

# Improving Conservation Of The Eastern Arc Mountains Forests Of Tanzania

Stories From Community Projects



May  
**2018**







“The survival of our wildlife is a matter of grave concern to all of us in Africa. These wild creatures amid the wild places they inhabit are not only important as a source of wonder and inspiration but are an integral part of our natural resources and our future livelihood and wellbeing. In accepting the trusteeship of our wildlife we solemnly declare that we will do everything in our power to make sure that our children’s grand-children will be able to enjoy this rich and precious inheritance. The conservation of wildlife and wild places calls for specialist knowledge, trained manpower, and money, and we look to other nations to cooperate with us in this important task – the success or failure of which not only affects the continent of Africa but the rest of the world as well”

**Mwalimu Julius K. Nyerere, September 1961**



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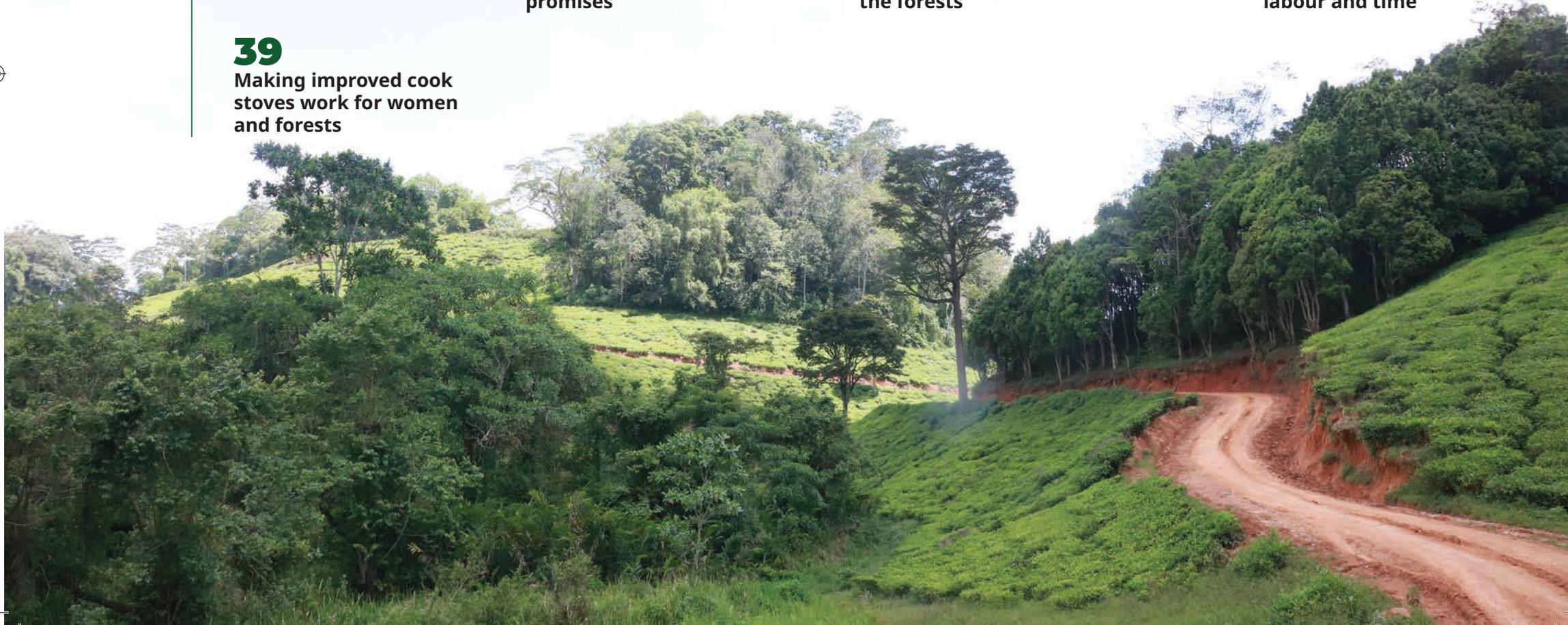
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# PREFACE

Through the financial assistance by the Royal Norwegian Embassy in Dar-Es-Salaam, the Eastern Arc Mountains Conservation Endowment Fund (EAMCEF) successfully implemented a five year (June 2011-May 2016) project “Improving Conservation of the Eastern Arc Mountains Forests in Tanzania” targeting nine protected areas, namely; Amani, Nilo, Chome, Magamba, Mkingu, Uluguru, Kilombero and Uzungwa Scarp Nature Reserves, and the Udzungwa Mountains National Park. The project implementation was undertaken through field partners in the eleven priority District Councils where the nine protected sites lies - Muheza, Korogwe, Mkinga, Same, Lushoto, Mvomero, Morogoro, Morogoro Municipality, Kilombero, Kilolo and Mufindi. Whereas project partners coordinated and supervised the implementation of the project activities in the field, EAMCEF issued project grants to facilitate the interventions in three thematic areas - forest conservation and management; community development and livelihood improvement; and, applied biodiversity and climate change research.

While implementation of forest conservation and management projects aimed to achieve effective biodiversity conservation and improved forest condition of each of the nine priority sites, community development and livelihood improvement projects aimed to improve the economic wellbeing and social welfare of the communities living adjacent to the priority sites through provision of alternative livelihood options and income generating activities. Applied biodiversity and climate change research projects were implemented in order to generate useful information for informed decision making and conservation planning for effective conservation of the target forest sites.

Following successful completion of the project in May 2016, EAMCEF initiated a process to document the results and impacts realized from the implementation of the project in order to present the progress, share the experiences gained, lessons learned and approaches of best practice adopted in implementing the project. A field survey was then undertaken towards the end of 2017 whereby stories contained in this documentary were narrated by the project beneficiaries in some few selected sites. It is our sincere hope that you will find the stories interesting and useful.

Francis B.N. Sabuni

Executive Director  
Morogoro, Tanzania

May, 2018

# PROJECT PORTFOLIO

## KEY THEMES

146

Community-Based Conservation and Development Projects

40

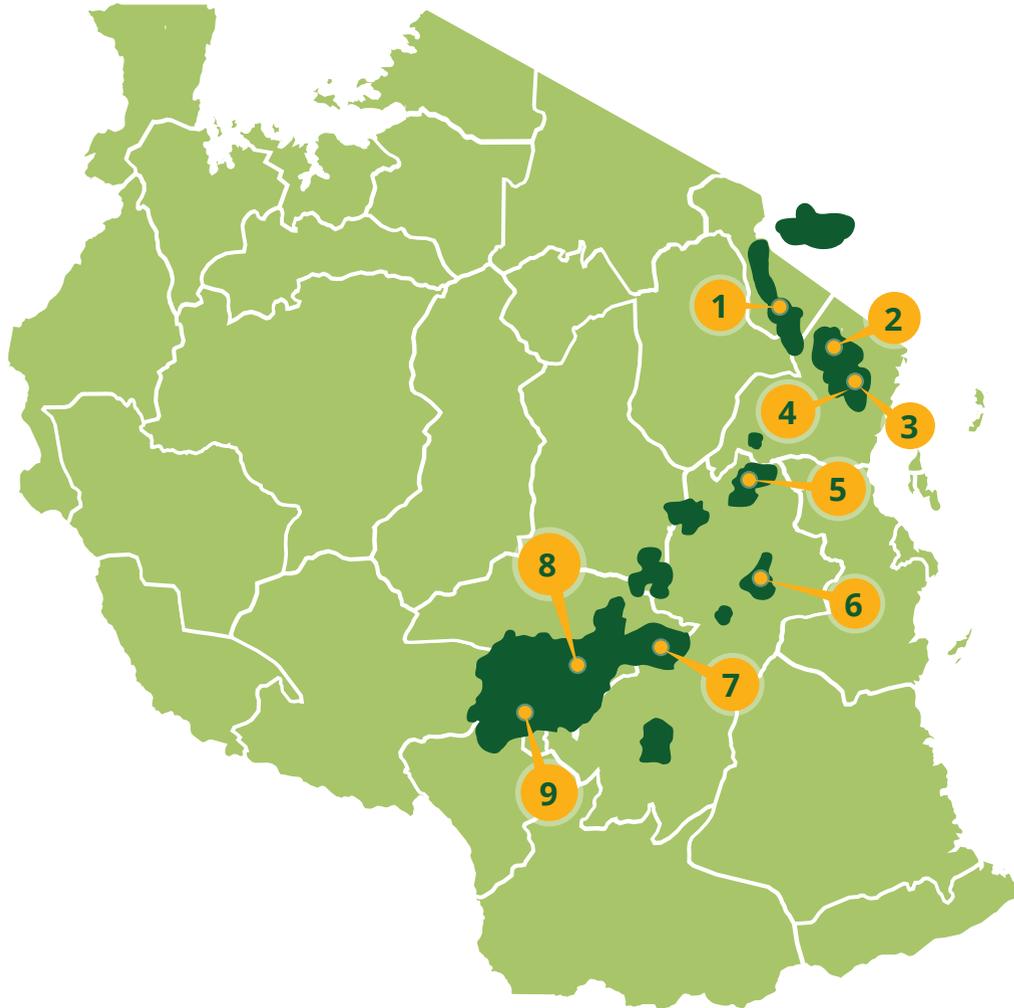
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Applied Biodiversity and Climate Change Research Projects

Stories in this booklet focuses on Community-Based Conservation and Development Projects

# WHERE WE WORK



 Eastern Arc Mountains

- 1** Chome Nature Reserve Same District
- 2** Magamba Nature Reserve Lushoto and Korogwe Districts
- 3** Amani Nature Reserve Korogwe, Muheza Districts
- 4** Nilo Nature Reserve Mkinga, Muheza and Korogwe Districts
- 5** Mkingu Nature Reserve Mvomero District
- 6** Uluguru Nature Reserve Mvomero, Morogoro Districts and Morogoro Municipality
- 7** Kilombero Nature Reserve Kilombero and Kilolo Districts
- 8** Uzungwa Scarp Nature Reserve Kilolo, Mufindi and Kilombero Districts
- 9** Udzungwa Mountains National Park Kilolo and Kilombero Districts



## **The conservation equation: Replacing wild meat with local chicken to save the forests**

**Mkanga Village, Mvomero District  
Surrounding Forest: Mkingu Nature Reserve**

Like in many other Forest Reserves, residents of Mkanga Village living adjacent to Mkingu Nature Reserve have continually depended on forests within their vicinity to satisfy their needs for wild meat as the main source of protein.

