



TIST HABARI MOTOMOTO NOVEMBER 2025

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I. Nursery Care

A. Pest control

Organisms like fungi, bacteria, viruses, nematodes and insects (e.g. ants, termites, aphids) can damage seedlings. A common nursery disease is called damping off and is caused by fungi. It causes seeds to rot before germination, roots to decay before the shoot appears and the shoot to become thin and collapse. The typical symptoms are:

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

Control damping off by:

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

- Diseases can also be managed by the proper use of chemicals and insecticides. It is best to use natural insecticides as chemical ones can be expensive and may damage the environment e.g. Application of ash
- Ensure the seedbed is clean to avoid encouraging pests.

B. Root pruning

Move the seedlings around once a week so that the taproots do not sink into the ground and need to be cut. A healthy taproot helps the trees get water after transplanting. When the seedlings are growing in the pots after 3-4 months (depending on species and climate) their roots start to grow out of the bottom of the pots. These roots should be cut every 1-2 months with knives. Note that care must be taken when lifting the pots so as not to damage the young roots.

C. Watering, weeding and shading

- Sprinklers should be attached to the watering cans so as not to cause soil erosion.
- You can also use a pierced tin.
- Avoid too much or too little watering, roughly 20 litres for 1000 seedlings. Too much water can weaken the seedlings and attract pests and fungus. One sign of over-watering is a thin film of algae or green moss on the soil surface.
- Water every morning and evening when possible.
- Sandy soils will need more watering than clay soils.

- Direct the water to the soil, not to the leaves.
- Water slowly to ensure it penetrates the soil.
- Be careful not to damage roots when weeding.
- Do not leave the weeding too late. Weeding is necessary as the weeds increase competition for light, soil water and nutrients.
- Some seeds require shading; make sure simple shades are constructed.
- During the rainy season, cover the seedlings using dry grasses or hay. Seedlings should be moved away from under trees so water does not drip onto the seedlings and cause damage.
- Fence off the nursery to protect from cattle and playing children.
- Let the seedlings grow to about 30 cm before transplanting. This may take from 1 month to 6 months. Also remove the shade during this time.

II. Best Practices for Tree Nurseries

As the TIST project continues to grow and expand in various areas in Tanzania, many groups have been motivated to establish their own tree nurseries so that they have enough trees seedlings for planting during the rainy season. Every Cluster has used their Best Practices learned from other experienced and inexperienced TIST groups, the groups have been able to establish and maintain their tree nurseries. In this article, we have used Best Practices from Maelewano Group, Tunaweza Group of the Bukililo Cluster, the Cathedral and the Mseta Clusters in Mpwapwa.

Best Practices from the Maelewano and the Tunaweza Groups of the Bukililo Cluster:

- **Soil collection area:** We choose an area with fertile loamy soil to collect the soil used for growing our tree nursery. You can also choose an area with fertile sandy soil; this soil allows the seeds to germinate well without even using fertilizer.
- **How we measure and mix soil:** We took three buckets of loamy soil, two buckets of manure and one bucket of sand, then we mixed together and sprayed it with water and cover it for 14 days before putting it in the bags.
- **Time from mixing the soil until the time for seed planting:** After 14 days the soil is well and evenly mixed, then we fill soil in the bags, then we plant the seed in the bags.

- The exercise continues until all the bags are well filled. We usually start watering all the bags with seeds. Other seeds like mhumula can be planted directly in the farm because they germinate very well.
- **Types of bags and cutting measurements:** We do measure depending on the type of the bags, for example, the wide bags we cut three to four inches, for the narrow bags we cut two and a half inches.
- **Best bags to use:** According to our experience, we see that narrow bags are better than wide bags. Wide bags are best for growing avocados; the narrow ones are the best for all trees except avocados.



Photo: Maelewano Group tree nursery



Photo: Tunaweza Group tree nursery

Best Practices from Mpwapwa Cathedral Nursery:

- **Soil collection area:** We chose an area with fertile loamy soil
- **How to measure and mix soil:** 10 buckets of loamy soil, 10 buckets of fertilizer, then we mix together
- **Time from mixing the soil until the time for seed planting:** Immediately after mixing the soil, we set our own schedule for each person to fill 500 bags a day and then the next day you make sure you have plant seeds in the bags you filled with soil.
- **Types of bags and cutting measurements:** We use both wide and narrow bags. We cut one bag and use it to measure the other bags.
- **Soil measurement in the bags:** We do not fill the bags to the top in order to leave space for watering
- **Best type of the bags to use:** according to our experience; the entire bag works well, though the wide bags are better because they provide space for storing water, and are suitable for large seeds such as purple, mango, avocado, etc.

