



# PERMAGARDEN TRAINING

23 – 25 MARCH 2016 HAVVASSA, SNNPR, ETHIOPIA



THE AGRICULTURE KNOWLEDGE, LEARNING, DOCUMENTATION AND POLICY PROJECT (AKLDP)

Following a series of meetings in 2014 organized by the USAID funded Agriculture Knowledge Learning Documentation and Policy (AKLDP) project, the Home Gardens Network held a Launch and Planning Workshop in January 2015 that was co-hosted by the AKLDP and the USAID Technical and Operational Performance Support (TOPS) Program. The primary purpose of the Network is to promote household-level fruit and vegetable production and consumption that contributs to improved nutrition outcomes. In times of surplus production, fruit and vegetables may be sold to increase household income. The Home Garden Network organizes quarterly information sharing meetings, visits to Members project sites and also facilitates training.

Following a Training of Trainers (ToT) course on Permagarden organized jointly by the Network and the TOPS program, two of the trainees – Bruk Kebede\* and Firehiwot Tesfaye\*\* – gave a three-day training on permagarden at the SOS Children Villages, Hawassa for staff and local residents involved in gardening.

# AKLDP AND SOS CHILDREN'S VILLAGES

The Home Gardens Network is an initiative of the USAID funded Agricultural Knowledge Learning Documentation and Policy (AKLDP) project, and is regularly attended by more than 30 organizations. The SOS Children's Village in Hawassa is one of the network members. AKLDP is a five-year project being implemented by the Feinstein International Center at Tufts University, providing collaborative learning and coordination support across the Feed the Future portfolio, leading to improved agriculture, livestock and pastoral policy and programming. The permagarden training was entirely organized and facilitated for the first time by Ethiopian staff who took the Training of trainers (ToT).

The trainees shared their experience on kitchen gardens including both the progress made and some challenges. The participants reported that garden provided good vegetables to eat at home and to sell to increase their income. The challenges noted included: improving the soil specifically making and using compost, ash and other amendments; managing pests and diseases; and securing quality vegetable seed. SOS Children's Villages was established in Hawassa in 1985, with the setting up of a social center to help orphans and vulnerable children who no longer live with their parents, as well as the wider community. The social centers work with families in a holistic way to maintain family cohesion, promote self-reliance and economic autonomy. They help families to send their children to schools where possible, and also provide counseling and psychological support. In addition, the centers provide day care services for up to 150 children, enabling parents to send their children to the center while they work, where they are fed and taught basic literacy.

The SOS Children's Village in Hawassa includes a medical center and assists children through primary, secondary and vocational training. The training school offers a range of vocational skills, including dairy, livestock rearing, as well as fruit and vegetable gardening. Their experience in gardening, as well as the availability of appointed gardeners and farm management technicians, provided an ideal opportunity for AKLDP to chose Hawassa as a place to offer the permagarden training. Nineteen gardeners, eight of whom were female, attended the training. This report summarizes the three days of permagarden training and highlights the lessons learned in delivering technical skills and knowledge to the gardeners.

For further information on Permagarden training please contact <u>Mestawet.Gebru@tufts.edu</u>

### THE TRAINING PROGRAM

The SOS Children's Villages Director, Ato Kassahun welcomed all the participants and invited the trainees to introduce each other through 'pair introduction'. Independent consultant Firehiwot Tesfaye then outlined the objectives of the training and the agenda. Participants were given a chance to provide a short background about their experience and activities related to permagardening or home gardening. The trainees shared their knowledge on gardens and the challenges they are facing. These included: a lack of awareness among the society about small-scale gardening, a lack of knowledge on soil and water management, and pests in the local area. Participants were consulted on setting the ground rules for the training with the agreed points summarized on a flipchart and put up on the wall.

#### 23rd March - Day One

08.30 - 9.00	Formal Opening
9.00 - 10.30	Introduction Overview of Permagarden Needs of plants and people Resilience The home-asset dialogue
0.30 - 11.00	Break
.00 -  2.30	Community resource walk and talk Landscape mapping
2.30 -  .30	Lunch
1.30 - 3.00	Garden site assessment Site clearing
3.00 - 3.30	Break
3.30 - 4.30	Water control and conservation Water management strategies
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#### 24th March - Day Two

08.30 - 9.00	Review of day one
9.00 - 10.30	Garden design and layout Local soil amendments Making Compost
10.30 - 11.00	Break
.00 –  2.30	Bio-intensive soil preparation Double digging
2.30 -  .30	Lunch
1.30 - 3.00	Bio-intensive soil preparation Double digging (cont.)
3.00 - 3.30	Break
3.30 - 4.30	Fencing or Protection
25th March	- Day Three
<b>25th March</b> 08.30 – 9.00	- Day Three Review of day 2
<b>25th March</b> 08.30 – 9.00 9.00 – 10.30	- Day Three Review of day 2 Bio- intensive seed spacing and planting
25th March 08.30 - 9.00 9.00 - 10.30 10.30 - 11.00	- Day Three Review of day 2 Bio- intensive seed spacing and planting Break
25th March 08.30 - 9.00 9.00 - 10.30 10.30 - 11.00 11.00 - 12.30	<ul> <li>Day Three</li> <li>Review of day 2</li> <li>Bio- intensive seed spacing and planting</li> <li>Break</li> <li>Pest and disease control</li> <li>Plant fertility and fertilization</li> <li>Crop rotation and garden maintenance</li> </ul>
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# DAY ONE