To obtain wild meat, villagers normally go into the forests for hunting small animals – preferably cane rats (known locally as Ndezi). Despite being a small animal – 6-10Kg, Ndezi's meat is much preferred due to its tenderness and delicious taste alike that of local chicken. To make the hunting job easy, hunters do not only hunt using dogs but also burn grasses to scare and easily chase Ndezi. It is the burning that results into detrimental forest fires, destroying the valuable forests and associated biodiversity, leaving the forests into patches.

To address the challenge, in 2013 EAMCEF project grant supported introduction of improved local chicken and brooding techniques by providing trainings to a group of 25 people in each village. Of the greatest interest at the local level was the introduction of locally-made chick brooders (known locally as Vinengunengu). A startup capital of 5 chicken and a cock was handed over to each trainee. EAMCEF believed that local chicken would replace Ndezi and consequently save the forests from fire. Since then, villagers have witnessed tremendous results in the production of eggs and chicken – the use of Vinengunengu has assured raising of up to 248 chicks per chicken per year. Increased production has assured availability of protein (meat and eggs) at household and at the village levels – thereby reducing forest fire incidences.

**It is the sales of chicken and eggs that has transformed the livelihood of participating villagers. Income from sales has been used to cover household needs, but most importantly covered pressing needs like school fees, health services, repair and construction of modern houses and improved toilets.**



**Some villagers have used income from sales of chicken and eggs to:**

- Install solar panels and illuminate the households, allowing pupils to earn extra study hours at home thereby improving overall performance.
- Expand agricultural activities by buying more acres of land, employing casual labourers – resulting into increased production and stable food security
- Buy dairy cow and ensure sufficient milk for the household and availability of manure for gardening activities.

## KEY DATA

Across project sites – Korogwe, Same, Mvomero Districts.

- **873 (535F:338M)** trained on improved chicken keeping
- **2061 Improved** chicken supplied to villagers
- **439 Households** supplied with improved chicken
- **TZS. 17,420,500** Revenue generated from sales of eggs
- **TZS. 26,766,600** Revenue generated from sales of chicks
- **TZS 38,858,000** Revenue generated from sales of chicken
- **13,760kg of chicken** manure used for home gardens



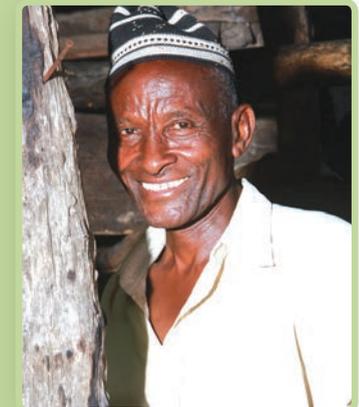
### ROHAN BELINGTON MANGA

For the last three years chicken [meaning income from sales of chicken] have been paying for my children's school fees, one of the children was able to join the college and is now employed. We are very much respected in our village just because of chicken, we are now eligible to get loans from Village Community Banks (VICOBA) for other entrepreneurship activities. I don't expect to go back to the forests for Ndezi because there is enough meat [chicken] available at the community level especially within my compound.



### PETER FELIX MBUYA

In 2017 alone, I earned more than TZS. 700,000 from sales of eggs and chicken, used part of the money to buy a dairy cow...this would have been impossible if it were not for the chickens! Chickens can help me address my financial needs without crying out for help from relatives or neighbours.



### AMANI B. MTASIWA

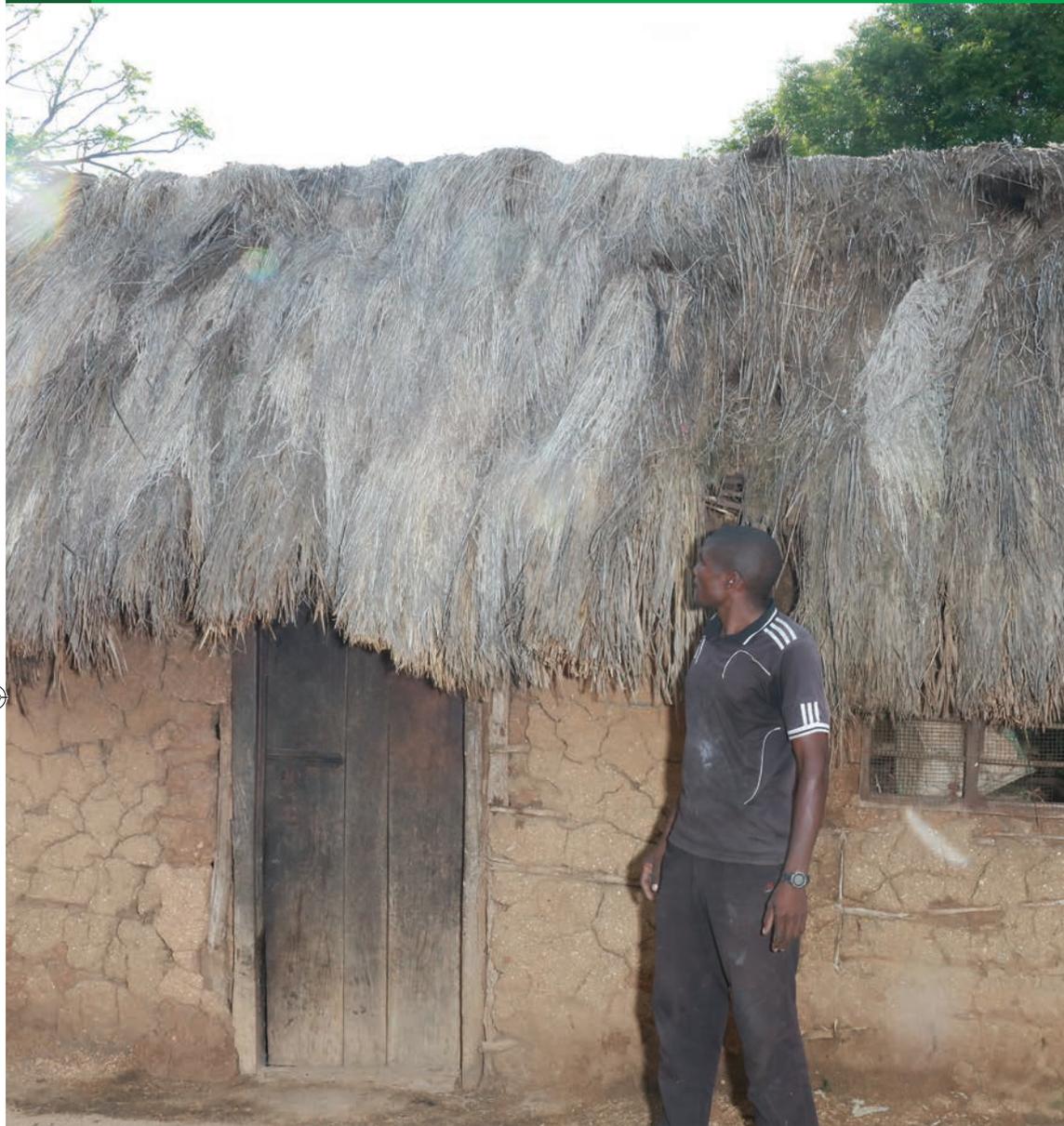
Before joining the project my main source of income was from casual labour – attending other people's farms, but the income was so small and untimely. To date, through sales of eggs and chicken I have been able to buy my own farm, bought a water pump for my garden and I can now feed my family throughout the year. Through these chickens I accumulated some money and decided to construct an improved house, iron-roofed and comfortable for my family.



### BERNADETHA BASIL OISSO

If it were not for the chicken I wouldn't have afforded my heart treatments in Dar es salaam, they [chicken] saved my life In the past, I could only farm one acre but now I can employ casual labourers and farm up to four acres.





