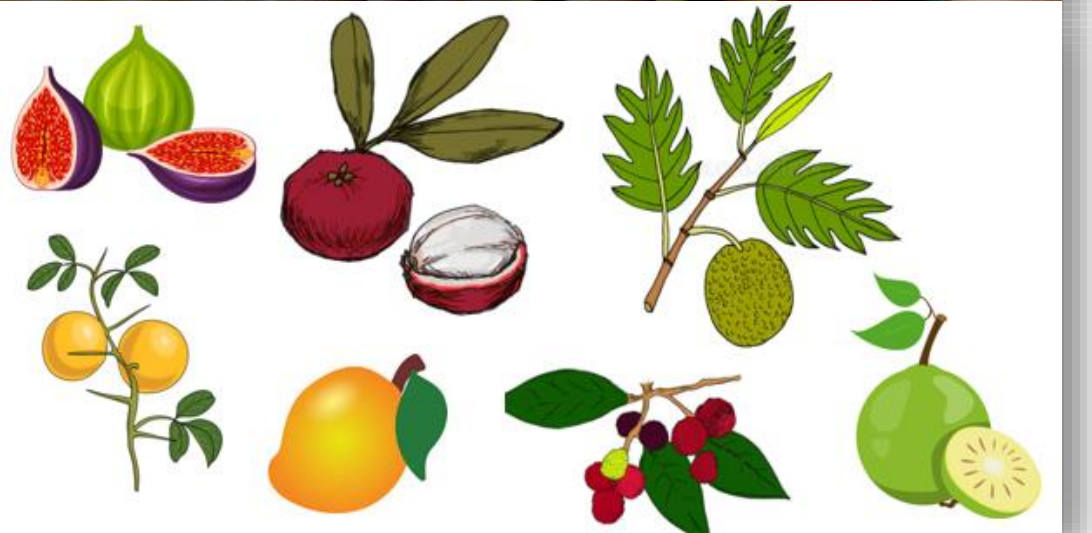

Testing different farming practices of fruit production aiming farm sustainability and environmental well being

Presenter
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1. Introduction to Project:

Title : Testing different farming practices of fruit production aiming farm sustainability and environmental well being

Implemented by : BAIF Development Research Foundation, **Location: Lakkihalli, Tal- Tiptur, Dist – Tumkur, Karnataka**

Model: High density plantation of Tropical Apple, Jackfruit and Dragon fruit with intercropping with various vegetables and fodders by using bio inputs produced through recycling of farm waste

Problem Statement	Justification
Monocropping	• Introduction of new fruit trees to the region (Dragon fruit and Tropical Apple) • Year round production through fruits and vegetables
Unmanaged use Agrochemicals	• Use of Bio Inputs in orchard management • Application of organic control measure for plant protection as a part of IPM • Recycling of farm waste
Risk – Climatic Uncertainties, Crop Failure	• Introduction of various intercropping models • Crop diversification
Water scarcity	• Use of System of Water for Agriculture Rejuvenation (SWAR) • Organic mulching
Supply of Quality Inputs	• Sustainable Nursery unit

2. Project Objectives:

1. Establish various climate-resilient fruit-based farming models integrating use of bio-inputs and efficient water management methods for small and marginal farmers.

2. Minimise the dependency on external inputs by recycling the farm waste.

3. Evaluate various diversified intercropping systems through raised-bed vegetable cultivation in fruit orchard.

4. Establish a nursery to supply quality planting materials to support sustainable fruit-based farming.

5. Evaluate the change in income through various fruit production systems while ensuring the nutritional security and environmental safety

3. Methodology and implementation approach (1):

3.1. Plantation:

- Research will be conducted on a 0.4 Ha
- Jackfruit - Intercropping with various vegetables
- Tropical Apple – High Density – 3 *2 m. Extra 416 plants per Ha.
- Dragon Fruit - Intercropping with some vegetables

- Introduction of Honey bee colonies
- Application of bio inputs that is sourced through recycling of farm waste
- SWAR drip irrigation will be installed in Jackfruit and Tropical Apple plantation to enhance water-use efficiency and build resilience.

