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Perma-garden at the household backyard, Gaz-Gibela (2017)

## PERMA-GARDEN IN SMALLHOLDERS' BACKYARDS TO COPE AND ADAPT TO CLIMATE SHOCKS

Perma-gardening aims to build the capacity of farmers to withstand and adapt to shocks and stresses in both wet and moisture stress areas, whether due to shortage of rainfall, drought or flooding. It allows producing perennial and seasonal nutritious crops throughout the year.

This is achieved by establishing a productive home garden and by preventing dependence on costly external resources. All of the materials used to establish and run a perma-garden are available locally. HELVETAS promotes perma-gardening in combination with nutritious and income generating crops.

HELVETAS follows a cluster-based target selection and offers theoretical and practical training for both women and men. Further, HELVETAS offers intensive technical support and monitoring to farmers in collaboration with Zonal and District Agriculture Offices.

Besides its contribution to healthier food consumption at the household level, a perma-garden plays a key role in diversifying and increasing household income from selected crops which fetch high market prices, such as garlic and gesho leaves, which sell for an average price of ETB 60 (2.25 USD/kg) for garlic and ETB 75 (2.6 USD/kg) for gesho. This is an average increase in income of 88 % over conventional crops such as sorghum, teff or wheat.

### Multi-dimensional benefits

- **Household nutrition:** Diversified diet.
- **Economic benefit:** Enhanced productivity and provision of high-value crops for sale on local markets.
- **Social empowerment:** Enhances the agronomic skills, builds confidence and supports women in particular through income generating activities.
- **Ecologically friendly:** Promotes water conservation and soil treatment using locally available resources.

« Thanks to perma-gardening and the ring-basin infiltration pit, we can even grow vegetables during the dry season. »

Ms. Worke Tsegaw Dehana Woreda, Amhara Region

## The technique of double digging

Double digging of the ground down to 50 cm in two steps: the lower layer of 25 cm soil is mixed with char, egg shell, ash, stocks, and coffee lees, whereas the 25 cm of topsoil is enriched with compost and manure.

A yield assessment of garlic was conducted to compare garlic yield from perma-gardening/double digging and conventional simple beds. In the conventional bed gardening, 57 quintals per hectare were registered whereas the perma-gardening (double digging) resulted in 125 quintals per hectare, which represents an average production increase of 119 %.

### Yield comparison of garlic in kg/m<sup>2</sup>

| Description                        | Mean yield/m <sup>2</sup> | No of sample |      |
|------------------------------------|---------------------------|--------------|------|
| Simple bed                         | 0.57                      | 9            | 0.12 |
| Perma-gardening/<br>double digging | 1.25                      | 9            | 0.41 |
| Total                              | 0.91                      | 18           | 0.45 |

Source: HELVETAS (2016)



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Beyond nutritious food crop production, the home-stead orchard development contributes significantly to **women's empowerment**. It provides enhanced access to and control over resources and increases the status of women; hence, it raises women's self-esteem and leads to mutual decision making at the household level.

Worke Tsegaw, a 29-year-old mother of four children, attended the practical training on how to construct a ring-basin infiltration pit, perma-gardening and compost making. The training sessions included agronomic practices focusing on planting cash crops and kitchen-gardening for improved nutrition.

"I have had a good harvest during the rainy season (2016), even a good production during the dry season thanks to supplementary irrigation and moisture conservation. We grew tomato, green pepper, head cabbage, Swiss-chard, garlic and gesho. In total, I sold vegetables for 1,380 ETB (50 USD) during the first year of production. Thanks to our homestead garden, we now consume more vegetables at home. From the sale, I have started a small business trading spices and coffee, and I have become a member of the Amhara Credit and Savings Institute. Now, I have my own income and do not depend on my husband for household expenditures, clothes for the family members and for the children's school expenses."

## CONTRIBUTION OF PERMA-GARDEN TO CLIMATE RESILIENCE

| Sustainable Land Management  | Access to Water   | Benefit at Household Level  | Climate Resilience  | Disaster Risk Management  |
|--|---|---|---|---|
| <input checked="" type="checkbox"/> Recharge of ground water<br><input checked="" type="checkbox"/> Retention of water<br><input checked="" type="checkbox"/> Soil fertility<br><input checked="" type="checkbox"/> Increase in biodiversity | <input type="checkbox"/> Drinking<br><input checked="" type="checkbox"/> Irrigation | <input checked="" type="checkbox"/> Increase in income<br><input checked="" type="checkbox"/> Diversification in production | <input type="checkbox"/> Absorptive<br><input checked="" type="checkbox"/> Adaptive<br><input checked="" type="checkbox"/> Transformative | <input type="checkbox"/> Prevent<br><input checked="" type="checkbox"/> Reduce<br><input checked="" type="checkbox"/> Prepare / Respond |