**OLD HOUSE**



**NEW HOUSE**

“Through these chickens I accumulated some money and decided to construct an improved house, iron-roofed and comfortable for my family”

(Amani B. Mtasiwa, Mkanga Village, Mvomero District)



## Butterfly farming – that's strange!

Bwambo Village, Same District.  
Surrounding Forest: Chome Forest Nature Reserve



## KEY DATA

Overall for Same District

- **396 (180F: 216M) villagers** trained on butterfly farming in Same District
- **72 households** practicing butterfly farming
- **1400 pupas** raised in 2017
- **1200 pupas** sold out in 2017
- **2,700,000 TZS** generated from sales of pupas

“When butterfly keeping project was first introduced in our village most people were laughing and considered it as a weird undertaking...it is very embarrassing for a grown-up man/woman to walk around catching butterfly” said Msese E. Elifuraha of Bwambo Village in Same District. Mr. Elifuraha and his colleagues constituting the Butterfly Farming Group are so happy to have proved that the project is a softer and economical way of making alternative income – no hustles!

EAMCEF introduced butterfly farming to help communities adopt an alternative means of making income as a strategy to reduce heavy-dependence on forests – the Chome Forest Nature Reserve.

Members of the Butterfly Farming Group were trained and visited one of the butterfly keeping sites in Amani Nature Reserve for further learning. Back from the training, the group started planting food plants [flowering plants] that would attract and provide food to butterflies.

## What do farmers do with butterflies?

In this project, farmers catch female butterflies and place them in a breeding cage containing food plants (flowering plants). The butterfly lays her eggs on the food plant and the farmers carefully harvest the eggs and place them on a clean container. In 14 days the eggs hatch into a larva - called caterpillars (the most active feeding stage). The farmers transfer the caterpillars to their particular food plant and cover the branches to avoid any loss. In another 14 days the larvae attach themselves on leaves or branches and shed off their skin (pupate) to form pupas (singular pupae). It is this pupa that the farmers harvest for sale overseas through a middle man/company based in Amani Nature Reserve. When the pupa reaches overseas they are used for zoos and live exhibitions as ornamentals.

**In 2017 butterfly farmers managed to sell up to 865 pupa which earned them TZS. 1,186,530 – this translates to an average price per pupae of TZS. 1,371.7**

“People were laughing at me when they saw me walking around with a small net, catching butterfly, they thought I am out of my mind!”

**Emmanuel E. Singo**

## “ MSESE E. ELIFURAHA

In 2017 I sold 330 pupas for TZS. 419,430. I used the money to renovate my house...I replaced the old floor with modern tiles, put modern windows [aluminum]. The project has motivated many villagers and changed their attitude towards the forest, they respect the forest since they know that butterfly comes from the forests, so if they destroy the forest they will never get butterflies, and so the income.



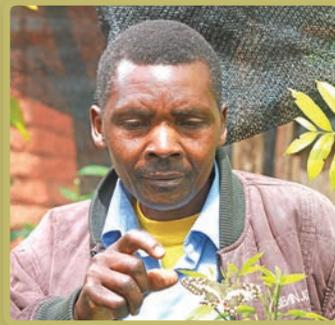
## “ RIDI ELIAMANI

Butterflies have given light to my house, I got TZS. 90,000 from sale of pupas and decided to install solar panel for lighting my house. My children were so happy to finally study under light bulbs, they extended their study hours from one hour in the past to, sometimes, until midnight.



## “ EMMANUEL E. SINGO

My daughter was suspended from school since I could not manage to pay school fees of TZS. 60,000. but, after selling 189 pupas I earned TZS. 256,840 and cleared the school fee. My daughter was so happy to get back to school since she almost missed her final exams.



## “ NAVONE EMMANUEL E. SINGO (Student, Daughter Of Emmanuel E. Singo)

I was so ashamed to see my dad catching insects, but later we saw money coming out of it. I am now helping him to take care of the butterfly cage...and I like the job. Before my dad started keeping butterflies, I used to miss classes since fee was not paid on time. I remember staying home for extra 2-3 weeks while my friends were already in school.





## Pig keeping for multiple benefits

Ukwega Village, Kilolo District  
Surrounding Forests: Kilombero and Uzungwa Scrap Nature Reserves

**E**AMCEF supported pig keeping in Ukwega Village to prove if communities can generate income from alternative sources other than forests, they would reduce their direct dependency on forests for that purpose, thereby enhancing biodiversity conservation in Kilombero and Uzungwa Scrap Nature Reserves. Pig keeping was selected as the best option that would provide sustainable solution to accelerate poverty alleviation through provision of multiple benefits - incomes through sales, as a source of protein, manure for garden and for biogas production. In 2013 the project started to implement the idea by providing conservation education and training on pig husbandry and later provided 'seed' pigs in four villages, to 168 villagers. To spread the impact to many villagers, villagers agreed to share one new born piglet to the neighbouring household not supported by the project. By close of phase one of the project support in 2016, the project witnessed improved livelihood status of the supported community, including significant reduction in the number of people reported to have encroached the forests.

**Pig meat (pork) became the easily available meat in the village butcheries compared to bush meat which was obtained from illegal hunting in the Nature Reserves - through burning of grasses to scare animals, but with detrimental effects on the forests. Income from sales of piglets and/pork has improved household income, while manure has been instrumental in improving home gardens.**

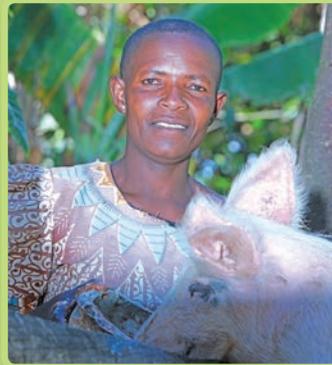


### KEY DATA

Across project sites- Kilolo District

- **283 (149F:134M) Villagers** trained on Pig husbandry
- **168 households** provided with start-up improved breeds of pigs
- **124 Households** received pigs as a multiplier effect of the project
- **TZS. 31,135,000** earned from selling of pigs/piglets,
- **TZS. 4,430,000** earned from selling of Pork
- **2713Kgs of pig manure** used for home gardens

**RITHA ALMAS MGOBA**  
Since I started using manure from pigs I have seen increased production, such that I was able to sell excess maize and beans and pay school fees for my children. In the past, it was not easy to sell food because the harvests were very little. This project will help many people if continued, forest crimes will end completely since people will find no reasons to invade the forests.



**DISMAS WILLIAM KIGAVA**  
As I was convinced to start pig husbandry when I saw my friend's life was improving every day, I made decisions to join the project a day when I visited him and was surprised by 9 new piglets born from one pig. I see myself becoming rich, by 2020 I will be very rich like my friends, I can see a bright future ahead of me and I can confidently encourage others to start keeping pigs.



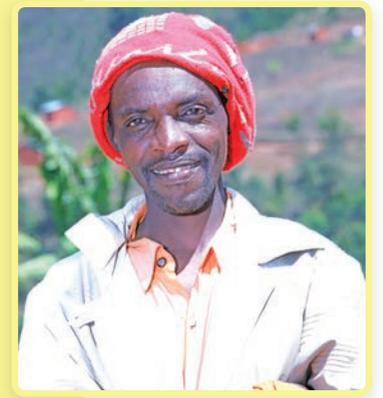
**FAIDA WILBERT KIHOO**  
Through this project [pig husbandry] I can now manage to join Village Community Banks (VICOBA) and small loans – I never had money to do that in the past. Our life used to be very difficult and it was not easy to get money, when I heard news about the project I decided to join...after joining, my life changed.



**AMARIA DOMINICUS KIMATA**  
I used to fight with my husband because our house was very primitive, we never used to sleep if there is rain during the night. We are now very happy to have moved to the new house built by money from sales of pigs – no more fights! I took part of the income from pigs to start a small business here in the village – I make breads and buns and sell them in the village where I earn up to TZS. 65,000 per month.



