TIST HABARI MOTOMOTO JANUARY 2025

www.tist.org. Email: info@tist.org Tel. +255784-537720

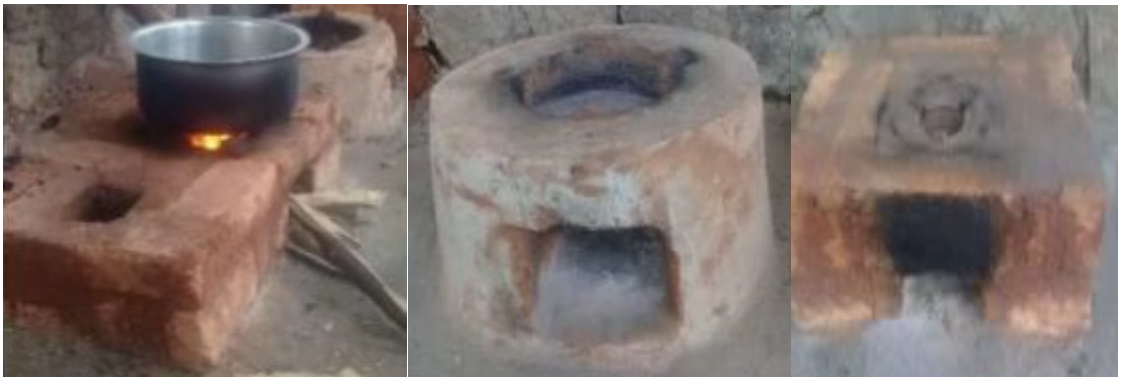


Photo 1: *Examples of energy serving stoves (Majiko Banifu)*

In this newsletter, we are going to have two articles;

I. Sustainable Energy
II. Types of Energy serving stoves

I: Sustainable Energy

It is estimated that most households in Tanzania use fire wood for cooking. The use of firewood as the main source of energy for cooking has raised many arguments from the environmental stakeholders. Cutting down trees has been contributing significantly to the destruction of the environment and the increase in the effects of climate change in Tanzania and the worldwide.

Rural cooking energy sources

Many rural Farmers use firewood as the main source of energy for cooking because it is to ease access. Some Farmers, especially those with income, have started using alternative energy such as gas, alternative charcoal which helps to reduce the impact on the environment. Generally, rural energy sources can be: firewood, alternative charcoal or charcoal

The use of firewood in rural areas

It is difficult to completely eliminate the use of firewood as the source of energy for cooking. But it is possible for Farmers and society in general to reduce environmental damage by using sustainable energy that reduces the use of wood when cooking. There are various ways to reduce the use of firewood by up to 80 percent. The use of sustainable energy will contribute to reduce the destruction of forests and also reducing the climate change.

A sustainable way to reduce the use of firewood

- ✓ Using renewable energy like gas, electricity and solar.
- ✓ Using the best cooking methods that focus on low energy consumption
- ✓ To use energy serving stoves (jiko banifu)
- ✓ Using alternative charcoal

Cooking best ways that help on using less firewood:

- ✓ Preparation of firewood: Cutting them into small pieces, splitting and drying them.
- ✓ Prepare all things for cooking: It is good to prepare all the things that are required for cooking before you turn on the fire. For example cutting things into small pieces before cooking them
- ✓ Presoaking: hard foods such as beans are soaked for several hours before cooking.
- ✓ Best cooking techniques such as: using a tight-fitting lid, put something heavy on the lid and don't put too much water. A tight fitting lid can reduce wood consumption by 20%
- ✓ Using food tenderizers such as applying papaya, garlic, ginger, etc. to the meat before cooking it reduces the time for cooking.

Knowledge about energy serving stoves (Jiko Banifu)

Energy serving stoves in villages aims to reduce the use of firewood and thus reduce the problem of environmental damage by cutting down trees to get energy for cooking and also to use fire to reduce the cold especially at night. So it is good to be educated about the benefits of these stoves in the whole concept of sustainable environmental care

What is energy serving stove?

It is an efficient stove which use wood or charcoal to provide energy for cooking or providing heat in the house. These stoves reduces the amount of wood that can be used in cooking food and bring a great advantage in protecting the environment and especially forests and the health of the user as it does not emit a lot of smoke and also does not contaminate the user's utensils or clothes.

