



# Pathways and challenges toward a socio-ecological transformation

*of landscapes, livestock and livelihoods in  
the East African drylands*

**Field Report: Regenerative farming and kitchen gardening follow-up  
training and co-learning at Chepukat Village, Chepareria Ward, West  
Pokot County**



**Reported by**

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## 1. BACKGROUND INFORMATION

The General Assembly of the United Nations in September 2015 adopted the 2030 Agenda for Sustainable Development. This includes 17 Sustainable Development Goals (SDGs). The goals build on the vital principle of “leaving no one behind”, and emphasizes a holistic approach to achieving sustainable development for all. Of the 17 goals, is the SDG 2 which aims to end hunger, achieve food security and improved nutrition and promotion of sustainable agriculture. Food security is a condition necessary to be fulfilled for good nutrition to be achieved. Food security is said to be achieved when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for a healthy life (Hansen et al, 2022). In sub-Saharan Africa, food insecurity has been persistent. Twenty-one (21%) per cent of people living in sub-Saharan Africa were food insecure in 2019. To address food security in a more productive approach is complex than simply growing more food, thus interdisciplinary approach is necessary to address food security. Food security can be addressed through building resilience to decrease the need for emergency aids, empowerment through gender equality, access to good land and information, adequate nutrition and food production. One such approach of food production is through the establishment of Kitchen gardens.

Kitchen gardens are a universal subsistence food production system which entails small scale fruit and vegetable production units in relatively confined areas located close to the family dwellings. The kitchen garden is an *in-situ*, on site household production system of fruits and vegetables with the use of low cost local materials and traditional knowledge. This eventually improves self-reliance and substitutes human capital for costly external inputs. It is primarily intended for regular supply of fresh vegetables for family use.

<sup>1</sup> *Cover photo*

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<sup>1</sup> *The kitchen gardening follow up training participants showcasing a variety of produce at one of the banana circles at the Livestock Café's kitchen garden area in Chepareria (Photo by M Nyaga)*

Furthermore, kitchen gardens offer a unique opportunity not only to improve the household's food security but also as an additional source of income through the sale of garden's surplus produce. Additionally, kitchen gardens helps to cultivate organic vegetables and fruits, conserve traditional varieties of vegetable seeds, contributes to increased household income by reducing expenses on other food items, better health from balanced diet, they are an effective way for women to utilize their free time. To ensure throughout the year supply of nutritious food from the kitchen garden area, some principles are required. These may include; selection of vegetable and fruit crops according to existing agro-ecology, growing diverse nutritious crops, conservation of vegetable seeds for next season and economic returns through sale of surplus produce (Kadam et al., 2020).

Kitchen gardens have a very high potential for impact since they are easy to set up, they are normally designed with locally available seedlings and training of residents by those already trained is easy and feasible. Through training, communities can be empowered to propagate crops whose seeds are affordably available, widely collected or even donated and thus they reduce the costs of setting up the kitchen gardens.

Kitchen gardens have been included as part of the Livestock Cafés in the Drylands Transform Project. The Livestock Cafés are co-learning and knowledge sharing hubs where researchers, local communities, and other stakeholders come to co-learn in formal and informal ways. In this regard, in June 2022 a total of 30 ToTs drawn from three locations surrounding the Livestock Café were trained on kitchen gardening (field activity report#7). They planted various crops, some of them were new to the area and thus follow up training was organized to assess the performance of the crops and more training on regenerative agriculture.

## 2. NAMES OF THE PROJECT PERSONNEL AND CONSULTANTS INVOLVED

<b>Name(s)</b>	Dr. Stephen Mureithi			Researcher, University of Nairobi		
	William Makokha			Liaison Officer, Triple L Initiative		
	Margaret Nyaga			Obj 2 PhD Student, University of Nairobi		
	Alice Mwangi			Trainer in Permaculture Design Course (PDC), Regenerative Agriculture and Kitchen Gardening, Hillside Organic Garden		
	Jane Wegesa			Trainer in PDC, Regenerative Agriculture and Kitchen Gardening, Jjaja Regeneration		
	Mercy Letting			Trainer and Extension Worker, Ministry of Agriculture, Livestock and Fisheries, Chepareria Ward, West Pokot County		
<b>Dates of training</b>	<b>Start Date</b>	10/10/22	<b>End Date</b>	12/10/22	<b>Duration (Days)</b>	3
<b>Destination Counties</b>	West Pokot County					
<b>Wards /Sub County</b>	Chepareria Ward, Chepkopegh Location, Chepukat Village					

## 3. OBJECTIVES/AIM OF THE TRAINING

The practical training aimed to achieve the following objectives:

1. Refresher discussion on lessons learnt in June during Kitchen garden establishment
2. Observations and lessons learnt in the growing period, Q&A sessions
3. Regenerative garden management, harvesting, seed saving, soil fertility management, recycling waste and composting, preparing the garden for the next rains and no till seeding.
4. Field visits to ToTs who have started their own kitchen gardens

## 4. ACTIVITIES

### 4.1 Tour to the garden

The training was organized for both the ToTs and the West Pokot County agricultural extension staff who were drawn from the different Wards of the County (Appendix 1). The extension staff, trainers and the ToTs toured the garden assessing which crops did well and which ones did not.