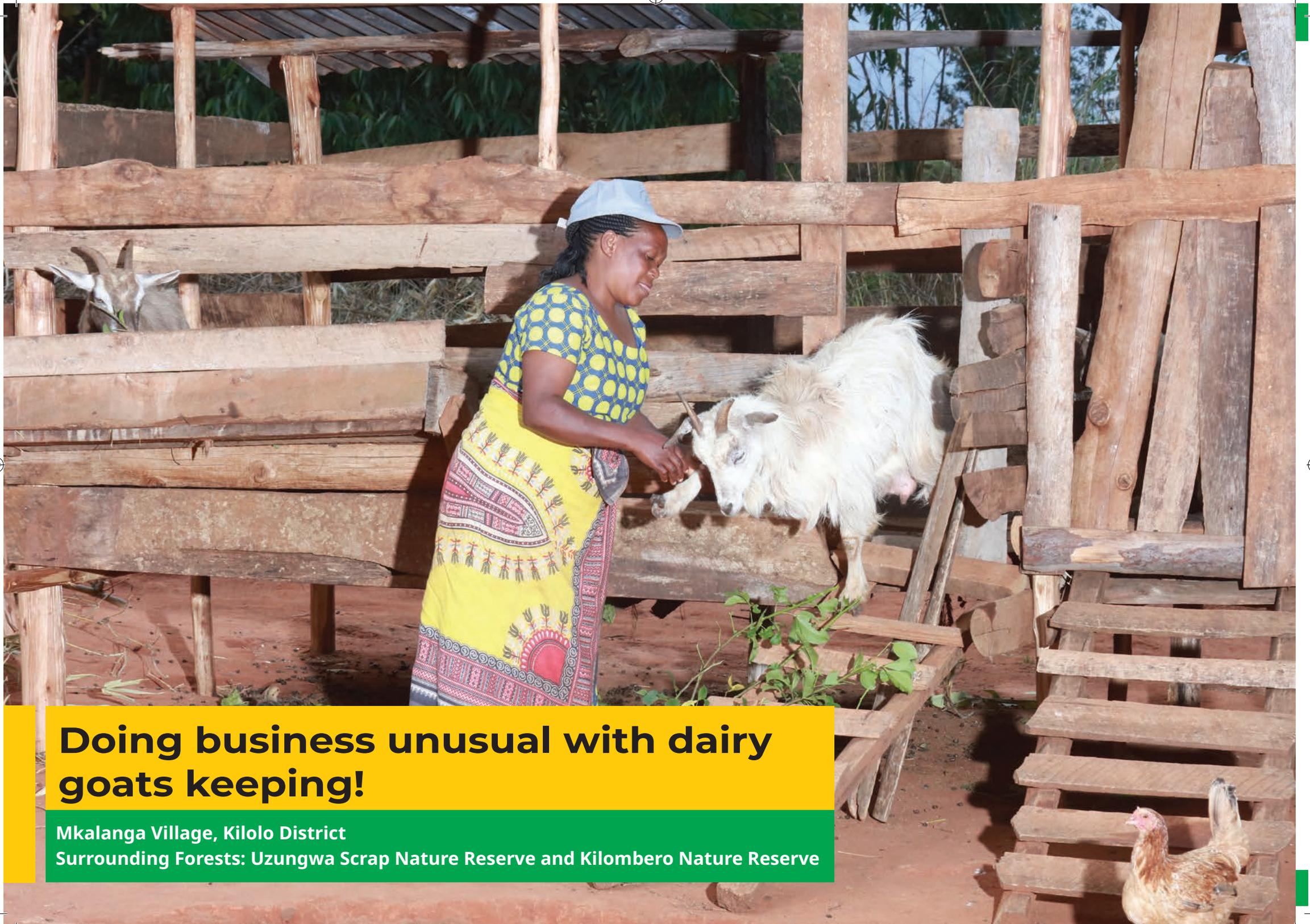
**TIRNESY ASTANDI KITOSY**  
I sold 9 pigs, got TZS. 700,000, made bricks and constructed a family house to do away with my old, small and uncomfortable one that could not allow enough privacy with my wife. Through income from pigs, I managed to install solar panel in my house. Solar light gives my wife freedom to work overnight...she cooks [prepares] buns overnight and sell them the next morning. I also provide phone charging services to other villagers and earn an extra income of around TZS. 15,000 per month.





“Through income from pigs, I managed to install solar panel in my house. Solar light gives my wife freedom to work overnight...she cooks [prepares] buns overnight”

**TIRNESY ASTANDI KITOSY, Ukwega Village, Kilolo District**



## Doing business unusual with dairy goats keeping!

Mkalanga Village, Kilolo District  
Surrounding Forests: Uzungwa Scrap Nature Reserve and Kilombero Nature Reserve

Just a few people in Mkalanga Village believed that goats can be a good source of milk...just like dairy cows, and that the income from goat husbandry can change lives of the poor villagers. Dairy goat husbandry seemed unusual and strange undertaking. Through sensitization and training meetings villagers were convinced that dairy goat husbandry is a feasible undertaking that they wished to try. Mr. Seth Chavala, a resident of Mkalanga Village shared his story below:

Our dairy goat husbandry group is called 'Mshikamano', members were selected by the Village Assembly. I am a farmer but I can clearly say that I used to get very little from agricultural activities than it is now with goats. I started keeping goats in 2015 through EAMCEF support, I have an assurance of getting 1.5 Litres daily, out of which I sell one little for TZS. 1,000 and the family consumes the rest. In the past, my family and most people in this village were not able to afford milk as it was obtained somewhere far from here and a bit costly. The income I get from goats is used to cover for household needs, school fees and stationaries etc. Apart from milk, it was not easier to get farm manure than it is now. We were used to industrial fertilizers which destroyed our land, but now I get manure from goat and can grow vegetables. I no longer buy industrial fertilizers"

## KEY DATA

Across project sites – Mkinga District, Morogoro Municipality, and Kilolo District.

- **314 (154F: 160M)** villagers trained on dairy goat husbandry
- **377 (212F: 165M)** villagers supplied with dairy goats
- **108 households** received goat offsprings as multiplier effects of the projects
- **TZS. 7,944,500** Revenue earned from selling of goat and milk





### SETH CHAVALA

I was so happy that day when I received a goat from the project, we are now benefiting a lot.



### YUSTA LUHWAGO

It wouldn't have been possible to afford taking my child to the hospital if it were not for the goats. I don't have health insurance so I sold one goat, paid hospital charges...happy now my child is fine.

I started selling vegetables after seeing that the goats can provide enough manure for my garden. Through income from vegetables I can easily afford household needs.

**The goats have rescued me from being a beggar and casual labourer.**



### IZACK NYAMOGA

I use manure from goats to grow avocado, my trees are so healthy. During 2016, I sold avocados and got TZS. 210,000 from only 3 trees. In the past, I could only harvest a few avocados which were not enough for sale. I used the income to buy a Television set and installed solar panel. Since I installed solar panel, my children can study a couple of more hours during the night than it was before with traditional kerosene oil lamp 'kibatari'.



### NELIA KIKOTI

I sold one goat for TZS. 70,000 and used the money to pay casual labourers to work on my farm, I planted beans and sold the harvest for TZS. 450,000. I used my income from beans to build a bigger house for my family. My old house was too small for family members to fit in.

When my goat gave birth (now I have 7 goats) I sold one goat and employed some people to help up plant trees in my one acre farm. I am also getting 3 litres per day, I normally sell two litres and consume the rest.

...since then my life has changed a lot, I would rank myself to have moved from level 1 to level 10 – all because of dairy goat husbandry!



"I sold avocados and got TZS. 210,000 from only 3 trees...I used the income to buy a Television set and installed solar panel..."

**IZACK NYAMOGA, Mkalanga Village Kilolo District**



**If crops can't change our lives, dairy cows will**

Idegenda Village, Kilolo District  
Surrounding Forest: Uzungwa Scrap Nature Reserve

**H**earing of a forest conservation project one thinks of key actions such as forest patrols, boundary clearing and forest management plans. Agatha Kipingi and her colleagues forming the dairy cow keeping group in Idegenda Village (Kilolo District) tells their story on how (through) dairy cow keeping supported by EAMCEF has changed their lives and avoided heavy dependency on forests for household income.

**Our group consisting of 25 people was formed in 2013 during the Village Assembly meeting when EAMCEF arrived in our village. we received trainings on dairy cow keeping and construction of proper shelters for the cows. EAMCEF gave us 9 cows and 1 bull to start the project, as a group we now [2017] have 23 animals in total.**

In my house we managed to install a small biogas feeder that utilizes animal dung to generate energy for cooking. I bought a stove and constructed a good kitchen. In the past, I used to spend hours and hours – up to six hours in the forests fetching for firewood. With biogas, I use the ‘saved’ hours to attend my cows and my farm. I no longer go to the forest as it used to be, but I also enjoy my new smokefree kitchen, and my husband is now comfortable to join me while cooking. The new kitchen has reduced up to 75% firewood consumption thereby reducing pressure on surrounding forests. If all households in Idegenda Village keep cow and switch to biogas...our surrounding forests [The Uzungwa Scrap Nature Reserve] will forever remain intact”



### KEY DATA

Across project sites – Kilolo District.

- **40 (17F:23M) villagers** from two villages trained on dairy cow management
- **20 cows** purchased and distributed to 42 villagers
- **TZS. 53,462,200** collected as revenue from sales of milk
- **15,794kg of cow dung** used for manure
- **10,253 kg of cow dung** used to make biogas

## AGATHA KIPINGI

Before I joined the project my family never had access to milk, I now get excess and sell to my fellow villagers. For the last two years I managed to make around TZS. 3,000,000.

I used my income to buy 2 acres of land and planted 1200 trees – I earned around TZS. 6,000,000 from trees. I used part of the money to clear school fees for my 3 children and install piped water in my house.

In the past I used to fetch firewood from 6am to until around 11am and was not able to attend my farm properly. The cows give me biogas and I no longer waste time in the forests, I use my time to attend my cows and my garden.

Before I started applying animal manure that I get free from keeping cows, I used to harvest 3 sacks of maize per hectare, but now the harvest has been doubled.

## SIFA MWANDILA

With Biogas cook stoves my cooking experience has been so enjoyable – no hustle in starting the fire, no smokes, no dirt, clean kitchen... and nowadays I can see my husband comfortably spending time in the kitchen.

My neighbours say I am better off just because I no longer face the troubles of the three-stones traditional stove!

## HARUNAH SIMAMBILI MOTO

I would have never afforded to pay school fees for my children if it were not for income from sales of milk. I earn TZS. 700,000 each month – this was not possible in the past.

I no longer invade the forest for meat, I sell milk and get enough money to buy meat at any butcheries.





