

## Details of Technology Inventory

- 1. Name of the institution:** Malda Krishi Vigyan Kendra
- 2. Name of the technology:** **Vegetables based Multi-tier Horticulture System**
- 3. Scientist associated:** Miss Samima Sultana (Subject Matter Specialist- Horticulture)
- 4. Problem statement-** Farmers generally cultivate seasonal crops. Hence, after a certain time they have no scope to earn more. Vagaries of weather many times spoil that scope of earning which aggravates their poverty. When farmers are planted single climber crop in bower system made by bamboo structure there most of the land remain unutilized. The nutrient of different soil layer remains unused. Farmers lack of technical knowledge of different cropping systems. In this situation Multi- tier cropping system opens a new door to earn from round the year as well as there is less risk of complete crop failure. Multitier cropping systems are dynamic interactive practices that better use of the production components such as soil, water, air space, solar radiation and all other inputs on sustainable basis to take full advantage of limited land resources. Minimizes risks of crop yield loss.
- 5. Description of technology-**  
At first a structure (about 6ft height) is made by bamboo on which climber crop like cucumber, bottle gourd, bitter gourd, snake gourd, dolichos bean are grown. In this system the tallest components have foliage of strong light and high evaporative demand and shorter components with foliage requiring shade and or relatively high humidity. Under the structure different vegetable crops according to their height can be grown. Under the structure land should properly ploughed and prepared plots and irrigation channels. The soil of plots mixed with fertilizer and manures according to crop requirement. Vegetables which are selected for multi tier cropping system like leafy vegetables (coriander, spinach, radish, amaranthus) tomato, brinjal, chilli and even elephant foot yam may also be grown. All growing space is used as crop fit together vertically or horizontally (tall, medium & short) and underground (deep-rooted and shallow-rooted plants). Crops can be grown according to market preference and seasons.
- 6. Applicability/ Situations:** The technology was conducted by Malda Krishi Vigyan Kendra at farmers' field of different block in Malda district, West Bengal, India. The site was located in sub-tropical humid climate with gangetic old alluvial soil, sandy clay loam texture, good water holding capacity, well drained, and with acidic to neutral reaction and moderate fertility status. From this technology increases the Income per unit area. It ensures a more evenly distribution of income and employment throughout the year due to harvesting of different crops in different seasons. Women's are highly interested to adopt this technology as entrepreneur in their home stead situation. This technology can be replicated for other district or other area also.

### 7. Economics/ Cost involved:

Area	Cost of cultivation(Rs/bigha)	Gross return (Rs/bigha)	Net return (Rs/bigha)	BC ratio
Farmers who followed the technology	14300	45700	31400	2.19
Farmers practice single crop	5400	13800	8400	1.55

The economic assessment for the technology was done on the basis of cost of cultivation, gross and net return, considering the cost of inputs and market price of the produce during the period of experimentation.

- 8. Impact and up scaling:** The technology is highly potential because it uses natural resources properly. Farmers are highly interested to adopt this technology because production per unit area of land, time and inputs can be increased with multitier cropping system and reduce the insecurity of monocropping.



