwagiriire) kana ndukanyihirie mita 2) Ririkana, mweri wa January mwaka uyu, hindi ya mucemano wa Cluster, nitwaigwithanirie angikoruo miti yaku ihandituo na gutigithukano kunini gukira mita igiri(2m) inyui gikundi kinini mwagiriiruo ni kimutigithukania. Ihinda riri miti iria igukoruo itigithukanitio hanini gukira 2m no ikarugiriruo wagiriiruo ni kurugirira miti nginya 2010.
3. Gakundi kanyu kagiririrwo ni gukorwo na miti ya mibau minini muno ta ikorwo itakinyite gichunji kia 33% hari miti iria yothe mwina nayo. Angikorurwo miti ya mibau yanyu

niikirite gichunji kia 33%, nimwagiriirwo mutwandikire Forest plan yanyu ya uria mukunyahia miti yanyu ya mibau gwa kahinda ka miaka itatu - nginyagia mweri 31 -12 - 2011. Mwarikia kunandika forest plan yanyu, muturehere cluster -ini yanyu nigetha muriho mbeca cianyu.

4. Amemba a gakundi kanini kanyu nomuhaka makorwo mekirite irore (signature) fomu ya ngwataniro ya kwonjorithia riera riria rithambitio ni miti. Ni mwagiriirwo nigutigirira ati siginicha cianyu ni njega na namba cia ibandi ni ciama. Angikorwo fomu yanyu ina mahitia, nimwagiriirwo ni gusaini ingi njeru nigetha mwamukire marihi manyu.

Ririkana, nikwagiriire mukorwo mugithii micemano ya o mweri ya cluster. Thiinii wa micemano ino nimurikoragwo mugeteithaka na mathomo meeru hamwe na gukurania meciria na ikundi iria ingi. Ikundi iria ithiaga cluster meetings niirheagwo mweke wa mbere hari gutarirwo miti yao, hari kurihwo mbeca ciao. Koguo ni kwagiriire o gakundi o gakundi gakorwo gagituma andu matanyihire eere thiinii wa micemano ya Cluster.



Tharaka TSE- Urimi mwega / Kilimo hai niukoraguo na magetha maingi - na kunina ng'aragu.



Ikundi nini kuuma cluster ya Nkodi Small maari mucemanio.

Ooh,ooh,niuriwona nyoni riera-ini ikenete
Tharaka,Igembe miena iria semi-arid
Niturona nimarakenio ni rieraTharaka, Igembe
kuria kumu urimi wa iguru wa gukuria irio
kurigiriria migunda ya matunda,ta
maembe,mababai na mangi maigi nimatumaga
magie na mbeca,
Tharaka,Igambe niturorete handu hangi.

Gikundi gia Tunyai kina tukundi tunini
70.Nkodi 51,Makatiri 52,Ntahmbiro 45,Kanjoo
inatukundi tunini 51.Atumia na Athuri ni
manyitanita makurie matura mao.
Nimakuragia comomilla, carcarde,lemon
grass, comomilla, carcarde, lemon grass.

Hindi iria urenda mbecaaria uhoro wa
mimea.

Mimea ino ikuraga iguru wa kirima gia
Kenya,hatari kuhuthira thumu wa kigeni kana
ndawa kuri guteithiriria ngurubu
nini.magaciikira tumihuko-ini twa macani
makendia tari ndawa cia miti/dawa cia
kimerera.

Mibango ya CF kuri magetha maingi-gutiri
ngaragu.
Mithemba yothe ya irio ni kuragio-mboga cia

kabici,water melon,mianga,gwaci,igua na
thukuma/matharu.

!TIST,nitukenete
Gwika maita maingi ,Kugayana,Kurutithania
wira hamwe thi-ini wa ikundi citu
nini.Kugayana unene.Gukuria wira.Ithuothe
turi atongoria, Gutiri munene gukir aria angi-
Kuhotana kwega.

.Mithemba miingi ya miti iria turakuria,irio na
mbeca iria turathondeka
Mibango,Gukuria maembe tugethondekera
jiici ya kuendia.

Miarobaine,mukau,mikorocho miti iria
yuikaine itura-ini ,no kuma wirutiri wa TSE itu
na ingi ta miena imue ya mititu na
urimi,nituo nete no tucenje matura maitu.
Nyitanira na ithui,Reke tuhande miti tondu
niyo baina itu.

Turi CF nituthite na mbere.
Riu nituo nete ugaruruku.Kugetha mbebe
maita meri.Na irio mithemba itiganite
nyingi.Imue itikuraga wega -Nitugethete,
Gacunji kanini ni karutaga cia kuigana -
Magetha maingi,Rekei tunyitane hamwe-
Tukurie irio nyingi -Tugie na magetha maingi.



Hihi niui ati unguhuthira urimi mwega wa Kilimo hai / Conservation Farming (CF) niukugia na magetha maita meri kimera giki?