### The joy of biogas plant

“In my house we managed to install a small biogas feeder that utilizes animal dung to generate energy for cooking. I bought a stove and constructed a good kitchen”

**Sifa Mwandila Idegenda - Village, Kilolo District**



## **Tree planting overturning poverty in Kilolo District**

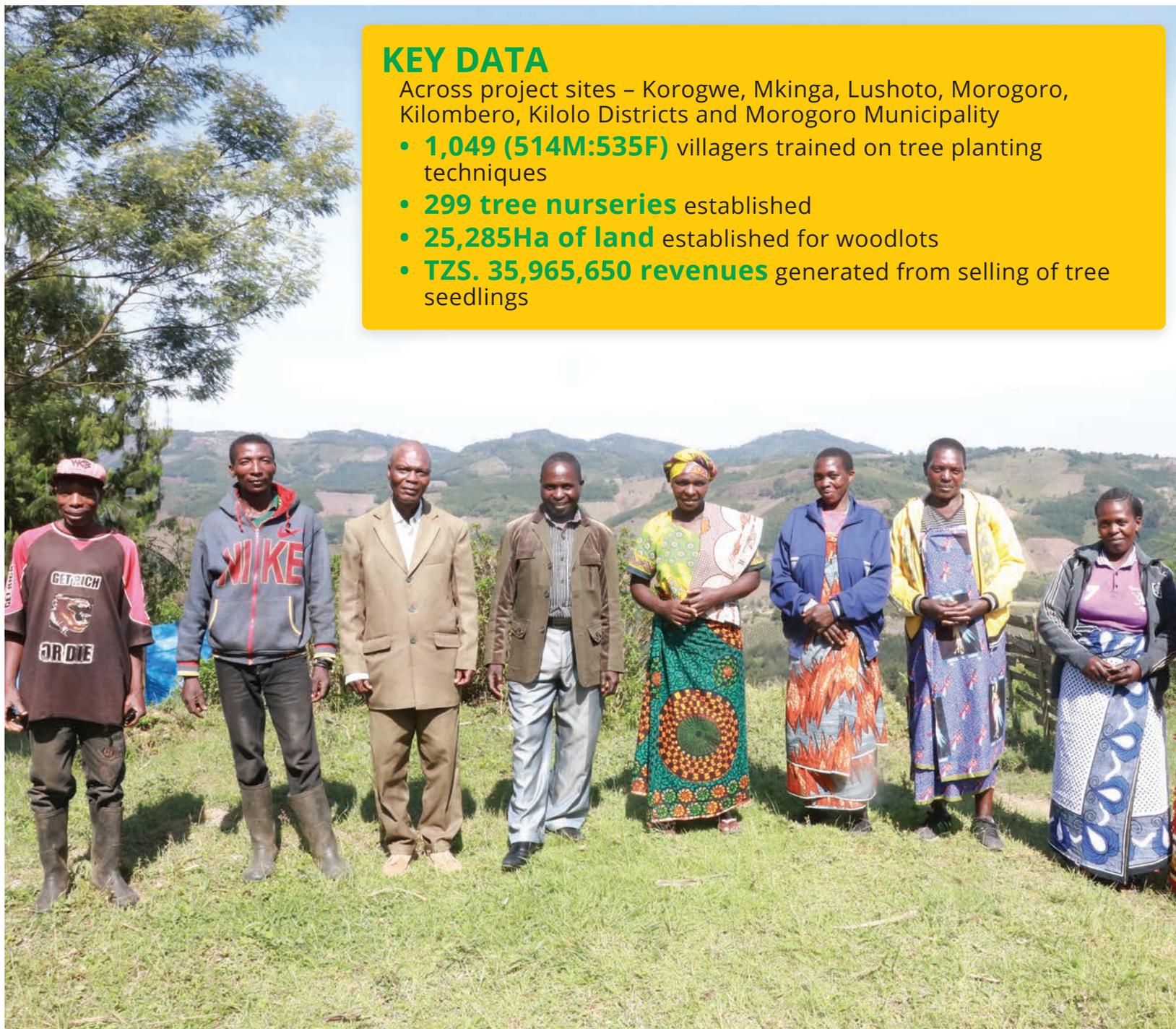
Idegenda Village, Kilolo District  
Surrounding Forest: Uzungwa Scrap Nature Reserve

The beautiful landscape of Kilolo District is blessed by cold weather and rich soil supporting tree growing business, however, and for many years the key challenge has been the 'waiting time'. From planting to harvesting and sales of a mature tree one needs to wait for at least 15 years to enjoy the fruits - that's too much!

While waiting for more than a decade, local communities in Idegenda Village, one of the villages in Kilolo District, engages in various on farm and off farm activities to generate income.

Of the off-farm activities, the Uzungwa Scrap Nature Reserve just at their vicinity has always been the victim - victimized for tree cutting (timber and poles) and other income generating activities resulting into forest

To address the problem, EAMCEF through a participatory approach interrupted the 'waiting time' by introducing fast growing pine trees (7 years) that would act as alternative sources of income to save forests from destruction. Apart from planting, villagers raise and sell tree seedlings.



## KEY DATA

Across project sites - Korogwe, Mkinga, Lushoto, Morogoro, Kilombero, Kilolo Districts and Morogoro Municipality

- **1,049 (514M:535F)** villagers trained on tree planting techniques
- **299 tree nurseries** established
- **25,285Ha of land** established for woodlots
- **TZS. 35,965,650 revenues** generated from selling of tree seedlings

## “ WILSON MGATA (Village Chairperson)

I planted 3600 trees on a 6 - acre farm during 2013. In 2-3 years from now I can happily expect TZS. 60,000,000 from selling matured trees. I am so much impressed by this project, I have already generated TZS. 35,000,000 from selling tree seedlings.

I used part of the income to build a commercial house from which I earn TZS. 140,000 per month. I use this income to cover all my household needs, but also built a modern house like those you see in the city centre.

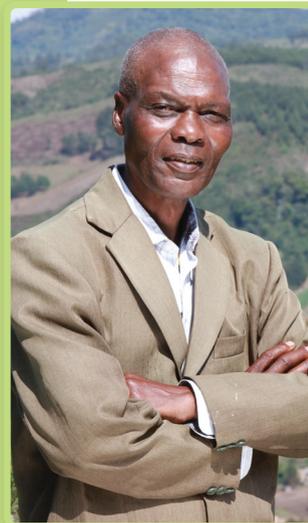
In the past we could see fires burning in the forest, up to two times a week, but now it is not the case anymore as villagers are busy with their trees.



## “ EXAVERY SAMIGARI KISIMBA

I have been growing trees for the past 30 years but was so surprised to hear from EAMCEF that there are fast growing species. Without any delay, I started growing and selling seedlings – made up to TZS. 20,000,000 for three years, and later I planted 20 acres on my own farm. I used part of the income from selling of seedlings to build a modern house in Iringa Town thereby saving money which I and my family and relatives would have incurred for living in hotels and guest houses.

Money from sales of tree seedlings rescued my relationship with my wife...every time we wanted to have privacy we were forced to go somewhere away from home since our house was too small, and with kids... you can imagine how hard it is to enjoy with my wife! sometimes, until midnight.



