



Tamil Nadu Agricultural University

Opportunities for Global Networking and Partnerships on University Transformation - TNAU Experience

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Why is India an important education partner for others?

- ✓ **INNOVATIVE RESEARCH FINDINGS**
- ✓ **WORLD CLASS RESEARCH**
- ✓ **RESEARCH TALENT**
- ✓ **BEST FUTURE ACADEMIC**

- ✓ **PUBLICATIONS**
- ✓ **BUSINESSES AND INDUSTRY NEED SKILLED GRADUATES IN INDIA**





INDIA'S INBOUND AND OUTBOUND DEGREE-SEEKING STUDENTS

Inbound:

44,766



Outbound:

277,387



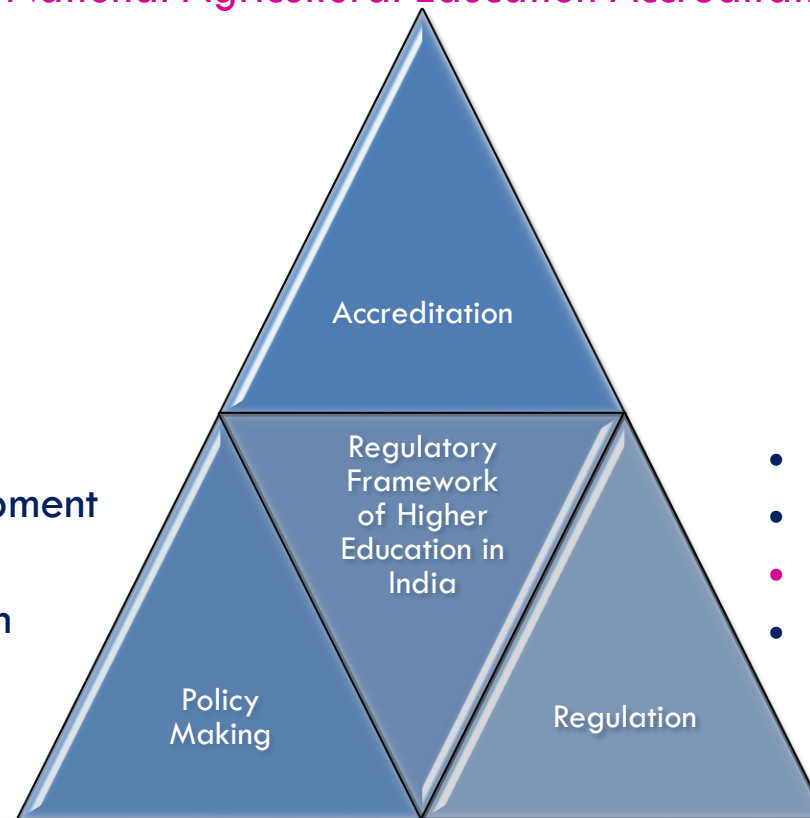
① = 10,000 students
Source: UIS UNESCO



Regulatory Framework of Higher Education in India

- National Board of Accreditation
- National Assessment and Accreditation Council
- National Agricultural Education Accreditation Board

- Department of Higher Education, Minister of Human Resource Development
- Association of Indian Universities
- Central Advisory Board of Education
- State Councils for Higher Education



- University Grants Commission
- AICTE, MCI, PCI, DEC, BCI, NCTE
- ICAR, ICMR, ICSSR, CSIR
- State Regulators

100 years and going...