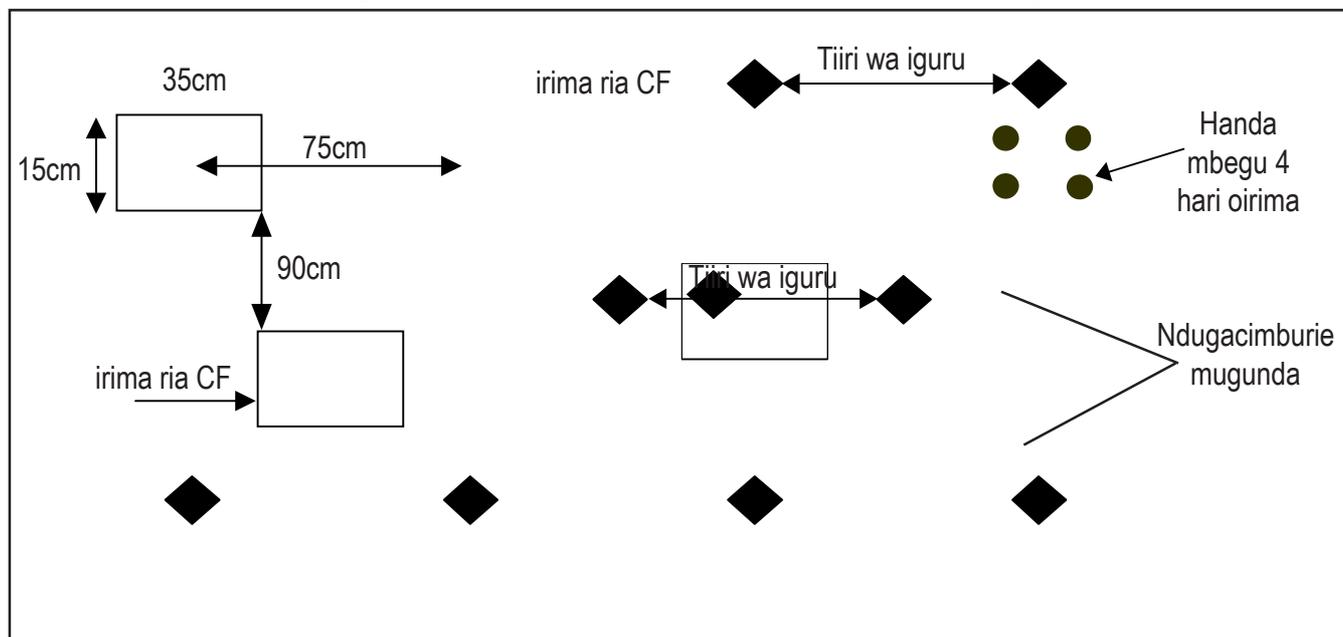
Urimi uyu ni muhuthu kuutungata

- Theria kana utugute mugunda waku. ndukauchimburie.
- Marima magiriire gukorwo mari na kona inya. Magiriire gukorwo mari na warii wa 15cm, uraihu wa 35cm na uriku wa 15cm na makorwo mari na utiganu wa 75cm kuma hari irima rimwe nginya riria ringi.
- Oya thumu hamwe na tiri wa iguru na utukanie na wikire irima-ini riu nginya uraya wa 10cm kuma thi.
- Ukihanda mbembe ciaku, handa mbegu inya irima-ini riu na uhande kona ciothe inya no angikorwo

urahanda muhia, handa mbegu 5-6 kona-ini cia irima riaku thutha wa mbura kura wega.

- Thika mbegu ciaku na gatiri karia kanoru uriku wa 2.5cm na weka uguo nihagukorwo hatigarite handu hatari hathike ha uraihu wa 2.5cm.
- Irima riri watigia hau iguru ritari rithike riteithagia mai maingire wega mumeraini waku riria mbura yoira.
- Rimagira mumera waku kaingi na kaingi.

Ndwagiriirwo ni kuhuthira bataraita hari urimi uyu.



Ndugachimburie mugunda waku. Wagiriirwo no kewga marima tu ta uria mbica ino ironania.

Ririkana

1. Ndukanarime mugunda waku. Theria na wenje marima maku.
2. Ndukanachine mahuti maria watuguta kana matigari ma mimera yaku iria wabetha no umatigage kuu mugunda-ini nigetha mathondeke thumu mwega.

3. Ndukanariithie mahiu maku mugunda-ini.
4. Ndukanahuthire fertilizer iri na chemical tondu mimera yaku no iguciara wega orona itari na fertilizer iyo.
5. Ndukanarime mugunda wothe no urimage oro haria hari na mumera. Huthagira ruhui kurima gatagati ka mumera nginya uria ungi.

Hamwe na uguo

- 1) Ambiriria kuhanda miti ya kiunduire mugunda-ini waku na makiria ndere-ini cia ruui. Na ndukahande miti ya mibau kana minyua mai hakuhi na rui.

NYITANIRAI NA GIKUNDI KIANYU. MUKORWO NA NGUATIO YA KWENJANIRA MARIMA MBERE YA MBURA IRINGITE!