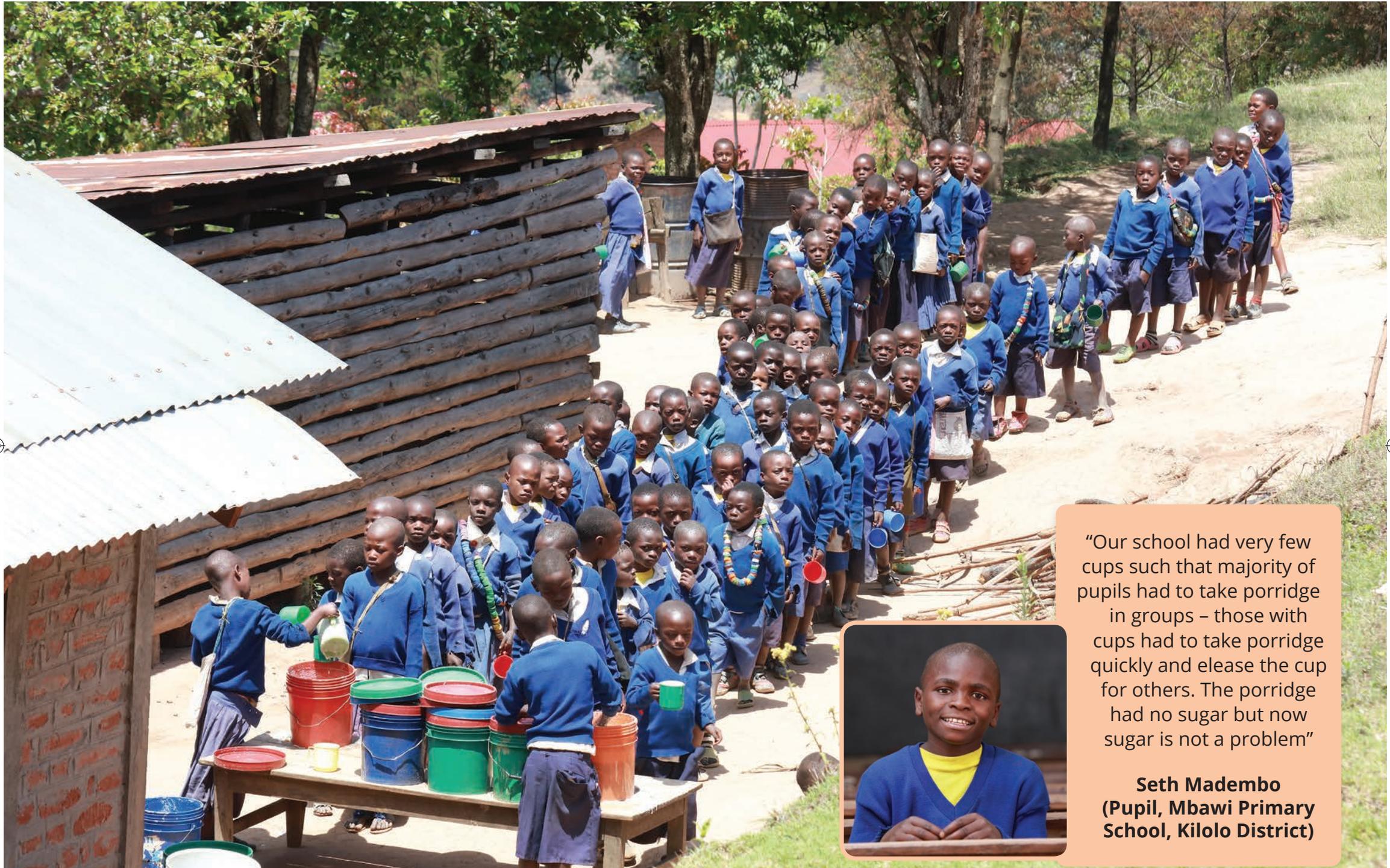
## “ MBAWI PRIMARY SCHOOL, KILOLO DISTRICT

The tree planting project has helped the school solve long-standing challenges, especially relating to services offered to pupils. Income from sales of seedlings was used to build a large kitchen, cooking and serving equipment/utensils etc., but of most important the school installed a solar panel to help pupils who are waiting for their standard seven exams get extra study hours during the night. Teachers believe that it is this solar panel that has contributed to good performance of pupils – from 60.3% pass (in 2016) to 68.9% pass in 2017”, narrates Ponziano Lung’ali (Environmental Teacher, Mbawi Primary School, Kilolo District)

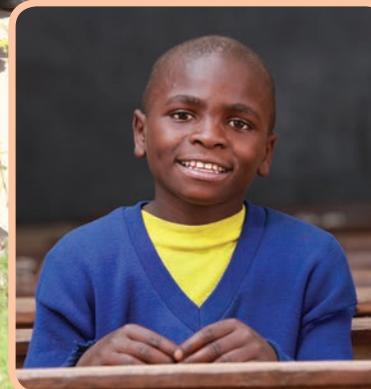


Income from sales of seedlings was used to build a large kitchen, cooking and serving equipment/ utensils etc.

**Mbawi Primary School, Kilolo District**



“Our school had very few cups such that majority of pupils had to take porridge in groups – those with cups had to take porridge quickly and please the cup for others. The porridge had no sugar but now sugar is not a problem”



**Seth Madembo**  
(Pupil, Mbawi Primary School, Kilolo District)



## **If it were not for the bees...**

**Msufini Village, Kilombero District  
Surrounding Forest: Udzungwa Mountains National Park**

Situated just on the foot of Udzungwa Mountains, Villagers of Msufini Village in Kilombero District enjoys the magnificent view of forests and landscape just at their vicinity. In this village, EAMCEF selected a small group of farmers to demonstrate how beekeeping through modern beehives can be a profitable economic activity that would change lives of the people, provide them with alternative income that would incentivize them to stop invading protected forests for the same purpose.

Ten years earlier prior to EAMCEF intervention, a group of ten farmers – 6 being males – agreed to form a beekeeping group named 'Wosia wa Baba'. The group gathered 10 locally-made beehives, normally made from logs, and hanged them on trees, in the forest – protected forest. Each beehive produced honey only 5 litres a year. The group therefore generated around TZS. 50,000 – 60,000 per year! The group never owned any honey processing equipment. During honey harvesting period, bee keepers normally light fire to chase away bees. In the process, fire is left uncontrolled and spread to nearby trees and even further deeper into the forest. The forest authority in the area prohibited such activities and put strong measures to prevent people from invading the forests. The group, being among the victims was left without any other option than hanging hives on nearby trees within the village. The group chose a small area and decided to plant trees to serve the purpose, but still this was not economically viable.

### To make beekeeping a profitable business

that would withdraw villagers from invading protected forests, EAMCEF intervened and took advantage of the existing group to introduce modern beekeeping techniques.

### KEY DATA

Across project sites - Korogwe, Mkinga, Lushoto, Same, Morogoro, Kilombero, Mvomero, Kilolo and Mufindi Districts

- **1570 (680F:890M) villagers** trained on modern beekeeping techniques
- **82 beekeeping groups** formed
- **1352 modern beehives** supplied to villagers/groups
- **14180 litres of honey** harvested
- **508kgs of beeswax** collected
- **TZS. 7,6647,400 revenues** generated from sales of honey and beeswax



## “ GODFREY DANIEL HORO (Chairperson, Wosia wa Baba Beekeeping Group)

We received 50 modern beehives from EAMCEF, in 2016 alone each hive produced 15-20 litres of honey – five times the amount produced from traditional beehives! In 2016 alone, we sold 250 litres of honey for TZS. 2,500,000 and used part of the money to lease a two-acre farm where we planted sugarcane.

From sugarcane, we earned another TZS. 2,500,000 and used part of it to initiate another business – we bought 10 bicycles and hired them for transport services within the village, from bicycles we got TZS. 5,000,000 within 6 months.

Each group member receives a 25% dividend, I used mine to buy a bicycle for my son who used to walk 14KM every day for school. With the bicycle, my son can now get back home early and do his assignments... he now gets 70-80% grades than the usual 50-55% in his exams.

Our success as a group has promoted formulation of 15 other beekeeping groups within the village, villagers are no longer risking their lives in the forests for income.

**Our group has made a difference in the village, we are lending money to people in critical needs, especially to members of the village community banks (VICOPA) without charging any interest. Our group saved the lives of 4 villagers who were very sick but unable to afford hospital costs.**

## “ RAJAB MOHAMED MALIPA

We [the group] are like conservators, by practicing beekeeping we know that bees depend on the environment around so we don't allow anyone to cut trees or burn them down...I am very much enthusiastic about the project and I am now a good teacher to others. I would advise the villagers to ensure that during village land use planning exercise, a large chunk of land is set aside for tree planting and beekeeping activities. This will reduce pressure on protected forests since the woodlots would provide firewood too.



## “ RECKSON ARON MTAMA (Secretary - Wosia wa Baba Group)

Bees [to mean beekeeping] are enough, I remember I almost got bitten by a black mamba [a snake] in search for honey in the forest. I no longer need to go up there [in the forest] again I no longer feel stressed paying school fees for my children, in the past I was very much disgraced...I borrowed TZS. 40,000 to pay for school fee, but ended up repaying one sack of paddy worthy TZS. 100,000!

## “ HIDAYA SAID MATAJIRI

I am a widowed woman but no longer frustrated because I use income from beekeeping activities to invest in other productive activities – last year I did not touch any hoe, instead I hired a tractor to plough my farm!



## Rewarding forest conservation promises

Kazita Primary School, Muheza District  
Surrounding Forest: Nilo Forest Nature Reserve

**W**ould the communities in Kazita Village keep their promises to conserve the forests of Nilo Nature Reserve situated just at their vicinity? The story of Kazita Primary School (KPS) says it all.

### At the inaugural time in 2008

the School had two rooms – one being a classroom and the other a general pool for teachers and pre-school children. The one classroom was ‘virtually’ partitioned for use by both Grade One and Grade Two pupils. The partitioning was such that the two Grades would seat facing opposite sides, one Grade was forced to stay in the ‘mute mode’ bending on their desks if the teacher is having classes with the other Grade and vice versa -but this was not easy as it reads. The teachers’ pool accommodated the Head Teacher, Assistant Head Teacher and other teachers.

### EAMCEF support

As a strategy to promote Participatory Forest Management(PFM) – that is broad participation of local communities in forest management of the Government-owned Nilo Forest Nature Reserve, EAMCEF initiated a series of consultation with local villagers of Kazita Village to agree on possible ways to engage effective participation of local communities in forest management activities.

