



BAIF Development Research Foundation

Committed to Sustainable Development of Rural India

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PROGRAMMES & OUTREACH

PROGRAMMES

Livelihoods

Livestock Based Livelihoods | Farm Based Livelihoods
Water Centric Livelihoods | Rural Non-Farm Sector Based Livelihoods



Social Enterprises



Research & Incubation



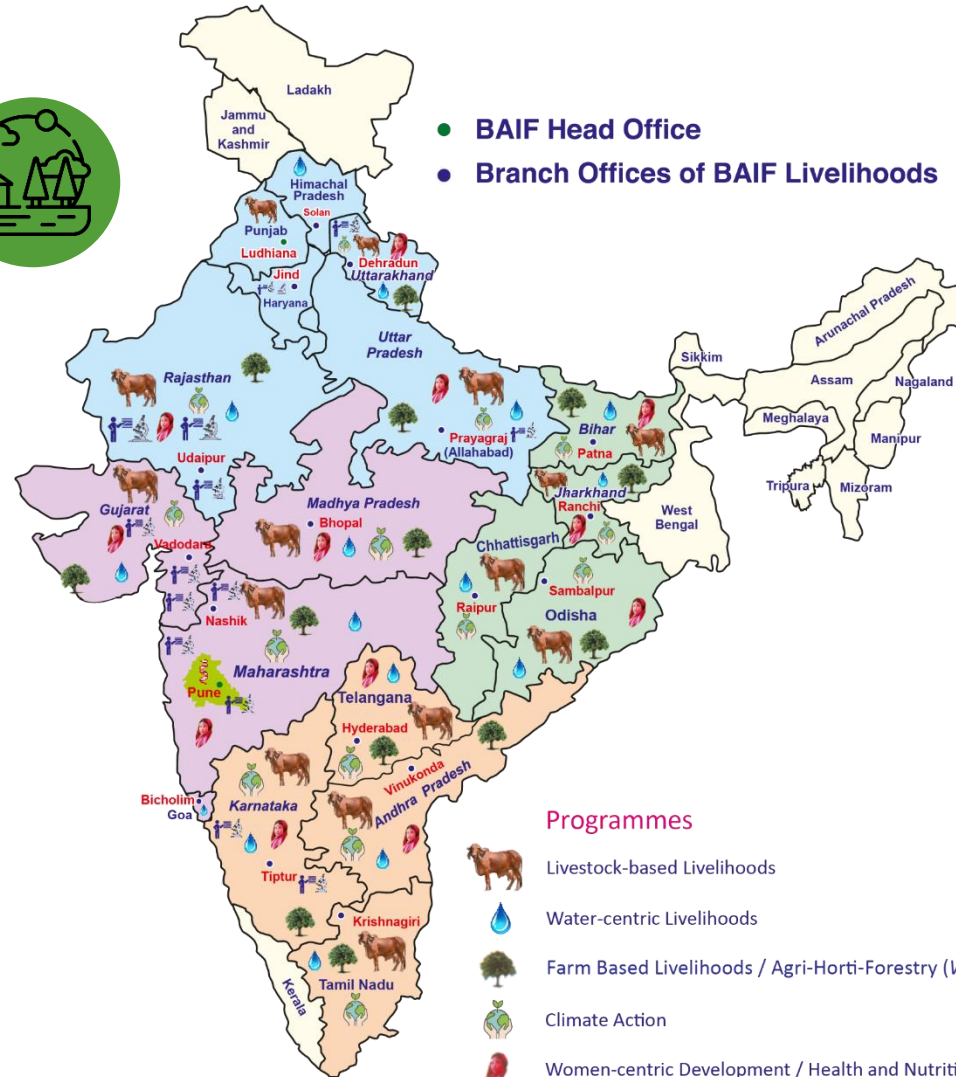
Climate Action



Women Centric Development



Health and Education



- BAIF Head Office
- Branch Offices of BAIF Livelihoods

Programmes

- Livestock-based Livelihoods
- Water-centric Livelihoods
- Farm Based Livelihoods / Agri-Horti-Forestry (*Wadi*)
- Climate Action
- Women-centric Development / Health and Nutrition
- BAIF Central Research Station
- Semen Laboratory
- Research, Demonstration and Training Campuses

OUTREACH

17 States

348 Districts

61 Aspirational Districts

0.1 Million Villages

4.0 Million Families

Background:

- **Area under fruit crops in India 7.04 million hectares**
- **10% of worlds share in fruit production**
- **Tribal regions of India frequently experience a deficit in fruit consumption**