CHAMPION OF HIGHER EDUCATION



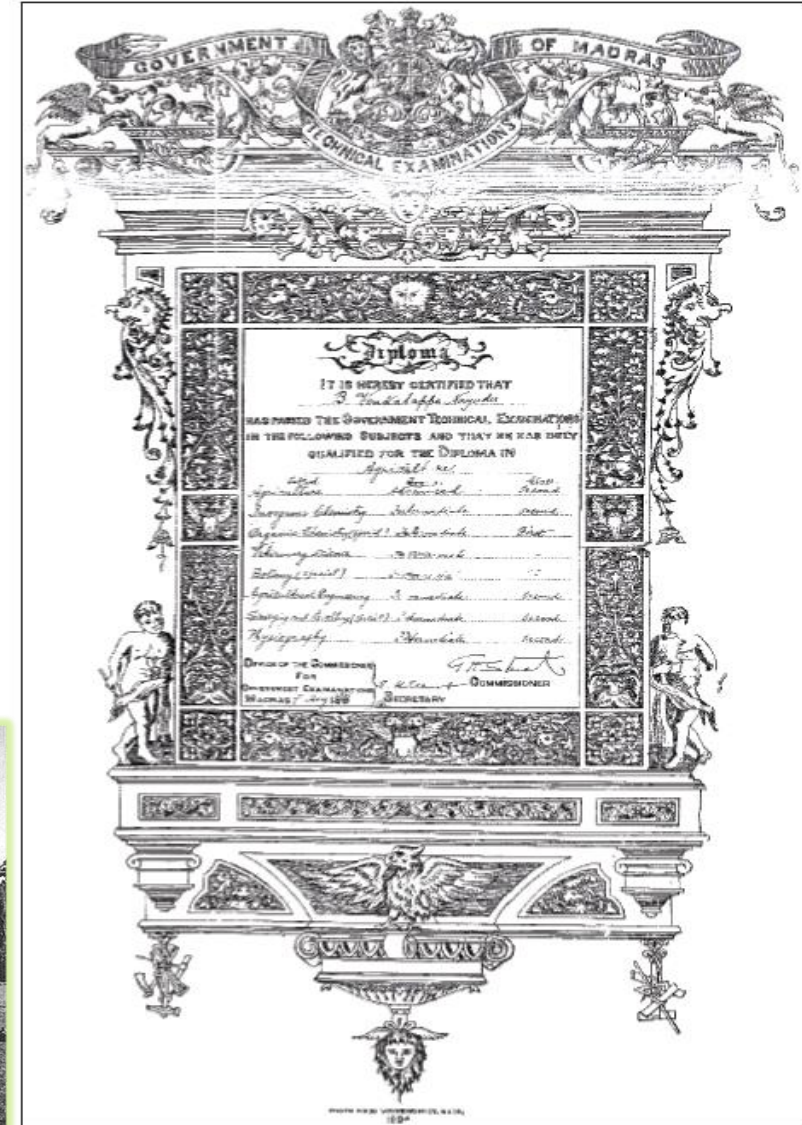
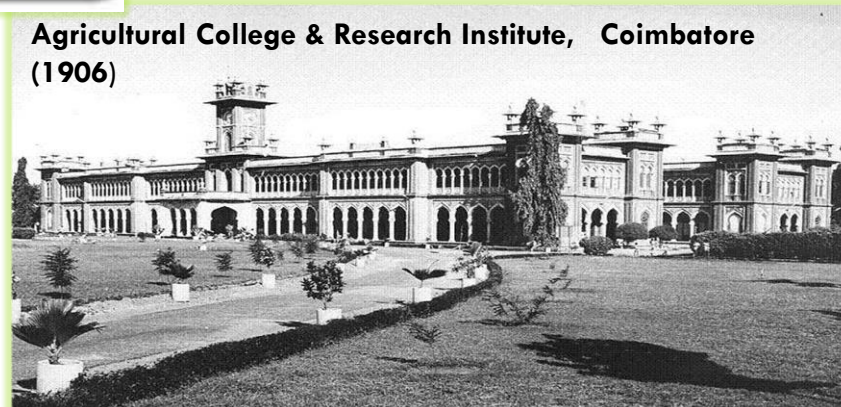
TNAU: History



Agricultural School, Saidapet (1868)



Agricultural College & Research Institute, Coimbatore (1906)





Tamil Nadu Agricultural University

1906 - 2018

Vision

- Provide quality education in agriculture

Educate

Advance technology

- Towards productive agriculture

- Provide technical inputs and business solutions and focusing on food security

Serve



Inter departmental linkages



Intra-university

- Biotechnology
- Nanoscience & Technology
- Remote Sensing & Geoinformatics
- Bioenergy
- Post-harvest technology
- Environmental Sciences



Inter-institutes

- University of Guelph
- University of Tokyo
- CSIRO
- Massey University
- ICAR institutes
- IIM, Bangalore



Public sector & Industry

- Jain Irrigation Systems
- Bayer Crop Science
- Hatsun Agro products
- Rasi Seeds
- Sugar Federation of TN
- Distillery Association of TN
- NLC
- BHEL

