



MARCH 2010

REPORT



Kenya Majii Moto Eco Initiative

Entry Phase Workshops – Round One and Two
Integrated Vermiculture and Organic Vegetable Production Courses

Introduction

As the entry phase to the Maji Moto Eco-Initiative, three four-day Integrated Vermiculture and Organic Vegetable Production Courses were successfully completed in October 2009 at the following venues :

1. Ng'Oswani Village Borehole - 15 October to 18 October, 2009
2. Enkare Nairowua School - 19 October to 22 October, 2009
3. Majii Moto Spring Windmill - 23 to 26 October, 2009.

In February 2010, a second round workshop tour was undertaken by CSA between 6 and 20 February. This workshop tour was used to assess the progress of the organic vegetable garden sites established, and to re-inforce and expand this development process.



First Phase Entry Workshop Programme

Workshop 1- Ng'Oswani Borehole Site

The first of the three Eco-Initiative entry phase workshops was held in the village of Ng'Oswani at the borehole site.

The following eighteen participants registered and completed the Integrated Vermiculture and Organic Vegetable Production Course :

- ✦ JOSEPH TAEK (Photographed on the cover of this report)
- ✦ MOROGET TAEK
- ✦ FELLISTUS NORMEISIEYIEKI
- ✦ NOLARI NTOKOIWUAN
- ✦ RISE NANTEYA
- ✦ KIRAMATISHO LETOIL
- ✦ NONYUAT KIPURI
- ✦ KIRIKAI DAPASH
- ✦ NCHAANGA TONGOYO
- ✦ DANIEL KOSEN
- ✦ EZEKIEL MERERU
- ✦ LAPIT NANGIYO
- ✦ CHRISTINE MEIKWAYA
- ✦ NAILEPO MERERU
- ✦ MARK KANYARE
- ✦ LENOI NEBOO
- ✦ EVERLINE KERORE
- ✦ ELIZABETH NJAPIT

During the workshop period:

1. On a daily basis throughout the four-day programme, short lecture/ discussion groups on the course topics were held between building work and practical demonstrations. The following topics were covered:

- 1.1. Lecture/discussion group 1 - Overview of the Africa Eco-Initiative Process
 - 2.2. Lecture/discussion group 2 - Introduction to Eco-Farming
 - 3.3. Lecture/discussion group 3 - Worm Farming
 - 4.4. Lecture/discussion group 4 - Growing and breeding worms
 - 5.5. Lecture/discussion group 5 - Worm vegetable gardens
 - 6.6. Lecture/discussion group 6 - Eco-farming principles
 - 7.7. Lecture/discussion group 7 - Organic grown and organic fertilizers
 - 8.8. Lecture/discussion group 8 - Community conservation businesses
 - 9.9. Lecture/discussion group 9 - How are the community conservation businesses set up?
 - 10.10. Lecture/discussion group 10 - REDD project principles and carbon credits
2. The 18 person group, working as one team, erected three worm production units :
 - A composting/worm windrow.
 - A large tent worm/cocoon incubator
 - A small tent worm/cocoon incubator
 3. All three worm production units were filled with worm housing/composting mix using top soil, humus, cattle dung, elephant dung, and other organic material such as leaves).
 4. The team was then divided into four different groups, and each group marked out and began the construction of a forestry/vegetable garden nursery. (The plan was to initially utilise these nurseries as team vegetable gardens, and then convert them into tree and vegetable seedling production nurseries. This conversion would take place in a second phase once participants had built their own individual composting/vegetable beds).
 5. In each forestry/vegetable garden nursery, vegetable garden beds were built using a vegetable bed/worm housing mix (top soil, ant-hill, humus, cattle dung, elephant dung, and other organic material such as leaves).
 - Central worm holding systems were put up in the centre (heart) of each nursery.
 - Three different worm holding units were used in the nurseries: two nurseries used collapsible worm bins, one nursery a “Neverfill” unit, and the other nursery a stacked worm crate/basin system. These worm units were all filled with the worm housing/composting mix (top soil, humus, cattle dung, elephant dung, and other organic material such as leaves)
 6. Unfortunately a major water problem was experienced on site: The windmill on site was out of action, and although, at the start of the workshop, repairs were expected to take place immediately, this did not happen. Vegetable planting therefore had to be delayed and could not take place during the course of the workshop. However arrangements were made for a CSA Extension Officer to remain in Kenya post-workshop to train and supervise participants on vegetable sowing and planting practices once water became available. However water was transported from the Olarro water factory to the site to keep the worm units moist.
 7. Worms: Each participant was supplied with 100 worms. However due to water having to be carted to the site, these worms were not held by each participant individually as planned. The 1800 worms were instead held jointly. Nine hundred worms were housed in the small tent worm/cocoon

incubator, and the remaining 900 worms were housed in one of the worm bins.