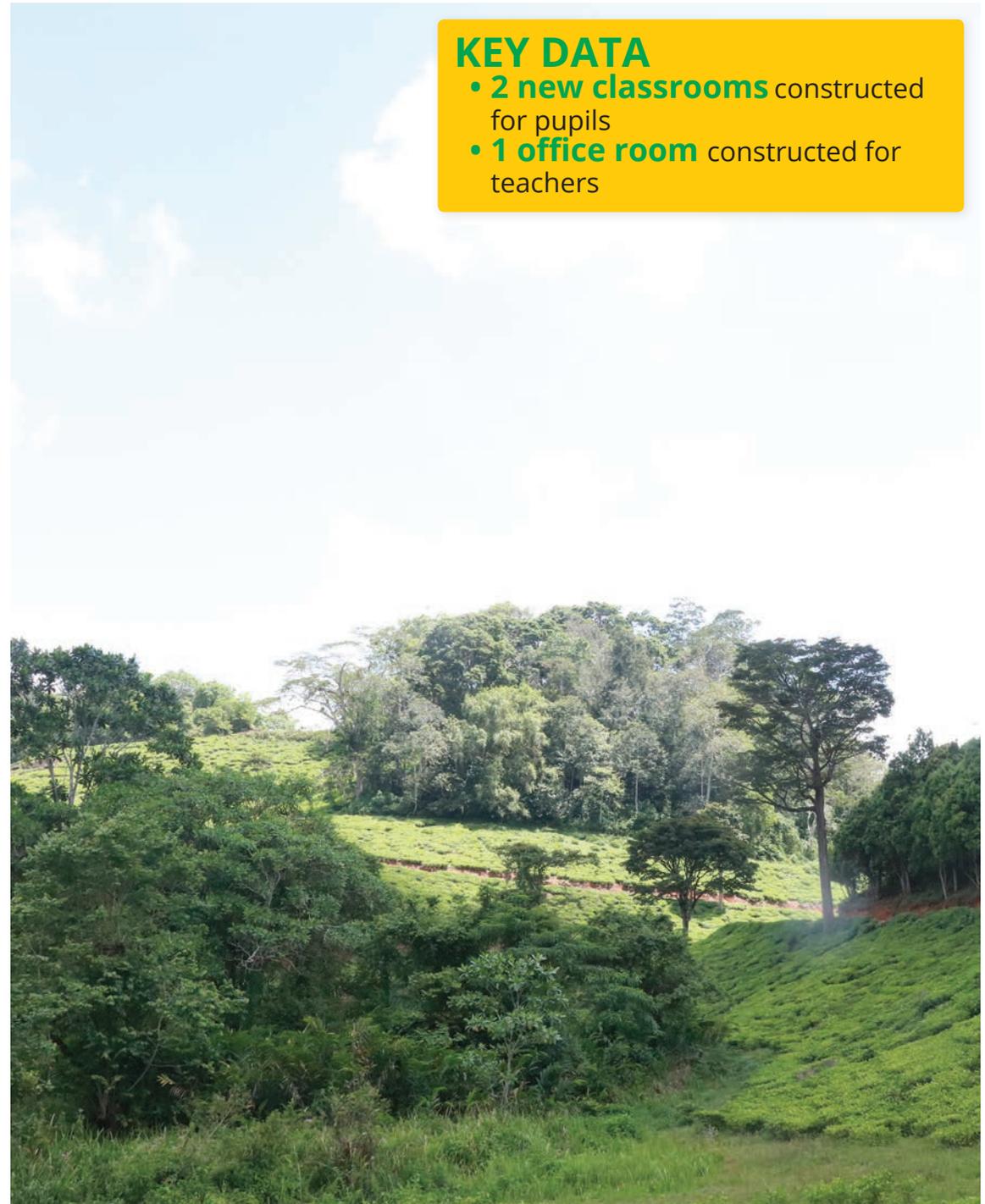
Since EAMCEF’s approach to forest management is through community development interventions, a consensus was reached to support the community build three rooms (two classrooms and one office) for the School in return of the labour and time spent by communities in forest management activities performed through village committee.

Before EAMCEF intervention, villagers were invading the protected forests in search for marketable wood products that would give them extra income to afford paying their dues for school construction.

Since EAMCEF took up the role, community members stopped their financial contribution but had to repay through participation in forest management. Following support from EAMCEF, the school increased enrolment of new pupils.

### KEY DATA

- **2 new classrooms** constructed for pupils
- **1 office room** constructed for teachers



**OMARI IDDI MWANGIA**  
(Assistant Head Teacher, Kazita Primary School)

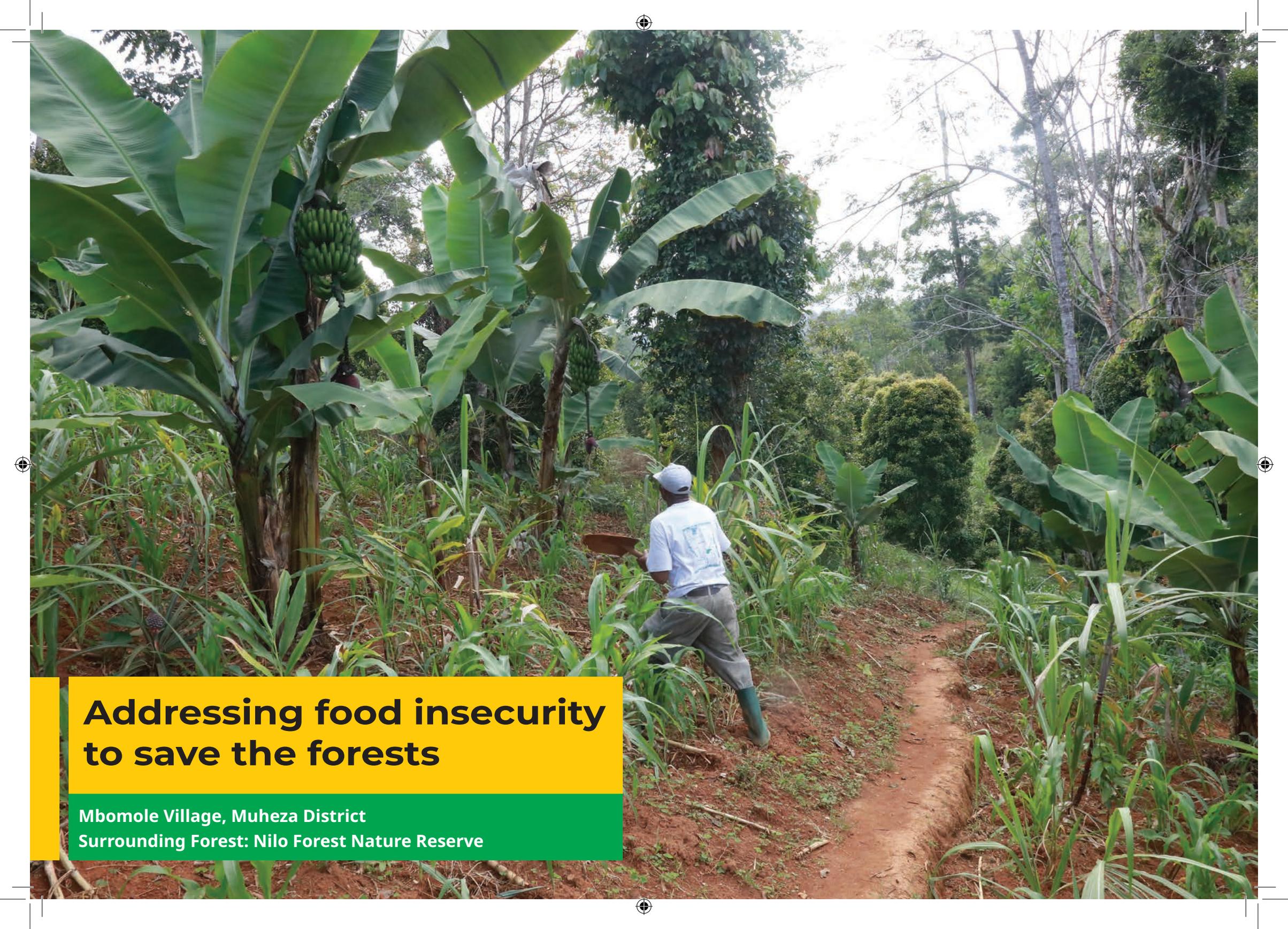
The working environment is now conducive, the head teacher has his own office, pupils too have their own rooms. We can see performance of pupils has changed since then. The forest is now free from destruction since parents are no longer invading it for 'money'



**ADAM BAKARI MBIU** (Secretary, School Construction Committee)

This project has encouraged villagers to participate in protection of Nilo Forests, villagers formed environmental committees and participate actively in forest patrols once per week. In the past, we could conduct patrols only once or none per month. We were so happy, and still so to see EAMCEF supporting school construction. Through conservation education provided by EAMCEF, each villager is now a protector of the forest.





## Addressing food insecurity to save the forests

Mbomole Village, Muheza District  
Surrounding Forest: Nilo Forest Nature Reserve

**E**AMCEF believes that, if local communities in Mbomole Village (Muheza District) are foodsecured, little degradation happens on forests, and vice versa. Food insecurity drive villagers to invade nearby forests in search for commercial timber, poles and wild meat so they can afford buying food for the families, or pay school fees. In this village, food insecurity is caused by inadequate harvests resulting from poor farming techniques on slopes of the village land. Since slopes cannot retain water for long time, most crops die, soil nutrients get washed away, soil erosion destroy crops resulting into poor harvests and food insecurity. In the state of food insecurity, the forests become the easiest victim, the free source of income. EAMCEF intervened through introduction of soil and water conservation techniques using bench terraces.

## KEY DATA

Across project sites – Muheza District and Morogoro Municipality.

- **329 (190M:139F)** villagers trained on soil and water conservation techniques.
- **106 households** adopted soil and water conservation techniques
- **863Ha of land** put under soil and water conservation techniques



**DAINESS ABRAHAM MLOWE**

Before I adopted this technique, farming was just a waste of time, but now it is a profitable undertaking. Before, I used to harvest 10kgs of beans, but last year [in 2016] I harvested 80Kgs on the same land area.