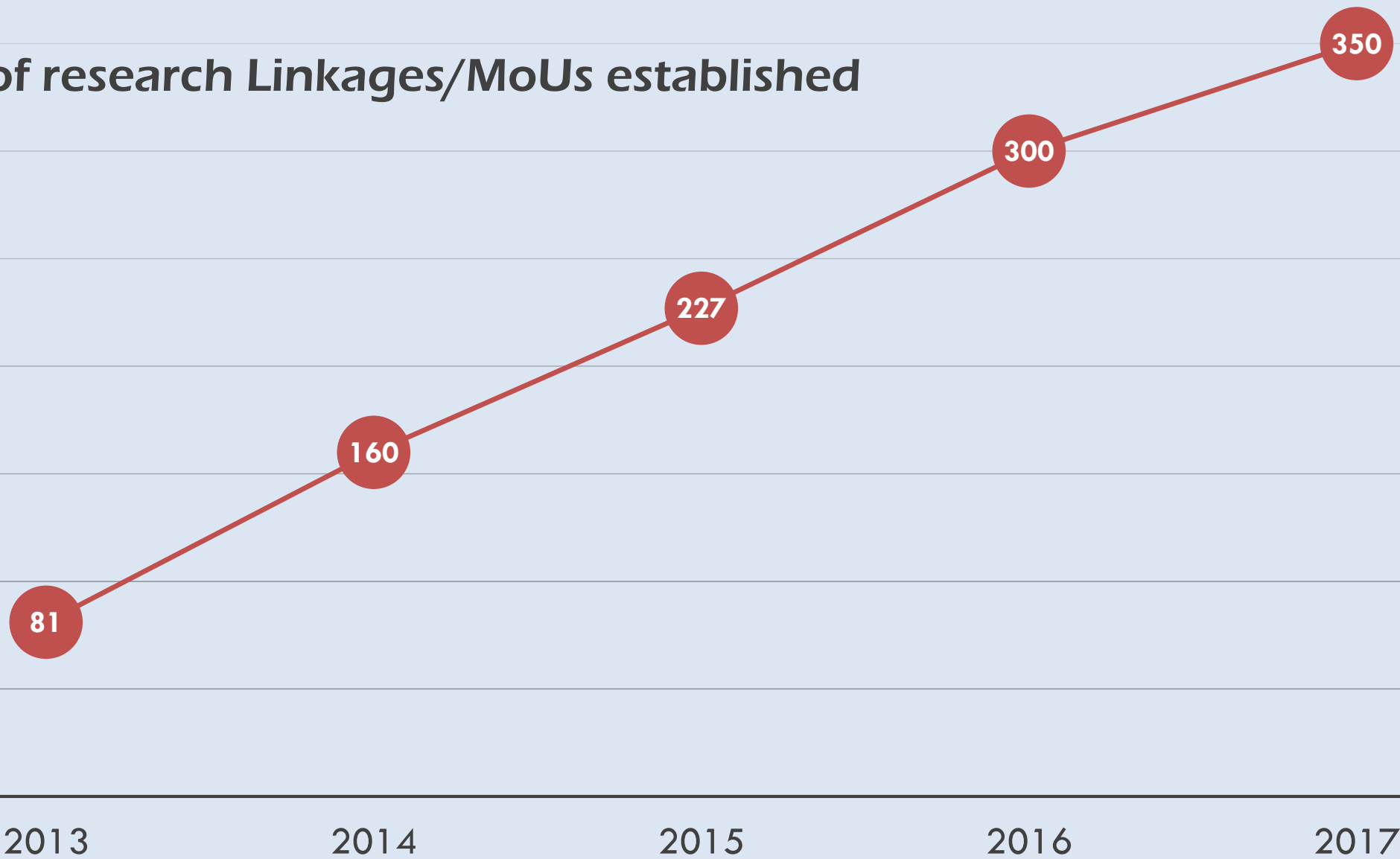
Interdisciplinary research

Dual Degree Programme

Specific Problem Research



No. of research Linkages/MoUs established





UG Degree Programmes

- 1. B.Sc. (Hons.) (Agriculture)
- 2. B.Sc. (Hons.) (Horticulture)
- 3. B.Sc. (Hons.) (Forestry)
- 4. B.Sc. (Hons.) (Home Science)
- 5. B.Tech. (Agricultural Engineering)
- 6. B.Sc. (Hons.) (Sericulture)

Agricultural Science Programs



Colleges 14

- 1. B.Tech. (Food Process Engineering)
- 2. B.Tech. (Biotechnology)
- 3. B.Tech. (Horticulture)
- 4. B.Tech. (Energy & Environmental Engineering)
- 5. B.Tech. (Bioinformatics)
- 6. B.S. (Agribusiness Management)
- 7. B.Tech. (Agricultural Information Technology)

Agricultural Technology Programs





First Year

- Foundation courses of Agriculture

Second Year

- Practical courses including crop production, management and protection

Third Year

- Marketing and Management courses

Final Year

- Practical industry experience
- Preparation for Masters programme
- Job oriented training programmes



Graduates in Agriculture

- Job declining in public sector
- Increase in the private sector
- Graduates require desired knowledge, skills, ability and exposure in industrial field.



Job – providers rather than job seekers

The Student READY programme consists of **five components**

1. Experiential Learning – Business mode
2. Experiential Learning – Hands on Training (Skill Development) without business mode
3. Rural Awareness Work Experience (RAWWE)
4. In Plant Training / Industrial attachment / Internship
5. Student Project

Integrated Learning Systems



ELP modules currently implemented



Commercial Plant Tissue Culture



Commercial Nursery Technology of Horticultural Crops



Bio-inoculants Production Technology



Commercial Beekeeping



Gardening and Landscape



Commercial production of Bio-control agents



Commercial mushroom production



Development of Integrated Farming system Model



Protected cultivation of Vegetable crops



On Farm Advisory for Soil Health, Water Quality and Plant Nutrition



Hybrid Seed Production



Managerial skill for Agribusiness



Commercial seed production



Composting technology



Commercial broiler and layer production



Masters Programme Offered

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Faculty of Agriculture

Agricultural Economics
Entomology
Agricultural Extension and Communication
Agricultural Microbiology
Agronomy
Plant Physiology
Genetics & Plant Breeding
Plant Genetic Resources
Molecular Plant Breeding
Nematology
Plant Pathology
Seed Science & Technology
Soil Science and Agricultural Chemistry
Geoinformatics
Plant Biotechnology
Environmental Science
Agri. Business Management
Sericulture
Agrometeorology
Nano Science & Technology
Statistics

Faculty of Horticulture

Fruit Science
Vegetable Science
Floriculture & Landscape Architecture
Plantation, Spices, Medicinal and Aromatic crops

Faculty of Agri. Engineering

Farm Machinery and Power Engineering
Renewable Energy Engineering
Processing and Food Engineering
Soil and Water Conservation Engineering
Environmental Engineering
Storage Engineering

Faculty of Forestry

Forestry

Faculty of Community Science

Food Science and Nutrition



Doctoral Programme Offered

29

Faculty of Agriculture

Agricultural Economics
Entomology
Agricultural Extension and Communication
Agricultural Microbiology
Agronomy
Plant Physiology
Genetics & Plant Breeding
Nematology
Plant Pathology
Seed Science & Technology
Soil Science and Agricultural Chemistry
Plant Biotechnology
Environmental Science
Agri. Business Management
Sericulture
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Nano Science & Technology