- **Nursery Maintenance Best Practice:** We maintain our nursery through the following ways:
 - We use special watering cans and buckets for watering
 - We have a water storage tank to make sure that water is available all the time.
 - Before the seeds germinate, we water them twice a day; i.e. in the morning and in the evening. We set watering shifts, some group members go in the morning and others go in the evening. Once they germinate we are watering once a day.
 - We do weed to make sure the area is clean.
 - We lift up the pots to check if the roots have gone down and cut them so that the roots do not go deep down the ground.
 - It takes about a month for the seedlings to start germinating, continue watering them until they sprout
- **Total number and type of seedlings in the nursery:** We have a total of 3,692 seedlings, African mahogany, Oranges, Papayas, Avocados and Cassia
- **Our future plans:** Every member of our group will be given seedlings to plant in their farms, and then we will sell the remaining seedlings to increase our income.

Best Practices from Mseta Nursery:

Soil collection area: In our nursery we used soil from an area where there were cattle shed in the past. However, there are two types of soil collection area you can choose from for planting seeds;

- a. You can use soil that is under a large tree that a lot of leaves falls down and makes the area compact due to the many leaves that rot and make the soil fertile.
 - b. You can also use soil that is in an area where in the past there was cattle shed, this type of soil is mixed with manure and causes the soil to be light as dust, this soil has sufficient fertility because it is mixed with manure.
- **How to measure and mix soil:** We took 5 wheelbarrows of fertile soil from the past cowshed and 2 wheelbarrows of sandy soil and mixed them together.
 - **Time from mixing the soil until the time for seed planting:** After mixing, we water the soil to soften it for a day before filling it into the bags and planting the seeds after filling the soil. Make sure the soil is firm enough and not sticky.

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- **Types of bags and cutting measurements:** We cut the narrow bags 3-inches; we usually use wide bags for growing avocados. We cut the bags 3 inches and then use that to cut other bags.
- **Soil measurement in the pots:** We fill by pressing down and in the middle so that the bottom is firm and then we fill the top without pressing, when the pot is full, you wipe the top until it is flat to make it easier to plant the seeds and water to penetrate.
- **Best type of the bags to use:** Both wide and narrow bags are best because narrow ones are suitable for small seeds and wide ones are suitable for large seeds.
- **Nursery Maintenance Best Practice:**
 - We water the seedlings twice a day with tap water using the special watering cans,
 - We do weed in the nursery area
 - When the seedlings reach the sizes where the roots start to go down we lift up the bags and cut the roots using a knife so that the roots do not go down.
 - We also spray a pesticide when we see some seedlings growing mold (mold is caused by the cold weather which burn the seedlings)
- **Type of seedlings in the nursery:** We have Natal mahogany and caccia

- **Our future plan:** is to distribute seedlings to group members for planting during the rainy season



Photo: Mseta nursery

NOTE:

TIST Farmer – you are NOT required to contribute money or anything to a TIST employee during the execution of their duties on your farm. If any TIST employee asks you to pay any amount of money, please contact your TIST country management team member.

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TIST Values

As TIST Family we have our Values which most of TIST Small Groups know and practice. We always reflect on these Values and to ensure that we all are truly living by them. The success of TIST is based on the integrity and effort of individual members within TIST. What we can achieve depends on each of us following these Values;

Who are we?

- (i) We are Honest
- (ii) We are Accurate
- (iii) We are Transparent
- (iv) We are Servants to each other
- (v) We are Mutually Accountable to Each Other and
- (vi) We create Low Budget/ cost, yet we achieve Big Results

How we do things that other people can see

- 1) We are committed
- 2) We do our work in small groups
- 3) We seek and use the best way
- 4) We use our minds and hands.

What do we do?