- **Significant export earning potential, Indias share (around 1%)**
- **Indias share valued at nearly \$1.145 billion**
- **China's total fruit exports: approximately \$5.98 billion**

- **Significant fruit losses: 6-15% (poor post-harvest infrastructure)**
- **~120.8 m ha (36.7%) is degraded Land**
- **Converting degraded lands to Agroforestry/ fruit plantations: mitigate the requirement of fruits, promote livelihoods and increase trees outside forests.**



Advancing Fruit Cultivation through *Wadi*
For carbon sequestration & livelihoods of small and marginal farmers



Agroforestry Systems (Wadi)

For carbon sequestration & livelihoods of small and marginal farmers

Evolution of Wadi Programme

1980

- > Participatory assessment
- > **Concept**
- > **Initial demonstrations** (34 families)
- > Need-based components added
- 5000 families**

1990

- > **Crystallized concept**
- > Early impacts visible
- > Farmer Organizations
- > **Support of NABARD, KfW, EU**
- > 20,000+ families, 5 states

2000

- > **Adoption by State Governments & Tribal Development Department**
- > NABARD launched **Tribal Development Fund**

2010

- > BAIF as **Resource Support Organization**
- > Replication in 25 states
- > Mentioned in **Agroforestry Policy of India**

2020

- > Discussed at **World Congress on Agroforestry, COP 27**
- > 2 Lakh families BAIF programmes (5 lakh plus families under TDF, NABARD)

Agroforestry Systems (Wadi)

For carbon sequestration & livelihoods of small and marginal farmers

Components of Wadi Programme

**Horticulture
(Fruit) &
Forestry Tree
Plantation**

Intercrops

**Value Chain
Development/
Fruit
processing**

**Sustainable
Livelihoods
through Wadi
Initiative**

**Water
Resource
Development**

**Short- Gestation
High
Remuneration
Activities**

**Soil & Water
Conservation
& Soil
Enrichment**



Agroforestry Systems (Wadi)

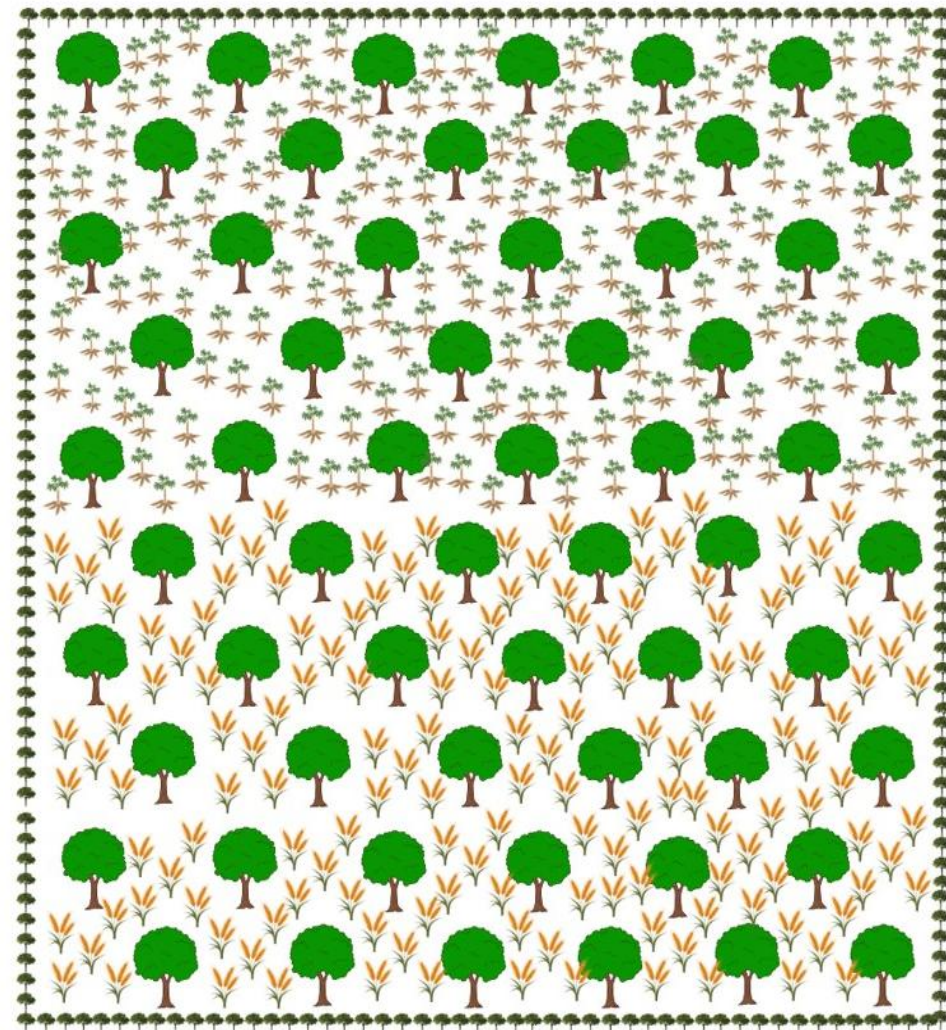
For carbon sequestration & livelihoods of small and marginal farmers

