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Homestead gardens in drought prone areas in north-western Bangladesh

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Summary

Homestead gardening is a well-known practice in the rural areas of Bangladesh, creating opportunities for year-round income, even when other income sources fail particularly due to water scarcity and drought. Homestead gardens use the small raised areas (chalas) around the homesteads.

The management of close by homestead gardens benefits from using homestead wastes, sweepings and debris as organic matter, as well as from roof collection of irrigation water. Selecting vegetables and varieties which require less irrigation water enhances drought resilience.

Homestead gardens are a good practice from women in particular, who can manage activities and earn income with minimum support from their male counterparts.

Description

In the Barind Tract in Northwest Bangladesh tree species such as mango, mahogany, emblic (Indian gooseberry), pomegranate jackfruit, drumstick and palm are usually grown on the small raised areas (chalas) around the homesteads.

These areas can be easily turned into more intensively used homestead gardens by intercropping with hazard resilient vegetable varieties. The use of the chalas for homestead vegetable cultivation reduces on the one hand the likelihood of crop losses from seasonal water stagnation which is common in lowlands during rainy season; and on the other hand, the use of drought tolerant varieties reduces water stress during the long dry season. Homestead gardening increases moisture retention, improves soil fertility and crop yield and reduces surface runoff, thus halting soil erosion on the chalas. Roof water collection can provide water for small scale irrigation to bridge drought spells. The use of homestead litter, ash supplements and organic matter in the soil keeps insects away.

As the rain fed Barind Tract is mostly dominated by rice during kharif II (July to October) season, integration of homestead gardening within the farming system provides more varied nutrients, food supplements and thus helps ensure household nutrient security.

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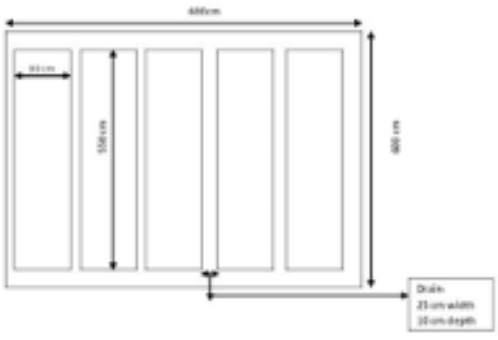
Since it is managed by women, homestead gardening in drought-prone areas contributes to gender equity within the climate change adaptation framework. Sometimes the surplus produced is marketed and thus serves as income diversification activity.

The objective of homestead gardening is to provide vegetables throughout the year, primarily for household consumption and thereby contribute to family nutrition. The use of drought tolerant tree and vegetable species reduces hazard exposure. Surplus vegetables may be sold in the market for additional family income, which increases household resilience and flexibility to better cope with potential hazard impacts.

1. Implementation of the Technology

Technical details of recommended set up of a homestead garden in drought prone areas are discussed below.

Figure 1. Layout of homestead vegetable garden



1.1 Lay out of the plot/bed

- Area of homestead garden is 36 m^2 (6 m x 6 m).
- No. of bed are 5 (in the north - south directions to ensure equal distribution of sunlight).
- The length of each bed is 550 cm and width of each bed is 90 cm.
- Width and depth of boundary drain are 25 cm and 10 cm, respectively.
- The height of the seedbeds will be 15 cm.

1.2 Other technical aspects

- Five recommended cropping patterns of vegetables may be followed for five beds so that diversified vegetables are available throughout for family consumption.
- A strong boundary fence is required to establish (with bamboo or other low-cost materials) to protect crops from cattle, goats, etc.
- In the boundary canal aroid and on the fence bitter gourd, country bean, yard long bean, sponge gourd can be grown.

1.2.1 Recommended cropping patterns during kharif I season (February-March)

- Bed 1: Radish/Tomato/Suitable Crop-Red amaranth- Indian spinach.
- Bed 2: Red amaranth+ Briangal-Red amaranth-Ladies finger.
- Bed 3: Spinach-Garlic/Red amaranth/ Suitable Crop-Stem amaranth-Red amaranth.
- Bed 4: Batishak-Onion/Carrot-Kolmishak-Red amaranth.
- Bed 5: Cabbage-Red amaranth- Bitter Gourd-Red amaranth.

Figure 2. Homestead gardens in drought prone areas in north-western Bangladesh

1.2.2 Recommended cropping patterns during kharif II season (June-September)

- Bed 1: Kangkong
- Bed 2: Brinjal

- Bed 3: Red amaranth
- Bed 4: Radish

Figure 3. Homestead gardens in drought prone areas in north-western Bangladesh

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2. Validation of the practice

This technology was tested in the mixed rainfed farming systems in north-western Bangladesh, in the agro ecological zone of warm humid tropics.

3. Further reading

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- Bangladesh Rice Research Institute (BRRI)

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4. Agro-ecological zones

- Tropics, warm

5. Objectives fulfiiled by the project

5.1 Women-friendly

Women farmers can manage activities of homestead gardens and earn income with minimum support from their male counterparts.

5.2 Pro-poor technology

By applying this practice, farmers manage to earn an additional income by selling surplus vegetables.

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