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

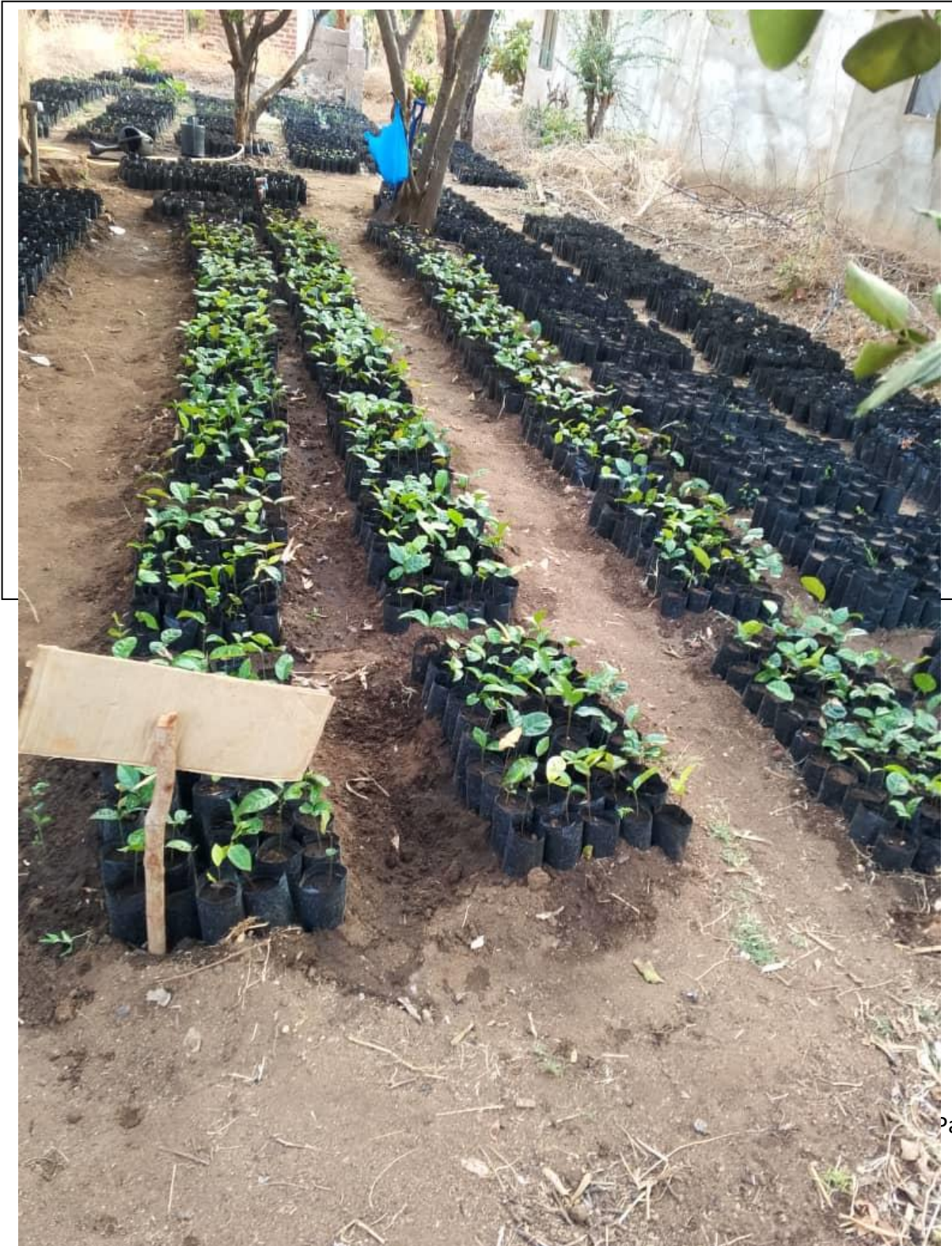
What do we create?

- 1) We create team work - by doing things this way; we end up working as a team.
- 2) We create capacity - we create organization, strength, and a system that is strong.
- 3) We create enjoyment - we see results, we accomplish big things that we enjoy.
- 4) We create Big Results - In Conservation Farming and from other projects and business that we do.
- 5) We create Low Budget/Cost, yet we achieve big results.



