



CFI Research Grant Planning Workshop

16-18 June 2026
Jain Hills, Jalgaon

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19-11-2025

1. Project Snapshot



- **Project title:** Collection, Conservation and Morpho-phenological Characterization of Avocado Germplasms found in Sikkim,”
- **Institution:** College of Horticulture, Bermiok, Central Agricultural University (Imphal) Namchi-737134, Sikkim, India
- Principal Investigator: Dr Yamuna Pandey
- Project duration: 3 Years
- Budget: 25 Lakh (\$27,472.53)
- Project location(s): Sikkim (Namchi, Soreng, Mangan, Gangtok, Gyalsing & Pakyong)

2. Landscape (Agro ecological context)

- The proposed project area falls within the subtropical to mid-hill zones (800–1,800 m amsl), where climatic conditions are highly suitable for avocado cultivation.
- Temp: 10 -30 ° C
- Rainfall: 1500 to 3500 mm
- High relative humidity and frost free conditions
- Acidic soil, rich in organic matter, well-drained, and suitable for perennial fruit crops.
- Organic Farming practices.

Key challenges being addressed

- ✓ Unavailability of quality planting material and services.
- ✓ No systematic commercial orchards established so far.
- ✓ Lack of systematic conservation and documentation.
- ✓ Absence of morpho-phenological data
- ✓ Insufficient Technical Knowledge
- ✓ Risk of genetic erosion

Target beneficiaries

- Small and marginal ST, SC & OBC farmers.
- Women farmers belonging to ST & SC households.
- Unemployed youth interested in horticulture-based entrepreneurship and self-employment.



PROJECT LANDSCAPE

- The project landscape offers significant potential for integrating avocado cultivation into existing farming systems due to the crop's adaptability to hill ecosystems, suitability under organic production systems, and growing market demand.
- The intervention will focus on orchard establishment, quality planting material production, capacity building of farmers, and strengthening market linkages to develop a sustainable avocado value chain in the state.



3. Year-1 Implementation plan



Component	Activities	Target (Year 1)	Expected Output
Multiplication of Avocado Germplasm	Multiplication of 21 geo-tagged avocado germplasm accessions collected from different districts of Sikkim through vegetative propagation.	2000 grafted plants 6 district	Establishment of a Decentralized gene bank for conservation of collected avocado genetic resources.
Nursery Development Activities	Since the College of Horticulture, Bermiok already has a well-maintained avocado nursery, the project can focus on strengthening and expanding nursery activities rather than establishing a new nursery.	Skill-based training programmes conducted for farmers and unemployed youth on avocado cultivation, propagation, and orchard management.	Mass multiplication of Grafted avocado will be produced for distribution to farmers of the region
Demonstration Sites	Establishment of decentralized field gene bank demonstration plots for conservation and utilization of avocado genetic resources will be done at farmers field.	6 (1 in each district)	Conservation of genetic resources for future crop improvement.
Capacity Building Programmes	Training Programmes, Field Days, Awareness Camps, Input Distribution Programme	10-12 programmes (Need Based)	Skill Enhancement and empowerment of youth and farmers
Target Community Engagement	SC,ST, Youth, Women, SHG, FPOs	300 householed	Area expansion in Fruit farming

4. Fruit Species and production models

Morphological Diversity in Fruit Traits of Avocado Germplasm in Sikkim.



YMP-01



YMP-02



YMP-03



YMP-04



YMP-05



YMP-06



YMP-07



YMP-08



YMP-09



YMP-10



YMP-11



YMP-12



YMP-13



YMP-14



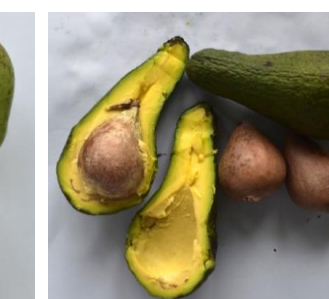
YMP-15



YMP-16



YMP-17



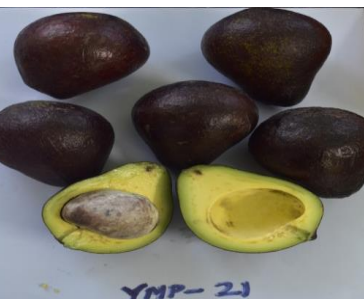
YMP-18



YMP-19



YMP-20



YMP-21

4. Fruit Species and production models



Key fruit species promoted: Avocado (21 No of accessions)

Production systems to be demonstrated:

- *ex. Homestead orchards (Decentralized Field Gene Bank)*



5. Year-1 Targets and deliverables :



Key Performance Indicator	Target (Absolute number)
Villages covered	6
Households reached	180 (30 in each villages)
Women beneficiaries	100 (ST/SC)
Youth beneficiaries	80 (ST/SC)
Trees to be planted	3000 (15 Plants Each farmer)
Fruit species promoted	1 (Avocado)
Trainings planned	6
Nurseries established	1 (Strengthening of existing nursery at COH, Bermiok)

6. Collaboration Opportunities (Offer and Ask)



What we can offer	Support we need
Technical guidance on organic avocado production	Monitoring, Evaluation and Learning (MEL) support for tracking project outcomes and impacts.
Existing nursery facilities and mother blocks at COH, Bermiok.	Facilitation of market linkages for avocado growers, FPOs, and producer groups.
Technical expertise on propagation protocols.	Nutrition monitoring and assessment to evaluate project contributions to household nutritional security.
Scientific guidance for establishment and management of decentralized field gene banks.	Assistance in establishing partnerships with government agencies, research organizations, and private-sector stakeholders.
Farmer Empowerment and Capacity Building	

7. Baseline, MEL and Next Steps :



Component

Key Activities

Baseline

Conduct survey of existing avocado germplasm, identify beneficiary farmers, assess current cultivation practices, map suitable sites for field gene banks, and document socio-economic status of target households.

Monitoring, Evaluation and Learning (MEL)

Monitor nursery production, survival and growth of planted germplasm, track farmer participation and training outcomes, document lessons learned and success stories, and conduct periodic review meetings.

Next Steps

Strengthen avocado nursery at COH, Bermiok; establish decentralized field gene banks; distribute quality planting materials; conduct capacity-building programmes; and develop market and stakeholder linkages for long-term sustainability.

8. Budget summary, risk & mitigation strategy:



Category	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Personnel (Project Assistant @ Rs. 25,000/month; consolidated)	300000	300000	300000	-
Planting material and field trials	200000	300000	100000	-
Infrastructure (if justified)	-	-	-	
Capacity building and awareness workshops	80000	100000	20000	50000
Travel (only project related)	100000	100000	40000	50,000
Monitoring, documentation and publication	70000	50,000	20000	50,000
Field days	50000	50,000	20000	50,000
Administration (5 %)				
Total (INR)	800000	10,00000	50000	200000

Grand Total: 25,00000/-

Risk and Mitigation Strategy



Risk

Poor survival of plants due to improper site selection and management

Loss of germplasm due to disease, natural calamities, or negligence.

Inadequate maintenance of field gene banks by beneficiary farmers

Limited market access for future avocado production

Mitigation Strategy

Conduct site suitability assessment and provide regular technical support to farmers

Maintain duplicate germplasm collections at COH and decentralized field gene banks

Regular monitoring, follow-up visits, and farmer engagement through incentives and training

Develop linkages with buyers, FPOs, traders, and processing agencies



Thanks