



TIST HABARI MOTOMOTO APRIL 2025

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Photo 1: An example of intercropping using alley cropping

In this newsletter, we are going to have one article and one story;

- I. Intercropping
- II. A story from Gatson Mapya and Furaha Marcelo “We enjoy the Best Environmental Practices by using jiko banifu at our home for cooking which has helped us avoid the harmful effects of smoke from the use of traditional stoves”

Intercropping

Intercropping describes the practice where different crops are grown at the same time in the same field. It can also include growing crops with trees such as alley cropping.

Some TIST groups have tried the following technique;

1. For the first row dig a trench 18cm deep and 18cm wide
2. Fill this trench with compost manure
3. Plant cassava and potato alternatively
4. For the next row plant a one-meter strip of maize using Conservation Farming holes
5. Another row of cassava and potato
6. Another row of maize, etc.

This technique uses much of what we have learned in the training: it involves using intercropping; it uses compost manure and also Conservation Farming.

- Try alternating rows of maize with rows of trees; Small Groups have tried alternating a 3m strip of maize with a row of moringa/yellow cassia/leucaenia/bean tree trees.
- Rows of sorghum can be planted between rows of moringa or leucaenia.
- Try combinations of calliandra and bananas, calliandra and beans, calliandra and maize, maize and beans, beans and leucaenia, beans and bananas.

- Try intercropping cowpea with maize/sorghum or millet; Experiment with the spacing to see what works best, and let TIST know the results.

Crop rotation ideas

Crop rotation is where Farmers cycle through planting different crops over time on the same land.

There is a particular order of crops followed, where the next crop chosen is from a different family than the previous one. Crop rotation can be beneficial for soil fertility as different crops have different depths of root systems, meaning the same layer of soil nutrients is not depleted year after year. This method also helps to break up the soil at different levels, which improves soil structure, and can attract different types of beneficial soil organisms.

To get the benefits of crop rotation a different type of crop must be planted in turn. This is because crops of the same type may attract similar pests and diseases, and rotating the types can reduce the risk of certain pests and diseases taking hold in the soil.

The following list categorizes crops according to groups. Crops from the same group should not be planted one after the other. Be sure to mix the groups in your rotation plan!

Group 1: Cucumber, pumpkin, squashes, watermelon (Gourd family)

Group 2: Broccoli, brussels sprouts, cabbage, cauliflower, collards, kale, radish, turnip, mustard, watercress (Crucifer/Brassica family)

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Group 3: Eggplant, pepper, tomato, potato (Solanaceous family)

Group 4: Lettuce, artichoke (Aster family)

Group 5: Maize, rice, sorghum, wheat, oat, barley, millet (Grains and cereals family)

Group 6: Beans and peas (Legume family)

Group 7: Garlic, leek, onions, chives (Allium family)

Group 8: Carrot, celery, dill, parsnip, parsley (Carrot family)

Group 9: Cassava, sweet potato, taro, yam, water chestnut (root crop family)

Group 10: Cotton, okra (Mallow family)

If the above system is overly complicated, many farmers simplify crops to five groups to rotate between

a) Leaf crops (broccoli, cabbages, cauliflowers, kales, spinach, etc.). They need more nutrients than other vegetables.

b) Fruit crops (chilies, eggplants, peppers, tomatoes, etc.). They need a considerable amount of nutrients but not as many as 'leaf' crops.

c) Root crops (carrots, beetroots, potatoes, onions, radishes, turnips, etc.). They need fewer nutrients compared with leaf and fruit crops.

d) Legumes (beans, chickpeas, cowpeas, grams, peas, pigeon peas, etc.). Their additional benefit is fixing atmospheric nitrogen into the soil.

e) Cereals (maize, millets, sorghum etc.)

Reminder:

All TIST Farmers we are reminded to plant indigenous trees because they adapt to the climate very well as well as planting fruit, nut and other high beneficial trees for eating and selling.

Ideas to consider:

Try planting maize and groundnuts together in year 1 and in year 2-plant sorghum. Try planting groundnuts in year 1 and then a mixture of legumes, sunflower and/or potatoes in year 2.

Another idea is to try planting maize followed by a legume such as soybeans or groundnuts. Then in the following season try a cash crop such as cotton.

Try leaving the land fallow for a whole year, then plant crops again for 3-5 years before leaving it to fallows again. This will give the land a chance to replenish its soil nutrients. Consider Napier grass for fodder if you have livestock.