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I. Utunzaji wa Kitalu

A. Udhhibiti wa wadudu.

Viumbe kama vile fangasi, bakteria, virusi na wadudu (kama mchwa na vidukari) wanaweza kuharibu miche. Mara nyingi kitalu hushambuliwa na ugonjwa unaoitwa damping off (ugonjwa unaotokana na unyevunyevu) na husababishwa na fangasi. Ugonjwa huu husababisha mbegu kuoza kabla ya kuota, mizizi kuoza kabla ya chipukizi kuonekana na chipukizi kuwa jembamba na kuanguka.

Dalili zake ni:

- Shina kuwa jembamba na kufa hasa sehemu ya chini ya shina.
- Mche kunyauka na kuanguka
- Majani yanageuka na kuwa na rangi ya manjano na hatimaye mche hufa.

Namna ya Kudhibiti ugonjwa huu

- Kubadilisha au kuondoa udongo wa kupandia mbegu kila baada ya mwaka 1-2.
- Ondoa mara moja miche iliyoathiriwa na uichome moto
- Epuka kumwagilia kupita kiasi
- Hakikisha mifereji ya kupitisha maji iko vizuri.
- Imarisha njia za uingizaji hewa bora ili kuondoa unyevunyevu
- Hakikisha palizi inafanyika kwa ufanisi na kwa wakati
- Udongo haupaswi kuwa na rutuba kupita kiasi. Uwiano sahihi wa udongo unapaswa kufuatwa. Punguza kiwango cha nitrojeni kwa kuweka mbolea kidogo.

- Kuwe na nafasi ya kutosha kati ya miche ili kuepuka msongamano.
- Hakikisha kuwa kitalu kiko safi wakati wote ili kuepuka wadudu waharibifu.
- Pia magonjwa yanaweza kudhibitiwa kwa kuwa na matumizi sahihi ya kemikali na viua wadudu. Ni vyema kutumia viua wadudu vya asili kama majivu kwani vya kemikali zinaweza kuwa ghali na zinaweza kuharibu mazingira.

B. Kupogoa mizizi.

Unapaswa kusogeza miche mara moja kwa wiki ili mizizi isizame ardhini na kuangalia kama inahitaji kukatwa. Mizizi wenye afya husaidia miti kupata maji baada ya kupandikiza.

Wakati miche inakua kwenye makopo au viriba baada ya miezi 3-4 (kulingana na aina na hali ya hewa) mizizi yake huanza kukua kutoka chini ya kopo au kiriba. Mizizi hii inapaswa kukatwa kila baada ya mwezi 1-2 kwa visu. Kumbuka kwamba umakini unahitajika sana hasa wakati wa kuinua kopo ili usiharibu mizizi michanga.

C. Kumwagilia, Kupalilia na kuweka Kivuli.

- Tumia keni kwa ajili ya kumwagilia au koki maalumu kwa ajili ya umwagiliaji zinapaswa kuunganishwa kwenye ndoo au madumu ya kumwagilia ili kulisababishhe mmomonyoko wa udongo.
- Unaweza pia kutumia ndoo iliyotobolewa matundu madogo madogo.

- **Muda wa kuchanganya udongo hadi kusiha mbegu:** Baada ya siku 14 tunauchanganya huo udongo vizuri kwa usawa ndipo tunaujaza kwenye viriba na kusiha mbegu na kuanza kumwagilia. Mbegu nyingine kama mhumula zinaweza kupandwa moja kwa moja shambani zinaota vizuri kabisa
- **Aina ya viriba na vipimo vya kukata viriba:** Vipimo vinategemea na aina za viriba kwa mfano viriba vipana tunakata nchi tatu hadi nne, viriba vyembamba tunakata inchi mbili na nusu
- **Viriba bora vya kutumia:** Kwa uzoefu wetu tunaona viriba vyembamba ni Bora zaidi kuliko viriba vipana. Viriba vipana ni kwa ajili ya kuoteshea parachichi ila viriba vyembamba ni kwa ajili ya miti yote kasoro hizo parachichi