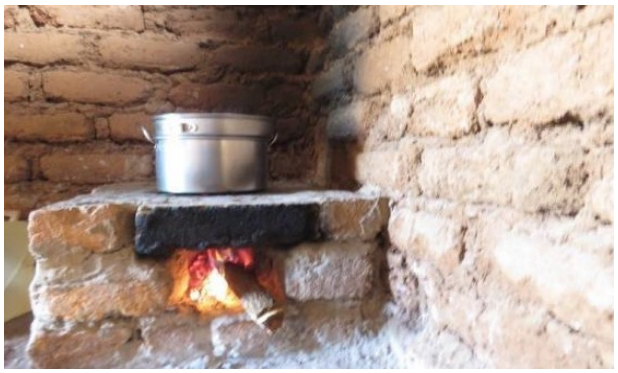


Photo 2: *an example of a tight fitting lid one of the cooking best way*

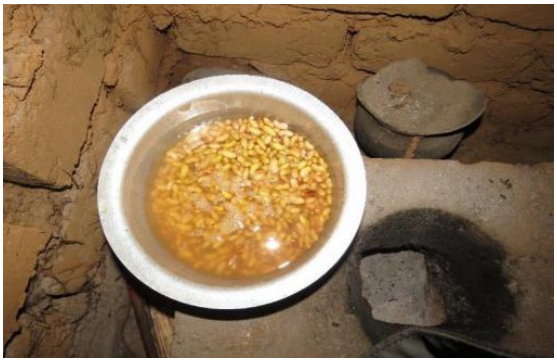


Photo 3: Soaking beans before

II. Types of energy serving stoves

There are various types of energy serving stoves that a Farmer can use. The choice of the type of stove depends on;

- ✓ Availability of resources to make the stove
- ✓ Family size
- ✓ Financial ability to make/buy that type of stove
- ✓ Understanding the choice of the relevant stove
- ✓ The quality of the stove depending on the financial situation of the use

Types of stoves

a) Mud bricks stove

It is made of clay, straw, sand and burnt bricks

If you compare it to the traditional three-burner stove, this stove;

- ✓ Retains heat for more than 11% - 29%,
- ✓ Uses less wood by 16% - 26%,
- ✓ Takes less time to boil water at less than 2% - 6%

b) Mudstove

It is made of clay, leaves, sand and stones.

If you compare it to the traditional three-burner firewood stove, this mudstove;

- ✓ Saves heat by more than 41% - 77%,
- ✓ Uses less fuel by 42% - 47%
- ✓ Takes less time to boil water at less than 8%-13%

c) Insert stove

It is made of clay, brick and steel

If you compare it to the traditional three-burner firewood stove, this stove

- ✓ Saves heat by more than 47%,
- ✓ Uses 45% less wood
- ✓ Takes less time to boil water at less than 6%

d) Rocket stove

If you compare it to the traditional three-burner firewood stove, this stove

- ✓ Retains heat by more than 31%
- ✓ Uses less wood by 29%
- ✓ Takes less time to boil water with less than 13%

Methods of smoke removal

Venting the smoke outside with the chimney is very important for the health of the mother and children especially so they don't breathe the harmful smoke.

It is advised that the stoves should be located in an open and well ventilated place for cooking. Another way is during construction technician should design a flue pipe that should be the right height and cross-sectional area to efficiently burn fuel wood and remove smoke. The hearth should be completely closed and have a limited air intake.

Advantages of Energy serving stoves

Reduce the impact on the environment: The stove uses between 40 to 80 percent less wood than the traditional three-burner firewood stove. It also produces less smoke. All this significantly reduces the impact on the environment.

Better efficiency: By using this stove, 80 percent of the heat goes into the pan compared to 10 to 40 percent for the traditional three-burner firewood stove, thus saving a large amount of wood.

Health of the user: When using energy serving stove ensures all the woods is burned completely and thus reduce the smoke that is harmful to the environment, the health of the user, utensils and even clothes.

It uses simple raw materials: When making energy serving stoves, they use simple raw materials that are easily available in the area.