Faculty of Horticulture

Fruit Science
Vegetable Science
Floriculture & Landscape Architecture
Plantation, Spices, Medicinal and Aromatic crops

Faculty of Agri. Engineering

Farm Machinery and Power Engineering
Renewable Energy Engineering
Processing and Food Engineering
Soil and Water Conservation Engineering

Faculty of Forestry

Forestry

Faculty of Community Science

Food Science and Nutrition



Centre for Advanced Faculty Training

ICAR - CAFT	Year of Establishment	Number of trainings (2013-18)	No. of Trainees
Agronomy	1991	7	107
Genetics & Plant Breeding	1994	4	77
Agricultural Entomology	1995	5	73
Agricultural Microbiology	1997	4	54
		20	311



Trainees of CAFT won Externally funded projects in the theme of CAFT: 6 nos. (DST, DBT, SERC, DBT-Biocare, MOFPI)

CAFT strengthen the respective departments by way of purchase of Library books worth Rs.30,000/- each year



Incubation Centres

Technology Business Incubators

Thrust area: Agriculture & allied ventures

Food Processing ventures	71
Manufacturers of equipments and machinery	23
Farm and Bio products	92
Mushroom production	22
Consultancy and venture capitalist	7
Nationalized Banks	4
FPOs	4
NGOs	1
Total Number of Incubatees enrolled	224
Domain experts	6

224 registered members

75 startups

*ABIS-TBI, TNAU is ranked second position
"Entrepreneur"*

Bagged 15th place in NITI-AAYOG's AIM

<https://sites.google.com/a/tnau.ac.in/tbi>

BIRAC & DST support centres

Workshops on

- Entrepreneurial Opportunities in Herbal Products
- Commercial Plant Tissue Culture
- Accelerating Bio-Ventures
- Patenting of Bio-Inventions
- Biopreneurship
- Stimulating Bio-Entrepreneurs





Technology enabled Learning resources

Online Learning Tools

Development of e-Courses <http://eagri.org/>

Video Conferencing Facility: Multi Point Video Conferencing facility is available through Vidyo Portal

Network Infrastructure : Intranet, Smart Class Room, Video Conferencing, Wi-Fi Zone

