



## Underutilized Wild Fruits for Nutrition Security: Profiling, Public Health Impact, and Community Access in Assam's Upper Brahmaputra Valley



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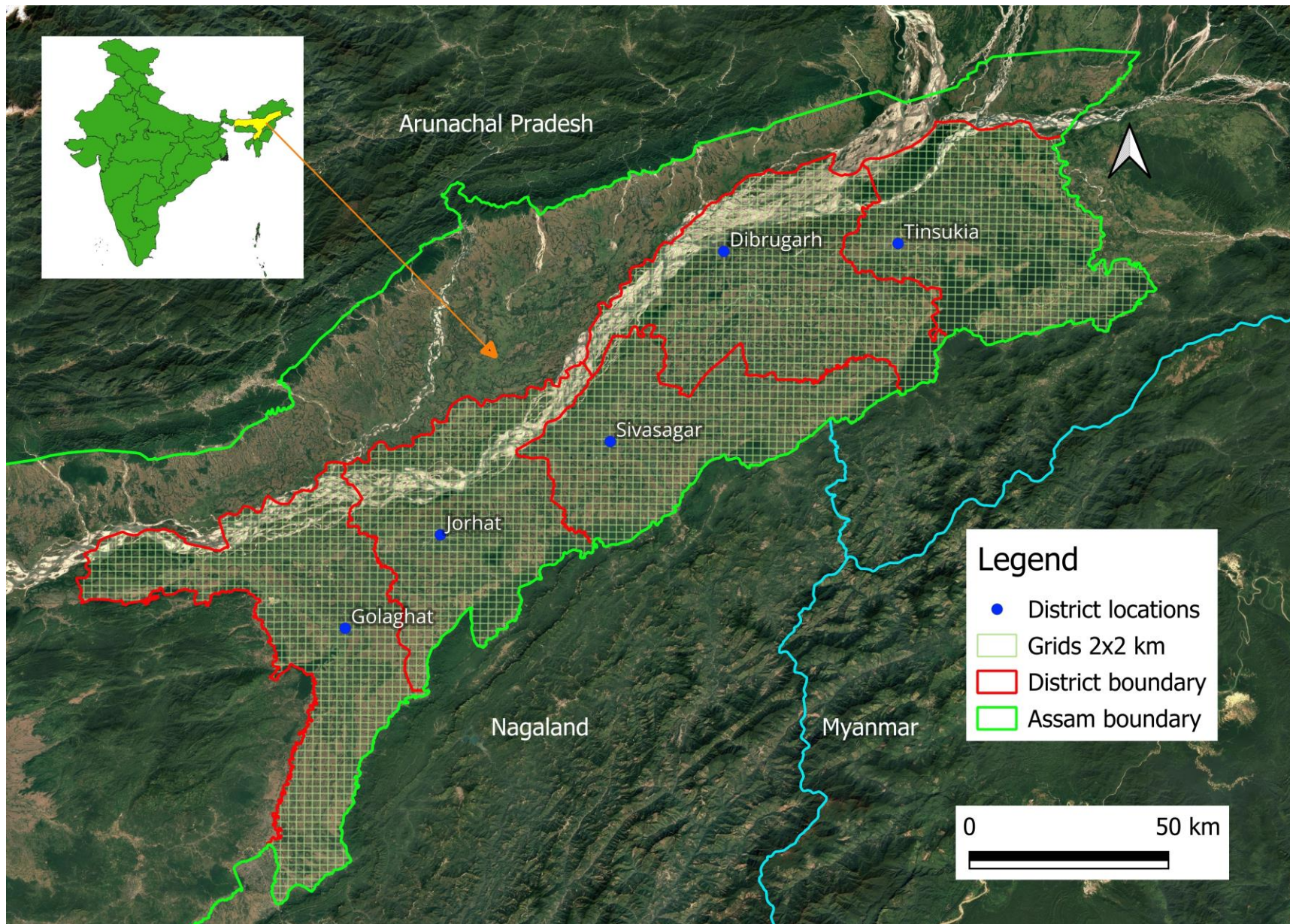
# 1. Introduction to project: Project Site