Horticulture (Fruit) and Forestry-Based Tree Plantation

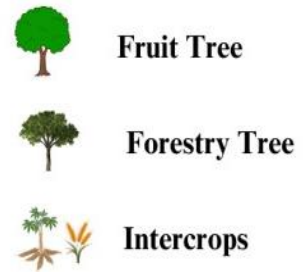
- Fruit trees: 2 types: 50 to 60
- Forestry trees on periphery: 250 trees
- Species selection

Intercrops: Mainly Legumes

Layout Drawing of Wadi Model



Wadi Size: 0.3-0.4 ha
Fruit Trees: 60
Forestry Trees: 200



Agroforestry Systems (Wadi)

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Soil & Water Conservation; Soil Enrichment

➤ Site Specific Soil Conservation

- Trench cum Bund
- Tree platform

➤ Soil Improvement practices

Organic practices: Green Manuring, Compost application, In-situ Composting

➤ Water Efficient Technologies



Tree Platform



Trench cum Bund

Agroforestry Systems (Wadi)

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Water Resource Development

- **Decentralized, Small and Micro-Water Resources:** Springs, Group wells, Jalkunds, Check Dams
- Group based Lift irrigation
- Water availability: **Drinking & Protective Irrigation** of Wadis



Solar Lift-Irrigation



Farm Pond



Check Dam



Spring Development

Agroforestry Systems (Wadi)

For carbon sequestration & livelihoods of small and marginal farmers

Short Gestation High Remuneration Activities:

- For Nutrition & Income Security
- Vegetables/ tubers
- Trellis-based Vegetable Cultivation
- Floriculture
- Non-Timber Forest Produce



Agroforestry Systems (Wadi)

For carbon sequestration & livelihoods of small and marginal farmers

Outcomes

Livelihoods

- Short-gestation Livelihoods & Resource base for Sustainable Long-term Livelihoods
- Doubling to multi-fold increase of baseline Income
- Increase in Farm diversity and availability of fruits
- Improved resilience to Climate and Market Shocks
- Distress Migration Checked → Improved Quality of Life

Nutrition

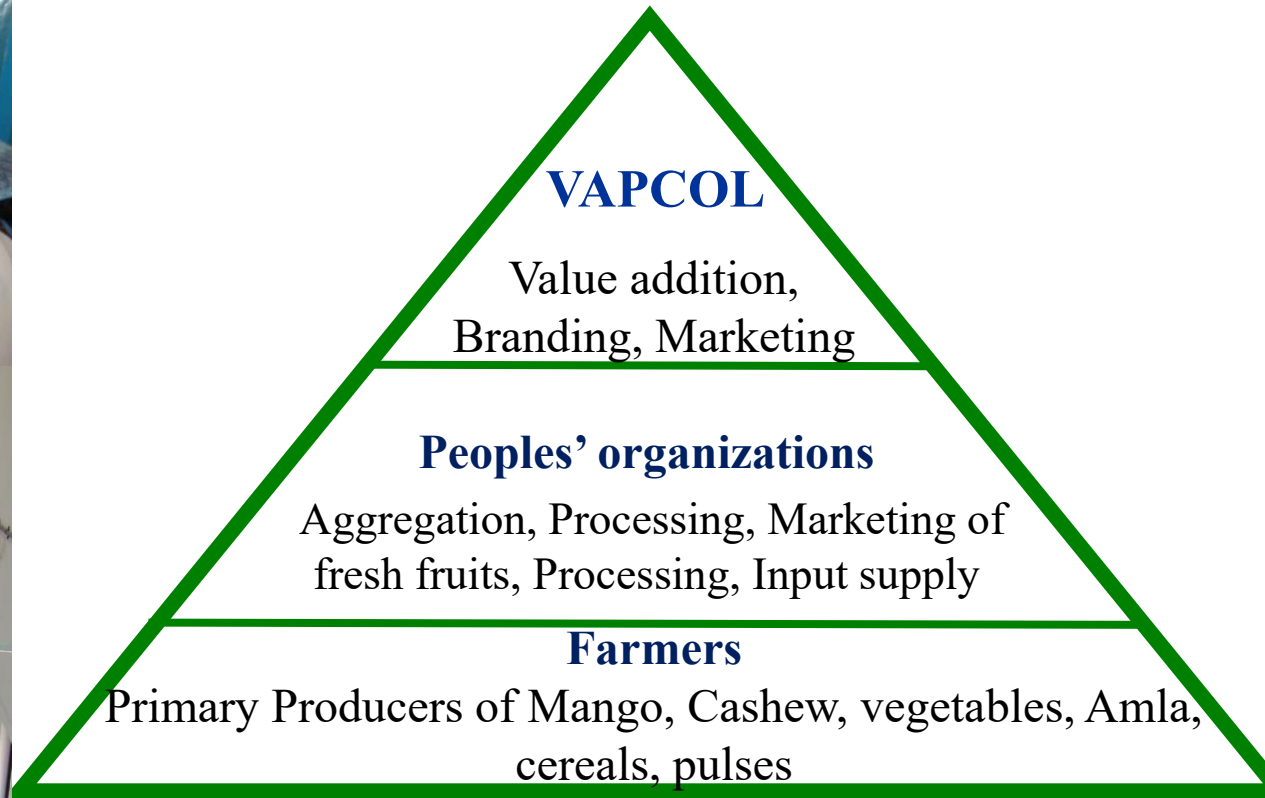
- Improved availability and consumption of fruits & vegetables