**SOPHIA CYPRIAN**

Through this technique, I have managed to start up another small business...I bought chicken and can now sell eggs. I get enough money to pay for school fees.



### MICHAEL SIMON

Through this technique, it is now possible to grow vegetables on my farm.

In 2016 for example, I harvested up to 500kg of vegetables. After selling, I got TZS. 800,000 and used the money to expand my farm from 1 acre to 4 acres, but also dug a water well which I am planning to use it for irrigation.



### JOHN LENGE

Before I started practicing conservation agriculture my harvest was not more than 2 sacks [200kg], but it's amazing to see 7 sacks of maize coming from the same farm. I had plenty of food last year [2016], I sold the excess and bought cows.



### HASHIM SALEHE POMBEKALI

Kilimo cha makingamaji' [conservation agriculture] was introduced to our farming group called ANGAZIA...we were very happy to see increased yield to suffice household food needs throughout the year. In the past, maize harvests could only feed the families hardly for one month. Before I adopted this technique, I was not able to do mixed farming as some crops require enough moisture to grow. Nowadays I mix maize with banana, spices and cassava and they grow up very well! My family is now food-secured. I have helped, for free, many villagers to adopt this technique, I go and teach them for free – I feel so happy indeed!



## Compensating communities for labour and time

Amani Nature Reserve, Tanga Region

Unlike Game Reserves where consumptive wildlife tourism is generating significant revenue from hunting tourists, the Nature Reserves generates revenue from photographic tourism and other non-consumptive activities.

Implementation of Protected Areas and climate Change Management Projects was coordinated and managed by staff in each targeted Protected Area. Project activities related to forest management were done in close collaboration with surrounding community casual labourers selected through village assemblies. Major activities that employed large number of villagers included: forest boundary clearance, planting of tree seedlings along forest boundary length, establishment of new directional trenches, participatory forest patrols, rehabilitation of mining pits, establishment and management of nature trails, campsites establishment and management and tourist drive routes.

EAMCEF through its partners paid local communities for participation in the mentioned forest management activities as a cost-effective option than hiring a company for the purpose – despite no estimates was done to compare how much time and money it would have costed to hire private company. The payment to local communities was treated as compensation for time and labour, but also as a benefit arising from Protected Areas management. Compensation was done through cash payments at reasonable government rates. In total, during the project life over 10,800 local communities (men and women) have been employed and paid over TZS. 367 Million for providing their labour and time in managing Protected Areas. Hiring surrounding communities is not only cost effective but also important for changing perceptions of local communities especially of those tied to historical experience of exclusion, with ‘fences and fines’ conservation approaches.

### **The case of Amani Nature Reserve:**

In support of the tourism business and forest management EAMCEF supported Amani Nature Reserve to clear nature trails that would allow tourists to walk across the forests and enjoy the nature – diverse attractions. This support is aimed at promoting the reserve and enhancing participation of local communities in forest management activities and increase revenue that is channelled to the surrounding villages. Apart from revenues from ecotourism, the little payments (as compensation for time and labour) that community members receive from participation in boundary clearing, maintenance of nature trails, forest patrols incentivise local communities to protect the forests.



## “ ISAACK MATUNDA (In Charge – Tourism, Research and Ecotourism, Amani Forest Nature Reserve)

Before EAMCEF came in, we never had enough budget for boundary clearance, we could only clear a small portion. Support from EAMCEF has made it possible to clear up to 6 KM nature trails that are currently being used by tourists to reach unique attractions, especially nocturnal chameleons and frogs.

Because of EAMCEF support, we are experiencing increased number of tourists – for example, in 2014/15 we had 153 visitors, 635 in 2015/16 and 763 visitors by November 2017...this goes hand in hand with increased revenue. EAMCEF support has increased our visibility at both national and international levels. our focus was initially on protection of the forests for water catchment services and little advertisements were done, but through EAMCEF we managed to produce communication materials, TV and radio programmes. This support has enhanced close participation of local communities in forest management activities. We normally employ local communities from 20 surrounding villages to help up with clearance of nature trails, we pay them a small token as a compensation [for labour and time]. It would have been very expensive to accomplish these tasks if we were to hire people from outside the area.

Through this support, we trained local tour guides from the surrounding villages, of which a guide gets 60% of the guiding fee, 20% goes to respective village governments, while the remaining 20% is retained at Amani Nature Reserve.

Local communities participate effectively in forest patrols through their respective environmental committees, small income obtained from patrols incentivizes continued cooperation from local communities, thereby reducing illegal activities.



### KEY DATA

Across nine Nature Reserves within Eastern Arc Mountains, including Udzungwa Mountains National Park.

- **1,500KM of forest boundary** cleared
- **265KM of forest boundary** planted with trees
- **199KM of forest boundary** surveyed/resurveyed
- **716.10KM of nature** trails established
- **177KM of drive routes** established
- **10,000+ villagers (30% females)** participated in various forest management activities
- **TZS. 367,000,000+ compensated** to villagers for labour and time in undertaking various forest management activities.
- **TZS. 79,853,000 generated** from fines to forest incroachers and other culprits

AMANI NATURE RESEF  
ABOMOLE TRAIL





## **Making improved cook stoves work for women and forests**

**Mbakweni Village, Same District  
Surrounding Forest: Chome Forest Nature Reserve**

One of the tricky questions in addressing drivers of forest degradation in Tanzania is how to deal with growing fuelwood demands especially in local settings where 100% of the population depends on firewood and charcoal for cooking. To address this challenge, EAMCEF provided grants to a local NGO to implement a woman-empowerment project that would cut down firewood consumption but with multiple benefits to the women group.

### In Mbakweni Village

– one of the villages bordering Chome Forest Nature Reserve, the project trained a women group – called **Mkombozi** to construct improved cook stoves that would not only replace the traditional three-stones stove, but also reduce by 50% the amount of firewood consumption and reduce health risks associated with smoke. To date, the group has trained other women and constructed 406 improved stoves in different households.

### KEY DATA

Across project sites – Korogwe, Muheza, Mkinga, Same, Mvomero Districts and Morogoro Municipality

- **1,531 (849F: 682M) villagers** trained on construction of fuel-efficient cook stoves
- **14,016 households** using fuel-efficient cook stoves in Mvomero, Morogoro Municipality, Same, Mkinga, Muheza and Korogwe Districts.
- **50% reduction** in firewood consumption



## MARY AGNES

We were exposed to very high health risk as our old cook stoves produced too much smoke, our eyes and hearts were suffering. The stoves made our kitchen so dirty and unattractive. My family used to spend between 24-32 hours a week fetching firewood, such that we were not able to do other activities when back from the forests. We managed to cut more than 50% of firewood consumption using the new stove, cooking is easy, clean, safe and takes much shorter time.



## MARY BARUBUKA

I was incurring a weekly cost of TZS. 10,000 for firewood, but now with the new stove I spend only TZS. 4,000 for firewood per week. I use the savings to improve the family diet.

## NIGHENJIJWE KODA

My husband is so happy to see me using Mkombozi stoves [improved cook stoves], he feels comfortable joining me in the kitchen, this was never the case!



## About EAMCEF

The Eastern Arc Mountains Conservation Endowment Fund (EAMCEF) is a Trust Fund that was established and functions as a long-term and reliable funding mechanism to support Community Development, Biodiversity Conservation and Applied Research Projects, which promote the biological diversity, ecological functions and sustainable use of natural resources in the Eastern Arc Mountains of Tanzania. EAMCEF was officially registered in Tanzania on 6th June 2001 and operates as a Conservation Trust Fund.

## Vision

Our Vision is to see that Eastern Arc Mountains and the people who depend on them live in harmony as one sustainable ecosystem. The forests and mountains will provide goods and services - from water to electrical power, from food and cash crops to medicines- for the people of Tanzania. And the world community will benefit from a protected biodiversity hotspot and a major carbon sink reducing global warming.

## Mission

Our mission is to catalyse resources to foster conservation of forest biodiversity in the Eastern Arc Mountains of Tanzania through investment in sustainable community development and livelihood improvement, sustained financing for protected areas management and financial support to applied biodiversity and climate change research.

## The Eastern Arc Mountains of Tanzania

The Eastern Arc Mountains in Tanzania cover a total area of approximately 5,350 square kilometres. Major Mountain blocks of the Eastern Arc spread over fifteen districts in five regions of Tanzania namely, Tanga (East and West Usambara, and Nguu Mountains), Kilimanjaro (North and South Pare Mountains), Morogoro (Nguru, Uluguru, Ukaguru, Udzungwa, Malundwe, Mahenge and Rubeho Mountains), Dodoma (Rubeho Mountains) and Iringa (Udzungwa Mountains).

## Focus Area

1. Community Based Conservation and Development activities for improvement of rural livelihoods of forest adjacent communities.
2. Applied biodiversity research relevant to the conservation of biodiversity in the priority Eastern Arc Mountains.
3. Protected Areas and Climate Change Management to improve the ecological functions of the ecosystem and strengthen the management capabilities of the responsible institutions.

This document was produced from the project – Improving Conservation of the Eastern Arc Mountains of Tanzania (2011-2016), supported by the Government of Norway.

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