#### Overview of permagardening

Following the introductions, the concepts, principles and the benefits of a permagarden were shared with the trainees. The trainees were reminded that the permagarden method could be applied on a very small piece of land, and that it enables the gardener to produce nutritious food all year round through improved soil fertility, water management and other inputs. In addition, the four goals of permagardening were introduced to the participants goals. The principles of permagardening were emphasized and participants were repeatedly reminded of them during the training. Through brainstorming the needs of plants and people were then discussed, identifying the things plants and people require for survival. A practical demonstration was given by means of the living metaphor, using string, with each participant representing the different needs of people and animals.



Figure I: Demonstration of how plant and people needs are interlinked

#### Resilience and Community resource mapping

The participants were asked to identify the shocks and stresses in their household or community, and were given an example on the concept of resilience and its connection with a permagarden. A brainstorming session on resources and assets was then facilitated to enable participants to recognize any available resources in their surroundings that could be used for gardening. After a short break the participants were then divided into three groups and asked to carry out landscape mapping through a transect walk in the SOS Children's Village compound. Each group presented their resource map and identified those resources required to build a permagarden.



Figure 2: Resource maps were drawn by the groups

#### Garden site assessment and site clearing

Following lunch on the first day, the importance of site assessment and clearing for creating a permagarden was discussed with the participants. The critical elements for plant growth, for example the direction of the sun, soil type, slopes and water sources needing to be taken into consideration during site selection were explained. Accordingly, after assessing and identifying a garden site, a 36m2 garden space

### DAY ONE (CONTINUED)

was demarcated near to the SOS Children's Village kitchen and nursery. Using farm tools (hoes, rakes and shovel) participants started to clear the area and uproot the grasses; the teamwork helping the work to be done easily.



Figure 3: Site clearing

#### Water control, conservation and management

Following lunch, the major sources of water for their gardens, and different water conservation practices existing around the participants' localities, were identified through brainstorming. They identified rainwater, rivers, streams, underground water and springs as sources for their home gardens. The existing soil and water conservation techniques that are mostly promoted by the government in their locality include bunds, terraces, ridges and pits. Participants were given examples of how much rainwater could be collected from a square meter area. In addition, a demonstration was made on a small, simulated garden area. The area was covered with mulch and then the mulch was burnt to show the importance of protecting the soil from runoff and increasing moisture in the soil. Participants were then divided into three groups and asked to construct an A-frame. Using the A-frame, each group learned how to find the contour lines and which way the water flows. The four principles, Stop, Slow, Spread and Sink, were explained for water control, and methods for building swales and berms were explained.

At the end of the day the participants were reminded about the topics covered and asked to provide an evaluation of the day. They were also asked to bring materials from their homes for the next day's training on soil amendment.





Figure 4: A-frame construction and laying out of ontour lines

### DAY TWO



Figure 5: Permagarden design and layout

#### Garden design and layout

On the second day the participants marked out contour lines, starting from the highest point of the garden. Each group started to plan the swales and berms to capture water and provide protection for the permanent beds to be dug across the slope. Participants dug the swales and built the berms, and dug planting pits at the ends of the swales to hold water and safely dispose excess water.

#### Local soil amendments

Participants were asked to list out traditionally existing resources in their locality. Among others, compost is essential to build up the soil's fertility, to improve its water holding capacity, and to promote plant health. A Im x Im compost preparation site was demonstrated to participants through collecting and placing locally available resources like animal manure, ash, charcoal dust, crop residue and leaves into a pile.

#### **Double digging**

The importance and the reasons for double digging were explained as allowing closer plant spacing, deeper root growth, and to retain more water. The trainees, as a group, double dug the permanent garden after dividing the beds into segments. The soil amendments (compost, wood ash, charcoal dusts and, egg shell) collected by the trainees were added into every segment.

### **DAY THREE**

#### Bio-intensive seed spacing and planting

The benefit of bio-intensive spacing in relation to the efficient utilization of the available resources and to maximize plant density was discussed with the participants. Triangular spacing was demonstrated in practice on the built permagarden, with participants planting cabbage, beetroot and onion seedlings.

Based on the four principles of water conservation, techniques including mulching, water recycling, and plastic water bottles were introduced. All the beds, berms and swells were mulched with grasses, and plastic water bottles were put between the planted seedlings.

#### **Review of agronomic practices**

The importance of protection to make the garden sustainable was discussed with the trainees. Some of the practices discussed were the addition of plant nutrition to the soil, watering, pest and disease control, proper plantation and fencing. Organic and integrated pest control methods were discussed and participants identified the locally available plants for pest control. In addition, preparation and application of liquid fertilizer from plant leaves and animal manure (tea) was demonstrated for participants. Moreover, some of the agronomic practices namely crop rotation, inter cropping and companion cropping were mentioned.