Tablet PCs for Class Room Teaching Purpose: Tablet PCs for teachers

Computing Facilities to a tune of Rs. 5 crores 2015 - 2018

MOOC courses online <http://www.ignouonline.ac.in/swayameoi>

MOOC Courses

Coconut cultivation

Nursery techniques

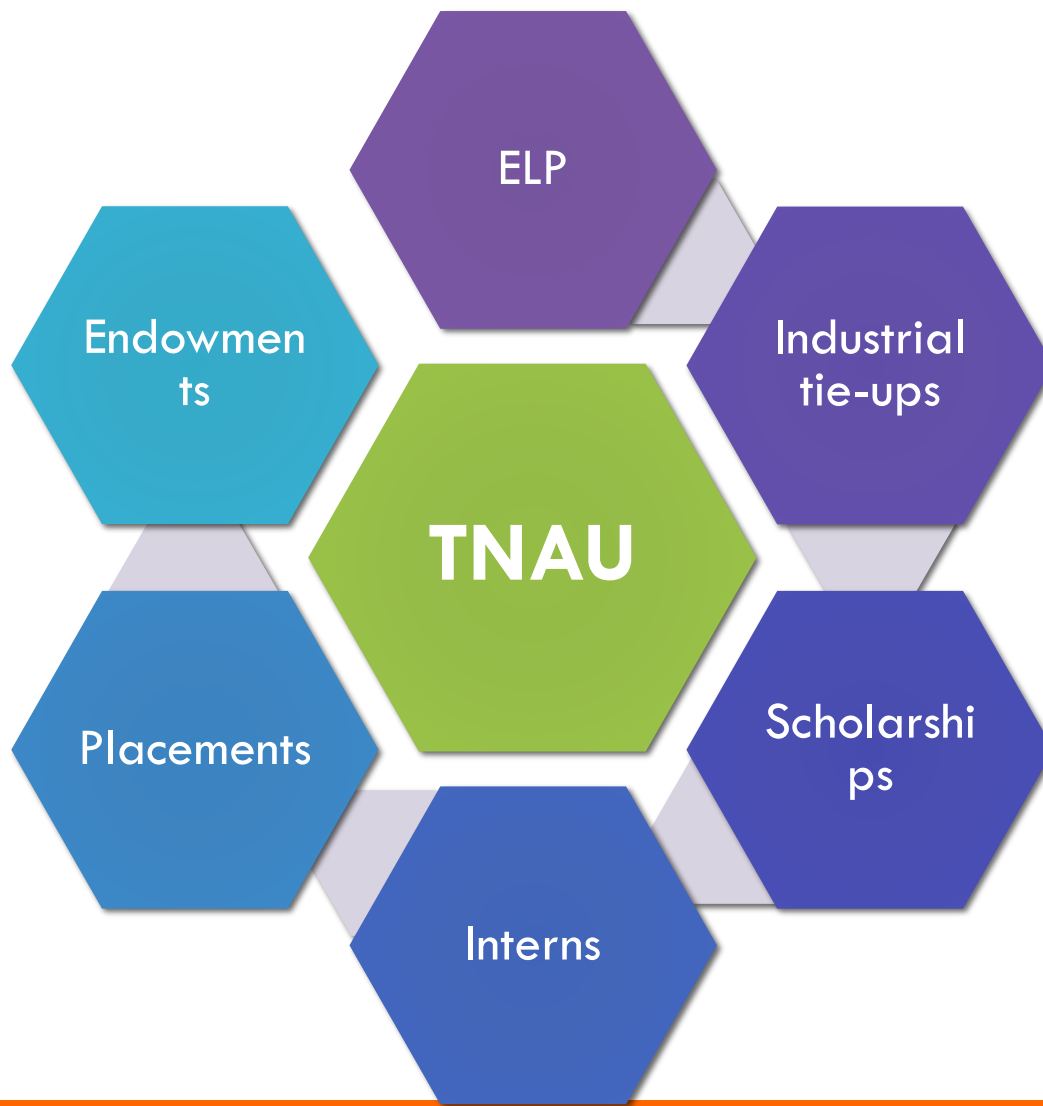
Value addition in millets

Bee keeping

Sericulture



Academic Industry Interface

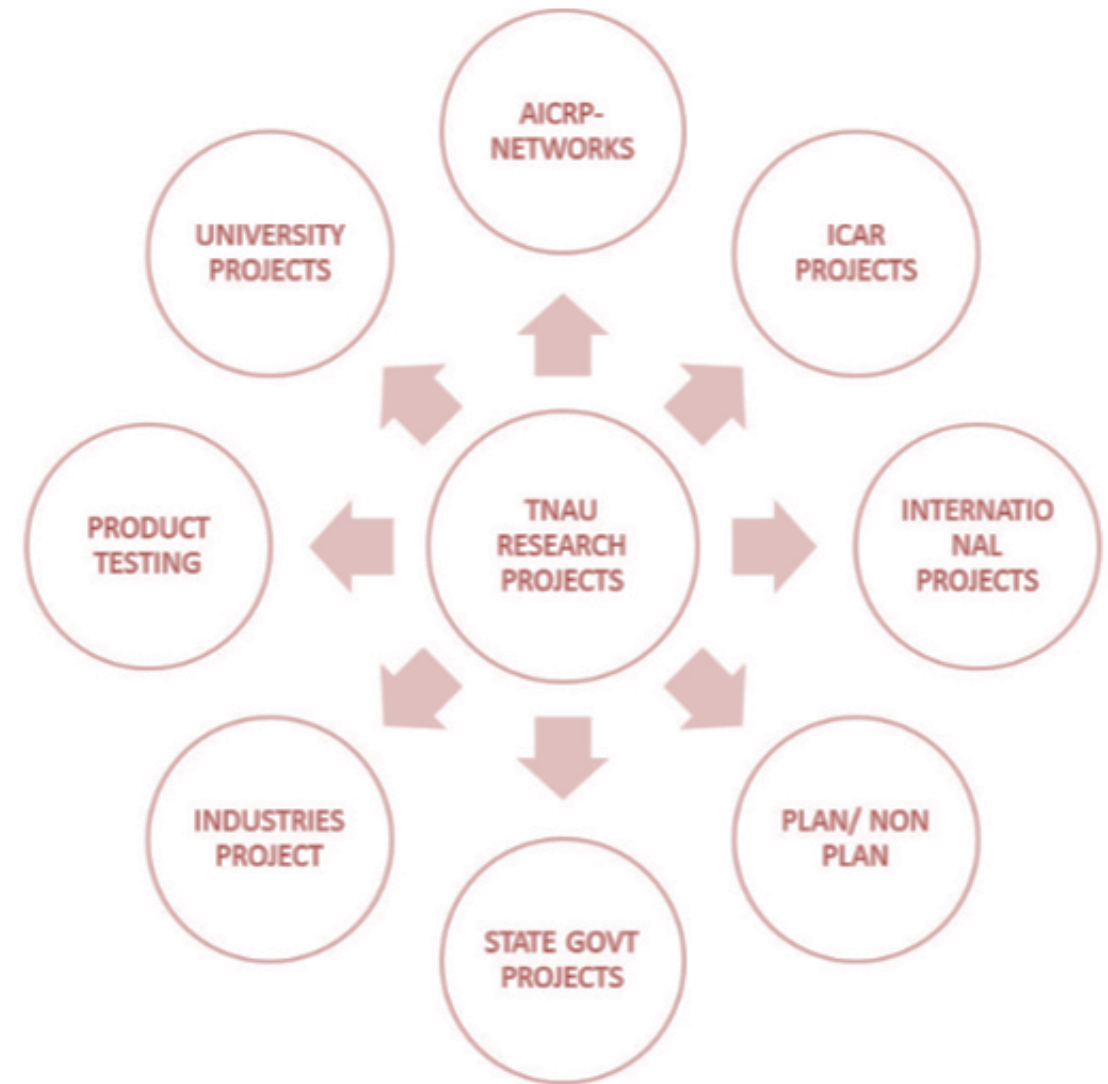


Name of Scholarship	Amount	2012-13	2013-14	2014-15	2015-16	Total
Backward Class/Most Backward Class Scholarship	Rs.8670/= p.a	267	172	210	250	899
Scheduled caste/Scheduled Tribe Scholarship	Rs. 26,140/= per annum	231	235	250	265	981
SC/ST Chief Minister Fellowship	Rs. 3000/= p.a	6	9	29	35	79
Periyar Endowment Fellowship	Rs. 5000/= p.a	14	15	13	15	57
KHG Fellowship	Rs. 8000/= p.a	9	10	10	15	44
Vedavalli Fellowship	Rs. 7000/= p.a	3	3	3	3	12
Differently abled Fellowship	Rs. 6760/= p.a	5	4	4	5	18
Total		535	448	519	588	2090
Top 10 rank holders	Rs. 40,000/= p.a					