3.2. Intercrops:

Vegetables :

✓ New crops and other – Strawberry, and other creepers

Fodder :

✓ Legume and cereal fodder crops for balanced nutrition

3. Methodology and implementation approach(2):

3.3. Nursery:

- Sustainable nursery to support the trials and farmers nearby with quality assured input supply
- Raw material used for nursery will be from the recycling of the farm waste

3.4. Climate Smart Practices :

- Building Soil Health – Application of various bio inputs
- Integrated Pest Management
- Recycling - Farm waste will be recycled
- SWAR – Method of irrigation to optimise the water use efficiency
- Build and enhance ecosystem - Nectar plants, Honey Bee colonies

3.5. Extension / Scaling :

- BAIF training centre – Demonstrate the best model of the orchard management
- Training module will be prepared for regular training sessions
- Documentation of these practices and results / outcomes will be prepared.
- Farmers and other stakeholders

3.6. Data Collection :

- Plant performance – Canopy developed and Fruiting (all crops)
- Growth and Yield parameters
- Pest / Disease incidences
- Nutritional Analysis
- Soil Parameters

4.Social and nutrition impact pathway – Project outcomes/Impact:

- The project interventions will ensure the year-round availability of the diverse fruits and vegetables, thus ensures the nutritional security
- Model will demonstrate the best practices for small farmers - Involves other family members
- Lower down the spending on the fruits and vegetables
- Knowledge and capacity budling of farmers through training and visit
- Enhance income per unit area as the model ensures optimal land utilization and input use
- As income enhances, quality of life and social status will be improved
- Model is easy to adopt by small farmers *(80.17% -Small and Marginal Farmer*)*

* Source : https://www.nabard.org/auth/writereaddata/tender/pub_2102250728421375.pdf

5. Environmental and climate advantages

- Building Soil Health:
  - Use of Bio inputs resulting in reduction of agrochemical use
  - Improve water holding capacity
  - Enhances microbial activity - Intercrops, Biochar application etc.
  - Enhance nutrient uptake

- Building Ecosystem in and around the farm :
  - Lowers the dependency on external inputs
  - Enhances the interaction among the factors of production
  - Increased number of pollinators
  - Judicial use of agrochemicals and application of IPM

- Building Farm Resilience :
  - Use of diverse tree species and intercrops - Contributing to conserve the Biodiversity
  - Integration of livestock – Fodder as intercrops and dung recycling along with farm waste

- Water Use Efficiency:
  - System of Water for Agricultural Rejuvenation (SWAR) will enhance the water use efficiency

6. Scaling, sustainability and cost efficiency:

- Scaling Strategy :
  - The successful model will be replicated through the various BAIF programmes
  - Lakkihalli campus is training center
  - Demonstration model for the ongoing trainings at campus
  - Knowledge transfer and cross learnings
  - Capacity to replicate to other locations as well
  - Proven model will be relocated to BAIF other campuses and nearby KVK's.

- Sustainability post project period:
  - As the plantation is on BAIF's campus, it will be maintained by campus
  - As it involves the integration of intercrops makes this model resilient
  - Value addition and value chain

- Cost Efficiency :
  - Bio-input production and nursery units
  - Small scale model easy to replicate

7.Budget summary and risk and mitigation strategy:

Particulars	Year 1 (₹)	Year 2 (₹)	Year 3 (₹)
Dragon Fruit Cultivation	611,000	71,000	71,000
Tropical Apple Cultivation	441,000	71,000	71,000
Jackfruit Cultivation	226,400	52,400	52,400
Water Resource / Irrigation Facility	500,000	-	-
Project Leader / TPE	70,000	80,000	90,000
Research Officer	450,000	495,000	544,500
Field Assistant	180,000	180,000	180,000
Documentation & Reporting	10,000	12,000	15,000
Nursery Infrastructure	140,000	-	-
Nutritional Analysis	-	-	105,000
Subtotal	2,628,400	961,400	1,128,900
TMC (5%)	131,420	48,070	56,445
Total	**2,759,820**	**1,009,470**	**1,185,345**
Grand Total (3 Years)	**4,954,635**		

- Risk and Mitigation Strategy :

  - Climatic Uncertainties :
    Includes climate smart practices and water use efficiency measures to tackle with biotic an abiotic stress.

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Thanks