In general, plant legumes before cereals. Planting crops from the Brassica family (e.g. cabbage) before and after crops from the Solanaceous family (e.g. tomatoes) can help prevent build-up of rootknot nematodes and bacterial wilt.



Photo 2: An example of intercropping by Planting trees and crops

“We enjoy the Best Environmental Practices by using jiko banifu at our home for cooking which has helped us avoid the harmful effects of smoke from the use of traditional stoves”.

Gatson Mapya and Furaha Marcelo of the Ustawishaji Mazingira Group 2003TZ343 we are the, married couple and the TIST Farmers. We joined this Program in 2003 after attending a TIST seminar. As TIST Farmers we have been learning many things in our Groups and in the Cluster meetings including; How to create tree nurseries and taking care of them, motivating other Farmers to plant trees and take care of them, learned about carbon credit and its benefits through tree planting, Efficient Energy Use such as the use of jiko banifu, etc.

In our 1¼ acre farm we have planted various types of trees including; Cashew trees, Mango trees, jackfruit, Avocados, Plums, custard apple trees, leucaena tree and Jacaranda. We enjoy the various benefits we get from our trees where we get clean air, shades, the weather has been good in our area and in our village along with increased fertility in our farm from fallen tree leaves that rot and become fertilizer.

Since we joined TIST Program, we have seen much success in our lives; we know the importance of planting trees and its benefits, we have improved our health and we have enough food for our family. TIST has helped us through tree planting, our farms have become fertile from the leaves of the trees that fall on the farm and increased our harvest that helped to get enough food for family needs and we sell the extra to increase our income. In addition; our Group “Ustawishaji Mazingira” received pre-payment voucher from TIST, the money helped us to

The most enjoyable thing is *“We enjoy the Best Environmental Practices by using jiko banifu at our home for cooking which has helped us avoid the harmful effects of smoke from the use of traditional stoves”*. To mention some few benefits of using jiko banifu; it uses less firewood, as a woman I have reduced the time spent collecting firewood and instead I do other social and development activities. Apart from agricultural activities, we are also doing grain business, raising pigs and chickens where these businesses help us increase our income.

Our future plans are to expand our farm and continue planting more trees and practice Conservation Farming in order to have enough food for the family and to sell the extra crops. We also want to increase capital for our business and increase livestock.



Photo 3: Furaha is cooking using her jiko

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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;

- (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.*



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Picha 1: Mfano wa Kilimo mseto

Katika jarida hili, tutakuwa na makala moja na hadithi moja:

- (I) **Kilimo Mseto**
- (II) Simulizi kutoka kwa Gatson Mapya na Furaha Marcelo “Nyumbani kwetu tunafurahia Mbinu Bora ya utunzaji mazingira kwa kutumia jiko banifu kupikia ambalo limetusaidia kuepuka madhara ya moshi kutokana na matumizi ya majiko ya kienyeji”.

Kilimo mseto

Kilimo mseto kinaelezea utaratibu ambao mazao mbalimbali hupandwa kwa wakati mmoja kwenye shamba moja. Pia unaweza kupanda mazao kwenye shamba la miti.

Baadhi ya vikundi vya TIST vimejaribu kutumia Mbinu Bora zifuatazo kwenye Kilimo mseto;

1. Kwenye mistari wa kwanza chimba mtaro wenye kina cha 18cm na upana 18cm
2. Jaza mbolea ya mboji kwenye mtaro huu
3. Kisha panda mihogo na viazi
4. Kwenye mistari unaofuata panda mahindi kwa umbali wa mita moja kwa kutumia mashimo ya Kilimo Hai
5. Mistari mwingine tena mihogo na viazi
6. Mistari mwingine wa mahindi, nk. fanya hivyo kwa kadiri ya ukubwa wa shamba lako unalotaka kupanda.

Mbinu hii inatumia mambo mengi tuliyojifunza kwenye mafunzo; inahusisha kutumia kilimo mseto; kinatumia mbolea ya samadi na pia Kilimo Hifadhi.

Jaribu kubadilisha mistari ya mahindi na mistari ya miti; Vikundi vidogo vimejaribu kubadilisha eneo la mahindi mita 3 na mistari wa mti wa mlonge/mjohoro/mlusina/na mti wa shanga.

Mistari ya mtama inaweza kupandwa kati ya mistari ya milonge au milusina.