Research Support

TNAU - RESEARCH STATIONS





TNAU – Research

TNAU Research Priorities

Plant sciences and crop improvement

Soil health and nutrient

Farm mechanization

Value addition and post harvest supply chain

Ecology, evolution and the environment

Energy and photosynthesis

Indigenous knowledge and sustainable organic agriculture

Seed priming and seed research priorities

Market driven production - Precision farming

Integrated farming systems

Bioinputs and bioprospecting

Bio-engineering

Crop for water and nutrient use efficiency

Nano and bio-technologies



Technology developed and its adoption

VARIETIES
RELEASED



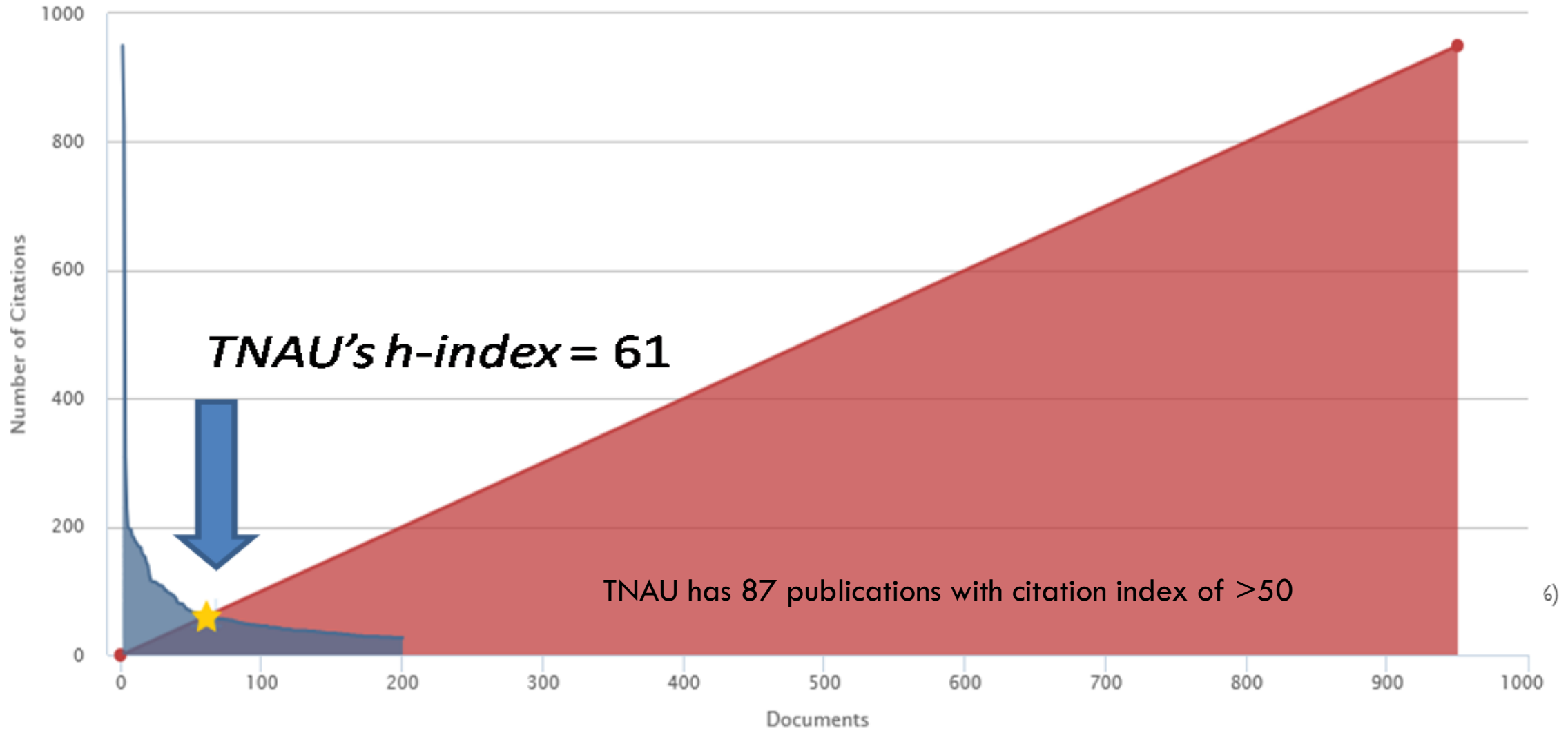
IMPLEMENTS
RELEASED



2013-14	2014-15	2015-16	2016-17	2017-18
Rice CO 51 Ragi CO 15 Greengram CO 8 Groundnut CO 7 Lucerne CO 2 Davana PKM 1 Tapioca YTP 1 Turmeric CO 2 Sweet Potato CO 5 Coleus CO 1 Amaranthus PLR 1 Eucalyptus MTP 1	Rice TPS 5 Blackgram MDU 1 Fodder Sorghum CO 31 Butter Pear Ooty 1	Rice TKM 13 Rice CR 1009 Sub1 Rice MDU 6 Sorghum K 12 Cluster bean MDU 1 Coconut hybrid VPM 5 Wheat CO W 3	Pearl millet CO 10 Blackgram VBN 8 Groundnut VRI 8 Cotton CO 14 Sugarcane CO 0212 Fodder Cowpea CO 9 Bhendi hybrid CO 4 Lime VRM 1	Rice