Agroforestry Systems (Wadi)

For carbon sequestration & livelihoods of small and marginal farmers

Value-Chains Development: VAPCOL (Vasundhara Agri-Horti Producer Company Limited)



VAPCOL: BAIF promoted Farmer producer Company

- 56 FPOs in 7 states; 40000 farmers
- **Integrated value chains**
- Branding “**VRINDAVAN**”



Agroforestry Systems (Wadi)

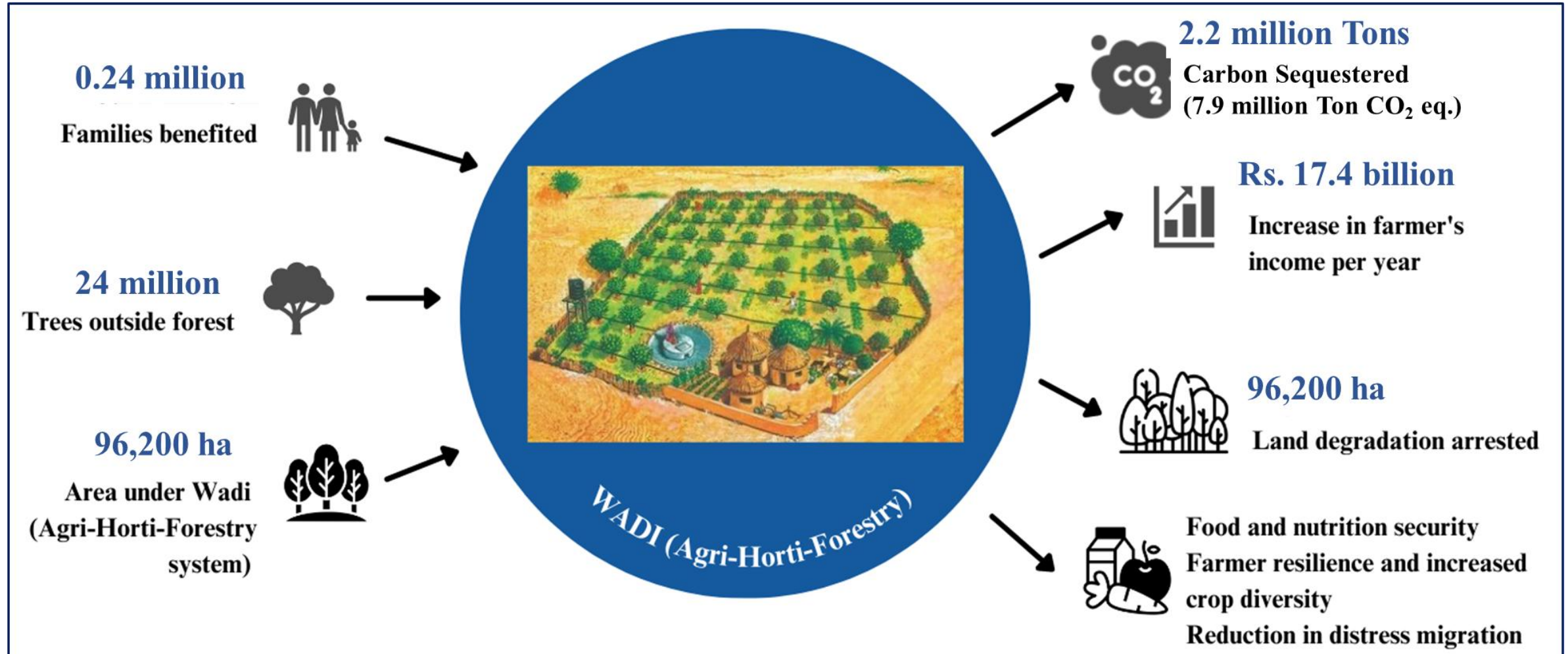
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Environmental Impacts