8. Coccoons: 3,300 coccoons were allocated to the workshop. These were held for hatching at Olarro Lodge on behalf of the participants.
9. In order to keep out intruding village cattle, sheep and wildlife, a live fence of Commiphora truncheons was planted from cuttings around the entire site. In this manner a total of 180 trees were planted.
10. Equipment Supplied :
 - 1 x worm windrow unit with PVC tarpaulin base and 80% shade-cloth cover
 - 2 x collapsible worm bins
 - 4 x worm boxes and sleeves
 - 4 x worm basins
 - 2 x garden rakes
 - 2 x garden hoes
 - 2 x spades
 - 2 x garden forks
 - 1 x small worm/cocoon incubator tent
 - 1 x large worm/cocoon incubator tent
 - 1 x Neverfill Unit

Workshop 2 – Enkare Nairowua School

The second workshop was held at Enkare Nairowua School from the 19 to 22 October, 2009.

There were 18 participants registered, while from time to time, school children attended the workshop in the afternoons after classes.

Participants at Enkare Nairowua School;

- ↔ AMOS YENKO;
- ↔ KASHU BOTOYO;
- ↔ CYPRIAN OGATA
- ↔ NKIOLE NKOIBOO
- ↔ KORES BOTOYO
- ↔ SELINA LEINTOI
- ↔ BEATRICE YENKO
- ↔ NOORETET MUSANKA
- ↔ SAMUEL TONGOYO
- ↔ JULIUS TONGOYO
- ↔ SALATON
- ↔ LEWEN TITAAI

- ↔ LEINTOI LEKITONY
- ↔ NOLOISANKA SANKALE
- ↔ KURASH
- ↔ TWALA
- ↔ JULIUS LEINTOI
- ↔ PARBURUSH

During the workshop period :

1. As per the first workshop short lecture/discussion groups on the course topics were held between building work and practical demonstrations.
2. The 18 person group, working as one team, marked out 4 forestry/vegetable garden nurseries.
3. The group then completed the vegetable garden bed construction in one nursery :
 - 9 Vegetable garden beds were built using the vegetable bed/worm housing mix (top soil, ant-hill, humus, compost, cattle dung, elephant dung, and other organic material like leaves and grass). The compost used was from the worm tunnel erected at the school by the CSA team in August, 2009.
 - A Neverfill unit, as a central worm holding system, was put up in the centre (heart) of the nursery.
4. The 9 vegetable beds were each allocated to a two-man team. After CSA provided a demonstration on planting of all the different varieties of seeds, each team then planted out their beds with vegetable seed of their choice. The direct seed sowing method of planting was used.
5. After the seeds were planted they were covered with a sand mulch. An elephant dung mulch which had been soaked in water was then used to cover all the inter-row areas of the vegetable beds.
6. All the beds were given a thorough watering.
7. Worms
 - All 18 participants counted out and took ownership of 50 worms.
 - To accommodate the worms, the following holding units were used : the central Neverfill unit in the nursery, one small tent worm/cocoon incubator, 5 worm crates, and 8 worm basins. All worm production units were filled with worm housing/composting mix using top soil, compost, humus, cattle dung, elephant dung, and other organic material such as leaves. All these units were kept within the nursery, with each worm holding unit being shared between two participants.
8. Vegetable bed and worm unit watering practices were demonstrated and daily watering programmes were put in place for the team.
9. No live fence was planted around the garden as the area was enclosed within the school security fence.
10. Cocoons : 3,300 cocoons were allocated to the workshop. These were held for hatching at Olarro Lodge on behalf of the participants.

11. Equipment Supplied :

- 1 x worm tent
- 1 x worm bin
- 1 x Neverfill
- 5 x worm crates
- 8 x basins
- 2 x garden forks
- 2 x garden spades
- 2 x garden hoes

Workshop 3 – Majii Moto Spring Site

The third and final workshop was held at Majii Moto Spring from the 23 to 26 October, 2009.