Increases Income: By using energy serving stoves gives time to women to do other development activities rather than using their time searching for firewood or charcoal.

How to make Energy serving stoves

These stoves are often made with raw materials that are easily available in rural areas to reduce costs of making them. Instructions on how to make them will be given by the relevant technician in each village.

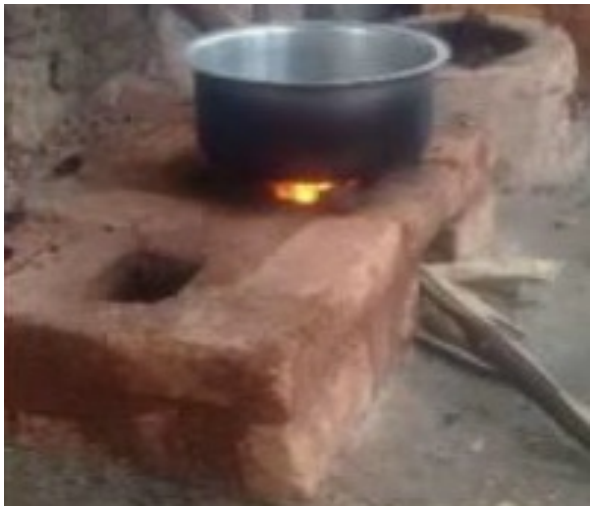


Photo 4: *Mudbrick energy serving stove*

Photo 5: *mud energy serving stove*

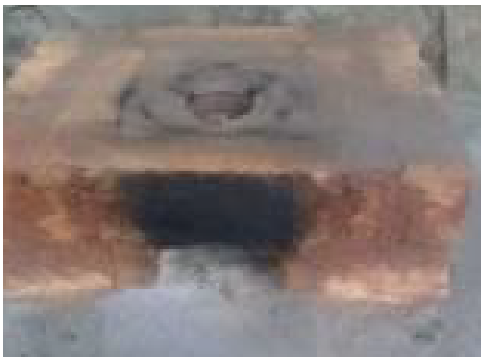


Photo 6: *Insert stove*

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.*

Picha 1: *Mifano ya majiko banifu*

Katika jarida hili, tutakuwa na makala mbili:

(I) **Nishati Endelevu**

(II) **Aina za Majiko Banifu**

I. Nishati Endelevu

Inakadiriwa kuwa kaya nyingi nchini Tanzania hutumia nishati ya kuni kupikia. Matumizi ya kuni kama chanzo kikuu cha nishati ya kupikia kimezua hoja nyingi kwa wadau wa mazingira. Ukataji wa miti kwa ajili ya kupata nishati ya kupikia imekuwa ikichangia kwa kiasi kikubwa uharibifu wa mazingira na ongezeko la athari za mabadiliko ya tabia nchi hapa Tanzania na duniani kwa ujumla.

Vyanzo vya nishati ya kupikia vijijini

Wakulima wengi vijijini hutumia nishati ya kuni kama chanzo kikuu cha nishati ya kupikia. Hii inasababishwa na urahisi wa kupatikana. Lakini baadhi ya kaya hasa zenye kipato zimeanza kutumia nishati mbadala kama gesi, mkaa mbadala ambavyo vinasaidia kupunguza athari kwa mazingira. Kwa ujumla wake vyanzo vya nishati vijijini vinaweza kuwa: kuni, mkaa mbadala au mkaa wa kawaida

Matumizi ya Nishati Kuni vijijini

Kutokana na hali halisi ya vijijini ni vigumu kuondoa kabisa hali ya matumizi ya kuni kama nishati pekee ya kupikia. Lakini inawezekana kwa Wakulima na jamii kwa ujumla kupunguza uharibifu wa mazingira kwa kutumia nishati endelevu inayo punguza matumizi ya kuni wakati wa kupika. Zipo njia mbali mbali za kupunguza matumizi ya kuni hadi kwa asilimia 80. Kwa kutumia nishati endelevu huchangia kupunguza uharibifu wa misitu na pia kupunguza mabadiliko ya tabia ya nchi.