## Lead Organization



## Major Partners



# 1. Introduction to project:

- The **Upper Brahmaputra Valley (UBV)**, part of the **Indo-Burma Biodiversity Hotspot** and one of the last northern lowland tropical and semi-evergreen forest regions diversity (Proctor et al., 1998), has very limited documentation on the nutritional value of its rich wild fruit
- At present, ***Bari system*** (Traditional homestead gardens) are the **last remnants** of lowland tropical and semi-evergreen forests **outside protected areas in UBV**
- The *Bari* systems are broadly categorized into **community *Baris*** and **private *Baris*** in UBV.
- Historically, from the Ahom dynasty to the post-independence era, *Bari* system (homestead gardens) have acted as key repositories of wild edible fruit diversity
- Micronutrient deficiencies very high: Anaemia-**Women 70%** (vs 57% national) ; **Children 68%** (vs 67% national)
- These fruits can help reduce **hidden hunger** but remain underused due to **low awareness and poor market access**

This project seeks to maximize the potential of these fruits through understanding **HHDS status, nutritional profiling, Spatial mapping and community-led value addition.**

## 2. Project Objectives:

1. Identification and Nutritional profiling of 8–10 underutilized wild fruits in UBV
2. Spatial mapping of fruit hotspots & *Bari* system in UBV
3. Create sustainable harvesting & marketing models: Local consumption pattern, assess their role in improving dietary diversity
4. Develop an open-source information platform
5. Promote consumption through community campaigns and behaviour change initiatives in UBV



# 3. Methodology and implementation approach(1):



## 1. Spatial Mapping:

- Field surveys (market survey and Household survey)
- Mapping homestead gardens
- Secondary data collection from Desk reviews, KVKs, and line departments
- Household Dietary Diversity Score (HDDS)

## 2. Nutritional Profiling:

- Laboratory analysis of macro- and micronutrients, antioxidants, polyphenols, and bioactive compounds
- Generates the nutrition information stack for communities, policymakers, and digital dissemination

## 3. Digital Platform

- Open-source mobile app/dashboard: Linked with *xorukheti* dashboard/app
- Provides fruit-specific nutrition facts, seasonal availability, recipes, and market linkages
- Enable public health and decision-support tool

## 4. Community Pilots (SHG)/CBO):

- Establish value-addition units in 5 selected sites  
Activities: drying, juicing, powdering, low-cost preservation, wine making *etc.*
- Enhances income generation and reduces post-harvest loss