There were 14 participants registered :

- NKINGIIS OLE NKUITO
- LEISEI NKOILA
- KIMBORESHO OLOIBORMONGI
- MUSERE OLENANGIYOO
- KISIEKU ENE DAPASH
- NGISINGIS KOILA
- NEMUTA ENE NAIMONDU
- REPESA OLE NKOITIKO
- NOLARIKON ENE YENKO
- NATAANA ENE KIROKOR
- SORPAN OLE LOSIKANY
- SITANY OLE SANKALE
- KASAINI TWALA
- KOLLEKEN OLE MUSANKA

Majii Moto Spring Workshop Proceedings :

1. The area for one forestry/vegetable garden nursery was marked out, between the Maji Moto Windmill and the Maji Moto Spring. This work was undertaken by the CSA and Olarro teams whilst awaiting participants arrival for registration. (The participants were late due to cattle problems with drought)
2. Registration commenced, and after completion, the CSA and Olarro teams were introduced.



3. Andy Kockott outlined the Maji Moto Eco-Initiative drive.
4. As per the first workshop short lecture/discussion groups on the course topics were held between building work and practical demonstrations.
5. Participants were then divided into pairs, each choosing partners of their choice. Each pair were allocated their own bed site within the Forestry/ Vegetable Garden Nursery that had been marked out.
6. CSA demonstration of how to mix the vegetable bed/worm housing mix (top soil, ant-hill, humus, compost, cattle dung, elephant dung, and other organic material like leaves and grass).
7. Working in pairs the participants each built their own two-man team vegetable beds within the Forestry/Vegetable Garden Nursery
8. Six of the two-man teams were each issued a worm crate, and one team a worm bin, in which to start off their worm breeding stock . These worm holding units were then filled with the standard worm housing/composting mix using top soil, compost, humus, cattle dung, elephant dung, and other organic material such as leaves.
9. Each team counted out their own 100 worms and added them to their holding units
10. The vegetable beds were sown with seed, and mulched using river sand and elephant dung
11. When planting, mulching and final watering was completed, a screen house cover was finally fitted over the forestry/vegetable garden nursery
12. The necessity of protecting the garden unit from the livestock and wild animals was covered, and the planting of a live fence from commiphra cuttings commenced. (The importance of refraining from cutting whole trees was stressed - and the importance of using branches cut from growing trees as a means of propagation explained).
13. Coccoons : 3,300 coccoons were allocated to the workshop. These were held for hatching at Olarro Lodge on behalf of the participants.
14. Equipment Supplied :
 - 2 x Spades
 - 2 x Garden rakes
 - 2 x garden hoes
 - 2 x garden forks
 - 1 x complete Screen House tent
 - 6 x worm crates



First Phase Entry Workshops Round Two

Re-inforcing and expansion stage

A 3-man CSA team undertook a second round workshop program on Majii Moto Group Ranch between 6 to 19 February 2010. The purpose of this second round program was to :

- Assess the progress/development of the first round entry phase workshops
- Re-inforce and expand on the entry phase workshop/capacity building process

Ng'Oswani Bore-hole Site

Assessment

- No planting of vegetables had been possible as the water supply problems had only been rectified days before the CSA February visit. Despite this, hard work had been done and the team had demonstrated amazing resilience under difficult conditions.
- All 18 members were still active participants, with 7 members in particular having made a special effort.
- A good living tree (commiphra) fence had been successfully planted and established around the garden site.
- Importantly all the worms were thriving, and for ease of feeding and watering, all the worms had been transferred to the small worm/incubator tent.
- The worm holding units had stood up well despite exposure to the hot sun and dry and windy conditions. (The only exception was the large worm/cocoon incubator tent which had been vandalised by some youngsters, and being out in the open, the wind and sun had damaged this tent).
- The 7 members who had worked extra hard were awarded First Class Certificates, with the remaining 11 participants were issued with Participant certificates.