Jaribu michanganyiko ya Mijakaranda na migomba, mijakarandana maharagwe, mijakaranda na mahindi, mahindi na maharagwe, maharagwe na milusina, maharagwe na migomba.

Ili kupata faida za mzunguko wa mazao ni lazima aina tofauti ya mazao ipandwe kwa zamu. Hii ni kwa sababu mazao ya aina moja yanaweza kuhamasisha uwepo wa wadudu na magonjwa kwenye shamba, hivyo kubadilisha aina ya mazao kunaweza kupunguza hatari ya wadudu na magonjwa Fulani kwenye udongo.

Mzunguko wa mazao

Mzunguko wa mazao ni pale wakulima wanapopanda mazao tofauti tofauti kwa kila msimu kwenye shamba moja. Kuna utaratibu fulani wa mazao unaofuatwa, ambapo mazao yanayochaguliwa yanatakiwa kutoka familia tofauti. Kufanya kilimo cha mzunguko wa mazao kunaleta rutuba kwenye udongo kwani mazao tofauti yana kina tofauti cha mifumo ya mizizi. Kwa maana hiyo hufanya udongo wa juu kwenye shamba usiharibiwe kila mwaka. Njia hii pia husaidia kuugawa udongo kwa viwango tofauti, ambavyo huboresha muundo wa udongo, na kuweza kuvutia aina tofauti za viumbe vyenye manufaa kwenye udongo.

Orodha ifuatayo inaainisha mazao kulingana na makundi yake. Mazao ya kundi moja hayapaswi kupandwa pamoja. Hakikisha unachanganya mazao ya makundi tofauti tofauti kwenye mpango wako wa mzunguko!

- a) Mazao ya majani (broccoli, kabichi, cauliflowers, kale, mchicha, nk). Yanahitaji virutubisho zaidi kuliko mboga nyingine.
- b) Mazao ya matunda (pilipili, biringanya, pilipili, nyanya n.k.). Yanahitaji kiasi kikubwa cha virutubisho lakini si nyingi kama mazao ya 'majani'.

c) Mazao ya mizizi (karoti, beetroot, viazi, vitunguu, radishes, turnips, nk). Wanahitaji virutubisho vichache ikilinganishwa na mazao ya majani na matunda.

d) mazao ya mikunde (maharage, kunde, kunde, gramu, njegere, mbaazi, n.k.). Faida yao ya ziada ni kuweka nitrojeni ya anga kwenye udongo.

e) Mazao ya nafaka (mahindi, mtama, mtama n.k.)

Kundi la 1: Matango, mamung'unya, maboga, tikit maji (Familia ya maboga)

Kundi la 2: Brokoli, brussel, kabichi, cauliflower, kale, figili, haradali, (Familia ya majani)

Kundi la 3: Biringanya, pilipili, nyanya, viazi (Familia ya matunda)

Kikundi cha 4: lettuce, artichoke (familia ya Aster)

Kundi la 5: Mahindi, mchele, mtama, ngano, shayiri, shayiri, mtama (Familia ya nafaka)

Kundi la 6: Maharage na mbaazi (Familia ya mikunde)

Kikundi cha 7: Vitunguu swaumu, vitunguu maji, (familia ya mizizi)

Kikundi cha 8: Karoti, celery, binzari, parsnip, parsley (familia ya karoti)

Kundi la 9: Mihogo, viazi vitamu, viazi vikuu, (familia ya mazao ya mizizi)

Kundi la 10: Pamba, bamia (Familia ya Mallow)

Ikiwa mfumo ulio hapo juu ni mgumu kupita kiasi, wakulima wengi hurahisisha mazao kwa makundi matano ili kubadilishana kati ya hayo;

Kumbusho:

Wakulima wote wa TIST tunakumbushwa kupanda miti ya asili kwa sababu inaendana na vizuri na hali ya hewa kwenye maeneo yetu. Pia tupande miti ya matunda na miti mingine yenye faida kubwa kwa ajili ya chakula na kuuza.

Mambo ya kuzingatia:

Jaribu kupanda mahindi na karanga pamoja katika mwaka wa 1 na mwaka wa 2-panda mtama. Jaribu kupanda karanga katika mwaka wa 1 na kisha mchanganyiko wa kunde, alizeti au viazi katika mwaka wa 2.