Picha: Kitalu cha kikundi cha Maelewano



Picha: Kitalu cha Kikundi cha Tunaweza

Mbinu Bora kutoka kitalu cha Kanisa Kuu Mpwapwa

- **Eneo la kuchota udongo:** Walichagua eneo lenye udongo wa tifutifu wenye rutuba
- **Vipimo ya kuchanganya udongo:** Udongo wa tifutifu ndoo 10, mbolea ndoo 10 kisha unachanganya pamoja
- **Muda wa kuchanganya udongo hadi kusiha mbegu:** Baada ya kuchanganya udongo tulijiwekea utaratibu wetu ambapo kila mmoja alikuwa anajaza viriba 500 kwa siku halafu kesho yake unahakikisha umesiha mbegu kwenye vile viriba ulivyojaza udongo
- **Aina ya viriba na vipimo vya kukata viriba:** Tulitumia viriba vipana na vyembamba, Namna ya kukata viriba kwa vipimo, tulikata kiriba kimoja hicho kikatumika kupimia viriba vingine kwa kufuata kipimo cha hicho kiriba
- **Kipimo cha udongo kwenye viriba:** Hatujazi udongo hadi juu, ili kuacha nafasi ya kumwagilia maji
- **Viriba bora vya kutumia:** Viriba vyote vinafanya vizuri, ila viriba vipana ni vizuri zaidi kwa sababu vinatoa nafasi kwa ajili ya kuhifadhi maji, vinafaa pia kwa mbegu kubwa mfano zambarau, embe, parachichi nk.
- **Vifaa vya umwagiliaji wa kitalu:** Tunatumia can, madumu na mipira. Tuna tank la kuhifadhi maji ili yawe yanapatikana muda wote

- **Utunzaji wa kitalu**

- Kabla mbegu hazijaota tunamwagilia asubuhi na jioni
- Zikishaota zinamwagiliwa mara 1
- Tunalimia majani
- Tunainua viriba kuangalia kama mizizi imeenda chini na kukata ili mizizi isikomae chini
- Tuliweka zamu za kumwagilia, wengine wanakwenda asubuhi na wengine wanakwenda kumwagilia jioni
- Mikangazi inatumia muda wa mwezi mmoja hadi kuanza kuota, hivyo inahitaji kuvumilia kwa kuendelea kumwagilia hadi iote

- **Idadi na aina ya miche kwenye kitalu:** Tuna jumla ya miche 3,692 aina ya Mikangazi, Michungwa, Mipapai, Miparachichi na Miti nguzo.

- **Mpango wa baadae:** Mpango wetu ni kugawana miche sisi wanakikundi ili tukapande mashambani mwetu, halafu miche mingine tutauza ili kujipatia kipato



Picha 4: Kitalu cha Kanisa kuu Mpwapwa

Mbinu Bora kutoka kitalu cha Mseta:

- **Eneo la kuchota udongo:** Kwenye kitalu chetu tulitumia udongo kutoka kwenye eneo lilipokuwa na zizi ngo'mbe kipindi cha nyuma. Ila kuna aina mbili ya kuchagua eneo la kuchota udongo unaotumika kusiha mbegu mfano udongo wa kichanga, tufutifu na wenye rutuba;
 - Unaweza kutumia udongo ambao uko chini ya mti mkubwa ambao hupukutisha majani mengi na kufanya eneo hilo linakuwa linabonyea kutokana na majani ya miti kuwa mengi yanayooza na kufanya udongo ule uwe na rutuba
 - Unaweza pia kutumia udongo ambao uko kwenye sehemu iliyokuwa na zizi la ngo'mbe siku nyingi, udongo huu unakuwa umechanganyika na mbolea na kupelekea udongo kuwa mwepesi kama vumbivumbi, udongo huu una rutuba ya kutosha kutokana na kuwa umechanganyika na mbolea.
- **Vipimo ya kuchanganya udongo:** Tulichota udongo wenye rutuba wa kwenye zizi la ngo'mbe la zamani toroli 5 na udongo wa kichanga toroli 2 halafu tukachanganya pamoja.
- **Muda wa kuchanganya udongo hadi kusiha mbegu:** Baada ya kuchanganya Udongo tunaumwagilia ili ulainike kwa siku moja kabla ya kujaza kwenye viriba na kusiha mbegu. Hakikisha udongo unakuwa mgumu kiasi hauwi rojorojo.