First Class Certificates

- ✦ Joseph Taek
- ✦ Nolari Ntokoiwuan
- ✦ Moroget Taek
- ✦ Christine Meikwaya
- ✦ Fellistus Normeiseyieki
- ✦ Kiramatisho Letoil
- ✦ Daniel Kosen

Participant Certificates

- ✦ Nonyuat Kipuri
- ✦ Kirikai Dapash
- ✦ Nchaanga Tongoyo
- ✦ Ezekiel Mereru
- ✦ Lapit Nangiyo
- ✦ Mark Kanyare
- ✦ Nailepo Mereru
- ✦ Everline Kerore
- ✦ Elizabeth Njapit
- ✦ Rise Nanteya
- ✦ Lenoï Neboo



Re-inforcing/Expansion

To re-inforce and expand on the first workshop, the following was undertaken with the original 18 participants:

1. The original four forestry/vegetable garden nursery beds that the participants had built were altered in configuration. This was to allow each member to have their own individual larger scale rectangular shaped vegetable bed (4.5 square metres in size). All the original bed materials were used in this process plus new additional material (top soil, ant-hill, humus, compost, cattle dung, elephant dung, and other organic material like leaves and grass).
2. Once constructed these 18 vegetable garden beds were sown with seed, mulched with river sand and watered.¹¹



3. The different worm holding units and their worms were consolidating into a large scale composting/worm windrow. This was also boosted with an additional 18,000 worms.
4. At the same time, 25 new participants were added to the group. These new participants each built their own individual vegetable beds under supervision. They also contributed to the building of three additional
5. large scale composting/worm windrows. During this catch-up/ building process, new members all received the course lectures, with print-outs and discussion groups. 25 new participants were registered:

- ➔ NOONKISHU MAKOI
- ➔ MERCY MASAGO
- ➔ NOMALI KULALE
- ➔ JACKLINE MASAGO
- ➔ MERCY KOSEN
- ➔ ARAMI TAEK
- ➔ TLAMPATI TAEK
- ➔ JAMES NANGIYOO
- ➔ DANIEL N.LETOIL
- ➔ ROSE NTAYIA
- ➔ JUNIOR KOSEN
- ➔ KERINGOT OYIPU
- ➔ FAITH ZAKARIA
- ➔ JOHN TAEK
- ➔ KALEP LEPORE



- ↔ TIRANKO KOSEN
- ↔ JULIUS K. SAYIALEL
- ↔ KATORIA MUSAKA
- ↔ EVERLINE T. KOSEN
- ↔ KIPENGOT MERERU
- ↔ SIMION KOSEN
- ↔ KUMOLASHO TAEK
- ↔ ALICE S. NAEKO
- ↔ ROBERT NANGISA
- ↔ CATHERINE NYAGEMI

6. The area within the growing commiphora fenced site had space to accommodate a total of 50 x 4.5 m vegetable beds. (Post-workshop, all 50 sites were taken up). It also allowed space for a total 12 large composting/ worm windrows.

Additional Worms Supplied: 18,000

Additional Equipment Issued

- 2 watering cans
- 1 wheel-barrow
- 1 spade
- 1 hoe
- 1 pick



Maji Moto Spring Site

Assessment

The entire 14 member group was intact, and this group had worked very hard post-workshop, with the entire site well cared for, productive and had been expanded on their own accord.

- ↔ Site maintenance, care and neatness were first class
- ↔ The screen-house covering the forestry/vegetable garden had stood up well to the prevailing conditions, and was in good shape.
- ↔ A good crop of vegetables had been produced, and was still producing vegetables
- ↔ The growing vegetable beds were well watered and cared for with all beds clean and weed free.
- ↔ Worm care and condition was excellent. Without exception all worms healthy and well fed and moisture conditions in all holding units was ideal.
- ↔ A good living tree (commiphra) fence had been successfully planted and established around the garden site.
- ↔ Outside of the screen-house, some members had shown good innovation and built additional vegetable beds which they had planted out. These new beds were producing vegetables, and . again innovation had been shown in protecting these beds with thorn bush “covers”.





Challenges the growers experienced :

- ↔ Monkeys had been a problem at times with the vegetables
- ↔ A genet cat had been a problem at times with the worms in the worm crates
- ↔ When plants were stressed through lack of adequate watering insect pests were a problem, as plants growing under stressed growing conditions attract predators.

Despite these challenges, without exception, all the participants were very enthusiastic and proud of their achievements.