Njia Endelevu za Kupunguza Matumizi ya Kuni

- ✓ Kutumia nishati mbadala kama gesi, umeme na sola.
- ✓ Kutumia mbinu bora za upishi zinazozingatia matumizi kidogo ya nishati
- ✓ Kutumia majiko banifu
- ✓ Kutumia mkaa mbadala

Njia bora za upishi zinazozingatia matumizi kidogo ya kuni:

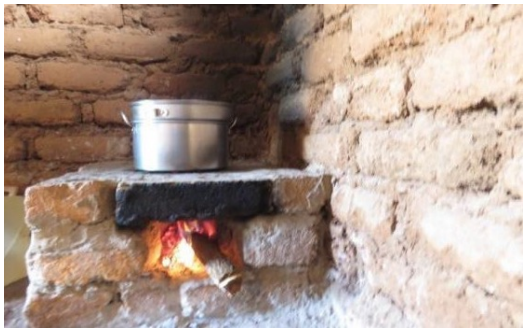
- ✓ Maandalizi ya kuni: Kuzikata vipande vidogo kuzipasua, na kuzikausha.
- ✓ Maandalizi ya vitu vya kupika: Ni vizuri kuandaa vitu vyote vitakavyotakiwa kupikwa kabla hujawasha moto mfano; kukatakata vitu viwe vipande vidogo vidogo kabla ya kuvipika
- ✓ Kuloweka: Vyakula vigumu kama maharage hulowekwa kwa masaa kadhaa kabla ya kupika.
- ✓ Mbinu bora za upishi kama: Kubebanisha sufuria za kupikia, Kutumia mfuniko unaobana, weka kitu kizito kidogo kwenye mfuniko na usiweke maji mengi. Mfuniko unaobana vizuri huweza kupunguza matumizi ya kuni kwa 20%
- ✓ Kutumia vilainishi vya vyakula kama kupaka papai, kitunguu swaumu, tangawizi, nk kwenye nyama kabla ya kuipika husaidia kupunguza muda wa kupika.

Elimu ya Majiko Banifu Vijijini

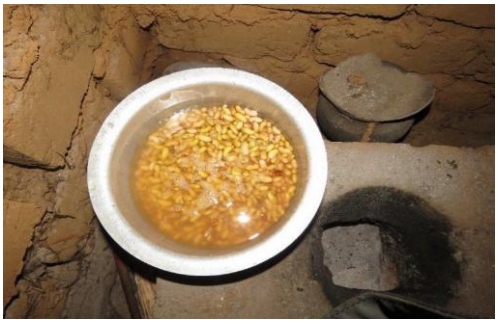
Elimu ya majiko banifu vijijini inalenga kupunguza matumizi ya kuni na hivyo kupunguza tatizo la uharibifu wa mazingira kwa kukata miti kwa ajili ya kupata nishati ya kupikia na pia kuota moto kwa ajili ya kupunguza baridi hasa wakati wa usiku. Hivyo ni vema kupata elimu kuhusu faida ya majiko haya katika dhana nzima ya utunzaji endelevu wa mazingira

Jiko Banifu ni Jiko la aina gani?

Ni jiko lenye ufanisi katika kutumia kuni au mkaa katika kutoa nishati ya kupikia au kutoa joto ndani ya nyumba. Kwa maana nyingine jiko hili hupunguza kiasi cha kuni kinachoweza kutumika katika kupika chakula na hivyo kuwa na faida kubwa katika kulinda mazingira na hasa misitu na afya ya mtumiaji kwani hayatoi moshi mwingi na pia hayachafui vyombo au nguo za mtumiaji.



Picha 2: *Mfano wa kutumia sufuria yenye mfuniko unaobana njia bora ya upishi*



Picha 3: *Kuloweka maharage kabla ya kupika*

II. Aina za Majiko Banifu

Zipo aina mbalimbali za majiko banifu ambazo Mkulima anaweza kuzitumia. Uchaguzi wa aina ya jiko hutegemeana na;

- ✓ Uwepo wa rasilimali za kutengeneza jiko hilo
- ✓ Ukubwa wa familia
- ✓ Uwezo wa kipesa kutengeneza/ kununua aina ya jiko hilo
- ✓ Uelewa wa uchaguzi wa jiko husika
- ✓ Ubora wa jiko kulingana na hali ya kifedha ya mtumiaji