Figure 6: Bio-intensive planting

Figure 7: Water management: mulching and bottle irrigation

# **REVIEW OF THE TRAINING**

#### **Overall results**

- The participants' positive reaction towards the training was revealed through their active participation, and their enthusiasm for building permagardens in their backyards and training others. Pages 12-13 show their level of satisfaction with the training
- The skills and knowledge of the participants was enhanced, as evidenced by the realization of almost all of the expectations listed by the trainers.
- The participants developed detailed action plans to be implemented in the SOS farm as well as in the villages as a group.
- The permagarden (PG) built in the SOS compound will serve as a demonstration site.
- Further guidelines were given to some of the participants who could read English and the SOS office.

#### Lessons learned

- Practical demonstration helps farmers to learn and understand more than lecturing.
- Gardeners were willing and eager to adopt and adapt the PG techniques, as the technologies are low cost, simple, sustainable and manageable.
- Proper preparation and availability of the required materials fostered good facilitation and better time management.

#### **Challenges addressed**

- Moderating the training using the local language was necessary as Amharic proved challenging. It was also difficult to directly translate some of the technical words into the local language/context: With the help of some gardeners it was possible to enable the participants to understand using examples.
- Limited visuals and the absence of a video to illustrate PG practices to the gardeners: This challenge was managed by focusing on practical demonstrations rather than theoretical sessions.
- Shortage of time to deliver all the topics in line with the participants' pace: Addressed by minimizing the lecturing and engaging trainees in different group activities.
- Hot weather conditions: The participants were moved from the training hall to tree shades in the afternoon and practical sessions were carried out in the morning.
- Some women do not speak out: Providing them with group activities and encouraging them to talk with their neighbors helped.

#### Recommendations

- Follow up and monitoring support is needed from AKLDP or the TOT team in order to check whether the skills and knowledge given has brought about changes in the practices of the trainees.
- Translation of the manual and guidelines into the local language and revisions based on the local context.

# SATISFACTION SURVEY

Participants were given a satifaction survey to complete at the end of the training. The 20 participants gave the training

a total of 833 out of a possible 900 points—an average satisfaction rating of 92.6 percent.

Evaluation Questions	l (Strongly Disagree)	<b>2</b> (Disagree)	<b>3</b> (Neither Agree nor Disagree)	<b>4</b> (Agree)	5 (Strongly Agree)	Total score (percent)
I. The workshop improved my knowledge	5	0	0	4		76
2. The topics discussed are important to my work and relevant	0	0	0		19	99
3. My knowledge and skills on the key topics definitely improved and I will be able to use them in my work	0	0	0	2	18	98
4. The workshop gave me adequate opportunity to participate (speak up) during the sessions	0	0	0	3	17	97
5. The class theoretical sessions were effective	2	2			14	83

Figure 9: Satisfaction survey results

# SATISFACTION SURVEY (CONTINUED)

Evaluation Questions	l (Strongly Disagree)	<b>2</b> (Disagree)	<b>3</b> (Neither Agree nor Disagree)	<b>4</b> (Agree)	5 (Strongly Agree)	Total score (out of 100)
6. The practical sessions were effective and participator	0	0		4	15	94
7. I am satisfied with the design and delivery of the workshop materials	0	0	0	1	19	99
8. The pace of the workshop was appropriate	0	0	0	7	13	93
9. The training venue and refreshment service	0	2	0	0	18	94
X	-4	-3	-2	-	0	
Total score	-28	-12	-4	-23	0	833

### **ABOUT AKLDP**

The Agriculture Knowledge Learning Documentation and Policy (AKLDP) project is part of Feed the Future, the United States Government's global initiative to reduce poverty and improve food security and nutrition, especially for women and children. Ethiopia's Feed the Future portfolio consists of 16 core projects and a large number of smaller projects focused around three core components: agricultural growthenabled food security, linking the vulnerable to markets, and fostering a regulatory environment and private sector conducive to economic growth.

The AKLDP and its team of agriculture sector specialists — a mix of social scientists, agronomists, veterinarians, agriculturalists, nutritionists and food security specialists provides learning, documentation and policy support to those implementing Ethiopia's Feed The Future program: USAID, its implementing partners and the Government of Ethiopia. Through documenting good practice in the agriculture sector, supporting research and disseminating experience across the initiative, AKLDP helps to strengthen national agriculture sector policy, strategy and programming.

Despite its modest size, the AKLDP team provides learning support across Ethiopia's three main agro-ecological zones — high and low rainfall highland mixed farming, and lowland pastoral — covering issues related to agriculture, livestock and pastoralism. They also provide collaborative learning support on food security and nutrition, gender equity and climate change adaptation, as well as resilience programming — including learning and guidance on disaster risk management.

#### THE AGRICULTURE KNOWLEDGE, LEARNING, DOCUMENTATION AND POLICY PROJECT (AKLDP)

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