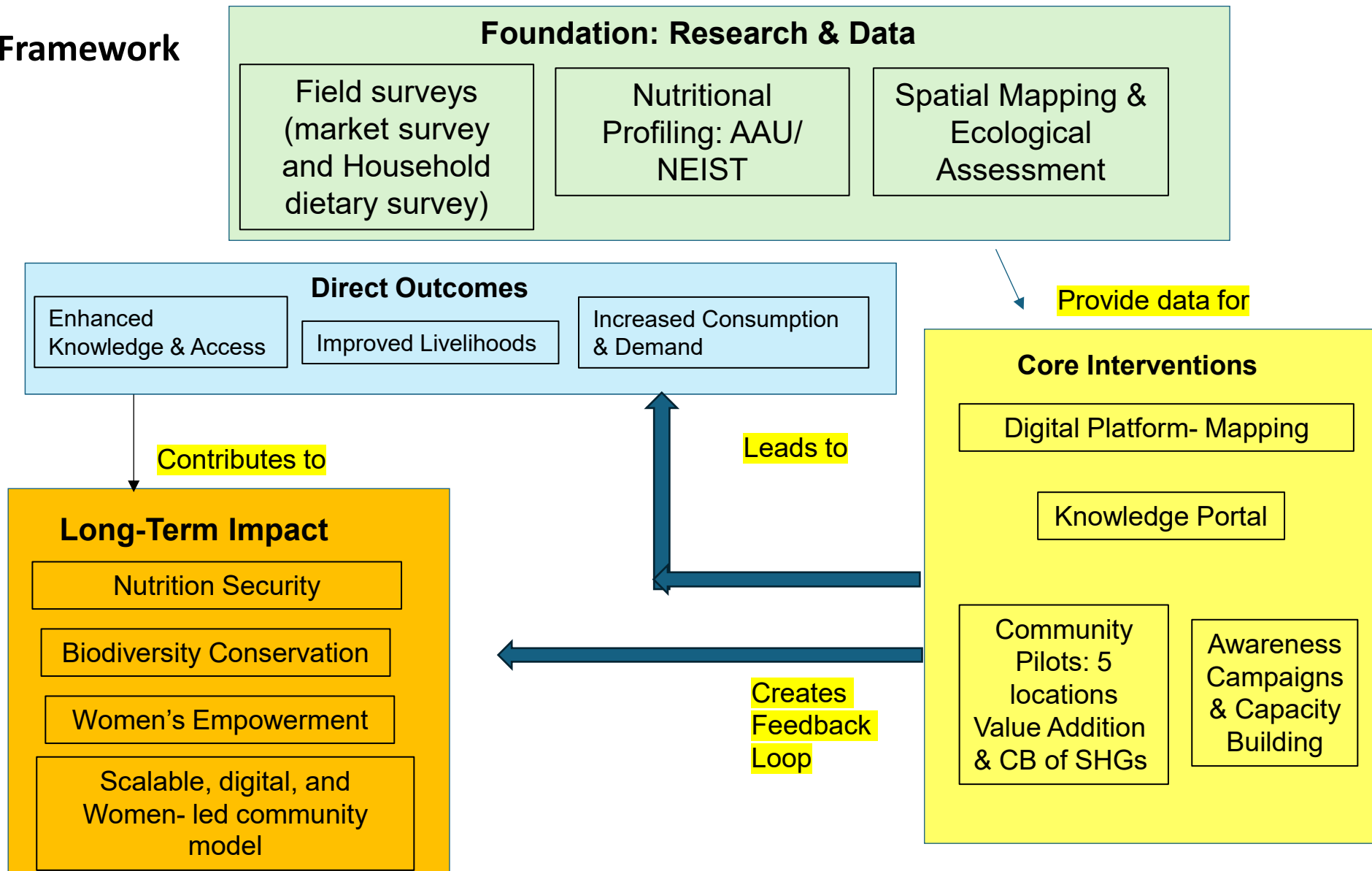
## 5. Awareness Campaigns/Capacity Building: Through SBCC Model: 20 Nos.



# 3. Methodology and implementation approach(2):



## Conceptual Framework



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



## Inputs

1. Market survey and HHDS
2. Nutritional profiling of wild fruits
3. Spatial mapping of wild fruit hotspots in UBV
4. Digital platform development
5. SHG/CBO capacity building

## Activities

1. Survey and data collection
2. Mapping of fruit hotspots
3. Capacity building  
Processing & value addition-5 locations
4. Behaviour Change campaigns

## Outputs

1. Nutritional databases
2. Spatial maps
3. Selection of 100 *Bari* (homestead gardens)- Based on Diversity of Wild Fruits & Frequency of Consumption
4. Open-source dashboard-Linking to *xorukheti*
5. Women led community models: 5 locations

## Outcomes

1. 500 households adopt wild fruits through awareness campaigns & nutrition education
2. Identification of 100 *Bari* (homestead gardens) for nutrition security
3. 200 SHG women manage 5 community processing units for value addition
4. 1 open-source digital platform

## Impact

1. 10–20% rise in household dietary diversity
2. 5% reduction in micronutrient gaps
3. 200+ women in SHG-led value addition
4. 200 households gain improved income
5. 5 community units sustainably operating
6. 100 *Bari* (homestead gardens) for nutrition security
7. Profiling of 8–10 wild fruit species
8. Scalable model for 5,000+ households in UBV & NE India