Wazo lingine ni kujaribu kupanda mahindi na kufuatiwa na mikunde kama vile soya au karanga. Kisha katika msimu unaofuata jaribu zao la biashara kama pamba.

Jaribu kuliacha bila kulima kwa muda wa mwaka mzima, kisha panda mimea tena kwa miaka 3-5 kabla ya kuiacha ikaanguka tena. Hii itaipa ardhi nafasi ya kujaza rutuba ya udongo wake. Fikiria nyasi ya Napier kwa lishe ya mifugo ikiwa una mifugo.

Kwa ujumla, panda mazao ya mikunde kabla ya nafaka. Kupanda mazao familia ya majani (Brassica) kama kabichi kabla na baada pamoja ya mazao familia ya matunda (Solanaceous) kama nyanya kunaweza kusaidia kuzuia mrundikano wa viwavi na bakteria.



Picha 2: Mfano wa Kilimo Mseto kwa kuchanganya miti na mazao

“Nyumbani kwetu tunafurahia Mbinu Bora ya utunzaji mazingira kwa kutumia jiko banifu kupikia ambalo limetusaidia kuepuka madhara ya moshi kutokana na matumizi ya majiko ya kienyeji”

Gatson Mapya na Furaha Marcelo wa kikundi cha Ustawishaji Mazingira 2003TZ343. Sisi ni wanandoa na Wakulima wa TIST Tulijiunga na Mpango huu mwaka 2003 baada ya kupata semina kuhusu TIST. Kama wakulima ndani ya TIST tumekuwa tukijifunza mambo mengi katika Vikundi vyetu na kwenye Klasta ikiwemo; namna ya kutengeneza vitalu vya miti; kuhamasishana wakulima kwa wakulima kupanda miti na kuitunza; tumejifunza juu ya biashara ya hewa ya kaboni na faida zake kupitia upandaji wa miti na matumizi bora ya nishati kama vile majiko banifu

Tuna shamba lenye ukubwa wa ekari moja na robo (1¼) ambapo tumepanda aina mbalimbali ya miti ikiwemo; Mikorosho, Miembe, Mikungugu, Miparachichi, Mikuyu, Mijohoro, Miti Maji, Milusina, Mitopetope na Mikwaju. Tunafurahia faida mbalimbali tunazopata kutokana na miti yetu ambapo tunapata hewa safi, vivuli, hali ya hewa imekuwa nzuri kwenye eneo letu pamoja na rutuba kuongezeka kwenye shamba letu kutokana na majani ya miti yanaoanguka yanaoza na kuwa mbolea.

Kuwa Mkulima wa TIST kunasaidia kupata mafanikio; sisi tangu tumejiunga tumeona mafanikio kwenye maisha yetu kutokana na mradi huu; Tumejua umuhimu wa kupanda miti na faida zake, tumeboresha afya yetu na familia yetu kwa kula matunda na kuwa na chakula kwa ajili ya familia. TIST imetusaidia kupitia upandaji miti mashamba yamekuwa na rutuba inayotokana na majani ya miti yanayodondoka shambani hivyo tumeongeza mavuno. Pia tumefanikiwa kupata vocha ya malipo ya awali kwenye Kikundi chetu cha Ustawishaji Mazingira, fedha hiyo ilisaidia kununua mahitaji ya nyumbani.

Jambo la kufurahisha zaidi **“nyumbani kwetu tunafurahia Mbinu Bora ya utunzaji mazingira kwa kutumia jiko banifu kupikia ambalo limetusaidia kuepuka madhara ya moshi kutokana na matumizi ya majiko ya kienyeji”**. Tangu tumeanza kutumia jiko banifu tumekuwa na matumizi kidogo ya kuni, mimi kama mama nimepunguza muda wa kutafuta kuni na badala yake ninafanya mambo mengine ya maendeleo. Mbali na shughuli za Kilimo, pia tunajishughulisha na biashara ya kuuza nafaka, ufugaji wa nguruwe na kuku ambapo biashara hizi zinatusaidia kutuongezea kipato.

Mipango yetu ya baadae ni kuongeza shamba na kuendelea kupanda miti ya matunda na miti ya kawaida, kufanya Kilimo Hai ili kuwa na chakula cha kutosha kwa ajili ya familia na kuuza, kuongeza mtaji wa biashara ya nafaka na kuongeza mifugo.



Picha3: Furaha anapika kwa kutumia jiko lake banifu

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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;

- 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**