



Capacity Building for Entrepreneurship Centered Around Trees Outside Forests

Module 4: Start-up Opportunities Based on Trees Outside Forest in India
Lecture 2: Overview of start-ups and incubation related to TOFI in India



Introduction:

- Wood has been a vital resource since ancient times .
- Traditional wood business has been practiced since time immemorial.
- With time, there has been an evolution in the techniques of wood production, with the innovation of engineered woods and global trade expansion the technology driven models for wood production is more costly, under such circumstances start ups and incubators can be driving force to initiate business .

Business incubators:

Business incubators has its beginning in 1960's and gained attention in the late 1980's.

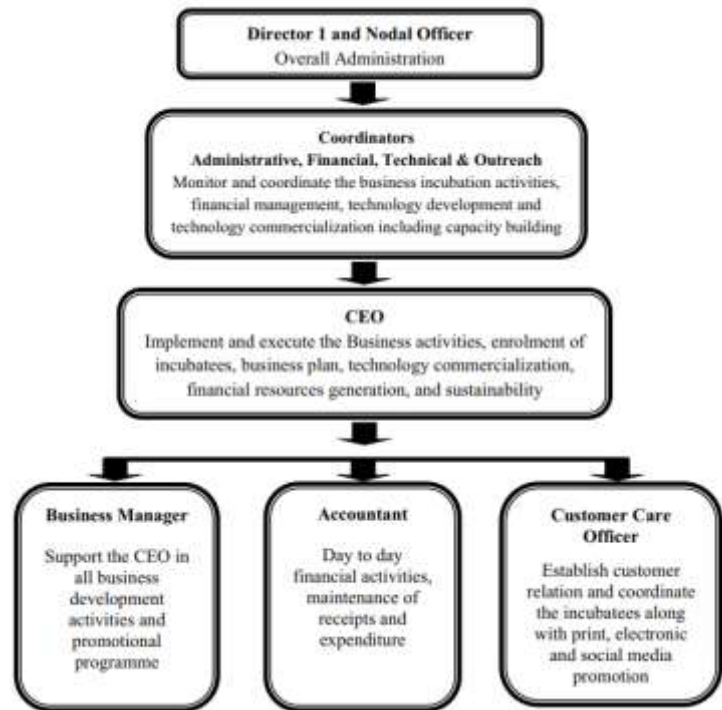
- Startups and incubation was incorporated in agriculture and allied sectors only since 2008 through the National Agriculture Innovation Project.
- The data on start-up India indicated that there are 100 agriculture and allied sector based business incubators .
- National Agriculture Innovation Fund (NAIF) accelerated facilitated financial resources for creation of incubation facility .
- The concept of business incubation in forestry and agroforestry sector began in 2018 when India's first business incubator at Forest College and Research Institute, Tamil Nadu Agricultural University (TNAU) was established with the primary objective of creating business ecosystem to attract forestry- and agroforestry-based business opportunities.

Scope for incubators for commercialization



S.No	Key area dor start ups	Scope	Example
	Biomass briquetting	Judicial combination of plantation and industrial residues which attracted development of new start-ups and enterprises	Saw dust shavings from sawmills compressed to briquette
	Mini-clonal technology	development of high yielding short rotation (HYSR) clones with mini-clonal technology which ensured mass multiplication of quality planting material.	ITC's Mini Clonal Program eucalyptus, casuarina, and subabul
	Wood seasoning technology	Post-harvest management of farm-grown	Vacuum Kiln BY Icfre
	Essential oil extraction	Establishment of aromatic distillation unit with standard protocol for wide range of biomass utility	
	Carbonization technology	Technologies for activated charcoal and carbon production	
	Biofuel technology	Oil expelling process and the associated trans-esterification technology especially for biodiesel production have increased the scope of business opportunities	Tree-borne oilseeds (TBOs)-based oil
	Wood value addition technology	Wood carving and the associated wood antique making	TNAU-RI building prioritized as wood antique ant to promote wood carving and wood antique as a business enterprise.
	Burlapping technology	Involve canopy, root, stem management through articulated water management system, hormonal application for shoot and root induction, and machine-based transplantation	
	Multifunctional agroforestry	Skill development program to various stakeholders for execution of the model	
	Cocoon crafting technology	Cocoon craft technology through the value addition of cocoon in the sericulture industry cocoon-based value-added products like garland, fower vase	

Fig. 1 Organizational structure of the incubator registration of incubates and current status



S. No	Incubation Support and services
1	Technology support
2	Technology commercialization
3	Technology validation, licensing, and branding
4	Financial support

S.no	Potential Incubates
1	Students
2	Individual
3	MSME
4	Corporates
5	Mentors
6	Start ups
7	Communities
8	New startups
9	NGO's
10	Research and development
11	Plantation and nursery group
12	Financial institution



Role of start ups in promoting TOF

- integration of tree plantation with agricultural crops, increasing productivity and sustainability. Nursery and seedling production
- Start-ups producing high-quality seedlings for agroforestry and urban planting.
- Start-ups promoting products like timber, fruit, medicinal plants, and other tree-based goods.



1. CropIn

- It is a leading AI and Data –led agri tech organization that provides SaaS solution to reduce cost, increase income.
- Industries: Analytics, AI, Farming , Forestry, GreenTech, Horticulture.

2. Central Arid Zone Research Institute

- Works on research and development in physical, engineering and life sciences.
- Industries: Agriculture, Forestry

3. National plywood Industries:

- Manufacture of plywood, block boards and flush doors
- Industries: Forestry, Manufacturing

4. ICFRE:

- Apex body in the national forestry research system promoting and undertaking based forest research extension
- Industries: Education, Forestry, product research, service industry

5. Tree based enterprise incubation centre:

- Aims to foster sustainable, tree based enterprises that contribute to India's environmental, economic and rural development goals.
- Designed to develop value chains for various tree crops, promote large scale plantation and foster innovation in tree based products and services



5. Agroforestry business incubation centre:

- Business Incubation
- Product/Technology Registration
- Intellectual Property Rights
- Human Resource Development

6. Mudra Yojana:

- Facilitates funding for small tribal businesses through micro-finance institutions.

7. TRIFED:

- Provides entrepreneurship training, technical support, and market linkages.

Incubation support for TOF RELATED START UPS

1. National Mission on Sustainable Agriculture (NMSA)
2. National Bank for Agriculture and Rural Development (NABARD)
3. Start-up India Initiative
4. Agri-Tech, Agriculture and agroforestry business Incubators