Aina za majiko banifu

c) Jiko la matofali ya kuchoma (Mud bricks stove)

Hutengenezwa kwa udongo wa mfinyanzi, majani, mchanga na matofali ya kuchoma
Ukilinganisha na jiko la kienyeji la mafiga matatu, jiko hili;

- ✓ Huhifadhi joto kwa zaidi ya 11% - 29%
- ✓ Hutumia kuni kidogo kwa 16% - 26%
- ✓ Hutumia muda kidogo kuchemsha maji kwa chini ya 2%- 6%

d) Jiko la Udongo Wa Mfinyanzi (Mudstove)

Hutengenezwa kwa udongo wa mfinyanzi, majani, mchanga na mawe.
Ukilinganisha na jiko la kienyeji la mafiga matatu, jiko hili;

- ✓ Huhifadhi joto kwa zaidi ya 41% - 77%,
- ✓ Hutumia kuni kidogo kwa 42% 47%
- ✓ Hutumia muda kidogo kuchemsha maji kwa chini ya 8%-13%

a) Jiko Linalo Wekewa Chuma Ndani (Insert stove)

Hutengenezwa na udongo, matofali na chuma cha kuweka ndani
Ukilinganisha na jiko la kienyeji la mafiga matatu, jiko hili

- ✓ Huhifadhi joto kwa zaidi ya 47% ,
- ✓ Hutumia kuni kidogo kwa 45%
- ✓ Hutumia muda kidogo kuchemsha maji kwa chini ya 6%

b) Jiko la roket (rocket stove)

Ukilinganisha na jiko la kienyeji la mafiga matatu, jiko hili

- ✓ Huhifadhi joto kwa zaidi ya 31%
- ✓ Hutumia kuni kidogo kwa 29%
- ✓ Hutumia muda kidogo kuchemsha maji kwa chini ya 13%

Njia za kuondoa moshi

Kutoa moshi nje kwa bomba la moshi ni muhimu sana hasa kwa afya ya mama na watoto ili wasivute huo moshi hatari. Inashauriwa kuwa majiko yawekwe mahali pa wazi na penye hewa ya kutosha kwa ajili ya kupikia. Njia nyingine ni wakati wa ujenzi fundi atengeneze bomba la moshi ambalo linapaswa kuwa na urefu sahihi ili kuchoma kuni kwa ufanisi na kuondoa moshi.

Faida ya Majiko Banifu

Kupunguza athari kwa mazingira: Jiko hili hutumia kati ya asilimia 40 hadi 80 pungufu ya kuni ambazo zingeweza kutumika kwa kutumia majiko ya asili kama yale ya mafiga matatu na jiko hili pia lina uwezo ka kutumia kuni chache kuivisha chakula na hutoa moshi kidogo. Haya yote kwa kiasi kikubwa hupunguza athari kwa mazingira.

Ufanisi bora: Kwa kutumia jiko hili kiasi cha joto la asilimia 80 huingia katika sufuria kulinganisha na asilimia 10 hadi 40 kwa majiko ya mafiga matatu na hivyo kuokoa kiasi kikubwa cha kuni.

Afya ya mtumiaji: Jiko hili linauwezo wa kuhakikisha kuwa kuni zote zinachomwa kabisa na hivyo kupunguza moshi ambao una madhara kwa mazingira, afya ya mtumiaji, na vyombo na hata nguo.

Mali ghafi rahisi: Utegenezaji wa majiko haya hutumia malighafi rahisi na ambazo zinapatikana kirahisi vijijini.

Kuongeza Kipato: Kwa kutumia majiko banifu akina mama hupata muda wa kufanya shughuli nyingine za kimaendeleo badala ya kutumia muda huo kutafuta kuni au mkaa.

Utengenezaji wa Majiko Banifu

Majiko banifu mara nyingi hutengenezwa na malighafi ambazo hupatikana kirahisi vijijini ili kupunguza gharama za utengenezaji. Maelekezo jinsi ya kutengeneza yatatolewa na mtaalam katika kila kijiji.

Picha 4: *Jiko banifu la matofari ya kuchoma*

Picha 5: *Jiko la udongo wa mfinyanzi*

Picha 6: *Jiko la linalowekewa chuma ndani*

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**