

MANDATE

- Screening and genetic upgrading of selected plant species for their compatibility in different agroforestry systems.
- To optimize tree crop combination for different regions.
- Performance/enhancement of the local predominant agroforestry systems.
- To upgrade and refine the existing technologies for higher productivity and sustainability.

Objectives

- Diagnostic survey and appraisal of existing farming system, agroforestry practices and farmers' preferences.
- Collection and evaluation of promising tree species, cultivars of fuel, fodder and small timber for agroforestry interactions.
- Studies on management practices of agroforestry systems such as agri-silviculture, boundary plantation, silvi-pasture, silvi-horticulture, agri-silvi-horticulture, multistorey, homestead etc.
- Analyze economical analysis of agroforestry systems.
- Explore the role of agroforestry for environment protection.
- Studies on post harvest technology, fishery, apiculture, lac, etc. in relation to agroforestry systems.

VISION

Integration of woody perennials in the farming systems to improve land productivity through conservation of soils, nutrients and biodiversity to augment natural resource conservation, restoration of ecological balance, alleviation of poverty and to mitigate risks of weather vagaries.

SIGNIFICANT ACHIEVEMENTS

- Agroforestry models for different agro-climatic regions developed.
- Prepared the local volume equations/volume table for twelve MPTs viz., *Gmelina arborea*, *Melia composita*, *Acrocarpus fraxinifolius*, *Alnus nitida*, *Dalbergia sissoo*, *Acer oblongum*, *Bauhinia variegata*, *Robinia pseudoacacia*, *Ulmus villosa*, *Toona ciliata* and *Acacia catechu*.
- Interspaces of fruit bearing coconut (> 20 year old) was utilized successfully in lower Himalayan region belt of Assam by growing rice seedling in kharif, followed by growing sorghum, maize and oat as fodder crop in rabi season.
- Model Bari (Homestead) system including vegetable, fruit trees, coconut, arecanut, Bay leaf and black pepper developed for Assam.

- Recommended two poplar clones (L-48/89 and L-47/88) for commercial cultivation in Punjab
- Standardized cultural and management practices for poplar based agroforestry system for tree row direction and spacing; different crop rotations, wheat varieties and their time of sowing; nutritional requirement of system, zinc deficiency amelioration and insect pest control measures
- In terms of growth, volume yield as well as soil improvement *Gmelina arborea* is identified best under red and laterite soils.
- Bamboo based agroforestry system is very beneficial and preferred by the farmers.
- Superior Shisham germplasm stock PS-52 registered at NBPGR (INGR11052) for higher height and diameter growth and straight bole. This genetic stock has also shown resistance to mortality and has a straight bole.
- Phenological characteristics of different MPTS of North Bihar in terms of leaf drop, leaf flush, vegetative growth, fruit formation and seed maturation.
- Development of Phule technique (Continuous Contour Trench (CCT)) by forming bunds of about 1m height by excavating trench of 60 x 30 cm and refilling it with in-situ soil on sloppy land for tree plantation in arid and semi arid region of Maharashtra, and created awareness among the farmers.
- Maximization of crop productivity and soil fertility improvement with inter crops castor in kharif and sweet sorghum in rabi in Pongamia based cropping system with the integrated use of 75% RDF + vermicompost @ 2 t ha⁻¹ (or) 25% N through poultry manure.
- Black pepper production system with *Acacia auriculiformis* and *Artocarpus heterophyllus* as support trees was evolved for humid high rainfall areas.

LOCATIONS OF COORDINATING CENTRES

Total : 37; SAUs : 26; ICAR : 10; ICFRE: 01

Himalayan: Srinagar, Jammu, Solan, Palampur, Dehradun, Kahikuchi, Barapani, Imphal, Gangtok

Indo-gangetic: Ludhiana, Pantnagar, Faizabad, Karnal, Pusa Samastipur.