- **Aina ya viriba na vipimo vya kukata viriba:** Tumetumia viriba vyembamba vya inchi 3, viriba vipana huwa tunatumia kwa ajili ya kuoteshea miparachichi. tunakata viriba kwa kipimo cha inchi 3 kisha tunatumia kiriba hicho kukata viriba vingine
- **Kipimo cha udongo kwenye viriba:** Tunajaza kwa kushindilia chini na katikati ili kitako kiwe kigumu halafu kwa juu tunajaza bila kushindilia, kiriba kikijaa unafuta kwa juu hadi kiwe flat ili kurahisisha upandaji wa mbegu na maji kupenya.
- **Viriba bora vya kutumia:** Viriba vipana na vyembamba vyote ni bora kutumia kwa sababu vyembamba vinafaa kwenye mbegu ndogo na vipana vinafaa kwenye mbegu kubwa.
- **Vifaa vya umwagiliaji na utunzaji wa kitalu:** Tunamwagilia mara mbili kwa siku maji ya bomba kwa kutumia can, tunalimia majani, miche ikifikia ukubwa ambao mizizi inaanza kuota chini tunanyanyua viriba na kukata mizizi kwa kutumia kisu ili mizizi isiende chini. Pia tunapulizia dawa ya ukungu tunapoona baadhi ya miche inaota ukungu (ukungu unatokana na baridi kali kuunguza miche)
- **Aina ya miche kwenye kitalu:** Mikangazi na Mijohoro.
- **Mpango wa baadae:** Ni kugawa miche kwa wanavikundi kwa ajili ya kwenda kupanda mashambani



Picha: Kitalu cha Mseta

KUMBUKA:

Mkulima HUTAKIWI kuchangia fedha yoyote au kitu chochote kwa mtumishi wa Mradi wakati wa utekelezaji wa majukumu yake shambani kwako. Endapo mtumishi yoyote atakuomba kitu chochote au fedha kiasi chochote, jiridhishe kwanza kwa kuwasiliana na uongozi wa Mradi wa TIST kabla ya kutekeleza ombi hilo.

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MAADILI YA TIST

Kama Familia ya TIST tuna Maadili yetu ambayo wengi wa Wanavikundi Vidogo vya TIST wanayajua na kuyatekeleza. Daima tunatafakari juu ya Maadili haya na kuhakikisha kwamba sote tunaishi kulingana nayo. Mafanikio ya TIST yanatokana na uadilifu na juhudi za wanachama binafsi ndani ya TIST. Tunachoweza kufikia inategemea kila mmoja wetu kufuata Maadili haya;

Sisi ni Nani?

- 1) Sisi ni waaminifu.
- 2) Sisi tunatoa taarifa sahihi.
- 3) Sisi ni wawazi
- 4) Sisi tunatumikiana.
- 5) Sisi ni wawajibikaji
- 6) Bajeti Ndogo, Matokeo Makubwa

Jinsi tunavyofanya mambo ambayo watu wengine wanaweza kuona

- 1) Sisi tunajitolea.
- 2) Tunafanya kazi zetu katika vikundi vidogovidogo
- 3) Tunatafuta na kutumia njia bora
- 4) Tunatumia akili na mikono yetu.

Tunachofanya

- 1) Tunapanda aina mbalimbali za miti itakayodumu kwa muda mrefu.
- 2) Tunafanya mambo kuboresha afya zetu.
- 3) Tunafanya Kilimo Hai.
- 4) Tunafanya miradi na biashara zingine.
- 5) Tunafanya biashara ya hewa ya kaboni.

Tunafanya.

- 1) Tunaunda kazi ya timu—kwa kufanya mambo kwa njia hii; tunaishia kufanya kazi kama timu.
- 2) Tunajenga Uwezo-tunaunda shirika, nguvu, na mfumo ambao ni imara.
- 3) Tunafanya mambo yanayotufurahisha-tunaona matokeo, tunatimiza mambo makubwa ambayo tunafurahia
- 4) Tunafanya mambo yanayoleta matokeo makubwa-matokeo makubwa ya upandaji miti. matokeo makubwa katika Kilimo Hai na matokeo makubwa kutokana na miradi na biashara zingine tunazofanya.
- 5) Tunatumia gharama ndogo za Utawala, lakini tunapata matokeo makubwa.