CO 52 Barnyard Millet MDU 1 Redgram CO 8 Blackgram ADT 6 Blackgram KKM 1 Sesame VRI 3 Castor YRCH 2 Cotton K 12 Sugarcane COC 25 Snakegourd COH 1 Bottlegourd PLR 1 French bean Ooty 3 Melia MTP2
	Tractor drawn single row / two row cassava harvester	Tractor drawn turmeric rhizome planter Hydraulic brake for two wheel tractor trailer system	Tamarind Deseeder Double chamber centrifugal de-huller for millets Tractor drawn precision pulse seeder	Continuous Aonla de-seeding machine



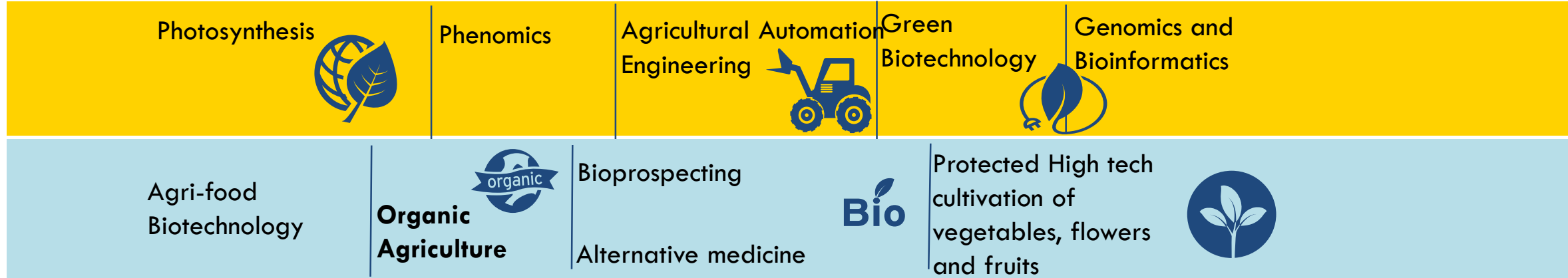
Research Publications





Research Plan

TNAU has commercialized its patents viz., Storage insect traps, Bt gene etc.,

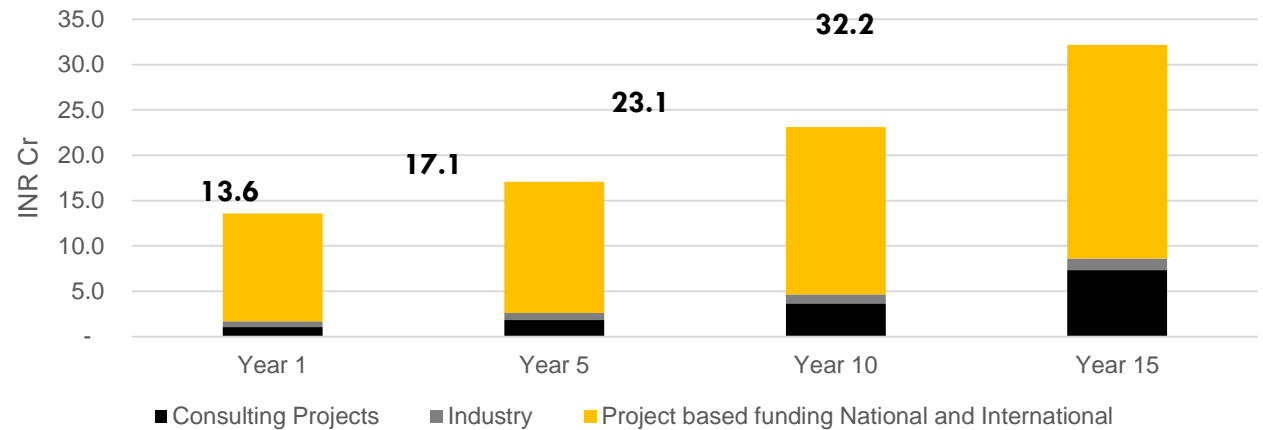


Model Acid Lime Orchard for Entrepreneurial Farming

Plant immunity

- TNAU is planning to set-up centres of excellence (CoE) with leading global universities”
- ✓ Centre for Systems Biology with UC Berkeley
 - ✓ Centre for Food Processing and Food Safety with University of Minnesota
 - ✓ CoE in Biotechnology (Rs. 430 Crore)

Revenue from industry and research focused activities



TNAU plans to set up labs with an approximate expense of INR 500 + Cr to support its initiatives in the next 5 years



Our march towards eminence ...