Humid-Sub Humid: Jhargram, Bhubaneswar, Ranchi (BAU & ICAR Eastern Region), Agartala

Arid –Semi-arid: SK Nagar, Fatehpur- Shekhawati, Jabalpur, Hisar, Rahuri, Nagpur, Hyderabad (PJTSAU & CRIDA), Jodhpur, Jhansi

Tropical: Dharwad, Bangalore, Coimbatore (TNAU & IFGTB), Kattaupakkam, Thrissur, Dapoli, Shimoga.

FIVE BEST TECHNOLOGIES/PRODUCTS

- Superior genotypes and clones of Poplar, Eucalyptus, Shisham, Neem, Acacia and others. High yielding genotypes/clones in Simarouba and Tamarind are Identified and clonal seed orchard are established
- Development of tree fodder based silvipasture systems as fodder scarcity is major problem in hilly, arid and semi-arid regions of the country particularly during summer season. Based on AICRP on AF centres recommendation farmers have adopted poplar based agroforestry system on large scale and earned high economic returns. This has led to significant increase in area under Trees Outside Forests (TOFs).
- Growing teak at 10 or 20 m row spacing (with 2 m spacing between two teak) and planting papaya between two teak plants (for initial 3 years) and growing field crops (*viz*, sorghum and groundnut) in the interspace of teak rows gave three times higher average net returns as compared to only field crops.
- One ha Watershed based Integrated Farming System with agroforestry under rainfed ecosystem is developed and demonstrations are conducted for Karnataka.
- Integration of *Leucaena leucocephala* at 2x2m spacing in Napier-Bajra hybrid fodder production system yielded 12.03, 34.49 and 11.83 % higher dry fodder biomass, digestible protein and total digestible nutrients respectively compared to Napier-Bajra hybrid grass without silvi component.
- Data base on tree leaves feeding to ruminant animals has been developed for Tamil Nadu.

NEW INITIATIVES

- Awareness programme for boundary plantation conducted by the centre for the benefit of the farmers and informed about the suitable tree species for farm boundaries for different agro-climatic zones.
- Consortium of Industrial Agroforestry was established in Tamil Nadu to provide a platform for interaction by all stakeholders involved in agroforestry.
- Tree insurance scheme was launched for the first time in the country in Tamil Nadu.
- First Agroforestry Farmers' Producer Company in the country in Tamil Nadu.

COLLABORATIVE PARTNERS

The AICRP on AF established strong linkage with National and International organizations such as WAC (ICRAF), SAUs, AICRPs on IFS, DA and Weed control, other State and Central government institutions and NGOs.

FLAGSHIP PROGRAMMES

- Development of agroforestry systems integrating livelihood option including value addition and income generation for inculcating self-reliance among farmers.
- Standardization of propagation technique for quality planting material of elite planting material with focus on indigenous agroforestry species.
- Network on Tree Fodder.

THRUST AREAS FOR XII PLAN

- Recurrent Design and Diagnostic survey of existing agroforestry systems in different agro-climatic regions and evaluation of genetic base in agroforestry tree species for different regions.
- Development of appropriate agroforestry production and protection technologies in system perspective for diversified agriculture and intercropping systems.
- Agroforestry popularization through HRD, and field demonstrations particularly in tribal areas through TSP.
- Provide back up for quality planting material availability of important agroforestry tree species

EXTERNALLY FUNDED PROJECTS/CONSULTANCY : Nil

STAFF STRENGTH

	Sanctioned	Filled	Vacant	% vacant
Scientific	74	64	10	13.52
Technical	51	40	11	21.57
Administrative	26	26	--	---
Supporting	125	125	--	---
Total	276	54	21	---

QRT

Period: 01 January 2007 to 31 March 2013

Chairman: Dr. D. N. Tewari

Next QRT due for 1 April 2013 to 31 March, 2018

PUBLICATIONS (previous 5 years)

No. of papers in NAAS rated journals:

(a) No. of papers in score >6 : 42

(b) No. of papers in scores < 6: 275

FINANCIAL OUTLAY (Rs.in lakh)

	XI Plan actual utilization	XII Plan proposed	Last year budget(2015-16)		
			RE	Actual Expenditure	% Utilization
Plan	3061.64	6572.24	1307.20	1304.40	99.78
Total	3061.64	6572.24	1307.20	1304.40	99.78

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