In assessing participants' efforts and achievements, the following factors were considered, and participants were graded and awarded certificates accordingly:

- Garden maintenance and watering
- Crop grown
- Attendance
- Worm maintenance
- Quality and quantity of vegetables
- Crop protection practices
- Initiative

The following participants were awarded Certificates :

First Class Certificates:

MUSERE NANGIYOO	BENSON KOIYIKO
NEMUTA NAIMONDU	KIMBORESHO OLOIBORMONGI
SORPAN LOSIKANY	KASAIN TWALA
PAULINE NAISHOMA	

Second Class Certificates:

NATAANA KIROKOR	KINGIIS KIUTO
LESEI KOILA	NGISINGIIS KOILA
KOLLEKEN MUSAKA	



Re-inforcing/Expansion

1. The original 14 workshop participants, plus 10 of the original Enkare Nairowua School Workshop participants and 13 new participants listed below took part in the Maji Moto Spring re-inforcing and expansion program. (The 10 school workshop participants opted to leave the school site in preference for the Maji Moto Spring site extension area)

New participants registered :

- ↪ N KINGIIS OLE NKUITO
- ↪ LEISEI NKOILA
- ↪ KIMBORESHO OLOIBORMONGI
- ↪ MUSERE OLENANGIYOO
- ↪ NGISINGIS KOILA
- ↪ PAULINE NAISHOWA
- ↪ NEMUTA ENE NAIMONDU



- ➔ NOLARIKON ENE YENKO
- ➔ NATAANA ENE KIROKOR
- ➔ SORPAN OLE LOSIKANY
- ➔ KASAINI TWALA
- ➔ KOLLEKEN OLE MUSANKA
- ➔ BENSON LANKANA KOITIKO

2. Vegetable garden expansion was undertaken with the addition of another vegetable garden site adjacent to the forestry/vegetable garden screen house. (The forestry/vegetable garden screen house was left to finish growing out its existing vegetable crop. Once this crop was completed, this unit would be used to continue growing vegetables, after modifications to the screen-house to make it more secure from monkeys and other animals).
3. The new vegetable garden site was marked out to incorporate a total of 38 individual composting/vegetable beds. Also included was a 3 X 6 meter composting/worm area set between the 2 sets of 16 beds.
4. Once the site was marked out, individual bed sites (each 4.5 square meters in size) were allocated to the participants
5. Within the 3 X 6 meter composting/worm area, one large scale composting/worm windrow was built by the original 14 workshop participants. Here all their original worms were transferred from the screen-house, and introduced into the windrow. In addition 8000 further worms were also introduced to boost the worm windrow numbers
6. At this stage, it was CSA departure time, and the remaining work to complete this workshop was undertaken by a CSA Teacher/Extension Officer with the assistance of the Olarro team. This involved completing bed building and the lecture/discussion group program, and planting the living commiphora fence.



7. Sowing of the beds is awaiting the construction of a shade house will be undertaken to enclose and protect the additional vegetable garden.

ENKARE NAIROWUA PRIMARY SCHOOL

Assessment

- The school site was a big disappointment, and the effort put in to sustain the vegetable garden was inadequate. The garden was very dry, and the vegetables un-cared for. Although the worms in all the units were alive, their housing conditions were too dry. These units were also only half full with food and composting material.
- Of the 18 school participants, the following 9 members were awarded participants certificates. This was on the grounds that these participants worked hard during the 4-day entry phase workshop :
- Kashu Oloibormongi (Botoyo)
- Amos Yenko
- Beatrice Yenko
- Julius Leintoi (Tongoyo)
- Nooretet Musanka
- Lekitony Leintoi
- Nasaku Nchoe
- Kurash Botoyo
- Salatn Tompoi



Remedial Action Plan

- A meeting was held by CSA and the Olarro team with the school headmaster, who outlined the difficulties and challenges experienced re the school sharing the site with community members.
- A further meeting was held with all the community workshop members.
- It was unanimously agreed that the best way forward would be to allocate the garden established to the school, and offer community members interested, their own individual beds in the Maji Moto Spring site extension area.
- All 18 original participants opted to continue as participants.
 - 10 community members chose to become part of the Maji Moto Spring site.
 - The 5 teachers and 3 community members (who were school employees) chose to continue with the school site.
- Time and the school site situation did not allow the full CSA team the opportunity to conduct a school re-inforcing/expansion workshop program during the teams visit. As a result a decision was taken to have the CSA Teacher/Extension Officer remain at Olarro until 3 May. This would allow the school workshop program to take place under the supervision of the CSA Teacher/Extension Officer once the Maji Moto Spring program was completed.





Andy Kockott
+267 71748583
environment@iwayafrica.com