Introduction of new programs and frontier research

Enhance collaboration with leading global universities

Increase research output

Hire foreign faculty

Improve foreign domestic student mix

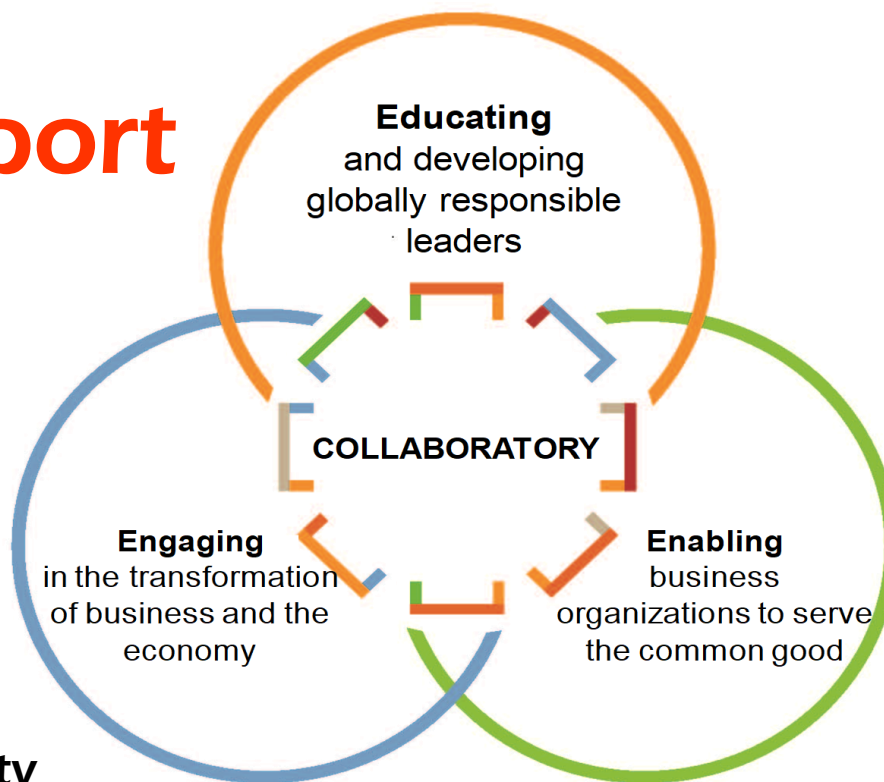
Diversify sources of income

Strengthen Alumni networking

Digital University framework for Student Life Cycle Management System



Global Support



International advisory cell functions at the Directorate of Planning & Monitoring

Student exchange programmes: Eight students have availed the International Fellowships (2017)

International adjunct faculty

Country	Number of Adjunct faculty	Universities adjunct faculty are placed
USA	12	University of California, Kansas State University, Virginia State University, Rutgers State University, Iowa State University, Loma Linda University,
Canada	3	University of Guelph, University of Saskatchewan, Dalhousie University



Fund raising through CSR

NIAER, Norway

ATREE

NETAFIM

VWF Industries

Kothari Sugars and Chemicals Ltd., Trichy

C-DAC, Kolkatta

NRTT, Mumbai

CII-Yi, Coimbatore

RCF, Mumbai, MoFC

Kraft Foods, UK

NETAFIM

ACSM

APD

BASM

ITC Ltd, Karamadi

Kancor Ingredients Ltd., Cochin

SPB Ltd, Erode

AMEC

Cadburys India Ltd

Marico-Mumbai

TNPL

JCERDC

Tropical Agrosystems Pvt. Ltd., Chennai

M/s Tropical Biosciences Pvt. Ltd., Chennai

ERDF

Sakthi Distillery, Bhavani

RIHN, Japan

EID Parry

Century Plyboards Pvt Ltd.

Monsanto Beachel-Borlaug

International

Bioseeds

Seshasayee paper and boards limited,
Erode

TNPL

Japan International Cooperation
Agency (JICA)

EID Parry

TNPL

SPCDB, Canada

Bhuvicare

NETAFIM

ABF

IOPEPC, Mumbai

Total funds raised 1 633 lakhs



Collaboration with GCHERA-Kelleg Foundation through APAARI

Conducted workshop on Training Faculty Leaders to develop subsequent Leaders in January, 2019



National Agricultural Higher Education Project-World Bank Funded

- **Develop Entrepreneurial ship for the Graduating Students.**
- **Train the Final year students for training in National and International Institutes.**
- **Faculties too**



Alumni Support



TAMIL NADU AGRICULTURAL UNIVERSITY CENTENARY BUILDING THANKS TO THE CONTRIBUTORS

TNAU STAFF, STUDENTS AND ALUMNI	: Rs. 40,85,808.00
RASI SEEDS (P) LIMITED	: Rs. 25,00,000.00
BANNARI AMMAN SUGARS LIMITED	: Rs. 10,00,000.00
SHIVA DISTILLERIES LIMITED	: Rs. 5,00,000.00
PRICOL LIMITED	: Rs. 5,00,000.00
ROOTS GROUP OF COMPANIES	: Rs. 5,00,000.00
STATE BANK OF INDIA	: Rs. 5,00,000.00
SENTHIL GROUP OF COMPANIES	: Rs. 1,00,000.00
INDUSTRIES AND INDIVIDUALS	: Rs. 96,000.00



Thank you