- Improved Soil Health
- Reverses Land Degradation
- Carbon Sink: sequesters 23 tC/ha



BAIFs Tree Based Farming Model: Agri-horti-forestry (Wadi)



Replication: Wadi model scaled up in 29 states and Union Territories with the support of NABARD.

Agrobiodiversity Conservation: Reviving and mainstreaming Indigenous crop varieties



THE FARMING MONK
for the discerning consumer

- Native Rice Variety
- Direct from Farmer
- Organically Grown

Price 1kg

Extremely Rare Rare Spare

State wise Promoted Fruit trees (2024-25)

Sr	State	Coverage (HH)	Promoted Fruit trees
1	Maharashtra	122101	Cashew, Mango, Guava and Jackfruit
2	Gujarat	43150	Cashew, Mango, Guava, Dates
3	Madhya Pradesh	9800	Mango, Guava, Nagpur Mandarin, Acid Lime, Drumstick and Custard Apple
4	Rajasthan	31332	Ber and Gunda
5	Karnataka	22607	Mango Cashew, Sapota, Arecanut, Acid Lime, Coconut, Coffee and Jackfruit
6	Uttar Pradesh	4922	Mango, Guava, Apple Ber and Amla
7	Uttarakhand	1367	Mango and Guava
8	Andhra Pradesh	252	Mango, Guava, Acid Lime, Sweet Lime and Pomegranate
9	Telangana	553	Guava, Sweet orange and Mango
10	Tamil Nadu	62	Mango and Coconut
11	Bihar	1020	Mango, Guava
12	Odisha	777	Mango, Acid Lime, Cashew, Apple Ber, Pomegranate and Papaya
13	Jharkhand	3120	Mango, Litchi, Acid Lime, Ber, Guava, Papaya and Drum stick
14	Chhattisgarh	250	Mango, Apple ber and Acid Lime
	Total	241313	

Research Gaps

- Regional **customized high-density** plantation models
- **Optimizing Fruit species and intercrop** models

- **Quality planting material**; Reducing **cost of grafted & tissue culture plants**
- Availability and **Propagation techniques of indigenous fruit** varieties

- **Yield Gaps/ Yield Improvement Measures**
- **Pest and Disease Management** through **environment friendly measures/ Residue free production**

- **Resilience against Climate Change** (Resilient Varieties and Practices)

- Nutrient management (especially **micronutrients and their impacts on yield** and quality of produce)
- **Water use efficiency** (More Crop per Drop of Water)

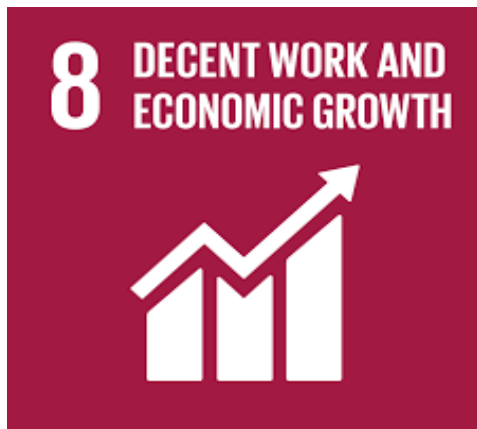
- Reduction of **crop losses**
- Reduction of **post-harvest losses/ handling and storage** practices

- **Nutrition based varietal** selection

Agroforestry Systems (*Wadi*)

For carbon sequestration & livelihoods of small and marginal farmers

Contribution to Sustainable Development Goals



Thank You!