Fig. 1: Participants and the trainers assessing the garden(Left). One of the ToTs, explaining to the participants how they established a banana circle (Right) (Photos by M Nyaga).

### 4.2 Harvesting crops

The harvesting was done in such a way that only the ready produce were harvested. The crops residues were not removed from the garden. For example, the sunflower and maize plants were not cut, so that they provide shade and climbing support to the existing or new crops. The pumpkins which were not yet ready were left in the garden to grow further. The cow peas stalks were not uprooted since they are perennial crops and can produce vegetables round the year. The sweet potatoes vines were not uprooted, only the tubers were removed and the vines returned back and covered with the soils.



Fig. 2: Harvesting of sweet potatoes and sunflowers (Photos by M Nyaga).



Fig. 3: A group photo of the ToTs and their Trainers displaying the various produce from the garden (Photo by M Nyaga).

#### 4.3 Seed saving and preservation methods

The ToTs assembled all the harvested produce and shared among themselves. They were trained on ways to save or preserve the seeds in storage containers locally available like water bottles for planting during the coming seasons.



Fig.4: Sharing of the produce among the ToTs (Photo by M Nyaga).

#### 4.4 Kitchen garden management

A training was done on kitchen garden weed management through chop and drop to ensure there is mulch for the garden and to enrich the garden instead of taking away the crop residues. For example the sunflower and maize plants should not be cut, even after harvest, so they provide shade and climbing support to the existing or new crop.

Aeration of the garden was also done using wooden pegs and mulching using sisal and panicum grass from the fodder production area.



Fig. 5: Weed management through chop and dropping (Photos by M Nyaga).



Fig. 6: Mulching of the beds using locally available materials like the sisal and grass mulch harvested from the fodder production area (Photos by M Nyaga).



Fig. 3: Aeration of the gardens growing beds (Photos by M Nyaga).

#### **4.5 Top-dressing of beds using manure and planting more different crops**

Having assessed that some crops did well and others did not, other different crops were planted in the sunken beds to take advantage of the soil moisture retained in the beds and the little rains that were being received in the area. The crops planted were beetroots, chia, sweet potatoes, sorghum, finger millet and cowpeas. The crops are drought tolerant and have a short growing period.





Figure 4: Top dressing of beds using manure and planting more sweet potatoes' vines (Photos by M Nyaga).

#### **4.5 Field visits to ToTs**

The trainers visited one of the ToTs Ms. Josephine Chebet (Fig. 9) who has made an effort to establish her own kitchen garden. She had dug nine half moon water harvesting structures, planted kales, sweet potatoes, bananas and some woody trees like *Grevillea robusta*.

### **5. WAY FORWARD**

A gap was discovered in the utilization of the various crops planted in the garden like the dolichos, coriander and pigeon peas. Follow up training on the utilization, value addition of the vegetables and food preservation technologies should be organized. In addition a survey should be done together with the ToTs on the crops that performed fairly well to be promoted and struggling or straining crops to be eliminated from the list. Food calendars should also be developed to map out which crops are available at different months of the year.

### **6. ACKNOWLEDGEMENTS**

This field activity was made possible through the financial support of the Swedish Research Council (FORMAS) to the Drylands Transform Project [2020-00478] 2020-2024. We heartily acknowledge the warm reception, cooperation and teamwork we received from the training participants and the entire Chepukat Village community.



Fig. 5: Visit of the trainers to one of the ToT's garden Ms Josephine Chebet (Photo 1, left) who has adopted the kitchen garden technologies (Photos by M Nyaga).

7. APPENDICES

1. List of Extension staff who participated in the training



Financed by:  
FORMAS

KITCHEN GARDEN TRAINING AT THE LIVESTOCK CAFÉ AT CHEPUKAT  
VILLAGE, CHEPARERIA WARD, WEST POKOT COUNTY  
FROM 10<sup>TH</sup> TO 12<sup>TH</sup> OCTOBER 2022  
ATTENDANCE REGISTRATION FORM

AGRICULTURAL EXTENSION STAFF			DATE		
SN	NAME	ID NO	10/10/22	11/10/22	12/10/22
1.	STANSEANUS WAFULA	[REDACTED]	Tran	Tran	Tran
2.	MUSIO MATHENI	[REDACTED]	mm	mm	mm
3.	PIUS A. ONDIGO	[REDACTED]	Pto	Pto	Pto
4.	LOTH CHEROP KAMOMAI	[REDACTED]	Ucal	Ucal	Ucal
5.	MILON ROTICH	[REDACTED]	*	*	*
6.	JOSEPH K. KAPCHEROP	[REDACTED]	Joseph	Joseph	Joseph
7.	JONAH LONUKET	[REDACTED]	Jonah	Jonah	Jonah
8.	AMBERIE RUTO TIAMALE	[REDACTED]	Amberie	Amberie	Amberie
9.	Thomas P. Liotagino	[REDACTED]	Thomas	Thomas	Thomas
10.	MERCY LETTING	[REDACTED]	Mercy	Mercy	Mercy
11.	SALINA CHEKUNIR	[REDACTED]	Salina	Salina	Salina
12.	LINUS POWOM	[REDACTED]	Linus	Linus	Linus
13.	FRIDAN MAKAN	[REDACTED]	-	-	FRIDAN
14.	CHEBANG FLORENCE	[REDACTED]	-	-	Ch
15.					

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