# Slide 6. Environmental and climate advantages

1. **Conserve biodiversity:** Protect 100 homestead gardens (~500 ha) for nutrition and biodiversity security, safeguarding 8–10 priority wild fruit species
2. **Climate Resilience:** 10–20% improved dietary diversity + 100 mapped *Bari* (Homestead garden) boost agro-biodiversity, nature positive and climate resilience
3. **Ecosystem Restoration:** 8–10 priority wild fruit species conserved + 200 SHG women enhanced knowledge and awareness
4. **Scalable Adaptation:** Model for 5,000+ households + 5 sustainable community units builds climate-adaptive nutrition systems

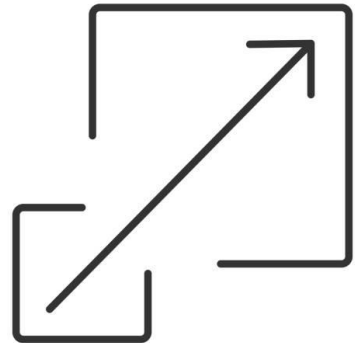


## 7. Scaling, sustainability and cost efficiency:

**Scaling Efficiency:** Model validated in 100 homesteads expands to 5,000+ households across region via SHG networks and digital hotspot maps, achieving 50x coverage at <2x cost

**Sustainability Mechanism:** 5 community units + 200 women-led value addition ensure autonomous operations by Year 3

**Cost Efficiency:** 200 households gain income from zero-input wild fruits + 5% micronutrient gap closure via local *Bari* produce, reducing external supplementation costs by 25-30%



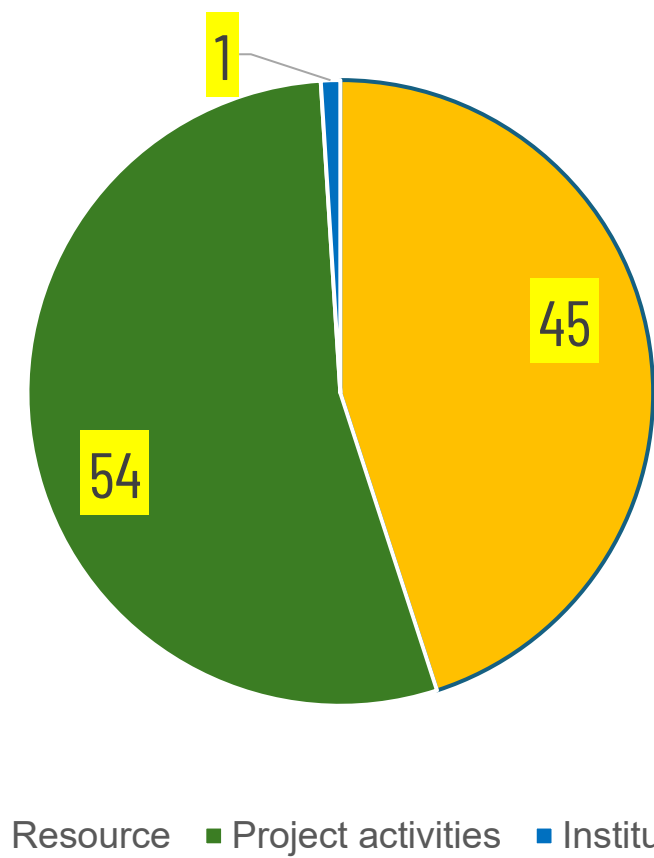
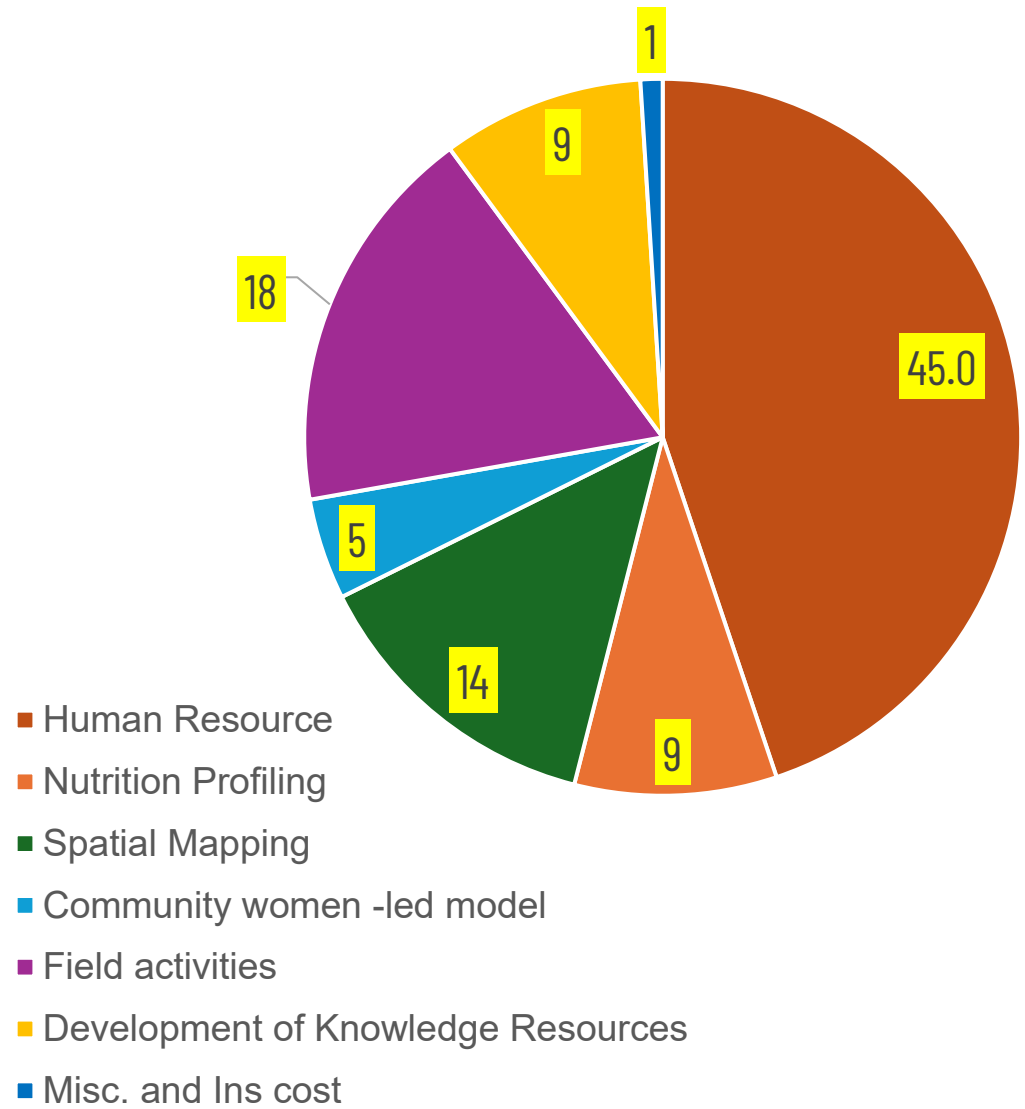
# 8. Budget summary and risk and mitigation strategy (1):



## Total project Cost for 3 years

Total (INR)	Total (USD)
4,369,376	49,822

## % Sharing of total project cost in different Heads



# 8. Budget summary and risk and mitigation strategy (2):



## Risk and mitigation strategy

Probable Risk Area	Risk Description	Mitigation Strategy
1. Community Participation	Limited interest or cultural barriers in adopting wild fruits	Behaviour change campaigns, SHG leadership, community demonstrations, local press coverage, social media influence
2. Fruit Availability	Seasonal scarcity or decline due to land-use change	Awareness on sustainable harvesting, homestead planting, Community led monitoring
3. Digital Literacy	Low digital literacy among community members	Simple digital interface, local-language support, training via NEATEHUB & SHGs
4. Market Linkages	Difficulty selling value-added products	Linkages to local markets, online platforms, FPOs, NEATEHUB support
5. Climate Variability	Extreme climate events affecting fruit production	Promote hardy wild fruits and mixed-species in <i>Bari</i> (homestead gardens)



**Thanks**